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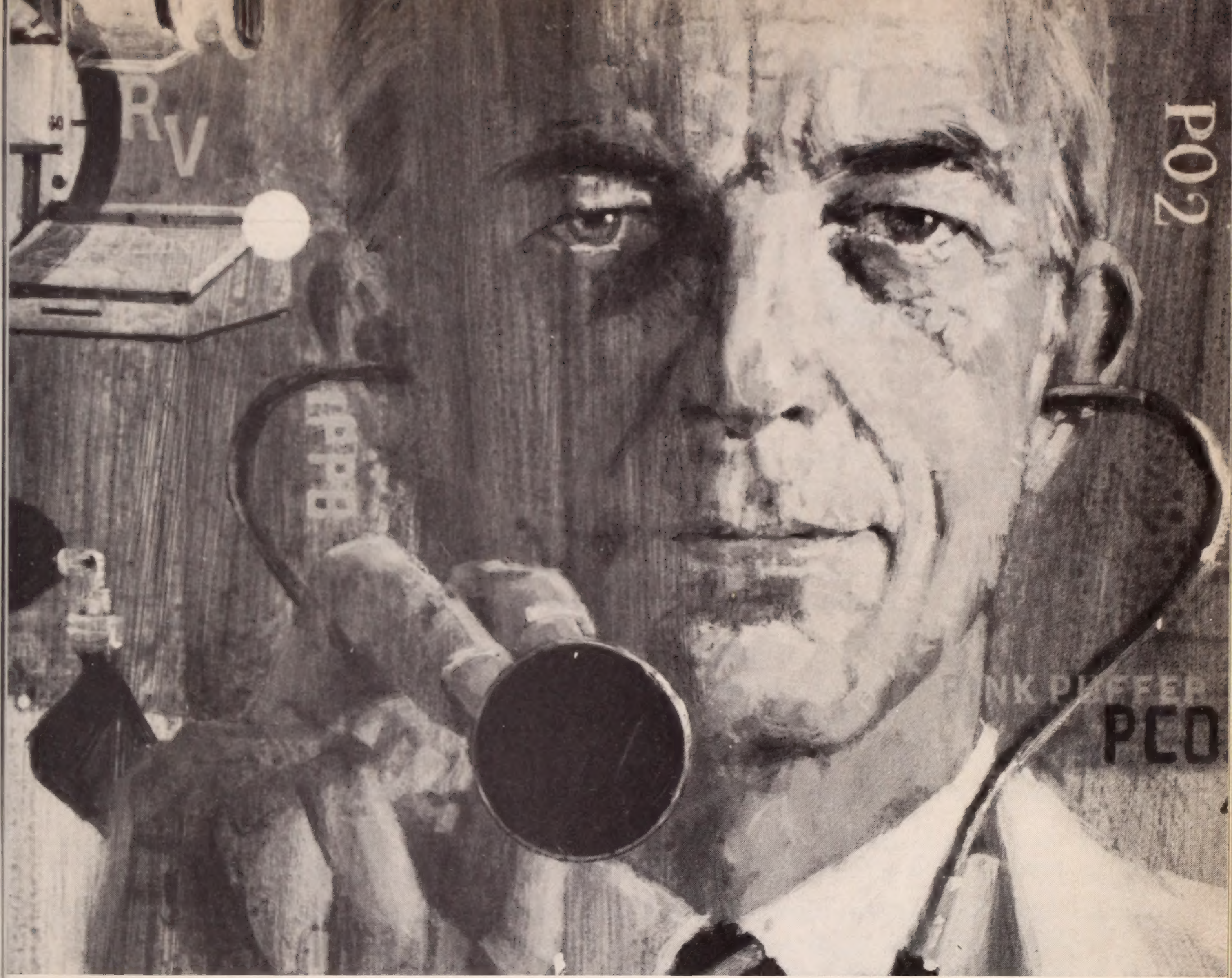

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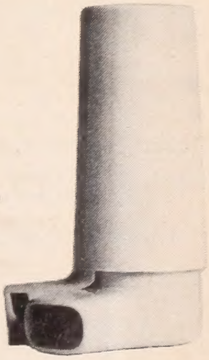

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Fifth Annual Symposium on

MEDICAL ASPECTS OF SPORTS

Sponsored by the

Medical Society of the State of New York Committee on Medical Aspects of Sports

Saturday, February 12, 1972 9:00 a.m. to 5:00 p.m.
Americana Hotel, New York City

Registration—8:30 a.m., Georgian Foyer (No Registration Fee)

9:00 a.m. Greetings: George Himler, M.D., *President Medical Society of the State of New York;* Thomas Sheldon, Ph.D., *Deputy Commissioner, State Education Dept.*

DRUG ABUSE AND DRUGS IN SPORTS—Georgian Ballroom A

Program—Morning Session—9:00 a.m.

Moderator, Max Novich, M.D., *Orthopedic Surgeon, Perth Amboy, N.J.*

9:15–11:00 a.m.

1. BASIC PHARMACOLOGY OF COMMONLY ABUSED DRUGS
   Harold Borgstedt, M.D., *Assoc. Prof. of Pharmacology, University of Rochester*
2. CARE AND TREATMENT IN DRUG ABUSE CASES
   Leonard L. Heimoff, M.D., *Clin. Assoc. Prof. of Medicine, Cornell University Medical College*
3. DRUG ABUSE IN SPORTS
   Fred L. Allman, Jr., M.D., *Team Physician, Georgia Institute of Technology*

11:00 a.m. FILM: WHAT DID YOU TAKE? Discussion by Donald C. Walker, M.D., *Asst. Dir., Office of Medical Manpower, N.Y. State Dept. of Health*

GIRLS PROGRAM—Georgian Ballroom B

11:00 a.m. Health Aspects—Medical Views on Girls Interscholastic Sports. Moderator, Lewis C. Obourn, *Chairman, Safety*
12:30 p.m. *Committee NYSPHSAA*

Greetings: Thomas Sheldon, Ph.D., *Deputy Commissioner, State Education Dept.*

1. MEDICAL VIEWS ON GIRLS' INTERSCHOLASTIC SPORTS
   Thomas E. Shaffer, M.D., *Prof. of Pediatrics, Ohio State University College of Medicine*
2. PSYCHOLOGICAL ASPECTS—CONSIDERATION OF FEMALE COMPETITIONS
   Dorothy V. Harris, Ph.D., *Pennsylvania State University*
3. FUTURE OF GIRLS' SPORTS IN NEW YORK STATE
   Katherine Ley, Ph.D., *Past Chmn., Commission on Intercollegiate Athletics for Women, State University of New York at Cortland*

11:15 a.m. CLINICAL DEMONSTRATIONS—Versailles Terrace
12:30 p.m. Coordinator, Joseph N. Abraham, Ph.D., *Dir. of Physical Education, Hobart College, Geneva*
John Dziegiel, *Trainer, New York Giants Pro Football Team*
John Kundson, *Trainer, Wagner College Athletic Teams*
Fritz Massansan, *Trainer, New York Nets Pro Basketball*

12:30 p.m. LUNCHEON—Royal Ballroom A and B. Toastmaster, Ralph S. Emerson, M.D., *Chairman, Committee on Medical Aspects of Sports;* Guest Speaker, Richard Forzano, *Head Coach, United States Naval Academy*

2:00 p.m. Scientific Program—Georgian Ballroom A
Moderator, Alexius Rachun, M.D., *Team Physician, Cornell University*

1. HOWS AND WHYS OF INJURIES
   James M. Robey, Ph.D., *University of North Carolina*

2. THE SUBLUXATING SHOULDER IN ATHLETES
   Anthony De Palma, M.D., *Dir., of Orthopedic Surgery, New Jersey College of Medicine & Dentistry*

3. CARDIOVASCULAR AND CARDIORESPIRATORY HEALTH
   Nicholas Alexiou, M.D., *N.Y. State Department of Health*

4. WEIGHT CONTROL—all year round conditioning & training of athletes
   Thomas De Lorme, Jr., M.D., *Harvard University*

GIRLS PROGRAM—Georgian Ballroom B

2:00–3:30 p.m. Moderator, Miss Rita Eichenger, *Chairman, State Comm. for Girls' Athletic Activities,* N.Y.S.P.H.S.A.A.

1. TEAM SPORTS
   Miss Iris Carnell, President-elect, AWPENYS, Assoc., Prof. Ithaca College

2. THE INDIVIDUAL SPORTS
   Mrs. Lura Wilson, *Past President, AWPENYS*

3. GYMNASTICS
   Mrs. Muriel Grossfeld, *U.S. Women's Gymnastic Olympic Team, 1956, 1960, 1964*

4. TRACK AND FIELD
   Nell C. Jackson, Ph.D., *Coach, U.S. Girls Olympic Track Team*

PANEL—QUESTION AND ANSWER PERIOD
Chairman, Joseph Abraham, Ph.D., *U.S. Olympic Trainer, Womens Gym and Volleyball Team*
Penelists: Thomas E. Shaffer, M.D., *Prof. of Pediatrics, Ohio State University College of Medicine;* Katherine Ley, Ph.D., *State University of New York at Cortland;* Muriel D. Grossfeld, *Coach, Olympic Womens' Gymnastic Team*

3:30 p.m. REPEAT CLINICAL DEMONSTRATION—Versailles Terrace

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Books Received

*The following books were received during the months of October and November, 1971.**

Textbook of Obstetrics and Gynecology. Second edition. By 54 Authors. Edited by David N. Danforth, Ph.D., M.D. Quarto of 1,219 pages, illustrated. New York, N.Y., Harper & Row, Publishers, 1971. Cloth, $35.

Comprehensive Group Psychotherapy. Edited by Harold I. Kaplan, M.D., and Benjamin J. Sadock, M.D. Quarto of 911 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $27.50.

Medical and Veterinary Protozoology—An Illustrated Guide. By Katherine M. G. Adam, James Paul, and Vigar Zaman. Quarto of 200 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.75

Bailey's Textbook of Histology. Sixteenth edition. By Wilfred M. Copenhaver, Ph.D., Richard P. Bunge, M.D., and Mary Bartlett Bunge, Ph.D. Quarto of 745 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.50.

Gonadotrophins and Ovarian Development. Proceedings of the two Workshop Meetings on the Chemistry of the Human Gonadotrophins and on the Development of the Ovary in Infancy, Birmingham, 1969. Edited by W. R. Butt, B.Sc., Ph.D., A. C. Crooke, M. A., M.D., and Margaret Ryle, M.A., Ph.D. Octavo of 400 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1970. Cloth, $19.

The Principles and Practice of Medicine. A Textbook for Students and Doctors. Tenth edition. Edited by Sir Stanley Davidson, B.A., M.D., and John Macleod, M.B., Ch.B. Octavo of 1198 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $16.

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* Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

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Inherited Disorders of Sulphur Metabolism. Proceedings for the Eighth Symposium of The Society for the Study of Inborn Errors of Metabolism. Edited by Nina A.J. Carson, M.D., B.Ch., and D. Noel Raine, Ph.D., M.B. Octavo of 312 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $15.25.

Coeliac Disease. Proceedings of an International Conference held at the Royal Postgraduate Medical School, London, 1969. Edited by C. C. Booth, M.D., and R. H. Dowling, M.D. Octavo of 252 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1970. Cloth, $14.

Visual Anatomy. Volume Two. Thorax and Abdomen. By Sydney M. Friedman, M.D., Ph.D. Quarto of 202 pages, illustrated. New York, N.Y., Harper & Row, Publishers, 1971. Cloth, $12.50.

Introduction to Medical Laboratory Methods. By Alberto Lamela, M.D. Octavo of 307 pages, illustrated. New York, N.Y., Harper & Row, Publishers, 1971. Cloth, $12.50.

Outline of Orthopaedics. Seventh edition. By John Crawford Adams, M.D. Octavo of 476 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $11.75.

Practical Dermatology. By I. B. Sneddon, M.B., Ch.B., and R. E. Church, M.A., M.D. Octavo of 212 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $8.25.

Infection in Hospital. A Code of Practice. Edited by G. L. Gibson, M.D. Octavo of 101 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $6.75.

Clinical Obstetrics and Gynecology. Volume 14 Number 2, June, 1971. Human Reproduction Problems of the Adolescent. Edited by Helen M. Wallace, M.D. **The RH Problem.** Edited by John T. Queenan, M.D. Octavo, illustrated. New York, N.Y., Harper & Row, Publishers, 1971. Published Quarterly (four numbers a year). Cloth, $22. per year.

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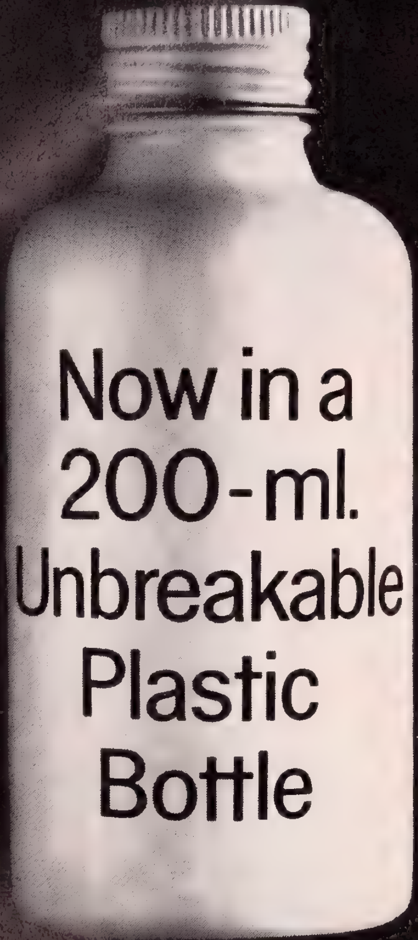

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The annual convention

The 166th annual convention of the Medical Society of the State of New York takes place this year at the Americana hotel in New York City. Beginning on Sunday, February 13th, the scientific sessions will run through Wednesday, February 16th. The House of Delegates, meeting concurrently, will go through to Thursday, February 17th.

Reference committees will review the work of the Society for the year and pass on the numerous resolutions presented to the House. These are open meetings and should be of interest to anyone who asks, "What does the State Medical Society do?"

Prominent among the subjects of the general sessions of the scientific assembly will be computerization in medicine, gastrointestinal hemorrhage, violence and the law as it affects the practice of medicine, inhalation therapy, the failing heart, and failing lungs.

Part II of the pharmacology of commonly used therapeutic agents will be presented in cooperation with the New York State Society of Internal Medicine. Part I, presented last year, was largely attended.

The Section on Space Medicine will present the practical applications of medical technics developed in the space program.

The Section on Archives will devote its attention to hospital medical records. It would be worthwhile for hospital records departments to send representatives to attend this program.

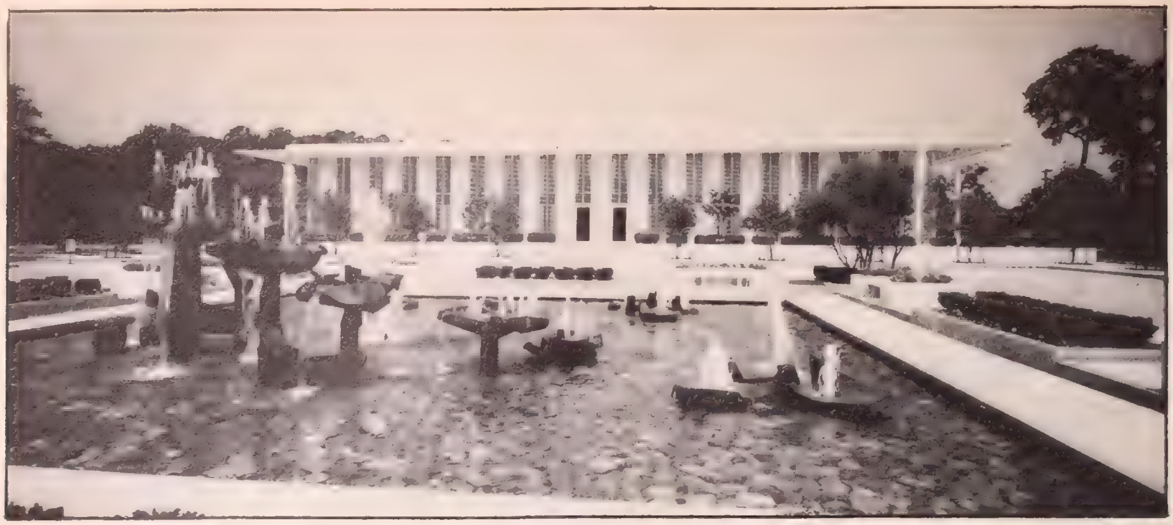
Interdisciplinary dialogue will be further developed this year with combined programs by pediatrics-ophthalmology, general practice-psychiatry, focusing on emotional disturbance in heart disease, cancer, and stroke; otolaryngology-plastic surgery; and medicolegal medicine-workman's compensation-occupational medicine on disabilities of the hand.

The scientific exhibits will be worthwhile as always because they represent largely what is going on in research.

Not least are the commercial (technical) exhibits which present what is new, useful, and available for your daily work.

On Friday, February 18th, the 11th annual Medical Communications Day sponsored by the Metropolitan Chapter of the American Medical Writers Association and the ***New York State Journal of Medicine*** will meet at the Americana. You don't have to be a journalist to enjoy this. It is for everybody.

We urge you to make a day or two at your annual convention a part of your continuing education.



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166th *ANNUAL CONVENTION*

MEDICAL SOCIETY of the STATE OF NEW YORK

Americana of New York

February 13-17, 1972 New York City

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MEDICAL SOCIETY OF THE STATE OF NEW YORK

February 13-17, 1972

CONVENTION SCHEDULE

166th ANNUAL CONVENTION

MEDICAL SOCIETY OF THE STATE OF NEW YORK

February 13 through 17, 1972

AMERICANA OF NEW YORK

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House of Delegates

The annual meeting of the House of Delegates of the Medical Society of the State of New York will be called to order at 2:00 P.M. on Sunday, February 13, 1972, in the Georgian Ballroom of the Americana of New York.

In accordance with Chapter II, Section 3, of the Bylaws, the House will assemble according to the following schedule:

Sunday, February 13, 2:00 P.M.
Tuesday, February 15, 2:00 P.M.
Wednesday, February 16, 9:00 A.M. and 2:00 P.M.
Thursday, February 17, 9:00 A.M.

At the last scheduled session (Thursday, February 17, 9:00 A.M.) the election of officers, councilors, trustees, and delegates to the American Medical Association will take place in accordance with Chapter III, Section 1, of the Bylaws.

GEORGE T. C. WAY, M.D., *Speaker*
CARL GOLDMARK, JR., M.D., *Secretary*

166th Annual Meeting

The 166th Annual Meeting of the Medical Society of the State of New York will be held on Wednesday, February 16, 1972, at 8:00 P.M. in the Royal Ballroom of the Americana of New York.

WALTER SCOTT WALLS, M.D., *President*
CARL GOLDMARK, JR., M.D., *Secretary*

Registration

Registration for *delegates* will be held in Vendome, 10, third floor of the Americana, on Saturday, February 12, from 12:00 NOON to 8:00 P.M. and in the foyer of the Georgian Room, third floor, on Sunday, through Thursday, February 13 through 17, after 8:00 A.M.

General registration for State Society members and guests will take place in Albert Hall, the Americana, Sunday, February 13, from 9:00 A.M. to 6:00 P.M. and Monday, February 14, through Wednesday, February 16, from 8:30 A.M. to 5:00 P.M.

Exhibits

Scientific Exhibits will be located in Albert Hall.

Scientific Motion Pictures will be shown in the Motion Picture Theatre in Albert Hall.

Technical Exhibits will be located in Albert Hall.

Exhibits will be on view Sunday, February 13, from 10:00 A.M. to 6:00 P.M.; Monday, February 14, through Wednesday, February 16, 9:00 A.M. to 5:00 P.M.

Scientific Program

General Sessions will be held Sunday, February 13, at 10:00 A.M.; Monday, Tuesday, and Wednesday, February 14, 15, and 16, at 2:00 P.M.

Section and Session Meetings will be held Sunday, February 13, at 10:00 A.M. and 2:00 P.M.; Monday, February 14, through Wednesday, February 16, at 9:00 A.M. and 2:00 P.M.

Dinner Dance

The Dinner Dance will be held in the Royal Ballroom, second floor of the Americana, on Wednesday, February 16, at 8:00 P.M., preceded by the President's Reception in the Versailles Ballroom at 7:00 P.M.

Tickets should be ordered in advance from the Medical Society of the State of New York, 420 Lakeville Road, Lake Success, New York 11040. Subscription is $25 per person.

Woman's Auxiliary

See page 49 for program.

Scientific Program

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Associate Chairmen
EDWARD A. BURKHARDT, M.D., New York
STEPHEN NORDLICHT, M.D., New York
WILLIAM B. RAWLS, M.D., New York
MAXWELL SPRING, M.D., The Bronx
WILLIAM J. STAUBITZ, M.D., Buffalo
LEO SWIRSKY, M.D., Brooklyn
JOSEPH R. WILDER, M.D., New York
Director, Division of Scientific Activities
NORMAN S. MOORE, M.D., Ithaca
CHAIRMEN OF SECTIONS AND SESSIONS

GENERAL SESSIONS

Sunday, February 13, 1972, 10:00 A.M.

Royal Ballroom A, Second Floor

All Day Session

JOINT MEETING WITH

Section on Data Processing in Medicine

Symposium:

FUNDAMENTALS OF COMPUTERING AND THEIR APPLICATIONS TO MEDICINE

Basic Fundamentals on How a Computer Works

Complete program to appear in convention booklet.

Sunday, February 13, 1972, 2:00 P.M.

Royal Ballroom A, Second Floor

NORMAN S. MOORE, M.D., Ithaca, *Presiding*

Symposium:

MEDICAL APPLICATIONS OF DATA PROCESSING

1. The Inpatient Information System at Columbia-Presbyterian Medical Center, New York City

WILLIAM A. BAUMAN, M.D., New York City
Director, Medical Administrative Data Processing, the Presbyterian Hospital; Assistant Clinical Professor of Pediatrics; Columbia University College of Physicians and Surgeons

Advances in medical care are causing a 15 per cent annual increase in laboratory testing on bed patients at the Columbia-Presbyterian Medical Center. Patients' medical records have trebled in size during the last two decades. This growth of patient information has exceeded the resources required to process the data and has led to delays and inaccurate result reporting. In 1967 the hospital initiated a computerized inpatient information system to alleviate impaired manual data-handling procedures. The system at present automatically processes admission, transfer, discharge, and laboratory data through two interconnected computers and then transmits results over a teleprocessing network to computer terminals in nurses' stations and administrative offices.

2. Automatic Electrocardiographic Analysis by Computer

LEON PORDY, M.D., New York City
Associate Cardiologist, The Mount Sinai Hospital; Associate Professor of Cardiology, Mount Sinai School of Medicine

Our method for computer analysis of the electrocardiogram is automatic and employs three simultaneously recorded lead sets, including the conventional 12-lead electrocardiogram plus the component Frank vectorcardiographic leads. The electrocardiogram and clinical data are transmitted from patient to computer facility directly via telephone or first recorded on analogue tape. The computer processing time is in the range of thirty seconds. The resultant printout contains interpretation of both cardiac rhythm and electrocardiogram contour. This is reduced for teletype message back to the sender. The diagnoses are those utilized in clinical practice and are physician reviewed. Comparative programs for repetitive tracings have been completed. Our system functions presently from satellites throughout the U.S.A. and Europe.

3. Computer Assisted Medical Instruction

STUART R. BLESS, M.D., Boston, Massachusetts (*by invitation*)
Clinical Instructor in Medicine, Harvard Medical School; Associate in Medicine, Beth Israel Hospital

RICHARD A. RIFKIND, M.D., New York City
Professor of Medicine, Columbia University College of Physicians and Surgeons

The decision-making capability of a computer can be used to direct individualized teaching sessions related to complex medical problems. Two-way discussions between student and computer program can be conveyed in free English text over standard computer terminals. Real clinical situations can be simulated, and the student may pursue problems with the computer acting as an expert tutor. Limitations in the widespread applicability of computer-assisted medical education lie in a combination of engineering and medical problems currently under investigation. The experience to date of the authors and others will be summarized.

4. Computers in Medical Insurance

SAMUEL SOLOMON, M.D., New York City
Associate Medical Director, United Medical Service

Monday, February 14, 1972, 2:00 P.M.

Royal Ballroom A, Second Floor

WILLIAM B. RAWLS, M.D., New York City, *Presiding*

This symposium and panel discussion is under the auspices of the American Therapeutic Society's Continuing Educational Program—A Day in Therapeutics. It is supported, in part, by grants-in-aid from E. R. Squibb & Sons, Inc.

This program has been accepted for three hours' elective credit by the Academy of General Practice.

Symposium and Panel Discussion:

UPPER GASTROINTESTINAL HEMORRHAGE

MICHAEL J. LEPORE, M.D., New York City, *Moderator*
Professor of Clinical Medicine, New York University School of Medicine; Chief of Gastroenter-

ology, St. Vincent's Hospital and Medical Center of New York

1. General Approach to the Patient with Gastrointestinal Bleeding

Michael J. Lepore, M.D., New York City

2. The Vigorous Diagnostic Approach to the Localization of the Site of Gastrointestinal Hemorrhage

Eddy D. Palmer, M.D., East Orange, New Jersey *(by invitation)*
Professor of Medicine, and Director, Division of Gastroenterology, New Jersey College of Medicine and Dentistry

3. Fiberoptic Endoscopy in the Diagnosis of Esophageal, Gastric, and Duodenal Lesions

Henry Colcher, M.D., New York City
Associate Clinical Professor of Medicine, Columbia University College of Physicians and Surgeons

4. Radiologic Technics in the Localization of Gastrointestinal Bleeding: The Use of Angiographic Studies

Stanley Baum, M.D., Boston, Massachusetts *(by invitation)*
Professor of Radiology, Harvard Medical School; Attending Radiologist, Massachusetts General Hospital

5. The Management of Stress Ulcers with Hemorrhage

René Menguy, M.D., Rochester
Professor of Surgery, University of Rochester School of Medicine and Dentistry; Surgeon-in-Chief, Genesee Hospital

6. The Medical Treatment of Gastrointestinal Bleeding and the Criteria for Surgical Intervention

James L. A. Roth, M.D., Philadelphia, Pennsylvania *(by invitation)*
Professor of Clinical Medicine, University of Pennsylvania School of Medicine; Director, Institute of Gastroenterology, Presbyterian University of Pennsylvania Medical Center

7. Surgical Procedures Most Appropriate to Various Causes of Gastrointestinal Bleeding

Thomas F. Nealon, Jr., M.D., New York City
Professor of Clinical Surgery, New York University School of Medicine; Director of Surgery, St. Vincent's Hospital and Medical Center of New York

Summation

Michael J. Lepore, M.D., New York City

Panel Discussion
The above speakers

Questions and Answers

Tuesday, February 15, 1972, 2:00 P.M.

Royal Ballroom A, Second Floor

Stephen Nordlicht, M.D., New York City, *Presiding*

This program has been accepted for three hours' elective credit by the American Academy of General Practice.

Symposium and Panel Discussion:

THE VIOLENCE OF MAN

John P. Lambert, M.D., Katonah, *Moderator*
Associate Clinical Professor of Psychiatry, Columbia University College of Physicians and Surgeons; Medical Director, Four Winds

1. The Patterns of Criminal Violence

Milton Helpern, M.D., New York City
Chief Medical Examiner, the City of New York; Professor and Chairman, Department of Forensic Medicine, New York University School of Medicine

2. Violence and the Law

The Honorable Harold A. Stevens, New York City *(by invitation)*
Presiding Justice of the Appellate Division, First Judicial Department, State of New York

3. The Impact of Violence on Law Enforcement

The Honorable Patrick V. Murphy, New York City *(by invitation)*
Police Commissioner, the City of New York

4. The Determinants of Violence

Stephen Nordlicht, M.D., New York City
Clinical Associate Professor of Psychiatry, Cornell University Medical College; Associate Attending Psychiatrist, The New York Hospital

Panel Discussion
The above speakers

Wednesday, February 16, 1972, 2:00 P.M.

Royal Ballroom A, Second Floor

Maxwell Spring, M.D., Bronx, *Presiding*

This symposium and panel discussion is under the auspices of the American Therapeutic Society's Continuing Educational Program—A Day in Therapeutics. It is supported, in part, by grants-in-aid from Geigy Pharmaceuticals.

This program has been accepted for three hours' elective credit by the American Academy of General Practice.

Symposium and Panel Discussion:

INHALATION THERAPY

Maurice S. Segal, M.D., Boston, Massachusetts, *Moderator (by invitation)*
Professor of Medicine, Tufts University School of Medicine; Director, Lung Station and Department of Inhalation Therapy, Boston City Hospital

1. Acid-Base Balance and Its Regulation Made Simple

Matthew B. Divertie, M.D., Rochester, Minnesota *(by invitation)*
Consultant in Internal Medicine and Thoracic Diseases, Mayo Foundation; Associate Professor of Medicine, Mayo Graduate School of Medicine

Respiratory failure implies that the lungs cannot support the metabolic needs of the body. Consequently, the patient's life is threatened by hypoxemia and the respiratory acidosis which results from retention of carbon dioxide. Treatment of respiratory acid-base disturbances is not difficult if the underlying principles are understood. Simple explanations and practical guide lines will be provided in this review.

2. Indications and Physiologic Basis for Use of Inhalation Therapy Apparatus

Edwin Rayner Levine, M.D., Chicago, Illinois *(by invitation)*
Medical Director, Department of Respiratory Therapy, Edgewater Hospital; Associate Professor of Medicine, Chicago Medical School

Inhalation therapy apparatus may be used to relieve hypoxia, improve bronchial drainage, correct inadequate ventilation, or maintain ventilation. In each case it is necessary to determine the type and degree of the impairment to plan proper improvement. The patient should be monitored by blood gas studies, and ventilatory measurements and changes made as needed. One or more or all of the indications may be present. Choice of apparatus will depend on the problem and the changes that occur during treatment.

3. Acute Respiratory Failure

STEPHEN M. AYRES, M.D., New York City
Associate Professor of Clinical Medicine, New York University School of Medicine; Director, Cardiopulmonary Laboratory, St. Vincent's Hospital and Medical Center of New York

Acute respiratory failure may result from exacerbation of chronic airway obstructive disease or from some acute process occurring in a patient with previously normal lungs or with mild respiratory disease. Patients with chronic airway obstructive disease are frequently adapted to low-oxygen and high-carbon dioxide tensions. In contrast, rapid changes in oxygen tension and acid-base balance develop in patients with acute respiratory failure and previously normal lungs. In general, metabolic abnormalities should be corrected at about the same rate at which they developed. Acute respiratory failure with previously normal lungs is best termed nonobstructive respiratory failure or the "stiff-lung" syndrome. It may be seen with congestive heart failure, pulmonary edema, burns, drug-overdosage, the postoperative state, and trauma. Treatment for all varieties of respiratory failure involves correction of respiratory gases by either oxygen administration or ventilatory assistance. Metabolic abnormalities must be corrected by appropriate technics.

4. Chronic Respiratory Failure

THEODORE RODMAN, M.D., Philadelphia, Pennsylvania (*by invitation*)
Associate Professor of Medicine, Temple University Medical School and Health Sciences Center; Chief of Pulmonary Function Laboratory, and the Intensive Respiratory Care Program, Temple University Hospital

The different forms of chronic respiratory failure will be described briefly along with the types of diseases which are likely to underly and predispose to the development of respiratory failure. Problems and pitfalls in the recognition and treatment of these conditions will be emphasized.

Panel Discussion
The above speakers

SECTIONS AND SESSIONS

All papers read before the Society by members become the property of the Society. The original copy of each paper shall be left with the Secretary of the Section or Session.

Discussers should have their remarks typed and should hand them to the Secretary.

Section and Session meetings shall begin promptly at the hour specified.

Executive Session—*The first order of business, election of officers. "To participate in the election of any section, a member must register with such section."*—BYLAWS, CHAPTER XII, SECTION 3

SECTION ON
Allergy

Chairman . . . . EARL B. BROWN, M.D., New York City
Vice-Chairman . . . . ROBERT E. REISMAN, M.D., Buffalo
Secretary . . . . SAMUEL BLOOM, M.D., Brooklyn
Delegate . WILLIAM E. HERMANCE, M.D., New York City

Sunday, February 13/10:00 A.M./Versailles Terrace, Second Floor

Symposium and Panel Discussion—**New Developments in the Care of the Allergic Child**

EARL B. BROWN, M.D., New York City, *Moderator*
Director of Allergy, Lenox Hill Hospital; Robert A. Cooke Institute of Allergy, Roosevelt Hospital

Asthma and severe allergic rhinitis account for a high percentage of morbidity in children. In an effort to reduce the disabling effects of allergy, new theories and prophylactic regimens have been advocated.

1. The Inherited Factor

EARL B. BROWN, M.D., New York City

What is the role of genetics in the causation of childhood allergy? In September, 1965, a prospective study was inaugurated on the national course of asthma. From November 1, 1965, until September 30, 1968, 1,508 parents were interviewed, and 754 children were followed from birth to the age at termination of the grant. The influence of the inherited factor in the development of allergy in the offspring is examined.

2. Chemical and Antibiotic Prophylaxis

WILLIAM E. HERMANCE, M.D., White Plains
Director of Allergy, White Plains Hospital Outpatient Department

Should antibiotics be given continuously to a child in whom asthma develops after infections in which no extrinsic allergen can be demonstrated? Should gamma globulin be administered periodically to the chronically sick asthmatic child?

3. Diet, Environment Control, and Hyposensitization

WALTER R. KESSLER, M. D., New York City
Associate Professor of Pediatrics, Columbia University College of Physicians and Surgeons; Chief, Pediatric Allergy Clinic, Vanderbilt Clinic

Will eliminating milk, eggs, and other highly sensitizing foods from a potentially allergic child's diet prevent development of allergic symptoms in the child in the future? Should a potentially allergic child be stopped from drinking milk? Should furred and feathered pets be eliminated from the environment of a potentially allergic child? Is hyposensitization worth while, particularly in a child with mild allergic symptoms?

4. Community Responsibility in the Care of the Allergic Child

HERBERT I. COHEN, M.D., New York City
Chief of Pediatric Allergy, Roosevelt Hospital

The Roosevelt Hospital Child and Youth Program (C & Y) is a federally funded community health program established three years ago to provide total medical care for the children of New York City's west side. The largest of the subspecialty clinics is the pediatric allergy clinic. Here a team of workers rather than individual doctors works to care for an allergic child. Is the team approach the answer in reducing the morbidity rate of childhood allergy?

5. Treatment of the Severe Allergic Child

HAROLD I. LECKS, M.D., Ardmore, Pennsylvania (*by invitation*)
Associate Professor of Clinical Pediatrics, University of Pennsylvania School of Medicine; Chief, Pediatric Allergy Section, Philadelphia General Hospital

What about the child with severe allergic rhinitis and asthma who has not been helped prophylactically? What are the newer methods of therapy? Should antihistamines, bronchodilators, or steroids be given continuously? Is alternate day administration of corticosteroids safe? What are the best methods to treat the asthmatic child requiring hospitalization?

Panel Discussion
The above speakers

SECTION ON
Anesthesiology

Chairman . . . LOUIS S. BLANCATO, M.D., Mount Vernon
Vice-Chairman . . . .
. . . . H. KETCHAM MORRELL, JR., M.D., Syracuse
Secretary . . . . GERTIE F. MARX, M.D., Bronx
Delegate . . . . VICTOR J. TOFANY, M.D., Rochester

Sunday, February 13/2:00 P.M./Versailles Terrace, Second Floor

1. The Decision to Ventilate

GERALD EDELIST, M.D., Toronto, Canada (*by invitation*)
Anesthetist-in-Chief, New Mount Sinai Hospital; Associate Professor of Anesthesia, University of Toronto Faculty of Medicine

The decision to begin artificial ventilation is sometimes a difficult one. In the cases in which clinical judgment is insufficient, a set of objective criteria is necessary to evaluate the status of the patient. A portable cart which can be taken to the patient's bedside will be described. With this minimum of equipment the following data are made available: tidal volume; minute volume; blood gases on air (V/Q); blood gases on 100 per cent oxygen, shunt calculation; cardiac output; and V_D/V_T. Certain criteria, used as indications for artificial ventilation, will be discussed. It is emphasized that these objective criteria are useful only in addition to the clinical information one can get from observing the patient.

Discussion: Ronald A. Andree, M.D., New York City
Associate Chairman, Department of Anesthesia, and Director, Respiratory Therapy Service, Roosevelt Hospital

2. Requirements for Long-Term Ventilation

Stanley W. Weitzel, M.D., Valley Stream
Professor of Anesthesiology, State University of New York Downstate Medical Center

Discussion: Benton D. King, M.D., Brooklyn
Chairman and Professor of Anesthesiology, State University of New York Downstate Medical Center

THE E. DEAN BABBAGE, M.D. MEMORIAL LECTURE

3. The Delivery of Anesthesia Care—Present and Future

Richard Ament, M.D., Williamsville
Clinical Professor of Anesthesiology, State University of New York at Buffalo School of Medicine

Demographic data of the present manpower available to provide for anesthesia care in the United States have been collated. A profile will be presented of the physicians practicing anesthesia at the present time and a ten-year projection drawn from this profile. Geographic distribution, recruitment, and attrition data will also be shown. Future task requirements have been estimated, and models of anesthesia care delivery in a pluralistic system will be proposed. Ways to accomplish better utilization of anesthesia personnel to provide quality levels of care will be discussed.

SECTION ON
Chest Diseases

Chairman	Nathaniel E. Reich, M.D., Brooklyn
Vice-Chairman	Allan E. Bloomberg, M.D., Bronx
Secretary	Harry Golembe, M.D., Liberty
Delegate	Arthur Q. Penta, M.D., Schenectady

Tuesday, February 15/9:00 A.M./Versailles Ballroom, Second Floor

JOINT MEETING WITH
American College of Chest Physicians and New York Cardiological Society

1. Chairman's Address—Support for the Failing Heart and Lungs in 1972

Nathaniel E. Reich, M.D., Brooklyn
Clinical Associate Professor of Medicine, State University of New York Downstate Medical Center; Attending Physician, State University Hospital

2. *Symposium and Panel Discussion*—The Failing Lungs

Nathaniel E. Reich, M.D., Brooklyn, *Moderator*

A. Airway Obstruction

Harold A. Lyons, M.D., Brooklyn
Professor of Medicine and Director, Pulmonary Disease Division, State University of New York Downstate Medical Center

The dominant functional abnormality in patients disabled by bronchitis, emphysema, or asthma is difficulty on expiration. This breathing difficulty can be assessed by demonstrating that an increased force (pressure) has to be used to maintain normal flow rates during breathing and that lung emptying is slower than normal when maximum expiratory force is used.

The mechanisms for this functional abnormality arise from changes within the airways and from loss of elasticity of the parenchyma. As these mechanisms progress and produce greater obstruction to airflow, greater impairment of distribution of inspired gas and gas exchange results in respiratory failure and failure of the right side of the heart. Knowledge of the basis of respiratory failure due to obstruction of airways leads to the design of therapy.

B. Alveolar Disease

Richard W. Hyde, M.D., Rochester (*by invitation*)
Associate Professor of Medicine and Head, Pulmonary Unit, University of Rochester School of Medicine and Dentistry

C. Immunologic Mechanisms

Bram Rose, M.D., Montreal, Canada (*by invitation*)
Professor of Experimental Medicine, McGill University; Director, Harry Webster Thorp Laboratories for the Division of Immunochemistry and Allergy, Royal Victoria Hospital

J. R. Phills, M.D., Westmont, Canada (*by invitation*)
Physician, Department of Medicine, Queen Elizabeth Hospital; Allergist-in-Chief, Queen Mary Veterans' Hospital, Montreal

Panel Discussion
The above speakers

3. THE NEW YORK STATE TRUDEAU SOCIETY LECTURE

Support for Acute Respiratory Emergencies with the Membrane Oxygenator

Arnold J. Landé, M.D., New York City (*by invitation*)
Resident in Cardiovascular and Thoracic Surgery, The New York Hospital—Cornell Medical Center

Extracorporeal blood oxygenation with the membrane oxygenator provides the most physiologic milieu in which acutely afflicted lungs can be expected to regain their health and function. Membrane oxygenators are now available in a convenient, totally disposable form. They have been proved efficient and harmless during routine daily use in support of cardiac surgery and during patient perfusions lasting as long as ten days for respiratory failure.

4. *Symposium and Panel Discussion*—The Failing Heart

Nathaniel E. Reich, M.D., Brooklyn, *Moderator*

A. Cardiomyopathies

Bernard M. Wechsler, M.D., Brooklyn

B. Newer Concepts in Bradyarrhythmias and Tachyarrhythmias

Richard P. Lasser, M.D., New York City
Associate Clinical Professor of Cardiology, Mount Sinai School of Medicine; Director of Medicine, Jewish Memorial Hospital

Newer concepts in bradyarrhythmias and prediction of heart block will be discussed including the electrocardiographic recognition of anterior and posterior hemiblocks and various forms of bilateral bundle branch block and trifascicular block. Management of these arrhythmias in complete heart block occurring both chronically and in association with acute myocardial infarction will be discussed. Treatment of tachyarrhythmias will also be discussed with relationship to the use of drugs, cardioversion, and defibrillation.

C. Recent Advances in the Medical Management of Congestive Heart Failure

Nicholas P. DePasquale, M.D., New York City
Attending Physician and Chief of Cardiology, Lenox Hill Hospital

Pump failure with or without cardiogenic shock is the greatest cause of death on the cardiac care unit and a major contributor to disability in the United States. While the newer oral diuretic agents have improved management of patients with pump failure, it is doubtful whether they have had much impact on the mortality rate in the advanced disease. Loss of a critical mass of contractile myocardium, massive cardiac dilatation, ventricular aneurysm, and valve lesions are essentially mechanical defects and, as such, are not likely to respond to presently known pharmacologic agents.

D. Progress with the Artificial Heart

Adrian Kantrowitz, M.D., Detroit, Michigan (*by invitation*)
Professor of Surgery, Wayne State University College of Medicine; Chairman, Department of Surgery, Sinai Hospital of Detroit

Recent laboratory investigations have yielded a prosthetic surface of Dacron fibers backed with an electrostatic polyurethane. The neointima developed on the surface is nonthrombogenic and highly acceptable to the blood as an interface. In August, 1971, a patient in chronic intractable left ventricular failure was operated on with the permanent implantation of a partial mechanical heart. Data from this patient who improved well enough to be sent home will be presented. The data indicate that there is significant hemodynamic improvement in the left ventricular failure by the use of this mechanical auxiliary ventricle.

Panel Discussion
The above speakers

5. The Ailing Heart and Lungs in Space: A Brief Look Toward the Future

Constantine D. J. Generales, M.D., New York City
Physician and Research Associate, The Mount Sinai Hospital

Recent experiences in extended space flight have produced conflicting physiologic reactions which revert to normal on return to earth. This report entertains predictable deviations of classic earthbound nosologic landmarks and symptomotology rendering early diagnosis difficult or impossible, thereby affecting timing and type of treatment especially in pulmonary cardiovascular systems during month or year-long voyages in the W ° state.

SECTION ON
Data Processing in Medicine

Chairman. . . .William Bauman, M.D., New York City

Sunday, February 13/2:00 P.M./Royal Ballroom A, Second Floor

JOINT MEETING WITH
General Session

Symposium: **Medical Applications of Data Processing**

1. The Inpatient Information System at Columbia-Presbyterian Medical Center, New York City

William A. Bauman, M.D., New York City
Director, Medical/Administrative Data Processing, the Presbyterian Hospital; Assistant Clinical Professor of Pediatrics, Columbia University College of Physicians and Surgeons

Advances in medical care are causing a 15 per cent annual increase in laboratory testing on bed patients at the Columbia-Presbyterian Medical Center. Patients' medical records have trebled in size during the last two decades. This growth of patient information has exceeded the resources required to process the data and has led to delays and inaccurate result reporting.

In 1967 the hospital initiated a computerized inpatient information system to alleviate impaired manual data-handling procedures. The system at present automatically processes admission, transfer, discharge, and laboratory data through two interconnected computers and then transmits results over a teleprocessing network to computer terminals in nurses' stations and administrative offices.

2. Automatic Electrocardiographic Analysis by Computer

Leon Pordy, M.D., New York City
Associate Cardiologist, The Mount Sinai Hospital; Associate Professor of Cardiology, Mount Sinai School of Medicine

Our method for computer analysis of the electrocardiogram is automatic and employs three simultaneously recorded lead sets, including the conventional 12-lead electrocardiogram plus the component Frank vectorcardiographic leads. The electrocardiogram and clinical data are transmitted from patient to computer facility directly via telephone or first recorded on analogue tape. The computer processing time is in the range of thirty seconds. The resultant printout contains interpretation of both cardiac rhythm and electrocardiogram contour. This is reduced for teletype message back to the sender. The diagnoses are those utilized in clinical practice and are physician reviewed. Comparative programs for repetitive tracings have been completed. Our system functions presently from satellites throughout the U.S.A. and Europe.

3. Computer Assisted Medical Instruction

Stuart R. Bless, M.D., Boston, Massachusetts (*by invitation*)
Clinical Instructor in Medicine, Harvard Medical School; Associate in Medicine, Beth Israel Hospital

Richard A. Rifkind, M.D., New York City
Professor of Medicine, Columbia University College of Physicians and Surgeons

The decision-making capability of a computer can be used to direct individualized teaching sessions related to complex medical problems. Two-way discussions between student and computer program can be conveyed in free English text over standard computer terminals. Real clinical situations can be simulated, and the student may pursue problems with the computer acting as an expert tutor. Limitations in the widespread applicability of computer-assisted medical education lie in a combination of engineering and medical problems currently under investigation. The experience to date of the authors and others will be summarized.

4. Computers in Medical Insurance

Samuel Solomon, M.D., New York City
Associate Medical Director, United Medical Service

SECTION ON
Dermatology and Syphilology

Chairman......EDWARD F. GUDGEL, M.D., Tonawanda
Vice-Chairman......SAUL BLAU, M.D., New York City
Secretary................LOUIS DANTZIG, M.D., Utica
Delegate....NORMAN B. KANOF, M.D., New York City

Monday, February 14/9:00 A.M./Versailles Terrace, Second Floor

Complete program to appear in convention booklet.

SECTION ON
Gastroenterology and Proctology

Chairman...........JAMES F. PHILLIPS, M.D., Buffalo
Vice-Chairman.....BERTRAM A. PORTIN, M.D., Buffalo
Secretary.......MARTIN LIPKIN, M.D., New York City
Delegate...RICHARD M. ALEXANDER, M.D., Great Neck

Monday, February 14/9:00 A.M./Royal Ballroom A, Second Floor

1. ALBERT F. R. ANDRESEN MEMORIAL LECTURE

Historical Development of Granulomatous Ileitis and Granulomatous Colitis

BURRILL B. CROHN, M.D., New York City
Emeritus Professor of Medicine, Mount Sinai School of Medicine; Consulting Gastroenterologist, The Mount Sinai Hospital

2. Hemorrhoidal Ligation with Sclerotherapy, Repository Anesthesia, and Electrocoagulation

ARTHUR A. RAND, M.D., Forest Hills
Assistant Clinical Professor of Surgery (Proctology), Albert Einstein College of Medicine of Yeshiva University; Associate Attending Surgeon, Jewish Hospital and Medical Center of Brooklyn

3. Surgery in Acute and Chronic Ulcerative Colitis: A Twenty-One-Year Review of 182 Cases

LEONARD BERMAN, M.D., Buffalo
Associate Clinical Professor of Surgery, State University of New York at Buffalo School of Medicine; Attending Surgeon, Buffalo General Hospital

4. Immunologic Studies in Chronic Active Hepatitis

MORRIS REICHLIN, M.D., Buffalo
Professor of Medicine, State University of New York at Buffalo School of Medicine; Chief of Immunology, Veterans Administration Hospital

SECTION ON
General Practice

Chairman.......ALAN L. GOLDBERG, M.D., The Bronx
Vice-Chairman........JAMES R. NUNN, M.D., Amherst
Secretary.............LEO SWIRSKY, M.D., Brooklyn
Delegate...M. THEODORE TANENHAUS, M.D., Brooklyn

Wednesday, February 16/9:00 A.M./Versailles Terrace, Second Floor

JOINT MEETING WITH
Section on Psychiatry

Symposium and Panel Discussion: **Emotional Considerations in Heart Disease, Cancer, and Stroke**

WILFRED DORFMAN, M.D., Brooklyn, *Moderator*
Consultant, Internal Medicine and Psychiatry, Brunswick Hospital Center, Amityville; Attending Physician, Gracie Square Hospital, New York City

1. Emotional Considerations in Heart Disease

BURTON L. ZOHMAN, M.D., Brooklyn
Clinical Professor of Medicine, State University of New York Downstate Medical Center; Senior Attending Cardiologist, St. Barnabas Hospital for Chronic Diseases, The Bronx

2. Emotional Considerations in Cancer

RENÉ C. MASTROVITO, M.D., New York City
Assistant Professor of Clinical Psychiatry, Cornell University Medical School; Assistant Attending Psychiatrist, Memorial Hospital for Cancer and Allied Diseases

3. Emotional Considerations in Stroke

JOHN J. SCHWAB, M.D., Gainesville, Florida (*by invitation*)
Professor of Psychiatry and Medicine, University of Florida College of Medicine

Panel Discussion

ALAN GOLDBERG, M.D., The Bronx
Associate Visiting Physician, Bronx-Lebanon Hospital Center

JOHN GRAHAM, M.D., Boston, Massachusetts (*by invitation*)
Chief of Medical Service and Director of Headache Research Foundation, Faulkner Hospital

LADISLAV PAUL HINTERBUCHNER, M.D., Brooklyn
Clinical Associate Professor of Neurology, State University of New York Downstate Medical Center; Neurologist-in-Chief, the Brooklyn-Cumberland Medical Center

HAROLD R. MERWARTH, M.D., Brooklyn
Clinical Professor (Emeritus) of Neurology, State University of New York Downstate Medical Center; Consulting Neurologist and Psychiatrist, Brooklyn Hospital

JOHN E. SARNO, M.D., New York City
Associate Professor of Rehabilitation Medicine, New York University School of Medicine; Director, Outpatient Services, Institute of Rehabilitation Medicine

ADAM J. KRAKOWSKI, M.D., Plattsburgh
Attending Neuropsychiatrist; Chief, Division of Psychiatric Liaison and Research, Champlain Valley-Physicians Hospital Medical Center

CHARLES P. NEUMANN, M.D., New Canaan, Connecticut (*by invitation*)
Medical Director, Silver Hill Foundation

ALAN S. KAPLAN, M.D., Rockville, Maryland (*by invitation*)
Acting Deputy Director, Division of Professional and Technical Development, Regional Medical Programs Service, Department of Health, Education, and Welfare

SECTION ON

Internal Medicine

Chairman . . . . Robert M. Kohn, M.D., Buffalo
Vice-Chairman . . . . David S. Gerbarg, M.D., Kingston
Secretary . . . . William C. Felch, M.D., Rye
Delegate . . . . John R. Williams, M.D., Rochester

Wednesday, February 16/8:55 A.M./Royal Ballroom, Second Floor

JOINT MEETING WITH

New York State Society of Internal Medicine

Symposium and Panel Discussion: **Pharmacology of Commonly Used Therapeutic Agents—Part II**

Maxwell Spring, M.D., Bronx, *Moderator*
Clinical Assistant Professor of Medicine, New York Medical College

1. **Pharmacology of Oxygen**

   Herbert A. Saltzman, M.D., Durham, North Carolina (*by invitation*)
   Director, F. G. Hall Laboratory for Environmental Research, Duke University Medical Center

2. **Pharmacology of Iron**

   Carl V. Moore, M.D., St. Louis, Missouri (*by invitation*)
   Professor of Medicine, Washington University School of Medicine

3. **Potent Analgesics**

   Arthur S. Keats, M.D., Houston, Texas (*by invitation*)
   Professor and Chairman, Department of Anesthesiology, Baylor University College of Medicine

4. **Antihypertensive Agents**

   Ray W. Gifford, Jr., M.D., Cleveland, Ohio (*by invitation*)
   Department of Hypertension and Nephrology, Cleveland Clinic

5. **Cardiac Glycosides (Digitalis)**

   Frank I. Marcus, M.D., Tucson, Arizona (*by invitation*)
   Chief, Cardiology Section, University of Arizona Medical Center

6. **Antianginal Agents**

   Robert Goldstein, M.D., Bethesda, Maryland (*by invitation*)
   Cardiology Branch, National Institutes of Health

7. **Anticoagulants**

   Armand J. Quick, M.D., Milwaukee, Wisconsin
   Hemostasis Research Division, Marquette University School of Medicine

Panel Discussion
Leon I. Goldberg, M.D., Atlanta, Georgia (*by invitation*)
Professor of Medicine (Clinical Pharmacology) and Pharmacology, Emory University School of Medicine
The above speakers

SECTION ON

Medical-Legal and Workmen's Compensation Matters

Chairman . . . . Mario E. Stella, M.D., New York City
Secretary . . . William F. Browne, M.D., New York City
Delegate . . . . Robert Katz, M.D., New York City

Tuesday, February 15/2:00 P.M./Versailles Terrace, Second Floor

JOINT MEETING WITH

Section on Occupational Medicine, and American Academy of Compensation Medicine

Symposium and Panel Discussion: **Medical and Surgical Problems of the Hand in Industry**

Mario E. Stella, M.D., New York City, *Moderator*
Clinical Associate Professor of Orthopedic Surgery, New York University College of Medicine

James G. Wall, M.D., New York City, *Moderator*
Medical Director, American Telephone and Telegraph

1. **Surgical Approach to Injuries of the Hand**
   J. William Littler, M.D., New York City
   Associate Clinical Professor of Surgery, Columbia University College of Physicians and Surgeons; Attending Surgeon, Roosevelt Hospital

2. **Occupational Diseases of the Hand**
   Alexander A. Fisher, M.D., Woodside
   Clinical Professor of Dermatology, New York University School of Medicine; Associate Attending Dermatologist, New York University-Bellevue Medical Center

3. **Disability of the Hand**
   Philip R. Casesa, M.D., New York City
   Chief Medical Consultant, Bureau of Disability Determinations, New York State Department of Social Services

4. **Application**
   Irvin Klein, M.D., New York City
   Medical Director, New York State Workmen's Compensation Board; President, American Academy of Compensation Medicine

Panel Discussion
The above speakers

SECTION ON

Obstetrics and Gynecology

Chairman . . . . William F. Finn, M.D., Manhasset
Vice-Chairman . . . . Theodore M. King, M.D., Albany
Secretary . . . . . . David B. Moore, M.D., New York City
Delegate . . . . Donald W. Hall, M.D., Buffalo

Tuesday, February 15/9:00 A.M./Royal Ballroom A, Second Floor

Symposium and Panel Discussion: **Laparoscopy**
William F. Finn, M.D., Manhasset, *Moderator*

1. **Introduction and Technics**
   Thomas F. Dillon, M.D., New York City
   Chairman, Division of Obstetrics and Gynecology, Roosevelt Hospital; Clinical Professor of Ob-

stetrics and Gynecology, Columbia University College of Physicians and Surgeons

2. **Diagnostic Uses of Laparoscopy**
Theodore M. King, M.D., Baltimore, Maryland *(by invitation)*
Professor and Director, Department of Gynecology and Obstetrics, Johns Hopkins University School of Medicine

3. **Laparoscopy in Infertility**
Alvin M. Siegler, M.D., Brooklyn
Clinical Professor of Obstetrics and Gynecology, State University of New York Downstate Medical Center; Attending, State University Hospital

4. **Operative Laparoscopy**
Clifford R. Wheeler, Jr., M.D., Baltimore, Maryland *(by invitation)*
Assistant Professor of Obstetrics and Gynecology, Johns Hopkins University School of Medicine

Panel Discussion
The above speakers

SECTION ON
Occupational Medicine

Chairman . . . . . . James G. Wall, M.D., New York City
Vice-Chairman . . . Robert C. Kessler, M.D., Rochester
Secretary . . John F. Osterritter, M.D., New York City
Delegate . . . . Thomas J. Doyle, M.D., New York City

Tuesday, February 15/2:00 P.M./Versailles Terrace, Second Floor

JOINT MEETING WITH
Section on Medical-Legal and Workmen's Compensation Matters

Symposium and Panel Discussion: **Medical and Surgical Problems of the Hand in Industry**

Mario E. Stella, M.D., New York City, *Moderator*
Clinical Associate Professor of Orthopedic Surgery, New York University College of Medicine

James G. Wall, M.D., New York City, *Moderator*
Medical Director, American Telephone and Telegraph

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4. **Application**
Irvin Klein, M.D., New York City
Medical Director, New York State Workmen's Compensation Board; President, American Academy of Compensation Medicine

Panel Discussion
The above speakers

SECTION ON
Ophthalmology

Chairman . . . . James L. McGraw, M.D., Syracuse
Vice-Chairman . . . . William M. McCarty, M.D., Troy
Secretary . . . . Charles H. Addington, M.D., Buffalo
Delegate . . . . Philip H. Landers, M.D., Binghamton

Sunday, February 13/2:00 P.M./Versailles Ballroom, Second Floor

JOINT MEETING WITH
Section on Pediatrics

1. **Finding and Treating the Strabismus Patient: Who Should Do What?**

Robert D. Reinecke, M.D., Albany
Professor and Chairman, Department of Ophthalmology, Albany Medical College of Union University

2. **Genetics and Pediatric Ophthalmology**

Mary L. Voorhess, M.D., Syracuse
Professor and Acting Chairman, Department of Pediatrics, State University of New York Upstate Medical Center

Ocular disease may be caused by inherited disorders which solely affect the eye, or the ocular manifestations may be part of an inherited systemic disorder. In addition, chromosomal aberrations often are accompanied by abnormalities of the eye. It is important for the physician to recognize these conditions and to determine the mode of inheritance so that appropriate genetic counselling can be given. A review of some common heritable eye problems of childhood will be presented.

3. **How Much Ophthalmology Should the Pediatrician Do?**

Albert C. Snell, M.D., Rochester
Professor and Chairman, Division of Ophthalmology, University of Rochester School of Medicine and Dentistry

4. **Medical Ophthalmology in Pediatrics**

Richard S. Kochman, M.D., New York City
Associate Attending Ophthalmologist, St. Luke's Hospital Center

Marvin C. Kochman, M.D., Brooklyn
Attending Ophthalmologist, Long Island College Hospital; Associate Attending Ophthalmologist, Maimonides Hospital

Questions and Answers

SECTION ON
Orthopedic Surgery

Chairman . . George B. Ambrose, M.D., New York City
Secretary . . William James Rogers, M.D., Tonawanda
Delegate . Frederick Lee Liebolt, M.D., New York City

Tuesday, February 15/2:00 P.M./Versailles Ballroom, Second Floor

Complete program to appear in convention booklet.

SECTION ON
Otolaryngology

Chairman . . . . John M. Loré, M.D., Buffalo
Vice-Chairman . . . . John Williams, M.D., New Rochelle
Secretary . . . . George F. Reed, M.D., Syracuse
Delegate . . . . Edwin I. Cleveland, M.D., Bronxville

Wednesday, February 16/2:00 P.M./Versailles Terrace, Second Floor

1. Microsurgery of the Larynx

William F. Robbett, M.D., New York City
Director of Otolaryngology, Manhattan Eye, Ear and Throat Hospital

2. Prolonged Nasal Tracheal Intubation for Acute Respiratory Care in Infants and Children

Martin J. Downey, M.D., Buffalo
Chief of Anesthesiology, Buffalo Children's Hospital

Discussion: R. J. Ruben, M.D., The Bronx
Professor and Chairman, Department of Otorhinolaryngology, Albert Einstein College of Medicine of Yeshiva University

Daniel J. Fahey, M.D., Buffalo
Clinical Associate Professor of Otolaryngology, State University of New York at Buffalo School of Medicine

3:30 P.M./Versailles Terrace, Second Floor

JOINT MEETING WITH
Sections on Surgery and Plastic and Reconstructive Surgery

Panel Discussion: **Head and Neck Surgical Training**

John M. Loré, M.D., Buffalo, *Moderator*
Professor of Surgery, Head of the Division of Otolaryngology, State University of New York at Buffalo, School of Medicine

Panelists

General Surgery
Charles Eckert, M.D., Albany
Professor and Chairman, Department of Surgery; Surgeon-in-Chief, Albany Medical Center Hospital

Plastic and Reconstructive Surgery
Robert M. McCormack, M.D., Rochester
Professor and Chairman, Division of Plastic Surgery; Vice-Chairman, Department of Surgery, University of Rochester School of Medicine and Dentistry; Chief of Plastic Surgery, Strong Memorial Hospital

Otolaryngology
G. Slaughter Fitz-Hugh, M.D., Charlottesville, Virginia (*by invitation*)
Professor and Chairman, Department of Otolaryngology, University of Virginia School of Medicine

SECTION ON
Pathology, Clinical Pathology, and Blood Banking

Chairman . . . . Louis G. Jakovic, M.D., Albany
Vice-Chairman . . . Edward C. Zaino, M.D., Garden City
Secretary . . . George K. Higgins, M.D., New York City
Delegate . . . . Albert H. Harris, M.D., Albany

Monday, February 14/9:00 A.M./Versailles Ballroom, Second Floor

JOINT MEETING WITH
New York State Society of Pathology

Symposium: **Immunopathology**

1. Immunologic Deficiency Diseases
Hilaire J. Meuwissen, M.D., Albany (*by invitation*)
Assistant Professor of Pediatrics, Albany Medical College of Union University, and New York State Birth Defects Institute

2. Autoimmune Hematologic Alterations
Richard P. Propp, M.D., Albany
Assistant Professor of Medicine, Albany Medical College of Union University

3. Autoimmune Kidney Disease and Immunologic Injury in Renal Transplantation
Bernard Pollaro, M.D., Albany (*by invitation*)
Professor of Pediatrics, Albany Medical College of Union University; Director, New York State Kidney Disease Institute

4. Paraimmunoglobulinopathics
Elliott F. Osserman, M.D., New York City
Professor of Medicine, Columbia University College of Physicians and Surgeons

SECTION ON
Pediatrics

Chairman . . . . Gilbert L. Fuld, M.D., New York City
Vice-Chairman . . . . Martin C. Ushkow, M.D., Syracuse
Secretary . . . . . Stephen Glaser, M.D., New York City
Delegate . . . . Thomas S. Bumbalo, M.D., Buffalo

Sunday, February 13/2:00 P.M./Versailles Ballroom, Second Floor

JOINT MEETING WITH
Section on Ophthalmology

1. Finding and Treating the Strabismus Patient: Who Should Do What?

Robert D. Reinecke, M.D., Albany
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2. Genetics and Pediatric Ophthalmology

Mary L. Voorhess, M.D., Syracuse
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Associate Attending Ophthalmologist, St. Luke's Hospital Center

Marvin C. Kochman, M.D., Brooklyn
Attending Ophthalmologist, Long Island College Hospital; Associate Attending Ophthalmologist, Maimonides Hospital

Questions and Answers

SECTION ON
Physical Medicine and Rehabilitation

Chairman.....Harold Gellert, M.D., New York City
Vice-Chairman.......Robert H. Cress, M.D., Albany
Secretary.......Herbert L. Thornhill, M.D., New York City
Delegate..............Henry Fleck, M.D., The Bronx

Tuesday, February 15/9:00 A.M./Versailles Terrace, Second Floor

Complete program to appear in convention booklet.

SECTION ON
Plastic and Reconstructive Surgery

Chairman. Dicran Goulian, Jr., M.D., New York City
Vice-Chairman.......David B. Stark, M.D., Syracuse
Secretary........Bard Cosman, M.D., New York City
Delegate............Howard B. Rasi, M.D., Brooklyn

Monday, February 14/2:00 P.M./Versailles Terrace, Second Floor

Panel Discussion: **Variations in Dealing with Common Plastic Surgical Problems**

Dicran Goulian, M.D., New York City, *Moderator*
Director, Division of Plastic Surgery, The New York Hospital-Cornell University Medical College

Panelists

George F. Crikelair, M.D., New York City
Director, Division of Plastic Surgery, Columbia-Presbyterian Medical Center

Bernard E. Simon, M.D., New York City
Director of Plastic Surgery, The Mount Sinai Medical Center

Harold Bales, M.D., Rochester
Division of Plastic Surgery, University of Rochester School of Medicine and Dentistry

W. Brandon Macomber, M.D., Albany
Director, Division of Plastic Surgery, Albany Medical Center

Michael Lewin, M.D., Bronx
Director, Division of Plastic Surgery, Albert Einstein College of Medicine of Yeshiva University

David B. Stark, M.D., Syracuse
Director, Division of Plastic Surgery, State University of New York Upstate Medical Center

3:30 P.M./Versailles Terrace, Second Floor

JOINT MEETING WITH
Sections on Otolaryngology and Surgery

Panel Discussion: **Head and Neck Surgical Training**

John M. Loré, M.D., Buffalo, *Moderator*
Professor of Surgery, Head of the Division of Otolaryngology, State University of New York at Buffalo, School of Medicine

Panelists

General Surgery
Charles Eckert, M.D., Albany
Professor and Chairman, Department of Surgery; Surgeon-in-Chief, Albany Medical Center Hospital

Plastic and Reconstructive Surgery
Robert M. McCormack, M.D., Rochester
Professor and Chairman, Division of Plastic Surgery; Vice-Chairman, Department of Surgery, University of Rochester School of Medicine and Dentistry; Chief of Plastic Surgery, Strong Memorial Hospital

Otolaryngology
G. Slaughter Fitz-Hugh, M.D., Charlottesville, Virginia (*by invitation*)
Professor and Chairman, Department of Otolaryngology, University of Virginia School of Medicine

SECTION ON
Preventive Medicine and Public Health

Chairman............John J. A. Lyons, M.D., Albany
Vice-Chairman. Richard Nauen, M.D., New York City
Secretary..........James J. Quinlivan, M.D., Albany
Delegate..........George E. Leone, M.D., Riverhead

Wednesday, February 16/2:00 P.M./Versailles Ballroom, Second Floor

1. *Panel Discussion:* **Prepaid Group Practice**

John J. A. Lyons, M.D., Albany, *Moderator*
Commissioner of Health, County of Albany

Edward D. Coates, M.D., Albany
Assistant Commissioner, New York State Health Department

Mr. John Campbell, Sr., Hartford, Connecticut (*by invitation*)
Program Administrator, Connecticut General Life Insurance Company

2. *Panel Discussion:* **Sickle Cell Anemia**

John J. A. Lyons, M.D., Albany, *Moderator*
Commissioner of Health, County of Albany

Medical Aspects
Anthony Tartaglia, M.D., Albany
Chief of Hematology, Albany Medical Center Hospital

Genetic Aspects
Ian Porter, M.D., Albany
Director of Birth Defects Institute, New York State Department of Health; Professor of Pediatrics, Albany Medical College of Union University

SECTION ON
Psychiatry

Chairman .... **WILFRED DORFMAN**, M.D., Brooklyn
Delegate .... **CHARLES F. NICOL**, M.D., Kenmore

Wednesday, February 16/9:00 A.M./Versailles Terrace, Second Floor

JOINT MEETING WITH
Section on General Practice

Symposium and Panel Discussion: **Emotional Considerations in Heart Disease, Cancer, and Stroke**

WILFRED DORFMAN, M.D., Brooklyn, *Moderator*
Consultant, Internal Medicine and Psychiatry, Brunswick Hospital Center, Amityville; Attending Physician, Gracie Square Hospital, New York City

1. **Emotional Considerations in Heart Disease**
BURTON L. ZOHMAN, M.D., Brooklyn
Clinical Professor of Medicine, State University of New York Downstate Medical Center; Senior Attending Cardiologist, St. Barnabas Hospital for Chronic Diseases, The Bronx

2. **Emotional Considerations in Cancer**
RENÉ C. MASTROVITO, M.D., New York City
Assistant Professor of Clinical Psychiatry, Cornell University Medical School; Assistant Attending Psychiatrist, Memorial Hospital for Cancer and Allied Diseases

3. **Emotional Considerations in Stroke**
JOHN J. SCHWAB, M.D., Gainesville, Florida (*by invitation*)
Professor of Psychiatry and Medicine, University of Florida College of Medicine

Panel Discussion

ALAN GOLDBERG, M.D., The Bronx
Associate Visiting Physician, Bronx-Lebanon Hospital Center

JOHN GRAHAM, M.D., Boston, Massachusetts (*by invitation*)
Chief of Medical Service and Director of Headache Research Foundation, Faulkner Hospital

LADISLAV PAUL HINTERBUCHNER, M.D., Brooklyn
Clinical Associate Professor of Neurology, State University of New York Downstate Medical Center; Neurologist-in-Chief, the Brooklyn-Cumberland Medical Center

HAROLD R. MERWARTH, M.D., Brooklyn
Clinical Professor (Emeritus) of Neurology, State University of New York Downstate Medical Center; Consulting Neurologist and Psychiatrist, Brooklyn Hospital

JOHN E. SARNO, M.D., New York City
Associate Professor of Rehabilitation Medicine, New York University School of Medicine; Director, Outpatient Services, Institute of Rehabilitation Medicine

ADAM J. KRAKOWSKI, M.D., Plattsburgh
Attending Neuropsychiatrist; Chief, Division of Psychiatric Liaison and Research, Champlain Valley-Physicians Hospital Medical Center

CHARLES P. NEUMANN, M.D., New Canaan, Connecticut (*by invitation*)
Medical Director, Silver Hill Foundation

ALAN S. KAPLAN, M.D., Rockville, Maryland (*by invitation*)
Acting Deputy Director, Division of Professional and Technical Development, Regional Medical Programs Service, Department of Health, Education and Welfare

SECTION ON
Radiology

Chairman .... **EDWARD A. DUNLAP, JR.**, M.D., Kenmore
Vice-Chairman .... **NORMAN E. LEEDS**, M.D., The Bronx
Secretary .... **EDWARD W. CARSKY**, M.D., Syracuse
Delegate .... **SAMUEL H. MADELL**, M.D., New York City

Sunday, February 13/2:00 P.M./Princess Room, Second Floor

1. **Esophageal and Hiatal Hernia Lesions as Causes of Gastrointestinal Bleeding**

BERNARD S. WOLF, M.D., New York City
Professor and Chairman, Department of Radiology, Mount Sinai School of Medicine; Director of Radiology, The Mount Sinai Hospital

2. **Arteriographic Manifestations of Uncommon Causes of Gastrointestinal Bleeding**

RALPH J. ALFIDI, M.D., Cleveland, Ohio (*by invitation*)
Director, Hospital Department of Radiology, Cleveland Clinic

3. **Bleeding from the Small Bowel**

RICHARD H. MARSHAK, M.D., New York City
Clinical Professor of Radiology, Mount Sinai School of Medicine; Attending Radiologist, The Mount Sinai Hospital

SECTION ON
School Health

Chairman .... **ARTHUR HOWARD**, M.D., Johnstown
Vice-Chairman ..... **BERNARD BREITER**, M.D., Harrison
Secretary .... **JUSTIN W. MIGNAULT**, M.D., Baldwinsville
Delegate .... **GARRA LESTER**, M.D., Chautauqua

Monday, February 14/9:00 A.M./Royal Ballroom B, Second Floor

This program has been accepted for three hours' prescribed credit by the American Academy of Family Physicians

Symposium and Panel Discussion: **Let's Rap About Students' Health Problems**

JOSEPH B. ROBINSON, M.D., Albany, *Moderator*

Assistant to the New York State Health Commissioner for Special Health Problems; Assistant Clinical Professor of Medicine, Albany Medical College of Union University

1. **School Health Education Today**

FRED V. HEIN, PH.D., Chicago, Illinois (*by invitation*)
Director, Department of Health Education, American Medical Association

A number of states have begun to tool up for programs of required comprehensive health education in their schools. A recent survey of state certification of teachers of health education shows that such regulations are in various stages of development, but progress is being made in terms of previous provisions.

Educational leaders generally agree that two provisions, (1) a health education requirement in the curriculum and (2) certification of teachers of health, are essential ingredients of an effective program. Health education is the process of translating what is known about health into what people believe and do about health. Accordingly, evaluation must be concerned with attitudes, practices, and values as well as knowledge. Health education is not something that can be taught effectively merely through correlation and integration with other areas of the curriculum. In both the junior and senior high schools, there should be at least one semester each of direct health instruction in addition to correlation and integration.

2. Sex Education

JOHN S. SINACORE, ED.D., Albany (*by invitation*)
Special Assistant to the Commissioner of Education

The following topics will be discussed: sex education, the need for definition; the various curricula that contain sex related information; the Joe McCarthy syndrome of the antigroups' guilt by association; the distinction between venereal disease and sex education; the misconceived notion that learning takes place only in the school; the need for the well-prepared teacher; and the physician and other health professionals as resources.

3. Venereal Disease in Schools

LEONARD L. HEIMOFF, M.D., The Bronx
Assistant Physician, The New York Hospital; Associate Physician, Morrisania Hospital

Panel Discussion
The above speakers

SECTION ON
Space Medicine

Chairman . . . .
Vice-Chairman . . . . LEVON BEDROSIAN, M.D., Albany
Secretary . . . . . THEOBOLD REICH, M.D., New York City
Delegate . . . .

Sunday, February 13/2:00 P.M./Royal Ballroom B, Second Floor

Symposium—**Space Age Technology in the Service of Man: Actual and Potential Applications in Clinical Medicine**

1. Space Technology Know-How in Aids for the Handicapped

MYRON YOUDIN, M.E.E., New York City (*by invitation*)
Institute of Rehabilitation Medicine, New York University Medical Center

2. Changing of Atmospheric Environment to Improve Mental and Behavioral Function: Applications in Treatment of Senescence

YEHUDA BEN YISHAI, PH.D., New York City (*by invitation*)
Institute of Rehabilitation Medicine, New York University Medical Center

LEONARD DILLER, PH.D., New York City (*by invitation*)
Institute of Rehabilitation Medicine, New York University Medical Center

3. Understanding of Cerebrovascular Function: Contributions of Space Technics

JUNE N. BARKER, PH.D., New York City (*by invitation*)
Institute of Rehabilitation Medicine, New York University Medical Center

4. Electrocardiographic Telemetry by Wireless and by Cable: Applications in Coronary Care Units and in Telephonic Transmission

JACOB HIRSCH, M.D., New York City
New York University Medical Center

5. Rensselaer's Roving Vehicle for Mars: Lessons for Possible Clinical Applications

GEORGE SANDOR, P.E., Rensselaer, New York (*by invitation*)
Professor, Rensselaer's Polytechnic Institute

SECTION ON
Surgery

Chairman . . . . LOUIS C. CLOUTIER, M.D., Buffalo
Vice-Chairman . . . . . DAVID N. KLUGE, M.D., Rochester
Secretary . . . HUGH F. FITZPATRICK, M.D., New York City
Delegate . . . . FREDERIC P. HERTER, M.D., New York City

Wednesday, February 16/2:00 P.M./Princess Room, Second Floor

1. Emergency Medical Care Committee: A Response to the Crisis in Emergency Care

JAMES H. COSGRIFF, JR., M.D., Tonawanda
Assistant Clinical Professor of Surgery, State University of New York at Buffalo School of Medicine; Chairman, Emergency Medical Care Committee, Medical Society of the County of Erie

Discussion: CALDWELL B. ESSELSTYN, M.D., Albany
Director of Emergency Health Service, Department of Health, State of New York

2. Prolonged Cardiopulmonary Support with Disposable Membrane Oxygenator During Aortocoronary Artery Bypass Grafts in Patients with Congestive Failure, Reoperation, or Multiple Arterial Lesion

ROBERT G. CARLSON, M.D., New York City
Assistant Professor of Surgery, Cornell University Medical College

ARNOLD J. LANDE, M.D., New York City (*by invitation*)
Chief Resident in Thoracic and Cardiovascular Surgery, The New York Hospital

J. BAXTER, M.D., New York City

C. W. LILLEHEI, M.D., New York City
Professor and Chairman, Department of Surgery, New York Hospital-Cornell Medical Center; Surgeon-in-Chief, The New York Hospital

3. Panel Discussion: Socioeconomics in Surgery

Panelists

RALPH S. EMERSON, M.D., Roslyn Heights, New York
Chairman, Peer Review Committee, Medical Society of the State of New York; Member, Board of Directors of New York State Society of Surgeons

THEODORE C. BEDWELL, JR., M.D., Baltimore, Maryland (*by invitation*)
Chief Medical Officer, Bureau of Health Insurance of Social Security Administration

3:30 P.M./Versailles Terrace, Second Floor

JOINT MEETING WITH

Sections on Otolaryngology and Plastic and Reconstructive Surgery

Panel Discussion: **Head and Neck Surgical Training**

JOHN M. LORÉ, M.D., Buffalo, *Moderator*
Professor of Surgery, Head of the Division of Otolaryngology, State University of New York at Buffalo, School of Medicine

Panelists

General Surgery
CHARLES ECKERT, M.D., Albany
Professor and Chairman, Department of Surgery; Surgeon-in-Chief, Albany Medical Center Hospital

Plastic and Reconstructive Surgery
ROBERT M. MCCORMACK, M.D., Rochester
Professor and Chairman, Division of Plastic Surgery; Vice-Chairman, Department of Surgery, University of Rochester School of Medicine and Dentistry; Chief of Plastic Surgery, Strong Memorial Hospital

Otolaryngology
G. SLAUGHTER FITZ-HUGH, M.D., Charlottesville, Virginia (*by invitation*)
Professor and Chairman, Department of Otolaryngology, University of Virginia School of Medicine

SECTION ON

Urology

Chairman ..... R. KEITH WATERHOUSE, M.D., Brooklyn
Vice-Chairman .. THOMAS M. FLANAGAN, M.D., Norwich
Secretary ..... ANDREW J. MCGOWAN, JR., M.D., New York City
Delegate .... WILLIAM J. STAUBITZ, M.D., Buffalo

Wednesday, February 16/2:00 P.M./Royal Ballroom B, Second Floor

Symposium and Panel Discussion—**Surgery of the Bent and Broken Penis**

KEITH WATERHOUSE, M.D., Brooklyn, *Moderator*
Professor and Chairman, Department of Urology, State University of New York Downstate Medical Center

1. **Correction of Congenital Chordee in the Adult**
ANDREW MCGOWAN, JR., M.D., New York City
Chief of Urology, St. Vincent's Hospital and Medical Center of New York

2. **Surgery of Impotence**
JOSEPH E. DAVIS, M.D., New York City
Clinical Assistant Professor of Urology, New York Medical College

3. **Penile Abnormalities Associated with Extrophy: Can They Be Corrected?**
EDWARD C. MUECKE, M.D., New York City
Associate Attending Surgeon, New York Hospital; Clinical Associate Professor of Surgery (Urology), Cornell University Medical College

4. **Treatment of the Fractured Penis**
C. ALEXANDER GHODS, M.D., Brooklyn
Assistant Instructor in Surgery (Urology), State University of New York Downstate Medical Center

5. **The "Dorsal Tilt" Operation for Chordee in Children**
JOHN K. LATTIMER, M.D., New York City
Professor and Chairman, Department of Urology, College of Physicians and Surgeons of Columbia University

6. **Surgery of Priapism**
EDWARD C. SACHER, MC, USN, Philadelphia, Pennsylvania (*by invitation*)
Chief of Urology, United States Naval Hospital

7. **Surgical Repair of the Self-Amputated Penis**
KEITH WATERHOUSE, M.D., Brooklyn
Professor and Chairman, Department of Urology, State University of New York Downstate Medical Center

Panel Discussion
The above speakers

SESSION ON
Archives

Chairman . . . . JOSEPH A. TAMERIN, M.D., New York City

Monday, February 14/2:00 P.M./Royal Ballroom B, Second Floor

JOINT MEETING WITH
Medical Archivists of New York

Panel Discussion: **Preservation of Hospital Archives**

Louise Heinze, New York City, *Moderator* (*by invitation*)
Executive Secretary, Medical Archivists of New York

Panelists

CHARLES E. DEWING, B.S., Washington, D.C. (*by invitation*)
Records Appraisal Division, Office of the National Archives

CHARLOTTE ISLER, R.N., Oradel, New Jersey (*by invitation*)
Senior Associate Editor, RN Magazine; Chairman, Historical Resources Committee, Alumnae Association, The Mount Sinai Hospital School of Nursing

GERALD B. KARA, M.D., New York City
Surgeon Director of Ophthalmology, New York Eye and Ear Infirmary

HARRIETT E. NORTHRUP, M.D., Jamestown
Attending Pediatrician, Woman's Christian Association Hospital, and Jamestown General Hospital

HOWARD A. PATTERSON, M.D., New York City
Chief of Surgery (retired), The Roosevelt Hospital

SESSION ON
Neurology

Chairman . . . . DAVID GREEN, M.D., Albany
Secretary . . . . ARTHUR W. SCHAPPELL, M.D., Forest Hills

Wednesday, February 15/9:00 A.M./Versailles Ballroom, Second Floor

Symposium and Panel Discussion: **The Internist as Neurologist**

DAVID GREEN, M.D., Albany, *Moderator*
Clinical Associate Professor of Neurology, Albany Medical College of Union University

1. Chairman's Address:
Hippocrates, Plato, and Neurology
DAVID GREEN, M.D., Albany

2. Neurologic Complications in Hematology

ANTHONY TARTAGLIA, M.D., Albany
Associate Professor of Medicine, and Head, Division of Hematology, Albany Medical College of Union University

There are a great many neurologic complications seen in primary hematologic disorders. It is impossible to review all of them in this report. Only a few selected neurologic problems seen in hematologic patients will be reviewed. The problems chosen for discussion are those that may not be familiar to all neurologists because of the low incidence of the primary hematologic disorder. The specific neurologic problems discussed are (1) hyperviscosity syndrome, (2) multifocal leukoencephalopathy, (3) cerebral leukemia, (4) cryptococcal meningitis, and (5) intracranial hemorrhage in hemophilia.

3. As a Cardiologist Sees Neurologic Problems

PAUL FORMEL, M.D., Albany
Clinical Professor of Medicine, Albany Medical College of Union University

A host of cardiovascular disorders demonstrates primary neurologic manifestations, due mainly to generalized or localized ischemia of the central nervous system, secondary to diseases of generalized or localized blood flow. This discussion will center about the clues to recognize and procedures to follow, and to define many of these disturbances of cardiovascular function and anatomy including hypertensive encephalopathy, cardiac dysrhythmias, various embolic syndromes, and vascular obstructive diseases.

4. Neurologic Complications of Diseases of the Gastrointestinal Tract

JOHN B. RODGERS, JR., M.D., Albany
Associate Professor of Medicine, Albany Medical College of Union University

Neurologic complications are not uncommonly experienced in patients with gastrointestinal illness. This is particularly so with disease of the liver causing both acute and chronic encephalopathy. With hepatocellular failure or marked shunting of portal blood directly into the systemic system, various circulation toxins accumulate and compromise central nervous system function. This is seen generally with acquired diseases of the liver such as Laennec's cirrhosis but may also be seen in Wilson's disease, a hereditary illness of the liver. As many patients with acquired liver disease are alcoholic subjects, the differential diagnosis of abnormal central nervous system function may be difficult and include the direct acute and chronic effects of alcohol on the brain, plus possible head trauma in addition to hepatic encephalopathy.

Diseases of the digestive tract may also cause complications in the central nervous system. Any illness producing vitamin B_{12} deficiency, such as Addison's pernicious anemia, nontropical sprue, regional enteritis, or the "blind loop" syndrome can produce combined system disease. Malabsorption with malnutrition can also cause pathologic changes in the brain or peripheral nervous system. Most of these complications can be corrected by treating the underlying illness of the gastrointestinal tract or replacement of vitamins by the parenteral route.

5. The Skin Is an Aid to Neurology

JOEL SPIRO, M.D., Albany
Clinical Assistant Professor of Dermatology, Albany Medical College of Union University

Dermatology and neurology are closely aligned in ectodermal origin. Many neurologic diseases have their external window, the skin, which makes diagnosis readily available and simplified. Von Recklinghausen's disease, tuberous sclerosis, Sturge-Weber syndrome, and a presentation of the combined rare disease of Von Recklinghausen's and Ehlers-Danlos syndrome will be discussed. In addition, an unusual case of mycosis fungoides with metastasis to the brain accompanied by neurologic signs will be reviewed.

6. Neurologic Presentation of Collagen Vascular Disease

CURTLAND BROWN, M.D., Wallingford, Connecticut (*by invitation*)
Assistant Chief of Medicine, Gaylord Hospital; Associate Clinical Professor of Medicine, Yale University School of Medicine

Major peripheral neuropathies in rheumatoid arthritis and related connective tissue diseases will be discussed with respect to pathogenesis and management. Attention will also be given to the much more common minor sensory disturbances seen in these patients.

Panel Discussion

The above speakers

SESSION ON

Neurosurgery

Chairman..........PAUL M. DE LUCA, M.D., Endicott
Secretary..........I. M. GREENBERG, M.D., Freeport

Sunday, February 13/10:00 A.M./Versailles Ballroom, Second Floor

Symposium and Panel Discussion—**Socioeconomic Problems of the New York State Neurosurgical Society, Inc.**

1. **Problems Relating to Patient Care**
2. **Progress Report of the Newly Formed Neurosurgical Society**

Panelists

To be announced

1972 ANNUAL CONVENTION

Scientific Exhibits

ALBERT HALL, LOWER LEVEL

ALBERT H. DOUGLAS, M.D., Jamaica, Chairman
FRANCIS P. BILELLO, M.D., Glen Cove
LESTER BLUM, M.D., New York City
THOMAS S. BUMBALO, M.D., Buffalo
BERNARD S. EPSTEIN, M.D., New Hyde Park
FREDERICK LEE LIEBOLT, M.D., New York City
ROBERT A. MOORE, M.D., Brooklyn*
BEVERLY C. SMITH, M.D., New York City
FRANK RAYMOND SMITH, M.D., New York City

* Deceased.

Scientific Exhibits

Certificates of Award will be given by the Medical Society of the State of New York in two groups:

Group I: Awards are made for exhibits of individual investigation which are judged on the basis of originality and excellence of presentation.

Group II: Awards are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of data.

Necrotizing Enterocolitis of Infancy

Rubem Pochaczevsky, M.D.
Greenpoint Hospital, Brooklyn
George Kassner, M.D.
State University of New York Downstate Medical Center, Brooklyn
John Leonidas, M.D.
The Mount Sinai Hospital, New York City

Necrotizing enterocolitis of infancy is a fulminating disease not entirely restricted to the neonatal period, with a predilection for the premature infant. The roentgenographic findings which permit accurate diagnosis in most cases will be demonstrated. Criteria for the differential diagnosis from other pathologic processes will be presented **(Booth 200).**

Management of Heart Disease in Children

Milton Prystowsky, M.D. and Associates
Children's Hospital of Newark and New Jersey College of Medicine and Dentistry, Newark, New Jersey

The exhibit demonstrates our experience in the evaluation and over-all medical and surgical management of congenital heart disease. Shown is a breakdown in incidence of the various congenital heart malformations, methods of evaluation and treatment, presentation of representative cases, types of complications encountered during cardiac catheterization and cineangiography, postoperative complications, and follow-up results of medical and surgical treatment.

Our experience demonstrates that with an early and aggressive approach in evaluation and therapy (both medical and surgical), especially in the newborn and infant, we have been able to salvage lives and decrease infant mortality. In many cases, medical therapy is insufficient, and without early surgery these patients would have died. Furthermore, with open and closed heart surgery, we have repaired congenital heart malformations completely while others have been improved by palliative measures either as a final procedure or in preparation for total correction at a future date. Malformations are also presented for which there is, as yet, no known medical or surgical panacea at a certain age **(Booth 201).**

Alcoholism: A Practical Synthesis for Physicians

Frank A. Seixas, M.D.
Irvin E. Hendryson, M.D.
Luther Cloud, M.D.
National Council on Alcoholism, New York City

Alcoholism is a treatable disease. The exhibit outlines its epidemiology, persons at risk, doctor's role in diagnosis and treatment, pharmacology, and physiology of the disease. Alcoholism should be understood in terms of a pharmacologic subacute brain syndrome. The National Council on Alcoholism has a role in providing information for physicians in current treatment of alcoholism **(Booth 202).**

Check List: A Simple Screening of Developmental Lags

Margaret J. Giannini, M.D.
Emanuel Chusid, M.D.
New York Medical College, New York City

This exhibit demonstrates a new simple developmental check list, which was developed under the auspices of the Committee on Handicapped Children of the American Academy of Pediatrics, and the process of evaluation **(Booth 203).**

Exchange Transfusions in the Treatment of Hepatic Coma

Maxwell L. Gelfand, M.D.
Theodore Cohen, M.D.
Allan Aronson, M.D.
New York Infirmary, New York City

The mortality rate for hepatic coma that develops during the course of acute hepatic necrosis is extremely high. The essence in management of patients in coma is to sustain life long enough for liver-cell regeneration to occur. A number of new therapeutic methods have been suggested to influence recovery. Exchange blood transfusions is one method that is simple to perform, which we have used successfully in 3 patients. The purpose of our exhibit is to present these patients and discuss the pathogenesis of hepatic coma (**Booth 204**).

Sickle-Cell Anemia

Hollis S. Ingraham, M.D., Commissioner
Department of Health, State of New York, Albany

The exhibit will cite the importance of physician alertness to sickle-cell trait and sickle-cell anemia as a major health problem. Data relative to the prevalence of sickle-cell trait and anemia will demonstrate tests for the detection of both. Suggestions for prevention and treatment will be included **(Booth 205).**

Duodenal Fixation Anomalies: A Cause of Persistent Vomiting in Children

Anita Falla, M.D.
Diller Groff, M.D.
James Marquis, M.D.
New Jersey College of Medicine and Dentistry, Newark, New Jersey

A partially obstructed duodenum was diagnosed in 28 infants who had persistent vomiting and failure to thrive. The features of radiologic diagnosis are illustrated. Most of these infants needed surgery for cure, and the essentials of surgical correction are detailed **(Booth 206).**

New Trends in the Diagnosis and Treatment of Osteogenic Sarcoma

Ralph C. Marcove, M.D.
Andrew Huvos, M.D.
Nael Martini, M.D.
Memorial Hospital for Cancer and Allied Diseases, New York City

An autogenous vaccine prepared from the patient's tumor is shown to be superior, with statistical significance, when the tumor cell is homogenized, when compared to whole cell preparations. In all, 30 patients have been treated. Once pulmonary metastasis develops, it is considered a vaccine failure. Pulmonary resections, when metastases appear, have been shown to prolong survival in 22 patients. Thirty per cent are alive after three years; 5 per cent of control-pulmonary metastasis cases are alive at this time. The control study was published in the *Journal of Bone and Joint Surgery*, April, 1970 **(Booth 207).**

Fiberoptic Colonoscopy: Significant Advance in Colonorectal Surgery

William I. Wolff, M.D.
Hiromi Shinya, M.D.
Abraham Geffen, M.D.
Beth Israel Medical Center, New York City

Colonofiberoscopy, a new technic, permits detailed visual examination of the entire colon. Performed without anesthesia, on an ambulatory basis, the procedure is safe (over 600 examinations without complications) and permits biopsy at any level. Therapeutically applied, pedunculated polyps beyond the reach of the conventional sigmoidoscope may be removed endoscopically (80 cases without complication), sparing such patients an abdominal operation **(Booth 208).**

Endoscopic Study of Massive Upper Gastrointestinal Bleeding: Surgical Point of View

William I. Wolff, M.D.
Hiromi Shinya, M.D.
Beth Israel Medical Center, New York City

Precise diagnosis of the site and cause of upper gastrointestinal hemorrhage is the key to effective management. Fiberoptic endoscopy, performed as a bedside procedure especially during the acute bleeding phase, solves this problem in 90 per cent of cases. Experience with 300 cases of massive bleeding is analyzed, and new concepts of cause and management are presented **(Booth 209).**

Cervical Plexus Block for Aortic Endarterectomy

Lawrence Spielberger, M.D., and Associates
University Hospital, New York City

The exhibit presents a method of performing cervical plexus block as related to carotid endarterectomy as well as the basic physiologic background of this surgical procedure. It emphasizes the team approach and the necessity for cooperation between all members of the team: surgeon, anesthesiologist, nurses, and technicians. A clinical approach relying on the patient's conscious effort to provide information has been more helpful than other data concerning cerebral perfusion. By a method of moment-to-moment contact with the patient, information may be obtained before irreversible changes have taken place. This may run counter to established precepts but ultimately benefits the patient. Blood gas data, roentgenograms, anatomic sketches, and photographs illustrate the exhibit **(Booth 210).**

Organ Scanning with Color Contrast Enhancement Technics

O. L. Manfredi, M.D.
St. Vincent's Medical Center of Richmond, Staten Island

A survey of organ scanning will be presented demonstrating convention linear law of color, as well as a myriad of nonlinear technics displaying count rate differences between target and nontarget areas. This is highlighted by a large number of cases depicting the clinical value of color contrast enhancement **(Booth 211).**

Ostomy Rehabilitation Program

Daniel Burdick, M.D.
Mrs. John A. Root, R.N.
Mrs. Emily Triggs, R.N.
American Cancer Society, New York State Division, Syracuse

A comprehensive continuous audiovisual presentation of the latest technics in the care and management of patients with a colostomy and ileostomy is shown **(Booth 212).**

New System for Teaching Proctosigmoidoscopic Morphology

H. David Markman, M.D.
Herbert Volk, M.D.
Albert Einstein College of Medicine of Yeshiva University, The Bronx

A method of teaching colorectal morphology will be presented, utilizing three newly developed units: (1) A proctosigmoidoscopic teaching endoscope encourages students, without supervision, to study realistic photographs through a sigmoidoscope. (2) A synchronized audiovisual unit enables two students using two separate scopes to see and listen to a descriptive tape; and (3) an ingenious mannikin for teaching technic **(Booth 213).**

Cancer of the Colorectum in Patients Above Eighty Years of Age

Yehuda G. Adam, M.D.
Carmine Calabrese, M.D.
Herbert Volk, M.D.
Albert Einstein College of Medicine of Yeshiva University, The Bronx

Analysis of data of 226 patients above eighty years of age with colorectal cancer, seen at the Bronx Municipal Hospital Center in New York City, between 1955 through 1969, will be exhibited. Distinct differences in clinical manifestations in this age group will be emphasized. The influence of concurrent cardiovascular, respiratory, genitourinary, and metabolic disease in relation to surgical management will be shown. Management of major complications including perforation, obstruction, or bleeding will be illustrated. A rationale for the operation of choice, which provides the lowest operative mortality and morbidity rates for these geriatric patients, will be presented **(Booth 214).**

Subcutaneous Mastectomy with Immediate Prosthetic Reconstruction in the Nodular Breast: A One-Stage Procedure

Daniel L. Weiner, M.D.
Herbert Volk, M.D.
Albert Einstein College of Medicine of Yeshiva University, The Bronx

Multinodular breasts present complex diagnostic and therapeutic challenges because of increased malignant potential. Solution in certain cases is gland removal. A one-stage operation for any size nodular breast is demonstrated. It includes simultaneous subcutaneous mastectomy with immediate prosthetic reconstruction.

Approach is by a combined plastic and general surgical team **(Booth 215)**.

Current Advances in the Diagnosis and Treatment of Peripheral Vascular Disease

Bok Y. Lee, M.D.
Veterans Administration Hospital, Castle Point

Using noninvasive transcutaneous blood flowmetry technics in conjunction with square-wave electromagnetic flowmetry, quantification and qualification analyses of the pulsatile waveforms obtained provide the data for correlating the preoperative, intraoperative, and postoperative hemodynamics with clinical findings, which provide the objective criteria for assessing distal arterial outflow capacity, predicting the probability of success or failure of the surgical procedure **(Booth 216)**.

Observation of Subcapsular Lymphatics in Normal and Diseased Human Pancreas

Benedict M. Reynolds, M.D.
Misericordia Hospital, The Bronx

Intraoperative study of subcapsular lymphatics of pancreas in 24 patients was undertaken to determine anatomic patterns with rate of flow and alterations found in pancreatitis. Findings in chronic pancreatitis revealed total lymphatic blockade in all cases. Chronicity in pancreatitis may be related to peripancreatic lymphatic obstruction rather than ductal obstruction **(Booth 217)**.

Surgical Treatment of Coronary Atherosclerosis

C. W. Lillehei, M.D.
R. G. Carlson, M.D.
A. J. Landé, M.D.
The New York Hospital-Cornell Medical Center, New York City

Surgical treatment consists of direct revascularization by vein bypass grafts together with concomitant repair of all correctable structural defects, such as aneurysm, akinesia, papillary muscle damage, or ventricular septal defect. The use of our membrane oxygenator for support in postmyocardial infarction shock and for elective surgery is demonstrated **(Booth 218)**.

Arteriography of Penetrating Wounds of the Extremities: Help or Hindrance?

Rubem Pochaczevsky, M.D., and Associates
The Jewish Hospital and Medical Center of Brooklyn, Greenpoint Hospital Affiliation, State University of New York Downstate Medical Center

This exhibit summarizes our clinical and angiographic experience with 75 patients who sustained penetrating injuries of the extremities in the proximity of major arteries. Results of an additional experimental study, utilizing arterial trauma in dogs to establish the value of clinical manifestations versus reliability of arteriography in penetrating arterial wounds of the extremities will also be presented **(Booth 219)**.

The Role of Surgery in Malignant Lymphoma and Chronic Leukemia

E. G. Elias, M.D.
Arnold Mittelman, M.D.
Roswell Park Memorial Institute, Buffalo

The exhibit presents (1) diagnosis: pitfalls in lymphomas and staging of lymphomas; (2) complications in lymphoma and leukemia; (3) preoperative and postoperative care for these patients; and (4) results: mainly of splenectomy (to correct hematologic defects) in lymphoma and leukemia and staging operation in lymphoma **(Booth 220)**.

Periodontal Disease

Division of Dental Health, National Institutes of Health, Bethesda, Maryland

The role of bacterial plaque in the loss of teeth due to periodontal disease and the control measures for plaque removal are shown **(Booth 221)**.

Selective Management of Stab Wounds of the Abdomen

George H. Haddad, M.D.
Walter F. Pizzi, M.D.
Edgar P. Fleischmann, M.D.
Knickerbocker Hospital, New York City

The exhibit will show that not all stab wounds of the abdomen need undergo surgery. The sinogram test will be pictorially demonstrated and will show how to differentiate between penetrating wounds of the abdomen. Nonpenetrating wounds are spared surgery. The value and the reliability of a thorough abdominal physical examination in arriving at a decision whether to operate or not are clearly demonstrated. A variety of x-ray films of sinograms and their interpretations will be shown **(Booth 222)**.

Tissue Reconstruction of the Cardiac Valves

Charles P. Bailey, M.D.
Teruo T. Hirose, Ph.D.
Frank S. Folk, M.D.
St. Barnabas Hospital for Chronic Diseases, The Bronx

Combining the principles of Johanson and Devine, developed in the relief of urethral stricture with the experiences accumulated in seventy years of clinical transplantation of autologous tissues (especially fascia lata), we have worked out a series of surgical technics which permit effective reconstruction of diseased cardiac valves. Results are demonstrated **(Booth 223)**.

Afterloading with Radium Substitutes in the Treatment of Gynecologic Cancer

N. Simon, M.D.
S. M. Silverstone, M.D.
L. Roach, M.D.
The Mount Sinai Hospital, New York City

Insertion of blank hollow tubes in cavities and tumors is followed by loading of these tubes with radioactive cesium. This method is better than the traditional use of radium, because it is safer, more accurate, and even spares anesthesia **(Booth 224)**.

Ancillary Technics in Laparoscopy

Alvin M. Siegler, M.D.
State University of New York Downstate Medical Center

The technic of laparoscopy is shown. Photographs used through the instrument reveal its potential as a diagnostic aid. Aspiration of ovarian cysts, of cul-de-sac fluid, and from a hydrosalpinx is demonstrated. A new technic of female tubal sterilization is illustrated as a method of permanent conception control **(Booth 225)**.

MEDICO: A Service of CARE

Colgate Phillips, M.D.
Ethel Spore, R.N.
New York City

Photographs, maps, and informational material provide a panorama of MEDICO work in Asia, Latin America, and Africa. The exhibit is geared toward those interested in service overseas, either for two years as salaried MEDICO team members or as volunteers for one month as visiting specialists (**Booth 226**).

Disability Evaluation Under Social Security

Philip R. Casesa, M.D.
Mr. Sidney Houben
Bureau of Disability Determinations, New York State Department of Social Services, New York City

Disability is defined according to the Social Security Act and its amendments. The primary component of this definition, a medically determinable impairment, is specifically stated. The use of medical evaluation criteria in the disability program are explained, and a criterion for evaluating impairments is provided (**Booth 227**).

Female Cancer Detection Mobile Unit

Philip Strax, M.D.
American Cancer Society, New York City

A new female cancer detection mobile unit is presented which incorporates proved methods for early detection of cancer of the breast, uterus, and lungs, and makes them available to large numbers of women right in their own communities, thus increasing the motivation for acceptance of such screening modalities (**Booth 228**).

Indications for Total Hip Arthroplasty

Charles M. Evarts, M.D.
Alan H. Wilde, M.D.
H. R. Collins, M.D.
Cleveland Clinic Foundation, Cleveland, Ohio

An analysis of the first 150 cases of Charnley-Mueller total hip arthroplasty performed at the Cleveland Clinic Foundation forms the basis for this exhibit. The major indications for this procedure are (1) marked loss of bone substance of the acetabulum or femoral head, (2) severe bilateral involvement of the hip joints, (3) failed arthroplasty—cup or endoprosthesis, and (4) failed femoral osteotomy. Other indications include failed arthrodesis, failed ring total hip prosthesis, failed girdlestone arthroplasty, and bone tumors of the proximal femur (**Booth 229**).

Pharmacologic Properties and Clinical Effects of Estrogens in the Human

Herbert S. Kupperman, M.D.
New York University Medical Center, New York City

A review is presented of the effects of estrogens in the climacteric, the excessively tall girl, osteoporosis, functional uterine bleeding, and primary amenorrhea (**Booth 230**).

Medical Directory of New York State

Medical Society of the State of New York
Lake Success, New York

The new *Medical Directory of New York State*, the first produced by completely automated methods of up-dating and printing, is available for study. This is the most up-to-date edition of the essential reference providing complete, authoritative professional data on the over 34,000 physicians practicing in New York State that we have ever been able to provide. Staff personnel will be on hand to answer inquiries and provide order forms to prospective purchasers (**Albert Hall**).

New York State Journal of Medicine

Medical Society of the State of New York
Lake Success, New York

The NEW YORK STATE JOURNAL OF MEDICINE welcomes visiting doctors to its booth where members of the staff will discuss JOURNAL editorial matters and solicit physicians on their preferences in contents for the publication (**Albert Hall**).

Physicians' Placement Bureau

Division of Scientific Activities, Medical Society of the State of New York
Lake Success, New York

The Physicians' Placement Bureau will be available with information about practice opportunities, group practice, Educational Council for Foreign Medical Graduates, and so on. Literature about these subjects and many more can be obtained from the booth. Persons interested in obtaining a physician for a job or physicians looking for jobs will be interviewed at the booth (**Albert Hall**).

New York State Medical Assistants Association

Medical Society of the State of New York
Lake Success, New York (**Albert Hall**)

New York State Society of Surgeons, Inc.

New Hartford, New York

Pamphlets and bylaws explaining the purposes of the New York State Society of Surgeons, Inc., will be available (**Albert Hall**)

1972 ANNUAL CONVENTION

Scientific Motion Pictures

Sunday, February 13, through
Wednesday, February 16
Motion Picture Theatre, Albert Hall

KENNETH B. OLSON, M.D., Albany, Chairman
JAMES J. QUINLIVAN, M.D., Albany, Co-chairman
LESTER COLEMAN, M.D., New York City

Sunday
February 13, 1972

Morning

10:00 **The Snared Runner (Rehabilitation)**
Genesee Valley Heart Association, Rochester, New York

10:35 **Increasing Capabilities for Quadriplegics (Part I): Transfer and Mobility**
L. L. TRIGIANO, M.D., Medical Director, Department of Physical Medicine and Rehabilitation, Johnstown, Pennsylvania

11:14 **Increasing Capabilities for Quadriplegics (Part II): Self Care**
L. L. TRIGIANO, M.D., Medical Director, Department of Physical Medicine and Rehabilitation, Johnstown, Pennsylvania

11:56 **Language and Speech Stimulation for Preschool Cleft Palate Children**
BETTY JANE PHILLIPS, ED.D., RHODA J. JACOBS, M.ED., ROBERT J. HARRISON, PH.D., Department of Surgery, School of Medicine, University of Miami, Florida

Afternoon

12:23 **Surgical Treatment of Benign Acanthosis Nigricans**
HELEN OLLENDORFF CURTH, M.D., Institute for Dermatologic Communication and Education, 630 Ninth Avenue, New York, New York 10036

12:47 **Hypotonic Duodenography**
G.D. Searle & Co., P.O. Box 5110, Chicago, Illinois 60680

1:09 **Cancer Chemotherapy (Solid Tumors)**
American Cancer Society, Syracuse, New York

1:37 **Cancer of the Urinary System**
American Cancer Society, Syracuse, New York

2:05 **The Pulses Profile (Evaluation of Function in the Stroke Patient)**
EUGENE MOSKOWITZ, M.D., Director, Division of Physical Medicine & Rehabilitation, Grasslands Hospital, Valhalla

2:34 **Acquisition of Language by a Speechless Child**
ERIC H. LENNEBERG, Childrens Hospital Medical Center, Boston, Massachusetts

2:58 **Airway Obstruction**
Health Research, Inc., University of Buffalo, Buffalo, New York

3:17 **Female Pelvic Viscera**
LAWRENCE E. WRAGG, M.D., PH.D., Northwestern University Medical School, Chicago, Illinois

3:42 **Male Perineum**
LAWRENCE E. WRAGG, M.D., PH.D., Northwestern University Medical School, Chicago, Illinois

4:07 **Inguinal Region**
LAWRENCE E. WRAGG, M.D., PH.D., Northwestern University Medical School, Chicago Illinois

4:30 **Muscles of Mastication and the Infratemporal Fossa**
LAWRENCE E. WRAGG, M.D., PH.D., Northwestern University Medical School, Chicago, Illinois

4:52 **Voice Production: The Vibrating Larynx**
Netherlands Information Service, New York, New York

5:41 **Cricothyroidotomy**
U.S. Navy, Washington, D.C.

Monday
February 14, 1972

Morning

9:00 **Sperm Maturation in the Male Reproductive Tract: Development of Motility**
University of Washington, Seattle, Washington

9:20 **Palmar Hand (Part I): Orientation**
LAWRENCE E. WRAGG, M.D., PH.D., Northwestern University Medical School, Chicago, Illinois

9:41 **Palmar Hand (Part II): Intrinsic Muscles**
LAWRENCE E. WRAGG, M.D., PH.D., Northwestern University Medical School, Chicago, Illinois

10:03 **Embryology of Human Behavior**
International Film Bureau, Chicago, Illinois

10:38 **Nonoperative Treatment of Scoliosis and Round Back with the Milwaukee Brace**
WALTER BLOUNT, M.D., 2040 W. Wisconsin Avenue, Milwaukee, Wisconsin

11:15 **Aldosterone: Story of a Hormone**
DAVID P. LAULER, M.D., Peter Bent Brigham Hospital, Boston, Massachusetts

11:56 **Verbal Impairment Associated with Brain Damage**
Institute of Physical Medicine and Rehabilitation, New York University Medical Center, New York, New York

Afternoon

12:19 **The Inner World of Aphasia**
Edward Feil Productions, 1514 Prospect Avenue, Cleveland, Ohio

12:50 **Oral Lesions in Children and Adults**
Wayne State University, Detroit, Michigan

1:25 **Resuscitation of the Newborn**
Special Committee on Infant Mortality, Medical Society of the County of New York, New York, New York

2:02 **The Effect of Anticholinergic Drugs on Gastric Motility and Pyloric Function**
G.D. Searle and Company, P.O. Box 5110, Chicago, Illinois 60680

2:25 **Penetrating Wounds of the Heart**
EMIL A. NACLERIO, M.D., 35 East 35th Street, New York, New York

2:52 **Clinical Applications of Gastroscopy, Intragastric Photography, and Gastric Biopsy**
G.D. Searle and Company, P.O. Box 5110, Chicago, Illinois 60680

3:20 **Diagnosis and Management of Cystic Fibrosis**
National Cystic Fibrosis Research Foundation, New York, New York

3:57 **Check the Neck**
American Cancer Society, Syracuse, New York

4:19 **Apgar on Apgar**
Virginia Apgar, Wayne State University, Detroit, Michigan

Tuesday
February 15, 1972

Morning

9:00 **Physiological Aspects of Speech: Speakers with Cerebral Palsy**
State University of Iowa, Iowa City, Iowa

9:32 **Physiological Aspects of Speech: Speakers with Cleft Palates**
State University of Iowa, Iowa City, Iowa

10:09 **Cancer of the Stomach**
American Cancer Society, Syracuse, New York

10:36 **Modern Obstetrics: Normal Delivery**
Ortho Pharmaceutical Company, Raritan, New Jersey

11:08 **The Case for Population Control**
G. D. Searle & Company, P.O. Box 5110, Chicago, Illinois 60680

11:45 **Medical Genetics (Part I)**
Department of Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland

Afternoon

12:26 **Medical Genetics (Part II)**
Department of Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland

1:05 **Medical Genetics (Part III)**
Department of Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland

1:46 **Chronic Bronchitis and Pulmonary Emphysema (Part I)**
U.S. Health Education and Welfare with New York University Medical Center, New York, New York

2:22 **Chronic Bronchitis and Pulmonary Emphysema (Part II)**
U.S. Health Education and Welfare with New York University Medical Center, New York, New York

2:54 **The Otoneurological Examination for Vestibulo-Cerebellar Function**
Abbott Laboratories, North Chicago, Illinois

3:27 **Immediate Postsurgical Prosthesis**
United States Veteran Hospital, Seattle, Washington

4:19 **Multiple Sclerosis Documentary**
National Multiple Sclerosis Society, New York, New York

Wednesday
February 16, 1972

Morning

9:00 **Uterine Cancer—Diagnosis and Management (Part I): Cancer of the Cervix**
American Cancer Society, Syracuse, New York

9:27 **Uterine Cancer—Diagnosis and Management (Part II): Cancer of the Endometrium**
American Cancer Society, Syracuse, New York

9:46 **Physical Examination of the Joints (Part II): Hip, Shoulder, and Back**
Arthritis and Rheumatism Foundation, New York, New York

10:23 **Contact Ulcer of the Larynx**
Institute of Laryngology and Voice Disorders, c/o HANS VON LEDEN, M.D., University of California Medical Center, Los Angeles, California

10:41 **The Function of the Normal Larynx**
Institute of Laryngology and Voice Disorders, c/o HANS VON LEDEN, M.D., University of California Medical Center, Los Angeles, California

11:09 **The Function of the Pathologic Larynx**
Institute of Laryngology and Voice Disorders, c/o HANS VON LEDEN, M.D., University of California Medical Center, Los Angeles, California

11:40 **Physiology of the Larynx Under Daily Stress**
Institute of Laryngology and Voice Disorders, c/o HANS VON LEDEN, M.D., University of California Medical Center, Los Angeles, California

Afternoon

12:10 **What Did You Take?**
New York State Department of Health, Albany, New York. Narrator and Technical Advisor: HAROLD TRIGG, M.D., Associate Director of Psychiatry for Addiction at Beth Israel Medical Center, New York, New York

12:52 **Depression**
Lakeside Laboratories, Inc., Milwaukee, Wisconsin

1:29 **Synovectomy of the Proximal Interphalangeal Joint of the Finger in Rheumatoid Arthritis**

ALAN H. WILDE, M.D., Cleveland, Ohio

1:45 **Patient Care and Understanding Taught by Televised Simulated Patient Interviews (With Immediate Playback for Self-Criticism)**

JOHN K. LATTIMER, M.D., and STANFORD PULRANG, M.D., Columbia University College of Physicians and Surgeons, New York, New York

2:34 **Hysterosalpingography and Hydrotubation**

ALVIN M. SIEGLER, M.D., Downstate Medical Center, Brooklyn, New York

3:02 **Colonoscopy**

WILLIAM I. WOLFF, M.D., and HIROMI SHINYA, M.D., Beth Israel Hospital, New York, New York

3:19 **Endoscopic Study of Massive Upper Gastrointestinal Bleeding—Surgical Point of View**

WILLIAM I. WOLFF, M.D., and HIROMI SHINYA, M.D., Beth Israel Hospital, New York, New York

3:37 **Duodendofiberoscopy**

WILLIAM I. WOLFF, M.D., and HIROMI SHINYA, M.D., Beth Israel Hospital, New York, New York

3:50 **The Pharmacist and Cancer**

American Cancer Society, Syracuse, New York

4:19 **Surgical Treatment of Coronary Atherosclerosis**

C. Walton Lillehei, M.D., and R. G. Carlson, M.D., The New York Hospital, New York City Ives Laboratory, 685 3rd Avenue, New York City

1972 ANNUAL CONVENTION

Technical Exhibits

Albert Hall

The Technical Exhibits *will be located in Albert Hall of the Americana Hotel and will open officially on Sunday, February 13, 1972, at 10:00 A.M. to 6:00 P.M. Monday through Wednesday, February 14 to 16, 1972, 9:00 A.M. to 5:00 P.M.*

Our exhibitors look forward to the pleasure of meeting and serving members and guests of the Medical Society of the State of New York.

Abbott Laboratories **Booth 43**
North Chicago, Illinois

Erythrocin, K-Lor

The Alkalol Company **Booth C**
Taunton, Massachusetts

Alkalol, Alkalol Nasal Cup, Irrigol

Ames Company
Div. Miles Laboratories, Inc. **Booth 67**
Elkhart, Indiana

Apache Programs, Inc. **Booth 68**
Minneapolis, Minnesota

Limited partnership investment programs for individuals and corporations. Investment programs in oil and gas exploration.

Armour Pharmaceutical Company **Booths 62 and 63**
Chicago, Illinois

Nicobid Tablets, Thyrolar Tablets

Astra Pharmaceutical Products, Inc. **Booth 30**
Worcester, Massachusetts

Xylocaine, Citanest

Ayerst Laboratories **Booths 94 and 95**
New York City

Premarin, Atromid-S, Inderal

Berkeley Bio-Engineering, Inc. **Booths 28 and 29**
Berkeley, California

Model 255 Mackay-Marg Tonometer, Model VC-II Vacuum Curettage Unit and Vibrodilator, Model VC-IV Vacuum Curettage Unit, Model 200 Fetal Heart Monitor and Thermopulse

Bio-Dynamics, Inc. **Booth 23**
Indianapolis, Indiana

Unitest System, Coagulation System, Select-a-Fuge, Automatic Pipette, Unibac System, Allen Medical Instruments

Biomedical Trends **Booth 66**
Clifton, New Jersey

Marketing Research. Physician interviewing

E. & W. Blanksteen Agency, Inc. **Booth 90**
New York City

Insurance Administrators

Breon Laboratories **Booth 64**
New York City

Bronkometer, Bronkosol, Bronkotabs

Bristol Laboratories **Booth 77**
Syracuse, New York

Burroughs Wellcome Company **Booth 46**
Research Triangle Park, North Carolina

Empirin Compound with Codeine, Actifed Tablets, Neosporin Topical Ointment

Coca-Cola USA **Booth 86**
Atlanta, Georgia

Coca-Cola and Fresca

CRO-MED Bionics Corporation **Booths 19, 20, and 21**
New York City

Compu-Gram, Compu-Console

The Devereux Foundation **Booth 31**
Devon, Pennsylvania

The Dow Chemical Company **Booth D**
Saddle Brook, New Jersey

Dow Diagnostics

Educational Aids Publishing Co., Inc. **Booth 74**
Carle Place, N.Y.

Multi-media reading materials

The Emko Company **Booth 42**
St. Louis, Missouri

Emko Pre-Fil

Encyclopaedia Britannica, Inc. **Booth 27**
Chicago, Illinois

Geigy Pharmaceuticals **Booth 39**
Ardsley, New York

D.B.I., Tofranil, Preludin, Butazolidin, Dulcolax, Tandearil

Geriatric Pharmaceutical Corp. **Booth 33**
Floral Park, New York

Ger-O-Foam, Cevi-Bid

Group Health Insurance, Inc. **Booth 41**
New York City

Hoechst Pharmaceutical Company **Booth 38**
Somerville, New Jersey

Lasix, Surfak, Doxidan

Hospital Book Service, Inc. **Booth 69**
Alexandria, Virginia

Books in Medicine and Allied Sciences

Ives Laboratories **Booth 70**
New York City

Isordil, Cyclospasmol, Synalgos

Key Pharmaceuticals, Inc. **Booth 40**
Miami, Florida

Key-Tusscapine, Theo-Nar, Nitroglyn, Hyasorb, Proternol, Pavakey

Lakeside Laboratories, Inc. **Booth 48**
Milwaukee, Wisconsin

Cantils, Imferon, Mercuhydrin, Metahydrin, Metatensin, Norpramin, the Depression Learning System, and the Iron Metabolism Learning System

Lederle Laboratories **Booth 44**
Pearl River, New York

Minocin Minocycline HCl, Achromycin Tetracycline, Aristocort Products

Eli Lilly and Company **Booth 34**
Indianapolis, Indiana

Keflex

Macsil, Inc. **Booth B**
Philadelphia, Pennsylvania

Mayflower Surgical Supply Co., Inc. **Booth 17**
Brooklyn, New York

Physio-Therapy; Electrocardiographs; Ultra-Sound Cleaners; Autoclaves; Medical Furniture; Exercise Equipment

Medcolator New York **Booth A**
Forest Hills, New York

Medco Dublett

Merck Sharp & Dohme **Booth 58**
West Point, Pennsylvania

M-M-R (Measles, Mumps and Rubella Virus Vaccine, Live)

Merrill Lynch, Pierce, Fenner & Smith, Inc. **Booth 50**
New York City

Investment Information Center, featuring up-to-date stock prices via Telequote III; Educational and Research literature

Nationwide Pension Planning, Inc. **Booth 61**
New York City

Tax-Qualified Retirement Programs; Feasibility Studies for forming professional corporation

New York State Narcotic Addiction Control Commission **Booth 45**
Albany, New York

Program of the Narcotic Addiction Control Commission

No-Cal Corporation **Booth 93**
Brooklyn, New York

Organon, Inc. **Booth 37**
West Orange, New Jersey

Pregnosticon DRI-DOT, Durabolin, Deca-Durabolin, Cortrophin Zinc, Hexadrol

Ortho Pharmaceutical Corporation **Booth 60**
Raritan, New Jersey

Medically accepted products for control of conception and the treatment of vaginitis

Parke, Davis & Company **Booth 80**
Detroit, Michigan

Parest 200–400, Norlestrin, Petipac, Elastic Support Hosiery

Professional Educational Services, Inc. **Booth 26**
Berkeley, California

A. H. Robins **Booth 35**
Richmond, Virginia

Dalkon Shield

William H. Rorer, Inc. **Booth 36**
Fort Washington, Pennsylvania

Maalox, Camalox, Ascriptin, Quaalude, and other products

Sandoz Pharmaceuticals **Booth 32**
Hanover, New Jersey

Mellaril, Hydergine, Serentil, Cafergot P-B, Fiorinal, Bellergal

W. B. Saunders Company **Booth 22**
Philadelphia, Pennsylvania

Medical books

G. D. Searle & Company **Booth 24**
Chicago, Illinois

Silver Hill Foundation **Booth 49**
New Canaan, Connecticut

Private, fully accredited psychiatric hospital for treatment of voluntary patients with emotional disorders. Specially designed programs for treatment of the aged, alcoholic, the acutely ill, and the adolescent are offered.

E. R. Squibb & Sons, Inc. **Booth 51**
Princeton, New Jersey

Stuart Pharmaceuticals, Division of Atlas Chemical Industries, Inc. **Booth 52**
Pasadena, California

Mylanta, Sorbitrate, Kinesed

United Medical Service **Booth 57**
New York City

Greater New York's Blue Shield's graphic display

The Upjohn Company **Booth 59**
Kalamazoo, Michigan

Ethical pharmaceuticals

H. F. Wanvig, Inc. **Booth 92**
New York City

Information concerning professional medical liability insurance program of the Medical Society of the State of New York

Winthrop Laboratories **Booth 47**
New York City

Talwin Oral, Isuprel Mistometer

Woman's Auxiliary

36th Annual Convention
Americana of New York

Sunday, February 13, through Wednesday, February 16, 1972

Mrs. Francis E. Ehret, President, the officers, and the Convention Committee extend an invitation to all wives of doctors to register and attend general sessions and social functions of the thirty-sixth Convention.

Sunday, February 13

11:00 A.M.	Board of Directors Meeting, *Provence Room*
1:30–4:30 P.M.	Registration and Information, *Imperial Ballroom Foyer*

Monday, February 14

8:00 A.M.–4:00 P.M.	Registration and Information *Imperial Ballroom Foyer*
9:00 A.M.–12 NOON	House of Delegates, *Imperial Ballroom B—* *Keynote Speaker:* Mrs. G. Prentiss Lee, President, Woman's Auxiliary to the American Medical Association
1:30–4:00 P.M.	House of Delegates, *Imperial Ballroom B* *Guest Speaker:* Fred L. Allman, Jr., M.D., Member, American Medical Association Committee on Exercise and Physical Fitness, Past President, American College of Sports Medicine
4:00 P.M.–5:30 P.M.	Voting for Nomination Committee and Delegates to National Convention, *Buckingham Room A*

Tuesday, February 15

8:00 A.M.–11:00 A.M.	Registration and Information, *Imperial Ballroom Foyer*
9:00 A.M.–11:45 A.M.	House of Delegates, *Imperial Ballroom B*
1:00 P.M.	Luncheon honoring Mrs. Francis E. Ehret, President, Woman's Auxiliary to the Medical Society of the State of New York, *Imperial Ballroom A* *Guest Speaker:* Miss Dorothy Sarnoff, Singing star of Broadway, Opera, Concert; Speech Consultant

Wednesday, February 16

8:00 A.M.–10:30 A.M.	Registration and Information, *Imperial Ballroom Foyer*
9:00 A.M.–12 NOON	House of Delegates *Imperial Ballroom B* Installation of Officers. Postconvention Meeting (State Officers, State Chairman, County Presidents, County Presidents-Elect)
1:30 P.M.	Board of Directors Meeting, *Presidential Suite*
7:00 P.M.	Reception and Dinner Dance honoring George Himler, M.D., President, Medical Society of the State of New York *Versailles and Royal Ballrooms*

Officers

President	MRS. FRANCIS E. EHRET, Erie
President-Elect	MRS. JAMES P. FURLONG, Albany
First Vice-President	MRS. WILLIAM G. CHORBA, Bronx
Second Vice-President	MRS. TORRENCE P. B. PAYNE, Orange
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Treasurer	MRS. RAYMOND DONOVAN, Richmond
Assistant Treasurer	MRS. JAMES SCHIUMA, Kings

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Co-Chairman	MRS. WILLIAM G. CHORBA, Bronx
Upstate Coordinator	MRS. STEPHEN BLATCHLY, Cortland

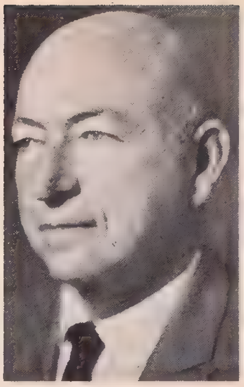
MEDICAL SOCIETY OF THE STATE OF NEW YORK

Officers 1971-1972

George Himler

New York

President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Clinton

President-Elect

John E. Lowry

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Vice-President

Carl Goldmark, Jr.

New York

Secretary

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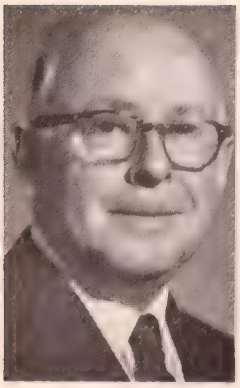
Nassau

Assistant Secretary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The Bronx

Treasurer

Albert M. Schwartz

New York

Assistant Treasurer

George T. C. Way

Dutchess

Speaker

Samuel Wagreich

The Bronx

Vice-Speaker

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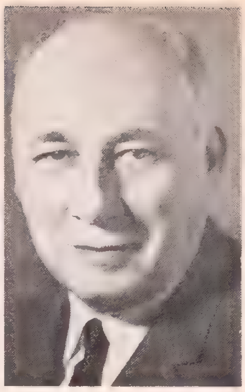

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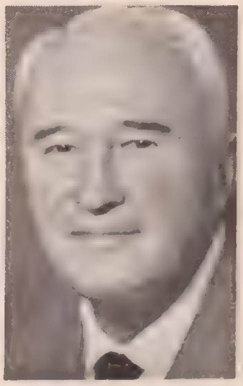

William Hammond

Westchester

Editor,
New York State Journal of Medicine

MEDICAL SOCIETY OF THE
STATE OF NEW YORK

House of Delegates

February 13 through 17, 1972
Americana of New York

Schedule of Sessions 53
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Resumé of Instructions from 1971 House and Actions Thereon . . . . See January 15 issue
Annual Reports to House 89
Additional Annual Reports . . . . See January 15 issue

Schedule of Sessions

Sunday, February 13
Opening Session . . . . 2:00 p.m.

Monday, February 14
Reference Committee Hearings . . . . 9:00 a.m.
Reference Committee Hearings . . . . 2:00 p.m.

Tuesday, February 15
Reference Committee Hearings . . . . 9:00 a.m.
Second Session . . . . 2:00 p.m.

Wednesday, February 16
Third Session . . . . 9:00 a.m.
Fourth Session . . . . 2:00 p.m.

Thursday, February 17
Closing Session . . . . 9:00 a.m.

According to the Bylaws, Chapter II, Section 7, the following shall be the order of business at the Sessions of the House of Delegates

Order of Business

1. Calling the meeting to order.
2. Invocation.
3. National Anthem.
4. Report of Reference Committee on Credentials.
5. Report by the secretary as to the presence or absence of a quorum.
6. Remarks by the speaker.
7. Reading the minutes of the previous meeting by title.
8. Report of the president.
9. Address of the president-elect.
10. Report of the Judicial Council.
11. Report of the Council.
12. Report of the secretary.
13. Report of the treasurer.
14. Report of the Board of Trustees.
15. Reports of district branches by district delegates.
16. Reports of special committees.
17. Reports of reference committees.
18. Unfinished business.
19. New business.
20. Adjournment.

1972 HOUSE OF DELEGATES

Members

The following pages contain a list of members of the 1972 House of Delegates of the Medical Society of the State of New York.

Officers 1971–1972

President—George Himler, New York
President-Elect—Edward Siegel, Clinton
Vice-President—John Edward Lowry, Queens
Secretary—Carl Goldmark, Jr., New York
Assistant Secretary—Joseph G. Zimring, Nassau
Treasurer—Thomas F. McCarthy, Bronx
Assistant Treasurer—Albert M. Schwartz, New York
Speaker—George T. C. Way, Dutchess
Vice-Speaker—Samuel Wagreich, Bronx

Councilors

Term Expires 1972
Lynn R. Callin, Monroe
Richard D. Eberle, Onondaga
Warren A. Lapp, Kings
Bernard J. Pisani, New York
Term Expires 1973
John H. Carter, Albany
George L. Collins, Jr., Erie
Paul M. DeLuca, Broome
Ralph S. Emerson, Nassau
Term Expires 1974
G. Rehmi Denton, Albany
Arthur H. Diedrick, Westchester
Albert H. Douglas, Queens
Milton Gordon, Suffolk

Trustees

James M. Blake, Schenectady, *Chairman*
C. Stewart Wallace, Tompkins
Milton Helpern, New York
Walter Scott Walls, Erie
Edward C. Hughes, Onondaga
Walter T. Heldmann, Richmond
Joseph J. Kaufman, Wayne

Past Presidents

1934–1935—Arthur J. Bedell, Albany
1950–1951—Carlton E. Wertz, Erie
1952–1953—Edward T. Wentworth, Monroe
1955–1956—Renato J. Azzari, Bronx
1957–1958—Thurman B. Givan, Kings
1959–1960—Henry I. Fineberg, Queens
1960–1961—Norman S. Moore, Tompkins
1961–1962—John M. Galbraith, Nassau
1964–1965—George A. Burgin, Herkimer
1966–1967—James M. Blake, Schenectady
1968–1969—Edward C. Hughes, Onondaga
1969–1970—Walter T. Heldmann, Richmond
1970–1971—Walter Scott Walls, Erie

Commissioner, New York State Department of Health

Hollis S. Ingraham, Albany

District Delegates

(Elected Delegates of District Branches)

First—Leonard L. Heimoff, Bronx
Second—Irving G. Manning, Suffolk
Third—Lee R. Tompkins, Sullivan
Fourth—Alton J. Spencer, Montgomery
Fifth—Marvin Brown, Madison
Sixth—Jason K. Moyer, Broome
Seventh—Vincent I. Bonafede, Livingston
Eighth—John T. Donovan, Jr., Niagara
Ninth—Irving Weiner, Orange

Section Delegates

(Delegates from Scientific Sections)

Allergy—William E. Hermance, Westchester
Anesthesiology—Victor J. Tofany, Monroe
Chest Diseases—Arthur Q. Penta, Schenectady
Dermatology and Syphilology—Norman B. Kanof, New York
Gastroenterology and Proctology—James F. Phillips, Erie
General Practice—M. Theodore Tanenhaus, Kings
Internal Medicine—John R. Williams, Jr., Monroe
Medical-Legal and Workmen's Compensation Matters—Robert Katz, New York
Obstetrics and Gynecology—Donald W. Hall, Erie
Occupational Medicine—Thomas J. Doyle, Queens
Ophthalmology—Philip H. Landers, Broome
Orthopedic Surgery—Frederick Lee Liebolt, New York
Otolaryngology—Edwin I. Cleveland, Westchester
Pathology, Clinical Pathology, and Blood Banking—Albert H. Harris, Albany
Pediatrics—Thomas S. Bumbalo, Erie
Physical Medicine and Rehabilitation—Henry Fleck, Bronx
Plastic and Reconstructive Surgery—Howard B. Rasi, Kings
Preventive Medicine and Public Health—George E. Leone, Suffolk
Psychiatry—Charles F. Nicol, Jr., Erie
Radiology—Samuel H. Madell, New York
School Health—Garra L. Lester, Chautauqua
Space Medicine—Constantine D. J. Generales, New York

Surgery—Frederic P. Herter, New York
Urology—William J. Staubitz, Erie

Delegates from Component County Medical Societies

Albany (4)
Charles M. Landmesser, Albany
James A. Moore, Albany
John J. Phelan, Jr., Albany
Francis A. Stephens, Albany

Allegany (1)
Irwin Felsen, Wellsville

Bronx (12)
Carl R. Ackerman, Glen Cove
John P. Albanese, The Bronx
Marcelle T. Bernard, The Bronx
Alan L. Goldberg, The Bronx
Isaiah Gross, The Bronx
Charles M. Kapp, The Bronx
Frank LaGattuta, The Bronx
Francis J. Loperfido, The Bronx
Milton M. Lowy, The Bronx
Joseph C. Polifrone, The Bronx
Alvin D. Yasuna, The Bronx
Saul Zucker, The Bronx

Broome (3)
Sterling W. Boyd, Binghamton
John A. Kalb, Endicott
John F. Spring, Binghamton

Cattaraugus (1)
Francis M. Bohan, Olean

Cayuga (1)
Frank T. Moran, Auburn

Chautauqua (2)
Lewis Foster Kibler, Jamestown
Herbert A. Laughlin, Westfield

Chemung (2)
R. Scott Howland, Elmira
Henry B. Marshall, Elmira

Chenango (1)
Thomas M. Flanagan, Norwich

Clinton (1)
George I. Starr, Champlain

Columbia (1)
Rosewell D. Shaw, Stottville

Cortland (1)

Delaware (1)
Thomas E. Lavell, Jr., Walton

Dutchess (3)
Richard D. H. Flaherty, Poughkeepsie
James K. Keeley, Poughkeepsie
Frank C. Starpoli, Poughkeepsie

Erie (9)
Guy S. Alfano, Buffalo
Carmelo S. Armenia, Kenmore
Charles D. Bauer, Buffalo
Martin J. Downey, Jr., Buffalo
Kenneth H. Eckhert, Buffalo
Herbert E. Joyce, Buffalo
James R. Nunn, Buffalo
Charles E. Wiles, Buffalo
Walter T. Zimdahl, Buffalo

Essex (1)
George G. Hart, Lake Placid

Franklin (1)
Alfred A. Hartmann, Malone

Fulton (1)
Armand J. D'Errico, Gloversville

Genesee (1)
Alfred L. George, Batavia

Greene (1)
Edwin G. Mulbury, Windham

Herkimer (1)
Harold T. Golden, Herkimer

Jefferson (1)
Thomas P. Hamilton, Jr., Watertown

Kings (23)
Lawrence Ames, Brooklyn
Norman S. Blackman, Brooklyn
Matthew Brody, Brooklyn
Philip J. Cantor, Brooklyn
John J. Flynn, Brooklyn
Joseph R. Fontanetta, Brooklyn
Vincent J. Geraci, Brooklyn
Alfred P. Ingegno, Brooklyn
David Kershner, Brooklyn
Vincent A. Lacovara, Brooklyn
Adrian C. Lamos, Brooklyn
David R. Levine, Brooklyn
George Liberman, Brooklyn
Harry S. Lichtman, Brooklyn
A. W. Martin Marino, Jr., Brooklyn
Martin Markowitz, Brooklyn
Bentley D. Merrim, Brooklyn
Ralph M. Schwartz, Brooklyn
Bernard Seligman, Brooklyn
Milton B. Spiegel, Brooklyn
Stanley Stark, Brooklyn
Leo J. Swirsky, Brooklyn
Vincent J. Tesoriero, Brooklyn

Lewis (1)
Louis A. Avallone, Lowville

Livingston (1)
John W. Stoll, Dansville

Madison (1)
Felix Ottaviano, Canastota

Monroe (6)
Gerald L. Glaser, Rochester
Eli A. Leven, Rochester
John H. Morton, Rochester
Ralph C. Parker, Jr., Rochester
Charles D. Sherman, Jr., Rochester
Robert C. Webster, Webster

Montgomery (1)

Nassau (12)
John A. Billows, Hempstead
Clement J. Boccalini, Floral Park

Jeff J. Coletti, Old Westbury
Ray S. Crampton, Garden City
Samuel Cytryn, Levittown
Sears E. Edwards, Garden City
Leo Fishel, Freeport
Abraham W. Freireich, Malverne
John P. Glaubitz, Bethpage
Robert P. Jessup, Syosset
Joseph H. Kinnaman, Mineola
Perry R. Mandel, Garden City

New York (25)
Seyton G. Bentham, New York City
Edgar P. Berry, New York City
Edward A. Burkhardt, New York City
George D. Cannon, New York City
Irwin J. Cohen, New York City
George S. Craft, New York City
Gerald D. Dorman, New York City
Lawrence Essenson, New York City
John A. Finkbeiner, New York City
Keith O. Guthrie, Jr., New York City
Robert E. Kaufman, New York City
W. Graham Knox, New York City
John A. Lawler, The Bronx
Barbara Lipton, New York City
Albert S. Lyons, New York City
William F. Mitty, Jr., New York City
James R. Nealon, New York City
Stephen Nordlicht, New York City
Richard N. Pierson, Jr., New York City
Oma H. Price, New York City
William B. Rawls, New York City
George M. Saypol, New York City
Mary H. Spalding, New York City
Clifford L. Spingarn, New York City
Meyer Texon, New York City

Niagara (2)
Glenn E. Jones, Lewiston
William C. Stein, Jr., Lockport

Oneida (3)
Clarke T. Case, Utica
Robert H. Cross, New Hartford
Robert B. Wallace, Utica

Onondaga (5)
Robert B. Bryant, Syracuse
Bruce E. Chamberlain, Syracuse
Robert J. Collins, Syracuse
Charles A. Gwynn, Syracuse
Robert E. Westlake, Syracuse

Ontario (2)
Robert M. Price, Clifton Springs
Philip M. Standish, Canandaigua

Orange (3)
William S. Montgomery, Newburgh
Harold Sobel, Middletown
Orin A. Wahl, Newburgh

Orleans (1)
Edward A. Barrett, Albion

Oswego (1)
Marcus A. Wuerschmidt, Oswego

Otsego (1)
Rodman D. Carter, Cooperstown

Putnam (1)
Garrett W. Vink, Carmel

Queens (16)
Alfred A. Angrist, Beechhurst
Sol Axelrad, Woodhaven
Lester J. Candela, Great Neck
Franz L. Ebstein, Forest Hills
Murray Elkins, Howard Beach
Harry H. Epstein, Jamaica
John L. Finnegan, Flushing
Irving G. Frohman, Rockaway Park
Jacob Savin Garber, Jamaica
Arthur Gordon, Woodside
Edith Gutmann, Flushing
Norton M. Luger, Fresh Meadows
Victor H. Raisman, Kew Gardens
Ralph E. Schlossman, South Ozone Park
Lester R. Tuchman, New York City
William E. F. Werner, Rockaway Park

Rensselaer (2)
John J. Noonan, Troy
Thomas D. Pemrick, Troy

Richmond (3)
Albert B. Accettola, Staten Island
William A. Schwarz, Staten Island
Joseph F. Shanaphy, Staten Island

Rockland (3)
Burton Allyn, Spring Valley
Frank E. Ciancimino, Bardonia
Lionel Zemek, New City

St. Lawrence (1)
Maurice J. Elder, Massena

Saratoga (1)

Schenectady (3)
John L. Clowe, Schenectady
Milton F. Gipstein, Schenectady
Stephen J. Grey, Schenectady

Schoharie (1)
Ward L. Oliver, Cobleskill

Schuyler (1)
Joseph Y. Roberts, Watkins Glen

Seneca (1)
David L. Koch, Waterloo

Steuben (2)
Thomas S. Cotton, Hornell
Wayne C. Templer, Corning

Suffolk (7)
Daniel Friedman, Bay Shore
John G. Hansen, Greenport
James A. Holleran, East Setauket
Andrew W. Lawrence, Huntington
Phillip I. Levitan, Smithtown
William C. Porter, Jr., Huntington
Milton Rosenberg, Patchogue

Sullivan (1)
Sirkka Elisabeth Vuornos, Liberty

Tioga (1)
Keun H. Park, Waverly

Tompkins (2)
Stephen W. Blatchly, Groton
George G. McCauley, Ithaca

Ulster (2)
Milton M. Grover, Jr., Kingston
Frederic W. Holcomb, Jr., Kingston

Warren (1)
Walter F. Harrison, Jr., Glens Falls

Washington (1)
John E. Glennon, Granville

Wayne (1)
James M. Flanagan, Newark

Westchester (8)
William P. Clark, Tuckahoe
Katharine L. Friedmann, Ardsley
Reid R. Heffner, New Rochelle
Russell C. Johnson, White Plains
Allison B. Landolt, Bronxville
Warren W. Leeds, Yonkers
Vincent James Manzella, Tarrytown
Robert A. Mayers, Port Chester

Wyoming (1)
Paul A. Burgeson, Warsaw

Yates (1)
William G. Roberts, Penn Yan

1972 HOUSE OF DELEGATES

Reference Committees

Credentials
Joseph F. Shanaphy, Richmond, *Chairman*
Edward A. Barrett, Orleans
Jeff J. Coletti, Nassau
Walter F. Harrison, Jr., Warren
Oma H. Price, New York

Reports of Officers
- *President*
- *President-Elect*
- *Secretary*
- *Treasurer*
- *Executive Vice-President*
- *Board of Trustees*
- *Budget and Finance*
- *Our Building*

James R. Nunn, Erie, *Chairman*
Thomas P. Hamilton, Jr., Jefferson
Harry S. Lichtman, Kings
Irving G. Manning, Suffolk
Thomas D. Pemrick, Rensselaer

Medical Services
- *Commission on Medical Services*
  - *Economics*
  - *Medical Care Insurance*
  - *Occupational Health*
  - *Workmen's Compensation*
- *Policy and Negotiating, on Government Supported Health Plans*
  - *Interspecialty*
  - *Universal Health Insurance*

Daniel Friedman, Suffolk, *Chairman*
Marcelle T. Bernard, The Bronx
Ralph E. Schlossman, Queens
John F. Spring, Broome
Francis A. Stephens, Albany

Standards of Medical Care
- *Commission on Standards of Medical Care*
  - *Ethics*
  - *Hospital and Professional Relations*
    - *Government Health Centers*
  - *Hospital-Based Physicians*
  - *Medical Review*
  - *Nursing and Allied Health Professions*
- *Foundations*
- *Peer Review Mechanisms*

James R. Nealon, New York, *Chairman*
Guy S. Alfano, Erie
James K. Keeley, Dutchess
Milton M. Grover, Jr., Ulster
Perry R. Mandel, Nassau

Public Health and Education
- *Commission on Public Health and Education*
  - *Accident and Injury Prevention*
  - *Aging and Nursing Homes*
  - *Alcoholism and Drug Abuse*
  - *Audio-Visual Aids*

Cancer
Cardiovascular Disease
Chronic Pulmonary Diseases
Continuing (Postgraduate) Education
Data Processing in Medicine
Disaster Medical Care
Environmental Quality
Forensic Medicine
General Practice
Health Care Technology
Health Manpower
Maternal and Child Welfare
Medical Aspects of Sports
Mental Health
Metabolic Diseases
Physical Medicine and Rehabilitation
Preventive Medicine
Rural Medical Service
School Health
Abortion
Liaison with Deans of Medical Schools and Directors of Regional Programs

Samuel H. Madell, New York, *Chairman*
Katharine L. Friedmann, Westchester
Stephen J. Grey, Schenectady
Milton Rosenberg, Suffolk
Victor J. Tofany, Monroe

Scientific Activities and Publications

Journal
What Goes On
Archives
Prize Essays
Convention
Physician's Placement
District Branches
Ad Hoc, To Evaluate the Status of the ***New York State Journal of Medicine*** *(Including the Problem of a New Editor)*

Robert B. Wallace, Oneida, *Chairman*
Thomas M. Flanagan, Chenango
John A. Finkbeiner, New York
Martin Markowitz, Kings
Ralph C. Parker, Jr., Monroe

Public and Professional Affairs

Commission on Public and Professional Affairs
Federal Legislation
State Legislation
Public Relations
Education Law Revision
Advisory to the New York State Medical Assistants Association

Alfred H. George, Bataula, *Chairman*
Joseph R. Fontanetta, Kings
Clarke T. Case, Oneida
Frederic W. Holcomb, Jr., Ulster
Herbert E. Joyce, Erie

Organization, Policies, and Legal Matters

Professional Medical Liability Insurance and Defense Board
Legal Counsel
Judicial Council
Constitution and Bylaws
New York Delegation to AMA
Research and Planning
Ad Hoc, To Study Participation of Medical Students in MSSY
Ad Hoc, To Study Professional Medical Liability Insurance
Ad Hoc, To Meet with New York State Podiatry Society

Charles D. Sherman, Jr., Monroe, *Chairman*
Jason K. Moyer, Broome
Francis J. Loperfido, The Bronx
Albert S. Lyons, New York
M. Theodore Tanenhaus, Kings

Sergeants-At-Arms

Armand J. D'Errico, Fulton, *Chairman*
Irwin Felsen, Allegany
John A. Kalb, Broome
Philip Miles Standish, Ontario
Garret W. Vink, Putnam

Tellers

Vincent J. Manzella, Westchester, *Chairman*
Maurice J. Elder, St. Lawrence
William C. Stein, Jr., Niagara
Robert C. Webster, Monroe

Nominating Committee

To the House of Delegates, Gentlemen:

In accordance with Chapter XI, Section 4, of the Bylaws of the Medical Society of the State of New York, the Nominating Committee met at the Society's headquarters, 420 Lakeville Road, Lake Success, New York, on Wednesday, December 8, 1971, at 4:30 P.M.

Present were the following:
First District—**Milton Helpern, M.D.,** New York
Second District—**John P. Glaubitz, M.D.,** Nassau
Third District—**G. Rehmi Denton, M.D.,** Albany
Fourth District—**Daniel F. O'Keeffe, M.D.,** Warren
Fifth District—**John A. Root, M.D.,** Onondaga*
Sixth District—**C. Stewart Wallace, M.D.,** Tompkins
Seventh District—**Joseph J. Kaufman, M.D.,** Wayne
Eighth District—**Walter Scott Walls, M.D.,** Erie, *Chairman*
Ninth District—**Allison B. Landolt, M.D.,** Westchester
Member-At-Large—**Vincent J. Tesoriero, M.D.,** Kings
Member-At-Large—**Saul Zucker, M.D.,** Bronx

* Serving for Bruce E. Chamberlain, M.D., Onondaga, who was unable to attend.

After careful consideration of the recommendations submitted by the district branches, county societies, and sections, in response to a memorandum of September 6, 1971, and nominations from the floor, your committee respectfully nominates the following candidates for election on February 17, 1971:

President—**Edward Siegel, M.D.,** Clinton
President-Elect—**Thomas F. McCarthy, M.D.,** Bronx
Vice-President—**Thomas S. Bumbalo, M.D.,** Erie
Secretary—**Carl Goldmark, Jr., M.D.,** New York
Assistant Secretary—**Joseph G. Zimring, M.D.,** Nassau
Treasurer—**Albert M. Schwartz, M.D.,** New York
Assistant Treasurer—**Mary H. Spalding, M.D.,** New York
Speaker—**George T. C. Way, M.D.,** Dutchess
Vice-Speaker—**Samuel Wagreich, M.D.,** Bronx

Trustee (for five years)—**James M. Blake, M.D.,** Schenectady
Trustee (for two years to fill the unexpired term of Waring Willis, M.D., deceased)—
C. Stewart Wallace, M.D., Tompkins

Councilors (four for three years)—**Lynn R. Callin, M.D.,** Monroe
Richard D. Eberle, M.D., Onondaga
Warren A. Lapp, M.D., Kings
Keith O. Guthrie, Jr., M.D., New York

Delegates to the American Medical Association (ten delegates and ten alternates for two years commencing January 1, 1973):

Edgar P. Berry, M.D., New York
Thomas S. Bumbalo, M.D., Erie
Lynn R. Callin, M.D., Monroe
Bruce E. Chamberlain, M.D., Onondaga
John L. Clowe, M.D., Schenectady
Arthur H. Diedrick, M.D., Westchester
Richard D. Eberle, M.D., Onondaga
Henry I. Fineberg, M.D., Queens
Thomas M. Flanagan, M.D., Chenango
Abraham W. Freireich, M.D., Nassau
Carl Goldmark, Jr., M.D., New York
Walter T. Heldmann, M.D., Richmond
Milton Helpern, M.D., New York
Joseph J. Kaufman, M.D., Wayne
David Kershner, M.D., Kings
George Liberman, M.D., Kings
John Edward Lowry, M.D., Queens
James A. Moore, M.D., Albany
Samuel Wagreich, M.D., Bronx
Walter Scott Walls, M.D., Erie

The ten nominees receiving the largest number of votes will be delegates; the second ten will be alternates.

Respectfully submitted,
Walter Scott Walls, M.D., Chairman

166th ANNUAL CONVENTION

Medical Society of the State of New York

FEBRUARY 13 through 17, 1972

The Americana, New York City

SUNDAY THROUGH WEDNESDAY

SCIENTIFIC PROGRAM

SCIENTIFIC EXHIBITS

SCIENTIFIC MOTION PICTURES

TECHNICAL EXHIBITS

SUNDAY THROUGH THURSDAY

HOUSE OF DELEGATES

WEDNESDAY EVENING

PRESIDENT'S DINNER

House Committee on Constitution and Bylaws

To the House of Delegates, Gentlemen:

The House Committee on Constitution and Bylaws consists of the following members:

Carl Goldmark, Jr., M.D., *Chairman*	New York
George L. Collins, Jr., M.D.	Erie
Gerald L. Glaser, M.D.	Monroe
Milton J. Greenberg, M.D.	Washington
Swen L. Larson, M.D.	Chemung
Francis A. Stephens, M.D.	Albany
George T. C. Way, M. D., *ex officio*	Dutchess

The House Committee on Constitution and Bylaws has held three meetings during the past year, on August 18, October 6, and November 18. The committee considered the proposed revisions of the Society's Constitution and Bylaws and the *Principles of Professional Conduct* and the twelve resolutions referred to it by the 1971 House of Delegates, and reached the following conclusions and recommendations:

71-20. Amendment to the Constitution and Bylaws Article IX, Funds, First Paragraph

Introduced by Medical Society of the County of Schenectady

WHEREAS, The assessment of monies, and the levying of dues is the prerogative and duty of the entire House of Delegates of the Medical Society of the State of New York; and

WHEREAS, Any other method denies each member his right to be represented in determining the fiscal requirements of the Medical Society of the State of New York; and

WHEREAS, The present Constitution of the Medical Society of the State of New York now allows the Council the privilege of assessing its members when the House of Delegates is not in session; therefore be it

Resolved, That the first paragraph of Article IX of the Constitution and Bylaws of the Medical Society of the State of New York which reads as follows: "Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session. The dues or assessments of each junior member shall be one-third the amount levied on each active member." be amended by deleting the words "or by the Council when the said House of Delegates shall not be in session."

This paragraph would then read as follows: "Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates. The dues or assessments of each junior member shall be one-third the amount levied on each active member."

71-21. Amendment to Constitution to Limit Assessment by Action of the Council

Introduced by Medical Society of the County of Chautauqua

WHEREAS, The Constitution of the Medical Society of the State of New York as presently drawn up gives the Council fiscal powers which are greater than is thought prudent by a majority of the membership of the Medical Society of the State of New York; therefore be it

Resolved, That Article IX, paragraph 1, of the Constitution of the Medical Society of the State of New York be amended by placing a period after the word "delegates" in line 5, deleting the phrase "or by the Council when the said House of Delegates is not in session," and inserting thereafter the following sentence: "When the House of Delegates is not in session, the Council may raise funds by levying assessments in an amount not to exceed $10.00 (ten dollars) per member per year."

Article IX, paragraph 1 would then read: "Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates. When the House of Delegates is not in session, the Council may raise funds by levying assessments in an amount not to exceed $10.00 (ten dollars) per member, per year. The dues or assessments of each junior member shall be one-third the amount levied on each active member."

71-46. Amendment of Constitution and Bylaws so that Approval of the House of Delegates or Component Societies is Required for an Assessment

Introduced by Medical Society of the County of Schoharie

Resolved, That the Constitution and/or Bylaws of the Medical Society of the State of New York be amended or revised to require the approval of the House of Delegates, or the component county medical societies, for an assessment on the members of the Medical Society of the State of New York.

71-86. Amendment to Article IX of the Constitution

Introduced by Medical Society of the County of Warren

WHEREAS, Article IX of the Constitution of the Medical Society of the State of New York provides for unlimited raising of "funds in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session"; and

WHEREAS, The assessment for the purpose of completing a building already under construction is probably not an emergency financial situation; and

WHEREAS, The State Medical Society holds a lever for coercing its members to maintain membership in this Medical Society because of its malpractice insurance program; therefore be it

Resolved, That article IX of the Constitution of the Medical Society of the State of New York be amended as follows: Delete the following phrase, "funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session."

Resolutions 71-20, 71-21, 71-46, and 71-86 were considered together since they all pertain to the raising of funds. *For the following reasons, your committee recommends that these resolutions not be adopted.*

1. The restricting of power to levy funds to the House of Delegates, thus taking this power away from the Council, would necessitate convening the House for assessments. This procedure would be expensive, time-consuming, and cumbersome.

2. The recent action taken by the Council in levying a special assessment was taken after extensive research and study and was in the best interest of the members of the Society. The basic consideration was not to saddle future generations of physicians by spreading out the assessment over a period of years.

71–22. Osteopathic Physicians in Medical Society of the State of New York

Introduced by Medical Society of the County of Erie

> WHEREAS, The American Medical Association has amended its Bylaws so that qualified doctors of osteopathy may be admitted to active membership in that organization; and
>
> WHEREAS, The action of the American Medical Association is a necessary first step toward the desirable objective of ending the coexistence of osteopathy as a separate discipline of medical education and for the delivery of medical services; and
>
> WHEREAS, A number of state medical societies have amended their constitutions so that doctors of osteopathy who have been given unlimited licenses to practice medicine may apply for full active membership in such state medical societies; therefore be it
>
> *Resolved,* That this House of Delegates instruct the House Committee on Constitution and Bylaws to prepare appropriate amendments to the bylaws to permit qualified doctors of osteopathy to be admitted to membership in the Medical Society of the State of New York and that such amendments be presented to this House for action at the 1972 annual meeting.

Resolution 71–22 concerns osteopathic physicians in the Medical Society of the State of New York.

It was the feeling of the committee that, since this resolution was referred to it without direct action of the House on the *Resolved* clause, which states in part that the House of Delegates *instruct* the House Committee on Constitution and Bylaws to prepare appropriate amendments to permit qualified doctors of osteopathy to be admitted to membership, *the committee should take no action on this resolution.*

71–53. Change in Age Requirement for Life Membership

Introduced by Medical Society of the County of Schenectady

> WHEREAS, It has become increasingly evident that physicians in the Medical Society of the State of New York are leaving practice at an earlier age; and
>
> WHEREAS, The increasing dues requirements are becoming more difficult for retired physicians to meet; therefore be it
>
> *Resolved,* That Chapter I, Section 6, of the Constitution and Bylaws of the Medical Society of the State of New York be changed by deleting the words "seventy years" and substituting the words "sixty-five years," so that Chapter I, Section 6, shall then read; "An active member in good standing on reaching the age of sixty-five, or who is permanently disabled . . . ."

Resolution 71–53 calls for a change in the age requirement (from seventy years to sixty-five years) for Life Membership. In view of the facts that the American Medical Association's limit for life membership is age seventy, adoption of the lower age would result in loss of income and that new members are joining the Society at an older age than in the past, *the committee recommends that resolution 71–53 not be adopted.*

71–56. Life Membership

Introduced by Medical Society of the County of Kings

> WHEREAS, During the past year, the Council of the Medical Society of the State of New York approved 213 members for remission of dues and has elected a total of 2,791 to Life Membership through the year 1970, constituting almost 12 per cent of the total membership of 27,047, and this total is steadily increasing; and
>
> WHEREAS, Statistics show that the membership of the Medical Society of the State of New York is not increasing as gains are balanced by losses due to deaths, resignations, and nonpayment of dues; and
>
> WHEREAS, Advertising sales in the ***New York State Journal of Medicine*** declined by $3,679 for the first ten months of 1970 and technical exhibitors are cutting back because of austerity programs with a resultant monetary loss to the Society; and
>
> WHEREAS, Because of rising building costs the Council found it necessary to assess each member $75; and
>
> WHEREAS, The Internal Revenue Service ruling that all income unrelated to the purposes of an exempt organization will now be taxable and may create an additional liability to the Medical Society of the State of New York of about $25,000 on 1970 interest and dividend earnings alone; and
>
> WHEREAS, In the 1970 House of Delegates' report, the executive vice-president states, "I am compelled to remind you that we are operating on a 'tight budget' . . . . We must confine our expenses to necessities only"; therefore be it
>
> *Resolved,* That Chapter I, Section 6, of the Bylaws of the Medical Society of the State of New York be amended as follows: "An active member in good standing for ten years or more, who becomes permanently disabled or who has reached the age of seventy years and is retired from active practice, may apply for Life Membership . . . ."

Resolution 71–56 pertains to life membership and was considered in two parts. The first part concerns disability and the second part concerns age seventy.

The committee voted to approve life membership for an active member in good standing for five years or more who becomes permanently disabled, since the committee felt that a person who is disabled permanently should not be required to be a member for ten years; the disability should be the controlling factor.

The committee disapproved Life Membership for physicians who have reached the age of seventy and are retired from active practice, since it felt that the addition of retirement is not justified.

The committee, therefore, recommends the adoption of the following substitute resolution:

> *Resolved,* That Chapter I, Section 6 of the Bylaws of the Medical Society of the State of New York be amended to read as follows: "An active member in

good standing, on reaching the age of seventy years, or an active member in good standing for five years or more who is permanently disabled, may apply for life membership.

71-62. Medical School Representation in the House of Delegates of the Medical Society of the State of New York

Introduced by Medical Society of the County of Monroe

WHEREAS, There is a growing need for all the major components of the medical profession to work together to respond to an increasing variety of outside influence in the practice of medicine as well as to initiate constructive steps forward; and

WHEREAS, The previous close relationship between the "academic community" and the practicing physician, which has deteriorated in the last few decades, needs to be strengthened again for the benefit of both groups and the general public; and

WHEREAS, One means of increasing rapport between medical schools and organized medicine is to involve official representatives of the medical schools in the deliberations of the governing body of the Medical Society of the State of New York; therefore be it

Resolved, That the Medical Society of the State of New York ask each medical school to appoint one official representative to serve as a delegate, with full privileges, in the House of Delegates of the Medical Society of the State of New York.

Resolution 71-62 concerns medical school representation in the House of Delegates of the Medical Society of the State of New York. The committee voted to amend the *Resolved* portion of this resolution by the addition of the following: "Provided that such delegate fulfills the requirements necessary to be a delegate to the House of Delegates of the Medical Society of the State of New York."

It was the opinion of the committee that a delegate should not be a nonmember of the Society, which would be possible under the original wording of this resolution; and that to retain the increased interest of medical students in organized medicine, something must be done to give the schools a more active role in the government of the State Medical Society. This seems to be the most feasible approach at the present time.

The *Resolved* portion would then read as follows:

Resolved, That the Medical Society of the State of New York ask each medical school to appoint one official representative to serve as a delegate, with full privileges, in the House of Delegates of the Medical Society of the State of New York, provided that such delegate fulfills the requirements necessary to be a delegate to the House of Delegates of the Medical Society of the State of New York.

The committee recommends the adoption of resolution 71-62 as amended.

71-66. Election of the Council of the Medical Society of the State of New York by Districts

Introduced by Onondaga County Medical Society

WHEREAS, More direct responsibility and representation to the Council of the Medical Society of the State of New York is important; and

WHEREAS, This would improve two-way communication and responsiveness between the State and county medical societies; and

WHEREAS, This would strengthen and improve the importance of the individual districts of the Medical Society of the State of New York; therefore be it

Resolved, That the members of the Council of the Medical Society of the State of New York be elected by each district; and be it further

Resolved, That the Bylaws of the Medical Society of the State of New York be changed as follows:

1. Chapter III, Section 1, delete the word "councilors."

2. Chapter III, Section 2, paragraph 3, delete the paragraph and substitute the following: "Councilors shall be elected by each district branch on the following basis: three councilors shall be elected annually for a term of three years."

3. Chapter XIII, Section 1, insert the words, "a Councilor to the Medical Society of the State of New York for a term of three years," between the words "a president for two years" and "a district delegate" so that Section 1 shall then read as follows: "Each district branch shall elect a president for two years, a councilor to the Medical Society of the State of New York for a term of three years, and a district delegate to the House of Delegates for two years, but with the approval of the Council a district branch may elect a president for one year."

Resolution 71-66 concerns election of members of the council by districts.

Since the number of members vary greatly from one district to another, with the possibility that there would be 600 in one and 6,000 in another, and there would not be proportional representation, the *committee recommends that resolution 71-66 not be adopted.*

71-67. Election of American Medical Association Delegates by District Branch

Introduced by Onondaga County Medical Society

WHEREAS, It is necessary to restore more direct responsibility of American Medical Association Delegates to the area and region they serve; and

WHEREAS, After the abolishment of mandatory American Medical Association membership not all of the members of the House of Delegates of the Medical Society of the State of New York will necessarily be members of the American Medical Association; and

WHEREAS, The problems which concern the American Medical Association differ in various areas of the State; therefore be it

Resolved, That the Delegates from the Medical Society of the State of New York to the American Medical Association's House of Delegates be elected from and by each district branch in direct relation to the number of physicians in that district branch with a maximum of five allowable Delegates for any one district branch; and be it further

Resolved, That the Constitution and Bylaws of the Medical Society of the State of New York be changed as follows:

1. Chapter III, Section 1, be changed to read: "The officers, councilors, and trustees of the Society and the "at-large" delegates to the American Medical Association shall be nominated and elected as the first business of the last scheduled session of the annual meeting of the House of Delegates. A member of the Society who is in arrears for county dues or State Society dues or assessments shall not be eligible for any

office or entitled to vote for any officer, councilor, trustee, or delegates."

2. Chapter III, Section 6, be deleted and replaced by the following: "The following method shall govern the election of delegates and alternates according to the following formula based on American Medical Association membership in the respective district branch:

1 to 1,000 members	one delegate
1,000 to 3,000 members	two delegates
3,000 to 5,000 members	three delegates
5,000 to 7,500 members	four delegates
7,500 to 10,000 members	five delegates

"There shall then be a number of delegates 'at-large,' this number to be determined by the number of delegates remaining to the Medical Society of the State of New York following the district branch election of American Medical Association delegates. These 'at-large' delegates shall be elected at the appropriate annual meeting of the House of Delegates of the Medical Society of the State of New York.

"Nominations shall be made for not less than double the full number of delegates to be elected, and the delegates shall be declared elected in the order of the highest number of votes cast until the allotted number shall have been chosen. A corresponding number in the highest order of votes cast shall be declared alternate delegates.

"When the full quota of elected delegates or alternate delegates is not available for attendance at the meeting, the president shall appoint and certify a sufficient number to complete the quota."

Resolution 71-67 concerns election of AMA delegates by District Branch.

Because of the following reasons, *the committee recommends that resolution 71-67 not be adopted:*

1. Delegates to the AMA represent the State and not the districts;
2. Delegates should be elected by the State as a whole and not by parts thereof;
3. The number of members in the districts vary greatly, as previously indicated, so that one district may have 600 members and another 6,000.

71-77. Student American Medical Association Participation in State Medical Society Activities

Introduced by Charles D. Sherman, Jr., M.D., as an individual

WHEREAS, Today's medical students have the maturity and interest necessary to participate with members of organized medicine as they wrestle with an increasing variety of problems in our changing health scene; and

WHEREAS, The American Medical Association and many state societies are already involving students in their activities and finding such efforts to be worthwhile; and

WHEREAS, Our own students in New York State have expressed the desire to work within organized medicine; and

WHEREAS, We need to reverse the trend toward fragmentation of the profession and involve all elements of our profession in a more united voice in response to outside thrusts and initiation of needed activities in the health field, therefore be it

Resolved, That the Medical Society of the State of New York form a section composed of student representatives from each medical school who shall meet and deliberate as a "special section" and be allowed to elect two delegates to the House of Delegates with full voting privileges; and be it further

Resolved, That initially two representatives from each chapter of the Student American Medical Association be elected to this "special section" by the chapters involved.

The report of the Special Committee to Study the Participation of Medical Students in the Medical Society of The State of New York, dated September 29, 1971, concerning resolution 71-77 was discussed.

The Committee on Constitution and Bylaws voted to amend the first *Resolved* as follows:

Resolved, That the Medical Society of the State of New York form a session composed of two student representatives selected by each medical school in New York State, and whose selection shall be certified by the dean of the medical school as being representative of that school. After meeting in two successive years as sessions, they may then form a section in accordance with the Bylaws of the Medical Society of the State of New York, and provide for a delegate and an alternate to the House of Delegates with voice and vote; and to delete the second *Resolved.*

The committee on Constitution and Bylaws recommends the adoption of the revised Constitution and Bylaws.

71-34. Revision of the Constitution and Bylaws of the Medical Society of the State of New York

Introduced by Edward Siegel, M.D., as an individual

WHEREAS, The House of Delegates of the Medical Society of the State of New York, at its meeting in February, 1968, approved a recommendation of the House Committee on Constitution and Bylaws that a detailed study of the Constitution and Bylaws be conducted; and

WHEREAS, The Ad Hoc Committee to Study the Constitution and Bylaws has presented in its annual report to the House, a draft of a revised Constitution; therefore be it

Resolved, That the recommended revision of the Constitution and Bylaws of the Medical Society of the State of New York by the Ad Hoc Committee to Study the Constitution and Bylaws, as presented in its annual report, be referred to the House Committee on Constitution and Bylaws.

Resolution 71-34 states that the recommended revision of the Constitution and Bylaws of the Medical Society of the State of New York, prepared by the Ad Hoc Committee to Study the Constitution and Bylaws, as presented in its annual report, be referred to the House Committee on Constitution and Bylaws. This resolution has been acted on by the committee's overall consideration of the subject. This resolution was construed as being laid over for a year and should be acted on by the 1972 House of Delegates.

Working with the revision prepared last year by the ad hoc committee and a complete history of our present Constitution and Bylaws prepared by the Division of Research and Planning, your committee submits for your consideration a proposed revision of our present constitution and bylaws. This revision presents a streamlined version of our organization, eliminates many discrepancies, recognizes actual practices and procedures which have developed over the years, and includes in one single document, called the Bylaws, what we feel is a practical, workable, and efficient framework for the State Society.

To facilitate your study of the proposed revision, Tables I, II, and III list the substantive new material, substitutions, and deletions, with references to our present constitution and bylaws and to the proposed revision.

Much thought has gone into this proposed revision in an attempt to clarify all details. You will note some major changes, for example, the upgrading of the office of vice-president, the requirement for New York State licensure for membership, the provision for action on life membership applications, the requirement that officers, councilors, and trustees shall practice or maintain a residence or office in the State of New York, and recognition of our annual convention with its various parts. The annual meeting of the State Medical Society has been transferred to a morning meeting to include the introduction of the new president.

Many minor changes are included and are indicated in italics in the proposed revision; substantive changes are listed in the tables.

Your committee feels that this proposed revision is a document within which our State Society can work for many years to come; we recommend its adoption by this House.

We particularly want to thank the Division of Research and Planning for the staff work which has made this proposed revision possible.

The committee on Constitution and Bylaws recommends the adoption of the revised Bylaws.

DRAFT OF PROPOSED REVISION OF BYLAWS* MEDICAL SOCIETY OF THE STATE OF NEW YORK

ARTICLE I. NAME AND PURPOSE

The name and title of the State Society shall be the Medical Society of the State of New York. The purposes of the State Society shall be: to federate into one organization the medical profession of the State of New York; to extend medical knowledge and advance the science and art of medicine; *to establish the Principles of Professional Conduct which shall be binding on the members of the State Society, the members of the component county medical societies, and the members of the component district branches, in all matters in their relation to each other and to the public; to enhance the delivery of medical care of high quality to all people in the most economical manner; to promote the betterment of community* health; and to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State.

ARTICLE II. MEMBERSHIP

SECTION 1. CLASSES

The membership in the State Society shall be divided into four classes: (a) active, (b) junior, (c) life, and (d) honorary.

Active and junior membership shall be limited to graduates of recognized medical schools who have completed not less than four satisfactory courses of at least eight months each in a medical school in the United States of America or Canada registered as maintaining at the time a standard satisfactory to the medical licensing authorities of the State of New York, or in a medical school in a foreign country maintaining a standard not lower than that prescribed for medical schools in this State; *and who are licensed by the State of New York.*[†]

Junior members shall be those members who have been graduated from medical college not more than five calendar years, not counting *active service in the armed forces of the* United States or *in the* United States Public Health Service, or who have not completed their continuous residency training, and *who are* licensed by the State of New York. In no case may junior membership continue more than seven years after the date of graduation from medical school.

The active and junior members shall be all active and junior members in good standing of the component county medical societies. A copy of the roster of such members, certified to be correct by the respective secretary of each component county medical society, shall be evidence of the right of the members whose names appear therein to membership in the State Society.

Junior members may become active members at any time during the period of allocated time deferment by paying the dues and assessments to their respective component county medical societies and to the State Society.

A junior member shall automatically become an active member of his component county medical society and the State Society on the expiration of the allocated time and the payment of the current active membership dues and assessments of his component county medical society and the State Society.

An active member in good standing, on reaching the age of seventy years, or who is permanently disabled, may apply for life membership. He shall apply for such life membership to the component county medical society of which he is a member. His application shall be governed by the constitution and bylaws of the component county medical society relative to active membership.

His application shall be signed by the president and the secretary of the component county medical society of which he is a member and sent to the secretary of the State Society for presentation to the Council *for approval.*

The honorary members of the State Society shall be such distinguished physicians residing outside the State of New York as may be elected. Nominations for honorary membership shall be endorsed by three members of the State Society and forwarded to the secretary of the State Society for presentation to the House of Delegates. A two-thirds vote of the House of Delegates present and voting shall be necessary for election to honorary membership.

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[*] Material in italics is new.

[†] *Those physicians who are not licensed by the State of New York but who have been elected to membership in their component county medical society and in the State Society prior to the adoption of this section shall not lose their membership for lack of licensure.*

SECTION 2. PRIVILEGES

Active members vote and hold office in the State Society.

They shall be entitled to receive the ***New York State Journal of Medicine,*** the *News of New York,* and the *Medical Directory of New York State.*

They shall be entitled to defense by the counsel of the State Society in actions concerning professional medical liability, *subject to the rules and regulations of the State Society.*

Junior members shall be privileged to attend all meetings of their component county medical societies, where they shall have voice in all discussions but no vote. They shall be entitled to receive the ***New York State Journal of Medicine*** and the *News of New York* but not the *Medical Directory of New York State. They shall be entitled to defense by the counsel of the State Society in actions concerning professional medical liability, subject to the rules and regulations of the State Society.*

Life members shall not be subject to *State Society* dues or assessments but shall be accorded all the rights and privileges of active membership. *They shall be entitled to receive the **New York State Journal of Medicine** and the News of New York, but the Medical Directory of New York State only on request.*

Honorary members shall be entitled to the privilege of attending the meetings of the State Society.

For a member elected after October 1, all rights and privileges of membership shall date from the time of election.

State Society dues and assessments of a member elected after October 1 shall be credited to the succeeding year.

A member of one component county medical society shall not be permitted to transfer to membership in another component county medical society until he has paid the current annual dues and assessments to the former component county medical society, and he has established a legal residence or practices in the county to which he desires transfer, except as provided in Article XVIII, "Component County Medical Societies," paragraph 2. The question of legal residence or locus of practice shall be verified by the component county medical society to which the member desires transfer.

Any member, except a member who is eligible and has applied for life membership, whose component county medical society and State Society dues are unpaid after May 1 of any current year *or whose assessments are unpaid by the specified time* is not in good standing and shall be deemed to be in arrears.

A member of the State Society who is in arrears for component county medical society dues or State Society dues or assessments shall not be eligible for any office or delegacy or be entitled to vote for any officer, councilor, trustee, or delegates.

A member of this State Society who has no professional medical liability insurance in force and who is in arrears shall lose his right to professional medical liability defense by counsel of the State Society for any acts on which suit may be predicated during the period of his arrearage. This last is not recoverable, even when he becomes reinstated. Immediately on payment of current dues and arrears, his right to professional medical liability defense by counsel of the State Society shall be restored from that date.

A member whose dues are unpaid after June 1 *or whose assessments are unpaid one month after the specified date* shall automatically be dropped from the rolls of membership of both his component county medical society and the State Society, without notice to such member by his component county medical society or the State Society, or without further action on the part of either the component county medical society or the State Society, and on such date he shall automatically cease to be a member of both the component county medical society and the State Society.

The secretary of the State Society shall forthwith notify the American Medical Association of said termination of membership.

A member who has been dropped from the roll of a component county medical society by reason of failure to pay dues shall not be accepted by another component county medical society except by regular transfer after reinstatement in the original component county medical society.

State Society dues of a member reinstated after October 1 shall be credited to the succeeding year, all rights and privileges of membership, however, dating from the time of reinstatement; but no member dropped for nonpayment of dues and assessments shall be reinstated until he has, in addition, paid his dues and assessments for the year in which he was dropped.

A member convicted in a court of law of a crime evidencing moral turpitude shall thereupon cease to be a member of this State Society.

A member expelled from his component county medical society or suspended from its rights and privileges shall likewise be expelled or suspended for the same period from the State Society. The right of appeal to the State Society shall not be impaired, nor shall such appeal prevent the carrying out of the judgment of the component county medical society pending such appeal. Members not in good standing or ceasing to be members of their component county medical society shall ipso facto have the same status in the State Society. The right to professional *medical* liability defense by counsel of the State Society shall terminate on expulsion, suspension, or arrearage. In the latter events, this loss of defense will continue for the period of suspension or arrearage.

ARTICLE III. HOUSE OF DELEGATES

There shall be a House of Delegates which shall be the legislative body of the State Society and shall be charged with the general management, superintendence, and control of the State Society and its affairs and shall have such general powers as may necessarily be incident thereto, except as otherwise specifically provided by the Bylaws.

SECTION 1. COMPOSITION

The House of Delegates shall be composed of: (a) duly designated delegates from the component county medical societies; (b) officers of the State Society, councilors and trustees; (c) a duly designated delegate from each district branch; (d) a *duly designated* delegate from each scientific section; (e) the Commissioner of Health of the State of New York or a deputy designated by him, provided that any representative shall be a member of the State Society; and (f) past presidents of the State Society who shall be members for life.

The number of delegates to which each component county medical society is entitled shall be determined by the following formula:

Any component county medical society, which according to the rolls of the State Society on May 1 of the previous calendar year shall have had up to 99 members, shall be entitled to 1 delegate. Any component county medical society having 100 to 199 members shall be entitled to 2 delegates. Any component county medical society having 200 to 349 members shall be entitled to 3 delegates. Any component county medical society having 350 to 499 members shall be entitled to 4 delegates. Any component county medical society having 500 to 749 members shall be entitled to 5 delegates. Any component county medical society having 750 to 999 members shall be entitled to 6 delegates. Any component county medical society having 1,000 or more members shall be entitled to at least 7 delegates and 1 additional delegate for each additional 300 members. Each component county medical society shall be entitled to designate at least 1 delegate, but no component county medical society shall be entitled to designate more than *30* delegates.

A delegate to the House of Delegates shall not be considered in good standing or entitled to vote in the House of Delegates if the component county medical society by which he was elected is in default of the payment of any dues or assessments imposed by the House of Delegates, and said component county medical society has been duly notified of such default, or if such component county medical society shall at the time be under sentence of suspension imposed by the House of Delegates, or if such delegate is not in good standing in the State Society, or in the component county medical society to which he belongs.

The term of a delegate duly designated by a component county medical society, district branch, or scientific section shall begin at the first annual meeting of the House of Delegates subsequent to his designation.

A delegate shall practice or maintain residence or an office in the State of New York. Otherwise his delegacy in the State Society shall be declared vacant.

SECTION 2. DUTIES

The House of Delegates formulates policy for the State Society. No officer, councilor, board, commission, or committee or employe shall initiate any policy or commit the State Society to any policy unless such policy has been expressly approved by the House of Delegates or by the Council.

It shall elect the officers, councilors, and trustees of the State Society and the delegates to the American Medical Association.

Credentials signed by the president and secretary shall be issued to delegates to the American Medical Association.

It shall pass on the credentials and qualifications of delegates and shall decide who are entitled to be members of the House of Delegates of the State Society.

It shall have authority and power to suspend or otherwise discipline its own members, district branches, component county medical societies, or any member of the State Society charged with special duties for and under authority of the State Society.

It shall provide for a division of the scientific work of the State Society into appropriate sections; for the organization of the district branches; for rules and regulations for its own government, and for the administration of the affairs of the State Society.

It shall provide for the issuance of charters to component county medical societies in affiliation with the State Society.

It shall have authority to appoint special committees from among members of the State Society.

SECTION 3. MEETINGS

The annual meeting of the House of Delegates shall be held at the call of the speaker *during the annual convention of the State Society.* The sessions of the House of Delegates may be adjourned from time to time as may be necessary. At least 30 days before the annual meeting of the House of Delegates, the Speaker shall announce a schedule of the adjourned sessions of the House of Delegates. This schedule may be amended by the House of Delegates during its meeting.

No new resolution shall be introduced at the last scheduled session except by a unanimous vote of the House of Delegates.

Special meetings of the House of Delegates shall be called by the Speaker on the request in writing of *25 per cent of the duly accredited delegates of the previous annual meeting of the House,* or at the request of the Council; and in case of the failure, inability, or refusal of the Speaker to act, such meetings may be called by a notice thereof subscribed *by 25 per cent of duly accredited delegates.*

The notices of the annual and special meetings of the House of Delegates shall state the date, place, hour *and items of business that will be considered.* These shall be mailed postpaid to each delegate at least seven days before such a meeting.

Publication of the notice of the annual meeting in the *official publication of the State Society* shall be considered as complying with this provision.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the *delegate* shall be deemed sufficient proof of the service on each and every *delegate* for any and all purposes.

A quorum shall consist of 100 members of the House of Delegates.

The following shall be the order of business at the sessions of the House of Delegates:

1. Calling the meeting to order
2. Invocation
3. National Anthem
4. Report of Reference Committee on Credentials
5. Report by the secretary as to the presence or absence of a quorum
6. Remarks by the speaker
7. Reading the minutes of the previous meeting by title
8. *Address* by the president
9. *Report of House Committee on Bylaws*
10. Report of the Judicial Council
11. Report of Council *commissions and committees*
12. Report of the secretary
13. Report of the treasurer
14. Report of the Board of Trustees
15. *Report of the executive vice-president*
16. Reports of district branches
17. Reports of special committees
18. Reports of reference committees
19. Elections
20. *Recess for annual meeting of the State Society*

21. Unfinished business
22. New business
23. Adjournment

This order *of business* may be altered by the speaker with the approval of the House of Delegates and may be suspended by two-thirds vote of the House.

No delegate shall speak on any question before the House of Delegates for longer than five minutes nor more than once on any subject except by the consent of a majority vote *of the House.*

As the first business of the last scheduled session of the annual meeting of the House of Delegates, the officers, councilors, and the trustees of the State Society, and the delegates to the American Medical Association shall be nominated and elected.

The rules contained in Sturgis Standard Code of Parliamentary Procedure shall govern the House of Delegates in all cases in which they are not inconsistent or in conflict with the Bylaws of the State Society or the standing or special rules of the House of Delegates.

ARTICLE IV. COUNCIL

There shall be a Council which shall exercise all the rights and duties of the House of Delegates consistent with the Bylaws of the State Society, when the House of Delegates is not in session.

SECTION 1. COMPOSITION

The Council shall be composed of the president, president-elect, vice-president, immediate past-president, secretary, assistant secretary, treasurer, assistant treasurer, speaker, vice-speaker, chairman of the Board of Trustees, and 12 councilors elected by the House of Delegates.

The trustees, the executive vice-president, the assistant executive vice-president, and *the counsel of the State Society* shall attend all meetings of the Council with voice but without vote.

Four councilors shall be elected annually by the House of Delegates, each for a term of three years. In the event of a vacancy, a councilor shall be elected *by the Council to serve until the next meeting of the House of Delegates, at which time the House of Delegates shall elect a councilor to fill the unexpired term.*

No person shall serve, consecutively, more than two terms as councilor. An unexpired term shall not be construed as a term of office.

The councilors shall assume office on election and shall hold office until their successors are duly elected and qualified.

A councilor shall practice or maintain a residence or an office in the State of New York. Otherwise his position in the State Society shall be declared vacant.

If a councilor is absent from three consecutive regular meetings of the Council without proper excuse, the Council shall declare his position vacant and elect a successor for the unexpired term.

SECTION 2. DUTIES

The Council shall take such action as is necessary to carry out the Bylaws and to give full effect to any resolution or vote of the House of Delegates.

It shall also have power to legislate as a House of Delegates, when the latter is not in session, on all matters consistent with the Bylaws.

It shall have the authority to make policy for the State Society when the House of Delegates is not in session.

The Council's resolutions and actions shall be decisive and final except that all resolutions and actions of the Council are subject to review by the House of Delegates. Its actions shall be governed by the Bylaws of the State Society and the rules and regulations of the House of Delegates.

The Council shall have power to fill any vacancy which may occur in any elective office not otherwise provided for, until the next meeting of the House of Delegates.

It shall prepare an annual budget for submission to the Board of Trustees.

The Council shall, with the approval of the Board of Trustees, appoint an executive vice-president, who shall be the chief executive officer of the State Society, to manage and direct the activities of the State Society including disbursement of its funds when duly authorized. He shall be a member of all boards, commissions, and committees with voice but without vote. The executive vice-president shall appoint an assistant executive vice-president *subject to the approval of the Council.*

The Council shall act on the applications for life membership which have been submitted by the component county medical societies. A majority vote of the Council present and voting shall be necessary for election to life membership.

The Council shall have responsibility for all publications of the State Society and their distribution. *For the purpose of required announcements, the official publication of the State Society shall be the* ***New York State Journal of Medicine.***

Special committees shall report to the Council and shall be subject to the Council unless otherwise instructed by the House of Delegates.

The Council, with the aid of the counsel of the State Society, shall examine the constitution and bylaws of component county medical societies and district branches and/or all amendments thereto which shall be submitted to the Council for approval and shall approve or disapprove of said amendments.

The duties of the Council shall include the supervision *of all commissions, committees, and activities of the State Society.*

The Council shall also keep constantly advised of the activities of and collaborate with the health and *social service* departments of the State and with hospitals, clinics, and *social service* agencies in furthering the health of the community.

Commissions and committees of the Council may include *any* member of the State Society *who* shall be appointed by the president subject to the approval of the Council.

The Council shall control all arrangements for the annual *convention* of the State Society.

SECTION 3. TRIALS FOR MALFEASANCE

The Council shall sit as a trial body for hearings on charges of malfeasance and/or nonfeasance.

Charges of malfeasance or nonfeasance preferred by a member against an officer, councilor, trustee, or member of a board, commission, or committee of the State Society shall be transmitted to the president in writing. The president shall order a trial on said charges by the Council, or a committee thereof.

Charges of malfeasance or nonfeasance preferred by a member against the president shall be transmitted in writing to the secretary of the State Society and shall *be considered by the Council with the vice-president presiding.*

The accused shall be given at least ten days' notice of such trial and of the charges against him and shall have full opportunity to defend himself, but no such officer, councilor, trustee, or member of a board, commission, or committee shall be removed or otherwise disciplined except by a *three-fourths* vote of the Council.

In case any such officer, councilor, trustee, or member of a board, commission, or committee shall be removed, he may appeal from the decision of the said Council to the House of Delegates; but, pending the determination of such appeal, he shall not exercise the functions of this office.

SECTION 4 EXECUTIVE COMMITTEE

The Council shall establish an executive committee to be composed of the president, the president-elect, *the immediate past-president,* the secretary, the treasurer, and *two* additional members of the Council appointed by the president with the approval of the Council.

This committee shall be appointed by the president immediately on his assumption of the office of president and *shall* serve *only* during his tenure as president.

The executive committee shall have the authority to take action in case of emergency arising in the interim between the meetings of the Council to protect the interests and purposes of the State Society as set forth in these Bylaws. In times of such emergency, the executive committee shall have all the powers and duties which are conferred on the Council, and it shall at all times assist the Council. Any action taken by the executive committee shall be reported in full to the Council at its next meeting.

SECTION 5. MEETINGS

The newly elected Council shall meet at the close of the annual meeting of the House of Delegates. The Council and *Executive Committee* shall meet at regular intervals at times and places that shall be fixed by the president with the approval of the Council. *Twenty-five per cent of the members* of the Council *in writing* may require the president to call a *special* meeting for such time and place as *he shall designate, within ten days of his receipt of such notice.*

The notices of the regular meetings of the Council shall state the date, place, hour, and shall be mailed postpaid to each member at least seven days before a meeting.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the Council member shall be deemed sufficient proof of the service on each and every Council member for any and all purposes.

Council members must receive at least three days' notice by letter or telegram from the State Society's office of a special meeting, which shall state the data, place, hour, *and items of business that will be considered.*

A quorum shall consist of 14 members of the Council.

The following shall be the order of business at meetings of the Council, which may be altered by the chairman with the consent of the Council:

1. Calling the meeting to order
2. Roll call
3. Reading of minutes
4. Communications
5. *Report of the Executive Committee*
6. *Report of the president*
7. Report of the secretary
8. Report of the treasurer
9. *Report of the executive vice-president*
10. Reports of commissions and committees
11. Unfinished business
12. New business
13. Adjournment

ARTICLE V OFFICERS

The officers of the State Society shall be a president, a president-elect, a vice-president, a secretary, an assistant secretary, a treasurer, an assistant treasurer, a speaker and a vice-speaker of the House of Delegates. They shall take office at the termination of the annual meeting at which they are elected and shall serve for one year or until their successors have been duly chosen.

No person may serve, consecutively, more than five terms as secretary, treasurer, assistant secretary, assistant treasurer, *speaker, or vice-speaker.* An unexpired term shall not be construed as a term of office.

No salaried employe of the Medical Society of the State of New York shall be an *elected* officer of the State Society. For the purposes of this article an honorarium shall not be considered as a salary.

SECTION 1. VACANCIES AND SUCCESSION

An officer shall practice or maintain a residence or an office in the State of New York, otherwise his office in the State Society shall be declared vacant.

The president-elect shall succeed to the presidency at the end of his term as president-elect.

In the event of the president's death, resignation, removal, *permanent* incapacity, or refusal to act, the *vice-president* shall succeed him and shall serve for the remainder of the unexpired term.

If the president is temporarily incapacitated for service by injury, ill health of himself or his family, important professional duties, or any other mandatory absence, the vice-president shall become acting president for the duration of such incapacity of the president. The president shall promptly notify the vice-president of his incapacity and request his attention to the duties of the office and shall also promptly notify the vice-president of the end of the period of temporary incapacity before resuming the office of the presidency.

If the office of vice-president becomes vacant for any reason whatsoever the Council shall elect a successor for the unexpired term.

If the office of president-elect becomes vacant, it shall remain so until the next annual meeting of the House of Delegates, at which an eligible member shall be elected to become president. *A president-elect to succeed him at the end of his term shall also be elected at the same meeting.*

The assistant secretary, the assistant treasurer, and the vice-speaker shall serve as the secretary, the treasurer, and the speaker, respectively, whenever these senior officers are incapacitated for service by injury, ill health of themselves or families, important professional duties, or any other mandatory absences. This shall be construed so as to include duty at or during meetings of the Board of Trustees as well as the other official duties designated for the senior officer. The senior officer shall promptly notify the junior officer of his incapacity and request his attention to said duties. *When the period of incapacity is ended, the senior officer shall promptly notify the junior officer of the end of the period of temporary incapacity before resuming office.*

If the offices of secretary, treasurer, or speaker become vacant, for any reason whatsoever, these officers shall be succeeded by the assistant secretary, assistant treasurer, and vice-speaker, respectively, for the unexpired term.

If an elected officer is absent from three consecutive regular meetings of the Council, without proper excuse, the Council shall declare his office vacant. The vacancy shall be filled as provided in the Bylaws.

Any *elected* officer of the State Society who is called into active service *in the armed forces of the United States or in the United States Public Health Service* may, on application to the Council, be granted leave of absence for any portion of his term of office during which he is on active service. During such absence, his duties shall be delegated as the Council may direct except where such delegation is already provided for elsewhere in the Bylaws.

SECTION 2. DUTIES

The president shall set the dates and place of regular meetings of the Council *and Executive Committee* and shall preside at all meetings of the State Society, the Council, *and the Executive Committee.*

He shall name the appointive members of the Executive Committee and appoint *the chairmen and members of* all committees and *the chairmen of all commissions* of the Council with the approval of the Council. He shall appoint all other committees not otherwise provided for, with the approval of the Council.

Within three months after assuming the office of president, he shall appoint, as prescribed in Article XII, paragraph 5, a nominating committee, whose names he shall cause to be published in *the official publication of the State Society.*

He shall be an exofficio member of all *boards, commissions,* and committees with voice *and vote.*

With the *approval* of the Council, he shall appoint a member to the Judicial Council to succeed the member with an expiring term, and in the event of a vacancy occasioned otherwise, he shall appoint a member for the unexpired term.

He shall appoint, with the approval of the Council, representatives to other medical societies or similar bodies as the interests of the State Society may require.

He shall appoint a sufficient number of delegates or alternate delegates to the House of Delegates of the American Medical Association when the full quota of those elected is not available, as provided in the Bylaws, Article VIII, Section 1, paragraph 4.

He shall appoint, with the approval of the Council, a chairman and a secretary for each organized session of the State Society.

When charges by a member of malfeasance or nonfeasance are preferred against *any other* officer, councilor, trustee, or member of a board, commission, or committee of the State Society and are transmitted to the president in writing, he shall order a trial on said charges by the Council, or a committee thereof.

He shall assign the special branches of work for which the members of the Council shall be responsible, with the approval of the Council.

He shall make an annual report to the House of Delegates.

He shall deliver an address *at the annual meeting of the House of Delegates.* He shall perform such other duties as the House of Delegates or the Council shall require.

He shall attend all meetings of the House of Delegates of the American Medical Association.

The president-elect shall perform such duties as may be requested by the president.

The president-elect shall attend all meetings of the House of Delegates of the American Medical Association.

The *vice-president* shall perform the duties of the president in the latter's absence.

He shall preside over the Council when it is deliberating on charges of malfeasance or nonfeasance preferred against the president.

The secretary shall attend all meetings of the State Society, the House of Delegates, the Council, the Board of Trustees, and the Judicial Council, and shall keep minutes of their respective proceedings. These minutes shall be copied from a stenographer's notes with such deletion only as will not modify, alter, or becloud the history of the actions of the said bodies. The stenographer's typewritten copy shall be preserved until ordered destroyed by the House of Delegates.

He shall perform such other duties as may be prescribed from time to time by the House of Delegates or the Council. He shall attend all meetings of the House of Delegates of the American Medical Association.

The secretary shall be the custodian of the seal of the State Society, and of all books of records and papers belonging to the State Society, except such as properly belong to the treasurer, and shall keep an account of and promptly turn over to the treasurer all funds of the State Society which come into his hands.

He shall record the name and date of admission of each member of the State Society.

He shall provide for the registration of the members at all *conventions* of the State Society. With the aid and cooperation of the secretaries of the component county medical societies, he shall keep a proper register of all the registered physicians of the State by counties.

He shall conduct the official correspondence, notifying members of meetings, officers, councilors, trustees, and board members of their election, and *commissions and* committees of their appointments and duties.

He shall affix the seal of the State Society to the credentials *of delegates to the American Medical Association* and to such other papers and documents as may require the same.

He shall make an annual report to the House of Delegates. Acting in cooperation with the Council, he shall prepare and issue all programs.

He shall be *an ex officio* member of all boards, *commissions,* and committees with voice *and vote.*

The assistant secretary shall aid the secretary in the work of his office.

The treasurer shall keep accurate books of accounts of all moneys of the State Society which he may receive and shall disburse or cause to be disbursed the same when duly authorized. He shall be the official custodian of all securities and the income thereof owned by the State Society, subject to the direction and disposition of the Board of Trustees. The Board of Trustees may select a bank on trust company to act as custodian in the place of the treasurer of all or any part of such securities and to act as agent of the State Society in collecting the income therefrom.

He shall collect, on or before the first day of May in each year, from the treasurer of each component county medical society, the State Society per capita annual dues. He shall collect any assessments voted by the House of Delegates or the Council. He shall at the expense of the State Society give a bond for the faithful performance of his duties, which shall be approved by the Board of Trustees as to amount, form, and surety. He shall make an annual report to the House of Delegates and reports to the Council *at each of its meetings*

The assistant treasurer shall aid the treasurer in the work of his office.

He shall, at the expence of the State Society, give a bond for the faithful performance of his duties, which shall be approved by the Board of Trustees as to the amount, form, and surety.

The speaker shall preside at all meetings of the House of Delegates. He shall appoint all committees to serve during the meeting of the House of Delegates at least thirty days in advance of the meeting. All resolutions submitted by component county medical societies, district branches, *and scientific sections* to be presented to the House of Delegates should be forwarded to the speaker at least forty-five days in advance of the annual meeting of the House and referred by him to the appropriate reference committees; and all resolutions sent in subsequent to forty-five days should be presented to the House and referred to the appropriate reference committees.

The vice-speaker shall perform the duties of the speaker when so requested by the speaker.

ARTICLE VI. TRUSTEES

There shall be a Board of Trustees which shall have charge of all property including trust funds and shall supervise the financial affairs of the State Society.

SECTION 1. COMPOSITION

The Board of Trustees shall consist of seven members elected by the House of Delegates. The president, secretary, treasurer, executive vice-president, assistant executive vice-president, *and counsel* shall sit with the Board of Trustees with voice but without vote.

One trustee shall be elected annually for a term of five years, but whenever the terms of two trustees expire in the same year, two trustees shall be elected each for five years.

To be eligibile for election as trustee a member shall have served at least two years as an officer, or at least three years as a councilor, or at least five years as a member of the House of Delegates.

No person shall serve more than *one* term as a trustee. An unexpired term shall not be construed as a term of office.

A trustee shall practice or maintain a residence or an office in the State of New York, otherwise his position in the State Society shall be declared vacant.

If a trustee is absent from three consecutive regular meetings of the Board, without proper excuse, the Council shall declare his position vacant and elect an successor for the unexpired term.

In the event of a vacancy, a trustee shall be elected *by the Council to serve until the next meeting of the House of Delegates at which time the House of Delegates shall elect a trustee to fill the unexpired term.*

SECTION 2 DUTIES

The annual budget estimate, prepared by the Committee on Budget and Finance, after its approval by the Council shall be submitted to the Board of Trustees for its approval.

All resolutions or recommendations of the House of Delegates or Council pertaining to expenditures of money must be approved by the Board of Trustees before the same shall become effective.

The Board of Trustees shall make and execute all contracts for the State Society. The fiscal year shall begin January 1 and end December 31 of each calendar year.

All moneys of the State Society received by the Board of Trustees, Council, or any member or agent thereof, shall be paid to the treasurer of the State Society. The Board of Trustees shall approve the bond of the treasurer and the assistant treasurer as to amount, form, and surety, and shall employ a certified public accountant licensed by the State of New York to audit the accounts of the treasurer and secretary and other agents of the State Society and present a statement of the same in its annual report to the House of Delegates.

The chairman of the Board of Trustees shall make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the State Society under its control.

SECTION 3 MEETINGS

The Board of Trustees shall meet immediately on the close of the annual meeting of the House of Delegates, and shall organize under the *temporary* chairmanship of the member senior *in service on the Board, elect a permanent chairman,* and fix the time and place of its regular meetings. Should two trustees have similar seniority, *choice between them for temporary chairmanship shall be by lot.*

The Board of Trustees shall meet at least bimonthly, except in July and August.

The notices of the regular and special meetings of the Board of Trustees shall state the date, place, and hour and shall be mailed postpaid to each member at least seven days before a regular meeting and at least five days before a special meeting.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the trustee shall be deemed sufficient proof of the service on each and every trustee for any and all purposes.

Any three members of the Board of Trustees may require the chairman to call a special meeting at the office of the State Society for such time as shall be designated by them in writing.

A quorum shall consist of four members of the Board of Trustees.

The following shall be the order of business at the meetings of the Board of Trustees, which may be altered by the chairman with the approval of the Board:

1. Calling the meeting to order
2. Roll call by the secretary
3. Reading of minutes
4. Communications
5. Reports
6. Unfinished business
7. New business
8. *Adjournment*

ARTICLE VII. JUDICIAL COUNCIL

There shall be a Judicial Council which shall have jurisdiction to hear and determine all appeals from decisions on discipline of component county medical societies or decisions of such societies which may involve the privileges, rights, or standing of members, whether in relation to one another or to component county medical societies or to the State Society.

It shall hear also from applicants on appeals from the action of a component county medical society in excluding them from membership.

SECTION 1. COMPOSITION

The Judicial Council shall consist of five appointed members. One member shall be appointed by the president each year for a term of five years with the *approval* of the Council.

No member shall serve for more than two consecutive terms, but a member *appointed* to serve an unexpired term shall not be regarded as having served a term unless he has served three or more years.

A member of the Judicial Council shall practice or maintain a residence or an office in the State of New York, otherwise his position on the Judicial Council shall be declared vacant.

In the event of a vacancy, a member shall be appointed *by the president* for the unexpired term with the *approval* of the Council.

The president and secretary of the State Society shall be ex officio members of the Judicial Council with voice and vote. The executive vice-president, the assistant executive vice-president, and the counsel of the State Society shall sit with the Judicial Council with voice but without vote.

SECTION 2. DUTIES AND PROCEDURES

A member of a component county medical society who shall have been disciplined or directed to suffer discipline in any degree by any final decision of his component county medical society and who shall have exhausted his right of appeal, if any, with a component county medical society, feeling aggrieved by the decision of such society, may appeal to the Judicial Council of the State Society from the decision of such component county medical society by filing a notice of appeal with the secretary of the State Society and with the secretary of such component county medical society within three months after such final decision by such component county medical society.

An applicant for membership in a component county medical society who has been excluded from membership in such society may likewise appeal from the action of said society.

The Judicial Council shall investigate also all charges preferred (a) by a member of a component county medical society against a component county medical society of which he is not a member; and (b) by a component county medical society against another such component county medical society or a member thereof.

A notice of appeal shall set forth in writing the name of the appellant, the name of such component county medical society, and the date and substance of the decision appealed from, and shall indicate the ground or grounds on which such appeal is taken. If the appellant desires to be present, with or without counsel, at the hearing of said appeal, the notice of appeal must so state. In that event, the appellant must file with the notice of appeal a bond in the sum of $500 to *guarantee his appearance or that of his representative.* If the appellant fails to appear in person or *be represented* by counsel on hearing of said appeal, he shall forfeit to the State Society such share of said bond as represents necessary expenditures incident to convening the Judicial Council for the hearing of said appeal.

On filing a notice of appeal, the appellant and the component county medical society shall submit to the secretary of the Judicial Council all records, minutes, letters, papers, and all written evidence, including a digest of all testimony not stenographically reported relating to the matter. All data so submitted shall be available only to the Judicial Council.

The Judicial Council shall consider the appeal on the data so submitted to it and may affirm, modify, or reverse the decisions so appealed from, by a majority vote of the members present and voting. If, in its opinion, the taking of further evidence is advisable, the Judicial Council may summon witnesses and proceed to take such evidence in such manner as it may deem proper and render its decision by a majority vote of those present and voting, which decision shall be final and binding. A member shall have the right of appeal to the Judicial Council of the American Medical Association, *provided said member is a member of the American Medical Association.*

Whenever the Judicial Council has met, the secretary shall report the proceedings to the Council of the State Society at its next meeting.

The chairman shall submit an annual report of the Judicial Council to the House of Delegates.

SECTION 3. MEETINGS

Immediately at the close of the annual meeting of the *House of Delegates* the Judicial Council shall organize and elect its own chairman.

The secretary of the State Society shall be the secretary of the Judicial Council.

The Judicial Council shall meet on the call of the chairman. The notices of the meetings of the Judicial Council shall state the date, place, and hour and shall be mailed postpaid to each member at least seven days before a meeting.

The affidavit of mailing of the secretary of the State Society to the last recorded address of the member *of the Judicial Council* shall be deemed sufficient proof of the service on each and every member for any and all purposes.

A quorum shall consist of three members of the Judicial Council.

ARTICLE VIII. ELECTIONS

As the first business of the last scheduled session of the annual meeting of the House of Delegates, the officers, councilors, and trustees of the State Society, and the delegates to the American Medical Association shall be nominated and elected.

A member of the State Society who is in arrears fo component county medical society dues or State Societ dues or assessments shall not be eligibile for nomination to any office, the Council, the Board of Trustees or as a delegate to the American Medical Association or entitled to vote for any officer, councilor, trustee, o delegate.

The delegates to the American Medical Associatio shall be elected in the calendar year preceding the meeting of the House of Delegates of the American Medical Association to which they are elected. One half of the allotted number of delegates and alternate delegates shall be elected each year.

Nominations for delegacy to the American Medical Association shall be made for not less than double the full number of delegates to be elected. *Only members of the State Society who are members also of the American Medical Association shall be eligible for nomination or election as delegates to the American Medical Association.*

SECTION 1 BALLOTING

After the appointment of a sufficient number of tellers by the speaker and after all nominations have been made, the secretary of the State Society shall cause to be displayed in full sight of the House of Delegates a list of nominees for each office of the State Society and delegacies to the American Medical Association, arranged in alphabetical order, and shall also cause to be distributed a sufficient number of blank ballots for the use of the House of Delegates. These ballots shall have printed or stamped thereon the appropriate headings for each office with spaces thereunder in which may be written the name of the candidate or candidates to be voted for.

All elections for offices of the State Society and delegacies to the American Medical Association shall be by ballot, each member of the House of Delegates depositing his ballot on roll call individually. *When, after the call for nominations from the floor,* there is only one candidate for an office, *the speaker shall direct the secretary to cast one ballot on behalf of the delegates. If there are more than two nominees for an office and none* received a majority of votes on the first ballot, the nominee receiving the lowest number of votes shall be dropped and a new ballot taken for that office. This procedure shall be continued until one of the nominees receives a majority of the votes cast when he shall be declared elected.

For the election of delegates to the American Medical Association, the delegates shall be declared elected in the order of the highest number of votes cast until the allotted number shall have been chosen; a corresponding number in the next highest order of votes cast shall be declared alternate delegates.

When the full quota of elected delegates or alternate delegates is not available for attendance at the meeting of the House of Delegates of the American Medical Association, the president of the State Society shall appoint and certify a sufficient number to complete the quota.

A duly elected delegate to the American Medical Association who does not serve as such because of reduction in number of delegates to which the State Society is entitled shall fill any vacancy which may occur in the delegation before alternate delegates are designated for that purpose.

The delegates and alternate delegates shall take office at the beginning of the calendar year following their election and shall serve for a term of two years.

ARTICLE IX. REFERENDUM

At any meeting of the House of Delegates *two thirds* of the members present and voting may order a referendum vote of the State Society on any question consistent with the Bylaws and in accordance with such regulations respecting the submission of the question as the House of Delegates may prescribe.

The members of the State Society shall vote thereon by mail. The polls shall be closed at the expiration of fifteen days after the mailing of the question; and if the members voting shall comprise a majority of all the active and life members of the State Society, a majority of such vote shall determine the question and be binding on the State Society and the House of Delegates.

When the House of Delegates is not in session the Council may in a similar manner order such a referendum by a *two-thirds vote.*

ARTICLE X. COMMITTEES OF THE HOUSE OF DELEGATES

SECTION 1. REFERENCE COMMITTEES

At least one month before the meeting of the House of Delegates the speaker shall appoint and publish in the official publication of the State Society such reference committees as he shall deem expedient for the purposes of the meeting. Immediately after the organization of the House of Delegates he shall formally announce the appointments of the committees. Only members of the House of Delegates shall be eligible for appointment to the reference committees. Such committees shall each consist of five members, three members constituting a quorum, and shall serve during the meeting of the House of Delegates for which they are appointed.

Annual reports of officers, Council commissions and committees, Board of Trustees, Judicial Council, district branches, and special committees shall be printed at least one month before the meeting of the House of Delegates and sent to the members of the reference committees appointed according to paragraph 1, for their preliminary consideration.

All recommendations, resolutions, measures, and propositions presented to the House of Delegates and which have been duly seconded shall be referred by the speaker to the appropriate reference committees, except that reports of committees of the House of Delegates may, at the discretion of the House, be presented directly to the House without referral to the reference committees.

Each reference committee shall consider such business as may have been referred to it and shall report promptly to the House.

Any member of the State Society in good standing shall have the right to appear before any reference committee and participate in its deliberations.

SECTION 2. COMMITTEE ON BYLAWS

The House Committee on Bylaws shall be appointed annually by the speaker. It shall consist of at least five members including a chairman, all of whom shall be members of the House. The president, secretary, and the speaker shall be ex officio members with voice and vote. The executive vice-president, assistant executive vice-president, and counsel of the State Society shall be members of the committee with voice but without vote.

It shall be the duty of the committee to study all proposed amendments to the Bylaws and the Principles of Professional Conduct of the State Society and to report thereon at the annual meeting of the House of Delegates following the meeting at which such amendments *are proposed. The committee shall include in its report recommendations for action on the proposed amendments with reasons for such recommendations.*

It shall be the duty of the committee to suggest amendments to or revisions of the Bylaws and the Principles of Professional Conduct of the State Society.

The report of the House Committee on Bylaws shall be presented directly to the House, without referral to a reference committee.

SECTION 3. SPECIAL COMMITTEES

Special committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the speaker or other officer presiding pro tempore over the meeting at which the committee is authorized.

ARTICLE XI. COUNCIL COMMISSIONS AND COMMITTEES

SECTION 1. ORGANIZATION

Committees of the Council are grouped by the related nature of their purposes and functions. A commission is composed of the chairmen of all committees within such a group.

Subject to the approval of the Council, the president shall appoint the chairmen and members of all of its committees and the chairmen of the commissions.

Any member of the State Society is eligible for membership on committees and commissions of the Council.

All chairmen of such commissions and committees shall have the right to present their reports in person to the Council and to engage in the discussion of such reports. Members of such commissions and committees shall have the privilege of presenting minority reports at the discretion of the Council.

Any ex officio member of a committee who enjoys that status by being a duly elected officer of the State Society shall have all the rights, responsibilities, and duties of any other member of the committee.

SECTION 2. NOMINATING COMMITTEE

The Nominating Committee shall be appointed by the president in conformity with Article V, Section 2, paragraph 3. It shall consist of 11 members, 1 from each district branch and 2 members at large. It shall be the duty of this committee to propose and nominate members of the State Society for all vacancies to be filled at the ensuing annual meeting of the House of Delegates. These recommendations shall be made to the House of Delegates in the same manner as prescribed in Article X, Section 1, paragraph 2.

SECTION 3. PROFESSIONAL MEDICAL LIABILITY INSURANCE AND DEFENSE BOARD

A committee to be known as the Professional Medical Liability Insurance and Defense Board shall be appointed by the president with the approval of the Council. It shall consist of seven members including a chairman, each appointed for a five-year term. No member shall serve for more than two consecutive terms. A vacancy created by expiration of a term shall be filled by the president, with the approval of the Council, by appointment of a member for five years. Other vacancies shall be filled for the unexpired term in similar manner. *The secretary and the treasurer shall be ex officio members of the committee with voice and vote.* The counsel and indemnity representative shall attend all meetings with voice but without vote. It shall be the duty of the committee to study and supervise, on behalf of the State Society, all matters having to do with professional liability insurance and defense.

SECTION 4. COMMITTEE ON PRIZE ESSAYS

A Committee on Prize Essays shall be appointed by the president with the approval of the Council. It shall consist of three members, including the chairman. It shall be the duty of this committee to receive all essays offered in competition for prizes which may be offered by the State Society. The committee shall make all necessary rules and regulations for the awarding of prizes, subject to the terms of the deeds of gift, and shall report the result at the next annual meeting of the House of Delegates. It shall give notice through the official publication of the State Society or by other methods of the amount of the prize and when the essays shall be submitted to the committee.

ARTICLE XII. SECTIONS AND SESSIONS

As designated by the House of Delegates, there shall be sections devoted to the scientific work of the State Society and sessions devoted to scientific, cultural, historical, or economic subjects. Both sections and sessions shall meet during the annual convention of the State Society, under the supervision of the Council.

SECTION 1. SECTIONS

The scientific sections designated by the House of Delegates shall organize at their annual meetings by the election of officers. Officers to be elected shall include a chairman, a vice-chairman, a secretary, and a delegate to the House of Delegates. The chairman, the vice-chairman, and the delegate shall be elected for one-year terms; the secretary for such term as the section may deem fit.

To participate in the election of any section, a member of the State Society must be registered with such section.

Should the delegate of a scientific section be unable to serve in the House of Delegates, the chairman of the section shall designate a substitute delegate and shall so notify the secretary of the State Society in writing.

The officers of the various sections shall prepare programs for their sections under the direction and subject to the approval of the Council.

No new section shall be created by the House of Delegates unless a session devoted to its subject matter or specialty shall have been held at least two successive annual conventions.

SECTION 2. SESSIONS

A session shall be a single meeting of a group to discuss scientific, cultural, historical, or economic subjects, under the direction and subject to the approval of the Council.

Each session shall have a chairman and a secretary who shall be appointed by the president with the approval of the Council.

ARTICLE XIII. MEETINGS

SECTION 1. ANNUAL CONVENTION

There shall be an annual convention of the Stat Society to be held at a time and place designated by th House of Delegates or by the Council.

This convention shall include the annual meeting *the State Society, the annual meeting of the House of Delegates, the annual scientific program which shall include the annual meetings of the sections and sessions and scientific motion pictures and exhibits, and such other activities and presentations as the House of Delegates or Council may direct.*

SECTION 2 STATE SOCIETY ANNUAL MEETING

The State Society shall hold its annual meeting at the last scheduled session of the House of Delegates, while the House is recessed following the annual elections. The president shall preside at this annual meeting of the State Society, which shall include the induction of the incoming president. The incoming president shall deliver his inaugural address at the annual meeting of the State Society.

Following the adjournment of the annual meeting, the House of Delegates shall reconvene to complete its agenda and receive the report of the tellers.

SECTION 3 SPECIAL MEETINGS

Special meetings of the State Society shall be called by the president on the request in writing of 250 members from the membership of at least 10 component county medical societies, and in case of the failure, inability, or refusal of the president to act, such meeting may be called by a notice thereof subscribed by 250 members from the membership of at least 10 component county medical societies.

SECTION 4 ORGANIZATION AND PROCEDURES

The notices of the annual *convention* and annual and special meetings of the State Society shall state the date, place, and hour and shall be mailed postpaid to each member at least thirty days before a meeting.

Publication of such notice in the official publication of the State Society shall be considered as complying with this provision.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the member shall be deemed sufficient proof of the service upon each and every member for any and all purposes.

Each member in attendance at the annual *convention* of the State Society shall enter his name and the name of the component county medical society to which he belongs in a register to be kept by the secretary of the State Society for that purpose. No member shall take part in any of the proceedings of such convention until he shall have complied herewith.

All members in good standing so registered may attend and participate in the proceedings and discussions of the scientific meetings of the State Society and of the sections and sessions.

A distinguished physician of a foreign country or a physician not a resident of this State who is a member of his own state medical association may become a guest during any annual *convention* upon the invitation of the president or officers of the State Society, and may be accorded the privilege of participating in all the scientific program of the *convention.*

No address or paper before the State Society, except those of the president and president-elect, shall occupy more than twenty minutes in its delivery.

All papers read before the State Society at its annual *convention* by its members shall become the property of the State Society Whenever such paper shall be deemed not acceptable for publication in the New York State Journal of Medicine it shall be returned to the author as promptly as possible after its receipt in the publication office of the State Society.

The following shall be the order of business at the annual meeting of the State Society:

1. Calling the State Society to order
2. Reading of minutes of the last meeting by title
3. *Induction of incoming president*
4. *Inaugural address by incoming president*
5. Adjournment

The rules contained in Sturgis Standard Code of Parliamentary Procedure shall govern the State Society in all cases in which they are not inconsistent or in conflict with the Bylaws of the State Society.

ARTICLE XIV. FUNDS

Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session. The dues or assessments of each junior member shall be one-third the amount levied on each active member.

The approval of the Council and of the Board of Trustees shall be necessary for the expenditure of any funds of the State Society, except that the said Board may delegate, to such person or persons as it sees fit, the authority to expend funds of the State Society in amounts and under conditions to be determined by said Board, on recommendation of the Council.

ARTICLE XV. DUES

The annual dues shall be determined by the House of Delegates.

Assessments can be levied by the House of Delegates or the Council *and shall be payable within a period of time specified by them.*

Life and honorary members shall not be required to pay dues or assessments to the State Society.

Annual dues are due and payable on the first day of January of each year. The dues year shall coincide with the calendar year, January 1 to December 31.

Any member, except a member who is eligible for and has applied for life membership, whose component county medical society and State Society dues are unpaid after May 1 of any current year *or whose assessments are unpaid by the specified time* is not in good standing and shall be deemed to be in arrears.

A member whose dues are unpaid after June 1 of any current year *or whose assessments are unpaid one month after the specified date* shall automatically be dropped from the rolls of membership of both his component county medical society and the State Society, without notice to such member by his component county medical society or the State Society, or without further action on the part of either the component county medical society or the State Society, and on such date he shall automatically cease to be a member of both the component county medical society and the State Society.

Dues and State Society assessments of a member elected or reinstated after October 1 shall be credited to the succeeding year, but no member dropped for nonpayment of dues and assessments shall be reinstated until he has, in addition, paid his dues and assessments for the year in which he was dropped.

The dues of an active or junior member of the State Society may be remitted for the current year by action by the Council on account of illness, financial hardship, or temporary active service in the Armed Forces of the United States or in the United States Public Health Service, when the request for such remission is made by the member's component county medical society. *Such a request shall be accompanied by a brief summary of the reasons therefore. Remission of dues due to illness or financial hardship shall be reviewed annually.*

ARTICLE XVI. EXPENSES

Allowances for expenses incurred in the actual performance of official duties by officers, councilors, trustees, members of the Judicial Council and of commissions and committees, delegates to the American Medical Association and employes of the State Society shall be made in conformity with the following conditions.

The president and the president-elect shall be allowed a per diem and expenses when engaged on official business. The amount of the per diem shall be set by the House of Delegates.

All other officers, councilors, trustees, members of the Judicial Council, delegates to the House of Delegates of the American Medical Association or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association, members of commissions and committees of the Council, of all special committees, members of the State Society appointed by the president or the Council to carry out special assignments for the State Society, and employes of the State Society shall be allowed traveling expenses when engaged on official business.

Members for life of the House of Delegates, delegates of the district branches and of the scientific sections, sitting in the House of Delegates, shall be allowed necessary expenses by the State Society.

Proper vouchers must be filed with the secretary of the State Society before any of the above allowances shall be made.

There shall be no allowances for the expenses, traveling or otherwise, for members of any *reference committee.*

Each district branch shall be entitled to receive a sum not to exceed $1,000 exclusive of the work done by the State Society regarding notices, programs, and so on, to defray the expenses of such district branch, provided a proper statement of such expenses shall have been presented to the secretary.

All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees.

ARTICLE XVII. DISTRICT BRANCHES

SECTION 1. DIVISION

The membership of the State Society shall be divided into nine district branches, as follows:

The First District Branch shall comprise the members of the Medical Societies of the Counties of Bronx, Kings, New York, Queens, and Richmond.

The Second District Branch shall comprise the members of the Medical Societies of the Counties of Nassau and Suffolk.

The Third District Branch shall comprise the members of the Medical Societies of the Counties of Albany, Columbia, Greene, Renesselaer, Schoharie, Sullivan, and Ulster.

The Fourth District Branch shall comprise the members of the Medical Societies of the Counties of Clinton, Essex, Franklin, Fulton, Hamilton, Montgomery, Saratoga, Schenectady, Warren, and Washington.

The Fifth District Branch shall comprise the members of the Medical Societies of the Counties of Cayuga, Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, and St. Lawrence.

The Sixth District Branch shall comprise the members of the Medical Societies of the Counties of Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Schuyler, Tioga, and Tompkins.

The Seventh District Branch shall comprise the members of the Medical Societies of the Counties of Livingston, Monroe, Ontario, Seneca, Steuben, Wayne, and Yates.

The Eighth District Branch shall comprise the members of the Medical Societies of the Counties of Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming.

The Ninth District Branch shall comprise the members of the Medical Societies of the Counties of Duchess, Orange, Putnam, Rockland, and Westchester.

Changes in the number or membership of these district branches may be made by a two-third vote of the House of Delegates at any annual meeting thereof.

SECTION 2. AIMS AND ORGANIZATION

The objectives of the district branches shall be to promote the scientific, social, cultural, and other interests of the medical profession within the district and to cooperate with the Council of the State Society in any way which that body may advise.

Each district branch may adopt a constitution and bylaws for its government and may amend them. The Constitution, Bylaws, and amendments shall not be in conflict with the Bylaws of the State Society, and before becoming effective, they shall be approved by the Council.

SECTION 3. OFFICERS AND ELECTIONS

Each district branch shall elect a president for two years and a delegate to the House of Delegates for two years, but with the approval of the Council a district branch may elect a president for one year.

Each district branch shall elect such other officers as are provided for in its bylaws. They shall attend the business meetings of the branch.

In the case of the inability of the delegate of a district to serve, the vice-president shall serve as delegate, and i the vice-president is unable so to function, the presiden shall designate a *substitute* delegate to serve and shal so notify in writing the secretary of the State Society.

Any elected officer of a district branch who is calle into active service in the armed forces of the Unite States or the United States Public Health Service may on application to the Council, be granted leave of absence for any portion of his term of office during whic he is on active service. During such absence his dutie shall be designated as the Council may direct, excep where such delegation is already provided for elsewhe in the Bylaws.

The president of each district branch shall visit t component county medical societies of the district least once during his tenure of office and make a caref inquiry of the condition of the profession in each county in his district and shall report thereon to the House of Delegates.

ARTICLE XVIII. COMPONENT COUNTY MEDICAL SOCIETIES

SECTION 1. DEFINITION

The term "component county medical society" shall include all county medical societies now in affiliation with the State Society or which may hereafter be organized and chartered by the House of Delegates. There shall be but one component county medical society in each county affiliated with the State Society. If there should be an insufficient number of physicians in any of the counties of this State to form themselves into a component county medical society, such physicians may become members of the component county medical society of an adjoining county when eligible by the constitution and bylaws of such component county medical society.

SECTION 2. MEMBERSHIP

Eligibility for membership in a component county medical society shall be determined by that society. Except by the approval of the Council no physician shall be an active or junior member in a component county medical society other than that of the county in which he practices or maintains legal residence.

Whenever an active or junior member in good standing or a life member in any component county medical society removes to another county in this State, his name on his request shall be transferred to the roster of the component county medical society of the county to which he removes, without cost to him, provided that he files a certificate with the secretary of the State Society, signed by the president and secretary of the component county medical society from which he removes as to his good standing in such society, and provided his application for membership has been acted on favorably by the members of the component county medical society of the county to which he has removed.

No member shall be an active or junior member of more than one component county medical society, nor shall any component county medical society accept as a member a physician who does not practice or have a residence in that county in any other way than in accordance with the law governing transfers.

SECTION 3. DUTIES OF OFFICERS

The secretary of each component county medical society shall keep a roster of its members in which shall appear the full name of each of said physicians, the date of his admission to such society, his residence, and the date when his license to practice medicine in this State was granted. He shall note any changes in said roster by reason of removal, death, or change of name, revocation of license, or other disqualification.

He shall forward said roster and information together with the names and places of residence of each of the officers of said society and the names and residences of each delegate to the House of Delegates from said society to the secretary of the State Society at least ninety days before the date of the annual meeting of said House of Delegates.

The treasurer of each component county medical society shall forward to the treasurer of the State Society the amount of the State Society per capita dues and/or assessments and the amount of all American Medical Association dues collected from members of his component county medical society as promptly as possible but in any event before the first day of May of each year.

SECTION 4. MEETINGS

Each component county medical society shall hold an annual meeting for the purpose of electing officers and a delegate or delegates to represent it in the House of Delegates of the State Society in accordance with the Bylaws.

The annual meeting of each component county medical society shall be held between January 1 and July 1 of each year at a time which it shall determine.

All officers of the component county medical society shall enter on their official duties between May 1 and July 1 at a date determined by the component county medical society and shall serve for a term of one year or until their successors shall have been duly elected and qualified.

SECTION 5. RESIGNATIONS

A member in good standing, whose resignation from membership in his component county medical society shall have been duly accepted, shall be considered to have resigned from the State Society as of the same date.

When a member in good standing, other than a life or honorary member, ceases, between May 1 and December 31 of any year, to reside and practice in the State of New York, he shall be considered to have resigned from membership effective as of that December 31. If such cessation to reside and practice occurs between January 1 and May 1 of any year he shall, provided he has been in good standing for the prior calendar year, be considered to have resigned from membership effective as of the previous December 31.

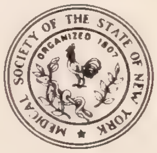
On resignation, a member shall forfeit all rights and title to any share in the privileges and property of the State Society, the district branch, and his component county medical society.

SECTION 6. CONSTITUTION AND BYLAWS

Each component county medical society shall adopt a constitution and bylaws for the regulation of its affairs and may amend them. The Constitution, Bylaws, and amendments shall not be in conflict with the Bylaws of the State Society, and before becoming effective, they shall be approved by the Council.

ARTICLE XIX. SEAL OF THE STATE SOCIETY

The seal of the State Society shall be as follows:


MEDICAL SOCIETY OF THE STATE OF NEW YORK
ORGANIZED 1807

ARTICLE XX. AMENDMENTS

Amendments to the Bylaws or to the Principles of Professional Conduct, except such as are obligatory by law, shall be made only at an annual meeting of the House of Delegates after having been submitted in writing at a previous annual meeting and having been published in the official publication of the State Society at least once and at least one month before the annual meeting at which action shall be taken.

The affirmative vote of two thirds of the House of Delegates present and voting shall be necessary for adoption of any amendment.

Amendments made necessary by law shall be made either by the Council or House of Delegates whenever such necessity exists.

TABLE I. New material: not in present Constitution and Bylaws but in Proposed Revision*

Article	Section	Paragraph	Text
I. Name and purpose	. . .	4, 5, 6	". . . to establish the Principles of Professional Conduct which shall be binding upon the members of the State Society, the members of the component county medical societies, and the members of the component district branches, in all matters in their relation to each other and to the public; ". . . to enhance the delivery of medical care of high quality to all people in the most economical manner; ". . . to promote the betterment of community . . ."
II. Membership	1. Classes	2	". . . and who are licensed by the State of New York." Also Footnote.
		8	". . . for approval."
	2. Privileges	3	". . . subject to the rules and regulations of the State Society."
		4	". . . They shall be entitled to defense by the counsel of the State Society in actions concerning professional medical liability, subject to the rules and regulations of the State Society."
		5	". . . They shall be entitled to receive the *New York State Journal of Medicine* and the *News of New York*, but the *Medical Directory of New York State* only on request."
		10	". . . or whose assessments are unpaid by the specified time . . ."
		12	"A member of the State Society who has no professional medical liability insurance in force and who is in arrears shall lose his right to professional medical liability defense . . ."
		13	". . . or whose assessments are unpaid one month after the specified date . . ."
III. House of Delegates	1. Composition	6	"A delegate shall practice or maintain a residence or an office in the State of New York. Otherwise his delegacy in the State Society shall be declared vacant."
	3. Meetings	4	". . . and items of business that will be considered."
		8	(In Order of Business) "8. Address by president; 9. Report of House Committee on Bylaws; 15. Report of executive vice-president; 20. Recess for annual meeting of State Society; . . ."
IV. Council	1. Composition	2	". . . and the counsel of the State Society . . .'
		3	". . . by the Council to serve until the next meeting of the House of Delegates, at which time the House of Delegates shall elect a councilor to fill the unexpired term."
		6	"A councilor shall practice or maintain a residence or an office in the State of New York. Otherwise his position in the State Society shall be declared vacant."
	2. Duties	7	". . . subject to the approval of the Council."
		8	"The Council shall act on the applications

(*continued*)

TABLE I. *Continued*

Article	Section	Paragraph	Text
			for life membership which have been submitted by the component county medical societies. A majority vote of the Council present and voting shall be necessary for election to life membership."
		9	". . . For the purpose of required announcements, the official publication of the State Society shall be the *New York State Journal of Medicine*."
	3. Trials for Malfeasance	3	"Charges of malfeasance or nonfeasance preferred by a member against the president shall be transmitted in writing to the secretary of the State Society and shall be considered by the Council with the vice-president presiding."
	4. Executive Committee	1	". . . the immediate past-president . . ."
	5. Meetings	1	". . . and Executive Committee . . ."
		1	". . . he shall designate, within ten days of his receipt of such notice."
		4	". . . and items of business that will be considered."
		6	(in Order of Business) ". . . 5. Report of the Executive Committee; 6. Report of the president; 9. Report of the executive vice-president; . . ."
V. Officers	. . .	2	". . . speaker, or vice-speaker."
	1. Vacancies and Succession	1	"An officer shall practice or maintain a residence or an office in the State of New York. Otherwise his office in the State Society shall be declared vacant."
		3	". . . permanent . . ."
		4	"If the president is temporarily incapacitated for service by injury, ill health of himself or his family, important professional duties, or any other mandatory absence, the vice-president shall become acting president for the duration of such incapacity of the president. The president shall promptly notify the vice-president of his incapacity and request his attention to the duties of the office and shall also promptly notify the vice-president of the end of the period of temporary incapacity before resuming the office of presidency."
		5	"If the office of vice-president becomes vacant for any reason whatsoever the Council shall elect a successor for the unexpired term."
		6	". . . A president-elect to succeed him at the end of his term shall also be elected at the same meeting."
		7	". . . When the period of incapacity is ended, the senior officer shall promptly notify the junior officer of the end of the period of temporary incapacity before resuming office."
		8	"If the offices of secretary, treasurer, or speaker become vacant, for any reason

(*continued*)

TABLE I. *Continued*

Article	Section	Paragraph	Text
			whatsoever, these officers shall be succeeded by the assistant secretary, assistant treasurer, and vice-speaker, respectively, for the unexpired term."
		10	". . . in the armed forces of the United States or in the United States Public Health Service. . ."
		6	"He shall appoint, with the approval of the Council, representaives to other medical societies or similar bodies as the interests of the State Society may require."
		11	"He shall make an annual report to the House of Delegates."
		17	"He shall preside over the Council when it is deliberating on charges of malfeasance or nonfeasance preferred against the president."
		31	". . . and scientific sections. . ."
VI. Trustees	1. Composition	1	". . . and council. . ."
		5	"A trustee shall practice or maintain a residence or an office in the State of New York. Otherwise his position in the State Society shall be declared vacant."
VII. Judicial Council	1. Composition	3	"A member of the Judicial Council shall practice or maintain a residence or an office in the State of New York. Otherwise his position on the Judicial Council shall be declared vacant."
	2. Duties and Procedures	6	". . . provided said member is a member of the American Medical Association."
VIII. Elections		4	". . . Only members of the State Society who are members also of the American Medical Association shall be eligible for nomination or election as delegates to the American Medical Association."
	1. Ballotting	2	". . . the speaker shall direct the secretary to cast one ballot on behalf of the delegates."
IX. Referendum	. . .	3	". . . by a two-thirds vote"
X. Committees of the House of Delegates	2. Committee on Bylaws	1–4	"The House Committee on Bylaws shall be appointed by the speaker. It shall consist of at least five members including a chairman, all of whom shall be members of the House. The president, secretary, and speaker shall be ex officio members with voice and vote. The executive vice-president, assistant executive vice-president, and counsel of the State Society shall be members of the committee with voice but without vote. "It shall be the duty of the committee to study all proposed amendments to the Bylaws and the *Principles of Professional Conduct* of the State Society and to report thereon at the annual meeting of the House of Delegates following the meeting at which such amendments are proposed. The committee shall include in its report recommendations for action on the proposed amendments with reasons for such recommendations.

(*continued*)

TABLE I. *Continued*

Article	Section	Paragraph	Text
			"It shall be the duty of the committee to suggest amendments to or revisions of the Bylaws and the *Principles of Professional Conduct* of the State Society. "The report of the House Committee on Bylaws shall be presented directly to the House, without referral to a reference committee."
XI. Council Commissions and Committees	1. Organization	4	". . . Members of such commissions and committees shall have the privilege of presenting minority reports at the discretion of the Council."
		5	"Any ex officio member of a committee who enjoys that status by being a duly elected officer of the State Society shall have all the rights, responsibilities, and duties of any other member of the committee."
XIII. Meetings	1. Annual convention	1, 2	"There shall be an annual convention of the State Society to be held at a time and place designated by the House of Delegates or by the Council. "This convention shall include the annual meeting of the State Society, the annual meeting of the House of Delegates, the annual scientific program which shall include the annual meetings of the sections and sessions, scientific motion pictures and exhibits, and such other activities and presentations as the House of Delegates or Council may direct."
	2. State Society annual meeting	1, 2	"The State Society shall hold its annual meeting at the last scheduled session of the House of Delegates, while the House is recessed following the annual elections." "The president shall preside at this annual meeting of the State Society, which shall include the induction of the incoming president. The incoming president shall deliver his inaugural address at the annual meeting of the State Society." "Following the adjournment of the annual meeting, the House of Delegates shall reconvene to complete its agenda and receive the report of the tellers."
XV. Dues	. . .	2	". . . and shall be payable within a period of time specified by them."
		5	". . . or whose assessments are unpaid by the specified time. . ."
		6	". . . or whose assessments are unpaid one month after the specified data. . ."
		8	". . . Such a request shall be accompanied by a brief summary of the reasons therefor. Remission of dues due to illness or financial hardship shall be reviewed annually."

* References are to articles, sections, and paragraphs in the proposed revision.

TABLE II. Substitutions: material in proposed revision substituted for present Constitution and Bylaws*

Proposed Revision				Present Constitution and Bylaws			
Article	Section	Paragraph	Text	Page	Article or Section	Line(s)	Text
III	1	3	"... 30..."	12	1	8	"... 25..."
	3	1	"... during the annual convention of the State Society..."	12	3	2–4	"... at least two and not more than four days before the annual meeting of the Society."
	3	3	"... 25 per cent of the duly accredited delegates of the previous annual meeting of the House,..."	31	6	3	"... sixty..."
	3	3	"... by 25 per cent of duly accredited delegates"	31	6	6	"... sixty..."
IV	2	13	"... social service..."	20	9q	3	"... welfare..."
	2	13	"... social service..."	20	9q	5	"... welfare..."
	3	4	"... three-fourths..."	41	5	12	"... two-thirds..."
	4	1	"... two..."	17	1b	4	"... three..."
	4	1	"... 25 per cent of the ..."	18	3	3	"... any four..."
V	1	3	"... vice-president..."	26	2	4	"... president-elect..."
	2	4	"... with voice and vote"	25	1	2–3	"He shall be an ex officio member of all committees"
	2	12	"...House of Delegates ..."	25	1	14	"...Society."
	2	16	"...vice-president..."	25	2	3	"...He (president-elect) ..."
	2	22	"...conventions..."	27	7	8	"...sessions..."
	2	24	"...of delegates to the American Medical Association..."	28	7	5, 6	"...issued to members of the Society elected by the House of Delegates..."
	2	26	"He shall be an ex officio member of all boards, commissions, and committees with voice and vote"	28	7	12–13	"...and committees with voice but without vote."
	2	29	"...at each of its meetings"	29	9	2	"...monthly..."
VI	1	4	"...one term..."	15	3	11	"...two terms..."
	1	7	"...by the Council to serve until the next meeting of the House of Delegates at which time the House of Delegates shall elect a trustee to fill the unexpired term"	15	3	5 and 6	"... for the unexpired term"
	2	1	"...prepared by the Committee on Budget and Finance, after its approval by the Council..."	21	2	5	"...prepared by the Council..."
	3	1	"...member senior in service on the Board, elect a permanent chairman..."	20	1	4	"...senior member..."
	3	1	"...choice between them for temporary chairmanship shall be by lot"	20	1	6, 7	"...the chairman of the Board shall be chosen from these two trustees by lot"

(*continued*)

TABLE II. *Continued*

Proposed Revision				Present Constitution and Bylaws			
Article	Section	Paragraph	Text	Page	Article or Section	Line(s)	Text
VII	1	5	"The president and secretary of the State Society shall be ex officio members of the Judicial Council with voice and vote. The executive vice-president, the assistant executive vice-president, and the counsel of the State Society . . ."	3	VII	2–4	"The president, secretary, and legal counsel of the Society shall sit with the Judicial Council with voice but without vote"
	3	1	". . . House of Delegates . . ."	22	1	12	". . . Medical Society of the State of New York . . ."
IX		1	". . . two-thirds . . ."	4	X	1	". . . a majority . . ."
X	1	5	"Any member of the State Society in good standing shall have the right to appear before any reference committee and participate in its deliberations."	35	5	2–7	". . . All members of such committees, who are not members of the House of Delegates, shall have the right to present their reports in person to the House of Delegates and to participate in the debate thereon, but shall not have the right to vote."
XI	3	1	". . . The secretary and the treasurer shall be ex officio members of the committee with voice and vote. The counsel and indemnity representative shall attend all meetings with voice but without vote. . . ."	34	2	12–15	". . . The secretary, treasurer, legal counsel, and indemnity representative shall be ex officio members of the committee with voice but without vote. . . ."
XIII	4	7	". . . president-elect . . ."	40	1	2	". . . orators . . ."
	4	9	(in Order of Business) ". . . 3. Induction of incoming president; 4. Inaugural address by incoming president; . . ."	31	4	4–8	". . . (in Order of Business) 2. Address of welcome by the chairman of the committee on arrangements; 4. Miscellaneous business; 6. Special addresses; . . ."
XVI		6	". . . reference committee"	32	1	26 and 27	". . . appointed pursuant to Chapter X of these Bylaws."
		7	". . . State Society . . ."	33	1	1	". . . secretary . . ."

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* References in the left column are to articles, sections, and paragraphs in the proposed revision; in the right column to pages, articles or sections, and lines in the present printed Constitution and Bylaws (1971 version).

TABLE III. Deletions: material in present Constitution and Bylaws not in proposed revision*

Page	Article or Section	Line(s)	Material
2	IV	8, 9	". . . the editor of the *New York State Journal of Medicine* . . ."
10	8	2, 3	". . . all persons now on the roster as such and in addition . . ."
10	8	12	". . . and addressing . . ."
11	1(a)	1–4	"(a) Each component county society shall be entitled to as many delegates as there shall be State assembly districts in such county at the time of election . . ."
16	7	5, 6	". . and in accordance with the constitution and bylaws of that body . . ."
16	1	9	". . . reconsideration, and action . . ."
17	1	11–16	"The Council shall have power and authority to employ, discharge, and arrange duties and, with the approval of the Board of Trustees, fix compensation of and for any employe whom it may find necessary for conducting the affairs of the Society."
18	7	6–8	". . . The Council shall advise the legal council in actions brought against members for alleged malpractice."
19	9	2	". . . study and . . ."
21	2	4	". . . and shall invest the surplus from time to time."
27	7	11–15	". . . He shall aid the officers of the district branches in the organization and improvement of the county societies and the extension of the power and influence of the Society. . . ."
34	1	6–8	". . . if such committee is to conclude its work during said meeting of the House of Delegates. . . ."

* References are to pages, articles and sections, and lines in the present printed copy of the Constitution and Bylaws.

Proposed Revision of *The Principles of Professional Conduct.* Resolution 70-17, Revision and Updating of the *Principles of Professional Conduct* of the Medical Society of the State of New York was referred back to the Ethics Committee by the House of Delegates.

The proposed revision and updating follow:

Chapter I, Section 1, is to be amended as follows:

"The prime object of the medical profession is to render service to humanity; reward of financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals."

Delete remainder of Section 1, after "ideals." The committee deleted the third and fourth sentences because they are considered to be superfluous and redundant.

Delete existing Section 2. The committee agreed that this section is superfluous.

Delete footnote "*Sir Thomas Watson." This was included in Section 2.

Present Section 3 becomes Section 2.

In new Section 2, the words "partnerships" and "corporations" should be inserted after the word "companies" since "partnerships" and "corporations" were added to cover or include as many as possible of the types of agreements physicians might enter, so that Section 2 shall then read as follows:

> The *Principles of Professional Conduct* shall apply to doctors of medicine as individuals or as members of staffs of hospitals, clinics, colleges, schools, foundations, partnerships, corporations, or groups, by whatsoever name they may be known.

Present Section 4 becomes Section 3 and is to be amended by adding the word "patients" after the words "advertises for" and again, after the phrase "and directs such" so that paragraph 2 shall read as follows:

> It should be understood that any medical care plan, company, or organization which advertises for patients and directs such patients to a restricted panel of doctors of medicine for medical care is advertising for the benefit of the doctors of medicine involved.

The word "patients" is used because it is more descriptive; whereas the word "subscribers" is limited in scope.

Present Section 5 becomes Section 4. At the beginning of the second paragraph, delete the words "an ethical," since doctors of medicine are assumed to be ethical. It shall then read as follows:

> A doctor of medicine may provide appropriate information regarding important medical and public health matters which have been discussed during open medical meetings or in technical papers whic have been published, and he may reveal informatio regarding a patient's physical condition if the patient gives his permission, but he should seek th guidance of appropriate officials and designate spokesmen of component or consitituent medical societies.

Divide the first paragraph of new Section 5 into thre paragraphs, without alteration of text except for deletio of "ethical" before "doctor of medicine," for simplific tion, as follows:

Paragraph 1 shall consist of sentences one and two.
Paragraph 2 shall consist of sentence three.
Paragraph 3 shall consist of sentence four.
Delete "ethical" in new paragraphs four and five.

Change last paragraph of new Section 5 as follow Change "prescription" to "prescribing" and chan order of wording for simplification, so that it will read follows:

> The prescribing or dispensing of secret medicines other secret remedial agents by a doctor of medici

or the manufacture or promotion of their use is unethical.

Delete "of which he does not know the composition." Section 7 shall become Section 6.

In Chapter II, Section I, delete fourth sentence, because it was considered to be superfluous, so that it reads as follows:

Section 1. In order that a doctor of medicine may best serve his patients, he is expected to exalt the standards of his profession and to extend its sphere of usefulness. A sectarian or cultist as applied to medicine is one who alleges to follow or in his practice follows a dogma, tenet, or principle based on the authority of its promulgator to the exclusion of demonstration and scientific experience. All voluntarily associated activities with cultists are unethical. Such consultation lowers the honor and dignity of the profession in the same degree in which it elevates the honor and dignity of those who are irregular in training and practice.

Section 3. Delete the part of the sentence after "family" and substitute the phrase "the patient and the authorized or legal representative of the patient, when in the doctor's considered opinion, the circumstances demand it" (This addition was necessary for the legal protection of the physician.); so that it reads as follows:

The doctor of medicine should be a minister of hope and comfort to the sick; however, he should not fail to give timely notice of dangerous manifestations to the family, the patient and the authorized or legal representative of the patient, when in the doctor's considered opinion, the circumstances demand it.

A new Section 8 shall be added to read as follows:

In Chapter III, Article IV, delete Section 2. The committee considered this section to be unintelligible.

Present Section 3 shall become Section 2.
Present Section 4 shall become Section 3.
Present Section 5 shall become Section 4.
Present Section 6 shall become Section 5.
Present Section 7 shall become Section 6.
Present Section 8 shall become Section 7.

A new Section 8 shall be added to read as follows:

"Use of Credit Cards for Payment of Fees." Section 8. The use of credit cards is not approved in the payment of medical fees. This was added since the House of Delegates of the Medical Society of the State of New York has voted that the use of credit cards is unethical in the practice of medicine.

Appendix I. In addition to the Oath of Hippocrates, add the Prayer of Maimonides and the Declaration of Geneva. The committee feels that a more liberal, modern, and meaningful interpretation of a physician's oath should be utilized.

The Committee on Constitution and Bylaws recommends the approval of these revisions.

Respectfully submitted,
Carl Goldmark, Jr., M.D., Secretary

MEDICAL SOCIETY
OF THE STATE
OF NEW YORK

WEDNESDAY
FEBRUARY 16, 1972

Dinner

ROYAL BALLROOM
AMERICANA
OF NEW YORK

Seventh Avenue
and 52nd Street
New York City

Annual Dinner Dance

in honor of

GEORGE HIMLER, M.D.
President

Cocktail Hour—7:00 p.m.

VERSAILLES BALLROOM

Music by Ben Cutler

Dress Optional

Reports of Officers

President

To the House of Delegates, Gentlemen:

This report must be submitted in October to appear in the January 1 issue of the ***Journal.*** It is, therefore, more in the nature of a progress report than a summary of the year's activities and their results. Events have been occurring at such a rate, however, that a progress report may be in order.

As you know, your executive vice-president and I had a number of conversations early in my term on how we could eliminate staff positions that were no longer justified and achieve greater economy and efficiency by reassigning personnel and redefining their functions. A good beginning has been made and, no doubt, the program will have been completed by the time of the annual meeting. The details of the changes made will be found in the report of the executive vice-president and, therefore, need not be given in full here. I would, however, like to make reference to one important innovation, which is the creation of a Division of Legislation under the directorship of Martin J. Tracey, J.D.

There has been a great deal of dissatisfaction expressed on the outcome of our legislative efforts of last year. Many of our failures were inevitable, but an analysis of the manner in which our legislative program is conducted led me to believe that there was room for improvement. In my opinion, the services the State Medical Society receives from its legislative counsel, DeGraff, Foy, Conway, and Holt-Harris are excellent of their kind, but they could be enhanced by supplementation from the Society's staff. Accordingly, the decision was made to station Mr. Tracey in Albany during the legislative session with the objective of establishing direct and continuous contact with all senators and assemblymen on all bills of interest to the Society. Specific details of the new program appeared in *News of New York,* volume 27, number 10, October, 1971. I urge you to reread this issue since the success of our future legislative endeavors will depend in large part on how well the State Medical Society's activities can be coordinated with those of the counties and district branches.

Professional liability insurance. The meteoric rise of malpractice insurance premiums has been a persistent and growing threat to the physicians of this State. The problem has now reached such proportions that it is no longer simply a nuisance and a burden to our members but is beginning to affect the cost and availability of health care. As a result, both the State and Federal governments have begun to take an interest and are studying the entire field of professional liability insurance.

On August 26, 1971, your executive vice-president and I appeared before a State legislative committee chaired by Senator Tarky Lombardi and testified extensively on the issues raised by rising premiums and on possible methods of containing or reversing the upward trend. The meeting was an open one with a number of interests represented and, as such, was not conducive to a discussion in depth. Nevertheless, the committee was left with a number of our suggestions and recommendations.

In October, Senator Lombardy followed this up with a letter requesting our comment and advice on 15 or 20 proposals and questions. He further indicated that, following receipt of our response, we would be accorded opportunities for continued explorations with his committee. It is encouraging to note this interest in a matter that has hitherto been of concern only to physicians. Every effort will be made to keep the subject before the legislators and enlist their aid in introducing and supporting remedial bills.

Fortunately, we are well prepared to do this. Early in 1971, I called together the members of the Society's Professional Liability Insurance and Defense Board, the directors of the H. F. Wanvig, Inc., and William F. Martin, Esq., our counsel. My purpose in doing this was to prepare a legislative program on malpractice for the Society and to establish clear-cut positions on the questions and issues that we anticipated would be raised. After thorough and lengthy discussion, the group came forward with a number of suggestions which have been turned over to the Committee on State Legislation, our legislative counsel, and Mr. Tracey for preparation in the form of bills for introduction during the 1971–1972 session.

At the national level, the U.S. Department of Health, Education, and Welfare formed a commission in August, 1971, to conduct a broad study of medical malpractice and liability insurance. It is headed by attorney Wendell Freeland, of Pittsburgh. Its members will represent health care providers and institutions, lawyers, the insurance industry, and the general public. Eli Bernzweig, the HEW specialist in medical malpractice will be the executive director. There are 5 physicians on the commission, including Carl A. Hoffman, M.D., president-elect of the AMA. Nationwide hearings have been scheduled. The date for the one in the New York area has not been set, but I have made arrangements to testify when it is held.

Shortly after the most recent rate increases, we received many letters indicating that a substantial number of members were having difficulty in making their new premium payment in one lump sum and were, therefore, having to secure bank loans at current rates of interest. Accordingly, it was decided to enter into negotiations with the H. F. Wanvig, Inc. and The Employers Mutual of Wausau, to make provisions for quarterly payments, either at no cost or for a minimum penalty.

These negotiations were concluded in October, and it was agreed that our member physicians could make quarterly premium payments if their annual premium was $1,500 or more. The charge for this service has been set initially at $6.00 per quarter or $24 per year, regardless of the dollar amount of the premium above the $1,500 level. The program cannot be put into effect before March 1, 1972, because of the tooling up and the EDP changes that are necessary. The arrangement clearly does not affect all our members equally, but it is the best that can be done immediately. It will at least give relief to those physicians who are most sorely pressed. Further liberalization of the policy may be possible when additional experience is available.

The review of our liability insurance program and our discussions with the carrier and H. F. Wanvig, Inc., brought to light a variety of questions, misunderstandings, and gaps in the information of the Council. The Professional Medical Liability Insurance and Defense Board is thoroughly informed on the details of the administration of our program, but the duties of the Board are primarily to determine physicians' insurability and premium rating. The work load of its members leaves the Board little time for overseeing the plan in its entirety.

In view of the extreme liability of the current situation in malpractice insurance, and in the interest of society members, it was deemed advisable to subject the plan to continuing surveillance and evaluation. I have, therefore, appointed a small committee, under the chairmanship of Thomas F. McCarthy, M.D., to serve the Council in this capacity. The new committee will in no way conflict with, or assume the functions of, the Professional Medical Liability Insurance and Defense Board. It is my hope that these actions will help to curb the spreading blight of malpractice litigation and mitigate its impact on our members.

Article 86:11 (c). This regulation of the State Health Department has become a cause célèbre within a few months. The wording of the original rule was impossibly ambiguous and raised the possibility that all so-called hospital-based physicians could be forced to become hospital employes, to be followed at a discrete distance by all other physicians of the State. The Commissioner of Health assured us that this was not his intent, but it was my opinion that, at a subsequent time, other State officials and other commissioners might place an entirely different interpretation on the regulation.

At my suggestion, on September 23, 1971, the Council adopted a resolution to the effect that the State Medical Society take every legal step possible to secure the revocation of Article 86:11 (c). Following this, the State Health Commissioner proposed a substitute which did little to meet our objections, whereon the Council reaffirmed its previous position with regard to the substitute.

It has been agreed that there will be further meetings between representatives of the State Medical Society and the State Health Department to reconcile our differences, if possible. The entire matter will be reviewed by the State Hospital Review and Planning Council at its meeting on December 9, 1971. I have asked to be present and heard at that meeting. In the meantime, the effective date of the regulation has been postponed by the State Health Department, and legal action on the part of the Society has been deferred.

Continuing medical education. The details of the Society's endeavors in the field of continuing education will be set forth in the report of the committee assigned to establishing a program. The Society has taken the position that continuing education should be voluntary and that the provision of appropriate opportunities would be sufficient to motivate physicians to participate. Your officers have, therefore, resolutely and consistently opposed State proposals for legislation to make such education mandatory. The Council has supported the concept, advanced by the committee, that an independent Commission on Continuing Education be created with members to be drawn from the State Medical Society, the Interspecialty Committee, the State Regional Medical Programs, and the medical schools. The Commission would be charged with the development of standards and curricula, as well as the establishment of "teaching resource centers" in strategically located hospitals throughout the State. The Interspecialty Committee has undertaken the monumental task of devising programs for the various specialties. The entire project has taken form under the capable and energetic Committee on Continuing (Postgraduate) Education, chaired by Marvin L. Bloom, M.D.

Workmen's Compensation. At the time of the last Workmen's Compensation fee negotiation in 1970, I, as the representative of the Medical Society of the State of New York on the Advisory Committee to the Chairman of The Workmen's Compensation Board on Fee Schedules and Allied Matters, stipulated that the next negotiation, due to be completed by July, 1972, was to be based on a relative value scale. It was our hope at the time that the Peat, Marwick, and Mitchell study would enable the Economics Committee to develop such a scale for our State. This is in progress, but it is obvious that the scale will not be ready in time to serve as the basis for the negotiations, which must begin soon. Accordingly, with the agreement of the specialty societies in the form of the Interspecialty Committee, it was decided to propose the five-digit 1969 California Relative Value Scale to be used in current negotiations. The carriers have raised a number of objections and see great difficulties in the use of any relative value scales but, in view of the fact that a definite agreement was made to use this method, your representatives will continue to insist on its adoption. The director of the Division of Medical Services, Max N. Howard, M.D., has done a tremendous amount of work in preparing comparative charts and tabulations and has researched the subject completely. Without these preliminary efforts, there would not be the remotest possibility of our reaching an agreement on the use of a relative value scale.

Compensation fees themselves must necessarily await the thaw that we all hope will follow the executive wage and price freeze and the post-congelation guidelines that are imposed. Until we know what these are, we will attempt to conduct the negotiations as though there were no legal limits on fee increases. The simplification of negotiations by the use of a relative value scale should be of considerable assistance in reaching the goal o customary fees in Workmen's Compensation.

The New York Institute for Research and Development in Health Care, Inc. In my inaugural address I indicated my intention of establishing this agenc at the State level. It has now been incorporated as not-for-profit corporation. Like the Empire State Medical, Scientific and Educational Foundation, it is independent of the State Medical Society, but a number o its directors and officers will be taken from the Counci of the State Medical Society. The Institute is not, a many believe, simply a Statewide foundation. It i designed primarily to supplement the efforts of loca and regional medical foundations, to assist them in developing their own programs and methodologies, and to help them negotiate those plans that extend beyond the boundaries of a single county or region. Federal grants are being sought to finance the development of the Electronic Data Processing (EDP) technologies and programs necessary for the management of foundations and for the preprocessing required for competent peer review.

The specifics of the Institute's objectives and functions, and the manner in which it will interrelate with medical foundations, are too intricate for presentation in this report. I hope to have an article prepared for distribution early in November, 1971, that will set forth all these facts in detail. I would like to state here, however, that I have traveled widely throughout the State and made great efforts during this past year, to encourage the establishment of medical foundations. To my mind, they represent the best means of organizing privately practicing physicians to help them meet the needs of a demanding society and, at the same time, to preserve the essential elements of a diversified, free, and viable system of health-care delivery.

Conclusion. I must express my appreciation to the Council, to the executive vice-president, Henry I. Fineberg, M.D., and to the entire staff, for their unstinting support and assistance in what has been a hectic, but extremely interesting, year.

Respectfully submitted,
George Himler, M.D., President

Secretary

To the House of Delegates, Gentlemen:

Duties of the secretary have been performed as follows for the year 1971–1972.

House of Delegates. Minutes of the 1971 meeting were edited and transmitted to the ***New York State Journal of Medicine;*** they appear in the June 1, 1971, issue of the ***Journal.*** The verbatim record of the 1971 House of Delegates' proceedings is on file at the Society's headquarters. Instructions of the House of Delegates were referred to the appropriate officers, committee chairmen, division directors, or other persons by the executive vice-president, either directly or in accordance with action taken by the Council in March on matters presented to it by the secretary at that time. Final disposition of instructions of the House have been excerpted from reports of officers and committee chairmen so far as they are available at the time of writing this report and are included in the "Résumé of Instructions of the 1971 House of Delegates and Actions Thereon by the Council, Board of Trustees, Officers, and Committee Chairmen."

Council, Executive Committee, Judicial Council, and Board of Trustees. The secretary has sent notices of the meetings of the Council, the Board of Trustees, and the Executive Committee and has also reported Executive Committee actions to the Council. There have been no meetings of the Judicial Council during the year, to date.

Membership. In response to requests by the county medical societies, presented by the Secretary, the Council has approved remission of dues of 167 at its meetings in March, May, and September because of illness, financial hardship, or military service. A supplementary report will contain additional membership information including dues remissions approved by the Council in November, 1971, and January, 1972, and a list of life members elected by the Council in November, 1971, and January, 1972. A list of persons elected to life membership at the Council meetings held in March, May, and September, 1971, follows.

Abram Joseph Abeloff, New York City
Cullen Adlerblum, New York City
Abraham Adnopoz, Brooklyn
William Brewster Allan, New York City
William Elliott Allison, Camden
George Edward Anderson, Brooklyn
George Clinton Andrews, New York City
David Irving Arbuse, New York City
Benjamin I. Ashe, New York City
Samuel Atkin, New York City
Amin Assad Audeh, Menands
Liese Auerbach, New York City
Joseph Avin, Brooklyn
Moses Bacher, The Bronx
Grace Baker, New York City
Irvin Balensweig, New York City
Valer Barbu, New York City
Arthur Joseph Barsky, New York City
Edgar Coleman Beck, Buffalo
Joseph Nuntius Bellino, Newburgh
Richard Berczeller, New York City
Louis Berg, New York City
Bernard Berglas, New York City
Ruth Pirkle Berkeley, New York City
Ira Jay Berlove, New York City
Jacob Clarence Bernstein, Greenlawn
Oscar Hirsch Bernstein, Hollywood, Florida
Samuel Bernstein, New York City
Louis F. Bishop, New York City
Josef Bleichfeld, Buffalo
Benjamin Abner Bloom, Brooklyn
Joseph Blum, New York City
Guido Boccardi, Long Island City
Edward Andrew Bogdan, Amsterdam
Cologero John Bonadio, Kings Park
Morris Bonfield, Brooklyn
James Bordley, III, Cooperstown
Alexander Borota, New York City
David Marsh Bosworth, New York City
Malcolm Albert Bouton, Schenectady
Charles Hugh Branigan, Bronxville
Eugene Braude, New York City
Lester Breidenbach, New York City
Ruth Pilpel Brickner, Hastings-on-Hudson
Samuel Brock, New York City
Isaac B. Brodsky, The Bronx
Katherin Forster Brokaw, Ghent
Ludmilla F. Brown, New York City
Philip Brown, The Bronx
Leon Allan Bryan, New York City
Charles Buckman, East Meadow
Vincent DePaul Bull, Syracuse
Samuel C. Burchell, New York City
William Gerald Burke, Brookville
Julius Burstein, New Rochelle
Con Amore V. Burt, New York City
Giovanni Caggiano, The Bronx
Otto Anthony Carabba, Brooklyn
Wolfgang Albert Casper, Staten Island
Thomas Norman Cassidy, Westbury
Anthony Joseph Cava, Valley Stream
William V. Cavanagh, Watertown
Nathan Wolf Chaikin, New York City
Levere McDonald Chaney, New York City
Alexander I. Charin, New York City
Joseph Solomon Chasnoff, Brooklyn
Robert S. Chernuchin, New York City
Albert A. Cinelli, New York City
Anthony Caesar Cipollaro, New York City
Philip Cirincione, The Bronx
Alphonse Vincent Clement, Brooklyn
Hollis Emerton Clow, White Plains
Samuel Lewis Cohen, Brooklyn
Frederick Eduard Cohn, Rhinebeck
Alfonso Coletta, Flushing
Charles Anthony Collins, Old Greenwich, Connecticut
Walter Edwin Constantine, Buffalo
William P. Corriero, Garden City
Harry A. Coveler, New York City
Ruth Foster Crabtree, Newburgh

John Dorsey Craig, New York City
Henry Aloysius Crane, Staten Island
William Henry Crull, New Paltz
Ralph Leslie Cudlipp, Sr., Winthrop
Salvatore Ralph Cutolo, New York City

Max Dahl, Poughkeepsie
Elbert Dalton, Beaver Falls
George Eaton Daniels, New York City
James Llewellyn Davis, Newark
Nathan Davis, New York City
Elizabeth W. De Csepel, New York City
John Kenneth Deegan, Beacon
Clarence E. de la Chapelle, New York City
Edward Victor Denneen, Thendara
Clifford Leroy De Rago, Brooklyn
Louis Marius D'Esopo, Tarrytown
Joseph Sante Diasio, Oakfield
Bernard Disick, Brooklyn
Vera B. Dolgopol, New York City
Edward Vincent Dollard, Miller Place
Arthur F. Donofrio, The Bronx
Harold S. Douglas, New York City
Margaret Douglas, New York City
Thomas Frazer Draper, Queens Village
Joseph George Druss, New York City
James Howard Dwinelle, Rye
Myron John Dybich, Schenectady
Joseph Eidelsberg, New York City
Joseph Jordan Eller, New York City
Harold Lloyd Ellis, New York City
Werner Herman Engel, New York City
Joseph Engelmann, New York City
Alfred John Ephraim, Brooklyn
Harry Herman Epstein, Sherburne
Herbert Arthur Epstein, New York City
I. Leslie Epstein, Brooklyn
Maximilian Fabrykant, New York City
George Linden Fair, Syosset
Miklos Farago, Helmuth
Raphael Farber, Rochester
Franklin Crevling Farrow, Buffalo
Anthony Godfrey Featherston, New York City
Frederic Feldman, Brooklyn
Eugene Alfred Fierro, New York City
Jacob Figarsky, Brooklyn
Leon E. Fineman, The Bronx
Hermann Fischel, Brooklyn
Alfred Elias Fischer, New York City
Arthur M. Fishberg, New York City
Grant Tracy Fisher, Lackawanna
Ferdinand N. Forbes, New York City
Claude Ellis Forkner, Deland, Florida
Ruth Fox, New York City
Sidney Albert Fox, New York City
William Henry Frazier, Yonkers
Samuel Z. Freedman, New York City
Arthur Jerome Freeman, Port Ewen
William Adrian Freeman, New York City
Jacob Robert Freid, New York City
Arthur Morton Freund, The Bronx
Hans Freundlich, Hamburg
Joseph John Fried, New York City
Benjamin Friedman, New York City
George Friedman, New York City
Jacob Friedman, New York City
Leon Arthur Friedman, Scarsdale
Margaret Evelyn Fries, New York City
J. Dudley Fritz, Palm Beach, Florida
Arthur Laverne Funk, Buffalo
Harry Gabe, The Bronx
Elmer Stewart Gais, New York City
Conrad K. Gale, New York City
Elizabeth M. Gallinek, New York City
Thomas Joseph Galvin, New York City
Percy Garson, Peekskill
Jacob Gantman, The Bronx
William Geiger, New York City
Francis Giammattei, North Tarrytown
William Vincent Gilbert, The Bronx
Joseph H. Gillman, Brooklyn
Paul Henry Girard, Utica
Ameil Glass, White Plains
Samuel Thomas Glasser, New London, Connecticut
Rachelle Goldberg, Brooklyn
Simon Noah Goldberg, Yonkers
Maximilian W. Goldstein, New York City
Leo Gottesman, Woodside
Arthur Gottlieb, Brooklyn
Horace Greeley, Jr., Brooklyn
Robert Stone Grinnell, New York City
Henry Nathaniel Gross, Brooklyn
Benjamin Grossman, Flushing
Friedrich Wilhelm Grossmann, New York City
Aleksander Grudzinsky, Elmhurst
Charles Gruen, Fort Myers, Florida
Arnold Grunfeld, New York City
Arthur Herman Grunfeld, Buffalo
Karl William Gruppe, Sauquoit

Marczel Haas, The Bronx
Ernst Hammerschlag, New York City
William Hammond, Scarsdale
Philip N. Harff, Cambridge
Louis Arthur Hauser, New York City
Anna Lee Hecht, Forest Hills
Lionel M. Heiden, New York City
Max Helfand, New York City
Frieda Henkin, New York City
Harry Lewis Herman, Brooklyn
Julian Bertram Herrmann, New York City
Leo Goldschmidt Hess, New York City
Hans Hesse, New York City
Norman L. Higinbotham, New York City
Louis Hirschborn, Great Neck
Hans Hirschfeld, New York City
Margot Hoffmann, The Bronx
Robin Hood, New York City
Edward Adolph Horowitz, New York City
Charles Voorhees Hults, Brooklyn
Henry Dunham Hunt, Saratoga Springs
Arnold A. Hutschnecker, New York City
Louis Iacueo, New York City
Alfred Ianora, Bellerose
Nicholas Ingoglia, Hollis
Ludwig Isaak, Greenwich, Connecticut
Otto Isakower, New York City
Edith Jacobson, New York City
Jacob O. S. Jaeger, New York City
Joseph J. Jaksy, New York City
Charles Neal Jeffries, Mamaroneck
W. Yerby Jones, Buffalo

James Craig Joyner, New York City
S. Fred Julich, New York City
Lothar B. Kalinowsky, Brightwaters
Edmund Kapise, New York City
Edward E. Kaplan, New York City
Samuel Karelitz, Flushing
Sigmund Karfiol, Brooklyn
Leopold Karp, Binghamton
Ernst Kaskel, New York City
William Augustus Katz, Flushing
Harry Harvey Kaufman, The Bronx
Julius Kavee, The Bronx
Alexander Sandor Kelen, New York City
Byron Benjamin Kenyon, Millerton
John Joseph P. Kilgallen, Brooklyn
Joseph Kertesz, Miami Beach, Florida
John Henry Kilgus, Bronxville
William L. King, Jamestown
Joseph Horace Kinnaman, Farmingdale
Edwina Kittredge, Yonders
Hans Simon Kiwi, New York City
Sophia J. Kleegman, New York City
Emil Fredrick Klein, Elmont
Irwin Jay Klein, Brooklyn
Percy Klingenstein, New York City
Morris I. Knopfelmacher, The Bronx
Isabel Knowlton, Key West, Florida
Hedwig Koenig, New York City
Jerome Kogan, Hallandale, Florida
Mortimer M. Kopp, New York City
Stefan Kornhauser, New York City (deceased)
Abraham Leon Kronzweig, New York City
Joseph Jack Kowles, The Bronx
Kyman Kozak, Brooklyn
Oscar Kramer, Brooklyn
Samuel Kramer, The Bronx
Emanuel Krimsky, Brooklyn
Marianne Kris, New York City
Harry Esslier Kroin, Jackson Heights
Julius D. Krombach, Crystal Beach, Florida
Harry Dayton Kruse, Bronxville
Norbert W. Kuch, Wayland
Bernard Kurz, The Bronx
Isaac Kuschner, New York City

Marion Dorothy Laird, The Bronx
Samuel Lampert, Long Island City
Herman Lande, New York City
Alfred Lang, Woodside
Gasper Anthony LaRosa, Rego Park
Norman Franklin Laskey, New York City
Evelyn G. Lavendel, Jackson Heights
John Walter Lawson, Yonkers
Wladyslaw Lewin, Kew Gardens
Leo Lefkowitz, Montrose
William Leifer, New York City
Martin Leiser, Poughkeepsie
Erwin Lengyel, Massapequa
Harold Sello Leopold, New York City
Harry Julius Lesnick, The Bronx
Kurt Leubuscher, Brooklyn
Charles Kantor Levy, Brooklyn
Eric L. Levy, New York City
Martin Lewy, Brooklyn
George Lichtenfeld, New York City
Betsy P. Lidsky, New York City
Milton Roland Louria, New York City
Harry Joseph Lowen, New York City
Henry J. Lowenfeld, New York City
Samuel Lowy, New York City
Joseph Lubart, New York City
Salvatore Luca, New Rochelle
Paul Joseph Lussheimer, New York City
Frederick Henry Lutze, New Rochelle

Kenneth Sheldon MacLean, New York City
Sigmund Mage, New York City
William Joseph Mahar, White Plains
Megirdich Mangoian, New York City
Hans Louis J. Mannheim, New York City
Joseph Mortimer Marcus, New York City
Lazar C. Margulies, New York City
Rafael A. Marin, New York City
Anthony Wayne Martin Marino, Brooklyn
Frank F. Marino, New Rochelle
James M. Markin, Rochester
Hirsch Marks, New York City
Jerome Alexander Marks, New York City
Kirby Armstrong Martin, New York City
Eugene Roland Marzullo, Brooklyn
William Edward Mathews, Niagara Falls
Joseph Bryant Mathewson, Ithaca
Leo Mayer, New York City

May R. Mayers, New York City
James Arthur McAleese, Freeport
Edward James McCabe, New York City
Joseph Tecumseh N. McCastor, New York City
John Corran McCauley, Jr., Wellsboro
Gladys May McDermaid, Arcadia, Florida
Harold Patrick McGan, Albany
Frederick William Haskell McKee, New York City
Abraham Medjuck, Brooklyn
Leon Merkin, New York City
Benjamin Messinger, The Bronx
Joseph Charles Micelli, Brooklyn
Ade Thomas Milhorat, New York City
Frederick Munger Miller, Jr., Utica
Kate Freeman Miller, Stony Brook
Charles Osborne Mills, Syracuse
Hyman Miner, The Bronx
Oscar Joseph Mink, Hastings-on-Hudson
Alex Mintzer, Hollywood, Florida
Peter John Milazzo, Corona
Ludovico Marion Mirabella, Floral Park
Sonya Arina Monen, Brooklyn
David Dodge Moore, Islip
Edwin King Morgan, Brooklyn
Leon Motyloff, New York City
Gerard Harry Mueller, New York City
Meta Froehlich Mueller, New York City
Michael George Mulinos, Westfield, New Jersey

Kurt Sam Nahm, New York City
Max Bernard Nathanson, The Bronx
Walter Gerhard Nauenberg, New York City
William Alexander Newlands, Tarrytown
Saul Charles Newman, Amityville
Elizabeth Grace Nicholls, Pittsburgh, Pa.
Savas Nittis, New York City
Michael Anthony Nocero, The Bronx
Arthur A. Nussbaum, Brooklyn

John Edward O'Connor, New York City
Edward Opin, West Palm Beach, Florida
Hellmuth Ernst Oppenheimer, New York City

Samuel Zachary Orgel, New York City
Julius Gustave Ottenheimer, New York City

Clarence Quinton Pair, Mount Vernon
Orla James Park, Hudson Falls
Richard Townley Paton, Southampton
Brittain Ford Payne, New York City
Nellie Pelecovich, Forest Hills
Stephan I. Pellathy, Kings Park
Osborn P. Perkins, New York City
Louis Perlman, Brooklyn
Arthur Melvin Persky, Brooklyn
Albert Bela Peterfy, New York City
Theodore Pick, New York City
Ulric Richard Plante, Massena
Alfons Podnieks, West Hempstead
Abraham Charles Posner, New York City
Harry B. Pozner, Elmont
Moses L. Press, Brooklyn
Pro V. Prewitt, New York City
Rosa Elizabeth Prigosen, Brooklyn
Rose Marie Pucci, Rochester

Marie Soloff Quasha, Brooklyn
John Joseph Quinlan, Troy (deceased)

Jay Robert Rabinowitz, Brooklyn
Milton Joseph Rader, North Miami Beach, Florida
Louis G. Raff, Flushing
Walter Redisch, New York City
Carl Reich, New York City
Ellen Reiner, New York City
Nathaniel H. Robin, Hempstead
Philip James Robinson, Ithaca
Abe Irving Rock, Buffalo
Adelaide Romaine, New York City
Alfred Romanoff, New York City
Leo Rosen, Brooklyn
Stephan S. Rosenak, New York City
Hyman Rosenfeld, Brooklyn
Maurice C. Rosenkrantz, Hollywood, Florida
Theodore Rosenthal, New York City
Alfred M. Rosier, Lynbrook
Mayer Edel Ross, Brooklyn
Abraham Simon Rothberg, New York City
David Rothstein, Jackson Heights
Kenneth Thomas Rowe, Hornell
Pierre Adolph Rube, New York City
Lucian C. Rutecki, Buffalo
Samuel Rubenstein, Brooklyn

Israel J. Sackin, Brooklyn
Edward Irving Salisbury, Plandome
Myron A. Sallick, New York City
Abraham Norman Saperstein, Bellerose
Stephen Frank Saxl, New York City
Max Morton Scharf, Hallandale, Florida
Alfred Schick, New York City
Henry A. Schlesinger, Brooklyn
Milton Herman Schlesinger, Jackson Heights
Solomon Schneider, Brooklyn
Ferdinand J. Schoeneck, Syracuse
Martin Schreiber, New York City
Philip Maxwell Schulman, Fort Lee, New Jersey
Milton John Schulz, Lancaster
Simon Jacob Schumacher, The Bronx
Harry Schwartz, New York City
Samuel Schwartz, New York City
William A. Schwartz, Hollywood, Florida
Paul Sylvester Seager, New York City
Robert Charles Seeley, New York City
Frank Justin Serafin, Amityville
Frank Z. Serman, New York City
Benjamin S. Shapley, Flushing
William Anthony Shay, Cortland
John Newton Shell, Freeport
Jacob W. Shemin, The Bronx
Penelope Sherwood, Newburgh
Irving Daniel Shorell, New York City
Gertrude M. Shults, Lakemont
Samuel A. Sidat-Singh, New York City
Samuel Silber, Brooklyn
Joseph Anthony Sileo, Brooklyn
Charles Franklyn Sims, The Bronx
Samuel Edward Sinberg, New York City
Frank Badger Smarzo, Livonia
Ainsworth Lockhart Smith, Miller Place
David Henry Smith, New York City
Henry Templeton Smith, New York City
Maxwell Conrad Snider, Binghamton
Robert Folger Solley, St. Louis, Missouri
Nathan Solomon, The Bronx
Anni Sonnenfeld, New York City
Herman Sparber, Brooklyn
Nathan Spector, Fort Lee, New Jersey
Joseph Maurice Spielberg, Miami Beach, Florida
Alfred Morrell Stanley, Adams Center
Samuel Jay Stabins, Rochester
Henry Staff, Bath
Otto Steinbrocker, New York City
Arthur Steindler, Forest Hills
Hans L. Steiner, Lindenhurst
Michael Steiner, New York City
Emil Sternberg, Buffalo
Herman Max Sternberg, New York City
Grete Stohr, New York City
Hilton Hedley Stothers, New York City
Adele Emily Streesman, Brooklyn
George Morris Stroll, Shelter Island
Marion Baldur Sulzberger, San Francisco, California
Harry Suna, Hollywood, Florida
Elizabeth G. Sunners, New York City
Wilson Carroll Swasey, Batavia
Willard Hamilton Sweet, Jr., Peekskill

Oscar Tanne, New York City
Sidney Tausend, Scarsdale
Stanleigh Sydney Tausend, New York City
Howard Canning Taylor, Jr., New York City
William Volf Tenzel, New York City
Robert Collins Towse, Watervliet
Ervin Anthony Tusak, New York City
Jacob H. Turner, The Bronx
John Russell Twiss, New York City

Albert Vander Veer, II, Delmar
Alfonso Alfred Vanore, Whitestone
Ilona Vass, New York City
Edmund Vermes, New York City
Raoul Elie Vezina, Troy
Eduard Walter Violin, New York City
John J. Viviani, Garden City
Peter Vogel, New York City
George Claus von Borstel, Scotia
Harry Edward Voss, Scarsdale

Max Waltuch, New York City
Francis Cluskey Ward, Odessa

Tobias M. Watson, Palos Verdes Estates, California
Abraham Weber, Brooklyn
Virginia Travell Weeks, Brooklyn
Selma Wehl, Brooklyn
Rudolf Weil, New York City
Seligman Weinberg, Yonkers
Joseph Weiss, The Bronx
Franklin Howard Westcott, San Diego, California
Francis Clark White, Victoria, British Columbia, Canada
Sidney B. Wilensky, New York City
Sigmund P. Winter, The Bronx
Rudolf Wittmann, New York City
Louis A. Wolfe, New York City
Ludwig Wolfermann, New York City
Joachim Berthold Wolff, New York City
William Abraham Zavod, Mount Vernon
Zelman Zelikson, The Bronx
Frederick Ziman, New York City
Alphonse Alfred Ziviello, The Bronx
Joshua Zuckerman, New York City
Julius Stephen Zufa, New York City
Wolf Zukerman, New York City

Dues payments. As of May 1, 1971, the date after which good standing is lost, dues had been received from the members in each county medical society in accordance with the following list.

Albany	429
Allegany	22
Bronx	1,499
Broome	328
Cattaraugus	82
Cayuga	77
Chautauqua	112
Chemung	121
Chenango	40
Clinton	71
Columbia	38
Cortland	37
Delaware	35
Dutchess	309
Erie	1,279
Essex	18
Franklin	39
Fulton	42
Genesee	46
Greene	26
Herkimer	39
Jefferson	99
Kings	2,790
Lewis	10
Livingston	37
Madison	56
Monroe	982
Montgomery	31
Nassau	1,879
New York	6,604
Niagara	171
Oneida	308
Onondaga	627
Ontario	109
Orange	212
Orleans	23
Oswego	52
Otsego	56
Putnam	24
Queens	2,208
Rensselaer	134
Richmond	294
Rockland	343
St. Lawrence	79
Saratoga	45
Schenectady	206
Schoharie	21
Schuyler	8
Seneca	25
Steuben	104
Suffolk	1,072
Sullivan	44
Tioga	20
Tompkins	100
Ulster	140
Warren	80
Washington	30
Wayne	54
Westchester	1,376
Wyoming	23
Yates	15

Meetings. The Secretary has attended meetings of the Council, the Executive Committee, the Board of Trustees, the Professional Medical Liability Insurance and Defense Board, the House of Delegates of the American Medical Association, and the New York Delegation to the American Medical Association. He plans to attend the meeting of the Nominating Committee. To date there has been no meeting of the Judicial Council.

Other Matters. The Secretary has kept the minutes and verbatim record of the proceedings of the House of Delegates, the Council, the Executive Committee, and the Board of Trustees. He has also kept files of the correspondence resulting from these meetings. He has served as custodian of the seal of the Society and has had it affixed to all appropriate documents.

As a result of his holding office in various other organizations, your Secretary was able to act as liaison officer with the following organizations: The New York Association of the Professions, New York Board of Trade, Group Health Insurance, and Physician's Home. Your Secretary also served as a member of the American Medical Association's Committee on Malpractice.

Before closing his report, your Secretary would like to express his thanks and appreciation for the great help rendered him during the past year by the Assistant Secretary, Joseph G. Zimring, M.D., and for the ever-constant aid of the executive assistant, Miss Gretchen Wunsch.

Respectfully submitted,
Carl Goldmark, Jr., M.D., Secretary

Executive Vice-President

To the House of Delegates, Gentlemen:

This report covers the period from the annual meeting in February to November 1—approximately nine months.

THE BUILDING

Work on the building has been progressing in the right direction, but slower than we had anticipated. As the deadline approaches, we become more and more impatient. This is only natural.

Although we realize that present-day trends do not call for dedication and speed, which was so prevalent in yesteryear, we still feel that more men should have been assigned to the job, so that completion of all phases of the building would be brought closer to realization. With this in mind, we have been meeting with the architects and contractors frequently—and urging them to go ahead at full steam.

The chairman of the Building Committee and our treasurer also have "been on the ball." They have been visiting the site at regular intervals. We could not have better "watchdogs."

Despite all the frustrations, we will occupy our new headquarters soon. We are scheduled to move to Lake Success on November 16.

The formal dedication will take place on December 10. By then, we hope that the "bugs," which are inherent in any new structure, will have been eliminated.

Assessment. Through October 12, the building assessment has brought in $1,727,530. The figures show:

Full Members:	22,851 × $75 =	$1,713,825
Junior Members:	90 × $25 =	2,250
Contributions:		11,455

In other words, 97.2 per cent of our regular dues-paying members have transmitted their checks. A few returns are still coming in.

Real Estate Tax. As some of you know, unexpectedly, a new law passed by the last Legislature makes it possible for property such as ours to be included in the list for real estate taxes—on local option. In other words, we have lost the privilege of real estate tax exemption.

Sometime ago, this letter was transmitted to the Village Trustees by John Lewis, our "village expert counsel."

> This statement is presented on behalf of the Medical Society of the State of New York in opposition to the proposal to adopt A Local Law to Provide for the Taxation of Presently Exempt Real Property Owned by Certain Nonprofit Corporations and Associations.
>
> The Medical Society was created by Special Act of the New York State Legislature, Chapter 138 of the Laws of 1806. It is a nonprofit membership corporation created for the purpose of advancing the science and art of medicine and to promote the betterment of public health.
>
> The Medical Society acquired property in Lake Success on August 31, 1967. It is in the course of constructing a building on such property which will constitute its headquarters. The building is expected to be ready for occupancy in October, 1971.
>
> Prior to the acquisition of the property and the preparation and filing of plans for the construction of such building, the Medical Society acting in reliance upon Section 420 (1) of the Real Property Tax Law of the State of New York which exempted properties of a medical society as well as properties of other educational, scientific, charitable and benevolent organizations, prepared a budget of its expenses of operation. Such budget did not nor could it be expected to include any sum for payment of real estate taxes on its proposed building. Any effort on the part of a municipality, whether at the town and county, the school or village level, to impose a real estate tax on such property would, if successful, seriously disrupt the Medical Society's budget and could have the effect of curtailing its activities.
>
> The recently enacted Section 420(1)(b) amendment to the Real Property Law of the State of New York was predicated upon a legislative finding that real property in the State of New York having an assessed valuation of excess of 22 billion dollars is exempt from and free from the payment of real property taxes and that the continuous removal from the tax rolls of taxable real property is a particular hardship on local governments and upon the citizens who are increasingly burdened by additional taxes whenever such tax exemptions reduce the tax base. No quarrel is raised with respect to the purpose enunciated in the Act. However, the condition sought to be corrected is of minor importance in Nassau County and minimal in the Village of Lake Success. Although the impact on municipalities of tax exempt properties held by public and by private nonprofit organizations is great, the proportionate share of such tax exempt properties held by hospital and medical facilities is relatively small and this impact is counterbalanced by the beneficial services the medical facilities provide to the taxpayer. Before considering a proposal to revoke a tax exemption enjoyed by a nonprofit organization, the municipality should determine whether that particular organization is providing a public benefit which should be encouraged.
>
> As stated above, Nassau County is not drastically affected by the percentage of real property exempt from taxation. Based upon 1967 assessment rolls, Nassau County tax exempt property amounts to 14.88 per cent whereas tax exempt property in St. Lawrence County was 62.59 per cent, Seneca County 57.88 per cent, and Livingston County 48.09 per cent. (See Final Report of the Joint Legislative Committee to Study and Investigate Real Property Tax Exemptions, Legislative Document (1970) No. 15.)
>
> Nassau County has taken no action under the authority granted to it in subdivision (b) of Section 420(1) of the Real Property Law. In fact, it is understood that the County at this time has no plans for enacting a local law revoking the present tax exempt status of properties within the County.
>
> Real property located within the Village is assessed at $32,180,322. Tax-exempt properties owned by the

County of Nassau, the Town of North Hempstead, the School District, the Manhasset-Lakeville Water District, religious organizations, the Medical Center, the Nursing Home, the Medical Society of the State of New York, and by the Village itself are assessed at $2,161,725 or approximately only 6.7 per cent of the assessment roll. This tax exempt property does not constitute a significant portion of the total land value within the Village and certainly does not create a burden upon the Village taxpayers. Since subdivision (b) of Real Property Law Section 420(1) does not encompass properties owned by State, County, Village, School Districts and Water Districts, the only property against which the proposed Local Law is directed is the single parcel held by the Medical Society. It is respectfully submitted that the benefits to residents of the Village to be provided by the Medical Society far outweigh the cost to the individual taxpayer.

There is a grave danger that any action on the part of the Village of Lake Success in revoking tax exemption heretofore granted to the property of the Medical Society would trigger similar action on the part of Town and County authorities and as a result the impact of taxes on the Medical Society could have a drastic effect upon its operations.

Furthermore, we question the validity of a Local Tax Law directed specifically against one single taxpayer.

For all the above reasons the proposed Local Law No. 1 of 1971 revoking tax exemptions presently granted should not be enacted.

The Board of Trustees of the Medical Society of the State of New York is considering an alternate plan to ease the burden of the tax, if the Village Board decides to pursue this matter.

Of course, to make up for the real estate tax cost, we also will plan the rental of unassigned space in our building to allied groups.

Subletting of Space at 750 Third Avenue. We have been very actively engaged in trying to find a lessee for subletting our present quarters. A number of organizations are definitely interested in occupying our space. The latest bid was $6.50 per square foot. The problem is being negotiated with Cross & Brown, the real estate agent for 750 Third Avenue. We are awaiting further developments.

STATUS OF MSSNY MEMBERSHIP

Since an additional 3.2 per cent of our members are in arrears and no longer in good standing during this year as compared with 1970, due mainly to the assessment, we will lose approximately 600 members, or a decrease in revenue of 600 × $70, which is over $40,000 less than the original estimate of income.

AMA DUES

The latest review shows that there will be about 8,000 members who have not paid their AMA dues, as compared with last year. This will reduce our representation in the American Medical Association House of Delegates from 27 to 19.

UNRELATED BUSINESS INCOME—JOURNAL ADVERTISING

The problem of unrelated business income, as far as the Journal advertising is concerned, has been presented to you on a number of occasions. Recently, the Internal Revenue Service submitted to us an income tax bill for 1968 of $40,116.56, plus a penalty of $6,017.48, for a total of $46,134.04. This matter was referred to Wilkie, Farr and Gallagher, tax experts.

Recently, we received the following communication from these people:

> With reference to our telephone conversation last Monday, I am writing to confirm our recommendation in connection with a proposed adjustment of the 1968 Federal income tax liability for the Medical Society of the State of New York (hereinafter called the Society). That adjustment, as set forth by letter dated July 20, 1971, from the Internal Revenue Service to the Society, proposed a deficiency of $40,116.56 in income tax, plus a delinquency penalty. As I stated to you on the telephone, we recommend that the Society pay the proposed deficiency and penalty, and thereupon file a claim for refund of such amount with the Internal Revenue Service.
>
> The alternative procedure is to file a memorandum with the Internal Revenue Service protesting the adjustment proposed in its July 20 letter.* Some months after the filing of that protest, there would be a conference with officials of the Internal Revenue Service; and, if a satisfactory agreement could not be reached, the Society at that time would have the choice of litigating in the United States Tax Court or then following the procedure which we recommend now, that is, paying the tax and filing a claim for refund.
>
> The procedure of filing a claim for refund is ordinarily selected if the taxpayer chooses to litigate the issue in a local district court rather than the Tax Court. Although there are no decisions indicating that a New York district court would be more favorably inclined to the Society's claim than would the Tax Court and—in view of the lack of precedent—much may depend upon the individual judge who hears the case, we are inclined to favor having the case heard in the District Court for the Southern District of New York.† Whether litigation is advisable at all, of course, depends upon the attitude of the Internal Revenue Service toward our claim for refund, as to which there will be followed an administrative procedure somewhat similar to that had we responded to the July 20 letter, that is, the filing of a memorandum followed by a conference. The fact that a district court might be relatively more hospitable than the Tax Court does not necessarily mean that our chances of success are likely.
>
> In addition, the asserted delinquency penalty accrues at the rate of 0.5 per cent of the tax each month, with a maximum of 25 per cent. As of the date of the letter, the penalty was 15 per cent for thirty months. If this penalty is ultimately payable, the cost for the next year of not paying the tax now will be 12 per cent, consisting of 6 per cent interest plus the penalty.** By contrast, to the extent that a refund of tax and/or penalty is obtained, the Society will be entitled to 6 per cent interest from date of

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*Although technically the time for filing such protest expired 30 days from that day, we believe that even now an extension might be granted.

†From the complaint in the Massachusetts Federal District Court which Mr. Martin sent us, it appears that counsel for the Massachusetts Medical Society reached a similar conclusion.

**Unlike interest, the penalty is not a deductible item.

> payment. Moreover, the Society will not have to go through the administrative procedure twice, that is, to file a response to the July 20 letter and, if no satisfactory agreement is reached, then to prepare a claim for refund.
>
> If you have any questions or comments about the foregoing, please do not hesitate to call me.
>
> Yours very truly,
> (signed) Charles I. Kingson

After conferring with William Martin, our counsel, and James Blake, M.D., chairman of the Board of Trustees, the following communication was transmitted to the New York City District Director of Internal Revenue Service:

> Enclosed is our check in the amount of $46,134.04 which we are paying under protest pursuant to your letter, dated July 20, 1971. This amount is related to the tax return for the year 1968. We hereby request a conference in the district office.
>
> We do not agree with your findings that there is a deficiency of $40,116.56 in the taxes paid for the year 1968, and, of course, disagree that there is any penalty due.
>
> It is our understanding that the deficiency is based on the finding of the Service that certain revenue related to publications of the Medical Society is taxable income. It is the position of the Medical Society that the revenue in question is income related to the purposes of the Medical Society and, therefore, is not taxable income.
>
> Under the penalties of perjury, I declare that I have examined the statement of facts presented in this protest, and to the best of my knowledge and belief, they are true.

THE 1971 CONVENTION

As usual, we held a "postmortem" convention staff meeting on March 10. Representatives of the Americana of New York attended.

All phases of the annual meeting were reviewed and evaluated—with the hope that our deliberations would result in better utilization of what we have to offer and increased efficiency. The Americana people promised to cooperate in every way possible.

Here are a few important statistics:

	Attendance				
	Sun	Mon	Tues	Wed	Total
Physicians*	1,068	611	287	578	2,544
Allied professions†	241	100	61	183	585
Guests	483	229	112	186	1,010
Totals	1,792	940	460	947	4,139
Technical exhibitors					727
Total					4,866

Comparative figures	Years		
	1969**	1970	1971
Physicians	1,805	2,864	2,544
Allied professions	298	520	585
Guests	498	745	1,010
Technical exhibitors	814	788	727
Totals	3,415	4,917	4,866

*Includes House of Delegates (259).

†Includes dentists, Ph.D.s, medical students, nurses, medical technicians, and others.

**Year of the blizzard.

Figure 1 (see page 112) is the exhibitors' evaluation report. The following comments were excerpted from an exhibitor's report:

Physician's family are a problem. Children take many copies of expensive scientific literature, to which they are not entitled.

Low attendance in general practice, orthopod, and physical medicine fields.

Sales of premiums and giveaways of drugs at one booth instead of vice versa.

Arrange scientific exhibits among technical.

Too cool on Sunday-Monday, stuffy at other times.

Samples lost or stolen, waste basket missing.

Booth furniture was "stolen" during evening of first day.

Missing 2 books.

Our sample cartons were disarranged and rifled this morning.

Charges for service excessive, as usual.

Would like specialty on identification.

Booth placed directly opposite close competition.

Have specialty on badge instead of number. (3)

Not enough registrants.

Have better ventilation too hot. (5)

Poor physician interest and participation.

Recommend 5:00 P.M. closing on Sunday. (3)

Have 3:00 P.M. closing on Wednesday.

The booths are too close.

Booth is not centrally located, so traffic is not heavy.

Average age of registrant is too old.

General lack of interest on the part of the physician in the technical exhibits.

Good turnout, good atmosphere, physicians look for us.

Program could be a little more coordinated.

Turnout could be better.

Anybody could come in, guards not efficient.

Hotel dirty, service terrible. (3)

We are located away from the main stream of traffic.

Visitors seen without badges on five occasions.

Excellent Sunday, then downhill thereafter.

Too many children and wives on Sunday (on same report as above item).

Have at mountain resorts (2); Statler Hotel (1).

REORGANIZATION OF THE STAFF

A year ago, we discussed the beginning of a staff reorganization. The Division of Occupational Health and Workmen's Compensation was eliminated, and became part of the Division of Medical Services. Max Howard, M.D., is its director; and he has fitted into our plans admirably.

In December, we propose to disassociate legislation from the Division of Public Affairs and establish a new separate Division of Legislation, with Martin J. Tracey, J.D., as its director (see president's message in *News of New York*, October, 1971).

Further administrative changes and streamlining are contemplated. The plans will be transmitted to you at the proper time.

DIVISIONS

Executive Assistant. The tasks assigned to this Division have been many. In addition to routine chores, we would like to mention the following:

. . . Preparation and circulation of the summary of the minutes of the annual meeting.

. . . Compilation of the official minutes of the annual meeting for publication in the June 1 issue of the New York State Journal of Medicine.

. . . Actions of the House of Delegates requiring further consideration were prepared for presentation by the Secretary at the March Council meeting.

. . . The changes in the Constitution and Bylaws of the following societies were prepared for Council approval (after study by the committee and legal counsel): Bronx, Columbia, Erie, Seneca, and Chautauqua.

. . . A list of officers of county medical societies was prepared for distribution and also for publication in the New York State Journal of Medicine, October 1, 1971.

. . . The minutes of meetings of the Council, the Executive Committee, and the Board of Trustees were prepared and circulated.

. . . Minutes of meetings of the New York Delegation to the American Medical Association in June, in Atlantic City, were transcribed and distributed.

. . . Letters were sent to officers, chairmen of comissions and committees, and presidents of district branches asking that annual reports be in our hands by October 1 so that they can be ready for presentation to the Journal before its November 15 deadline for publication in the January 1 issue.

. . . County medical societies, district branches, and sections have been requested to send in the names of delegates to the House for its 1972 meeting.

. . . Memoranda have been prepared and sent to the presidents and secretaries of county medical societies and district branches, and to chairmen and secretaries of scientific sessions asking for recommendations for membership on the various committees of the State Society.

. . . A resume of actions taken on resolutions and other recommendations of the 1971 House of Delegates is being prepared.

Scientific Activities. On March 9, 1971, a symposium entitled, "The Current Drug Epidemic," dealing with many of the problems of drug abuse and the control of same was held at Colgate University, Hamilton, New York. The Medical Society of the State of New York acted as cosponsor. Many prominent authorities participated, including George Himler, M.D., President, Medical Society of the State of New York; and Donald Louria, M.D., President, New York State Council on Drug Addiction. Approximately 300 students and 200 guests were present. It was a very successful meeting.

At the meeting of the Council on March 25, a report was submitted outlining all the phases of the drug abuse program from its inception. The *Desk Reference on Drug Abuse* for physicians, which had been mailed to the membership, has been very helpful. Shortly, a later edition will be completed for distribution. The current status of the Joint Drug Abuse Professional Education Project of the State Health Department and the State Medical Society, together with a list and dates of sessions to be held in various sections of the State, was presented for the information of the Council.

The Committee on Alcoholism and Drug Abuse met on March 26, 1971. One subject on the agenda and of great interest to the committee is the legal right of the individual physician to treat heroin addicts from the point of view of the practice of medicine. The committee unanimously agreed on the urgent need for physicians to administer narcotics to patients on an ambulatory basis and possibly detoxifying them under similar conditions, because the addict population is far out of proportion to the number of available hospital beds.

At a meeting of the Public Health Council, held on April 27, there was a long discussion about the proliferation of "scofflaw" medical care facilities throughout the State which were posing a mounting threat to the quality of care of patients. The discussion ended with the recommendation that a letter should be sent to all physicians in the State informing them about these establishments which are organized around specific medical procedures (abortion, hemodialysis, and multiphasic screening) and that this letter be signed by the New York State Commissioner of Health, the president of the Medical Society of the State of New York, and the chairman of the Public Health Council.

Since the May meeting of the Council, the director of Scientific Activities attended the meetings of the Committee on Data Processing, held at Mount Sinai Hospital, on June 2, the Committee on Health Care Technology, held at the Medical Society offices on June 3, and the Public Health Council meeting on June 4. He attended a meeting of the Committee on Forensic Medicine at the Medical Examiner's Office held on June 7, and a State Mental Hygiene Board meeting on June 8.

Also, he was present at a meeting of the Committee on Physical Medicine and Rehabilitation and a meeting of the Committee on Organization Coordination to the Health Planning Commission on June 9. On June 15 he joined Dr. Pisani for the meeting with the associate chairmen to formulate programs for the General Sessions at the next annual convention in February, 1972. Again, on July 8, both of these gentlemen participated in a meeting of the section and session chairmen at the Americana of New York where next year's session and section programs were discussed, and in large measure formulated. At this meeting, much discussion took place regarding outside funds to support session and section meetings, also the rule that papers presented were the property of the State Medical Society. In addition, the director prepared a draft of a memorandum on the subject of outside funds for scientific meetings. The same memorandum discusses who will designate prior approval for a paper not to be the property of the State Medical Society.

The meeting of the Commission on Public Health and Education was held on July 15, and was well attended. Considerable interest was expressed by both old and new chairmen of committees. A whole day of reports and discussions were stenotyped.

The director carried out the mandate of the Council that a letter be sent to all county society presidents and chairmen of county medical society cancer committees using the showing of the Cancer Society's new film about quackery entitled, "Journey Into Darkness." This letter was mailed to all county society presidents on July 6, 1971, and carried the address of every cancer society office in the State from which the film may be obtained.

The director was host to the Public Health Council at Tompkins County Hospital on July 22. Just before the meeting, Vincent Dole, M.D., of Rockefeller University, revealed the intention of the Food and Drug Administration to withdraw the conditions under which methadone maintenance programs are now being conducted. This would open the field for inexperienced as well as knowledgeable physicians to prescribe methadone. Such freedom could easily lead to unintentional, yet possible, hordes of young methadone addicts. The recommendation passed by the House of Delegates in 1970 did approve only one form of treatment with methadone, that is, the Dole method. The reference committee reported as follows:

1. That the State Medical Society go on record as approving the Dole methadone maintenance as a method of maintenance of opiate addiction at this time.

2. That the State Medical Society encourage support for the expansion of facilities for the methadone treatment of opiate addiction.

3. That the State Medical Society make every effort through proper channels to remove the legal restrictions which prevent the use of methadone treatment (mentioned in paragraph 1) by qualified physicians in offices, clinics, and hospitals.

The Dole method referred to in paragraph 1 involves provision for detoxification, available psychiatric services, social counseling, and controlled treatment; the addict patient returning to the clinic to receive his supply of methadone, usually taking the medication in the presence of clinic personnel.

Also, a back-up hospital is required. The largest program of this kind is now being carried out in Beth Israel Hospital. Thus, the Medical Society of the State of New York can participate in the formulation of guidelines without violating recommendation 3 of the 1970 House of Delegates because of the inclusion of the Dole system in number 3. William Antopol, M.D., and John E. Gainor, M.D., will have a free hand in working with the ad hoc committee.

The Public Health Council took the leadership in organizing an ad hoc committee to advise the Council on guidelines. At its meeting on July 19, 1971, the Executive Committee of the State Medical Society designated Dr. Antopol and Dr. Gainor to represent the Medical Society on the ad hoc committee, thereby assisting to construct guidelines for use of methadone which, if satisfactory, could be ratified by the Council of the Medical Society of the State of New York, the Public Health Council, and the New York City Board of Health. This procedure could avoid having three ad hoc committees arrive at about the same conclusions in the case of abortion guidelines in 1970. Ray Trussell, M.D., is chairman of the ad hoc committee, which will have ample staff from the State Health Department.

On July 28, the director attended an organization coordination meeting of the Advisory Committee to the Health Planning Commission; and on July 29 made himself available for a meeting of the Budget Committee, prepared a memorandum for that committee, and memoranda for consideration of the Executive Committee which met in the afternoon.

On September 21 and October 5, he attended meetings of the Mental Health Board, material from which meetings were distributed to councilors, officers, and trustees.

On October 14, the director represented the Medical Society at the hearing of the Joint Legislative Committee on the Mental and Physical Handicapped, Senator Dalwin Niles, chairman. All who spoke regretted the cutback on funds for rehabilitation of handicapped children. A crowd from Sampson put on quite an emotional show about removing retarded adults from Sampson to other hospitals.

Archives. On April 13, Mr. Douglas Bakken, Collector of Regional History, Cornell University, packed and took in his station wagon 28 boxes of materials from this office.

He picked up 17 boxes of material on August 11. He also met with department heads for a briefing by him of what materials are considered important to the collection. He asked for original source materials, including photos, memos, verbatim minutes, correspondence, and others. He reiterated that everything is retrievable. He asked that material be kept in filing sequence when emptied from files into packing boxes and that boxes be labeled with the name of the department, file "A–L," and so on.

Last February, Professor Herbert Finch gave a report at the Session on Archives. The article was printed in the June 15, 1971, issue of the New York State Journal of Medicine. He explained the value of archival material and the ease with which it can be overlooked and thus lost to posterity. He gave examples of collections on medicine and where they may be found. To continue to stimulate county society officers not to discard important material, he requested that a reprint of his talk be sent to all county society presidents on behalf of the Committee on Archives, with a covering letter from the director of the Division of Scientific Activities. The following memorandum was sent to county society presidents, with the reprint, during August:

> Subject: Preserving medical archival material
>
> Twice, since I have been associated in some capacity with the Medical Society of the State of New York, the headquarters of the Society has moved and twice important historical documents about our Society have been lost to posterity because no one took responsibility for their preservation. Again the MSSNY is about to move its headquarters, but this time we are more fortunate because all department heads are watchdogs over important archival material which should be preserved. The stimulus for saving archival material comes from the Committee on Archives and the agreement between MSSNY and the Regional History and University Archives at Cornell University for storing, indexing, and servicing material in case MSSNY officials wish to examine it.
>
> Last February, Professor Herbert Finch of Cornell Archives gave a paper at the Session on Archives in which he urged all hospitals and county medical societies to make a search for archival material and make sure of some arrangement for the preservation of it.
>
> In order that your society officers may become more familiar with what medical archival material is, I am enclosing, on behalf of the MSSNY Committee on Archives, a reprint of Professor Finch's presentation as reported in the New York State Journal of Medicine. If your Society should decide that the Regional History and Archives is the place where your archival material can be preserved best, you can contact Professor Herbert Finch, chief archivist, Olin Library, Cornell University, Ithaca, New York 14850. All material placed there is retrievable by your Society at any time. Such is the agreement between the State Society and the Regional History and University Archives at Cornell.
>
> In the future the Committee on Archives hopes to compile a list of medical archival material and where it is located. You can see from Professor Finch's article there are many collections in many places. It will be important to future scholars to know where archival material for a region may be examined.

What Goes On. *What Goes On* continues to be well read according to the survey of the New York State Journal of Medicine conducted during 1971. The number of subscriptions for *What Goes On* is 116. This amounts to approximately $350.

During the period since our last annual report (October 1, 1970 to October 1, 1971) 1,275 announcements were published. These announcements were sent to the editor's office by all of the medical schools in the State, more than 75 hospitals, about 120 nonprofit specialty societies and allied groups, including foundations, academies of medicine and science, as well as chapters of the American Academy of General Practice. Four special notices were published; three inviting deans of medical schools and administrators of hospitals to send in notices for publication, of postgraduate courses and important lectures, and so on, and the other notice was about preceptorships in Buffalo.

Physicians' placement opportunities were published at the back of *What Goes On* as often as space allowed. These amounted to 217 announcements during the year. Each time one of those announcements appeared a copy of *What Goes On* was mailed with a letter to the "contact" person. In this way, every community requesting a physician has been informed of our continuing interest in helping to place doctors in needed areas.

Physicians' Placement Bureau. The number of physicians wanting to locate in New York State has increased during 1971. Physicians' applications processed by the Bureau totaled 1,165 as compared with 740 a year ago. The great increases by specialty were in internal medicine, pediatrics, and general surgery; but other specialties that showed a sharp increase include anesthesiology, obstetrics and gynecology, ophthalmology, orthopedics, psychiatry, and radiology.

While the Bureau continues to place specialists, it cannot fill the real needs of the communities for "family doctors." More than 130 communities have requested 210 family practitioners, and only 57 applications from general practitioners are in our files. Seven have accepted places on our lists.

Areas where physicians were placed include Albion, Batavia, Brooklyn, Broome County, Cape Vincent, Carthage, Cato, Elizabethtown, Elmira, Moravia, Newfane, New York City, Plattsburgh, Rochester, White Plains, and others.

The Physicians' Placement Bureau of the Medical Society of the State of New York was mentioned in the May issue of *The House Physician Reporter* in a feature supplement entitled, "A Nationwide Look at Doctor Needs."

A booth was assigned to the Physicians' Placement Bureau at the annual convention of the State Medical Society in February. A great deal of activity resulted in more than 100 lists of placement opportunities and questionnaires being taken and a chance for personal communication between the physician and the Bureau. The same kind of rapport was achieved by personal contact with physicians from the upstate communities who took time to look up the Bureau and discuss their problems of trying to recruit doctors. Many took literature about group practice, the business side of practice, communities trying to find doctors, and so on. The booth was well stocked with pamphlets, brochures, and guidelines. Almost every piece of literature was taken before the end of the four days that the booth was in operation.

Scientific Publications. Judging from comments that have reached us, the new format of the Journal has been received enthusiastically. Particularly noteworthy are the improved appearance, greater legibility, and the remarkably enhanced illustrative material. It is gratifying to find that printing bills have been consistently lowered through this process. It has also speeded up the copy editing procedures to some extent. We seem to be back on schedule.

We have been analyzing the two questionnaires concerning the Journal that were sent out to physicians through the Division of Public Affairs; and plan to publish the results. Questionnaire I was given out during the fall (1970) months at meetings in upstate New York; and some were put into physicians' mail boxes in hospitals. Questionnaire II included five additional items to check and was given out early in the spring (1971) in the Greater New York area and at the annual convention. The returns at meetings were very high, but even including those given out more generally, there was an overall return of approximately 40 per cent. Since the replies were anonymous, respondents could express themselves quite freely.

Of approximately 4,000 copies distributed, there were 1,640 returned, of which 1,475 were positive, 165 negative (negative meaning they did not fill in any of the boxes). Of the positive returns, the adverse comments were fewer than 5.5 per cent. We have analyzed these returns item by item and find they are very revealing and heartening. Many of the comments are useful to us and will help in our thinking for the future.

Medical Services. On March 16, the director participated, together with Dr. Himler and Mr. Irving Gold (of the Workmen's Compensation Board) in a meeting with the Ad Hoc Committee of the Medical Society of the County of Erie regarding the marked increase in cases requiring arbitration of disputed workmen's compensation fees.

The director attended a number of workmen's compensation arbitration committee meetings. All the county societies in the Greater New York area have now been visited; and personal relationships established between the county representatives on the arbitration committees and the executive secretaries of the respective societies. This relationship has been helpful in resolving many problems in this field that reach our office both by telephone and letter.

With further respect to the workmen's compensation field, a good deal of time and thought has been devoted to develop the relative value fee schedule that is to be used in future negotiations with the Workmen's Compensation Board. The director attended two meetings of the Advisory Committee on the Medical Fee Schedule and Allied Problems, participating actively in discussions and actions as they pertain to the problems of the practicing physician. Here also avenues of communication have been established, not only with the officials of the Workmen's Compensation Board but also with carriers, self-insurers, and the New York Compensation Insurance Rating Board. These relationships have been fruitful and cordial.

Relative Value Schedule. The director has been urging the various specialty groups to get their studies into this office. They are finally beginning to arrive and have been or are in the process of being analyzed. Thi has required considerable telephone and letter com munications. We have analyzed, tabulated, and developed relative value schedules based on 549 raw questionnaires received from the pediatrics group and 584 tabulated results from the internal medicine group. There are several hundred raw questionnaires from the dermatology group now in the process of analysis. Separate meetings were held with representatives of the neurosurgeons, the internists, and the dermatologists to assist them in their data accumulation and analysis.

In regard to this, the director met with the statisticians of Blue Shield to be certain that the procedures that were followed were correct. He will meet with the representatives of Peat, Marwick, and Mitchell to establish a comparative base between their figures and what the specialty societies are submitting. Both secretaries have been preparing voluminous work sheets from the California Relative Value Schedule.

The Society's Committee on Occupational Health has been rather inactive during the past year; an effort will be made to stimulate a more energetic approach to the problems in this field. Mention might be made that the new Federal Occupational Health and Safety Act went into effect on April 28, 1971; your director has attempted to familiarize himself with the provisions of this Act by reading and by discussion with others knowledgeable in this field.

He attended the Industrial Health Conference in Atlanta, Georgia. Apart from the many scientific discussions, of particular interest were articles concerned with the changing pattern of health-care delivery systems and their effect on the practicing physician.

While in Atlanta, the director visited and discussed with Mr. J. Pullin, of the Georgia State Labor Department, workmen's compensation practices in Georgia. He also met with T. Howell, M.D., chairman of the Georgia State Workmen's Compensation Medical Board, and explored our common problems in this sector.

The first of a planned series of articles concerned with the problems of our members in the field of workmen's compensation has been submitted and accepted for publication in the New York State Journal of Medicine. An article has also been prepared and submitted to the American Academy of Compensation Medicine for publication in their newsletter.

In regard to the Economics and Interspecialty Committees, a good deal of time was required to correlate their efforts in the development of a relative value schedule with the Peat, Marwick, and Mitchell study.

The director chaired the Section on Medical-Legal and Workmen's Compensation Matters at the annual meeting of the State Medical Society. He has continued to concern himself with this Section hoping that its future programs can be developed to attract more interest by emphasizing topics that are of interest to our membership.

Medical Care Insurance material from county medical societies, as well as subjects brought to our attention by inquiries from our members, have been duplicated and called to the attention of the chairman for consideration by his committee.

The director attended two meetings of the Executive Board of Blue Shield, as well as a meeting held with representatives from all the county medical societies.

During the past weeks, there has been considerable correspondence and telephone conversations with various group representatives, as well as members, in regard to Section 86:11 (c) of the Rules and Regulations of the New York State Commissioner of Health. Material was accumulated and discussed with other division heads, as well as the president of the Medical Society.

The director attended a conference on National Health Insurance Plans sponsored by the New York City Labor Management Council.

We still receive numerous inquiries in regard to CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) and refer these to the proper channels.

Research and Planning. The Division of Research and Planning has continued to engage in projects of the House Committee on Constitution and Bylaws and the Committee on Research and Planning.

The director prepared a resume of items to be especially considered by the House Committee on Constitution and Bylaws at its meeting in Syracuse, on May 24. At that all-day meeting, the House Committee reviewed and discussed, page-by-page, the first half of the "Draft of the Revised Constitution." This document contained the changes previously proposed by the Ad Hoc Committee to Study the Constitution and Bylaws. Since the meeting in Syracuse, the Division has been occupied in rewriting the Constitution and Bylaws to carry out the actions taken by the House Committee. The first half of the latest revision has been completed. On August 18, the House Committee met to finish its scanning of the last half of the Ad Hoc Committee's draft revision. For this meeting, the Division of Research and Planning prepared an annotated list of items and questions for deliberation by the House Committee.

The director wrote an article entitled, "Prepaid Capitation, Group Practice Plans of Health Insurance: A Resume and Critique," which was prepared to serve as source material for the Committee on Research and Planning, and was enlarged to include a section on Health Maintenance Organizations and made into a report of the Committee, at its request. This report was approved by the Council, which directed that a copy be sent to each county medical society. It will also appear in the September 15 issue of the New York State Journal of Medicine.

At the annual meeting, the House of Delegates referred to the Council a proposed substitute resolution that the Society "establish a committee to study practical methods of providing health care to the urban poor and medically indigent." Rather than create a new committee, the Council chose to assign the study to the Committee on Research and Planning. This topic will be on the agenda of the committee's next meeting. As a basis for the committee's deliberations, the Division is drafting an article which sets forth the various ways in which medical care is now provided for the urban poor and medically indigent.

Standards of Medical Care. This Division is assisting in the organization of an Institute on Foundations.

Work is continuing with the Committee on Peer Review Mechanisms which will probably work in close harmony with this Institute.

The director participated in:

. . . A conference with the representatives of the New York State Nursing Association and the Hospital Association of New York State. It was at this meeting that the nurses notified us of their (*a*) disassociation with our Society because of our disagreement with them on paramedical personnel; and (*b*) desire for the passage of legislation changing the concept of the nursing profession.

...The AMA Regional Meeting on Peer Review, in Washington, D.C.

...A budget meeting of the Department of Mental Hygiene, in Albany.

...The Attorney General's hearings on commercial abortion referral services.

...A meeting with the Assistant Commissioner of Health, Lowell Bellin, M.D., and others to discuss "continuing education bill" introduced by Assemblyman Blumenthal.

Public Affairs. Since the Society's annual meeting, the major efforts on the part of the director of the Division of Public Affairs have been as follows:

...With the resignation of Mr. Anton Finelli, effective March 12, as coordinator of the News Relations Department, Mr. Barton Hickman was hired.

...Assembling of the "New Member Kit" for distribution was commenced during March. With the receipt in April of letters of welcome personally signed by the executive vice-president, the first kits were released in the mail (to the four large boroughs in New York City) and distributed to the regional representatives for hand delivery in all other county medical societies. The bronze paperweights will be distributed to all members receiving a hand-delivered kit.

...A systematic analysis of the effectiveness and condition of Ad Rem bulletin boards was commenced in March. In a routine manner, the regional representatives visited each hospital where a bulletin board is situated, inspected the board for condition, discussed its general value to the staff physicians with the hospital administrator, and reported to the director on all points.

It is of interest to note that about 95 per cent of the boards were maintained in "perfect" condition and are reported to be of high value to the physicians as a source of information.

We are now to evaluate the feasibility of expanding this means of communication with the membership.

...On February 27, the director attended a regional meeting on "Medicine and Religion." Unfortunately, the Medical Society of the State of New York was not represented by its committee.

On March 18, the Medical Society's Committee on Medicine and Religion met in Syracuse. The Rev. Barry Wood, M.D., chairman, was discouraged by lack of activity of his committee. None of the assigned work was accomplished between the summer of 1970 and March of 1971.

...With the resignation of Mrs. Helen Hickey as manager of information, the director interviewed applicants and hired Miss Madeleine Gaffney, effective June 7.

...He produced and distributed through the State a survey to determine which county medical societies have formal operative medical care referral services and which of these include referrals for abortions. He will recommend how this information should be made available to the public.

Much of his effort in the past months has been directed to the production of the audio-visual presentation for use with the health van, a survey of which schools are interested in our visiting their campuses, the mechanical condition of the van, and the search for and training of an operator.

On August 16 and 17, the director attended the AMA Communications Clinic, in Chicago. This clinic, under the direction of Frank Campion, the new director of the Division of Communications, was a major improvement over the last two or three such meetings the AMA has conducted. He picked up several very helpful ideas which will be reflected in innovations in the Public Affairs Division in the near future.

The following is information with regard to the various departments of the Division:

News Relations. Mr. Barton Hickman, immediately on arrival, was assigned to thoroughly investigate procedures involved with printing, addressing, and mailing of the *News of New York* to the end that we may improve these operations. He has done a good job and several innovations along these lines will be put into effect immediately. We believe that finally we may have discovered a means of speeding up delivery of the *News* via the mails.

Public and Professional Relations. Mr. Richard Klemfuss, Coordinator of Public and Professional Relations, attended the Public Relations Workshop for county public relations chairmen of District Branches I, II, and IX, which was conducted by Rockland County.

He was present at a meeting of the Committee on Medical Aspects of Sports and handled its correspondence. He coordinated the meeting of the Special Committee to Study Student Participation in the Medical Society of the State of New York and handled special correspondence for its chairman, Dr. Sherman.

He has had bound volumes made up of the Ad Rem bulletins dated over the past three years. He also put together a bound volume commemorating the 1971 Albion O. Bernstein, M.D. Award and submitted it to Mr. Morris Bernstein who responded with a letter of sincere appreciation.

Mr. Klemfuss continues to release Ad Rem bulletins and averages about seven per month.

He distributed promotional material on the venereal disease education mobile unit to the woman's auxiliaries, county health departments, and county medical society presidents.

Legislation. Mr. Martin J. Tracey represented the Medical Society at the New York State Association of the Professions' Board of Directors meeting on March 9 On March 10, Senator Tarky Lombardi, chairman, Senate Health Committee, called a conference which Mr Tracey attended. The subject was the Senator's bil setting up health service corporations.

He was kept busy through May and June with th great number of bills, many of them health related which were in the hopper this year. During May, hi principal effort was the opposition to the nurses definition bills. An all-out campaign to defeat S. 1918–B an A. 6164–A, the nursing definition bills, was conducte and involved memorandums, telegrams, and others. M Tracey was successful in having the president of NYSA send telegrams to the Governor placing that organizatio on record as being in opposition to these bills.

By invitation, Mr. Tracey participated in the May 1 meeting of the Medical Society's Ad Hoc Committee t Study Legislation, Professional Medical Liability I surance and Defense Board.

During June, with the adjournment of the State Legi lature and commencement of the Governor's thirty-da period for consideration of bills referred to him, M Tracey disseminated information on what happened the last hours of the session and advised the county s cieties of the status of legislation of interest.

At the direction of the executive vice-president, Mr. Tracey accepted an invitation from Joseph W. McGovern, Esq., chancellor, University of the State of New York, to participate in the annual legislative conference of the Board of Regents on September 9.

Department of Information. The work of the Department of Information continues at about the same rate, hat is, an average of 20 telephone calls per day and 6 etters per week, plus about 5 personal visits per month.

Miss Madeleine Gaffney, who assumed the responsibilities of the Department on June 7, has been doing a good job and is rapidly learning the requirements of the Department.

On assignment, she has been compiling a list of topics for which policy statements are needed by the Division.

The Department receives about 30 abortion inquiries each month. Obviously, the majority of these are referred to the Medical Society of the County of New York.

Requests for information on the physician's assistant career are increasing rapidly; and we have been disributing information in large quantities with regard to his opportunity. Information has been secured through Donald Walker, M.D., New York State Department of Health.

Regional Representatives. The field service men are continuing their usual efforts.

In August, Mr. William Baltaks resigned from the State Medical Society to accept the position of AMA assistant director of field services for the New England states. He will be headquartered in Framingham, Massachusetts. Mr. Coleman M.C. Fineberg, regional representative of the Fifth and Sixth District Branches, has been transferred to fill the responsibilities in the New York area. Tentatively, no replacement is planned for the Fifth and Sixth District Branches, which will be handled respectively by Mr. Gerald Sullivan and Mr. Harry Dexter, upstate regional representatives.

Miscellaneous. Mr. Klemfuss arranged for Wesley W. Hall, M.D., American Medical Association president, to meet with the *New York Times* publisher, Arthur O. Sulzberger, and the *Times'* editorial board. This two-hour interview took place on September 22. Shideler Harpe, Dr. Hall's assistant, expressed great pleasure at his meeting and its results. Mr. Harpe has informed Mr. Klemfuss that the AMA would like to try to arrange such a conference each year for incoming AMA presidents.

The editor of the *News of New York* and the director have been working on several facets of the *News of New York*. For one thing, we are attempting to develop a new format which will generate greater readership. Believing hat physicians are interested in brief, succinct articles on important, current subjects, we are slowly changing he format of the *News* to include extremely condensed reports in preference to long, detailed stories which have jumps from the front page, and so on.

Second, we are analyzing the advantages of the cold-ype process instead of hot-type in an effort to reduce the ead time required for printing. It appears that we will be able to pick up several days to a week's time by going o cold-type. This will also result in a saving of about $50 per page in contrast to type-setting.

We are planning to publish a front-page picture of our new building and an announcement of the change of address, telephone number, and location in the November issue of the *News of New York.* This issue will be reaching our membership during the middle of November at about the time we are arriving at our new location.

The Medical Society Health Shows van, after a discouraging start in New York City, is now hitting a good pace on upstate campuses. Except for three days when we had unseasonably cold and wet weather, the exhibit has experienced great success. The schools, the students, our membership, as well as the local public health people are finding the Medical Society Health Shows program to be a valuable contribution to the youth of New York State. We are learning every day how to improve our presentation. Interestingly enough, we are still definitely within our budget and hope that we are going to be carrying over some of the present budget into 1972, when, with the approval of the Budget Committee and Council, the program is continued.

BUSINESS

Advertising Sales—*Journal.* Gross billings for the first ten months of 1971 totalled approximately $250,319.20, as compared with gross billings of $265,879.20 last year, or a decrease of $15,560. However, our August, 1971, billings showed a slight increase over August, 1970, and our September, 1971, billing volume showed an encouraging 30 per cent increase ($8,036.30) over September, 1970.

It appears that the low ebb in pharmaceutical industry advertising has been reached and passed. Companies that had cut back advertising are reconsidering; the companies that had blindly favored "mass" circulation magazines are now talking about specific markets, that is, specialty journals and geographic magazines such as the New York State Journal of Medicine.

Advertising Sales—Technical Exhibits. The prospectus for the 1972 annual convention was mailed on July 19 to about 800 prospective exhibitors.

To date, we have received signed applications for over 40 exhibit spaces. Many of our past exhibitors have as yet not responded.

We have received communications from 31 firms who are unable to exhibit with us because of the usual reasons—"budgetary limitations," "arbitrary and unreasonable conditions associated with exhibiting in New York City," and "heavy national convention schedule."

We have planned a total of 101 technical exhibit spaces plus 3 table spaces, as well as approximately 50 scientific exhibit spaces.

Membership-Directory Department. The conversion of all the biographic data for the new *Medical Directory of New York State* was completed with Fisher-Stevens and production on it was initiated.

We met with representatives of Maple Press concerning the presswork and binding of the new *Directory;* and an agreement of this phase of the *Directory* operation was consummated.

Extensive discussions were held, and communications exchanged, with Fisher-Stevens and Lloyd Prang, of the American Medical Association, concerning the unsatisfactory aspects of our experience with the Central Automated Physician Information System (CAPIS). Suggestions for improving the system were evaluated; and several innovations will be incorporated into the program in 1972. Costs for these improvements will be paid for by the AMA, which is anxious to "sell" CAPIS to other states, and recognizes the shortcomings of the program as we have had to cope with it.

We have continued to process 1971 dues payments—a procedure which was extremely complicated this year due to the impact of (1) the mandatory Special Building Fund assessment, and (2) the dropping of mandatory AMA affiliation.

Letters have been mailed to the county medical societies and to individual physicians advising those who are being dropped for nonpayment of assessment.

We expect that the new *Directory* will appear at the end of November.

MISCELLANEOUS

We know that you will be interested in the following:

I. Memorandum we submitted to county medical society secretaries and executive secretaries:

> The Department of Motor Vehicles of the State of New York has advised us of the procedures to be followed by medical professional corporations wishing to obtain "M.D." plates, and we thought you might wish to call this to the attention of your members.
>
> "In order to be eligible for special plates as a professional corporation, the corporate name must end with the words 'Professional Corporation' or an abbreviation 'P.C.'
>
> "An individual may effect a change of registration at any time, provided he surrenders his current plates and the corporation obtains new plates as a new registrant.
>
> "An individual desiring to transfer his existing plates to a corporation must wait until the expiration of his current plates to effect the change. Immediately after the expiration date the corporation may apply for a transfer of those plates to the corporate name. Proof of insurance in the name of the corporation is required in either situation.
>
> "Our present policy of issuing only one special plate per professional has remained unchanged. Therefore, a corporation applying for professional plates will be required to complete a certification that the total number of plates issued in the name of that corporation and to individual members of that corporation does not exceed the number of professional members of that corporation. A special form for this certification will be available at all Issuing Offices."

II. Letter from the American Medical Association:

> The Office of the Executive Vice-President has been receiving an increasing number of inquiries from physicians in all parts of the country who are now over seventy years of age, and who feel that they should not be required to pay AMA membership dues.
>
> "We will appreciate your reviewing the AMA membership files, and a summary copy is enclosed.
>
> "You will note that physicians over seventy years of age, who are regular members of their state medical society, should not be required to pay AMA membership dues, but should be reported for active, regular dues-exempt membership.
>
> Perhaps it will be possible for you to pass this information along to the physicians in your State, with the hope that you can encourage all such physicians to continue their membership in your State medical society and then be reported by you for dues-exempt membership in the AMA.
>
> Incidentally, these active, regular dues-exempt members count in the apportionment of AMA delegates in your State.

1972
FACT SHEET
MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

According to the present Constitution and Bylaws of the American Medical Association, which was revised for 1972, there are now two basic types of membership:

I. ACTIVE MEMBERS
II. SPECIAL MEMBERS

I. Active Members shall be (A) Regular Members and (B) Direct Members.

(A) **Regular Members.** Regular membership shall be limited to those members of a state association who hold the degree of Doctor of Medicine or Bachelor of Medicine, or who hold an unrestricted license to practice medicine and surgery, and are entitled to exercise the rights of membership in their state associations, including the right to vote and hold office, as determined by their state associations.

A member in good standing of a state association of the American Medical Association is eligible for Regular membership in the American Medical Association after he has been certified for enrollment to the executive vice-president of the American Medical Association, by the secretary of the state association in the jurisdiction of which he conducts his professional activities provided there is no disapproval for membership by the Judicial Council. The Board of Trustees may excuse the following members from payment of dues, provided they are fully or partially excused from the payment of local dues by their component and state associations, except as noted in (4) below, and provided the request for exemption is transmitted through the state association to the executive vice-president of the American Medical Association.

(1) A member for whom the payment of dues would be a financial hardship, by reason of physical disability or illness. A member may also be excused from payment of dues because of financial hardship for other reasons, but these must be set forth by the secretary of the member's component society.

(2) Members retired from active practice.

(3) A member temporarily in the Armed Forces, regardless of local dues exemption, for the period beginning January 1 or July 1 following the date of the member's entrance into the service.

(4) A member, on request, regardless of local exemptions, on July 1 following his seventieth birthday.

(B) **Direct Members.** There are three classifications of Direct Members: (1) Service Members; (2) Physicians employed by Federal Agencies; and (3) hospital interns and residents.

(1) *Service Members.* Regular commissioned medical officers and commissioned medical officers of the reserve components, who hold the degree of Doctor of Medicine or Bachelor of Medicine or Doctor of Osteopathy, on extended active duty (more than two years) with the United States Army, the United States Navy, the United States Air Force, and the United States Public Health Service, who, on application, have been nominated by the Surgeons General of their respective services, may become Service Members provided there is no disapproval for membership by the Judicial Council. Service Members shall have the same rights and privileges as Regular Members but shall not be required to pay dues and shall not be entitled to receive any publication of the American Medical Association except by subscription. Service Members shall retain membership as long as they are on active duty, and thereafter if they have been retired in accordance with the Federal laws and are not eligible for membership in a county and state society.

(2) *Physicians Employed by Federal Agencies.* Full-time civilian physicians employed by all Federal agencies, including but not limited to the Veterans Administration, who are ineligible for membership in a county and state society, may become Direct Members on nomination by the chief medical director of their administration or agency, provided there is no disapproval for membership by the Judicial Council. Such members shall have the same rights and privileges and shall pay the same dues as Regular Members. They shall retain this class of

membership only as long as they are employed by the Federal government and thereafter if they have been retired in accordance with Federal law and are not eligible for membership in a county and state society.

(3) *Hospital Interns and Residents.* Interns and residents serving in training programs approved by the Association, and for whom there are no provisions for membership in a county and state society, may become direct Intern and Resident Members on application with endorsement of two (2) Regular Members of the American Medical Association on the staff of the hospital in which they are training provided there is no disapproval for membership by the AMA Judicial Council. Intern and Resident Members shall have the same rights and privileges as Regular Members. They shall pay such dues as are fixed for them by the House of Delegates and shall receive the Paid Member Benefit publications.

Interns and residents serving in training programs approved by the Association and who are members in good standing of a state association of the American Medical Association are eligible for Direct Membership in the American Medical Association and participation in the Business Meeting of Interns and Residents of the American Medical Association on payment of such dues as are fixed for Direct Intern and Resident Members by the House of Delegates. They shall receive the Paid Member Benefit publications.

II. Special members are (A) Associate, (B) Affiliate, and (C) Honorary.

(A) **Associate Members.** Associate membership shall be limited to:

(1) Those members of the state associations who are ineligible for Regular membership in the American Medical Association, and who hold the degree of Doctor of Medicine or Bachelor of Medicine;

(2) Members of the Armed Forces on temporary duty (two years or less).

Associate Members may attend meetings of the Scientific Assembly but may not vote or hold office in the American Medical Association. They shall not be required to pay membership dues to the American Medical Association and shall not be entitled to receive any publication of the American Medical Association except by subscription. An Associate Member must be certified for enrollment to the executive vice-president of the American Medical Association by the secretary of the state association in the jurisdiction of which he conducts his professional activities, or by the Surgeon General of his respective service. All such Associate Members may be disapproved for membership by the Judicial Council.

(B) **Affiliate Members.** Persons who belong to one of the following classes may become Affiliate Members.

(1) Physicians who are members of the national medical societies of foreign countries, to be approved and nominated by the Judicial Council;

(2) American physicians, located in foreign countries or possessions of the United States and engaged in medical missionary, educational, or philanthropic labors, to be approved and nominated by the Judicial Council;

(3) Dentists who hold the degree of D.D.S. or D.M.D., who are members of the American Dental Association and their state and local dental societies, to be approved and nominated by the Judicial Council;

(4) Pharmacists who are active members of the American Pharmaceutical Association, to be approved and nominated by the Judicial Council;

(5) Teachers of medicine or of the sciences allied to medicine who are citizens of the United States and are not eligible to membership, to be approved and nominated by the Judicial Council; and

(6) Scientists in sciences allied to medicine and others who have attained distinction in their fields of endeavor, who are not otherwise eligible to membership, to be approved and nominated by the Judicial Council.

Affiliate Members shall not be required to pay membership dues, and shall enjoy the privileges of the scientific assembly without the right to vote or hold office, and shall not be entitled to receive any publication of the American Medical Association except by subscription. Nominations for class (4), (5), and (6) must also be approved by the appropriate county and state medical society.

(C) **Honorary Members.** Physicians of foreign countries who have risen to preeminence in the profession of medicine and who attend a convention may be elected at that convention to Honorary membership by the House of Delegates on nomination by the Board of Trustees. The several scientific sections may make recommendations to the Board of Trustees for such nomination. Honorary Members shall enjoy the privileges of the Scientific Assembly without the right to vote or hold office, shall not be required to pay membership dues and shall not receive any publication of the American Medical Association except by subscription.

Discrimination in Membership. Membership in the American Medical Association or in any of its constituent associations shall not be denied or abridged on account of color, creed, race, religion, or ethnic origin.

Delinquency. An Active Member is delinquent if his dues are not transmitted by the state society to the American Medical Association by June 1 of the year for which dues are prescribed and shall forfeit his Active Membership in the American Medical Association if his delinquent dues are not received by this Association within thirty days after notice of delinquency has been mailed to his last known address by the executive vice-president of the American Medical Association. Members of the American Medical Association who have been dropped from the membership roll for nonpayment of annual dues cannot be reinstated until such indebtedness has been discharged, but such indebtedness shall apply only to the one year of delinquency. The delinquency provisions of this section also apply to Direct Members whose dues have not been transmitted to the executive vice-president by June 1 of the year for which the dues are prescribed.

III. In the sophisticated pharmaceutical industry, the physician market is well defined. Whether a physician is board certified or is limiting his practice to a specialty, he is equally interested in products for that specialty. Thanks to Fisher-Stevens, there follows the new AMA Statistics for Office-Based Patient Care: the totals of primary and secondary specialists in the U.S., in New York State, and the percentage of those U.S. specialists who practice in New York State (Table I).

IV. There have been a number of reports that the county medical societies receive the minutes of the Council meetings much too late. Therefore, we have reestablished the routine of preparing a summary of the proceedings of the Council immediately after each meeting; and they will be transmitted to all concerned soon thereafter.

Table II is a list of dues-paying members and the amount paid by each to his county medical society.

(Tables I and II follow on pages 108 and 109.)

TABLE I. Total office-based patient care

	Primary and Secondary Specialists		U.S. Totals in New York State (Per Cent)
Practice	U.S.	New York State	
Allergy	2,504	368	15
Pediatric	842	120	14
Anesthesiology	8,453	984	12
Cardiovascular disease	7,986	1,279	16
Pediatric cardiology	356	64	18
Dermatology	3,305	450	14
Gastroenterology	2,132	394	19
General Practice	40,386	2,768	7
General Practice with Secondary	15,015	2,365	16
Aerospace Medicine	922	77	8
Family Practice	337	13	4
Gen. Prev. Med.	642	92	14
Physical Medicine and Rehabilitation	928	168	18
Public Health	1,583	223	14
Internal Medicine	29,965	4,518	14
Diabetes	87	14	16
Endocrinology	344	53	15
Geriatrics	344	16	5
Hematology	505	73	14
Infectious diseases	101	10	10
Neoplastic diseases	228	27	12
Nephrology	258	26	10
Nutrition	7	0	0
Rheumatology	307	46	15
Neurology	2,639	379	14
Child Neurology	20	0	0
Obstetrics & Gynecology	16,070	1,889	11
Gynecology	434	47	11
Obstetrics	16	0	0
Occupational Medicine	3,592	422	12
Ophthalmology	8,343	919	11
Otorhinolaryngology	5,037	557	11
Laryngology	2	0	0
Otology	5	0	0
Rhinology	2	1	50
Pathology	3,392	209	6
Clinical	84	6	7
Forensic	394	41	10
Pediatrics	12,172	1,631	13
Psychiatry	12,007	2,337	19
Child	1,867	360	19
Hypnosis	34	3	9
Psychoanalysis	201	52	26
Psychosomatic Medicine	40	8	20
Pulmonary Diseases	2,247	388	17
Broncho-esophagus	8	0	0
Radiology	6,256	481	8
Diagnostic	1,101	129	12
Nuclear Medicine	198	25	13
Pediatric	14	2	14
Therapeutic	1,041	101	10
General Surgery	24,907	2,416	10
Abdominal	130	13	10
Cardiovascular	180	9	5
Colon and Rectal	1,119	170	15
Hand	157	14	9
Head and Neck	67	11	16
Neurologic	1,743	159	9
Orthopedic	7,260	709	10
Pediatric	50	4	8
Plastic	1,616	239	15
Thoracic	2,741	280	10
Traumatic	50	5	10
Urologic	4,612	501	11
Other Specialty	20,563	2,859	14
Unspecified	120,901	13,192	11

TABLE II. Breakdown of dues-paying members and amount paid to his county medical society

County	Number of Dues-Paying Members	Amount County Medical Society Dues
(1 to 30 members)		
Lewis*	7	25
Schuyler	9	50
Yates*	14	5
Tioga	18	10
Allegany*	21	60
Greene	21	10
Orleans	21	40
Essex	23	15
Schoharie	23	10
Wyoming	23	19
Seneca	27	20
(31 to 50 members)		
Herkimer†	32	125
Putnam	33	5
Cortland	34	25
Livingston	34	37
Washington	34	10
Chenango†	36	105
Delaware†	36	65
Montgomery	36	20
Fulton	40	25
Columbia	41	9
Sullivan	41	20
Franklin	42	35
Otsego†	49	75
Genesee	51	35
Wayne	51	35
Saratoga	52	10
Madison**	54	100
Oswego	55	40
Clinton	71	20
(51 to 100 members)		
Cayuga†	72	65
Cattaraugus	74	10
St. Lawrence	83	10
Warren	87	20
Jefferson†	89	60
Steuben	92	45
Ontario	98	30
Tompkins	102	25
Chautauqua	106	30
Chemung	109	43
Ulster†	129	55
Rensselaer	134	12
Niagara†	175	55
Orange	203	85
(100 to 500 members)		
Schenectady†	251	38
Richmond	273	85
Oneida**	288	105
Dutchess	294	20
Broome**	300	65
Rockland*	354	70
Albany*	444	65
Onondaga*	578	70
Monroe*	920	135
Suffolk*	1,040	80
(Over 500 members)		
Erie*	1,270	85
Westchester*	1,461	100
Nassau*	1,939	90

* Full-time executive secretary and staff.

† Part-time, or recording secretary, or other part-time outside assistance.

** Multiple-county executive (shared).

MEETINGS

In addition to routine affairs, your executive vice-president has participated in these activities:

1. A "closed" conference called by Attorney General Lefkowitz, to review and discuss the conduct of the commercial abortion referral services, on March 11, in New York City.

We testified against this practice; and read the following letter addressed to the Attorney General by our president:

> In response to your letter of February 11, addressed to Henry I. Fineberg, M.D., the Medical Society of the State of New York shares your concern regarding the activities of some commercial abortion referral agencies. We agree wholeheartedly that they must be under close control, if they are allowed to continue at all.
>
> As you know, many of our county medical societies offer an abortion referral service. While they do not have the facilities for arranging for transportation, hotel accommodations, or hospital reservations, they do refer patients seeking terminations of pregnancy to qualified gynecologists, exactly as they would refer patients to any other specialists.
>
> It should not be too difficult to educate New York State residents to seek abortion referrals in this fashion. The main difficulty arises with out-of-town patients who are not accustomed to calling on them when problems of finding physicians arise.
>
> We will make every effort to comply with the suggestion in your letter. We have already clarified and interpreted our code of ethics with particular regard to this situation and intend to enforce them stringently. I propose to circularize our 61 county medical societies to be sure that they all continue to offer a referral service. In addition, through our Public Affairs Division, we will explore all means of publicizing the existence of such services. As you pointed out, the various departments of the State administrations can be of enormous assistance to this.
>
> Please be assured of our continuing concern in this matter, and do not hesitate to let us know if there is anything further we can do.

2. A meeting with our legislative consultants, on March 12, in Albany.

3. The 71st annual banquet of the New York State Legislative Correspondents Association, on March 13, in Albany. In keeping with precedent, the important political figures of our day—national, State, and city—were lampooned. The guest speakers were Senator Buckley, Assembly Minority Leader Steingut, and Governor Rockefeller.

4. A meeting with Allison B. Landolt, M.D., president of the Medical Society of the County of Westchester, on March 16, in New York. We discussed county society problems.

5. A meeting of the State Hospital Review and Planning Council, on March 18, in New York City.

6. A conference with the Honorable Harry W. Albright, Jr., executive assistant to the Governor, on March 19, in New York. George Himler was also present. We talked about many matters of common interest.

7. A dinner in honor of the Honorable Alexander del Giorno, Judge of the State Court of Claims, on March 25, in Queens County.

8. Another conference concerning commercial abortion referral services, called by Senator Tarky Lom-

bardi, Jr., on March 29, in Albany. Members of the Legislature were present. We reiterated our policy against these groups.

9. George Himler and your executive vice-president met with Charles Gillett, executive vice-president of the New York Convention and Visitors Bureau, on April 12, in New York.

10. The regional Conference of Foundations for Medical Care, on April 16, 17, and 18, in Rochester. The host was the Monroe Plan for Medical Care, Inc. The meeting was attended by representatives from New England, the Middle Atlantic States, Ohio, and Pennsylvania. George Himler was the speaker at the luncheon on April 17.

11. A stated meeting of the Medical Society of Jefferson County, on April 20, in Watertown. We discussed "The State of the MSSNY."

12. The installation banquet of the New York State Society of the American Association of Medical Assistants, on April 24, in New York.

13. The American Medical Association Congress on Environmental Health, on April 26, in New York. There were welcoming addresses by Wesley Hall, of the AMA, and George Himler. Governor Rockefeller accepted our invitation to deliver the keynote address. He discussed solid waste management and its impact on the public from the standpoint of magnitude of the problem, the cost of adequately handling solid waste disposal, organization and administration to effectively cope with the problem, and generally how it affects the public.

14. A forum of the presidents of the 48 smaller county medical societies, called by our president, on April 29, in Syracuse. This was arranged as a "sounding board" for the leaders of the counties.

15. On May 4, in New York, a conference with representatives of the U.S. Department of Health, Education, and Welfare to talk about Medicaid and its progress in New York. Our president described what is going on here.

16. A meeting of the AMA Committee on Quackery, on May 6, in Washington.

17. The annual convention of the New York State Academy of General Practice, May 9 to 12, in Kiamesha Lake. We addressed the Congress of Delegates on the State of the MSSNY; and stressed our legislative program. Our president was the guest speaker at the annual banquet.

18. Another forum of the presidents of 13 "metropolitan-size" county medical societies, on May 13, in New York. The agenda was similar to that of the meeting held on April 29.

19. The dedication of the Joseph Ushkow Research Laboratory of Endow Laboratories, E. I. duPont de Nemours & Co., on May 14, in Garden City.

20. The Medallion Ball (Fiftieth Anniversary) of the Nassau County Medical Society, on May 15, in Garden City. All past presidents were honored.

21. The 74th annual dinner of the New York State Society of Certified Public Accountants, on May 17, in New York City.

22. A meeting of the National Tuberculosis and Respiratory Disease Association, in Los Angeles, May 19 to 21.

23. The sesquicentennial dinner of the Medical Society of the County of Monroe, in Rochester, May 25.

24. A meeting with the officers of Group Health Insurance, Inc., in New York City, on June 9. Also present were our president, George Himler, M.D., and Samuel Wagreich, M.D., and M. Theodore Tanenhaus, M.D., of the New York State Academy of Family Physicians.

25. The first Brook Ball for the Meadowbrook Medical and Educational Foundation, in Garden City, on June 12. At this affair, George Loring Hubbell, Jr., a former member of the Board of Regents, and John M. Shell, M.D., were honored for their services to the community.

26. Your executive vice-president delivered the main address at the graduation exercises of the School of Nursing of Flushing Hospital and Medical Center, in Queens, June 18.

27. The annual meeting of the American Medical Association in Atlantic City, June 19 to 24.

28. A medical bill-signing ceremony in the New York City office of the Governor, July 6.

29. The annual outing meeting of the Medical Societies of the Counties of Oneida, Herkimer, Madison, and Chenango, in New Hartford, on July 8. Our president was the main speaker. Your executive vice-president talked about the "state of the MSSNY."

30. A meeting with officers of the Bankers Trust Company to discuss the banking procedures that we will follow when we move to Lake Success, in New York City, on July 12.

31. A meeting of the Commission on Public Health and Education, in Albany, on July 15. In accordance with the precedent established some years ago, this was a very fine meeting and was well attended.

32. A meeting of the Board of Directors of the New York State Academy of Family Physicians, in Tarrytown, on July 31 and August 1. Your executive vice-president was afforded the honor of sitting in with the family practitioners and participated in the discussion of many problems.

33. A meeting of the AMA Committee on Quackery, in Chicago, on August 5 and 6. As usual, chiropractic was the main topic on the agenda.

34. A meeting of the New York State Education Department Medical Committee on Grievances, in New York City, on August 16. The new organization of the State Board for Medicine was reviewed.

35. Your president and executive vice-president met with Commissioner Ingraham and Mr. George Foy, in Albany, August 26, to talk about the rules and regulations of the Commissioner of Health, with specific reference to Section 86:11(c). This matter will be discussed fully by our president.

36. A meeting called by Senator Tarky Lombardi, in Albany, for the afternoon of August 26. The purpose o this conference was to discuss all the features concerned with medical malpractice. This meeting was attended by governmental officials, members of the Bar, Education Department, Department of Health, and others.

37. Conference with Edward C. Rozek, M.D., chairman of the Empire Medical Political Action Committee in New York, on August 30. The relationship betwee this organization and the Medical Society was agai reviewed. This was an amicable meeting; and we hop that some good will come of it.

38. A meeting of the Judicial Council of the America Medical Association, in Chicago, September 18 and 19.

39. A meeting with representatives of the AMA del gations of New Jersey and New England, in New Yor September 29. Dr. Himler presided.

40. Your president and executive vice-president m with Harry Albright and the State Superintendent

Insurance, in New York, on October 18, to talk about our legislative program.

41. Meeting of the Medical Society of the County of Kings, in Brooklyn, October 19. On the agenda: the inaugural address of the president and a talk on malpractice by Carl Hoffman, M.D., president-elect of the American Medical Association.

42. The annual meeting of the Bronx County Medical Society. Your executive vice-president was presented with an honorary membership.

43. The president's Dinner-Dance of the Medical Society of the County of Kings, in Brooklyn, October 30.

ACKNOWLEDGEMENT

As always, your executive vice-president expresses his gratitude to all who have participated in the affairs of our Society.

Respectfully submitted,

Henry I. Fineberg, M.D., Executive Vice-President

Figure 1 follows on page 112

TALLY OF INDIVIDUAL EXHIBITOR REPORTS	Excellent	Good	Fair	Poor	No opinion
I. Registrants interest in exhibits	6	42	23	3	
2. Traffic past your exhibit	12	36	18	8	
3. Identification of registrants	21	37	9	3	4
4. Control of admissions	24	30	9	6	5
5. Adequacy of time to visit exhibits	10	37	13	5	9
6. Accessibility of exhibit area (s)	24	42	2	2	4
7. Booth arrangement	21	40	7	3	3
8. Lighting and ventilation	12	39	12	(8y 1L) 9	2
9. Janitorial service	10	46	9	5	4
10. Shipping & receiving service	11	34	7	4	18
11. Hotel accommodations	14	25	5	1	29
12. Exhibit protection	24	37	5	1	7
13. Overall management of the meeting	17	42	6	1	8

14. Charges for services Reasonable 32 Excessive 13 No opinion 29

15. Do you favor convention returning to this city? Yes 60 No 3 Undecided 11

SUMMARY

A. Rating of this meeting based on your primary reason for participation.

	E	G	F	P	?
Pharmaceutical	5	21	11	2	3
Publishers			1		
Surg. Supp.& Equip.	2	4	3		1
Educational & other	4	8	6	2	1

B. Would you recommend that your firm exhibit next year?

	yes	No	undecided
Pharmaceutical	31	3	8
Publishers	1		
Surg. Supp.& Equip.	7	1	2
Educational & other	17	2	2

Location of 1971 meeting Americana Hotel, New York City, Albert Hall Date Held 2/14-18/71

Number of exhibiting firms 105

Number reporting 74

Was this discussed with the exhibit Manager at close of meeting? Yes

Registration Data
Physicians 2864
Nurses
Exhibitors 788
Guests 745
Others 520
Total 4917

FIGURE 1 Exhibitors' evaluation report, 1971 Annual Meeting.

Medical Services

Economics

To the House of Delegates, Gentlemen:

The Economics Committee is composed of the following:

Robert E. Westlake, M.D., *Chairman*	Onondaga
Dallas E. Billman, M.D.	Steuben
Jeff J. Coletti, M.D.	Nassau
William C. Felch, M.D.	Westchester
Alfred L. George, M.D.	Genesee
Robert G. Hicks, M.D.	New York
Harold N. Schwinger, M.D.	Kings
Herbert J. Wright, Jr., M.D.	Schenectady
Francis A. Stephens, M.D.	Albany
Allan H. Bruckheim, M.D.	Westchester

As of this report, four meetings were held during the year, on February 14, March 31, May 26, and September 15.

Relative value scale. The year has been an extremely busy one, the committee having set a goal for completing the Relative Value Scale study and its preparation in final form for submission to the House of Delegates at the annual meeting in February, 1972. The completed study by Peat, Marwick, Mitchell and Company was received in February, 1971; however, since of the 9,800 questionnaires mailed to physicians and various specialty groups throughout the State, only 1,350 (13.8 per cent) useable returns were sent in. Its validity has been challenged by several groups, and it has been decided that, in cooperation with the Interspecialty Committee, it be subjected to further critical analysis to determine whether or not, in fact, the relative values arrived at reflect the prevailing practices. At each of the meetings, members of the Interspecialty Committee joined in the discussions and the planning for this reevaluation.

Although the sampling received by Peat, Marwick, Mitchell and Company was small, their tabulated results were tested against the statistical formulas, and only those which proved to be statistically valid have been accepted. Also any changes submitted by the respective specialty groups would have to meet the same tests for validity. The disparity of charges, even in the same geographic areas of the State, was noted. The data to be submitted will have to be tested to determine if it is useable or if it should be modified.

Although 25 representatives of the various specialty groups have met with this committee during the past two years, the creation last year of the Interspecialty Committee simplified and improved, considerably, the lines of communication between them and the Economics Committee. At all sessions it was stressed that at this time we are concerned only with establishing a Relative Value Scale and not concerned with conversion factors or dollar sums.

The studies carried out by the various specialty groups are summarized in the report of the Interspecialty Committee and need not be repeated here.

As the progress reports were submitted by the Interspecialty Committee in the course of the year, problem areas were identified and steps for their solution proposed. The cooperation between the two committees has been most satisfactory, and the chairman expresses his appreciation to all concerned.

At the time this report is being written, there are still some areas in which problems remain to be resolved, but the number of problems is getting fewer. Although there still remains a tremendous amount of work to be done to prepare the final format, we are optimistic that the goal of completing the study by February, 1972, will be attained.

In accordance with the Council's decision, the committee, at its meeting on March 31, decided to take no action on any Statewide retirement health insurance plans, since these are made available to the physicians throughout the State by the respective county societies and district branches.

Resolutions. *Resolution 71-39,* "Cost of Hospitalization":

> *Resolved,* That the Medical Society of the State of New York join with other interested organizations to undertake a study of hospital charges and charges for the technical components of x-ray and laboratory examinations and recommend methods to promote uniformity of such charges based on actual cost and sound principles of pricing and billing and consistent with good quality medical care.

The committee questioned whether it should or could undertake a study of this scope which would require considerable personnel and expenditure. This matter has been discussed properly by liaison committees of the insurance carriers, Blue Cross, Blue Shield, and the government, they being involved with and in possession of the basic cost factors that determine laboratory charges. When such a group requests it, we will be pleased to cooperate.

Resolution 71-45, "Laboratory Test Batteries Utilizing Automated Equipment":

> *Resolved,* That the Medical Society of the State of New York deplore and condemn any method of charging for multichannel laboratory determination which fails to transmit the economic advantages of automation to the patient.

This committee deplores and condemns any method which does not reflect in lowered costs to the patient, when this is attained.

Resolution 71-41, "Current Procedural Terminology":

> *Resolved,* That the Medical Society of the State of New York urge that this five-digit system be adopted and used by all physicians and third parties to provide a more accurate description of services, logical sequential listing, and ample room for expansion.

This was acted on. With particular reference to the Relative Value Scale study, the AMA five-digit code, current procedural terminology, has been used.

The committee members were to consider, for future discussion, the effect that Health Maintenance Organizations and other capitation health-care-delivery systems will have in the field of medical economics.

At the September 15 meeting it was decided that after completion of the Relative Value Scale project, a review mechanism to update and modify the scale as the situation warranted, should be instituted and that such properly was the function of the Economics Committee working in close liaison with the representatives of each Statewide specialty group through the Interspecialty Committee.

Acknowledgments. The chairman wishes to express his appreciation to the members of this committee: to G. Rehmi Denton, M.D., chairman, Commission on Medical Services; John R. Williams, Jr., M.D., and members of his Interspecialty Committee, for their attendance at the meetings and their praiseworthy cooperation in dealing with the detailed and complicated matters that were presented to us during the year. He further wishes to thank George P. Farrell, the previous director, for his efforts and the assistance he has continued to render since his retirement in April, 1971. The chairman also expresses his appreciation to Max N. Howard, M.D., director of the Division of Medical Services and to his secretary, Mrs. Clementine Thompson, for their fine cooperation and the lengthy hours the work of this committee has required of them.

Respectfully submitted,
Robert E. Westlake, M.D., Chairman

Universal Health Insurance

To the House of Delegates, Gentlemen:

The members of the Committee on Universal Health Insurance are as follows:

Walter T. Heldmann, M.D., *Chairman*	Richmond
Allan E. Bloomberg, M.D.	Bronx
Eli A. Leven, M.D.	Monroe
Daniel F. O'Keeffe, M.D.	Warren
Philip R. Roen, M.D.	New York
Joseph F. Shanaphy, M.D.	Richmond
Robert E. Westlake, M.D.	Onondaga

The year 1971 was a rather quiet period as far as universal health insurance legislation on a State level was concerned. A bill (S. 6537-Rules), sponsored by the New York State Administration, similar to the bill supported last year by the Governor, was introduced. In the meanwhile, there was an upsurge of interest on a national level with the introduction of more than a dozen bills in Congress. Among these were proposals sponsored by the Nixon Administration, Senator Kennedy, Senator Javits, the American Medical Association, as well as by other groups and individual persons.

Due to these developments on a national scale, there was no concerted effort on the part of the Governor or his administration to have the bill sponsored by him enacted into law. As a result, the bill died in committee in both the Senate and Assembly. At the time the Governor sent his proposal to the Legislature, he noted his own previous proposal had not been enacted into law but pointed out that he was "heartened, nevertheless, that the principle of universal health insurance is at last gaining ground where it is most appropriate—at the national level."

In order that the members of the House may be aware of the thinking of some of the proponents of present-day proposals for universal health insurance, your committee would like to point out some of the provisions of the measure sponsored by the Governor (S. 6537-Rules).

S. 6537—Legislative findings. For example, section 1 of the bill entitled, "Legislative findings and purposes," reads as follows:

> It is hereby found and declared that basic health protection is denied to many of the inhabitants of the State as the result of inefficient management and resultant higher costs of delivery and financing of health services. Avoidable suffering continues to occur as the result of an anachronistic health care system throughout the nation which often operates to provide priority to patients on the basis of ability to pay rather than actual need for service. Inequities and hardships which result from such a priority system are further aggravated by duplication, waste, overlap, and poor coordination in the system at a time when health manpower and resources are in short supply. It is further found and declared that absence of effective organization of the private health care system throughout the nation also threatens to deny to the inhabitants of this State their fundamental right to health care, which, together with education and equality of opportunity, are keys to individual happiness and fulfillment in this State and nation. Removal of financial barriers to health care services, and improvement of the present system and economies of delivery of medical and hospital services, are matters of vital concern affecting the public health, safety, and welfare.
>
> It is further found and declared that in order to provide for the protection and promotion of the health of the inhabitants of the State, the New York State health insurance corporation should be established to have responsibility for the development and adminis-

tration of the State's policy with respect to a rational and coordinated system of financing health service benefits.

It is the purpose of this act to encourage the development of a single system of health service benefits, to which beneficiaries contribute within their means, and which will create and enhance a sense of self-reliance and underscore individual dignity. A single system of such health benefits, inclusive of both hospital and medical services, greatly simplifies and makes more efficient the delivery and utilization of these services, assures that there will be maximum public awareness of the health benefits to which the individual is entitled, and also provides better accountability on the part of carriers and providers entrusted with the funds used to provide such services.

It is also the purpose of this act to utilize the valuable management skills of the commercial and nonprofit insurance industry, coupled with State standards, to develop comprehensive health care plans providing integrated medical and hospital services.

Health insurance corporation. Another important provision is that which provides for the creation of the New York State Health Insurance Corporation, to administer the program. This section provides for benefits, individuals covered, methods of premium payments, and the like. These provisions are almost identical to the provisions of the bill introduced in 1970. The critique prepared by my predecessor, as chairman of this committee, Ralph S. Emerson, M.D., and his committee, were applicable to the 1971 version, since the provisions were very similar. This critique was submitted to the House last year and was published in our ***New York State Journal of Medicine.***

Two special provisions. There are, however, two special portions of the 1971 version of the Governor's perennial proposal which your committee should like to call to the attention of the House as a matter of great importance to members.

1. *Board of Trustees.* The bill provided that the aforementioned corporation should be administered by a board of 14 trustees. Five of these would be the commissioner of health, the superintendent of insurance, the commissioner of social services, the commissioner of commerce, and the chairman of the State consumer protection board. Eight trustees would be appointed by the Governor with the advice and consent of the Senate. Of these 8 trustees, 1 would be representative of hospitals, 1 would be representative of the health professions, at least 4 would be private citizens representative of the interests of consumers or purchasers of health services, and no more than 2 would be representatives of carriers. The final member would be the executive director of the corporation and secretary of the board. From this brief description it is clear that the health profession was limited to one representative, and he did not have to be a doctor of medicine.

2. *Medical fees.* The bill contained the following language in regard to fees:

> 1. The corporation shall appoint not less than seven regional councils with a defined geographical jurisdiction to be known as regional medical councils. Each such council shall consist of nine members appointed by the corporation, including at least three members representative of consumers of health services and two members representative of purchasers of health services. The corporation shall designate a member of each regional council to act as chairman thereof. Each regional council shall consider and advise the corporation relating to the establishment of schedules of fees for designated medical services in the region payable by carriers. All such schedules of fees recommended by a regional council shall take effect subject to approval by the corporation. A regional council may hold public hearings with respect to any of its functions.
>
> 2. Upon approval and adoption by the corporation of the fees recommended by a regional council, no carrier shall pay to any provider for services in furnishing any of the medical services provided in this act, an amount in excess thereof, nor shall any provider furnishing such service charge, request, or exact a payment in excess of the approved fee therefor.

An analysis of these provisions shows that the entire program might be administered by a board which has no physician member, and that medical fees would be fixed by regional councils which had no physician representation. The bill did not provide for negotiation of fee schedules with representatives of the health or medical care providers.

In brief, therefore, although the 1971 version of the Governor's bill did not necessitate the usual all-out efforts to defeat it because it was introduced "for study purposes" for the reasons outlined, your committee was opposed to the measure for the reasons set forth.

Basic principles reexamined. To carry out a directive of the Council referred to your committee, a meeting was held on October 6, in the Council Chambers of the State Medical Society headquarters. This directive required us to make "a restudy of the ten basic principles regarding comprehensive health insurance programs adopted by the House of Delegates of the Medical Society of the State of New York in order to update them and to make them consistent with current thinking of the State Medical Society."

It was the consensus that the following "Ten Basic Principles—Comprehensive Health Insurance Program," approved by the House of Delegates were outmoded.

> 1. It should be patterned after Title 18 A and B (PL 89-97), utilizing coinsurance, but not deductibles.
> 2. Private insurance carriers should be utilized.
> 3. The State and Federal governments should utilize Medicaid funds to pay health insurance premiums.
> 4. The State should assist in the payment of health insurance premiums for the near-indigent segment of the population.
> 5. There should be cost sharing by the employer and employe to pay insurance premiums.
> 6. There should be tax incentives for the remainder of the population to purchase insurance.
> 7. The insurance program should not disrupt the existing pattern of practice by altering the principles of freedom of choice, fee for service, and usual and customary fee concepts. Flexibility in the delivery and financing of health care in deprived areas to promote efficiency and to effect economy is acceptable, provided quality medical care is maintained. In deprived areas, fixed fee schedules negotiated with the appropriate county medical societies would be acceptable.

8. Basic minimum health benefits should be specified and should include parallel coverage for medical and diagnostic services in the hospital and in the doctor's office to keep institutional use and costs at a minimum.

9. Catastrophic health insurance coverage should be an integral part of the program.

10. Peer review mechanism through county medical society committees should be an integral part of the program.

These principles had been developed as guidelines for the evaluation of State legislation pertaining to universal health insurance, particularly the perennial introduction of the Governor's Universal Health Insurance Plan. They have been used in recent years as the basis for our critique of these bills and have enabled us to set forth our objections to these annual proposals.

Since the approval of the ten basic principles by the House, numerous new aspects of the entire problem had developed. There were pending in Congress more than a dozen major proposals for national health insurance, as previously mentioned, and your committee felt that a new set of principles, much broader in concept and less specific in content, should be adopted. After a thorough review of the current ten basic principles, and considerable discussion concerning new suggestions, your committee unanimously adopted the following new principles, submitted them to the Council at its October 21, 1971, meeting, and the Council approved them.

Six basic principles. To obtain the approval of the Medical Society of the State of New York, legislation providing comprehensive health insurance should contain the following six basic principles:

1. The plan should preserve the right of every person to select his own physician and health-care institution. The program should permit a doctor of medicine and his patient to maintain a direct and professional relationship.

2. The program should enable the individual person to have a free choice of protection plan, which could be in the form of an insurance policy purchased from a company, membership in a prepayment plan, or membership in a prepaid group practice plan. The plan should be universally available to all persons, with coverage provided for the poor.

3. The program should contain benefits sufficiently broad enough to enable the individual person to receive comprehensive health care, while removing the specter of catastrophic expense of illness. Such coverage should include parallel coverage for medical and diagnostic services in the physician's office as well as institutional care.

4. The cost of the program, which should be designed to meet America's health-care needs, should be kept at a reasonable and realistic level. This goal should be achieved by utilizing a system of cost sharing between government and recipients, based on the recipients' ability to pay. The program should be further maintained on a sound financial basis with the aid of coinsurance and deductibles.

5. Peer review should be an integral part of the program.

6. Flexibility in the delivery and financing of health care to promote efficiency and to effect economy is acceptable, provided quality medical care is maintained. Fee schedules negotiated with the appropriate medical societies would be acceptable.

Acknowledgments. Your chairman wishes to express his appreciation to the members of his committee for their cooperation, especially for their advice and counsel concerning the proposed new principles governing the evaluation of proposed universal health insurance laws. He also desires to thank the administration and staff of the State Medical Society, particularly to Martin J. Tracey, J.D., coordinator, Legislation Activities.

Respectfully submitted,
Walter T. Heldmann, M.D., Chairman

Workmen's Compensation

To the House of Delegates, Gentlemen:

The members of the Council Committee on Workmen's Compensation of the Division of Medical Services are as follows:

John H. Morton, M.D., *Chairman*	Monroe
Ray A. Elliott, Jr., M.D.	Albany
Burton P. Hoffman, M.D.	Westchester
John A. Kalb, M.D.	Broome
Robert Katz, M.D.	New York
George Lim, M.D.	Oneida
Walter W. Miner, M.D.	Nassau
Asa Paul Ruskin, M.D.	New York
Loring W. Wood, M.D.	Erie
Leonard Weitzman, M.D.	Suffolk

Two formal meetings of the committee were held on April 2 and June 18 with excellent attendance.

On April 2 the revised guidelines for rating applicants by the respective county workmen's compensation committees were reviewed, approved by the Council, and issued in May. The purpose of these guidelines is to establish uniform criteria throughout the State for the evaluation of physicians applying for authorization to treat workmen's compensation claimants.

Resolutions. *Resolution 71-40,* "Establishment of Specialty Rating and Code Letters for Specialty of Family Practice":

Resolved, That this House of Delegates request that the Council *immediately* notify the Chairman of the Workmen's Compensation Board, as presently required by New York State Law, that the Medical Society of the State of New York endorse the establishment of a separate Workmen's Compensation Specialty Rating as well as appropriate new code letters for the Specialty of Family Practice.

This resolution received considerable attention at both meetings, as well as discussions with representatives of the American Academy of Family Physicians. On April 2 the committee approved that both a special designation and appropriate increase in fees be requested. However, in keeping with the resolution, only the special designation request was made to the Advisory Committee on the Medical Fee Schedule and Allied Problems of the Workmen's Compensation Board. Early in the year this request was rejected. Subsequently, on our petition, the Advisory Committee agreed to hear two representatives from the American Academy of Family Physicians, and they appeared and presented their position on September 16. The request was formally denied on October 14, for the following reasons:

1. Multiple ratings in major specialties should not be granted (page 10 of the 1970 fee schedule);
2. Family practice is not a specialty involved to a great degree with occupational injuries or diseases.

Resolution 71-13, "Workmen's Compensation Fees":

> *Resolved,* That the Medical Society of the State of New York petition the Workmen's Compensation Board to reimburse anesthesiologists on a fee structure that is based on the Relative Value Guide of the New York State Society of Anesthesiologists.

In view of the ongoing negotiations for a changeover to a relative value scale in 1972, it was decided that this resolution be effected through these negotiations.

Resolution 71-60, "Fee for Attendance at Workmen's Compensation Hearings":

> *Resolved,* That the Medical Society of the State of New York urge the Workmen's Compensation Board to keep hearings involving physicians to an absolute minimum.

This was forwarded to the chairman of the Workmen's Compensation Board. On October 14 the chairman referred the resolution to the Workmen's Compensation Board's Advisory Committee requesting an opinion. To implement this resolution, it was agreed that a recommendation would be made that the substance of this resolution be brought to the attention of the supervising referee with the request that he pursue the matter with all the referees. In regard to the second *Resolved:* "That the Medical Society of the State of New York request the chairman of the Workmen's Compensation Board to set a fee of no less than $100 for physicians' attendance at hearings," action was postponed with the understanding that this would be made a part of the ongoing negotiations on the fee schedule.

C-4 forms. The Council committee considered proposals for simplification of C-4 forms; the five recommendations agreed on have been submitted to the Advisory Committee on the Medical Fee Schedule and Allied Problems, and they have these under consideration.

Refusal of physicians to accept cases. A request by the New York County Workmen's Compensation Bar Association that the Medical Society of the State of New York join them in investigating their complaint that many physicians refused to accept workmen's compensation cases was rejected. We challenged the claim that many physicians refused to accept workmen's compensation cases and requested that they present specific data to support their statement that a problem existed. Six months have intervened since this subject was broached; no data have as yet been forwarded to us.

In the closing hours of the 1971 State Legislative session, a bill was introduced that would amend the Workmen's Compensation Law to authorize treatment of workmen's compensation claimants by joint labor-management medical centers. The Medical Society of the State of New York felt that this was detrimental to the quality of care rendered to such patients and mobilized its resources to prevent its passage. The bill was referred back to committee and never came to the floor. We should be alert to the probability that it will be reintroduced.

The committee both formally and informally, concerned itself with many other problems that came to its attention either via members of the committee or of the Society. Most of these were dealt with in a direct manner that led to their resolution and assisted members of our Society.

The director of the Division has begun a series of articles in the ***New York State Journal of Medicine*** relating to frequently occurring problems in the workmen's compensation field which, it is hoped, will avert difficulties.

The director attended eight meetings of the Advisory Committee on the Medical Fee Schedule and Allied Problems. Among the subjects that were discussed at such meetings were the designation of Family Practice as a distinct class, the complaints of carriers concerning physicians and vice versa, the problem of double billing where the hospital contracts cover a physician's services. Perhaps the most important subject has been that of the new workmen's compensation fee schedule due in July, 1972. The State Medical Society insists that this be prepared on a relative value scale basis, a changeover of major proportions that has entailed and will still entail a great deal of work, not only by the staff of the Medical Society of the State of New York but also by the insurance carriers. As of this moment, we are meeting considerable resistance to our request, but we hope we shall overcome.

Arbitrations. During the preceding twelve months, 74 arbitration sessions were held throughout the State. Sixty-three were held in the Greater New York area. A total of 1,522 cases were submitted for arbitration. Disputed medical bills amounted to $375,130.77. Postponements deferred the settlement of 277 cases, and 1,024 cases were settled by arbitration. A total of 221 cases were settled without arbitration.

Acknowledgment. The chairman expresses his appreciation to all the members of the committee who have given so freely of their time and efforts. He also expresses his thanks to the director of the Division of Medical Services, Max N. Howard, M.D., and to the administrative assistant, Miss Alice E. Wheeler, for their industry and their cooperation.

Respectfully submitted,
John H. Morton, M.D., Chairman

Interspecialty

To the House of Delegates, Gentlemen:

The Interspecialty Committee is composed of the following:

John R. Williams, Jr., M.D., *Chairman* ***Internal Medicine***	Monroe
Thomas S. Bumbalo, M.D. ***Pediatrics***	Erie
Donald W. Hall, M.D. ***Obstetrics and Gynecology***	Erie
Norman B. Kanof, M.D. ***Dermatology***	New York
John P. Lambert, M.D. ***Psychiatry***	Westchester
Philip H. Landers, M.D. ***Ophthalmology***	Broome
Herbert Lansky, M.D. ***Pathology***	Erie
George Liberman, M.D. ***General Practice***	Kings
Samuel H. Madell, M.D. ***Radiology***	New York
Howard B. Rasi, M.D. ***Plastic Surgery***	Kings
Perrin B. Snyder, M.D. ***Urology***	New York
Victor J. Tofany, M.D. ***Anesthesiology***	Monroe
Paul M. Walczak, M.D. ***General Surgery***	Erie
I. Melbourne Greenberg, M.D. ***Neurosurgery***	Nassau

This committee has had an extremely active year, and hopefully we have helped to resolve some problems. Our three major thrusts have been (1) establishing better lines of communication between the various specialty societies and the Medical Society of the State of New York, (2) helping the Economics Committee develop a relative value scale, and (3) helping to establish a Council on Continuing Medical Education.

In regard to our first function, as a communications committee, it seems that we have been able to get the considered opinions of the various boards of trustees of the specialty societies and communicate these to the Council of the State Medical Society whenever we were asked. We have also been able to effectively communicate to the State Medical Society problems raised by the various specialty societies.

Second, when it became apparent to the Economics Committee that the Peat, Marwick, Mitchell & Company survey may not truly reflect the charges of physicians in New York State, probably because (*a*) physicians in general were not familiar with the definitions, since they have never really used the system, and (*b*) the small number of responses, this committee was asked to help develop a relative value scale. We approached this problem with fear and trepidation, but have made a good deal of progress. The primary-care physicians, the pediatricians, and internists, and the family practitioners, each appointed 2 members to a committee which has met several times and has developed a questionnaire that they felt would reflect over 85 per cent of the charges of each group. The questionnaire contained only 12 questions for each group. We received approximately a 50 per cent response from each of the groups and believe we have statistically significant figures indicating what these various groups charge for the most commonly performed procedures. Hopefully, well before the annual meeting, agreement will have been reached and a relative value scale for medicine will be complete. The other specialty societies have also developed relative value scales, some of these by questionnaires, others by using national, state, or local relative value scales. While the problem of relating the various surgical schedules one to the other has still not been resolved, hopefully it too will be ready before the annual meeting.

The third major problem of helping to develop a Council on Continuing Medical Education has been discussed at great length by this committee on numerous occasions. The members of the committee have taken the ideas and proposals of Marvin L. Bloom, M.D., and his committee on Continuing (Postgraduate) Education back to their respective Boards of Trustees and have in all instances secured their approval for support in implementing such a program. In addition, each of the specialty societies has formed a committee on continuing medical education, and a subcommittee of the Interspecialty Committee has been formed consisting of the chairman of each respective committee in the specialty societies. This subcommittee has met and organized and is ready to proceed as soon as this council is duly formed. Your chairman has met with Dr. Bloom and his committee and with the three other partners who were to set up the Council on Continuing Medical Education. It is extremely hopeful that this organization will be functioning by the time of the annual meeting, and that it can make New York State a leader in this field.

The following other items have been considered by the committee:

Prepaid and health maintenance programs. The difficulty of obtaining true costs in prepaid and health maintenance organization programs was discussed. In view of the pressures being exerted toward the establishment of such plans, it was felt that efforts to obtain such cost figures should be so that meaningful comparisons with other health-care delivery systems could be made.

Blue Shield. The committee discussed a proposal by Blue Shield requesting physicians to accept a reduction in their fees on full-payment benefit plans, pending further study of such coverage. A motion was unanimously passed that the Interspecialty Committee is unalterably opposed to any paid-in-full medical insurance plan that permits alteration of an already agreed on fee schedule by percentage reduction on the part of the carrier without prior negotiation with the participating physicians. This resolution was called to the attention of the Economics Committee and the Medical Care Insurance Committee.

The committee also discussed a letter from the New York State Health Department, signed by William F. McCann, assistant commissioner, concerning interpretation of Section 86:11 (c), pertaining to changes in the way medical services could be billed for inhospital patients when covered by Medicaid or Article 9-C Corporations, mainly Blue Cross and Blue Shield. We believe that we played an important role in persuading the State Health Department to alter this interpretation.

Acknowledgment. The committee would like to express its appreciation to Max N. Howard, M.D., director of the Division of Medical Services, for his devotion and suggestions that have made the work of our committee so much easier. We would also like to acknowledge the services of our secretary, Mrs. Clementine Thompson.

Respectfully submitted,
John R. Williams, Jr., M.D., Chairman

Standards of Medical Care

Ethics

To the House of Delegates, Gentlemen:

The Committee on Ethics consists of the following members:

Joseph G. Zimring, M.D., *Chairman*	Nassau
Charles A. Gwynn, M.D.	Onondaga
Frank LaGattuta, M.D.	Bronx
John Sauer, M.D.	New York

The committee has received many letters from individual physicians and county medical societies, not only from New York State but from many other states, requesting that some action be taken on the commercial abortion referral agencies located in New York State. All of these complaints were referred to the Attorney General's Office of the State of New York for future investigation and action.

A letter was received from an upstate county medical society asking whether or not it was ethical for physicians to bid against each other for a salaried position. The county medical society was told that a contract was unfair or unethical when "there is underbidding by physicians in order to secure the contract."

The committee received a letter from "Patient Credit Reference, Inc." which described a method of listing the names of patients in particular areas who have not fulfilled their financial obligations to members of the medical and dental professions. These names would then be available to all participating physicians and dentists.

It was the opinion of the committee that this system of credit rating patients was unethical, and that this should be publicized. The Council approved the recommendation of the committee.

A physician inquiring about the ethics of a physician "who accepts reasonable payment from an outside laboratory to whom he refers specimens for the services of himself and/or his office staff;" was told that this practice was unethical. An ethical doctor of medicine will not or does not accept rebates from commercial organizations on services that are rendered both by himself and the commercial institution.

A letter from a hospital asking whether or not it was ethical to permit chiropractors to send patients to hospitals for radiographic studies was answered by quoting Chapter II, Section I, of the *Principles of Professional Conduct of the Medical Society of the State of New York*. This section relates to the association between physicians and cultists.

We received several inquiries from both medical and lay organizations regarding bank credit cards. All were referred to the ruling approved by the House of Delegates in 1966 and reaffirmed in subsequent years. The American Bar Association also ruled this year on the use of credit cards for payment of legal fees. They support the position taken by the Medical Society of the State of New York, "that it is unprofessional for a lawyer to subscribe to credit card plans. . . as a means of enabling clients to pay his legal fees."

A letter from a county medical society questioning the use of a physician's name to dignify a business solicitation was received. The committee answered by quoting from the AMA *Judicial Council's Opinions and Reports*, paragraph 51, Section 7, which states that it is "demeaning to the medical profession for a physician to permit the use of his name or professional status in the promotion of commercial enterprises." The committee found two other examples of this type of promotional advertising; one concerned a physician advocating his colleagues to buy stock of a newly formed bank and another concerned an advertisement of a commercial product. Both of these cases were referred to the local county medical societies for investigation and action.

There were many inquiries from members of the State Medical Society which were referred to the local county medical societies for interpretation and action. Among those were questions concerning advertising for patients by a medical clinic; referral of patients by a commercial organization to physician; type of contract between hospitals and groups of physicians; use of facilities of a hospital pathologic laboratory for private use by the pathologists; use of signs in commercial buildings, and many others.

The committee met on August 20 to revise the *Principles of Professional Conduct of the Medical Society of the State of New York*. A copy of the revisions was sent to the House Committee on Constitution and Bylaws.

The committee would like to express its appreciation to Samuel Z. Freedman, M.D., director, Division of Standards of Medical Care; to Lynn R. Callin, M.D., chairman, Commission on Standards of Medical Care; to J. Richard Burns, J.D., assistant executive vice-president; and to Miss Catherine H. Renze, secretary to Dr. Freedman, for their assistance.

Respectfully submitted,
Joseph G. Zimring, M.D., Chairman

Nursing and Allied Health Professions

To the House of Delegates, Gentlemen:

The Committee on Nursing and Allied Health Professions consists of the following members:

Lester J. Candela, M.D., *Chairman*	Queens
Frank A. Baumann, M.D.	Broome
Clarke T. Case, M.D.	Oneida
Douglas S. Damrosch, M.D.	New York
Ramsdell Gurney, M.D.	Erie
Ralph F. Jacox, M.D.	Monroe
Joel E. Mandel, M.D.	Rockland
Frank C. Nichols, M.D.	Nassau
Vincent J. Tesoriero, M.D.	Kings

The spring meeting of the committee, attended by Henry I. Fineberg, M.D., was followed by a joint meeting with representatives of the New York State Nurses Association. The nurses were incensed at the impending passage of the Paramedical Assistants Bill which, apparently, gave them some justified concern regarding the relative "slots" allotted to the nursing profession versus the paramedical assistants in the health-care structure. Unfortunately, and incorrectly, they seemed to blame the situation on the medical profession.

Subsequent to this, there was an unprecedented drive for the passage of the "Nurse Practice Act" which would have created chaos both in and outside the profession because of the confusing similarity of the proposed definitions of the nursing profession compared with the medical profession. This effort was ill designed since it tended to result in an unintentional schism between the two professions.

The knowledgeable veto of the measure by Governor Rockefeller may have saved the day and laid the groundwork for a more satisfactory and realistic approach. Possibly, the outcome may be meaningful implementation of the "Joint Practice Act," reported by Jerome P. Lysaught, M.D., director of the National Commission for the Study of Nursing and Nursing Education, in "An Abstract for Action."

The healthy aim therein, again seems to be "back to the patient," the sphere in which both physician and nurse belong primarily. This is the status to date.

Respectfully submitted,
Lester J. Candela, M.D., Chairman

Peer Review Mechanisms

To the House of Delegates, Gentlemen:

The members of the Committee on Peer Review Mechanisms are as follows:

Ralph S. Emerson, M.D., *Chairman*	Nassau
Charles M. Brane, M.D.	Westchester
Lynn R. Callin, M.D.	Monroe
Lester J. Candela, M.D.	Queens
Richard D. Eberle, M.D.	Onondaga
Carl Goldmark, Jr., M.D.	New York
William A. Schwarz, M.D.	Richmond
Edward Siegel, M.D.	Clinton
Tiffany Lawyer, Jr., M.D.	Bronx

Peer review mechanisms continued to be of great interest in Congress. H.R. 1 which included provisions for review mechanisms passed the House of Representatives without fanfare. In the Senate, the Bennett Amendment was tacked on to the Senate version of H.R. 1. The Devine Bill was a modified version of the Bennett Amendment to meet some of the objectives of the American Medical Association. The AMA reintroduced the Peer Review Organization (PRO) version sponsored by Senator Clifford P. Hansen, Wyoming. These bills were moved to the back burner with the introduction of President Nixon's new economic policy. They will undoubtedly be reconsidered when the economic crisis is alleviated.

The State Legislature responded to the requests of the Medical Society of the State of New York by passing the immunity and disclosure bills which have been of great concern to members of peer review committees. These bills provide that: (1) "physicians who serve as members of medical review committees of county or state medical societies shall not be liable in damages for actions or recommendations by them within the scope of their functions as such members, if without malice"; and (2) "additional protection would be given to review committees, since the disclosure of the proceedings and records of hospital utilization committees and medical society review committees would be prohibited."

During the past year, members of our committee participated in peer review meetings at the local, State, and national levels. Your chairman was privileged to serve as a panelist and consultant at the National Conference on Peer Review sponsored by the American Medical Association and the American Society of Internal Medicine.

Function. Responding to the request of our president, George Himler, M.D., our committee prepared 2 articles outlining the functions of the State, regional, and county medical society peer review committees and offering specific recommendations. The purpose of these articles was to assist in the organization and functioning of peer review on a Statewide basis. Many areas of the State have effective peer review mechanisms. However, there are many undeveloped areas which need help. We hope the following suggestions will provide the blueprint to upgrade peer review mechanisms throughout the State.

MSSNY Peer Review Committee

1. To preserve quality medical care, emphasizing the educational aspect of peer review.

2. To advise regional PSRO (Professional Standards Review Organizations) regarding: (*a*) requirements of the law, and (*b*) comparison of other PSRO activities.

3. To collect, correlate, and distribute statistics.

4. To recommend representatives to a Statewide PSRO Council.

5. To act as a clearing house for: (*a*) evaluation of effectiveness of peer review, (*b*) appeal and adjudication mechanisms, (*c*) coordination of peer review—Statewide, (*d*) model programs, and (*e*) standardization and documentation of activities.

6. To act as a liaison with Federal and State government agencies, fiscal intermediaries, carriers, consumers, physicians, hospitals, AMA, and other professional organizations.

7. To publicize peer review activities.

The duties and functions of each PSRO would be to determine whether or not (1) health care services are medically necessary; (2) the quality of such services will meet professionally recognized standards of health care; and (3) proposed hospital or other health-care facilities' services could, consistent with the provision of appropriate medical care, be effectively provided on an outpatient basis or more economically in an inpatient-care facility of a different type.

In cases of any elective admission to the hospital or other health-care facility, or any health-care service consisting of extended or costly courses of treatment, PSRO would determine, in advance, whether or not such service, if provided by a particular health-care practitioner, or by a particular hospital, or by other health-care facility would meet the necessary medical and economic criteria. Each PSRO would publish from time to time the types and kinds of cases with respect to which such organizations would exercise their authority to make such advance determinations.

Each PSRO would be responsible for the regular review of patient care, utilizing to the greatest extent practicable in such patient profiles, methods of coding which will maximize confidentiality as to patient identity and assure objective evaluation. Profiles would be regularly reviewed on an ongoing basis with respect to each health-care practitioner and provider.

Hospital-care review would be performed only by physicians having active hospital staff privileges in at least one of the participating hospitals in his area. No physician would be permitted to review health-care services provided to a patient if he were directly or indirectly involved in providing such services, or if he or his family had directly or indirectly any financial interest in such institutions.

PSRO may make arrangements to utilize the services of practitioners or specialists in medicine, dentistry, or other types of health care who are in practice in the area; to undertake professional inquiry before and after the services; to examine the records of practitioners or providers; and to inspect the physical facilities in which care was rendered or services provided.

To familiarize physicians with the PSRO functions and activities and to promote acceptance of such functions and activities by physicians, patients, and other persons, each PSRO would:

1. Encourage all physicians in the area to participate in the review activities;

2. Provide rotating physician membership on review committees;

3. Assure that membership on review committees would have the broadest representation feasible in terms of various types of practice; and

4. Utilize medical periodicals and similar publications to publicize the functions and activities of PSRO.

Each PSRO is authorized to utilize the services of, and accept the findings of, review committees of hospitals in the areas, but only when and only to the extent that such committees have demonstrated to the PSRO their capacity effectively and in timely fashion to review activities in such hospitals, including the medical necessity of admissions, services ordered, and lengths of stay. Similarly, PSRO could utilize the services of medical societies and similar organizations but only after they have demonstrated their capacity effectively and in timely fashion to perform such activities.

Each PSRO would apply professionally developed norms of care and treatment based on typical patterns of practice in their region (including typical lengths of stay for institutional care by age and diagnosis) as principal points of evaluation and review. The National Professional Standards Review Council and the secretary would provide such technical assistance as will be helpful in utilizing and applying such norms of care and treatment. If actual norms of care in an area were significantly different from regional norms, the local PSRO would be informed. If appropriate consultation and discussion indicates a reasonable basis for the usage of such unusual norms in the area concerned, the PSRO may apply such actual norms in such areas as are approved by the National Professional Standards Review Council.

Any norm for treatment of a particular illness of health condition would include:

1. The types and extent of the health care services which, taking into account differing but acceptable modes of treatment, are considered to be within the range of appropriate treatment of such illness or health condition, consistent with professionally recognized and accepted patterns of care; and

2. The type of health-care facility which was medically appropriate and could be most economically provided.

The National Professional Standards Review Council would provide for preparation and distribution of regional norms to be utilized. Each PSRO would specify the appropriate time for recertification of continued hospital care.

Each health-care practitioner, hospital, or other health-care facility would be obligated to assure that services would be rendered only when and to the extent necessary and would be of a quality meeting professionally recognized standards. If the claims for services were under review by the PSRO or had been disapproved prior to rendering the service, the agency or organization responsible for acting on the claim for services would be notified. Although it is not directly stated, it is implied that the claim would not be paid.

If there are repeated violations or failure to comply with the obligations, grossly or flagrantly violating the obligations, demonstrated unwillingness, or lack of capability substantially to comply, the PSRO would report and make recommendations to the Secretary through the Statewide Council. The Secretary of Health, Education, and Welfare would decide whether to exclude the provider permanently or for a prescribed period from eligibility to provide services under Medicare or Medicaid on a reimbursable basis. In lieu of exclusion in case of medically improper or unnecessary services, the Secretary might require, as a condition to continued eligibility of the practitioner or provider, payment to the government of an amount not in excess of the actual or estimated cost of the medically improper or unnecessary services provided, or (if less) $5,000. Such amount may be deducted from any sum owed by the government to the person from whom such amount is claimed. If the practitioner or provider is dissatisfied with the determination of a PSRO, he is entitled to a hearing by the Secretary, who would make a final determination.

County Medical Society or Regional Peer Review Committees

1. To urge and assist hospitals in establishing peer review committees and to cooperate in ongoing review.
2. To develop liaison with local government, fiscal intermediaries, carriers, consumers, and communication media.
3. To develop up-to-date U.C.R. fees with Relative Value Scale conversion factor as a guideline for evaluating individual cases in their respective areas.
4. To develop norms of patterns of care that would meet the professionally recognized standards of health care.
5. To develop close liaison with specialty organizations, such as American Academy of General Practice, American Society of Internal Medicine, American College of Surgeons, and others.
6. To utilize standard information review and summary forms.
7. To report summaries at regular intervals to the respective PSRO and the State Medical Society Peer Review Committee.
8. To develop prototype plans that will fit the demographic patterns of the area.

PEER REVIEW RECOMMENDATIONS

The following recommendations outline the status of PSRO in relation to the Devine Bill (H.R. 7182) and specify the duties of a peer review organization.

Status of PSRO. When the Bennett Amendment 851 to H.R. 17550 on Professional Standards Review Organizations (PSRO) appeared on the scene last Fall, there was great apprehension and concern by all providers of services. In spite of repeated efforts of the AMA to delete the objectionable features, the modified version of December 2, 1970, was most distasteful. A lengthy summary was presented to our House of Delegates in February, 1971, entitled "Supplementary Report of the Peer Review Committee" and appears in the June 1, 1971, issue of the ***New York State Journal of Medicine,*** page 1365. Fortunately, the Bennett Amendment died in Committee.

Recognizing that a structured peer review as detailed in the Bennett Amendment was merely a forerunner of things to come, the AMA held a National Workshop Conference on Peer Review on May 21 and 22, in Chicago. A comprehensive *Peer Review Manual* was completed for this workshop. The cost is $4.00 per copy and may be obtained by writing to the American Medical Association's Division of Medical Practice, Department of Insurance and Practice Management, 535 North Dearborn Street, Chicago, Illinois 60610.

Recommendation 1. Every county society and peer review committee member should obtain a copy of the *Peer Review Manual* and become knowledgeable regarding its contents.

PSRO 1971, Devine Bill H.R. 7182. PSRO was reactivated on April 5, 1971, with the introduction of the Devine Bill, H.R. 7182 of the 92nd Congress. It has been presented as a separate piece of legislation to enhance its chance of passage. The foundation and framework of a structured peer review are unchanged. It is in many respects a replica of the Bennett Amendment, but does reflect the valiant efforts of the AMA to delete many of the objectionable provisions of Amendment 851. It will undoubtedly shock the uninitiated in peer review who still view it as purely a grievance mechanism. The provisions of norms, patterns of care, profiles of utilization and charges, data input and retrieval, reports, immunity, and sanctions remain unchanged.

The Devine Bill gives priority for peer review to the practicing physicians. The National Professional Standards Review Council shall consist of 11 practicing physicians recommended by statewide PSROs and 3 members recommended by national organizations recognized by the HEW Secretary as representing practicing physicians. In the Bennett Amendment physicians would also be nominated by consumer groups.

The statewide professional review organization of the Bennett Amendment has been deleted. The Bennett version was objectionable since only 2 physicians would be designated by the State Medical Society, 2 physicians designated by the State Hospital Association, and 4 members selected representing the public. Therefore, the practicing physicians would probably be in the minority.

The advisory group to the Statewide Professional Standards Review Council of the Bennett Amendment has also been deleted. This was objectionable since the members of this group were nonphysician health-care practitioners, which would result in minority representation of practicing physicians on the combined Statewide Professional Standards Review Council and its advisory group.

H.R. 7182 eliminates the financial penalties of the Bennett Amendment but does retain sanctions of exclusions from the program for failure to comply with the regulations.

A new dimension added to the Devine Bill refers to the parameters of cost of health care. It seems reasonable to assume that the quality of care will be factored into the cost and quality review mechanism. This does not imply that it is undesirable, but it does represent a broader concept.

It is important to emphasize the immunity provisions of PSRO to exempt persons serving on these committees or individuals following the activity authorized by PSRO from violating any criminal law or to be civilly liable under any law of the United States or any state unless the information is (1) unrelated to the performance of the duties and functions of the organization, or (2) false and the person providing the information knew or had reason to believe the information was false. This is similar to the Bennett Amendment.

The Devine Bill is more palatable than the Bennett Amendment. It places the responsibility squarely on the medical profession for a trial period of twenty-four months. If the medical profession fails to carry out the provisions of the Bill, nonprofessional personnel will be assigned the task.

The consensus of the House Ways and Means Committee is reflected in H.R. 1 which was introduced by its chairman, Wilbur Mills, on May 24, 1971. The following from H.R. 1 will be of interest to peer review committees:

> Program review teams would be established in each state by the Secretary, (HEW) following consultation with groups representing consumers of health services, state and local professional societies, and the appropriate intermediaries and carriers utilized in the administration of Title 18 benefits. Both the professional and the nonprofessional members of the program review teams would be responsible for reviewing and reporting on statistical data on program utilization (which the Secretary would periodically provide). In addition the entire program review team would review cases involving overcharging; however, only the professional members of the program review teams would review cases involving the furnishing of excessive, inferior, or harmful services in order to assure that only professionals will review other professionals under this provision.
>
> It is not expected that any large number of suppliers of health services will be suspended from the Medicare program because of abuse. However, the existence of the authority and its use in even a relatively few cases is expected to provide a substantial deterrent.

The penalties for fraudulent acts and false reporting under Medicare and Medicaid carries a penalty of up to one year imprisonment, a fine of $1,000, or both. Under H.R. 1: "the penalty for such acts, as well as false statements or representations of material facts in any application for payment under the Medicare and Medicaid programs, would be a fine of $10,000, and one year of imprisonment, or both."

As of July 1, 1971, H.R. 1 has passed the House of Representatives by a wide margin. Senate hearings will start in early July, 1971, and politics will probably determine the outcome. If H.R. 1 fails, the Devine Bill is ready for consideration.

Should either of these bills pass, it would apply primarily to Medicare and Medicaid. However, with the pressures for a national health insurance program, it is conceivable that the review mechanisms would be applicable to almost the entire population of the country. If this premise is correct, we must take urgent steps to develop a program that would meet the provisions of this or similar legislation.

CHP areas for each PSRO. Since New York State is so large and represents a diversified demographic population that it is impractical to consider one PSRO for the entire State, the following are suggested:

Recommendation 2. New York State be divided into regions corresponding to the CHP districts where feasible with one PSRO in each area.

Recommendation 3. Each representative on the State Medical Society Peer Review Committee act as liaison with the local area and assist in the coordination and development of their PSRO. We suggest he enlist the support of the foundations, medical societies, interspecialty societies, especially American Society of Internal Medicine, because of their expertise, hospital associations, insurance carriers, and government agencies in developing a structured program.

Certified hospital admissions program (CHAP). Hospital costs and services represent sixty cents of every health-care dollar. Since these services are the best documented and have been developed in varied degrees of sophistication of inhospital review activities, such as utilization review, medical and surgical audit, and admissions, medical records, and sundry efficiency committees, it would seem to be logical that this action would make an impact on cost of inhospital care. Furthermore, the experiences of the Sacramento Foundation in California and the Colorado Foundation have demonstrated CHAP to be a practical approach. The program is outlined in appendix G of the AMA *Peer Review Manual.*

Recommendation 4. Each PSRO area consider establishing a certified hospital admissions program as a joint effort of the involved parties.

Criteria studies in peer review. Many medical societies and hospitals have not developed the methodology for review of disease entities. Since this is time consuming and has been done by other organizations, it is impractical to duplicate the entire process.

Recommendation 5. The PSRO areas utilize the experience and expertise of established programs outlined in appendix D of the *Peer Review Manual* of the AMA.

Data sources. It is obvious that the complexities of hospital review studies inherent in a PSRO program cannot be done by reviewing individual charts alone and that modern technology of computer data processing must be utilized.

Recommendation 6. All hospitals be encouraged to develop their own data-processing program or subscribe to one of the available sophisticated programs of computerized medical record information systems referred to in appendix E of the *Peer Review Manual* of the AMA. The requirements for hospital review are outlined in the supplementary report of the Peer Review Committee to the House of Delegates, February, 1971.

Mobilization and organization of PSROs. It is incumbent on each PSRO to prove that they have the experience, expertise, and willingness to serve as an area group. The Secretary of Health, Education, and Welfare will decide on the basis of performance whether or not they have that competence.

Recommendation 7. The State Medical Society peer review member, county medical societies, and foundations should coordinate all component health resources in their respective areas to function as a unit to qualify as a PSRO.

Standardization of forms. When PSRO develops and matures as a nationwide system, there will undoubtedly be national standardized forms. In the interim each area should develop standardized forms to report and develop relevant data and to prove that they are a well-organized cohesive unit. Sample forms for medical society reviews are in appendix F of the AMA *Peer Review Manual.*

Recommendation 8. Medical societies, foundations, hospitals, and others, should develop standardized forms in their respective PSRO areas.

Publicity. When peer review is well established and functioning properly in the respective areas, the public should be apprised of organized medicine's efforts to upgrade the quality of medical care and to perserve the health-care dollar.

Recommendation 9. The medical profession should utilize all the communication news media to publicize the communication news media to publicize the peer review program to assure quality medical care and to the peer review program to assure quality medical care and to control health-care costs as a public service.

Norms, profiles, and patterns of care. Numerous criteria for use in peer review have been developed to serve as guidelines for review mechanisms (appendix D of AMA *Peer Review Manual*). These should be used to evaluate norms of care in the respective geographic area.

Patterns of care will vary in different areas. The common denominator is the appropriateness of medical care, bearing in mind reasonable cost parameters of the disease. It is important for the physician to document the symptoms and treatment to develop valid statistics. The treatment should conform to acceptable standards of the area.

Fee profiles will undoubtedly be a part of a national health insurance program. Since reasonable reimbursement for services rendered is essential for a viable and healthy medical profession, each area should develop the usual, reasonable, and customary charges either as a fee range or conversion factor in a recognized relative value scale, such as the California Relative Value Scale (1969).

Continuing education. Peer review is essentially an educational process and a method of preserving quality medical care. Abnormal patterns of care may be "kicked out" by computers, but judgment is a human equation, and judgments can only be made by peers at the local level. It should be based on honesty and common sense with the welfare of the patient the determining factor.

The Medical Society of the State of New York, the medical schools, and the New York State Health Department are devising a master plan for continuing education. Peer review should be an integral part in this program and could serve a beneficial function for both the patient and the physician.

Institute for Research and Development. The State Medical Society is planning an Institute which would be the nerve center for electronic data processing. This is important and timely. We desperately need a mechanism to collect, process, and evaluate the data inherent in the mechanics of PSRO. This would be done at one center for the entire State and would eliminate for the various PSROs the expense and duplication involved in a project of this magnitude.

MSSNY Peer Review Committee. This committee would assist the PSROs in developing and mobilizing, on a State level, the support of the State Hospital Association, State Health Department, medical schools, interspecialty societies, insurance carriers, Federal agencies, and the AMA. The committee would act as liaison with the various PSROs and the Institute. In conjunction with the Institute, it would review the relevant data of "gigo" for statistical analysis. It would coordinate the various programs to conform with Federal regulations.

Conclusion. There is increased evidence that Congress will assign the responsibility of peer review of professional services to organized medicine through the practicing physicians. The final determination will depend on our response to this opportunity and challenge.

Recommendation 10. That this report if approved by the Council be sent to the county medical societies for implementation.

No one can predict with certainty the ultimate course of peer review. If nonprofessional persons control the process, costs will probably have top priority at the expense of quality. If the medical profession responds with active leadership, being mindful of costs but emphasizing quality of care, we will be rendering a valuable service not only to the public but also to our profession.

Since peer review is essentially an educational process, the logical course would appear to be a factoring in of peer review in continuing medical education. With our legislators demanding relicensure or credits in a continuing medical education program, peer review offers a positive approach.

The following article on "Peer Review and Continuing Medical Education" was published in a surgical society publication and is included for your information.

CONTINUING MEDICAL EDUCATION AND PEER REVIEW

As government assumes an increasing role in financing the cost of medical education and health care, it extracts its "pound of flesh" in terms of rules, regulations, and supervision for all who enjoy the government carrot. This is not an arbitrary action of our legislators, since the Supreme Court has ruled that what the government finances, it must regulate. This is a bitter pill for the medical profession since physicians are basically rugged individualists.

In the past few decades we have seen the most prolific scientific and technological advances in history. What we were taught in medical schools and residency training programs are soon outdated. We must utilize our training in deductive reasoning and acquired judgment to assimilate the plethora of scientific advances. This can only be done by continuing medical education.

Government is aware of the trend of overspecialization resulting from the scientific explosion. It is also aware of the tunnel-vision effect and fragmentation of our services in the total picture of patient care. It is not surprising that most of the national health insurance bills before Congress include a provision for mandatory continuing medical education. Some of our legislators are advocating periodic relicensing.

The American Medical Association, American College of Surgeons, American Academy of General Practice, American Society of Internal Medicine, American Urological Society, American Academy of Orthopedics, and our medical schools have responded with voluntary assessment examinations, seminars, and sundry meetings in developing programs of continuing medical education. We urge all physicians to arrange their schedules to participate in these programs.

Self-assessment examinations and seminars focus on the quality of care which is unquestionably our main goal. However, it evades the issues of cost and quantity (appropriateness) of care which is of great concern to government and the public. We may have the highest quality of care, but if the cost and quantity are too great, we as a profession will price our product beyond the reach of the public. This is our dilemma in 1971, and unless we can surmount the cost and quantity factors in the seventies, we will be government employees by the eighties.

Our medical schools and affiliated hospitals rate high on quality but rate low in the cost and quantity of care as reflected in the per diem cost and length of stay statistics. In New York City per diem rates in our voluntary hospitals vary from $82 to $210 with our university-affiliated hospitals in the higher brackets. The high-cost hospitals claim research, residency training programs, increased services, and specialized technology account for the high per diem rates. This may be true, but many are asking if this price spread is necessary? In Philadelphia the State Insurance Commissioner has requested education and research be deleted in calculating the Blue Cross reimbursement formula. There is growing concern this concept may spread throughout the country and cripple our residency training programs.

In the private practice of medicine outside of the residency training hospitals, we find various gradations from excellent to marginal in terms of quality, cost, and quantity of care. The vast majority of physicians render a very commendable and dedicated service in terms of quality but are subjected to the same stresses in terms of cost and quantity as in the teaching hospitals.

This does not imply the medical profession is a major factor in the escalating per diem rates. However, it does focus on the role of the physician since he directs the patient into the hospital, prescribes his workup and treatment and determines to a large extent his length of stay and disposition. There are many reasons beyond our control for the excessive quantity and cost components, such as defensive medicine, because of malpractice premiums and claims, social reasons of insufficient extended care facilities, and economic considerations of the patients' insurance policy being structured to inhospital care. In spite of these factors there is much that can be and must be done to squeeze the fat out of the health-care dollar.

Peer review offers a practical approach because it includes quality, cost, and quantity controls. It supplements the continuing education program by an on-going and retrospective review of patient care. It will develop standards of the appropriateness (quantity) of care and will monitor the cost of care regarding fees and the total cost per disease entity. It will document the quality reviews that many have been doing in fragmentary fashion for many years without fanfare. By everyone serving on the committee in rotation, it tends to instill a cost consciousness and broad perspective of total patient care. It will maintain quality control within the medical profession and not allow government to usurp our prerogative. It accepts the challenge of government that the patient receive the appropriate care but no more. It does require education in a different context expressed by Aristotle: "It is by education I learn to do by choice what other men do by the constraint of fear."

Peer review is an educational process. It involves assessment of ourselves and others. It will meet the request of government and our critics and improve the image of the physician in the eyes of the public. It is an integral component of a continuing educational process to strive for excellence and improve the end product of patient care. This is the goal of the medical profession and why we have specialty organizations.

Peer review should be an integral part of our entire clinical medical education process whether it be in the medical schools, residency training programs, hospital conferences, or medical society review committees. Quality review has top priority. However, we must constantly review the quantity and cost of care. Was the hospitalization necessary? Were the diagnostic tests necessary? Was there a well-conceived plan of treatment? Was the reason for the workup and treatment documented? These should be routine bread and butter questions for every case. It would make us think and might save unnecessary expenditures. We must give more thought to the total cost of the treatment of the disease entity, such as hospitalization, workup, drugs, length of stay, extended care, and physician charges. It will require self-discipline by the physicians or regulation by the government.

Peer review will measure the end product of the physicians' knowledge as reflected in how he treats his patient. The physician should receive credits for continuing medical education by serving on these committees. Since improving the quality of medical care is the goal of the specialty organizations, they should participate actively by determining what are the appropriate standards in their respective discipline and area. The specialty societies should have active peer review committees to act as consultants to medical societies, and their members should constantly emphasize these standards in their residency training programs and staff conferences.

Peer review is the heart of the foundations, the Institute, and the proposed Statewide continuing medical education programs. Without effective peer review these well-conceived programs cannot succeed. The members of our committee will assist in developing and coordinating peer review activities within the framework of the proposed recommendations. The initiative and motivation must come from the local level, and time is running out. Therefore, we urge serious consideration of the proposed recommendations in this report.

Respectfully submitted,
Ralph S. Emerson, M.D., Chairman

Public Health and Education

Commission on Public Health and Education

To the House of Delegates, Gentlemen:

Members of the Commission on Public Health and Education are:

Richard D. Eberle, M.D., *Chairman*	Onondaga
John D. States, M.D.	Monroe
Peter S. Battaglia, M.D.	Niagara
William Antopol, M.D.	New York
Kenneth B. Olson, M.D.	Albany
Charles E. Rogers, M.D.	Nassau
Charles A. Bertrand, M.D.	Westchester
Frank C. Maxon, M.D.	Albany
Marvin L. Bloom, M.D.	Erie
William A. Bauman, M.D.	New York
Irving G. Frohman, M.D.	Queens
Stephen M. Ayres, M.D.	New York
Milton Helpern, M.D.	New York
Samuel Wagreich, M.D.	Bronx
Charles Weller, M.D.	Westchester
Bruce E. Chamberlain, M.D.	Onondaga
Edward C. Hughes, M.D.	Onondaga
Ralph S. Emerson, M.D.	Nassau
Allison B. Landolt, M.D.	Westchester
Arthur H. Dube, M.D.	Onondaga
Edward J. Lorenze, III, M.D.	Westchester
Harry S. Lichtman, M.D.	Kings
Edward C. Hughes, M.D.	Onondaga
Hugh F. Leahy, M.D.	Albany

The Commission, composed of the chairmen of its component committees, held its meeting with the officials of the New York State Department of Health in Albany, on July 15, 1971. This was the first meeting of the Commission held since the appointment of your chairman who, in his opening remarks, welcomed the chairmen of the various committees comprising the Commission and their counterparts in the State Health Department. He stated that this annual meeting presented an opportunity to exchange ideas of mutual interest and concern to develop points of contact where further investigation and cooperation can be effected.

Hollis S. Ingraham, M.D., Commissioner of Health of the State of New York, observed:

> We have been working together for a good many years and this relationship has been very productive. In addition to the natural community of interest, the history of the last dozen years indicates that we are more and more dependent on one another. We have always recognized we do things in the Health Department through the practicing medical profession, and it seems as if our interdependence is going to be even greater due to the legislation adopted in the past year concerning such things as physicians' assistants and not-for-profit medical corporations. We are going to have to close ranks and work even more closely together in the years ahead. . . .Our biggest handicap is the limitation of funds available since many programs were rather seriously cut back this year, thereby restricting efforts on a local and statewide basis.

The following is a brief report of some of the activities of the committees within this commission:

Continuing Education. In September, 1970, an all-day conference on Continuing Education was held at the Hospital for Special Surgery. A report of this meeting was published in the August 1 issue of the ***New York State Journal of Medicine.*** This meeting, as you will see in the report of the Committee on Continuing Education to the 1971 House of Delegates and the report to the House of Delegates of the committee's actions during 1970, commits the State Medical Society to a greater effort in continuing education. To that end there has been Council support for the new program.

On September 30, 1971, a meeting of representatives from the New York State Department of Health, medical school deans, Regional Medical Programs, State Medical Society, Interspecialty Committee, and two members of the committee as well as the chairman, Marvin L. Bloom, M.D., was held at the Hospital for Special Surgery, New York City. Robert Lee Patterson, Jr., M.D., surgeon-in-chief of the Hospital and a member of this committee, was the host at the meeting, as well as at the dinner following at the Union Club. At this meeting, the details of the formation of a new New York State Council on Continuing Medical Education were discussed. It was felt that such a Council should (1) be set up as soon as possible, (2) have equal representation from the various organizations involved, and (3) be funded through the Empire State Medical, Scientific and Educational Foundation.

Alcoholism and Drug Abuse. The Committee on Alcoholism and Drug Abuse cooperated with the State Health Department in the revision of the *Desk Reference on Drug Abuse,* which is now in its second edition. The committee also cooperated in the production of a movie prepared by the New York State Health Department, illustrating the management of actual drug abuse cases treated in the emergency room of Beth Israel Hospital. The narrated film, entitled "What Did You Take?," depicts patients with symptoms of overdoses and/or reactions to multiple drugs and shows a professional audience how to deal with patients with acute drug abuse symptoms.

This committee has also cooperated in a State-wide program for the education of physicians on drug abuse symptoms. The following statement by Donald C. Walker, M.D., of the New York State Department of Health, summarizes the Joint Drug Abuse Professional Education Program of the State Medical Society and the State Health Department:

> The Joint Drug Abuse Professional Education

Program of the Department and the Medical Society of the State of New York was launched in September, 1970.

The Department supplied honoraria for the instructors in this project while the State Medical Society paid their travel expenses. During the course of the year, more than 6,000 comprehensive training kits were distributed to those attending the sessions.

The second phase of this professional education project will feature the presentation of the Department's film on the management of emergencies encountered in drug abuse, "What Did You Take?" Emphasis at first will be on the distribution of the film to the professional staffs of New York State hospitals. A knowledgeable physician will serve as a discussion leader for each showing. A comprehensive guideline has been prepared for these moderators, and a brief information sheet will be distributed to the audiences. Those viewing the film will be encouraged to use the Department's revised edition of its *Desk Reference on Drug Abuse* for further and more detailed review of diagnosis and treatment. The second edition of this *Reference* has now been mailed to all physicians and hospitals in New York State.

Aging and Nursing Homes. The Aging and Nursing Homes Committee is concerned with the conflict between the Federal and State guidelines for medical practice in nursing homes. As an example, the State Hospital Code requires a physician to visit once a month. Also, the Federal definition of skilled nursing needs has all but eliminated Medicare patients from nursing homes of the State. The periodic medical review of all patients in nursing homes and mental hospitals, as demanded in the *Federal Register*, February 15, 1971, is untenable, impractical, and impossible to implement. The Aging and Nursing Homes Committee's report presents the problems which permit only 2.5 per cent of New York State nursing home patients in Medicare category and 80 per cent in Medicaid category, leaving 17.5 per cent of patients paying their own way.

Cancer. The Cancer Committee asked for wide dissemination of the film on quackery prepared by the American Cancer Society entitled, "Journey Into Darkness." It has also sponsored a letter to all physicians in the State from the Commissioner of Health, and the president of the State Medical Society, urging physicians to take advantage of the value of occult blood in the stool for the diagnosis of cancer of the gastrointestinal tract. The committee is most anxious to have some kind of reporting system on cancer for New York City in order that Statewide cancer statistics can be obtained.

Data Processing in Medicine and Health Care Technology. The committees on Data Processing in Medicine and Health Care Technology have set up guidelines regarding confidentiality of medical information on computers and guidelines for the development of acceptable multiphasic health testing programs. Subjects related to medicine raised by these two committees resulted in the decision of the chairmen to have an all-day general session on computers in medicine, using the General Session's allotted time in the morning, and using the time for the Section on Data Processing in Medicine in the afternoon. These committees feel it is important that physicians become informed of the ramifications of the use of computers in the medical field.

Preventive Medicine. The Committee on Preventive Medicine sponsored a letter signed by the president of the State Medical Society and the Commissioner of Health regarding the epidemic of venereal disease. The letter included a discussion of modern treatment of gonorrhea and syphilis.

Health Manpower. The Health Manpower Committee became deeply involved in the recommendation of guidelines for physicians employing physician's assistants. Its report also discusses the resolutions the 1971 House of Delegates referred to it and made note of the Legislature's increase in aid to medical schools.

It became clear during the discussions of this committee that there is need for further communication between county medical societies, medical schools, and the prospective and actual students within a county area. Concerning physician recruitment for areas in need of a physician, there are grants by certain county legislatures within Section 610(a) of the Education Law, special regents scholarships for medical students who agree to practice in areas of shortage, and further assistance through new Federal funds, and the extension of the Health Professions Educational Assistance Act. These need much more publicity than has been previously given.

Accident and Injury Prevention. The Committee on Accident and Injury Prevention advocates the reduction of from 0.15 per cent to 0.10 per cent alcohol levels in the blood as indication for legal intoxication and 0.07 per cent as indication for legal impairment. Recent legislation reduces the level to 0.12 per cent for intoxication.

General. There is much information available to physicians in the reports of all the committees which make up the Commission on Public Health and Education. Only a few have been outlined briefly. It is recommended that these reports be read in detail by both members and nonmembers of the House of Delegates. As one can see from these reports, there has been much cooperation with the New York State Department of Health. The Commission is appreciative of the excellent assistance of Miss Dorothy Smith who, as usual, has been faithful and efficient in coordinating the affairs of the Commission.

Respectfully submitted
Richard D. Eberle, M.D., Chairman

Accident and Injury Prevention

To the House of Delegates, Gentlemen:

The members of the Committee on Accident and Injury Prevention are as follows:

John D. States, M.D., *Chairman*	Monroe
Harold Brandaleone, M.D.	New York
Francis J. Gilroy, M.D.	Broome
James E. Holmblad, M.D.	Schenectady
George Lim, M.D.	Oneida
Leslie Fisher, M.D.	Albany
Caldwell B. Esselstyn, M.D.	Albany

The committee met on February 15, in conjunction with the annual meeting of the State Medical Society. Caldwell B. Esselstyn, M.D., an invited guest, was present and has since become a member of the committee.

A total of 250 legally blind drivers are licensed in New York State because they have central vision, but are classified as blind because of a peripheral visual field of less than 20 degrees. An inquiry, which was approved by the Council of the Medical Society of the State of New York, was made of the Commissioner of Motor Vehicles concerning the accident and violation rates of these drivers. It appears that a requirement on peripheral vision should be added to the driver-licensure tests.

The committee concurred with a recommendation of the Medical Advisory Board that the waiting period for relicensing following successful treatment of patients with seizure disorders be reduced to one year. The State Medical Society subsequently approved this recommendation.

The committee reviewed the recommendation of the Medical Advisory Board concerning suspension of licenses of patients who have had myocardial infarctions and recommended that passenger-car operators be suspended for two months and bus drivers for six months, with the exception of school-bus drivers who could be allowed to drive after two months. These recommendations should serve only as guidelines for the New York State Department of Motor Vehicles and should not become mandatory rules because of the additional administrative expense. Furthermore, this guideline appears to be unnecessary because most patients convalesce for at least two months and so are not considered to be a hazard.

Alcohol control programs initiated in New York State with Federal funding were reviewed and will be watched with interest. The Medical Advisory Board's recommendation that statutory test levels on blood, urine, and breath be reduced to 0.10 to be considered legal intoxication and 0.07 for legal impairment was strongly supported and subsequently approved by the Council of the State Society. Present State law permits only one chemical test to be made on a given sample. The committee recommended that multiple drug tests be permitted on blood, urine, or breath samples to identify intoxication with drugs other than alcohol.

Emergency health services committees are being established throughout New York State under the sponsorship of the Department of Health of the State of New York under the direction of Dr. Esselstyn. These committees will coordinate the emergency health services in local communities and hopefully will upgrade the services and permit statewide data collection. Federal matching funds support these committees. New York State has trained 4,600 emergency medical technologists and hopes to have 10,000 trained by the spring of 1972. This program is being supported by funds from the U.S. Department of Transportation. Standards for ambulance services hopefully will be extended for presently controlled commercial ambulance services to volunteer services and municipally operated services. Hospitals are being encouraged to resume ambulance services. Blue Cross funding arrangements consider this to be a legitimate hospital expense. Certification of mobile cardiac resuscitation units may be necessary, but, as yet, no certification program exists. The Department of Health of the State of New York is interested in developing standards for personnel and equipment.

Use of helicopters for the transportation of automobile accident victims has been closely examined by the Department of Health of the State of New York for the year 1970. An experimental eight-day test was conducted in Albany, and only one helicopter run during this period proved to be superior to ground emergency transportation. The result of the State test is that helicopters are extremely expensive and are not more efficient nor faster than ground transportation except in special situations. They have proved to be useful in secondary transfers between medical facilities and for the delivery of human organs for transplantation surgery.

The committee reviewed the personal experiences of the members and concurred with the results of the New York State study. For special services, helicopters are available from the New York State Police; the U.S. Air Force at Griffiths Air Force Base, Rome, New York; the New York State Conservation Service; Civil Defense; Nassau County Police; and Plattsburgh and Schenectady National Guard Airports. A commercial helicopter service is reported to be under development at the old Roosevelt racetrack on Long Island and may be operational by July 1, 1971.

Hospitals with more than 100 beds are now required by State law passed in 1966 to maintain emergency departments. Many have minimal facilities and would like to discontinue their emergency departments completely. Classification of emergency departments according to their medical capabilities appears to be desirable and necessary. The committee believes that this can best be done by national organizations, such as the American College of Surgeons.

Snowmobile accidents have increased at an alarming rate, but licensure and operator control, which began January 1, 1971, appear increasingly to be the responsibility of snowmobile operators. Improved means of identification and patrolling appears to be necessary.

Respectfully submitted,
John D. States, M.D., Chairman

Aging and Nursing Homes

To the House of Delegates, Gentlemen:

The members of the Committee on Aging and Nursing Homes are as follows:

Peter S. Battaglia, M.D., *Chairman*	Niagara
Marcelle T. Bernard, M.D.	Bronx
Edward J. Lorenze, III, M.D.	Westchester
Morris B. Miller, M.D.	Westchester
Leon M. Rothman, M.D.	Kings
George M. Warner, M.D., *Adviser*	Albany

The committee considered important issues regarding long-term care needs of the elderly, especially those requiring institutional care, and the roles of physicians and organized medicine in relation thereto. These include the following:

1. *Issue:* What are the roles of physicians in providing medical care and in supervising the care furnished by other provider professions to sick elderly people in nursing homes and health related facilities?

Response: The committee feels that each physician has ultimate responsibility and accountability for the medical and medically related care of each of his patients who is in an institution. Each physician should carry out his functions ethically, responsibly, to the best of his ability, and within the framework of reasonable standards and regulations. Should he be dissatisfied with governmental, institutional, or other criteria for physician services, he should express his views through his professional organization and other appropriate avenues, continuing at the same time to carry out his defined roles in behalf of each of his institutionalized patients.

The care furnished in institutions by other provider professions should continue to be furnished on request or with consent of each patient's personal or alternate physician-of-record, and such care should be provided under his direction or supervision. The kind and degree of such direction and supervision should be determined by the medical policies of each facility and the circumstances of each such service.

2. *Issue:* Federal Title 19 regulations on "skilled nursing homes" are a threat to the continuing certification of 150 nursing homes having 5,500 beds as Medicaid providers as of January 1, 1972. State agencies and the Governor have requested modifications of Federal regulations to extend currently tight time deadlines and related inflexibilities. What is the attitude of the State Medical Society on this matter?

Response: The committee recognizes the severe and continuing shortages of nursing-home beds for the care of many patients, including large numbers of Medicaid beneficiaries. who need this type of care. We also recognize the even more critical shortages of health-related facilities and other alternates to inpatient (inresident) care in health institutions (alternates such as home health services and protective environment housing) and the needs for achieving an appropriate balance among health care facilities and services in each community. Accordingly, and without going into technical details of Federal regulations and of Federal-State relations, we recommend support of amended requirements that will permit the continued certification of nursing homes whose services continue to be needed in each community, so long as each facility provides services in accordance with standards and as safe a setting as is reasonable and practical.

3. *Issue:* Periodic medical review and medical inspection regulations under Medicaid require that peer review, quality of care, utilization review, and referral and follow-up functions be performed at least once yearly or more often by medical review teams on behalf of each Medicaid beneficiary in every skilled nursing home and for each Medicaid beneficiary sixty-five years of age and older in each psychiatric hospital in New York State. What are the views of the medical profession regarding these requirements?

Response: The committee views these regulations as requiring activities that are: largely unnecessary; duplicative of other functions now being performed by State agencies, health care facilities, and other parties; much too costly in terms of presumed benefits; extremely burdensome in terms of manpower resources; and designed to achieve goals that can be reached through other more practical and feasible ways. A resolution has been forwarded by the committee on this subject.

4. *Issue:* Report G of the Council on Medical Services of the American Medical Association gives the AMA's position regarding the White House Conference on Aging. Does the committee concur with this policy statement as adopted by the AMA House of Delegates at its 1971 annual convention?

Response: The committee concurs with and suggests that AMA Report G be a guide for the activities and discussions by physicians from New York State who will participate in the November White House Conference on Aging.

5. *Issue:* The Social Security Administration in December, 1970, instructed its Part B fiscal intermediaries to exercise special care in making payments under Part B to physicians who visit and care for Medicare beneficiaries in nursing homes. When such patients are not otherwise receiving Part A benefits for care in extended care facilities, the physician must document his reasons for visiting a patient more often than once monthly or for seeing only one patient during a visit to a nursing home. The effect, regardless of intent, seems to have been to cause additional paper work, other annoyances, and some hostility by physicians toward the third-party payment agencies and the Federal government. What are the facts and the views of organized medicine in New York State?

Response: Although there are impressions that these Medicare policies are having deleterious effects, the facts are not sufficient for the committee to express an informed opinion. The committee recommended that approval be sought for a brief questionnaire of county medical societies on this matter.

Other topics considered and discussed for information purposes included: utilization review and its relation to long-term care services, community care of mentally impaired elderly people, needs for improving clinical and related skills of physicians who care for elderly and chronically ill persons, definition of "medical necessity" among elderly people in nursing homes and other institutions compared with medical necessity in younger patients, and miscellaneous subjects.

Respectfully submitted,
Peter S. Battaglia, M.D., Chairman

Alcoholism and Drug Abuse

To the House of Delegates, Gentlemen:

The members of the Committee on Alcoholism and Drug Abuse are as follows:

William Antopol, M.D., *Chairman*	New York
Stanley E. Gitlow, M.D.	New York
Susan E. Hanson, M.D.	Monroe
William L. Holt, Jr., M.D.	Albany
Allison B. Landolt, M.D.	Westchester
Francis J. Loperfido, M.D.	Bronx
Stephen Nordlicht, M.D.	New York
Joseph B. Robinson, M.D., *Adviser*	Albany
Donald C. Walker, M.D., *Adviser*	Albany

Norman S. Moore, M.D., director, Division of Scientific Activities, summarized the report regarding the role of this committee in the drug abuse program which was presented to the Council of the Medical Society of the State of New York on March 25. This report outlined the policies set up to combat the problem of drug abuse which have been approved by representatives of the State Departments of Education, Health, and Mental Hygiene; Narcotic Addiction Control Commission; and the Division for Youth.

Dr. Moore also outlined a joint venture of the Health Department of New York State and the State Medical Society on the subject of education of physicians regarding drug abuse. For this purpose Hollis S. Ingraham, M.D., Commissioner of Health of the State of New York, appointed an ad hoc committee consisting of Robert P. Whalen, M.D.; Joseph B. Robinson, M.D.; Franklyn B. Amos, M.D.; James J. Quinlivan, M.D.; Donald C. Walker, M.D.; John E. Gainor, M.D.; Nathaniel C. Webster, M.D.; Leonard L. Heimoff, M.D.; Henry Brill, M.D.; Harold H. Borgstedt, M.D.; William J. Alsever, M.D.; Norman S. Moore, M.D.; and William Antopol, M.D. A special Committee on Drug Abuse was designated by the Public Health Council, consisting of Norman S. Moore, M.D.; Herman E. Hilleboe, M.D.; Kenneth A. Riland, O.D.; and Howard A. Rusk, M.D. Also appointed was an ad hoc committee on Professional Education in Drug Abuse, consisting of William D. Alsever, M.D.; William Antopol, M.D.; Harold H. Borgstedt, M.D.; Henry Brill, M.D.; John E. Gainor, M.D.; Leonard L. Heimoff, M.D.; and Nathaniel C. Webster, M.D.

Donald C. Walker, M.D., of the Office of Medical Manpower, Department of Health of the State of New York, with the assistance of the committees mentioned, compiled a *Desk Reference on Drug Abuse* which has been sent to every physician in New York State to assist them in recognizing and treating various aspects of the drug abuse problem. It is expected that within the next few months a second and revised edition of this *Desk Reference* will be distributed to physicians. In addition to the *Desk Reference*, Dr. Walker also directed the production of a film entitled "What Did You Take? (The Drug Abuse Emergency)." The scenes are functional and kaleidoscopic, having been taken of actual patients in the emergency room of a hospital as well as in the physician's office. Besides demonstrating diagnostic criteria and methods of treatment of the effects of drug abuse, this film can serve as an excellent broad-based demonstration for paramedical personnel. It might be of special value to show it to high-school and college students since these groups will be impressed by and comprehend the ludicrous and inappropriate reaction of persons while under the influence of the various drugs, an actuality which they could scarcely imagine without viewing the film, and this could serve to discourage experimentation with drugs.

Your chairman wishes to take this opportunity to thank the members of this committee and to commend Dr. Moore for his assistance and advice as well as the excellent performance of his ad hoc committee, and Dr. Walker for his efforts in the collation of the outstanding desk reference and in the coordination of the multipurpose film. Thanks are also due to members of the ad hoc committee for their collaborative efforts in these activities. The great strides which they have made coincide precisely with the goals and functions of this committee.

Legal right of physicians to treat heroin addicts in private practice. Since the size of the addict population overwhelmingly exceeds the available hospital beds, the committee agreed unanimously on the urgent need for administering narcotics to patients on an ambulatory basis and attempting to detoxify them under similar conditions. The method chosen must be sufficiently flexible to meet the patient's needs and comfort while still maintaining adequate medical control to eliminate the desire for and possible use of additional narcotic drugs obtained surreptitiously. The Medical Society of the State of New York is on record that every effort should be made, through proper channels, to remove the legal restrictions which prevent effective treatment of addicts by physicians in their private offices, clinics, and hospitals. If private physicians were to treat addicts, it would be effective if such physicians were associated with and had the "back-up" support of an effective ongoing program with its available multidisciplinary ancillary services. In fact, the physician's office and his addict patients can serve as a branch unit of the central parent program. This association will also facilitate physician cross-coverage.

Immediate availability of beds for detoxification. Despite considerable controversy concerning medical value of detoxification based on the high rate of recidivism, it does reduce, albeit temporarily, the increasing daily dose requirements of the addict. Thus, for indeterminate intermittent periods after detoxification, the addict will be sheltered from the wasteland of narcotic activity. During this time he will not be subject to so intense and desperate a drive to obtain the excessive amounts of money to pay for his enormous predetoxification narcotic requirements. In addition, the period during and after detoxification can serve as a "stopgap" until the patient is accepted in an effective therapeutic program.

If methods were available for more rapid detoxification—these are now under investigation and probably will be successful—the absolute number of patients receiving the benefits of inhospital treatment for addiction could increase to at least double or triple the number without the need for acquiring additional hospital beds and the increased cost thereof.

Permission for specially trained physicians to treat addicts in their offices. The committee discussed a bill for certification of physicians to treat narcotic addicts and administer narcotic drugs, which was then being considered by the New York State Legislature. This bill would direct the Commissioner of Mental Hygiene to formulate rules and regulations for the certification of physicians competent to treat narcotic addicts; and, in accordance therewith, to certify physicians who would have the right to prescribe and administer narcotic drugs. If the physician were associated with an acceptable ongoing program, the effectiveness and safety of such a program would be potentiated.

It was pointed out that there are legal obstacles to screening the urine of high-risk populations for narcotics.

Examination of urine for screening of high-risk populations for narcotics and other drugs would be helpful in seeking out addicts. However, besides invasion of privacy, it was indicated that obtaining urine specimens in the course of routine physical examinations, when there is no suspicion of narcotic use, would be fraught with legal obstacles in the event such analyses revealed the presence of a drug, since the results of the contemplated procedures would be subject to "turnover to the authorities." In addition, drugs administered legally for therapeutic purposes might confuse the legal significance of the chemical test findings. The results in all likelihood would be inadmissible as evidence since this would be a violation of the Fourth Amendment which protects against unreasonable search and seizure. In addition, the courts zealously protect individual right and frown on "roundabout methods" on the part of officials. The question of the legal right and civil liberties of the individual person was the subject of much discussion by the committee. Since this is a committee to study drug abuse and since this information could provide fruitful and meaningful demographic data relating to the incidence of the narcotic abuse in various populations as well as significant secondary relationships to the non-narcotic population, we must look to our colleagues in the legal profession for their counsel and expertise to provide us with a means to obtain these data and yet not impinge on individual civil rights.

With regard to school children, the Board of Education could be required to mandate semiannual physical examinations of each pupil by a State-licensed physician, including tests for drug abuse and addiction, with notification to the parents and the Health Department if further medical assistance is required. The limitations already mentioned are to be considered in relation to this effort. The legal problem will be even more difficult in the case of children because the law is especially solicitous of minors, even when parental permission is obtained.

Change of classification of addiction from crime to illness. It is perfectly clear that all efforts to prevent or treat narcotic addiction have had little impact or have failed. Inherent hazards of narcotic addiction were well recognized long before the Harrison Narcotic Act was passed in 1914. Despite the Harrison Act, the number of "hard drug" addicts and the medical case load have risen steadily for over half a century, at a rate far surpassing the population explosion. It is obvious that this legislation has been a failure. Regardless of what collateral inferences may be drawn, narcotic activity still maintains the whip hand. The fundamental and possibly chilling conclusion is that our present guides, methods, and remedies, with possibly a single exception, are unproductive and ineffective. Treatment from the medical point of view has greater flexibility. As better programs appear, others which are not so effective fade out.

In view of this, perspectives of the narcotic problem must be reassessed and critically altered, attacking addiction not from the facade of crime primarily as does the Harrison Act which has a fixed perspective, but rather as an illness requiring medical care which has greater flexibility. The law enforcement agencies should be oriented toward preventing entry of narcotics into the nation and its distribution throughout the 50 states. In this fashion the legal and medical functions, which presently are at cross purposes with therapeutic efforts, will be nonexistent, thus eliminating the barrier between both these disciplines.

The efforts of physicians should be no less ambitious than those of the malevolent persons bent on illegally maintaining this human problem. As a last resort, in the face of hopelessness and failure, a wide avenue for medical therapeutic action should be opened.

This position should not be construed to reflect perjoratively or maliciously on the law enforcement agencies. Theirs is a most difficult position; they have incurred some unjust criticism because their activity is mission oriented requiring enforcement to the letter of the law just as it is written and without the slightest deviation. In addition, they are expected to pursue this function with obviously limited budget and manpower. There is no certainty, even with limitless funds, that this malady can be aborted—short of total interruption of the international illicit trade in narcotics or by eliminating the tolerance and dependency properties of the narcotic drugs. I am sympathetic with the law enforcement staff, but their assigned task is an impossible one, at least in the light of present knowledge and conditions.

Proposed legislation for amendment to Public Health Law concerning reclassification of marihuana. Abuse of "hard drugs," such as heroin, and the use of marihuana pose two separate and distinct entities, problems which should not be treated identically.

The former is a serious threat to society as well as to health; the latter has a questionable and as yet undetermined status. In view of our lack of knowledge relative to marihuana, the hazard of permitting its free and open use is great, at least for the present. Lacunae in our knowledge are vast; pertinent and serious questions relative to its toxic effects remain unanswered to such an extent that it would not be prudent to take a position on any of the questions now before the public forum without submitting marihuana to considerably more scientific evaluation.

One premise is clear; marihuana has no therapeutic use in clinical medicine. Any material of this class should, above all others, undergo at least the same rigid testing required of any useful drug intended for human use. The fact that it is not a legal drug should not exempt it from the precautionary methods required for determining potential toxicity in a drug which is legally sanctioned. From an ecologic point of view, because of its burgeoning use, the lack of such clearance for safety might open a Pandora's box. The matter of safety has highest priority and certainly must be decided before marihuana receives "medical blessing." Even with a therapeutic drug of known benefit, assumption of safety is never justified. There are instances in which apparently innocuous substances were later found to be responsible for disastrous effects. The development of retrolental fibroplasia and blindness after excessive oxygen inhalation in premature infants is an example of unexpected peril due to a ubiquitous substance. The recent tragedy of thalidomide also taught us that a drug which was essentially harmless to most persons could produce deformities in a particularly vulnerable population. Neither eagerness nor inertia, neither the magnitude of the undertaking nor its cost, should be permitted to deter appropriate detailed scientific investigations.

It has become clear that the marihuana which is marketed as "grass" varies in potency from batch to batch, reflecting its delta-4-tetrahydrocannabinol content. Until recently this active principle was not available for study, but at present a large number of ongoing investigations indicate that the substance is not without harmful and even dangerous effects. In fact, at this point reassessment of older opinions is necessary because the substance hitherto was considered to be of a nonthreatening nature.

I am sorry to circumvent or even avoid the question to which everyone is seeking an answer. The arguments for and against the use of marihuana are loud and long because we do not have the basic facts. Simplistic judgments often perpetuate themselves even though they are unreal and incorrect. Any law which might now be created would not have a scientific basis for either acceptance or for enforcibility.

The committee members discussed the numerous poorly supervised addiction treatment centers which have mushroomed throughout the State and which provide less than adequate and proper treatment. The methods of coping with these must await the decision of the Department of Health of the State of New York which already has this problem under consideration. (Since the last meeting of our committee the largest of these "treatment" centers has been closed.)

In last year's report we stressed the need for simultaneously conducting basic research on the mechanisms involved in drug addiction. This situation must again be emphasized. With the rapidly increasing addict population, the point is rapidly approaching when we will be unable to cope with the sheer numbers requiring treatment. This simple fact indicates that the problem of addiction cries out for a cure rather than the varieties of symptomatic treatment. It is bad enough that it costs more to treat than to cure; even our methods of therapy are being questioned at all levels. At present we can only offer temporary respite from the rough waves. Without seeming overenthusiastic, I am pleased to report that the results of a number of promising investigations relative to the deletion of tolerance of and dependency on narcotic drugs have appeared in the recent literature. In the light of present knowledge we cannot offer a cure but can only help the addict to live with his ailment. Until the time when the riddle of tolerance and addiction is solved, we can only employ the currently acceptable modes of therapy, which of course cannot substitute for a cure.

Respectfully submitted,
William Antopol, M.D., Chairman

Audio-Visual Aids

To the House of Delegates, Gentlemen

The members of the Committee on Audio-Visual Aids are as follows:

Kenneth B. Olson, M.D., *Chairman*	Albany
Wilbur M. Dixon, M.D.	Broome
James J. Quinlivan, M.D.	Albany

The committee has been fairly active during the year July 1, 1970, through June 30, 1971. Because of budget restrictions few new films have been added to the Film Library. Any member of the Medical Society of the State of New York who has a film, or knows of one, he feels should be included in the film library, is asked to write to the committee chairman. The film will be reviewed by the committee and depending on the review and the availability of funds, the film will be included in the Film Library of the Department of Health of the State of New York.

There are a number of film cassettes available which fit the Mark IV projector. Should there be sufficient demand, it is possible that voluntary societies, such as the American Cancer Society and the American Heart Association, would make film cassettes from motion picture films.

The following information will aid in the evaluation of the committee's activity in the last year: Total number of films shipped from May 1, 1970, to April 30, 1971, was 29,974; showings (reported) 62,520; and attendance (reported) 1,830,262.

There has been increased usage by private physicians and medical schools. From May 1, 1970, to April 30, 1971, 16 new medical films were added to the library. Because of budget restrictions, there is relatively little chance for expansion of the film program or for purchase of new films. There has been necessary reduction in the field of exploration of the use of films.

It is estimated that 90 per cent of the films shown at the film exhibit at the annual State Medical Society's convention are already incorporated in the film library.

The committee wishes to express its appreciation to Joseph Avonovich, supervisor of the film library, who truly keeps the professional and public film medical library in operation at the Department of Health of the State of New York. Without his devoted services, the film library would not function adequately.

Respectfully submitted
Kenneth B. Olson, M.D., Chairman

Cancer

To the House of Delegates, Gentlemen:

The members of the Committee on Cancer are as follows:

Charles E. Rogers, M.D., *Chairman*	Nassau
Daniel Burdick, M.D.	Onondaga
Richard G. Cooper, M.D.	Erie
John W. Hirshfeld, M.D.	Tompkins
Richard H. Lange, M.D.	Schenectady
Daniel G. Miller, M.D.	New York
Arthur A. Stein, M.D.	Albany
Herbert Volk, M.D.	Bronx
Sidney L. Arje, M.D., *Adviser*	New York
Peter Greenwald, M.D., *Adviser*	Albany
Walter T. Murphy, M.D., *Adviser*	Erie
Guy F. Robbins, M.D., *Adviser*	New York
Charles D. Sherman, Jr., M.D., *Adviser*	Monroe

In an effort to press forward the program begun by the previous chairman, Charles D. Sherman, Jr., M.D., as well as to implement the work of Roald N. Grant, M.D., the committee focused its attention on the cancer quackery problem in New York State. Richard H. Lange, M.D., has done a splendid job in preparing a source-brochure on various aspects of quackery. In addition, we hope that next year our Legislature will enact a law equal to the California law. A copy of a model Cancer Remedy Act, prepared by the Medical Affairs Department of the American Cancer Society, as well as a report by Louis F. Saylor, M.D., director of the California State Department of Health, concerning ten years' experience with the California law, was studied. The committee seeks the help of all members of the Society in securing the presentation and passage of this legislation.

A cooperative project is underway with the American Cancer Society to further educate both the professional and nonprofessional citizens of New York State concerning the magnitude and importance of the quackery problem. The Council of the State Medical Society requested that the American Cancer Society's film, "Journey Into Darkness," be given wide distribution; the committee sent a memorandum to presidents and chairmen of cancer committees of county medical societies asking them to call this film to the attention of their members. A list of the Divisions of the American Cancer Society which have this film for distribution (with addresses and telephone numbers) has also been sent to each county society.

At the annual meeting of the State Medical Society, the committee cosponsored with the New York State Interagency Council on Critical Health Problems an antismoking exhibit. It was felt that the time and money spent on the booth did not produce the desired yield. This was not due to lack of effort on the part of the presenters, but rather because of lack of enthusiasm by the viewers.

Action was taken on three resolutions originated and sponsored by this committee and passed by the House of Delegates last February. In summary these were: (1) the broadening of the age limits for the Papanicolaou smear requirements to include all female adults admitted to hospitals where clinically indicated and the lowering of the two-year interval to one year (referred to the Commissioner of Health); (2) the encouragement of physicians in New York State to use routine testing for occult blood as a screening procedure, (a letter to the membership on this is planned); and (3) the introduction of a resolution concerning quackery, including both education concerning it and legislation against it (referred to the Committee on State Legislation).

The committee has continued to work closely with the New York State Cancer Programs Association and has received outstanding support for its projects from the organization. The committee views membership in this organization as highly desirable for those physicians of the State who have a special interest in cancer.

This committee wishes to acknowledge the fine cooperation afforded it by the New York State Department of Health, under Hollis S. Ingraham, M.D., Commissioner, and particularly the excellent assistance and advice from Peter Greenwald, M.D., and the various members of the Bureau of Cancer Control.

Of grave concern to the committee is the fact that even better data concerning cancer could be made available if New York City were included in the law mandating that cancer is a reportable disease to the New York State Health Department.

A copy of Public Health Law 2401-04, and an excerpt from a 1939 legislative document have been studied. In essence, our State Health Department is held back from doing the superb job it is capable of doing by lack of information concerning about 45 per cent of the State's population suffering from cancer.

The committee asked the Commission on Public

Health and Education to give all possible aid and support to efforts to amend the law to include New York City with respect to reporting of cancer cases.

The addition in the peer review mechanism of specific screening of charts of patients with cancer diagnoses is considered laudable and necessary by the committee. This could be accomplished by appointing persons especially interested and knowledgeable in the field of cancer to a peer review committee all the way from the hospital to the State level. Such reviews would serve to disclose shortcomings in the treatment of patients with cancer and, hopefully, to improve their care.

The committee continues its interest in improving the radiation therapy conditions, in carcinogens in food and other consumer products, and in implementing the Guidelines for Cancer Care, the so-called Cole Commission Report.

Respectfully submitted,
Charles E. Rogers, M.D., Chairman

Cardiovascular Disease

To the House of Delegates, Gentlemen:

The members of the Committee on Cardiovascular Disease are as follows:

Charles A. Bertrand, M.D., *Chairman*	Westchester
Joseph T. Doyle, M.D.	Albany
Francis L. Giknis, M.D.	Schenectady
Abraham Jezer, M.D.	Bronx
Gabriel P. Seley, M.D.	New York

As a follow up to a report given three years ago regarding the use of telephone conferences, we should like to state that we have successfully continued to use this type of conference set up. This is convenient for a committee of six members, although it might be awkward for a larger committee. A telephone conference has the advantages of excellent attendance, lack of travel on the part of the committee members, reduced cost, and the recording of excellent minutes.

At the recent meeting of the committee in March, much time was spent discussing a report in a newspaper about open-heart surgery. Actually, one of the heart surgeons objected to this article and requested the State Medical Society to support his position. However, about five months elapsed before a final decision was made; although the committee met three weeks after receiving the request, a report had to be presented to the Executive Committee and to the Council. It is the opinion of this committee that a mechanism should be established whereby queries such as this may be handled within several days.

The article, taken from a report in a medical journal concerning the use of filters in open-heart surgery, grossly distorted one point in stating that air embolism and resulting brain damage was a sometimes fatal complication in approximately 50 per cent of these surgical procedures. After this article was published, many patients cancelled their scheduled surgical procedures because of the possible occurrence of brain damage. The committee was informed on June 8, 1971, that the Council had approved the following:

> It is the policy of the State Medical Society that the president and the executive-vice-president are the only two people authorized to speak for the Society; when a reply is necessary, specialists in the field will be selected (as they have been in the past) to provide information; and the Society, as a rule, does not get involved in clinical medicine or disputes involving two different viewpoints concerning scientific matters.

It is possible, however, for physicians, as individuals to refute statements on matters of a scientific or clinical nature.

Respectfully submitted,
Charles F. Bertrand, M.D., Chairman

Chronic Pulmonary Diseases

To the House of Delegates, Gentlemen:

The members of the Committee on Chronic Pulmonary Diseases are as follows:

Frank C. Maxon, Jr., M.D.	Albany
Henry J. Brock, M.D.	Buffalo
Joseph J. Fusco, M.D.	Columbia
Gabriel P. Seley, M.D.	New York
Marshall Henry Williams, Jr., M.D.	Bronx

The members of this committee have conferred by correspondence and telephone, and this report summarizes the consensus of the committee on chronic pulmonary diseases.

Tuberculosis hospitals. The closing of tuberculosis hospitals in the State of New York has required a reorganization of the current regulations pertaining to care of tuberculosis in the general hospital and consideration of regulations under which patients with tuberculosis may be treated in extended care facilities. This committee previously requested that representatives from the State Medical Society be included on an advisory committee to evaluate this problem within the Department of Health of New York State. Hollis S. Ingraham, M.D., Commissioner of Health of the State of New York, has appointed the chairman of the Committee on Chronic Pulmonary Diseases to serve as ex officio member of such a group.

The chairman will perform his duties in this capacity to the best of his ability and confer with his committee members when necessary.

This committee feels that specific attention must be given to the types of cases which will be eligible for care in general hospitals as well as those which will be acceptable for extended care facilities. Development of well-organized outpatient facilities and staffing must be a corollary consideration. Broad recommendations in regard to prophylaxis also must be considered and such services must be made generally available to all groups known to be a hazard of tuberculous activation.

Physician training. Training of physicians in pulmonary disease is strengthened through the efforts of the local teaching institutions and the Tuberculosis and Respiratory Disease Association in the Buffalo area. A program in the Albany area sponsored by the Regional Medical Program and the Tuberculosis and Respiratory Disease Association was successful last spring. At the present time, a course in pulmonary physiology is in the planning stage for the New York City area, under the cosponsorship of the New York State Tuberculosis and Respiratory Disease Association, the New York Trudeau Society, and the New York State Chapter of the College of Chest Physicians. Further efforts in this direction will be encouraged. It is hoped that suggestions may come from the Committee on Continuing (Postgraduate) Education of the State Medical Society to assist with the future planning in this direction.

Restrictions in radiologic procedures. Last year the House of Delegates of the State Medical Society decided that the problem of chest specialists being restricted from participating in radiologic diagnostic procedures for chest diseases could best be handled on a local basis. This committee would like to reemphasize the possibility that this might become a problem and would recommend that the county medical society, in areas where such restriction may occur, give support to qualified specialists in pulmonary diseases so that they may have access to all aspects of radiologic diagnostic procedures of the chest.

The Medical Society of the State of New York should give all-out support to programs to reduce air pollution as previously recommended. The health hazards of smoking cigarets must constantly be brought to the attention of the medical profession as well as to the general public. Any support to the tuberculosis and respiratory disease associations in this regard should be extended. One member of this committee feels that a concerted effort should be made to encourage all members of the State Medical Society to abstain from smoking cigarets.

Respectfully submitted,
Frank C. Maxon, Jr., M.D., Chairman

Continuing (Postgraduate) Education

To the House of Delegates, Gentlemen:

The members of the Committee on Continuing (Postgraduate) Education are as follows:

Marvin L. Bloom, M.D., *Chairman*	Erie
I. Jay Brightman, M.D.	New York
William C. Felch, M.D.	Westchester
Phillip I. Levitan, M.D.	Suffolk
Ward L. Oliver, M.D.	Albany
Malcolm I. Page, M.D.	Otsego
Robert Lee Patterson, Jr., M.D.	New York
Theodore J. Prowda, M.D.	Oneida
Charles D. Sherman, Jr., M.D.	Monroe
M. Theodore Tanenhaus, M.D.	Kings
Franklyn B. Amos, M.D., *Adviser*	Albany
Donald C. Walker, M.D., *Adviser*	Albany

During the past year, continuing medical education has come into focus as a key to continuing control of the medical profession by the medical profession.

There are powerful forces at work which would take over regulatory control of medicine. Within the past month, a *New England Journal of Medicine* editorial advocated the acceptance of PSRO (Professional Standards Review Organizations) which would have all records of ambulatory and hospital care monitored by nonprofessional hands. At the Federal level, the PSRO concept has received serious consideration. At the State level, the Department of Education has this year promoted legislation to mandate continuing education for all physicians.

This committee had been concerned simply with the mission to improve the postgraduate educational process. But in recent months, the committee has had to confront these external developments, pointing out that:

1. The present continuing education is obsolete;
2. To mandate continuing education would obstruct the profession by enforcing an obsolete educational process;
3. PSRO would not be competent to monitor medical records;
4. The need for PSRO would be obviated by installing peer review, differentiated according to specialties and integrated with an improved continuing education system;
5. The way to improve continuing education would be to invoke a new Statewide system, supported by the major sponsors of postgraduate education, and sponsoring participants would include: (*a*) the medical society, (*b*) the medical schools, (*c*) the regional medical programs, (*d*) the differentiated specialty societies, and (*e*) the New York State Department of Health.

Representatives of these groups would share a coordinative function in a central council. All physicians would affiliate with a Statewide network of learning-resource centers at hospitals.

The committee held a meeting in September, 1970, with representatives of the Statewide medical school deans, the regional medical programs, the professional specialty societies, and the New York State Department of Health at the Hospital for Special Surgery, New York City, whose chief of service is Robert Lee Patterson, Jr., M.D., a distinguished member of our committee. An edited transcript of the proceedings, which were largely extemporaneous, appeared in the August 1, 1971, issue of the ***New York State Journal of Medicine.***

It was the consensus that the State Medical Society should take the initiative in invoking a new Statewide system for continuing education which would involve full and equal participation on the part of all five groups represented. It was decided to invite three representatives from each group to a meeting in 1971 to see if operations of a central council for the Statewide system could be initiated. At this invitation conference in September, 1971, it was decided that the central council should begin work. Thereafter, a Statewide network of learning-resource centers at hospitals will be implemented, for affiliation with all practicing physicians, for learning opportunities supervised and organized by specialty organizations, and with better communications for information retrieval and peer review conducted by specialties.

Whatever the chosen branch of medical practice, assurance of optimum performance depends on continued learning. Of course, there are other factors. But this is sine qua non.

The medical profession has fostered and accepted continuing education, perhaps far more than any other profession. Year by year excellent available learning opportunities have proliferated, mostly in the form of short lecture courses. These courses have become recognized and credited as the cornerstone of acceptable continuing medical education. To a lesser extent, being applicable to fewer persons, other activities have been credited, such as teaching, supervised clinical learning in favorable situations, research, and various individual arrangements. Therefore, flexible options have been developed for participation.

For the greater number of physicians, constant reading and the daily challenging stimulus of clinical medicine have sufficed to assure continued competence. Many are able to profit more than adequately from consultations, teaching, hospital conferences, review committees, and postgraduate activities—particularly within specialties.

But, increasing concern has been voiced about a minority whose competence has been questioned. There are physicians who are not exposed to peer criticism, whose records are not examined, who are not hospital staff members, and who do not accept any of the recognized continuing education options. This minority group has become a target for reform; evoking proposals for restrictive regulatory procedures, which would include all physicians.

There is danger that the current heady reform atmosphere could have regrettable consequences which would be quite harmful to continuing education, assurance of competence, and the care of the sick. It could enforce a maze of regulations designed to monitor professional performance but administered by nonmedical personnel, such as PSRO. In continuing education, it could block improvement by demanding adherence to an obsolete system.

The question is, should the main thrust to improve medical care, by assuring competence, be through imposition of punitive regulation or through provision for an optimum educational-informational process?

A *New England Journal of Medicine* editorial reflects about "Continuing Assessment of Medical Performance."[1] Dr. Mueller observes that there has been increasing discussion about physician reexamination, recertification, and relicensure. He mentions being witness to deliberations about such procedures, which suggested that they should be decided by the results of academic examinations based on continuing education courses. Very few informed individuals would quarrel with the editorial's conclusion that such an approach would not be sound, and that evaluation should be based on the records of actual clinical performance rather than on academic responses. But, most of the same observers would disagree with the bland statement that "such recertification examinations will probably require objective outside (lay) examiners acquainted with medical practices, even though unacquainted with specific medical knowledge"!

Everyone can agree that the main objective is to achieve optimum medical care by every possible means. The assurance of continuing professional competence is everyone's goal. But, exception would be taken to evaluation of professional records by nonprofessionals.

In a critical spirit, physicians find the present postgraduate system both inadequate and obsolete, stressing that educational-informational needs must be provided adequately before imposing evaluation procedures. Without belaboring the issue of "outside (lay) examiners," the more constructive issue to provide optimum learning opportunities and communications for physicians should be dealt with before debating evaluation technics.

After reviewing the same general problems contained in the editorial in the *New England Journal of Medicine*, the State Medical Society's Committee on Continuing Education has proposed drastically different strategy and tactics. In the first place, the committee rejects the assumption that the present continuing education system is adequate. The committee submits that to examine performance before providing optimum educational opportunity would be inappropriate, to say the least. Available resources should be used to improve education and communications; both are observed to be provided suboptimally at present.

The present continuing education system is fragmented. It lacks differentiated planning and coordination for the specialties. It would benefit from placing greater emphasis on learning opportunities within the context of practice than on lecture courses. More skillful organization of available knowledge and communications could facilitate solution of clinical problems, beyond anything possible at present. The amount of pertinent medical information is formidable, and even in the most favored circumstances, the individual clinician faces relatively laborious access to what he should be learning to maintain his general competence, or to data he needs for solving specific problems.

It would be unreasonable to expect physicians to have so much data at their fingertips or to have the time regularly to research information needed for optimum clinical problem solving.

Authoritative identification of differentiated specialty needs (by a coordinated Statewide system) could provide annual curricula and learning materials. These would afford visible goals for more efficient and organized individual study. Innovative deployment of medical communications could make data more immediately accessible for clinical problem solving. The continuing education process should be integrated into daily clinical practice.

To improve the system would require collaboration from all major forces concerned, as explained.

Working toward a Statewide approach, the committee has asked the medical schools, regional medical programs, the New York State Department of Health, and the professional specialty societies to join the medical society as partners. In addition, it is planned to invite simultaneous input from national sources and liaison with the licensing authority, the New York State Department of Education.

Representatives of the five educational sponsors met, in September, 1970; a protocol of the extemporaneous discussion was published in the ***New York State Journal of Medicine.***[2] At that meeting, it was agreed to explore the possibility of creating a new Statewide continuing education system. This would include a Statewide network of learning-resource centers, where all physicians would affiliate. A central council, composed of 3 representatives from each of the 5 major participants, has been considered as a mechanism for coordination and for liaison with national bodies and regulatory authorities.

Given an operative Statewide system to improve medical education and medical communications, the goal of optimum medical care could be approached. Sound criteria and procedures for evaluation would be incorporated in the system-design from the outset, providing a demonstration that the medical profession has the vision, the will, and the vigor to precipitate effective action. It would involve a new dimension in cooperative planning, reorganization of local and Statewide resources, and a deliberate confrontation with the forces who threaten to impose punitive external mandates.

Every physician would have an interface with an effective, new, centrally coordinated informational-educational medical network of learning-resource centers. The Statewide system would be differentiated according to specialties, both at the point of physician contact and centrally.

The perfection of a peer review mechanism has not made adequate headway. It would have a much better chance if it were to be involved as the evaluation instrument of a new Statewide continuing education system, differentiated and supervised by specialty groups and coordinated centrally by the same specialties. Physicians relate and respond best to their specialty organizations.

In a constructive way, the evaluation sector of organized Statewide continuing education would preempt the reason to create professional service review organizations. These have been advocated by the *New England Journal of Medicine* editorial,[1] by government planners, and in bills before Congress. If enacted, PSRO would place in lay hands regulatory and punitive authority over medical practice.

There is no time to wait, however watchfully. In American history no profession has ever been so close to losing authority over its own affairs, including the educational process.[3] Only forceful constructive action, acceptable to society, would suffice to counter the forces at work to assume authority over the practice of medicine.

By reorganizing the educational process in the way described, peer review would emerge as a natural concomitant, obviating the need to impose external regulation (PSRO). To take such a critical forward step would place the profession in a more favorable posture, more in tune with socioeconomic realities, and provided with the kind of sophisticated support structure (educational-communications) it requires to supply optimum medical care.

Respectfully submitted,
Marvin L. Bloom, M.D., Chairman

References

1. Mueller, C. B.: Proposals for a recertification examination structure, New England J. Med. **284:** 1378 (May-June) 1971.

2. Bloom, M. L.: Initiation of cooperative statewide planning to improve continuing medical education system, ***New York State J. Med.*** 71: 1847 (Aug. 1) 1971.

3. Himler, G.: The anatomy of our melancholy, New England J. Med. **284:** 1406 (June 24) 1971.

Data Processing in Medicine

Members of the Committee on Data Processing in Medicine are as follows:

William A. Bauman, M.D., *Chairman*	New York
William J. Burke, M.D.	Westchester
Ralph L. Engle, Jr., M.D.	New York
Alvin H. Freiman, M.D.	New York
Elemer R. Gabrieli, M.D.	Erie
Terence W. Murphy, M.D.	Westchester
Leon Pordy, M.D.	New York
Charles Weller, M.D.	Westchester
William J. Mueller, *Adviser*	Onondaga

The guidelines of the committee regarding confidentiality and liability of computer-processed medical information were approved by the Medical Society of the State of New York.

The committee also recommends that the several health agencies in New York State develop proficiency in data processing so that health personnel and patients can be assured that skill and caution are exercised in handling medical data stored in computers.

The committee warns that there may be exploitation of physicians, patients, and health agencies by purveyors who stress the glamour of computers and automation. Evaluation of the merits of such proposed systems is difficult. Members of our committee are available for consultation.

We look forward to more complete representation by enlarging our committee. We will continue to act as a forum for computer information exchange and will engage in an active program of data processing education for members of the State Medical Society.

Respectfully submitted,
William A. Bauman, M.D., Chairman

Disaster Medical Care

To the House of Delegates, Gentlemen:

The members of the Committee on Disaster Medical Care are as follows:

Irving G. Frohman, M.D., *Chairman*	Queens
William G. Abel, M.D.	Suffolk
Russell Weaver Greenhalgh, M.D.	Onondaga
Robert C. Kessler, M.D.	Monroe
Patrick E. O'Hara, M.D.	Broome

The announcement this spring that the State Civil Defense Commission was to be abolished caused concern because of the potential impact on disaster medical plans of communities. The Department of Transportation was designated as the State's natural disaster coordinating agency, in addition to which we have been assured that it would function in hostile and civil disturbance situations. The State-wide warning and communication systems were transferred to the division of State Police. The Office of General Services has been made responsible for fall-out shelter protection. The Division of Military and Naval Affairs became responsible for radiologic protection and civil air patrol. Provision for medical defense stockpiles was transferred to the Department of Health. State aid programs to counties and cities were terminated. The medical defense stockpile, which was not funded recently, prior to the economy drive, is to be liquidated. The extent of this liquidation, I am certain, will be disclosed by Caldwell B. Esselstyn, M.D., director, Bureau of Emergency Health Services.

In this State with a population of 18 million people, there are approximately 60 federally-owned, 200-bed packaged disaster hospitals. Will these potential 12,000 beds continue to be available under our stringent economy? Will this State, formerly a leader in civil defense, be required to depend on external aid in the event of major calamities, such as the catastrophic east coast hurricane predicted around Labor Day of this year? The Federal government has also experienced budgetary limitations and available supplies may be less plentiful.

New York State has been able legislatively to restrict the Woodstock type of rock and roll festival for more than 5,000 overnight campers. We are still faced with the potentially disastrous consequences of massive rock and roll performances lasting less than one day, which are utilized for communal narcotization. As an example, on June 5, 7 persons who attended the July 9 Shea Stadium "concert" were taken to the hospital because of overdose of drugs. With the capacity of 55,000 in this city-owned stadium, a narcotic disaster, with possible deaths, was visualized. Preventive actions were stimulated by concerned committee chairmen of the Medical Society of the County of Queens, Public Health, Disaster, and Addiction, along with the District Attorney's Office and Police Department. Of the numerous cases treated at the Shea infirmary, only 10 had to be removed to the hospital. One nineteen-year-old patron was found dead in a nearby pool. Are these tragedies to be condoned by our various echelons of government or can effective regulation be instituted?

The American Red Cross has included the subject of drug abuse in their Advanced First Aid Course, and it can be included in the standard course. A 1971 booklet "Drugs and Their Abuse" is available at a cost of five cents from the Red Cross and is recommended to all concerned. Other publications related to disasters include: "Partnership in Disaster Preparedness," a speech by J. E. Davis, U.S. Civil Defense Director, published in the Winter 1971 issue of the *Defense Industry Bulletin* and reprinted in *Military Medicine*, May, 1971, p. 506; our New York State Health Department's "Organization and Planning for the Medical Aspects of Civil Disturbance Disasters," January, 1969, ***New York State Journal of Medicine;*** and "Medical Disaster Planning," Holloway, March 1 and 15, 1971. Publications by the New York State Health Department indicate that an outstanding job has been done by that organization in keeping people alert and prepared for these emergencies.

Dr. Esselstyn has reported that the State will be left with 16 packaged disaster hospitals of which only 14 are ready to go into use since, within the past two weeks, 2 of these hospitals have been relieved of this responsibility. The Federal government feels it will be able to allocate 4 additional packaged disaster hospitals to the State.

Respectfully submitted,
Irving G. Frohman, M.D., Chairman

Environmental Quality

To the House of Delegates, Gentlemen:

The members of the Committee on Environmental Quality are as follows:

Stephen M. Ayres, M.D.	New York
Eric J. Cassell, M.D.	New York
Stanley I. Fishman, M.D.	Kings
Verne M. Marshall, M.D.	Ontario
William E. Mosher, M.D.	Erie
Dwight F. Metzler, *Adviser*	Albany

The committee has reviewed the medical evidence presented in the Federal air quality criteria documents and believes that it is a fair statement of the presently known information relating environmental pollution to human health. Since the criteria are based on health effects, the committee believes it is the responsibility of the practicing physician to work for the implementation of control procedures which will limit pollutant emissions to levels prescribed by those documents. In the year ahead, it is planned to study and prepare position papers on the following important aspects of environmental control:

1. Development of a Statewide transportation system which will efficiently transport people and materials within the State but reduce automotive congestion and emissions.
2. Collection of information aimed at persuading

the State to develop an integrated power-policy which will minimize pollutant emissions, but yet will insure the adequate provision of electrical power throughout the State.

3. Study of the general ecologic and personal hazards of phosphates and other detergents in order that sensible legislation in this area may be supported.

4. Consideration of means for the testing and evaluation of home air pollution control devices, making such information available to the practicing physician.

While realizing these goals to be ambitious, the committee believes that future environmental control measures enacted by the State Legislature may be positively influenced if the State Medical Society adopts a strong and united position.

Respectfully submitted,
Stephen M. Ayres, M.D., Chairman

Forensic Medicine

To the House of Delegates, Gentlemen:

The members of the Committee on Forensic Medicine are as follows:

Milton Helpern, M.D. *Chairman*	New York
John F. Edland, M.D.	Monroe
Martin F. Hilfinger, Jr., M.D.	Onondaga
Herbert Lansky, M.D.	Erie
Leslie I. Lukash, M.D.	Nassau
John C. Sherman, M.D.	Saratoga
Arthur A. Stein, M.D.	Albany

The committee continues to be concerned with trying to improve and make more uniform the official investigation of all deaths that have medical-legal implications throughout the State. A questionnaire concerning this has been sent to all county medical examiners and coroners and to date there has been a 71 per cent return. A preliminary analysis of these data points up the uneven manner in which this work is being performed.

Although 88 per cent of autopsies ordered by the coroners with an elective coroner system are performed by board certified pathologists who work at their direction and report back to them, the arrangement is not too satisfactory because the work is not the primary interest and concern of the pathologist since he, unlike a medical examiner, does not have a total responsibility for the investigation from start to finish. Even though he is a qualified pathologist he is usually called on only to carry out the technical procedure of the autopsy which alone does not provide all the answers to medicolegal questions arising out of the death.

A basic provision in medical examiner systems is that the medical examiner must be a physician and also a pathologist with a primary interest and responsibility for the investigation of the circumstances at the scene, for the decision about the need for an autopsy and its performance, for the determination of the cause and manner of death, and for the reporting of findings and conclusions to appropriate agencies. Medical examiners are appointed civil servants and are not elected by popular vote.

The questionnaire attempted to determine, out of the total death rate of the counties, how many of the deaths are being reported to the medical examiner's or the coroner's office to obtain some idea of the number of more subtle deaths, as well as those of an apparently suspicious or violent nature are being reported; and to ascertain from those reported, how many are being accepted for complete investigation and postmortem examination. Important criteria of an effective official medicolegal death investigation service are not only the percentage of accepted deaths autopsied, but also the percentage of the total deaths reported and accepted for investigation. The study is not yet complete and additional pertinent data are being collected.

The committee feels that the establishment of a medical examiner system in all jurisdictions of the State would be a progressive step. However, adequate budgetary provisions and the present unavailability of pathologists and other scientific personnel for this important official work pose serious problems.

It is the committee's opinion that a practical solution would be the setting up of medical examiner's systems on a regional basis, with each of the counties comprising a district sharing the expense in proportion to the population. This plan is now being explored by members of the committee. The need for and importance of providing a well-organized medical examiners system and the advantage of such a system of official investigation of deaths were dramatically demonstrated by the recent fatal occurrence at Attica prison.

The committee is grateful to Norman S. Moore, M.D., director of Scientific Activities, and Hollis S. Ingraham, M.D., State Commissioner of Health, for their assistance and advice and for reaffirming the willingness of the New York State Department of Health to provide budgetary assistance to individual counties and groups of counties for the establishment of medical examiner systems.

The Ninth Annual Symposium on Forensic Sciences will be held at the Office of the Chief Medical Examiner, 520 First Avenue, New York City, on April 14 through 16, 1972.

Respectfully submitted,
Milton Helpern, M.D., Chairman

General Practice

To the House of Delegates, Gentlemen:

The members of the Committee on General Practice are as follows:

Samuel Wagreich, M.D., *Chairman*	Bronx
Max Cheplove, M.D.	Erie
G. Alex Galvin, M.D.	Tompkins
George G. Hart, M.D.	Essex
Joseph F. Palmieri, M.D.	Suffolk
Joseph B. Robinson, M.D., *Adviser*	Albany

The committee and the New York State Academy of Family Practice are involved at the present time in setting up family practice departments in the State-supported medical schools. The chairman wishes to remind the Commission that the Academy is deeply involved in continuing medical education, being one of the first organizations to foster this concept for its members, and has continued its interest in strengthening this area whenever and wherever feasible.

We are trying to broaden our membership to include more young people, especially members of the Student American Medical Association. We are involved with the American Board of Family Practice and with recognition of the specialty of family practice in Workmen's Compensation which will tie in with the Council of the Medical Society of the State of New York. Our membership is deeply and vitally concerned with malpractice problems and the need for legislation and policing, both internally and externally.

Also we are involved as members of the State Medical Society in many problems that concern the private practice of medicine.

Respectfully submitted,
Samuel Wagreich, M.D., Chairman

Health Care Technology

To the House of Delegates, Gentlemen:

The members of the Committee on Health Care Technology are as follows:

Charles Weller, M.D., *Chariman*	Westchester
Leo Gitman, M.D.	Kings
Robert E. Westlake, M.D.	Onondaga
Ralph E. Schlossman, M.D.	Queens
Donald Binder, M.D., *Adviser*	Albany

The objective of the committee is to study and evaluate existing and future technologic advances which are applicable to the delivery of health services and to develop guidelines for appropriate and efficient use of such tools as may relate to the clinical practices of medicine.

The following recommendations made by the committee were approved by the Council at its meeting on October 21, 1971:

1. The committee recommends the adoption of the following resolution after its review by the legal department of the State Medical Society.

Whereas, Physicians may receive unsolicited reports from multiphasic health testing or other centers; and

Whereas, These unsolicited reports may be on people in whom the physician has not established a physician-patient relationship; therefore be it

Resolved, That the physician who received an unsolicited report from a testing center on a person with whom a proper physician-patient relationship has not been established, and the physician does not wish to establish such a relationship, the physician should send a letter to the patient by certified or registered mail (return receipt requested) denying the existence of the physician-patient relationship, and a copy of this letter with the unsolicited report to the center of origin.

2. The committee recommended that the following Guidelines for the Development of Acceptable Multiphasic Health Testing Programs become the official guidelines of MSSNY.

1.0 Definition and Methodology

1.1 Multiphasic health testing programs are simply preliminary medical data acquisition methods, often utilizing automated technics with the assistance of allied health professionals, the resulting data are then evaluated by a physician as an aid in defining the patient's health problems in relation to patient management.

1.2 The systems used should be designed to condense and validate medical data as acquired, provide capsulated summaries, and may suggest interpretations of any abnormalities.

1.3 The testing systems criteria should include reliability, accuracy of output, saving of professional allied health professionals' time, have adequate utilization, and be available and customized for its local needs.

1.4 For professional value and economic feasibility, the test selected ideally should be: simple, safe, easy to interpret, inexpensive, quick to perform, and have acceptable sensitivity specificity, high predictive value, and patient acceptance.

1.5 The system should establish individual, ethnic, and geographic variations of normal and abnormal patterns.

1.6 The program must be appropriately accredited for quality control.

1.7 The objectives of the program must be clearly defined from the beginning, and the testing programs used should be designed to meet such varying objectives as health maintenance, diagnostic services, and management of on-going illnesses, such as chronic disease or compensated asymptomatic disease.

2.0 Relationship to Existing Health Care Delivery System

2.1 Any multiphasic health testing program must be integrated into the existing or newly developed comprehensive and continuing medical care system.

2.2 Methods should be developed to evaluate the long-term effects of the program on illness and on need and demand for health services.

2.3 The program should, when possible, be used to serve otherwise unmet needs in the delivery of health services.

2.4 The local medical profession must be involved in the planning and development of the program.

3.0 Ethical Considerations of Multiphasic Programs

3.1 Operation of the testing program must be under the supervision of qualified physicians.

3.2 The testing program should be designed and conducted primarily for the patient's benefit.

3.3 The confidentiality of patients' data must be maintained.

3.4 The principle of free-choice-of-physician by a patient is desirable in all testing programs.

3.5 The multiphasic testing program shall not be considered to function as the patient's physician.

The committee discussed means of communicating technologic advances to the physician members of the State Medical Society. It was suggested that a full-day program on the basic fundamentals on the use of computers in medicine be given at the next MSSNY annual meeting in February, 1972, in conjunction with the Committee on Data Processing. The chairman will contact the chairman of that committee for further discussion.

The committee recommended that active liaison be established with the New York State Health Department, and this committee is to develop means for registration and quality controls for multiphasic and similar health centers.

Respectfully submitted,
Charles Weller, M.D., Chairman

Health Manpower

To the House of Delegates, Gentlemen:

The members of the Committee on Health Manpower are as follows:

Bruce E. Chamberlain, M.D., *Chairman*	Onondaga
Stephen W. Blatchly, M.D.	Tompkins
Myron E. Carmer, M.D.	Wayne
James C. Dunn, M.D.	Erie
Arthur Howard, M.D.	Fulton
Robert V. Schatken, M.D.	Delaware
Robert B. Wallace, M.D.	Oneida
Franklyn B. Amos, M.D., *Adviser*	Albany

The chairman is grateful to the members of the committee for their participation.

The committee met on July 8. Among the topics discussed was the status of grants by county legislators for professional education (Sec. 610 (a) of the Education Law of New York State). An updated report is being compiled with the assistance of Edward D. Coates, M.D., of the New York State Department of Health. This will be published and distributed. Greater publicity of the availability of these scholarships is urged again through county medical societies. The committee also recommended that the State Medical Society distribute to county medical societies copies of the 1971 New York State Law which provides special Regents Scholarship Funds to medical students.

It has also recommended that county medical societies be made aware of a listing of students from the various geographic areas who are attending medical colleges in New York State. Such a listing could be developed through cooperation with the deans of medical colleges and the staff of the State Medical Society.

The committee notes that 11 counties outside of New York City have taken advantage of the Education Law, Section 610(a) in an effort to increase the number of practicing physicians. This law authorizes them to provide loans to medical students in attendance at an approved school of medicine in the United States, as well as hospital interns and residents. The following counties offer scholarships: Allegany, Chautauqua, Delaware, Fulton, Genesee, Livingston, Orleans, St. Lawrence, Schuyler, Wayne, and Wyoming. A total of 44 students are enrolled, ranging from 12 in Wayne County to 0 in Delaware County, whose program has just started. No M.D. has yet completed the program but Genesee and Wyoming have residents and interns enrolled. All counties expect their participants to return to practice in their county for at least one year for each year paid.

However, each county has a forgiveness clause that allows a student to repay the scholarship money if he does not return to the county to practice.

A total of $256,471 has been granted with Wyoming County leading with $86,971, followed by Fulton County at $39,000, and Wayne County at $36,000. The amount granted per student varies from $1,000 to $5,000 per year. Allegany, Chautauqua, Fulton, and Wayne Counties have no limit. The average student receives $3,000 per year.

Resolution 71-59, "Licensure of Service-Trained X-Ray Technologists," had been referred by the 1971 House of Delegates, to both this committee and the Committee on Nursing and Allied Health Professions. This problem has already been solved by the New York State Department of Health.

The committee noted the substance of the law on physician's associates passed as part of the Governor's 1971 Health Legislation. The committee urged the Council to implement the recommendations made in its report to the 1971 House of Delegates. A list of physician representatives from the State Medical Society to serve on the Governor's Advisory Council on Physician's Associates was submitted to President Himler. A cross representation was recommended to include (1) a physician in a teaching program; (2) three actively practicing physicians (one family-practice rural, one family-practice urban, and one specialist); and (3) one representative-at-large from the State Medical Society.

A supplementary report will be prepared for the House of Delegates.

Respectfully submitted
Bruce E. Chamberlain, M.D., Chairman

Maternal and Child Welfare

To the House of Delegates, Gentlemen:

The members of the Committee on Maternal and Child Welfare are as follows:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Walter L. Freedman, M.D.	Westchester
Robert M. George, M.D.	Oneida
George J. Lawrence, Jr., M.D.	Queens
Curtis J. Lund, M.D.	Monroe
Jacqueline A. Mauro, M.D.	Albany
R. Richard Murray, M.D.	Tompkins
Clyde L. Randall, M.D.	Erie
Ralph M. Schwartz, M.D.	Kings
M. Leon Tancer, M.D.	New York

As chairman of the Maternal and Child Welfare Committee and the Central New York Maternal and Perinatal Mortality Study, I respectfully submit the following report of the activities of the committee during the past year and present the program for the coming year.

The report for the past year follows.

Maternal deaths. Analysis of maternal deaths has continued. Although not all of the death reports have been received for 1970 at this time, it appears that the number of deaths has decreased. The following conditions have been reported:

Pulmonary embolism, including amniotic fluid and blood clot embolization, accounted for most of the deaths reported.

There were an unusual number of deaths signed out as cardiac arrest. They were generally associated with some operative procedure or complication of labor.

Also, an unusually large number of deaths were recorded as resulting from heart disease (9 deaths).

Rupture of the uterus, which always accounts for many deaths each year, caused 7 deaths. Many of these could have been prevented, if recognition had been accomplished.

It was astonishing to note that 3 deaths occurred from ectopic pregnancy. Either the patient died unoperated or had a massive hemorrhage. All cases were probably preventable.

Cerebral accidents, rather infrequently the cause of maternal death, were recorded in 3 patients.

There were two cases of septic abortion, both self-induced.

Sepsis was responsible for 4 deaths. These resulted from infection initiated in organs other than the genital organs.

Another rare cause of death occurred in 2 patients, namely acute yellow atrophy of the liver. These cases will be reviewed more thoroughly later.

A complete report of all maternal deaths will be prepared when all of the case reports have been received.

Perinatal deaths. Perinatal deaths have been reviewed during the past year. This analysis is rather disappointing because records in hospitals are incomplete, and it is almost impossible to correlate enough substantial information to draw valid conclusions. However, it is apparent that the largest number of infant deaths occurred in the preterm, low birth-weight infant and those having congenital anomalies of various organs. Many of these are related to the high-risk group of patients. Educational programs should be promoted to educate the physicians and the public that preconceptional study and therapy is necessary in these patients.

Research. An interesting and important portion of the work has been related to study of the placenta and its relationship to fetal death, and the effect of contraceptive agents on the generative organs.

Placental studies. Some interesting histologic and biochemical studies are in progress concerning the placenta as it relates to the high-risk patient and fetal death. Normal placentas and placentas from patients in the high-risk group have been studied. In the latter type of placenta, we have noted the deposition of material in the villi and surrounding the villi which apparently interferes with the to and fro exchange of materials used for fetal nutrition. The character of this material has not been determined. It appears as an unusual type of glycoprotein or mucopolysaccharide. This substance is being studied both biochemically and histochemically.

There is also an increase in large round cells resembling cytotrophoblasts, which ordinarily disappear or become superficial cells after the mid-portion of pregnancy. These cells contain glycogen ordinarily not found in the placenta at term. Infants born with placentas of this type have diminished glycogen in the liver and heart muscle. This deficiency contributes to fetal death before birth or infant death directly after birth. It is hoped that sufficient evidence will be obtained to report these findings during the next year.

Contraceptives. With the wide use of oral contraceptives, there has been some indication that these substances may have an adverse effect on the tissue of the generative organs. The committee, through its research,

TABLE I. Data from report on abortion law

	Per Cent		
Area	Ages (Years)	Marital Status	Ethnic Group
Upstate	Under 25 (66.7)	Single (49.2)	No record
New York City	Under 25 (60)	No record	White (72.4) Negro (23.2) Puerto Rican (4.4)

has studied the effect of these substances on the following types of tissue.

1. Endometrium: It is apparent from this report that endometrial tissue is affected after long usage of the oral contraceptives—certain ones having a more profound effect than others. Although it has been noted that recovery of endometrial function occurs after cessation of the contraceptive drugs, there are some patients where function does not return and permanent infertility may result.

2. Uterine cervix: Specimens have been studied in organ culture after the addition of the oral contraceptives. Although cellular changes have been observed after these substances have been in contact with the cervical tissue for seven to ten days, cancer has not been produced. However, the cellular changes are quite significant, and further study is necessary. Clinically, cervical erosion occurs more often in women on prolonged use of the agents.

3. Breast tissue: Specimens of breast tissue have been studied in organ culture. No report is available at this time.

These studies are carried out in cooperation with the Department of Pathology and the Department of Biochemistry at the Upstate Medical Center, a relationship which has been most encouraging.

Abortion. During the past ten months, the committee has analysed the abortions which have been reported. During the first three-month period, reporting came from about 41 per cent of the hospitals. Since that time the number of hospitals sending in the reports has increased, and a more complete list has been obtained. Reports have also been received from physicians' offices and clinics where the procedure is being done. All cooperating hospitals were sent a three-month and a six-month report. A complete report will be prepared at the end of the twelve-month period (June, 1971).

The chairman of the committee testified before the Senate Committee on Health, Executive Session on Possible Health Problems Presented by the Current Abortion Law, February, 1971, in Syracuse (Table I).

There was a significant increase in the incidence of complications, such as hemorrhage, infection, perforation of the uterus, shock, anesthetic problems after the twelfth week of pregnancy, and particularly after the twentieth week of pregnancy.

Some interesting conclusions can be drawn from the abortion review.

1. The incidence of complications increases when the procedure is performed in the later days of pregnancy.

2. The true picture of complications cannot be accurately evaluated because the follow-up cannot be obtained due to the shortness of hospital stay. It has been recorded that 2 deaths have occurred out of the state following the performance of abortion in New York State.

3. The incidence of abortion has been higher in the white than in the Negro population and in the white middle class. This is an interesting notation for further population relationships.

4. The institution of "abortion centers" in the State has created economic as well as unethical money-making services provided by lay groups. Legislation should be passed to prohibit such service.

It is the opinion of the chairman that these studies should be continued for another year at which time some definitive conclusions can be drawn.

Records. It has been almost impossible in many cases of maternal deaths and perinatal deaths to analyze and draw valid conclusions because of inadequate, incomplete, and noncomparable terms and records. The chairman is convinced that some type of new record keeping must be proposed and even mandated if vital statistics are to be meaningful and accurate. To this end the committee has been working along this line of endeavor.

The committee recommends standardization of terminology. The chairman has completed the study on this, and material will be published in September, 1971. The committee hopes to promote the standardization in all hospitals and physicians' offices.

To have good records which are comparable in terminology, as well as recording, standardization of prenatal, labor, and summary forms should be used universally. The chairman has been preparing such forms in cooperation with the American Medical Association, The American College of Obstetricians and Gynecologists, and the American Academy of Pediatrics. It is hoped that these forms will be completed in the next few months.

The committee is also working on standardization of birth certificates, and these are also being discussed with the American Medical Association, The American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, the U.S. Bureau of Vital Statistics, and the New York State Department of Health.

The committee proposes the following:

1. Continue to analyze the maternal death records of the State and place the information on punch cards.

2. Inasmuch as the perinatal study has not been as productive as hoped for, the committee has decided to choose several hospitals in the State, seek their cooperation, and analyze each perinatal death for a period of six months. The hospitals will be provided with record forms. The completed records will be photostated and sent to the committee for analysis. After the six months period is over, the results and suggestions will be given to the hospital personnel concerned. When each hospital survey is completed, another hospital in another area will be started. Hospitals will be chosen where the perinatal mortality rate has been higher than usual.

3. Analysis of the abortion reports should be continued for another year. More hospitals are reporting, and some definitive results should be recorded during this interval.

4. The committee will continue to work and complete prenatal, labor, and summary records in cooperation with the American Medical Association, The American

College of Obstetricians and Gynecologists, and the American Academy of Pediatrics.

5. Terminology, which will be published under the auspices of The American College of Obstetricians and Gynecologists, should be promoted for use in every hospital and medical school. Part of the function of the committee will be to promote the use of this terminology in hospitals, medical schools, and by physicians.

6. Research will be directed toward attempting to find out what the new mucopolysaccharide or glycoprotein is composed of and determining its effect on placental function. Work must be continued on the effect of oral contraceptives on cervical and breast tissues. Research will also continue on adenocarcinoma of the uterus which possesses the same type of glycoprotein as the abnormal placenta, although the chemical constituent of this substance has not been isolated as yet. This work will be conducted in association with the Department of Biochemistry of the Upstate Medical Center, using 2 postgraduate students for the technical work. The work will be conducted under the supervision of Dr. Ross Jacobs of the Department of Biochemistry.

7. **Continuing medical education**. During the past years, the committee has held meetings in various districts of the State with the consultant and local physicians interested in general improvement of obstetric care. Although these meetings have been successful, only a few physicians in comparison with the number practicing obstetrics have been exposed to the meeting and educational presentation. Articles have been written which, although presenting a complete treatise on the subject, have been too long for easy reading.

A survey conducted among physicians concerning continuing medical education revealed that many physicians consider reading to be the best method for obtaining new information. Therefore, a new type of education process will be attempted this year in the form of articles in the ***New York State Journal of Medicine*** noted as "Obstetric Forums." These will be published in each issue of the ***Journal*** and will be concise, accurate, and to the point. They will be about a page and a half long. Arrangements have been made with Henry I. Fineberg, M.D., and William Hammond, M.D., editor of the ***Journal*** to publish these forums. The following is a list of forums being prepared:

Cerebral Hemorrhage: A complication of pregnancy (report of 49 cases)
Pulmonary Embolism: Report of 106 cases
What is Prenatal Care?
Ectopic Pregnancy: Report of 44 cases
Obstetric Records and Conclusions
Perinatal Mortality: Status Quo
The High-Risk Obstetric Patient: Guidelines
Ruptured Uterus: Report of 86 cases
Abortion: Its complications
Effect of Oral Contraceptives on Future Conceptions
Sterility—Clomophine—Results
Amenorrhea in the Teenager.

Respectfully submitted,
Edward C. Hughes, M.D., Chairman

Medical Aspects of Sports

To the House of Delegates, Gentlemen:

The members of the Committee on Medical Aspects of Sports are as follows:

Ralph S. Emerson, M.D., *Chairman*	Nassau
Albert B. Accettola, M.D.	Richmond
Frederick H. Grabo, M.D.	Oneida
Donald T. Kasprzak, M.D.	Clinton
Joseph J. Kaufman, M.D.	Wayne
Alexius Rachun, M.D.	Tompkins
Advisory Committee	
Mr. J. Kenneth Hafner	Albany
James A. Nicholas, M.D.	New York
Max M. Novich, M.D.	Perth Amboy, N.J.
Anthony J. Pisani, M.D.	New York
M. Laurens Rowe, M.D.	Monroe
Mr. William Stein	New York

The Fourth Annual Medical Aspects of Sports Symposium was held in New York City on February 13, 1971. The theme of the program was "Safety and Prevention of Injuries to the High School Athlete." In spite of the city-wide garage attendants' strike, approximately 600 guests attended. The subject was broad and stimulating. The general reaction from the audience was that this program even exceeded our previous efforts. A critique was held immediately following the symposium, and suggestions were recorded to improve subsequent sessions.

The program for the February 12, 1972, Symposium has been developed and consists of three general topics: (1) a panel discussion on Drugs and Drug Abuse in Sports, (2) the first Girls Sports Program, and (3) Physical Conditioning and Rehabilitation, which will include a new program developed by Joseph Abraham, M.D., and the Eastern State Trainers' Association.

Your committee members participated in many state, national, and international sports medicine programs. We have received many requests for the proceedings of our symposia. Most of our articles have been abstracted in national sports reviews. We are recognized as not only having the largest but also one of the best programs in the country. We have encouraged and assisted in the development of regional sports programs to disseminate the safety aspects in high school athletics.

We have participated and acted as consultants to the New York State Public High School Athletic Association, State Department of Education, and the Education Council for School Research and Development in the following programs:

1. The modified football rules program has included approximately 65,000 participants. The principles have been expanded to include the junior high school athletic programs in baseball, lacrosse, soccer, basketball, swimming, track and field, wrestling, and swimming.

2. The 5-10-5 preseason conditioning program has included 51,000 participants. It was so successful it has been accepted by the Central Committee (governing body) of the New York State Public High School Athletic Association.

3. The modified football shoe project (disk heel; shortie cleats) of 61,000 varsity football participants is the largest study in the country. It will undoubtedly have an impact on the type of football shoe used in the future.

It should convince the sports world that "the conventional cleat must go."

4. An exciting study was begun last year by J. K. Hafner, of our Advisory Committee, correlating the severity of injury in terms of the length of time lost with: action at the time of block, field location of the injury, prior history of injury, and the player position. A total of 14,372 players participated in this program in 1970. When this study is completed and published, it will undoubtedly be received with great interest throughout the country.

The committee is proud to be a member of this dedicated, visionary, and innovative team who are engaging in pioneering research in the safety aspects of high school athletics.

Our committee wishes to thank the staff of the State Medical Society, especially Norman S. Moore, M.D., director, Division of Scientific Activities; Miss Dorothy Smith, his secretary; Guy Beaumont and Richard Klemfuss of the Division of Communications; and J. Richard Burns, J.D., assistant executive vice-president, for their invaluable assistance during the past year.

As chairman, I would like to express my appreciation to the members of the committee and the advisory committee.

Respectfully submitted,
Ralph S. Emerson, M.D., Chairman

Mental Health

To the House of Delegates, Gentlemen:

The members of the Committee on Mental Health are as follows:

Allison B. Landolt, M.D., *Chairman*	Westchester
Gurston D. Goldin, M.D.	New York
Jack Hammond, M.D.	Richmond
Edith M. Jurka, M.D.	New York
John P. Lambert, M.D.	Westchester
Stephen Nordlicht, M.D.	New York

Your committee continues to cooperate with other organizations interested in mental health.

At the committee meeting held in April, several legislative bills which had been before the State Senate and Assembly for action, were reviewed. During the spring, our committee was involved in discussions with many of the New York State legislators concerning these bills. Our committee opposed 12 bills, taking the position that they were too specialized and parochial to be considered psychiatrically sound.

In the past, the committee has been opposed to the proposed recodification of the Mental Hygiene Law. However, there is a strong feeling emerging in favor of endorsement, and the committee is reconsidering its position.

Your chairman attended the meeting of the Economics Committee of the State Medical Society to give the psychiatric viewpoint for the Interspecialty Committee. It was agreed at the time that insurance reimbursement should tentatively be based on the California Relative Value Scale until we can develop our own statistics in this State. Much work needs to be done to bring psychiatry to the same level of involvement and commitment in various State reimbursement schedules as medical and surgical programs.

The chairman of this committee attended the annual meeting of the Commission on Public Health and Education held in Albany in July and noted the importance of close cooperation with other medical specialties. This is particularly significant in the problem of plumbism. All in all, the one-day session was most edifying and stimulating.

The Annual Conference on Mental Health was held in Chicago, on September 24 and 25. The topic for discussion was "National Health Insurance, Implications for Mental Health." After considerable debate, the consensus was that every effort must be made to encourage the inclusion in any state and Federal legislation of insurance coverage for mental disorders equal to coverage for any other disease, without special limitations. Evidence was presented showing that the cost of mental illness can be insured in an actuarially sound manner. None of the present bills before Congress include proper coverage for mental disorders.

The various State Medical Society representatives were exhorted to contact Federal legislators to make our concern known. It was further considered that any legislation should follow the American Psychiatric Association guidelines.

Insurance reimbursement for treatment of alcoholism and drug addiction and for treatment of neurologically and mentally handicapped persons under the catastrophic illness concept was also considered to be feasible. This committee feels that the House of Delegates of our State Medical Society should go on record in favor of the inclusion of full insurance coverage for mental disorders in any Federal health insurance legislation, thus covering mental illness on the same basis as any other disorder.

The meeting of the New York State District Branch of the American Psychiatric Association, held at Tuxedo, on September 18, was attended by John P. Lambert, M.D., a member of this committee. At the conference it was agreed that a greater public relation effect should be made to disseminate information to all psychiatrists regarding the various facets of Federal and State legislation pertaining to mental health.

A committee will be set up to act as an advisory body to the legislators in the various counties, and its members will be invited to the meetings of the Psychiatric Association, at which time problems will be discussed. This is necessary, particularly when the Legislature is in session.

The committee appreciates the close relationship with the Committee on Alcoholism and Drug Abuse of which your chairman is a member.

We wish to thank Norman S. Moore, M.D., director, Division of Scientific Activities, who attended our meetings, for his invaluable advice and counsel. We are most appreciative of the devoted assistance of Miss Dorothy M. Smith, whose secretarial labors have helped us function most effectively.

Respectfully submitted,
Allison B. Landolt, M.D., Chairman

Metabolic Diseases

To the House of Delegates, Gentlemen:

The members of the Committee on Metabolic Diseases are as follows:

Arthur H. Dube, M.D., *Chairman*	Onondaga
Marshall Clinton, M.D.	Erie
Ann B. Wright, M.D.	Dutchess

The committee has met and reviewed the following subjects: (1) diabetes teaching programs, (2) special beds for patients in hospitals for metabolic diseases, and (3) diabetes detection drives.

We feel that most hospital teaching regarding diabetes is haphazard with great variation from hospital to hospital and even from floor to floor. Special teaching tapes and manuals are available, but often there is no coordinated drive to supply a particular group of teaching materials to the patient.

We would recommend that each hospital have a specially trained nurse assigned to teaching care of diabetes and to coordinate the program, and also have a special area in the hospital for patients with metabolic diseases to facilitate the use of coronary and respiratory units which are now standard in many hospitals. In the general field of metabolic diseases, highly technical tests with laboratory support are mandatory. Instruction and family counseling are highly specialized and could be best carried out within the setting of a special metabolic unit.

Diabetes detection drives fall short of the mark. The yield is much higher if proper tests are carried out in families of diabetic patients. A screening test such as the one-hour glucola test should be made available at low cost at a designated hospital to be carried out throughout the year. Additional screening tests could be added, such as uric acid, cholesterol, and blood urea nitrogen, if the program was in great enough demand and the cost reasonable.

In this regard, the committee is not overly optimistic because of the lack of funds and grants to hospitals to carry out these tests.

Respectfully submitted,
Arthur H. Dube, M.D., Chairman

Physical Medicine and Rehabilitation

To the House of Delegates, Gentlemen:

The members of the Committee on Physical Medicine and Rehabilitation are as follows:

Edward J. Lorenze, III, M.D., *Chairman*	Westchester
Peter S. Battaglia, M.D.	Niagara
William H. Georgi, M.D.	Erie
Milton Lowenthal, M.D.	New York
Milton B. Spiegel, M.D.	Kings
Samuel S. Sverdlik, M.D.	New York

The committee took note that the basic revision (S. 350) of the statutory provisions for physical therapy in the New York State Education Law provided for the administration of physiotherapy by a duly licensed and registered physician. It is our understanding that this has been changed by the addition of "and may be upon the oral prescription of a physician." The State Medical Society had objected to the omission of the provision for an oral prescription and was responsible for the law being amended to include it.

The committee continued to be in favor of resolution 68–59, "Rehabilitation Services in Extended Care Facilities," introduced by the Section on Physical Medicine and Rehabilitation, which requested the "Medical Society of the State of New York to urge the Commissioner of Health to require that all rehabilitation services rendered to Medicare and Medicaid beneficiaries in nursing homes and extended care facilities be ordered and supervised by either a physiatrist or an orthopedist." (See ***New York State Journal of Medicine,*** June 1, 1968)

It should be noted that the House of Delegates ultimately amended this to read "be ordered and supervised by a licensed physician." In any event, this has not been included in the Code.

We support the recommendation of the Committee on Aging and Nursing Homes, that Chapter 5 of the New York State Hospital Code be amended to include a provision for facilities to have a professional board which sets suitable professional standards, rules and regulations, thus, in fact, establishing an organized staff program.

The committee has discussed the changes in the State laws governing nursing homes to provide for a mandatory position of medical director to serve in a medical consultative and administrative role for purposes of organizing and establishing professional programs of care. This does not imply a direct service to patients, but rather establishes professional administrative responsibilities. The committee approves of this concept and feels that it will go toward the development of an organized health care staff and programs with rules and regulations for each nursing home.

The committee, with the aid of Max N. Howard, M.D., director of the Society's Division of Medical Services, extensively explored the Relative Value Schedules, with particular emphasis on their application to the development of Workmen's Compensation fee schedules.

It was suggested that the Committee on Physical Medicine and Rehabilitation proceed to develop a relative value schedule for physiatrists.

Bruce E. Chamberlain, M.D., chairman of the Committee on Health Manpower, has suggested that problems relative to health manpower affecting physical medicine and rehabilitation, be discussed. The chairman has been in contact with Dr. Chamberlain and will work toward setting up a joint meeting.

Respectfully submitted,

Edward J. Lorenze, III, M.D., Chairman

Preventive Medicine

To the House of Delegates, Gentlemen:

The members of the Committee on Preventive Medicine are as follows:

Harry S. Lichtman, M.D., *Chairman* . . . . Kings
Subcommittee on Infectious Diseases
Adviser Harry A. Feldmann, M.D. . . . . Onondaga
Thomas S. Bumbalo, M.D. Erie
Subcommittee on Community Health
Leonard L. Heimoff, M. D. . . . . Bronx
Subcommittee on Hospital Epidemiology
Max Milberg, M.D. . . . . Kings
Subcommittee on Tropical Diseases
Howard B. Shookhoff, M.D. . . . . New York
Subcommittee on Venereal Disease
Bruce P. Webster, M.D. . . . . New York
Burton Allyn, M.D. . . . . Rockland

The committee is comprised of five subcommittees, and at its meeting in April considered the following subjects:

Sickle cell disease. The committee unanimously approved Bill 1069A, an amendment to the Public Health Law, which is a request for State aid for "a research program to determine the cause, method of treatment, and cure of sickle cell anemia." The committee has appealed to the State Medical Society's Committee on Legislation for consideration and approval, and to the Council for its support. In addition, the committee recommended to the Council that each county medical society be requested to establish a committee to study the problem within its county. Unfortunately, the Council disapproved this recommendation, stating that it felt it unwise for county medical societies to set up a committee for every clinical disease.

However, sickle cell disease has become a rather important problem in counties having a high percentage of Negroes in the population. More Negroes have sickle cell disease than leukemia, 1 out of 500 Negroes has sickle cell anemia, and 1 out of 10 has sickle cell trait. Should carriers of sickle cell trait marry, 1 out of 4 of their children will develop sickle cell anemia. A number of deaths have recently been reported and diagnosed by post mortem examination.

The Medical Society of the County of Kings has a Committee on Sickle Cell Disease and is trying to alert the community to this problem. According to Joseph B. Robinson, M.D., of the New York State Health Department, this is an important problem since New York State has approximately 2 million Negroes, and although much is being done as far as funds and research are concerned, a greater effort is called for in view of the large population susceptible to the disease. Recently enacted legislation has given the Commissioner of Health the authority to develop rules and regulations regarding this condition. This legislation is presently being studied by the State Health Department in order to make recommendations to the Commissioner regarding implementation. It is felt that this effort should concentrate basically on hospital admissions and preschool testing.

Since it is felt that the Council of the State Medical Society did not have the pertinent information, Henry I. Fineberg, M.D., executive vice-president, suggested that this problem be resubmitted to the Council for consideration.

The committee, therefore, has submitted to the Council for reconsideration the following report made by your chairman at the annual meeting of the Commission on Public Health and Education:

> I spoke on this subject because of the study in depth made by the Committee on Preventive Medicine and its firm conviction that the Council should take favorable action on Bill 1069A introduced in the Senate on January 6, 1971. In addition, the committee recommended to the State Medical Society that each county medical society be requested to establish a committee to study the problem of sickle cell disease within its county, which the Council voted to disapprove. My plea is that both matters be reopened for discussion and approval.
>
> Sickle cell disease results from an abnormality of the hemoglobin (sickle cell Hb. S) found in blood genetically transmitted by parents according to the Mendelian Law, affecting the black population.
>
> Sickle cell anemia occurs when a child inherits two sickle cell genes, one from each parent. The incidence in the United States, according to various studies made, is 1 in 500 blacks.
>
> Sickle cell trait occurs when the child inherits the gene from only one parent. The trait is estimated to occur about 1 out of each 8 to 12 American blacks. In Africa some areas show an incidence from 20 to 40 per cent of sickle cell disease.
>
> The dangers of sickle cell disease is death prior to

the twentieth year. The dangers of sickle cell trait are great with the stress of anesthesia and high altitudes, excessive exertion, parenthood, and transfusions to infants.

Deaths due to sickle cell trait may be more frequent than previously appreciated and that early identification of such persons by appropriate screening tests is imperative.

(Editorial: vol 282, #20, page 1155, New England Journal of Medicine).

The Committee on Preventive Medicine has requested reconsideration by the Council as follows:

1. That legislation in 1972 regarding Sickle Cell Anemia, similar to Senate Bill 1069A of 1971, be approved by the Council and supported by the Legislative Committee of the State Medical Society.
2. Each county medical society should be requested to establish a committee to study the problem of sickle cell disease within its own county.

Lead poisoning. The committee voted to recommend to the New York State Health Department that local health departments throughout the State be urged to develop programs for lead poisoning in all children between the ages of one and six years in deprived areas within their jurisdiction.

Dr. Ingraham has reported to the committee that considerable progress has been made on the lead poisoning program, but a shortage of funds has hampered it.

Hepatitis. The following recommendations have been made by the committee for widespread circulation among physicians and hospitals in New York State:

1. Hospital personnel have a higher incidence of Australia antigen than the general public. The recommendation is to use such donors with great discretion.
2. The incidence of hepatitis carriers among voluntary donors is much less than donors in commercial blood banks.
3. Hospitals should make efforts to obtain blood from patients seeking elective surgery prior to hospital admission for their use if found necessary.
4. Support should be given Assembly Bill 4948 creating a State commission to study the problems of blood transfusions in New York State.
5. Blood banks should be mandated to require a hepatitis history, physical examination and test for Australia antigen from each blood donor.
6. Facilities for training technical and professional personnel in the most effective technics available for the detection of carriers of hepatitis virus must be expanded throughout the State.

Tetanus hyperimmunization. Frequent tetanus boosters may produce a state of hyperimmunization with its attendant potential hazards and complications. Physicians should not be pressured by requests from sources such as parents, school nurses, and summer camp owners to give this antigen more frequently. The only excuse for a booster dose sooner than the time interval mentioned is a recent tetanus-prone wound where the last booster given was twelve months prior to the accident.

Venereal disease. The committee held a meeting with representatives of the State Health Department, the State Education Department, and members of the Committee on Public Relations of the State Medical Society. It was decided to send the Society's Mobile Education Unit to the various colleges in the State during the summer of 1971. Plans for a film strip to be shown were discussed, as was the question of additional financing by a pharmaceutical company. The latter idea is to be followed up.

The New York State and New York City Health Departments were represented at the International Symposium of Individuals Interested in the Venereal Disease Problem, held in St. Louis, on April 15 and 16. Attendance at this meeting from upstate New York was poor. Methods of control utilized in various parts of the country were compared and plans of attack outlined.

At the request of the Governor, a meeting was held in Albany on April 26, with James McKenzie-Pollock, M.D., of the American Social Health Association representing the chairman of the Subcommittee on Venereal Disease. Support of the problem was expressed by two State senators who attended the meeting.

The National Commission on Venereal Disease, Bruce P. Webster, M.D., chairman, is meeting regularly in Washington to discuss a national strategy.

The Committee on Preventive Medicine feels that venereal disease, as well as sickle cell disease, should be given wider publicity among physicians, since venereal disease is reaching epidemic proportions and only 30 per cent of the cases are being reported nationally. The inability of health officers to do follow-up investigations of carriers and contacts, because of failure to report cases, has contributed to the spread of venereal disease. On May 28, George Himler, M.D., president, and Hollis S. Ingraham, M.D., commissioner of health, sent out a joint letter to all physicians in the State urging them to report all cases of venereal disease and enclosing a summary of data on current diagnosis and treatment technics.

The New York State Department of Health has been able to obtain funds in the supplemental budget for the venereal disease program, and, as with many of the programs, legislation has been provided and action is being taken within the established monetary limits.

It has been reported that the incidence of syphilis is high in the upstate area while the converse is true of gonorrhea.

Australia antigen. Australia antigen testing is required throughout the State, and the New York State Health Department Laboratories are monitoring the efficiency of such tests.

The committee feels that much more can be done to transmit information on the various programs, especially on venereal and sickle cell diseases, to the physicians if they were to be included in continuing medical education programs in the field of public health and preventive medicine.

Respectfully submitted,
Harry A. Lichtman, M.D., Chairman

Rural Medical Service

To the House of Delegates, Gentlemen:

The members of the Committee on Rural Medical Service are as follows:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Edward A. Barrett, M.D.	Orleans
Stephen W. Blatchly, M.D.	Tompkins
Alfred A. Hartmann, M.D.	Franklin
Erich Hirsch, M.D.	Ontario
Rudolph F. Hust, M.D.	Otsego
Stuart A. Winning, M.D.	St. Lawrence
Hugh M. McChesney, M.D., *Adviser*	Oswego
James J. Quinlivan, M.D., *Adviser*	Albany

Background

Ten years ago, the Board of Trustees and the Council of the Medical Society of the State of New York became alarmed at the reported shortage of physicians in rural New York and appointed a Committee on Rural Health to study the problem. Edward C. Hughes, M.D., was appointed chairman.

The committee, in cooperation with Dr. Bert Ellenbogen, professor of Rural Sociology at Cornell University, studied many small rural areas in respect to their medical coverage. Five years later a follow-up study was performed which revealed that there had been a marked decrease in the number of physicians in the areas. On the basis of these findings, reported by Dr. Ellenbogen to the Board of Trustees of the Medical Society of the State of New York and to the Council, the Committee on Rural Health was given the specific charge of developing a valid method of determining: first, the needs of medical coverage in Upstate New York; second, the specific location of these shortages; and third, the type of medical services needed in specific areas.

It was the opinion of the committee and the Society that data should be obtained for each area in the State before any new type of health care could be provided on a modern basis. To that end the project committee, with Dr. Hughes as chairman, undertook to develop a model which would provide a way and a means for accurately assessing these health care problems.

The investigation included the study of: (1) the physician or the provider of medical care; (2) the leaders of the communities; and (3) the consumers of medical services in each area.

This model was designed to obtain the thoughts and support of physicians and the needs and desires of consumers. The method designed was pretested in three areas of comparable size near the regional medical base (Syracuse, New York). Research instruments were prepared and the pilot projects administered by Community Medical Services, the research arm of the Rural Medical Services Committee of the State Medical Society.

Community Medical Services' staff is currently composed of:

Edward C. Hughes, M.D., Director
Dorothy J. Walker, Planning Director
    MRP (Masters of Regional Planning)
    PhD (Social Science)
John E. MacDonald, Project Director
    MA (Medical Sociology)
    Methods Specialist
Nancy E. Cochrane, Administrator
    AS
Virginia L. King, Secretary

During the first two years of this project, the research instruments were pretested and validated.

Results of these initial studies were published in a limited edition (1,500 copies) which was distributed to physicians, community leaders, and government officials in June, 1971. The publication was entitled *Rural Health Planning: a basement membrane model.* This portion of the study was funded by the Avalon Foundation with supplemental assistance from the State Medical Society and the Sears Roebuck Foundation.

As these preliminary studies were being completed, the Public Health Services' Bureau of Health Manpower Education, Division of Manpower Intelligence, became interested in the project and prepared an application for funding which supported the study initiated during the past year and currently in progress. It is expected that funds will be forthcoming for 1971–1972 in order that the project can be completed, the model fully tested, and a comparative analysis written which will be of value to providers, consumers, and planners of medical care in rural areas throughout the country.

During the past year considerable progress has been made in refining the method of assisting areas with critical health delivery problems. As contracted with the Public Health Service, the current project focuses on the Central New York region, involving 14 of the countries served by the Regional Medical Program and Upstate Medical Center. A working relationship between the Regional Medical Program, Upstate Medical Center, and the State Medical Society is essential for achieving coordinated health-care planning and delivery systems. Specific medical care needs in the area can be determined by utilizing the model described; educational programs are supplied by the Regional Medical Program; future manpower comes from the Medical Center.

To date:

1. An indepth sociomedical analysis has been completed of the Old Forge trading area in northern Herkimer County—an area with a unique set of health care problems. The document, "A Study of Medical Services and Facilities in the Adirondack Preserve" was prepared for and presented to the Town of Webb Board of Supervisors, the Town of Webb Health Center Fund, Inc., the Town of Webb Planning Board, and the Town Council of the Village of Old Forge.

2. A survey of the health problems of St. Lawrence County was conducted and a written analysis "A Study of Medical Services and Facilities in the North Country" was prepared for and presented to medical providers and consumers in a six-town area. This county has a population of approximately 110,000 and has critical health

services delivery problems, in addition to economic problems.

3. Survey arrangements are underway in a third area of the North Country where there are approximately 16,000 people. It is difficult to establish the type of health services needed in this area, as well as what is economically feasible.

Survey area determinations were made from the results of a regional survey in which a postcard questionnaire was sent to all villages, hamlets, and unincorporated areas with populations of 25 to 5,000 within the 14 counties. There were 579 questionnaires distributed: 176 postcards were returned "Yes" and 130 marked "No," in relation to interest in survey participation.

What does this project accomplish?

1. It accumulates the thoughts, suggestions capabilities, medical experience, and health status of physicians.
2. It determines the socioeconomic and medical status of an area, village by village and town by town.
3. It determines the educational, religious, and recreational advantages of a community or an area.
4. It determines the hopes, desires, requests, demands, and thoughts of consumers concerning medical care.
5. It determines the travel patterns of the people, helping to establish viable locations for community health centers, and points a way for creating a means of redistributing medical manpower.
6. It determines the type of medical practice which should be established for an area, based on accurate demographic data which is procurable through no other source.
7. It provides a profile of communities or areas seeking medical assistance, which will give young physicians insights into the requirements of specific communities.
8. It determines the number of individuals available to participate in health care such as nurses, technicians, and physician's assistants.
9. It determines the type of financing a community can afford, whether it be fee-for-service or other methods of paying for medical care and resources.
10. It brings together citizens from all walks of life and stimulates interest in community health problems. In some instances the working together breaks down village and town rivalries, as all join for a common cause.

There are other advantages to be derived from this coordinated approach. Conclusions in the Old Forge study are an example of the specific function which this indepth approach provides for a specific community and its residents.

Community Medical Services' plans for the next years

1. *Completion of the third study area* and preparation of the community report. It is essential that a third study area be completed to adequately conclude the regional project initiated through the Public Health Service.

2. *A Comparative study of the three areas surveyed* is considered imperative as the final phase of this project if findings on rural health are to be made available nationally. Specifically, in relation to this rural health project a comparative study of three geographically different areas will be most productive. Conclusions regarding rural health problems cannot be made, logically, on the basis of study of one area alone. Study of a single area, or two areas, may generate hypotheses which would be of interest for further study but may not be used to provide statistically meaningful answers to the problem of rural health in general.

Through a comparative study, we hope to define variables and situations which may be common to rural areas generally, and also to define those factors which are unique to any given area and which may thus not be generalized.

If the purpose of this project is to do more than "survey" people, we should be concerned with the generation of a theory of rural health care which will describe what characteristics of people and/or communities, and physicians, are involved in providing a solution to health-care problems. That is, why do some communities have a physician, why can some communities keep a physician while others cannot, and why do certain physicians practice in rural areas while others do not? If there is more than chance or personal will involved, it should be possible to arrive at some answers to these questions. Comparative study will show whether or not factors noted in one community are actually different from what would be expected by chance, and will help to develop a "grounded theory" in relation to the health problems of rural areas.

3. *A Survey of first, second, third, and fourth-year medical students, interns, ard residents* at Upstate Medical Center to determine reactions toward practice of medicine in rural communities is also planned.

Respectfully submitted,
Edward C. Hughes, M.D., Chairman

School Health

To the House of Delegates, Gentlemen:

The members of the Committee on School Health are as follows:

Hugh F. Leahy, M.D., *Chairman*	Albany
George F. Cunningham, M.D.	Suffolk
Edward M. Di Tolla.	New York
Robert A. Hoekelman, Jr., M.D.	Monroe
Sidney Leibowitz, M.D.	New York
Norman B. Schell, M.D.	Nassau

The committee held one meeting and several telephone conferences.

Perhaps our outstanding new concept in school health services is to coordinate the school health program with a neighborhood health service. This consists of a coordinated program made up of health personnel, educational personnel, and community agencies, such as boards of education, P.T.A. groups, and other parties interested in health services. This new concept would operate as a multiscreening process concentrating on those children who are particularly in need of health care. The nature of the screening would primarily depend in large part on age, for example in the nursery, search would be made for congenital defects; in the preschool period, for auditory and visual defects; in the elementary school, for learning defects; and in the older groups, for personality disorders. This type of service is now being given in some of the larger metropolitan areas with good results. It is readily admitted that the plan is not suitable for all localities; but the concept is a good one and should be borne in mind. In the future, school health services may be supervised by a health coordinator rather than a school physician.

Questions have been raised regarding Article 19, Section 904, of the Education Law, which states: "If parents or guardians are unable or unwilling to provide the necessary relief and treatment for such pupils, such fact shall be reported by the principal or teacher to the medical inspector, whose duty it shall be to provide relief for such pupils." Does this mean the school physician should treat an ear abscess, pneumonia, or meningitis? Of course, this is not done now. We have asked the New York State Departments of Education and Health for an official opinion by counsel on this matter. Presently, no treatment is prescribed in most schools, but some pediatricians feel treatment is indicated, especially in large ghetto areas.

The question of categorizing all schools in the State has been raised. This has been done in State, private, community, technical, agricultural colleges, and others listing number of teachers, students, socioeconomic status, number of classrooms, and so on. Through information already available on census cards, information could also be gained about health education, health services, and health environment (including building, lighting, heating, and so on).

The committee is not happy to report that the recent Education Law change in school examinations from annual to periodic (kindergarten, first, third, seventh, and tenth grades) has not produced the beneficial effects that had been desired. Some physicians still use the "assembly line" procedure instead of utilizing their increased time to offer better services. Perhaps this is due to the fact that some school districts have drastically reduced the school physicians' salary. The number of physicians still practicing "old style" is small, but we would like to reduce it to zero.

A number of objections have been raised concerning financial arrangements for school physicians. One of the main objectives of the committee is for closer liaison between the State Health Department, the State Education Department, the American Academy of Pediatrics, and the Medical Society of the State of New York.

Respectfully submitted,
Hugh F. Leahy, M.D., Chairman

Scientific Activities and Publications

Archives

To the House of Delegates, Gentlemen:

The members of the Committee on Archives are as follows:

Joseph A. Tamerin, M.D., *Chairman*	New York
Morris R. Keen, M.D.	Suffolk
Bernard R. Margolius, M.D.	Greene
Harriet Northrup, M.D.	Chautauqua

The Section on Archives met during the annual convention held at the Americana of New York in conjunction with other organizations, such as Medical Archivists of New York, the United Hospital Fund, the Federal Record and Archive Center, the Regional History and Archive Department of Cornell College at Ithaca, and the Committees on Archives of the New York Academy of Medicine and the Medical Society of the County of New York.

The theme of the February meeting, attended by about 50 to 60 archivists, was a salute to The New York Hospital on its bicentennial celebration. A distinguished panel of speakers presented reports which we hope will be published in the ***New York State Journal of Medicine.***

As a result of this meeting and two other meetings held with the same group at the New York Academy of Medicine and at the United Nations Auditorium, a substantial amount of money has been allocated by New York Hospital to put its records and archives in order. This is a milestone, since professional record management, disposal, evaluation, cataloging, preservation, and duplication for scholarly use in American hospitals has never before been done.

This has opened up the possibility of training hospital archivists on a professional basis. In view of the increasing interest in American archives because of the bicentennial celebration of the Declaration of Independence in 1976, this activity will be much needed. An executive committee, chosen to outline the direction of this activity, has met at the offices of the United Hospital Fund on two occasions.

Much credit is due Mrs. Louise Heinze, librarian at the United Hospital Fund, Carlyle R. Bennett, manager, National Archives and Record Service, New York City, and C. Herbert Finch, curator, Regional History and University Archives, Cornell University.

Our program for the 1972 annual meeting will be on the preservation of "Hospital Archives," which has been our theme for the last three meetings.

We confidently expect that, as a result of this work, the rest of the country will look to us for guidance in this area in the near future.

Respecfully submitted,
Joseph A. Tamerin, M.D., Chairman

Fifth District Branch

To the House of Delegates, Gentlemen:

The executive committee of the Fifth District Branch held its first meeting of 1971 on February 16. The agenda covered reports on legislation affecting medicine, the Student American Medical Association, the proposed three-tier organization, the Fifth District insurance program under Charles J. Sellers & Co., Inc., and plans for the annual joint meeting of the fifth and sixth districts to be held in September at Hotel Hershey, Pennsylvania.

The Fifth District Branch hosted the tenth annual joint meeting of the Fifth and Sixth District Branches which convened on September 10, 1971, at Hotel Hershey, Hershey, Pennsylvania. The business meeting of the Fifth District Branch was held on September 10 at which time all committee chairmen gave their annual reports. It was voted to continue financial assistance to the Student American Medical Association, and the 1971-1972 budget was formally approved. It was reported that the Sixth District Branch had arranged for the 1972 joint meeting to be held at the Concord Hotel, Kiamesha Lake, New York, and the Fifth District had tentatively made plans to hold the 1973 joint meeting in Bermuda.

The educational program on September 11 was chaired by Mr. Henry Spiegelblatt, director of programs, Medical Services Administration, U.S. Department of Health, Education, and Welfare. He discussed "The Administration's Health Plan," and the Hon. Barber B. Conable, Jr., member of the House Ways and Means Committee, gave an enlightening report on "Health Insurance: How It Looks From the Ways and Means Committee."

A total of 264 members and guests at the banquet held on September 11 enjoyed a short but stimulating talk by George Himler, M.D., president of the State Medical Society, and were entertained by the evening's after-dinner speaker, Professor Irv Wermont, ambassador of wit and humor, whose topic was "Laughter—The Secret Weapon."

The scientific session on September 12 was chaired by John F. Devlin, M.D., Deputy Chief Medical Examiner of the City of New York. Dr. Devlin discussed "The Significance of Medical Examiners' Cases." The interest in Dr. Devlin's speech was evidenced by the lively question-and-answer period which followed. A new format was tried, this year the wives and guests were invited to the educational meetings since it was felt that the topics would be of interest not only to the physicians but also to their wives and guests.

George Lim, M.D., was thanked for his work on the golf tournament and regret was expressed that Dr. and Mrs. Henry I. Fineberg could not be with us. From all reports it appears that this was one of our most successful annual meetings.

I wish to take this opportunity to thank the officers of the Fifth District Branch for their cooperation and especially Russell H. Feltus, our executive director, for his handling of the minute details which make a program such as this outstanding.

Respectfully submitted,
Bernard J. Hartnett, M.D., President

Sixth District Branch

To the House of Delegates, Gentlemen:

The Tenth Annual Joint Meeting of the Fifth and Sixth District Branches was held on September 10, through 12, at Hotel Hershey, Hershey, Pennsylvania. The Fifth District Branch, as host, prepared a splendid session, including such guest speakers as, the Hon. Barber B. Conable, Jr., member of the House Ways and Means Committee, and Mr. Henry Spiegelblatt, director of programs, Medical Services Administration, U.S. Department of Health, Education, and Welfare.

Mr. Spiegelblatt spoke on the various health programs currently being investigated and discussed by H.E.W. Mr. Conable held everyone's interest as he reviewed the health insurance proposals and "How It Looks From the Ways and Means Committee." John F. Devlin, M.D., Deputy Chief Medical Examiner, New York City, provided the Sunday morning fare discussing a wide range of unusual medical examiner cases.

The Sixth District Branch held its annual meeting on September 10. The membership approved the budget and financial report for 1971. They also agreed to continue to contribute to the Student American Medical Association. The executive committee reported that Mr. Russell D. Sprague, of Binghamton, and the Rupert & Lutz Agency, Inc., were appointed insurance administrators for the Sixth District with the exception of Chenango County.

Rupert & Lutz Agency, Inc. was assigned to provide a catastrophic insurance program, while Mr. Sprague was authorized to establish group-member life, disability, office overhead expense, and other insurance programs.

The business session also included approval of changes in district bylaws to allow for the appointment rather than election of the district delegate. The membership agreed that this arrangement would provide continuity relative to our representation in the House of Delegates.

Once again, efforts were made to establish the three-tier committee structure. While this has been difficult to arrange, the membership, nevertheless, urged the district officers to seek ways to institute the program. It was suggested that each county medical society president be requested to appoint the chairman of the county committees to the district branch committees. The district committees would not be obligated to meet and would be used only when needed.

Professional Review Organization (PRO) Services, Inc., informed the district branch that Chase Manhattan Bank resigned as retirement plan trustee. In seeking a new bank to handle the plan, PRO reported that the Continental Bank and Trust Company, in Philadelphia, was willing to become the successor trustee if this was acceptable to the district membership. The members agreed to endorse the recommendation.

Thomas Flanagan, M.D., of Norwich, requested that the question of developing an acceptable standard definition of death be presented to the membership. The topic was of interest to everyone and several avenues of research were suggested. It was recommended that a study group be appointed to develop guidelines.

Other business activities included the announcement that the Sixth District Branch will host the eleventh annual joint meeting to be held on the second weekend after Labor Day, 1972, at the Concord Hotel. The membership was encouraged to attend. The Fifth District Branch announced tentative plans to hold the 1973 annual meeting in Bermuda; the Sixth District members supported the plans.

The following slate of officers were elected to serve, beginning February 1972–1974:

President—Paul M. DeLuca, M.D., Broome
First Vice-President—Cornelius F. Ryan, M.D., Otsego
Second Vice-President—Robert E. Good, M.D., Chemung
Secretary—Stephen W. Blatchly, M.D., Tompkins
Treasurer—Thomas Flanagan, M.D., Chenango

The Delegate will be appointed pending approval by the Medical Society of the State of New York in the changes of the 1971 Bylaws.

In conclusion, I wish to express my appreciation to our Trustee, C. Stewart Wallace, M.D., our councilor, Paul M. DeLuca, M.D., and to the district and county society officers for their assistance and contributions to the activities of the district during the past two years.

Respectfully submitted,
Jason K. Moyer, M.D., President

Seventh District Branch

To the House of Delegates, Gentlemen:

The Advisory Council met twice after the annual meeting of September 9, 1970, in Canandaigua. The scientific meeting for 1970 was cancelled due to the bankruptcy of the planning agency, the Leisure Planning Corporation. Legal counsel has informed us that the physicians will receive the majority of their funds back in a few months.

On October 15, 1970, the district branch with Geigy Pharmaceutical Co. and other health organizations, cosponsored a symposium on "Youth and Family in a Changing Society." An outstanding program of interest to physicians and others interested in sociologic implementation of change as it affects the family, was attended by over 500 participants.

The seven-tier committees continued to forward pertinent material to the county level.

Our district caucus of delegates took place in April. Future plans were formulated. We maintain liaison with the Eighth District Branch caucus, and the combined caucuses of the seventh and eighth districts have produced meaningful results and lend strength to both of our districts.

The Advisory Council supports the Monroe Plan sponsored by the Monroe County Medical Society, a foundation concept to maintain fee-for-service payments, and urges all physicians to become members of the plan.

The development of numerous types of health maintenance organizations in the district has been noted by the Advisory Council, and progress in this area has been followed. There are several organizations with different approaches, and these certainly indicate a trend for the future.

The Charles J. Sellers and Co. Insurance Agency asked and was granted approval to place the "umbrella type" liability coverage policy with another company because the former company asked to be relieved of responsibility for our group. Also Insurance Company of North America (INA) discontinued the disability insurance and accidental and dismemberment coverage, and this, too, was transferred to another insurance company, the Commercial Insurance Company of Newark.

PRO-Services Inc. manages the Keogh Plan of the district through the PRO Fund and maintains an agent in Rochester, who is available for consultation and information. This fund will probably transfer from the present trustee to a Philadelphia bank in the near future, and legal counsel informs us that this will not affect the status of accounts in any way.

Ralph C. Parker, Jr., M.D., executive director of the Rochester Regional Medical Program, at one of the Advisory Council meetings, outlined plans for training physicians' assistants and nurse practitioners to work with physicians to help relieve the shortage of physicians. Malpractice coverage appears to be a problem.

The *Bulletin* as part of the district branch's service to the public continues to request letters and articles from component counties for publication.

The president attended a meeting of each component medical society in the past year. His attendance at the sesquicentennial celebration of the Monroe County Medical Society on May 25, was one of the highlights of his visits. These meetings with members of the component societies makes physicians more aware of the existing medical organizations, and acquaintances are developed with members not usually seen at State and district meetings. The problems are found to be quite similar—shortage of physicians, increased workloads, concern about the cost of medical care and peer review, the burden of paperwork, and concerns for the future of the practice of medicine with the development of Health Maintenance Organizations. Quality of care is also a major concern.

The Advisory Council urged all counties not presently incorporated to investigate the feasibility of incorporation since it has certain advantages if litigation should develop.

Changes in the Bylaws to conform with the Constitution and Bylaws of the Medical Society of the State of New York have been sent to the State Medical Society for approval. If approved, copies of the changes will be mailed to members of the district branch and may be presented for approval at the next annual meeting.

As the treasurer's report reveals, our organization is financially sound.

The maintenance of good communications has been our goal, since it helps our organization as well as being beneficial to the county and State medical societies. The distance to travel to meetings and time involved are problems, but these can be answered only by dedication and some sacrifice.

The annual meeting of the seventh and eighth districts was held at the Otesaga Hotel, Cooperstown, on October 3 to 6, 1970. The following programs were presented: "Clinical Trends in Chemotherapy, Surgical Management of Oncology, and Radiotherapy," and "The Future of Health Care in America." Outstanding speakers participated. George Himler, M.D., was the principal speaker at the annual banquet.

The 1971 annual meeting of the Seventh District Branch was held in Cooperstown, on October 4, 1971.

The following officers were elected to serve until the annual meeting of 1973:

President—Eric Hirsch, M.D., Ontario
First Vice-President—David L. Koch, M.D., Seneca
Second Vice-President—James M. Flanagan, M.D., Wayne
Secretary—Kenneth J. Berkes, M.D., Yates
Treasurer—Gerald L. Glaser, M.D., Monroe
Delegate—Vincent I. Bonafede, M.D., Livingston

Eric Hirsch, M.D., of Ontario County, the next president of the seventh district will do a fine job, and the continued cooperation of all county societies is urged.

I would like to thank all those who have worked with me during my two-year term of office, the advisory committee members; all committee members; the staff and executive secretary; Donald M. Irish; his assistant, Mrs. Marie Bernhardi; and Harry Dexter, field representative from the State Medical Society. The help of all has been necessary for our success.

Respectfully submitted,
Wayne C. Templer, M.D., Chairman

Ninth District Branch

To the House of Delegates, Gentlemen:

The annual meeting of the Ninth District Branch was held at the Americana of New York on February 15, 1971.

George T. C. Way, M.D., in giving a report on his efforts to establish comprehensive health planning on a regional basis, stated that the Mid-Hudson Comprehensive Health Planning Corporation, Inc. had been formed and was composed of Putnam, Orange, Sullivan, Dutchess, and Ulster Counties; Westchester and Rockland Counties were excluded from submitting applications with these five counties. Dr. Way reported he was negotiating with the county governments of the areas involved, and to date, approval for one has been granted. By the end of the summer, Dr. Way hopes to have approval from all five counties.

Irving Weiner, M.D., commented on the value of the two meetings of the Ninth District Branch held at the Pforzheimer Building in Westchester, and it was agreed to hold another meeting of this type in late October or early November.

There was a brief discussion regarding the cancelled November travel meeting to Spain and Portugal. It was pointed out that some judgments had been obtained against the travel agency involved. However, there was little hope of receiving full financial restitution for the 30-odd subscribers, although pressure is still being exerted on the agency for complete reimbursement.

A new trip-meeting in December, 1971, to Sonesta Beach, Key Biscayne, Florida, is being considered by a committee composed of Wallace M. Sheridan, M.D., chairman, and officers of the district branch, assisted by Vincent Zingaro, executive director of Westchester County, and William Baltaks. Details will be furnished to the membership at a later date.

The list of officers who will serve their second and final year follows:

President—Irving Weiner, M.D., Orange
First Vice-President—Garrett W. Vink, M.D., Putnam
Second Vice-President—Burton Allyn, M.D., Rockland
Secretary—Wallace M. Sheridan, M.D., Westchester
Treasurer—James Keeley, M.D., Dutchess
Delegate—Irving Weiner, M.D., Orange

Respectfully submitted,
Irving Weiner, M.D., President

Public and Professional Affairs

Federal Legislation

To the House of Delegates, Gentlemen

The Committee on Federal Legislation is composed of the following members:

Charles N. Aswad, M.D., *Chairman*	Broome
Jacob Buchbinder, M.D.	Putnam
Robert B. Bryant, M.D.	Onondaga
Robert P. Coolidge, M.D.	Schenectady
Irwin Felsen, M.D.	Allegany
John G. Meagher, M.D.	Suffolk
George M. Saypol, M.D.	New York
Ethan L. Welch, M.D.	Monroe

Since the last session of the House, your committee has studied closely all bills introduced in Congress, especially in regard to national health insurance. The committee met in late April to act on directives of the House and to discuss pending Federal legislation mentioned in this report. At the time this report is being prepared, a meeting of the committee is scheduled to be held at the Country House, Syracuse, on November 10, the day before, and in preparation for, the Annual Conference of County Medical Society Legislation Representatives, on November 11. A supplementary report covering the meeting and the conference will be submitted to the House in February, 1972.

Committee meeting. Your committee met at State Medical Society headquarters on April 28. Your chairman presided. The first order of business was action on matters referred to the committee by the 1971 House of Delegates of the State Medical Society. The committee considered the following resolutions and disposed of them in the manner indicated:

Resolution 71-2, "Telephone Narcotic Orders,"—the committee voted that the chairman is to send a letter to the director, Division of Narcotics, U.S. Department of Justice, Washington, D.C., concerning this resolution, with copies to be sent to New York State congressmen. No definite response has yet been received in regard to this matter.

Resolution 71-1, "Advertisements in Mass Media on Mood-Changing and Analgesic Drugs,"—since a resolution was to be introduced at the annual meeting of the American Medical Association's House of Delegates, Atlantic City, in June, 1971, on this subject, no action was taken. We have been advised that the AMA House of Delegates adopted a substitute resolution.

Resolution 71-10, "Amendment to Social Security Act To Change Qualifying Dates,"—no action was taken on this resolution because of the pending introduction of a similar resolution at the AMA House of Delegates. We have also been advised that this resolution was adopted by the AMA House of Delegates.

Resolution 71-76, "Support of Continued Funding for Basic and Applied Research"—no action was voted on this resolution since it also was to be introduced at the AMA House of Delegates. We have also learned that this resolution was adopted with the amendment that the word "clinical" be inserted between "applied" and "research," wherever these words occur.

Resolution 71-3, "Repeal of Public Health Law Requiring Reporting of Drug Addiction," and *Resolution 71-4,* "Treatment of Drug Addiction"—no action was taken on these resolutions since the subject matter was then being considered by the State Medical Society's Committee on Alcoholism and Drug Abuse and Committee on State Legislation.

Health insurance. Before entering into a discussion of the several national health insurance bills pending before Congress, the committee considered the 10 basic principles, originally adopted by our House of Delegates several years ago and subsequently reiterated, what any legislation must contain regarding comprehensive health insurance, before approval will be granted by our State Medical Society. The committee voted unanimously to recommend to the Council the following resolution:

> *Resolved,* That the Council of the Medical Society of the State of New York direct, through a committee appointed by the president, a restudy of the ten basic principles regarding comprehensive health insurance programs adopted by the House of Delegates of the Medical Society of the State of New York to update them and to make them consistent with current thinking of the State Medical Society.

At its meeting on May 27, the Council referred this resolution to the Committee on Universal Health Insurance Law. A meeting was called by Walter T. Heldmann, M.D., chairman, on October 6, to consider the principles in question. Your chairman was invited to attend this meeting.

The committee unanimously agreed that since the original ten principles were developed in response to the need for evaluating New York State bills on universal health insurance of several years ago, revision was necessary to update the State Medical Society's policy on Federal bills currently under consideration.

Dr. Heldmann's committee developed a new statement of principles to be submitted to the Council. By using these new guidelines, if approved, your Federal Legislation Committee will be able to evaluate all universal health insurance bills in keeping with current State Medical Society policy.

Prior to our meeting materials had been sent to each member of the committee on the major national health insurance proposals. These included: (a) Medicredit (AMA), H.R. 4965, S. 987; (b) Kennedy Bill, S. 3, H.R. 22; (c) Javits's Bill, S. 836; (d) Burleson Bill, H.R. 4349; (e) Hall Bill, H.R. 177; (f) Dingell Bill, H.R. 48; and (g) Pell Bill, S. 703.

There was a great deal of discussion about the Kennedy Bill and Medicredit. The Nixon Bill which had just been introduced in the House of Representatives on the day before the meeting, received much consideration. The committee finally decided that it would take no action on any of the major health insurance proposals at that time. The consensus was that more study should be given to the proposals, especially the Medicredit Bill, the Kennedy Bill, and the Nixon Proposal. All bills will undergo considerable revision, and support by the State Medical Society should be withheld from any bill not meeting all the criteria set by the House of Delegates with any subsequent revisions. According to reliable reports, no action is expected to be taken on these bills during the 1971 session of Congress.

It appears that Congress will move rather deliberately into the field of national health insurance and perhaps take one step at a time. The substantial underestimation of Medicare and Medicaid costs, and the obvious impact on demand for health care which they caused, have made many in Congress wary of plunging into a big new program in the health field.

If the Congress does approach national health insurance on a step-by-step basis, a reliable source estimates that these steps would be only beginning steps. Some of these might take place during 1972. Some may not. It is possible that all of these and even a few more layers might be added in a presidential election year. At any rate, here are some steps which reliable sources believe may take place:

1. Replacing Medicaid with a federally-paid health insurance policy for the poor.
2. Some form of catastrophic illness insurance, which is the most popular health proposal on Capitol Hill at the present time.
3. Some form of utilization review and cost controls for Federal health programs which may take the form of peer review.
4. Probably some form of the Administration's bill which would require employers to pay most of the cost of health insurance for employes and their families.
5. A limited Federal subsidy for Health Maintenance Organizations (HMO) especially on an experimental basis and in areas where health services are below the average, such as urban slums and rural poverty areas.

At the time of submitting this statement, it has been reported that hearings will begin in October, 1971, by the House Ways and Means Committee, Hon. Wilbur Mills, chairman, on the question of national health insurance.

This will further focus on this issue as the prime domestic issue of the forthcoming 1972 presidential election year.

Procedure. The committee decided also to follow the same procedure adhered to during the previous years in considering Federal legislation, namely, to consider the actions taken by the AMA's Legislation Committee.

Speakers. Your committee had the privilege of having two guest speakers at its meeting. George Himler, M.D., our president, participated in the meeting and reported on his appearance before the public hearing conducted by Senator Kennedy in New York City on health care. He also alerted the committee to plans under consideration for the sponsoring of Federal legislation in the area of malpractice insurance. Kenneth G. Bugan, assistant director, AMA Department of Field Service, reported on latest developments in Washington and the American Medical Association's activities in regard to them.

Acknowledgments. Your chairman wishes to express to each member of his committee his personal thanks for the help they rendered to him in the discharge of his duties as chairman. He is also appreciative of the assistance rendered to him by C. Stewart Wallace, M.D., past chairman, and Paul M. DeLuca, M.D., present chairman, Commission on Public and Professional Affairs; Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president; Guy D. Beaumont, director, Division of Public Affairs, and Martin J. Tracey, J.D., coordinator, legislation activities.

Respectfully submitted,
Charles N. Aswad, M.D., Chairman

State Legislation

To the House of Delegates, Gentleman:

The Committee on State Legislation is composed of the following members:

John H. Carter, M.D., *Chairman*	Albany
Gerald L. Glaser, M.D.	Monroe
Herbert E. Joyce, M.D.	Erie
Henry W. Kaessler, M.D.	Westchester
Andrew W. Lawrence, M.D.	Suffolk
John J. Noonan, M.D.	Rensselaer
William J. Ryan, M.D.	Onondaga
Merritt F. Spear, M.D.	Clinton
Stanley Stark, M.D.	Kings
Richard E. Sullivan, M.D.	Broome

The final results of the five-month session, one of the longest in history, of the 1971 New York State Legislature were recorded when the thirty days allowed the Governor to act on the more than 1,500 bills left to him by the legislators ended at midnight, July 6, 1971. Notable among the actions taken by the Governor was the vetoing of a bill that would have permitted nurses to practice medicine and the signing into law of two bills granting immunity from suit to peer review committees and establishing a ban on disclosure of their proceedings and records. A barometer of the volume of business transacted was the fact that of the 15,000 bills introduced, one-tenth were passed and 1,200 of these were approved by the Governor, while about 300 were rejected.

As a result of this voluminous and often controversial activity, your committee, staff, and legislative counsel were extremely busy in presenting the medical profession's views to our legislators. The council was kept abreast of developments through progress reports submitted by your committee.

Plans are now under way for our participation in the 1972 session of the State Legislature which commences in early January. Since these plans will not be finalized until our Annual Conference of County Medical Society Legislation Representatives is held in Syracuse, on November 11, 1971, a supplementary report will be submitted to the house in February.

The following is a brief review of actions by the Governor on bills passed by the Legislature as well as bills which were acted on by the Legislature but failed to receive approval.

Actions by Governor

MSSNY bills become laws. Four bills pertaining to medical review committees and their records, initiated and supported by MSSNY, were signed into law. Two laws provide that physicians who serve as members of medical review committees of county or State medical societies shall not be liable in damages for actions and recommendations by them within the scope of their functions as such members, if without malice. Similar protection is given to societies in which committees function, (Chapters 995 and 1109, Laws of 1971). Two laws prohibit disclosure of the proceedings and records of medical review committees and hospital utilization committees, (Chapters 989 and 990, Laws of 1971). The reasoning behind the two sets of laws is that one set applied to the basic Education Law as it existed prior to September 1, 1971, and the other set applies to the law as it was changed following that date.

Nursing redefinition bill vetoed. The Governor's veto of two bills (A. 6164-A, Pisani, *et al.*; S. 1918-B, Laverne), which would redefine the practice of nursing, announced in his memorandum in which he quoted substantially the position of our State Medical Society, put a successful conclusion to our long and strenuous efforts to defeat the measures. In several memoranda to legislators and later communications to the Governor, our State Medical Society contended that the bills were so broad in scope as to permit nurses to practice medicine and, that, in view of their lack of training for such responsibility, this would result in a definite erosion of patient care.

Your representatives were most active in opposing the Laverne-Pisani Nursing Redefinition Bills. We met with both legislators, discussed our reasons for opposition at length, and submitted several memoranda outlining our views. The bills were amended, but not to our satisfaction. The amendment added to the proposed definition, the words "and executing medical regimens as prescribed by a licensed or otherwise legally authorized physician or dentist." The words permitting nurses to diagnose and treat, however, were not changed, and we continued our opposition to the bill, as amended, since it would allow nurses to practice medicine.

When we found that in spite of our vigorous opposition the bill was moving, Henry I. Fineberg, M.D., our executive vice-president, called an emergency telephone conference to enlist the aid of county medical societies. This conference alerted the regional representatives to contact all our county medical societies and the members of our panel of liaison physicians.

Telegrams were sent to all county medical society presidents and executive secretaries, as well as to all members of our panel of liaison physicians, urging them to voice their vigorous opposition to their senators and assemblymen. A follow-up memorandum was sent by Dr. Fineberg to all these persons and county medical societies, enclosing a copy of the bill and our memorandum in opposition. A similar statement was sent to the Governor.

Revision of Education Law. The Governor signed, without comment, a voluminous bill (S. 350, Laverne) which revises extensively provisions of the Education Law concerning admission to, and regulation of certain professions, including medicine, (Chapter 987, Laws of 1971). The new law is the final version of the perennial proposal which MSSNY had considered for many years. Since most of MSSNY objections to the measure had been met in part and a chapter amendment (S. 4120-B, Laverne) meeting MSSNY's objections to the procedure of the grievance committee structure, had passed the State Legislature, the State Medical Society took no position on S. 350. The chapter amendment (S. 4120-B, Laverne) also was signed into Law by the Governor (Chapter 994, Laws of 1971).

A complete report on these laws is being submitted to the House of Delegates by the Council Committee on Education Law Revision.

Physician's associates proposal approved. Nine separate proposals, including one sponsored by MSSNY, were introduced into the State Legislature providing for physician's assistants. The Governor's bill (S. 5703-Lombardi, *et al.*) which was, in general, acceptable to the State Medical Society, was the measure finally signed into law by the Chief Executive, (Ch. 1135). However, a chapter amendment to this law (A. 7075, Ginsberg) was vehemently opposed by MSSNY. The amendment, which was also signed into law (Chapter 1136, Laws of 1971), was opposed by our State Medical Society on the grounds that it would emasculate the concept of physician's assistants and because it increased the Advisory Council from 10 to 12 members, in addition to the Chancellor of the State University, with only 5 physicians.

Nonprofit medical corporations. Legislation authorizing the creation of nonprofit medical corporations (S. 5704-A, Lombardi) was also approved by the Governor (Chapter 1139, Laws of 1971). Medical corporations organized under the new law are required to offer their services primarily in connection with a prepaid comprehensive health care plan and participating physicians must devote full time to the corporate enterprise.

MSSNY filed objections to the bill on the basic grounds, among others, that the bill set up a type of plan which has not yet proved to be a better vehicle for providing medical services than private practice and favored such corporations to the detriment of the private practitioner.

Abortion referral agencies. Three proposals, supported by our State Medical Society, relating to abortion referral agencies were made law, (Chapters 725, 776, 878, Laws of 1971). These new laws, in brief, would (1) ban abortion referral agencies operating for profit: (2) make it unlawful for a person or firm doing business in New York State to furnish a report of referral for abortion services or of an inquiry or request therefor to any person or governmental agency with certain exceptions; and (3) prohibit hospital or facility which delivers health care from granting or receiving discount to or from any medical referral service or in any manner split fees with a medical referral service.

Real estate tax exemption. Legislation vigorously opposed by our State Medical Society that subjects to "local option" the tax exemption of real property owned by certain nonprofit organizations, including medical societies, was signed by the Governor (A. 7228, Rules—Chapter 414, Laws of 1971). Another bill (A. 7227, Rules) was also made law (Chapter 417, Laws of 1971) and provides that all real property for which tax exemption is allowed shall be subject to service charges for police protection, fire protection, street and highway construction, maintenance and lightening, sanitation and water supply.

In a last minute development brought about by the crisis in New York City's fiscal situation, the bill (A. 7228) was passed by both houses. The bill was part of the tax package agreed on by the State Legislature's leaders and the City of New York. Prior to this arrangement, the bill was slated to die in committee.

Podiatry bills signed. Three bills which together establish the right of a licensed podiatrist to administer or prescribe narcotics were approved by the Governor (Chapters 997, 998, 999, Laws of 1971). The State Medical Society opposed all of these measures, despite their requirement that such right is conditioned on the podiatrist's certification by the Education Department in accordance with qualifications established by the Commissioner of Education.

Treatment of minors—parental consent. Several bills dealing with the treatment of minors without parental consent were introduced during the session, and one of these reached the Governor's desk (A. 6585). This bill which would have provided, in part, that any minor eighteen years or older, or has married, may give effective consent to medical, dental, and health services for himself, was vetoed by the governor.

Regents scholarships—shortage areas. A new statute approved by the Governor provides that at least 30 per cent of the total scholarships awarded annually for professional education shall be awarded to students beginning or engaged in professional study in medicine who agree to practice on completion of training in area in State designated as having shortage of physicians. (S. 3682-D, Chapter 964, Laws of 1971).

Blood—a service statute. Another favorable result of the session was the enactment of a bill supported by our State Medical Society and signed into law by the Governor before adjournment of the Legislature, which declares various activities incident to the providing of blood to be a public health service and not the sale of a commodity (Chapter 195, Laws of 1971). This measure affords hospitals and physicians some protection against damage actions arising from the providing of blood.

One chiropractic bill vetoed: others signed. The Governor vetoed a bill (S. 6792, Rules) which would have allowed an additional examination to an applicant for a chiropractic license who has been in practice between seven and fifteen years and has failed such an examination five times. He approved, however, other bills concerning chiropractic and opposed by the State Medical Society which: (1) provide that medical expense indemnity under the Insurance Law shall include reimbursement for care by licensed chiropractors (A. 3372, Flack—Chapter 982, Laws of 1971); and (2) stipulate that if an insurance policy includes reimbursement for service within the lawful scope of a licensed chiropractor, the subscriber would be entitled to reimbursement when a chiropractor performs such service (A. 3373, Flack—Chapter 983, Laws of 1971).

Also signed by the Governor was S. 6480—Chapter 991, Laws of 1971, which provides that a license to practice chiropractic shall not permit the holder to use diagnostic or therapeutic methods involving chemical or biologic means, or to utilize electrical devices except those approved by the board as essential to chiropractic practice.

Actions by legislature

During the session of the State Legislature some 19 proposals in connection with chiropractic were killed. All bills were strongly opposed by MSSNY. Among those defeated involved proposals on x-rays, clinical laboratories, and Workmen's Compensation.

MSSNY opposed bills—defeated. Principal among the bills opposed by MSSNY which did not pass the State Legislature was the Governor's perennial universal health insurance proposal.

Universal health insurance. The Governor sent to the legislature a universal health insurance program patterned after his 1970 proposal, "for study purposes," pending action by the Congress on President Nixon's recommendations in the same field. Noting that his own previous proposal had not been enacted, the Governor stated he is "heartened, nevertheless, that the principle of universal insurance is at last gaining ground where it is most appropriate—at the national level." This bill died in committee in both the Senate and Assembly.

Recodification of mental hygiene law. Following a study of the bill providing for the general recodification of the Mental Hygiene Law (S. 5641) by the chairman of our Committee on Mental Health, Allison B. Landolt, M.D., several objections were found in the bill, and these were incorporated in the memorandum submitted to the Legislature. The bill passed the Senate but died in the Assembly.

Psychologists. Two bills relating to the licensing of psychologists (A. 5578-A, Biondo and A. 5579-A, Biondo), which would have given psychologists unlimited rights in treating any or all emotional disorders, were killed on the Senate calendar after winning Assembly approval. These bills, likewise, were vigorously opposed by the State Medical Society.

Workmen's Compensation. Two bills introduced late in the session involving Workmen's Compensation also were opposed and defeated. These bills (A. 7896; A. 8049, both Rules), would have authorized the chairman of the Workmen's Compensation Board to permit medical centers, jointly operated by labor and management, to provide medical services under the Workmen's Compensation Law on an outpatient basis.

Other bills defeated. Other bills also opposed by the State Medical Society and failing to come out of committee included one that would have established a State Board of Human Research in the Education Department (A. 1837, Stavisky); another measure that would have repealed the Metcalf-Hatch Act of 1952, which permits use of impounded animals for scientific tests (A. 109, Jerabek); and a proposal that would have extended inpatient hospital coverage under health insurance plans for laboratory and x-ray services to outpatient departments (A. 2064-A, Lerner).

Family physician. A draft of a bill that would set up a category known as the "family physician" the provisions of which would have made "family physician" an inferior category of practice by lowering the educational requirements necessary to become a "family physician" was circularized but not introduced. The State Medical Society strongly opposed this proposal.

MSSNY supported bills—not passed. Although the two bills sponsored by the State Medical Society pertaining to peer review committees and their records passed the State Legislature and were signed by the Governor, other items of the State Medical Society's

1971 State Legislation Program, despite vigorous efforts by representatives of our State Medical Society, failed to reach a vote in the Senate or Assembly. One of the proposals, namely, the so-called clinical laboratory bill (S. 4767-A, Hudson) which would have restored the physician's right to bill a patient for laboratory services performed in his behalf, was reported out of committee in the Senate, but died on the calendar of that house.

Other measures relating to a change in the statute of limitations in malpractice cases involving foreign bodies (A. 1790, Corbett), immunity from suit for hospital emergency room personnel (A. 3712, Lerner), and emergency rescue teams (A. 3713, Lerner) died in various committees to which they had been assigned. Medical Society of the State of New York's bill (A. 6729; S. 5523) to establish a new health manpower category of "physician's assistant" was left in committee as Governor Rockefeller's "physician's associates" proposal to the same end was approved by the Legislature and enacted into law.

Legislation Information Center. For the seventh consecutive year, the Legislation Information Center, directed by our coordinator, Legislation Activities, continued to be a vital factor in the implementation of the work of your committee. Once again, the center proved that it is a successful mechanism for supplying answers to inquiries regarding State and Federal legislation, and that it is a worthwhile tool for disseminating news about pending bills. To provide current information, the center maintains an up-to-date filing system for copies of important health-related bills filed both in Albany and in Congress.

When the center was first opened in 1965, much of its work took place during the session of the State Legislature. As in other areas of present-day living, change has expanded its activities which now are year-round. The center continuously furnishes answers to questions received not only by mail, but over the telephone and examines all projects pertaining to legislation, particularly public hearings. Notices of public hearings received by the center are quickly transmitted to key persons in our State Medical Society in order that our organization may take a position in regard to the subject of the hearings and to designate physicians knowledgeable in the subject to appear and testify at the hearings.

While the principal goal is to help individual physicians and county medical societies, assistance also was given to hospitals and allied health organizations. There has been a growing number of requests from other state medical organizations for copies of bills and other matters pending before our State Legislature and for extensive related information requiring a great deal of research. Also during the past year, a comparatively new field of action was intensified. Help was given to certain Council committees, such as the Committee on Education Law Revision and the Committee on Universal Health Insurance Law. The center assembled numerous materials involving bills and other printed material, duplicated and distributed them to members of the committees in cooperation with the chairman.

Capitol News. The most effective medium available to our State Medical Society in communicating between our State Medical Society's legislation committee and county medical society legislation chairmen, as well as members of our panel of liaison physicians and other key persons, is our weekly legislative bulletin, *Capitol News*. Twenty-one issues of this publication were mailed each week during the session of the State Legislature and following the completion of the Governor's thirty-day period. A strong indication of the value of this publication is the growing number of requests from individuals and groups to be added to the mailing list. For the fourth successful year, William W. Tyler, a former Associated Press correspondent in Albany, edited and prepared copy for the publication under the direct supervision of our coordinator, legislation activities.

Public hearings. A significant indication of the growing tendency of the State Legislature to extend its operations beyond the regular session on a continuing basis throughout the year was the large number of public hearings conducted by its committee. The State Medical Society played an active and important role in these meetings. On several occasions our representatives appeared in person and testified, and our coordinator, legislation activities, monitored many of them. Among the subjects on the agenda were abortion, venereal disease, treatment of minors and parental consent, child abuse, physician shortage, and standards for admission to hospital staffs.

In addition, private conferences were held with committee chairmen to discuss problems of major concern to the legislators, the public, and the medical profession. On one notable occasion, our president, executive vice-president, legal counsel, indemnity representative, and our insurance carrier's spokesman, met with Senator Tarky Lombardi, Jr., chairman, Senate Health Committee. The purpose of this meeting, held at the Capitol, was to explore problems relative to malpractice suits and the feasibility of utilizing legislation as a partial solution.

These public hearings and private conferences serve several valuable purposes. They furnish legislators with unique information they are seeking that is available only from doctors of medicine. They demonstrate to the legislators that physicians are not only able but willing to cooperate. They present exceptional opportunities for physicians and law makers to meet face-to-face and exchange views which can be mutually beneficial as well as helpful to the public.

Legislator contact program. To obtain as much help as possible from our physicians at the local level, your committee sponsored a contact program with State legislators. Participants in this project, known as the MSSNY Panel of Liaison Physicians, are doctors of medicine who are not only able, but willing, to talk personally to their own State assemblyman and senator in their homes, or offices, in their respective neighborhoods. The regional representatives of our State Medical Society were most helpful and very active in this project.

Committees. In an attempt to develop a well-rounded State Legislation Program, your chairman invited the chairmen of the various committees of our State Medical Society to submit their suggestions regarding the introduction of bills and their views on bills which might come before the State Legislature. While a few answers were received, there is room for considerable improvement. Your chairman is hopeful that, by continuing to request the cooperation of these chairmen year after year, ultimately sufficient replies will be received to reflect a considerable segment of the opinions held by the committees of our State Medical Society.

General. In addition to preparing numerous memoranda to be submitted to the committees of our State Legislature in Albany, our legislative counsel and his assistants were very active in contacting the leaders of the Legislature, the chairmen of key committees in both the Assembly and Senate, and other outstanding legislative representatives in behalf of our State Medical Society.

At State Medical Society headquarters, our coordinator, legislation activities, worked closely with your chairman and our legislative counsel in Albany. Continuous contact was maintained, particularly by telephone, especially during the hectic days of the session when several telephone contacts were made each day.

Acknowledgments. Since there has been a tremendous amount of work involved and numerous people have been engaged in our activities, our committee expresses its gratitude to all those who cooperated during the 1971 session. We are especially thankful to George W. Foy, Esq., Legislative Counsel, and his assistants, Gerard L. Conway, Esq., and John C. Rice, Esq., for the time and effort they devoted to our program. We also convey our thanks to Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president; C. Stewart Wallace, M.D., past chairman, and Paul M. DeLuca, M.D., present chairman, Commission on Public and Professional Affairs. A vote of thanks also goes to Guy D. Beaumont, director, Division of Public Affairs; our regional representatives, William Baltaks, Harry Dexter, Coleman Fineberg, and Gerald Sullivan; and Martin J. Tracey, J. D., coordinator, legislation activities.

Respectfully submitted,
John H. Carter, M.D., Chairman

Education Law Revision

To the House of Delegates; Gentlemen:

The Committee on Education Law Revision consists of the following members:

Victor J. Tofany, M.D. *Chairman*	Monroe
Walter T. Heldmann, M.D.	Richmond
Robert B. King, M.D.	Onondaga
Stanley Stark, M.D.	Kings
Francis A. Stephens, M.D.	Albany
Donald C. Walker, M.D.	Albany

Following the 1971 session of the House of Delegates, your committee worked diligently to effectuate its recommendations on the proposed revision of the New York State Education Law. Our main thrust was to obtain modifications of the principal bill, S. 350 and (A. 359), which would amend the State Education Law in relation to the regulation of the practice of certain professions, including medicine. The bill was enacted into law and is now known as Chapter 987, Laws of 1971. At the same time, certain amendments to this law were also enacted. Some of these so-called "chapter amendments" were favorable to the interests of the State Medical Society.

The following is a brief explanation of the efforts made by your committee in the principal areas of concern and the ultimate outcome:

Definition. Under the old law, the practice of medicine was defined as diagnosing, treating, operating, or prescribing for any human disease, pain, injury, deformity, or physical condition. The House had approved seeking the deletion of the word "physical" and the addition of the words "or preventing." We succeeded in having the word "physical" deleted in one draft of the bill, but it was reinserted in the final version. In spite of all-out efforts by your committee to obtain change, the new law makes no basic change and retains the essence of the old definition.

Hearings. The House of Delegates recommended that an amendment be sought in the proceedings of professional misconduct cases so that a hearing could be held with the results being submitted to the Committee on Professional Conduct, which would then transmit its findings to the Board of Regents. Your committee's efforts in this regard were successful, and the new law contains such a provision. As a result, the objections of the Medical Society of the State of New York to a single board were withdrawn. The law as finally enacted makes provisions for a single board.

Crime. The original definition of "crime" was not acceptable to the State Medical Society. The term, however, was clarified and spelled out, as recommended by the House of Delegates, in the new law.

Utilization. The definition of "Utilization Committee" in the main bill was incomplete and did not reflect changes made in the law within the past few years. Your committee objected to this definition and recommended that changes be made. These changes were incorporated into the law as enacted. In addition, two bills which further enlarge on the definition were enacted into law at the request of our State Medical Society. These new laws grant protection from legal action to members of peer review committees of state and county medical societies and to the societies as groups when such committees function as parts of them, as well as granting protection to the records of such committees.

Unanimous vote. The House recommended that if all of these changes were made, objection to a four-fifths vote replacing the unanimous vote rule in grievance committee cases would be withdrawn. The law as finally enacted included the four-fifths-vote provision.

Your committee's efforts were complicated by the fact that the New York State Nurses Association attempted to amend S. 350 in regard to the sections pertaining to nursing. This amendment would have the effect of defining the practice of nursing as the practice of medicine. Our State Medical Society's strenuous opposition to this amendment resulted in success when the Governor vetoed the proposal.

Your chairman takes this opportunity to thank the members of his committee and to acknowledge the excellent cooperation and assistance rendered by our legislative counsel and by headquarter's staff members.

Respectfully submitted,
Victor J. Tofany, M.D., Chairman

Organization, Policies, and Legal Matters

Professional Medical Liability Insurance and Defense Board

To the House of Delegates, Gentlemen:

The members of the Professional Medical Liability Insurance and Defense Board are as follows:

Arthur J. Mannix, Jr., M.D., *Chairman*	Westchester
David Kershner, M.D., *Vice-Chairman*	Kings
A. L. Loomis Bell, M.D.	Kings
George L. Collins, Jr., M.D.	Erie
Robert George Hicks, M.D.	New York
Peter La Motte, M.D.	New York
Raymond S. McKeeby, M.D.	Broome
Carl Goldmark, Jr., M.D., *ex officio*	New York
Thomas F. McCarthy, M.D., *ex officio*	Bronx
William F. Martin, Esq., Counsel, *ex officio*	New York
Frank W. Appleton, indemnity representative, *ex officio*	New York

The American Medical Association recently reported that one physician in six now practicing in the United States has been sued for malpractice during his professional career; that in New York and the District of Columbia, one out of five has been sued; and in California, the rate is one out of four. Some experts calculate that before long one out of three physicians will have been charged with malpractice sometime before his retirement.

To compensate for skyrocketing damage awards, insurance companies across the country have had to raise their premiums substantially. Dozens of malpractice insurers have dropped out of the field in the past five years because, despite the rate increases, income did not keep up with losses.

Most physicians have read about the situation in Hawaii in 1970 where two leading insurance companies suddenly withdrew from the malpractice field, and one fourth of the Hawaiian physicians learned that they could not obtain coverage from any other carrier. In Pennsylvania there were drastic rate increases, and at one time in that state during 1970 there was only one company writing malpractice coverage for surgeons. In 1969, the California Medical Association discovered that the number of companies providing liability insurance had dwindled from 9 to 3 in just two years. At times a few states have been without any malpractice insurance at all.

Rates. In our own program, rates have increased 439 per cent in the last five years. The average size of claims has been rising rapidly. Within our own State Medical Society Program the statistics read as follows for the average cost of closed cases:

1965	$ 5,662
1966	7,531
1967	7,704
1968	8,085
1969	8,879
1970	13,272

Company officials tell us that they are hopeful that this latest increase as of July 1, 1971, will be the last of any "large" increases. They are hopeful that their system of developing trend factors are proper, and that we have begun to reach a plateau. We certainly hope they are right. However, whenever rates go up, there is a temptation for physicians in various specialties to run off on their own in splinter groups. The members of the Professional Medical Liability Insurance and Defense Board have seen time and time again the advantages of physicians in all specialties uniting in the common defense of a malpractice case. Within our program, premiums and losses are tabulated by specialty so that we are paying premiums based on losses for our own specialty or type of practice.

Specialty groups insuring on a nationwide basis have not fared too well. Let us see what happened to some of these groups within our own State.

St. Paul Mercury discontinued their program through the American College of Radiologists in 1953.

Lloyds of London and/or other companies beginning in 1953 started writing a considerable volume of malpractice insurance. The November, 1959, issue of the *AMA News* carried an article on the liquidation of British Commercial Insurance, Ltd., one of the "other companies." Since that time Lloyds has not been writing much malpractice insurance in the State of New York.

Lloyds was the carrier for a program started in 1954 by the American College of Pathologists. This was discontinued by the College in 1958.

British Commercial Insurance, Ltd., was one of the companies that had insured members of the American College of Physicians. On November 13, 1959, the insurance administrator for this program regretfully told their members of the "voluntary liquidation" of this company.

Interstate Fire and Casualty Company started writing for members of the American Society of Anesthesiology in 1952. Effective February 15, 1961, this company canceled all anesthesiologists' policies in New York State, irrespective of stated expiration dates.

The Professional Insurance Company of New York discontinued writing policies for anesthesiologists in January, 1963.

Michigan Mutual began writing malpractice insurance for the American College of Surgeons in 1955 but stopped writing new and renewal policies on September 1, 1963.

The American Insurance Company wrote for members of the American Academy of General Practice for eight years but refused to renew as of January 1, 1965.

The Interstate Fire & Casualty Company, writing a program for the American Academy of Ophthalmology and Otolaryngology, refused to write limits over $100,000/$300,000 as of January 1, 1966.

Fidelity General, as of September, 1966, would no longer issue policies in excess of $25,000/$75,000 in New

York State for members of the International College of Surgeons.

Public Service Mutual, writing insurance for members of the New York State Society of Anesthesiology since January 1, 1963, did not renew policies after January 1, 1967.

The Professional Insurance Company of New York, as of January 1, 1968, would write limits of only $15,000/$45,000 for a period of time until they made other arrangements for reinsurance.

St. Paul Fire & Marine Insurance Company refused to renew professional liability coverage for the American Academy of General Practice in the New York City area as policies expired, commencing late in 1969.

Suggested solutions. Many publications have carried suggested "solutions" to this malpractice dilemma. You may be interested in knowing that the AMA programs are largely patterned after our New York program. Articles discussing the AMA program have referred to a "new idea" of peer review to determine a physician's insurability. In our own program, we have had for many, many years an agreement with our insurance carrier that no physician's insurance would be canceled (except for nonpayment of premium) unless a committee or board of physicians appointed by the State Medical Society agreed that cancelation was justified. Our county advisory committees which review pending cases have been in existence for a number of years. The AMA points with pride to the fact that they have reduced the expense factor from the usual 40 per cent to something in the neighborhood of 30 or 35 per cent. Ours is currently 15.5 per cent, we are way ahead of them.

What can we do to stem the tide of rapidly rising malpractice costs in our State?

First and foremost, we think it imperative that the teaching institutions within our State take a real interest in the problem and allow time for the discussion of malpractice prophylaxis. All members of the Professional Medical Liability Insurance and Defense Board are willing to cooperate with any institution willing to set up such a program.

Slowly but surely we hope to make progress by having some laws changed within our State. During the past legislative session, bills were approved granting immunity from liability for members of peer review committees. The confidentiality of peer review committee proceedings was also recognized. This was a big step to assist self-policing within the medical profession.

Statute of limitation. There are other changes that are being explored. We have mentioned in the past that the long lag between the time of an act of alleged malpractice and the time the suit is concluded makes this a very difficult line of insurance to write. The statute of limitations in our State has gradually been expanded over the past years, and we would like to see it rolled back to some extent. In the case of children, the statute does not even start until the minor is twenty-one years old, and yet we now see the voting age being lowered to eighteen years. We hope to change the law so that the statute will commence when the minor becomes eighteen years old.

We would like to see the statute itself tightened, particularly in the realm of foreign objects. Not too long ago we had a court decision which said that in foreign-object cases the statute would not begin to run until the patient was aware that a foreign object, such as a needle or a sponge, had been left in his body. Shortly after that decision, we received a claim alleging that a needle had been left in a patient at the time of an operation in April, 1948. The insurance carrier at the time was the Yorkshire Indemnity which stopped writing malpractice insurance in 1949. They had long since paid out in malpractice loss dollars much more than they ever collected in malpractice premiums; yet, they were called on to accept this claim presented twenty-one years after the event. We hope that some change can be made to correct this situation.

Expansion of definition of "court costs." When a malpractice case is won, the defendant is entitled to collect costs, but by definition the "costs" are rather limited. We hope to introduce bills to expand the amount of court costs that will be collectible to include the costs of transcripts and perhaps even attorneys' fees.

Service of a summons improper unless the case has been put "on file" with the appropriate court. At various symposiums we often hear the plaintiff's attorneys talk about statistics in 1969 where there were over 7,000 suits filed, and only about 170 were for malpractice. We know that in 1969, in our program alone, we had 552. The problem is that these cases were not put "on file" at the court and thus did not start moving along the court calendars. This is just one other small item that slows down processing of these cases and relates to this interminable lag that we have mentioned in the past.

Informed consent. Informed consent is an increasing problem and to date no easy solution has been found in the way of potential legislative changes. We are doing our best to let the physicians in our State Medical Society know the potential dangers of this problem.

In spite of all this effort, the best solution for the malpractice problem is for each practicing physician to be aware of the pitfalls so that he can protect himself as best he can.

Respectfully submitted,
Arthur J. Mannix, Jr., M.D., Chairman

Constitution and Bylaws

To the House of Delegates, Gentlemen:

The Council Committee on Constitution and Bylaws consists of the following members:

John E. Lowry, M.D., *Chairman*	Queens
Leo S. Drexler, M.D.	Kings
Stuart L. Vaughan, M.D.	Erie
William F. Martin, Esq., *ex officio*	New York

During 1970 and 1971, the committee reviewed and reported to the Council on proposed amendments or revisions of the bylaws and/or constitution and bylaws submitted by the Medical Societies of the Counties of Albany, Bronx, Broome, Chautauqua, Columbia, Erie, Ontario, Queens, Schenectady, Seneca, Steuben, and

Westchester and also the Bylaws of the Fifth District Branch.

The Council, at its May 21, 1970, meeting, adopted the committee's recommendation that the revised Bylaws of the Medical Society of the County of Albany and the Medical Society of the County of Westchester be approved, and that the revised Bylaws of the Fifth District Branch be approved with recommended changes to be submitted to the Fifth District Branch. The Council also approved amendments to the Bylaws of the Medical Society of the County of Schenectady and the Constitution and Bylaws of the Medical Society of the County of Steuben at this meeting.

At its meeting on June 18, 1970, the Council adopted the committee's recommendation that proposed amendments to the Bylaws of the Broome County Medical Society, including recommended changes, be approved and transmitted to Broome County Medical Society.

Proposed amendments to the Constitution and Bylaws of Bronx County Medical Society and the bylaws of the Medical Societies of the Counties of Columbia, Erie, and Seneca, including changes recommended by the committee for transmission to these four county medical societies, were approved by the Council at its meeting on January 28, 1971.

The committee's recommendation that a proposed amendment to the Constitution and Bylaws of the Medical Society of the County of Ontario be approved, because it was not in conflict with the Constitution and Bylaws of the Medical Society of the State of New York, was adopted by the Council at its meeting on March 25, 1971.

A proposed amendment to the Constitution and Bylaws of Bronx County Medical Society was approved by the Council at its meeting on May 27, 1971, as recommended by the Committee, because it was not in conflict with the Constitution and Bylaws of the Medical Society of the State of New York.

The Council, at its June 17, 1971, meeting, adopted the committee's recommendations that the revised Constitution and Bylaws of the Medical Society of the County of Chautauqua and the Medical Society of the County of Queens, including recommended changes, be approved and transmitted to the Medical Society of the County of Chautauqua and the Medical Society of the County of Queens.

At its meeting on September 23, 1971, the Council approved proposed amendments to the newly revised Bylaws of the Medical Society of the County of Erie including corrections recommended by the committee for transmission to the Medical Society of the County of Erie.

Details of the foregoing revisions, amendments, and recommended changes are on file and available for your perusal, if desired, in the office of the State Medical Society.

Proposed amendments to the Constitution and Bylaws of the Sixth District Branch and a proposed revision of the Bylaws of the Medical Society of the County of Westchester have been received for study and review by the committee. Any action taken by the Council at its November or January meetings on these proposals will be reported in a supplementary report.

Your chairman takes this opportunity to thank the members of his committee and legal counsel for their assistance and cooperation. We deeply appreciate the able assistance of our secretary, Miss Mary Singer.

Respectfully submitted,
John E. Lowry, M.D., Chairman

New York Delegation to the AMA

To the House of Delegates, Gentlemen:

The New York Delegation to the 120th Annual Convention of the American Medical Association, held in Atlantic City, New Jersey, June 20 to 24, 1971, included:

Delegates: Lawrence Ames, M.D., Edgar P. Berry, M.D., James M. Blake, M.D., Charles M. Brane, M.D., Irwin Felsen, M.D., (alternate serving for Thomas S. Bumbalo, M.D.), John Lee Clowe, M.D., Albert H. Douglas, M.D., Ralph S. Emerson, M.D., Henry I. Fineberg, M.D., Abraham W. Freireich, M.D., Carl Goldmark, Jr., M.D., Walter T. Heldmann, M.D., Milton Helpern, M.D., George Himler, M.D., R. Scott Howland, M.D., Edward C. Hughes, M.D., Joseph J. Kaufman, M.D., David Kershner, M.D., Warren A. Lapp, M.D., Herbert A. Laughlin, M.D., John Edward Lowry, M.D., James A. Moore, M.D., Bernard J. Pisani, M.D., Charles D. Sherman, Jr., M.D., Samuel Wagreich, M.D., C. Stewart Wallace, M.D., and Walter Scott Walls, M.D.

Alternate delegates: Andrew W. Lawrence, M.D., and Irving M. Pallin, M.D.

Section delegate: George F. Reed, M.D., Section on Otorhinolaryngology.

AMA Past President: Gerald D. Dorman, M.D.

Also present: Edward Siegel, M.D., Thurman B. Givan, M.D., Carlton E. Wertz, M.D., William B. Rawls, M.D., and Walter F. Harrison, Jr., M.D.

State Medical Society Staff: Guy Beaumont, Gretchen Wunsch, Coleman Fineberg, Gerald Sullivan, William Baltaks, and Harry Dexter.

County Medical Society Executives: Lester J. Candela, M.D., Queens; Elvira A. Tirola, New York; Hazel Spadafora, Kings; and Richard Treccase, Erie.

Meetings. The delegation held a meeting on Saturday, June 19, at 5:00 P.M. and conferences at breakfast on Monday, Tuesday, and Wednesday. The delegates also met for breakfast on Thursday. Informal luncheons were available to the delegation on Wednesday and Thursday. A German Buffet was held on Tuesday for all delegates. This successful luncheon was arranged by the Communications Division.

Matters coming before the House were discussed; actions were decided on specific issues; and assignments were made.

Candidates for president-elect, vice-president, and the Council on Medical Service appeared at the breakfast meetings of the delegation. Dr. Himler and Dr. Hughes appeared before many of the other delegations in support of Dr. Hughes's candidacy for trustee to fill the unexpired term of Burtis E. Montgomery, M.D. The delegation voted at its meeting on June 21 to support Dr. Hughes for this one-year term. The candidacy of Dr. Hughes had been announced, brochures distributed, and other preparations made to conduct a successful campaign.

Margaret A. Krikker, M.D., Albany, appeared before the delegation to urge passage of resolution 13, "Iron Content of Enriched Flour."

Resolutions. The following resolutions were introduced by the New York Delegation and were acted on as indicated: (new material in italics).

1. *Resolution 7,* "Advertisements in the Mass Media on Mood-Changing and Analgesic Drugs," referred to, Reference Committee E (Warren W. Quillian, M.D., chairman). The text of the resolution follows:

Whereas, Many advertisements in the mass media suggest that mood-changing and analgesic drugs can be of great help in solving everyday problems; and

Whereas, This philosophy that drugs are necessary or helpful in coping with the stresses of everyday life may be a major factor contributing to the epidemic of drug abuse and misuse among the young people of this nation; therefore be it

Resolved, That the American Medical Association condemn advertising in the mass media that suggests that mood-changing and analgesic drugs are necessary for meeting the demands of life in our society; and be it further

Resolved, That the American Medical Association undertake a study of this matter and institute a program designed to bring about the banning of advertisements in the mass media promoting the use of mood-changing and analgesic drugs.

Action. The following substitute resolution was adopted:

Resolved, That the American Medical Association follow the studies being conducted to ascertain the relationship between proprietary drug advertising in the mass media and excessive use of self-prescribed drugs and drug dependence problems; and be it further

Resolved, That the American Medical Association intensify its efforts to establish effective liaison with the National Association of Broadcasters and the Proprietary Drug Association to assure more stringent voluntary controls over proprietary drug advertising in the mass media; and be it further

Resolved, That the American Medical Association cooperate in every way possible in the studies being conducted by the Federal Trade Commission to assure the enactment of proprietary drug advertising regulations in the interests of protecting consumers.

2. *Resolution 8,* "Support of Continued Government Funding for Basic and Applied *Clinical* Research," referred to Reference Committee C (Urban H. Eversole, M.D., chairman). Text of the resolution follows:

Whereas, Medical societies are obligated to extend medical knowledge and advance the science and art of medicine; and

Whereas, The American Medical Association and its constituent and component medical societies have always had a vital interest in the advancement of medicine and the promotion of medical progress; and

Whereas, Modern clinical care depends heavily on the uninterrupted continuation of both basic and applied research; and

Whereas, The financial support of government has, for some years, played an increasingly important role in promoting both basic and applied research, thereby increasing the fund of knowledge of clinical medicine; and

Whereas, Recently there has been a regrettable change in the government's policy of support, which has brought about retrenchment in funding, resulting in the dislocation of much research effort and great hardship to many investigators and their technical and professional supporting personnel; therefore be it

Resolved, That the American Medical Association reaffirm its interest in promoting research and the further advancement of medical knowledge for the continuing benefit of patients; and be it further

Resolved, That the American Medical Association bend its efforts, and join with other organizations, to achieve the restoration and continuation of government budget funds for basic and applied *clinical* medical research; and be it further

Resolved, That a copy of this resolution be sent to the Secretary of the Department of Health, Education, and Welfare, the president, legislators, and other individuals, organizations or agencies as, in the good judgment of the Trustees, can be helpful in achieving the objectives set forth in this resolution.

Action. The House voted to adopt this resolution as amended.

3. *Resolution 9,* "Amendment of the Social Security Act to Change Qualifying Dates," referred to Reference Committee B (Donald B. Koonce, M.D., chairman). The text of the resolution follows:

Whereas, Public Law 89-97, 1965, amended the Social Security Act to provide for inclusion of physicians under Social Security; and

Whereas, The current qualifying dates by which benefits under the Social Security Act are determined, namely 1936 and 1951, preclude many physicians who have paid the maximum tax for many years from the possibility of obtaining the full benefits of the act; and

Whereas, The House of Delegates of the American Medical Association at its meeting in June, 1966, referred to the Board of Trustees for study and appropriate action resolution 45, which called on the AMA to explore every legitimate channel and take every legitimate action to have the Social Security Act amended at the earliest possible date to provide a more recent qualifying year; and

Whereas, To date there has been no evidence that the Trustees or the Association have acted on this resolution; and

Whereas, The Social Security Administration is sufficiently automated and computerized to cope with the administrative problems incident to a change in the qualifying year; and

Whereas, The present provisions are iniquitous and contrary to the best interests of a large portion of the membership of the AMA; therefore be it

Resolved, That the House of Delegates of the American Medical Association reaffirm its action on resolution 45, 1966, "Amendment to the Social Security Act to Change Qualifying Dates," and that this matter be assigned top priority; and be it further

Resolved, That the Association work for a qualifying date for Social Security benefits for physicians which is five years or less prior to the effective date of the amended act, 1962, as equitable for counting the quarters and average monthly earnings for physicians; and be it further

Resolved, That the House of Delegates be informed at the November, 1971, session of the actions that have been taken to implement this resolution.

Action. The House adopted this resolution.

4. *Resolution 13,* "Request for Public Hearing before FDA re Iron Content of Enriched Flour," referred to Reference Committee E (Warren W. Quillian, M.D., chairman). The text of the resolution follows:

Whereas, Iron is an essential trace mineral nutrient; and

Whereas, There is an inherent danger of hemosiderosis and hemochromatosis with a high incidence of hepatomas from an unnaturally high dietary iron intake over a prolonged period; and

Whereas, The Federal Food and Drug Administration's so-called "GRAS" (Generally-Recognized-As-Safe) status of iron permits food manufacturers to add iron to foods in uncontrolled amounts; and

Whereas, The FDA is now considering a proposal to mandatorily increase the iron content in enriched flour and bread four times above its natural level; and

Whereas, The benefits from the fortification program compared to the risks are controversial; and

Whereas, The proposal ignores the caution expressed by the AMA Council on Iron Deficiency in 1968 and conflicts with the 1968 Joint Policy Statement of the AMA Council on Foods and Nutrition and the National Academy of Science-National Research Council Food and Nutrition Board; and

Whereas, The majority of physicians have not been aware of the proposal under consideration by the FDA; therefore be it

Resolved, That the American Medical Association request the Department of Health, Education, and Welfare, Food and Drug Administration, to conduct a public hearing on its position with regard to the iron content of enriched flour so that physicians may have the opportunity to voice their opinion on the little-publicized proposal to make mandatory fourfold increase in the iron content of enriched flour above the natural level.

Action. The House adopted this resolution.

5. *Resolution 85,* "Restraints on the Production, Distribution, and Prescribing of Amphetamines," referred to Reference Committee E (Warren W. Quillian, M.D., chairman). The text of the resolution follows:

Whereas, Amphetamines have been found to be psychologically more destructive than heroin; and

Whereas, Amphetamines are now more available than marijuana and, in many ways, are more treacherous than all other abused drugs; and

Whereas, The production per year of amphetamines has reached the astronomical number of 4 billion pills, or 40 for every person in the nation; and

Whereas, Pilot studies in Suffolk County, New York, have shown that the majority of physicians are interested in imposing a temporary embargo on the use of amphetamines except for a few medical indications; therefore be it

Resolved, That the American Medical Association urge all physicians to accept their real responsibility with respect to the use and abuse of amphetamines by sharply curtailing the prescription of amphetamines; and be it further

Resolved, That the American Medical Association lend its full support to the plans of the Justice Department to set production quotas and tighten the distribution of amphetamines.

Action. The following substitute resolution was adopted for resolutions 85, 6, and 29:

Resolved, That the American Medical Association urge all physicians to limit their use of amphetamines and other stimulant drugs to specific, well-recognized medical indications; and be it further

Resolved, That the American Medical Association support the proposal of the Bureau of Narcotics and Dangerous Drugs to transfer amphetamine and methamphetamine and their salts, optical isomers, and salts of their optical isomers from Schedule III to Schedule II published in the May 26, 1971, *Federal Register.*

6. *Memorial resolution.* Waring Willis, M.D.

Whereas, On April 23, 1971, Waring Willis, M.D., of the New York Delegation, passed from our midst; and

Whereas, He is remembered for his years of service as an outstanding obstetrician and gynecologist; and

Whereas, He served his profession unselfishly at the county, state, and national levels: as president of his county medical society; councilor, secretary, president, and chairman of the Board of Trustees of the Medical Society of the State of New York; and

Whereas, Dr. Willis served as a delegate to the American Medical Association for eight years and as a member of its Committee on Community Health Care; therefore be it

Resolved, That this House of Delegates of the American Medical Association express its profound sorrow at the passing of Waring Willis, M.D.; and be it further

Resolved, That the sympathy of this House be extended to Mrs. Willis and her family; that this resolution be recorded in the proceedings of this House; and that copies be appropriately presented to Dr. Willis's wife and family.

Action. This resolution was adopted.

At its meeting on Saturday, the New York Delegation honored the memory of Waring Willis, M.D., a member of the Delegation for many years, with a moment of silence.

Reference committee assignments. Members of the New York Delegation serving on reference committees were:

Amendments to Constitution and Bylaws	James M. Blake, M.D., chairman
B (Legislation)	Milton Helpern, M.D.
E (Scientific-Public Health)	James A. Moore, M.D.
F (Board of Trustees)	Charles M. Brane, M.D.

Observers at reference committee hearings, designated by the chairman of the *New York Delegation,* were:

Amendments of Constitution and Bylaws	Walter T. Heldmann, M.D.
Committee A (Insurance and Medical Service)	Ralph S. Emerson, M.D. Walter Scott Walls, M.D.
Committee B (Legislation)	Lawrence Ames, M.D.
Committee C (Medical	

Education)	Charles D. Sherman, Jr., M.D. Warren A. Lapp, M.D.
Committee D (Hospitals and Medical Facilities)	Albert H. Douglas, M.D. Edgar P. Berry, M.D.
Committee E (Scientific-Public Health)	Carl Goldmark, Jr., M.D. John Edward Lowry, M.D.
Committee F (Board of Trustees)	Joseph J. Kaufman, M.D.
Committee G (Miscellaneous)	C. Stewart Wallace, M.D. Abraham W. Freireich, M.D.
Committee H (Miscellaneous)	John Lee Clowe, M.D.

Hospitality. The New York Hospitality Suite, in the Garden Room at Haddon Hall, was open according to the following schedule: Sunday, 5:00 P.M., New York delegates only; Monday, 5:00 P.M., guests; Wednesday Noon, AMA delegates and alternates; Thursday, Noon, New York delegation only. On Tuesday at Noon a German Buffet was held for AMA delegates and alternates in the Rutland Room.

AMA Report. The following is a summary of the actions of the House of Delegates, as compiled by the executive vice-president of the AMA, of the 120th Annual Convention held June 20 through 24, 1971, in Atlantic City, New Jersey.

In addition to studying, discussing in committee, and acting on 158 items of business that came before it at the 120th Annual Convention, the House of Delegates heard a stirring speech by the President of the United States, as well as outlines of future plans as seen by both outgoing and incoming AMA presidents.

Meeting for a total of thirteen hours and fifty-three minutes, the House acted on 6 special reports; 31 reports from the Board of Trustees; 2 from the Council on Constitution and Bylaws; 4 from the Council on Medical Education; 8 from the Council on Medical Service; 2 from the Judicial Council; 1 from the Council on Long Range Planning and Development; and 104 resolutions.

Elections. Charles A. (Carl) Hoffman, West Virginia, was chosen president-elect of the AMA. Others elected or reelected to Association positions were: vice-president: Ralph C. Teall, California; speaker of the House: Russell B. Roth, Pennsylvania (reelected); and vice-speaker of the House: J. Frank Walker, Georgia (reelected).

The following were elected trustees: John M. Chenault, Alabama (reelected); Raymond T. Holden, Washington, D.C. (reelected); John R. Kernodle, North Carolina (reelected); Donald E. Wood, Indiana (filling the vacancy of L. O Simenstad who was ineligible for reelection); Robert B. Hunter, Washington (to fill the unexpired term of Burtis E. Montgomery); and Jere W. Annis, Florida (succeeding Charles A. Hoffman).

Judicial Council: Henry I. Fineberg, New York, was elected (succeeding Renato J. Azzari).

Council on Constitution and Bylaws: Carroll L. Witten, Kentucky (reelected); and John H. Burkhart, Tennessee (to fill the vacancy left by Robert Hunter's election to the Board).

Council on Medical Education: James W. Haviland, Washington (reelected); and Bernard J. Pisani, New York (reelected).

Council on Medical Service: Guy A. Owsley, Indiana (reelected); and C. Willard Camalier, Jr., Washington, D.C. (filling the vacancy of Charles J. Ashworth who was ineligible for reelection).

Address by Richard M Nixon, President of the United States. President Nixon began with some general statements based on Disraeli's comment that "The health of the people is really the foundation upon which all their happiness and all their powers as a state depend," pointing out that "I am happy for this opportunity to salute this profession which has contributed so much to the health of the American people and to the strength of this nation."

He talked about the current debate on national health insurance, emphasizing that, "I believe that the most expensive plan that has been offered—a plan for nationalized, compulsory health insurance—is the plan that would actually do the most to hurt health care in this nation."

Such a plan, the president said, "would exact a very high price from our people in terms of dollars and cents. But it would exact an even higher price in terms of the quality of American medicine."

Mr. Nixon emphasized that America's health care system needs reform. But he added that, "We can never improve our country's medical system by working against our country's medical profession. No system of health care will ever work unless the doctors of the nation make it work. So let us work together," he said, "for a system—a system that will continue to provide for choice, that will continue to provide for quality and one that will at the same time deal with the pressing problems of costs in an effective way that will not destroy quality."

The bulk of the president's speech, which was punctuated several times by applause, was a challenge to America's physicians to assume leadership in curing and preventing drug abuse. That problem, he said, "is America's public enemy number one. It afflicts the rich and the poor, the blacks and the white, the servicemen and the civilians, and the ghettos and the suburbs. It spreads like a plague throughout our society. It erodes our nation's strength. It destroys our nation's spirit. And worst of all, it undermines our nation's future.

"The best way to end drug abuse is to prevent it, and America's doctors are the indispensable front-line soldiers for success in this all-important battle. No one, believe me, can have more effect when he or she speaks out than a doctor on this issue of drug abuse. You speak with greater authority, because you speak about the power of drugs to save life—but also the power to destroy it.

"Rather than preach moralistically about the sinfulness of drugs, you can teach realistically about their physical and psychologic impact."

The president finished this major portion of his speech by saying, "The AMA can once again render outstanding service at a point of critical need by helping to develop what I would like to call Project USA—a project which would marshal the tremendous energy, the brains, the dynamism, the leadership of the doctors of this country in an all-out battle against drug abuse."

After some remarks about the need for physicians to be more active in politics and community leadership, President Nixon closed with these words: "The health of America is in your hands, and by its health I speak not just of its physical health—but its mental health, its moral health, its character. Meet that challenge."

AMA Response. Directly and immediately accepting the president's challenge, the Board of Trustees came before the House with Report EE, which the House adopted. The report points out that, "In respect to the urgent problems of drug abuse, the Council on Mental Health and its Committee on Alcoholism and Drug Dependence have already given support to the president's announcement of the establishment of a Special Action Office of Drug Abuse Prevention within the executive office and to his proposal to strengthen resources and programs for treatment and rehabilitation of drug-dependent persons."

The report recommended and the House adopted as policy that the AMA "strengthen and expand its program to combat drug dependence with particular attention to prevention, identification, treatment, rehabilitation, and research and that state and local medical societies be urged to give priority to the implementation of this program at the community level throughout the nation." The House also called on "individual physicians—whether in practice, research, teaching, or administration—to give special attention to problems of drug abuse and to volunteer their efforts to community programs." (Additional action on drugs and drug abuse is described later in this summary.)

President's final report. In describing his "Blueprint for the Future," Walter C. Bornemeier, M.D., pointed out that of three principal ingredients of medical care—cost, quality, and availability—"availability is on the front burner. People are more concerned about getting medical care when they need it," he said, "than they are about its cost or its quality. The question never has been 'is there a good doctor in the house?' or 'is there a cheap doctor in the house?' The question has always been 'is there a doctor in the house?'"

Along with increasing the number of physicians being produced by the nation's medical schools, Dr. Bornemeier said that "group practice appears to be the answer" to availability. "Groups can be either fee for service or have a prepaid package arrangement. They could be a combination of the two.

"When we eventually have a private practice group in every neighborhood," he said, "we will have come full circle, from a doctor over every drug store to a multispecialty group facility in every population center. It is my firm conviction that if we bring comprehensive medical care back into the population centers, the neighborhoods, and have medical care available twenty-four hours a day, seven days a week, the people will tell Congress that the present system does not need to be restructured."

Dr. Bornemeier also pointed out that expanding group practice centers will lead to a strong come-back for the family physician, who will best be able to give complete care to the whole patient. "Group practice," the president said in closing his final report, "has been on the increase and all indices point to accelerated development of this type of practice. Along with this, a movement of group practice to the population centers is inevitable. Competition between groups will encourage distribution to residential areas. All of this adds up to availability, today's most important ingredient of health care."

Inaugural address. In his inaugural address, Wesley W. Hall, M.D., the AMA's 126th president, began with a brief history of medicine as an art and science. "What was the state of medicine for some 6,000 years?" he asked. "Compassion, hope, and the patient's confidence in the physician were the foundation stones on which medicine rested for centuries. As an exact science, medicine had its beginning less than a century ago, when Robert Koch discovered the tuberculosis bacillus in 1882."

He traced the growth of medicine to the present time and then detailed some of the profession's more pressing problems of today, including the state of medical education, the need for more manpower, care for the poor, rural health, and others. He pointed out, however, that often too much emphasis is put on problems and not enough on achievements. "We need not agonize that we have not done enough," he said. "We should trumpet our successes while we strive all the harder in those areas where we have not yet attained perfection. To assure that, in a rapidly changing world, the AMA will be able to pursue its historic goals," Dr. Hall offered suggestions for consideration by the House.

The first was that the Association have a constitutional convention to "streamline our governing process to suit the needs and pace of the twentieth century physicians and its people"; to "combine overlapping functions within our organization"; and "enfranchise those whose voices we should hear."

He listed major changes made in past years by the AMA, but pointed out that "this year, one or two changes will not be enough."

Some of his suggestions were "at least one additional meeting day" for the House to conduct its business; reexamination of "the aims and duties of our 100-plus councils, committees, and commissions"; moving "through our state organizations to bring a greater number of young, able, and productive physicians into our Association"; setting "a limit on the number of terms delegates can serve in this House"; and rescinding "a number of outdated and long-ignored resolutions (that) remain on our books as policy statements."

Dr. Hall urged the Woman's Auxiliary to undertake new and increased activities in "encouraging prenatal care for the expectant mother, especially in rural areas and in areas where low-income families are concentrated," and in "helping to combat problems of teenage drug abuse and addiction."

Referring to the fact that some physicians are critical of the AMA, Dr. Hall emphasized that "the goal of the AMA and the goal of these colleagues is the same: to provide the best possible health care for each and every American, at reasonable cost."

"I urge all physicians—those in practice, those in government, those in research and teaching, those in public health, those in administrative positions, those in all facets of medical activity—to come under the AMA's umbrella, to bring to us their hopes, their beliefs, their ideas, and their vigor."

In closing his inaugural address, President Hall said, "The basic needs of man are food, clothing, shelter, education, and health. Certainly physicians have some expertise in each of these areas. We know the requisites of good nutrition; we are able to give advice concerning the health aspects of clothing and shelter; we can contribute to education; we care for the sick, and we attempt to keep the healthy in that enviable condition."

(The Board of Trustees brought before the House the question of a constitutional convention, as suggested by Dr. Hall. Delegates voted to defer action until the 1971 Clinical Convention, meanwhile requesting informational "white papers" on the subject from the Council on Constitution and Bylaws and the Council on Long Range Planning and Development.)

Organization changes. The Guam Medical Society of Agana, Guam, was accepted as a constituent association of the AMA, bringing to 55 the number of state, commonwealth, and territorial associations.

The scientific Section on Psychiatry and Neurology was separated to form two sections, the Section on Psychiatry and the Section on Neurology.

The Bylaws of the Association was amended to create a new membership classification. Under "Active Members," there now are two classifications: Regular Members and Direct Members. There is no change in the definition of Regular Members. Direct Members include service members, physicians employed by Federal agencies, and interns and residents.

Right of access to medical care. The House elaborated on its existing policy regarding the right of access to medical care by adopting this statement:

> It is the right of every citizen to have access to adequate medical care, but it is the responsibility of the citizen or of society to seek it. The American Medical Association will use all means at its disposal in an endeavor to make adequate medical care available to meet the needs of each person.
>
> In the spirit of inheritance of the Oath of Hippocrates, the AMA reaffirms its obligation to humanity. In this effort, the AMA cannot assume the responsibilities of government or the individual citizen. The AMA also recognizes the right of the physician to choose whom he will serve and the conditions under which he will render this service. These are integral essentials in the delivery of quality medical care.

Drugs and drug abuse. In addition to the action taken in direct response to President Nixon's speech to the House, delegates also took several other actions on the subject of drugs and drug abuse.

A report of the Council on Mental Health and its Committee on Alcoholism and Drug Dependence was filed for the information of the Association. It contains these recommendations for the medical profession:

1. Increased attention to alcoholism and drug abuse in the curriculum of medical schools.
2. Medical students, interns, and residents should be encouraged to associate themselves with "street clinics" to establish links between the profession and young drug abusers.

3. Continued development and dissemination of reliable information to physicians and other health professionals.

4. Laws and regulations should be modified to recognize alcoholism and drug dependence as illnesses.

5. Closer liaison between medical societies and law enforcement and licensure bodies to deal jointly with the problem of physicians suspected of professionally misusing or personally abusing drugs.

6. Continually updated factual material for public consumption.

7. Increased emphasis on the responsible use of drugs for therapeutic purposes, both by the public and by physicians.

The House resolved to follow "studies being conducted to ascertain the relationship between proprietary drug advertising in the mass media and excessive use of self-prescribed drugs and drug dependence problems" and to "cooperate in every way possible in the studies being conducted by the Federal Trade Commission to assure the enactment of proprietary drug advertising regulations in the interests of protecting consumers."

Delegates also resolved to "urge all physicians to limit their use of amphetamines and other stimulant drugs to specific, well-recognized medical indications."

In addition, the House resolved to go on record "favoring the implementation of stern measures for narcotic traffic control in Vietnam, as well as measures for the identification, prevention, diagnosis, and adequate treatment of addicts within the armed forces, with adequate provision for the availability of proper follow up and aftercare."

Terminology and definitions. Concerned with the growing use of the term "physician's associate" as opposed to the term "physician's assistant" to describe new health occupations, the Board and its Council on Health Manpower recommended (and the House agreed) that the term "physician's associate" be used only to denote another physician.

The House resolved that future editions of *AMA Drug Evaluations* "avoid the use of the word 'irrational.' "

Delegates adopted three definitions in the area of peer review:

1. Peer Review: Evaluation by practicing physicians of the quality and efficiency of services ordered or performed by other practicing physicians. Peer review is the all-inclusive term for medical review efforts. Medical practice analysis; inpatient hospital and extended care facility utilization review; medical audit; ambulatory care review; and claims review are all aspects of peer review.

2. Medical Practice Analysis: A function of the medical society, or other organization authorized by the medical society, designed to coordinate all peer review efforts of a community. Medical practice analysis focuses on the development and application of criteria for optimal medical care, and evaluates the individual and collective quality, volume, and cost of medical care, wherever provided.

3. Claims Review: Peer evaluation and adjudication of claims questions referred for peer review by any party with a valid interest in the case.

Definitions of other elements named in the "peer review" definition itself were referred back to the Council on Medical Service for further refinement.

Peer review. Further in connection with peer review, the House resolved:

That the American Medical Association and its constituent state associations reaffirm their support of voluntary mechanisms of review and education by physicians, such as grievance committees, insurance review committees, and the numerous hospital review mechanisms, many of long standing;

That the AMA and its constituent state associations continue to stress that peer review shall be considered a professional function, and as such shall be carried out by physicians or under the sponsorship of the county and state medical societies;

That this House of Delegates call on all state and county medical societies and the AMA to take an active responsible role in peer review and to document for the information of the public current functioning procedures and programs which are serving in the interests of delivering good medical care.

Better health and patient care. With respect to teen-age pregnancy, the House adopted the statements that, "The teenage girl whose sexual behavior exposes her to possible conception have access to medical consultation and the most effective contraceptive advice and methods consistent with her physical and emotional needs"; "The physician so consulted should be free to prescribe or withold contraceptive advice in accordance with his best medical judgment in the best interests of his patient." Earlier in that report, the House inserted the statement that "definite effort should be made to obtain consent from the minor's parents or legal guardian whenever possible."

Regarding maternal and infant care, the House adopted a report pointing out that "application of recent advances in scientific knowledge and skills in the intensive-care management of high-risk pregnant women and high-risk newborn infants will result in reduction of present maternal and infant mortality rates. A major contribution to such a program is the development of a centralized community (or regional) hospital-based newborn intensive-care unit. Concentration of high-risk infant-care programs in hospitals specially staffed and equipped to provide optimal care is a proved life-saving mechanism for infants at risk."

Concerned with the spread of venereal disease, the House resolved:

(1) that medical societies be urged to "support education of patients and the public through more extensive and more imaginative use of all available media and through school curricula"; (2) that the AMA "reiterates its support and cooperation with the National Commission on Venereal Disease to hasten the control of these diseases"; and (3) that the AMA "strengthen in every way possible research efforts toward the development of vaccines for the active immunization of our population against venereal disease."

On health education in schools, the House resolved to encourage state and local medical societies "to establish active liaison with their school systems to provide lectures and appropriate educational support regarding: personal hygiene, the effects of tobacco and drugs, the problem of medical quackery, and the role of physicians in maintaining good health."

To increase patient safety in hospitals, the House resolved that "medical staffs be urged to form a staff committee to cooperate with the administration and lend guidance in developing safety programs that will include the concepts of prevention, detection, and correction, and which will fully utilize the expertise of physicians and other members of the health care team."

Considering the use of assistants in medical practice, delegates resolved that "the physician may properly delegate technical procedures to an allied health worker" but affirmed the principle "that whatever privileges may at any time be granted either to allied health workers or to independent limited practitioners, by law or otherwise, such grant in no way circumscribes the physician's authority in that field and in no way restricts the practice of medicine by the physician."

House officers and medical students. The House commended "those county medical societies which have opened participation opportunities to house officers" and recommended to county medical societies "that reduced membership dues be provided for house staff members."

Delegates also resolved:

—To request the Board of Directors of AMA-ERF "to investigate the feasibility of providing financial aid for the continuation and coordination of the SAMA-MECO (Medical Education and Community Orientation) Project."

—To "urge that the Congress support increased Federal aid to medical students."

—"That residency training in community hospitals is worthy of strong and continued support."

—To encourage "individual state societies to promote community programs in their states to provide facilities or loan programs for students for which the student agrees to return to the community after training."

—That individual members of the AMA "assume sustaining membership in the Student American Medical Association."

—That the AMA "offer active support and counsel to the Student American Medical Association for their community health projects."

Additional actions and events. Delegates adopted a 39-page report on "Physician Manpower and Medical Education," prepared jointly by the Council on Medical Education and the Council on Health Manpower, with help from the Council on Medical Service.

They approved a progress report of the Board Committee on Professional Liability and filed for information an 89-page summary of "Computer Systems in Medicine."

They adopted a report from the Judicial Council reaffirming the position "that the basic principles of a fair and objective hearing should always be accorded to the physician whose professional conduct is being reviewed. These basic guarantees are: a specific charge, adequate notice of hearing, the opportunity to be present and to hear the evidence, and to present a defense. These principles apply when the hearing body is a medical society tribunal or a hospital committee."

They adopted the report of the Council on Long Range Planning and Development which included these objectives for the AMA:

1. To maintain an active, viable organization representing the majority of physicians of the United States.
2. To serve as the central coordinating organization of medicine.
3. To serve as the representative of the medical profession in its relations with other health professions, industry, government, labor, consumers, and other nonmedical organizations.
4. To develop, stimulate, and present scientific and professional programs and advances to the profession and public.
5. To continue its historic interest in all levels of medical education.
6. To assimilate recent medical graduates into the medical professional organizations.
7. To promote high standards of quality medical care.

Delegates saw the Sheen Award (including a check for $10,000) presented to Maxwell Finland, M.D., of Boston, a member of the Harvard Medical School faculty since 1928 and associated with Boston City Hospital since 1927.

Delegates also recognized the medical winners in the 22nd International Science and Engineering Fair, whose exhibits from the fair were on display among the scientific exhibits at the convention. The two were Barbara Solee, age seventeen, of Jamestown, North Dakota, with an exhibit on "Effect of Noise on Hamster Behavior Patterns"; and Thomas W. Wakefield, age seventeen, of Toledo, Ohio, with an exhibit on "Blood Supply to the Sinu-Atrial Node (Pacemaker) in Normal Human Hearts."

The chairman of the Board of Trustees of the AMA presented a plaque to Gerald D. Dorman, M.D., for his many years of work with both the AMA and the WMA (World Medical Association). Dr. Dorman has served on both Boards; has been president of the AMA; and has served as chairman of the Council of the WMA.

Before the House, the chairman of the Board announced that Richard S. Wilbur, M.D., deputy executive vice-president of the AMA, has been named by President Nixon as assistant secretary for health and environmental affairs of the Department of Defense. Dr. Wilbur is taking a leave of absence from his AMA position.

Respectfully submitted,
George Himler, M.D., Chairman

Research and Planning

To the House of Delegates, Gentlemen:

The members of the Committee on Research and Planning are as follows:

G. Rehmi Denton, M.D., *Chairman*	Albany
Edward A. Burkhardt, M.D.	New York
Robert E. Good, M.D.	Chemung
Ralph C. Parker, Jr., M.D.	Monroe
Clyde L. Randall, M.D.	Erie
Charles Weller, M.D.	Westchester
Robert E. Westlake, M.D.	Onondaga

During the past year the committee lost two dedicated and productive officers, John M. Galbraith, M.D., and Waring Willis, M.D., both of whom had served since its inception. Dr. Galbraith, the committee's first chairman, has retired to Arizona. Dr. Willis, vice-chairman, died April 25, 1971. The committee pays tribute to their outstanding performances.

G. Rehmi Denton, M.D., a member of the committee since its beginning, succeeds Dr. Galbraith as chairman. The committee welcomed a new member, Charles Weller, M.D., who follows John Lee Clowe, M.D. It commends the outgoing Dr. Clowe for his services.

The committee has held one meeting thus far during 1971 and has scheduled another meeting for November. At its session on March 24, the agenda contained the topic: "Prepaid, Capitation, Group Practice Plans of Health Care." Playing such a large part in the funding of health care and seeking to halt and reverse its rising cost in which hospitalization was the major expense, the government turned to promoting ambulatory care. It was attracted to the prepaid, capitation, group-health plan because the record of the Kaiser-Permanente Health Plan was reported in 1967 by the Presidential Commission on Health Manpower to show that medical care was provided at a 30 per cent lower rate than other systems. By controls and incentives the Kaiser-Permanente plan had achieved a low usage rate of hospitalization. Its ratio of outpatient visits to admissions was 45:1 in contrast to 4.3:1 of the country's community hospitals in 1969. Kaiser-Permanente reported that the average length of stay was 6.2 days compared with 8.3 for the community hospitals.

Since prepaid, capitation, group-practice plans were increasingly in the national spotlight, the Committee on Research and Planning subjected the topic to analysis. The name itself suggests three components: payment in advance, basis of payment, and multiple physicians. It has been declared that a viable prepaid, capitation, group-practice plan of health care must satisfy seven essential elements. On examination the topic was found to have thirteen categories of variables. With choices in each category, it was little wonder that the plan appeared in so many modified forms.

In the Kaiser-Permanente method of organization the health plan, the hospital, and the medical groups are separate entities; the health plan contracts with the latter two. At first membership in the Kaiser-Permanente health plan was restricted to the gainfully employed, but recently in some of its locations it has removed this qualification so that it is providing services under a true community rating. It has demonstrated that an indigent population can be successfully integrated with a paying membership in the health plan.

But whether or not a plan can be sustained for a massive indigent population alone, a former medical director of a Kaiser-Permanente plan regards as questionable. The Kaiser-Permanente organization has not tried it. But a prepaid, capitation, group-practice plan of health care has been started locally in impoverished areas of two cities, Baltimore and Boston. In the experience of the East Baltimore community plan, the problems were characterized as larger, more numerous, and different from those with an employed population.

In its study the Committee on Research and Planning differentiated prepayment, with payment in advance from postpayment, as in fee-for-services. But another contradistinction of fee-for-services is capitation under which the unit is the person, not a service. Nevertheless, fee-for-services may be combined with capitation. It may be capitation for the subscriber but fee-for-services for the physician who may be paid from the capitation pool.

Group practice may be either in or outside an organized health-care plan. Its relationship determines the preponderant mode of remuneration to the physician. Outside a plan the group physician usually provides medical care for fee-for-services. Within a plan the physician may be remunerated by share, salary, or even fee-for-services.

In promoting the prepaid, capitation, group-practice type of health plan the government designated a name of its own coinage: Health Maintenance Organizations. It emphasized two advantages of this type of organization (1) a wide range of services in a single unit, an arrangement that is convenient for the patient, and (2) provision of these services for a fixed contract fee payable in advance.

Since the Health Maintenance Organization is the government's name for prepaid, capitation, group-practice plan of health care, it too may be organized in various forms. Indeed, one of its strengths is said to be its flexibility. This variability confirms one of the committee's conclusions.

Writing about the record on prepaid, capitation, group-practice plans of health care, one director of a plan states: "After some thirty-five to forty years of experimentation less than 5 per cent of the population of the United States is enrolled in these allegedly superior methods for the delivery of personal health services. Even in localities where successful plans operate, such as Kaiser-Permanente, or Health Insurance Plan of Greater New York, less than 10 per cent of the population living in the service areas of the plans are members." Under the headline "Kaiser Permanente—Controversial Plan in the National Spotlight" the *AMA News* of September 13 carried an article which asserted: "The least controversial statement to be made about this health giant is that it is the largest nongovernmental provider of health services in the country and probably the world." It then cites opposite opinions about the plan. Its expansion and ultimate size are regarded as moot points.

The committee published its report on "Prepaid, Capitation, Group-Practice Plans of Health Care," including health maintenance organizations in the September 15 issue of the ***New York State Journal of Medicine.***

For the forthcoming meeting of the committee, the agenda will be medical care for the urban poor.

Respectfully submitted,
G. Rehmi Denton, M.D., Chairman

To Study Participation of Medical Students in MSSNY

To the House of Delegates, Gentlemen:

The members of the Special Committee to Study the Participation of Medical Students in the Medical Society of the State of New York are as follows:

Charles D. Sherman, Jr., M.D., *Chairman*	Monroe
John H. Carter, M.D.	Albany
George L. Collins, Jr., M.D.	Erie
Bernard J. Pisani, M.D.	New York

This committee has been in existence only a year and is exploring possible ways of developing more meaningful relationships between the Medical Society of the State of New York and the medical students in our 12 schools. The following comments are worth consideration. Today's medical students will comprise nearly half of the practicing physicians in 1982, and we should get them involved in some phase of our activities at an early age so that they will understand some of the problems we face. As one medical student who attended the State Society's last annual meeting said, "My eyes were opened, and I was favorably impressed."

Your committee feels that the most effective and least expensive way of involving students in the activities of organized medicine is to have them work on various committees of county medical societies in the areas where they attend medical school. For the last few years, there has been increasing activity regarding involvement of students in medical societies, and your committee encourages even greater efforts in this area.

Since students represent one of the significant segments of the medical profession and have some political power, your committee feels there should be an organized formal access to the making of policy decisions of MSSNY's House of Delegates, just as there is in several other state societies and will be in the AMA. Indeed, your committee feels that the fragmentation with which the medical profession's voice is heard should be changed and that all the major segments of the profession should deliberate together and speak with a more unified voice.

The organized formal structure we recommend is that of forming a "special student section" consisting of 24 students (2 selected by the student organizations of each of our 12 schools). These 24 students would meet as a section and elect one or two "section delegates" to MSSNY's House of Delegates with voice and vote. They would bring resolutions, comments, and ideas from their respective schools and would have the privilege of the floor at reference committee hearings to give the students' viewpoints on our various activities. This section would also be the mechanism for entry into our Council of any projects or ideas developed by the Student American Medical Association.

The "special student section" would differ from the other sections in the following respects: (1) The members of the section would be limited to those 24 students selected from their respective schools; (2) since they are not yet M.D.s, they would not be "members" of the MSSNY; and (3) since students' incomes are minimal, they would not be charged dues.

A student section such as we describe was recommended through resolution 71-77 introduced last year. The formation of such a student section requires a constitutional amendment, and the wording of the resolution was such that it was left to the House Committee on Constitution and Bylaws to develop the "legalese" indicated to accomplish these aims and to bring the amendment to our House of Delegates for voting in 1972.

An additional aspect of MSSNY's relationship with medical students involves the Medical Education for Community Orientation (MECO) project which is aimed toward acquainting students with the variety of health activities, including general practice, which take place in our small communities and with which they seldom come in contact in the usual university-metropolitan setup. Your committee has worked with national, regional, and local SAMA representatives to develop this project for the summer of 1972, and we have had excellent cooperation from the Hospital Association of New York State and the New York State Academy of Family Practice. We hope that next summer's program will be a successful one.

After the development of the student section described, we anticipate that the students will work with us in a variety of projects of particular interest to today's medical students, such as combating drug abuse, inner-city health, and community planning.

Your committee looks forward to a continuing mutually beneficial relationship with our medical students. We have contacted the associate deans for student affairs in each school and will continue to involve them in our deliberations, and expect them to be helpful to us in a variety of ways, not the least of which is to serve as a permanent contact in a fluctuant sea of students.

Respectfully submitted,
Charles D. Sherman, Jr., M.D., Chairman

Necrology

William James Butcher, M.D., of Ridgewood, died on November 1, 1971, at the age of sixty-four. Dr. Butcher graduated in 1932 from Long Island College of Medicine. He was an attending physician in internal medicine at Parkway Hospital and a consulting physician at Lutheran Hospital of Brooklyn. Dr. Butcher was a Fellow of the American College of Cardiology, a Fellow of the American College of Chest Physicians, and a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

James F. Cahill, M.D., of Syracuse, died on November 8, 1971, at the age of sixty-eight. Dr. Cahill graduated in 1927 from Syracuse University College of Medicine. He was a senior attending ophthalmologist at St. Joseph's and Syracuse Memorial Hospitals and University Hospital. Dr. Cahill was a Diplomate of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Donald MacNevin Carmichael, M.D., of Brooklyn, died on December 1, 1971, at the age of sixty-nine. Dr. Carmichael graduated in 1926 from Queen's University Faculty of Medicine, Kingston, Ontario. He was the first director of the State Mental Hygiene Department's after-care clinic in New York City serving discharged patients from mental hospitals throughout southeastern New York. Dr. Carmichael was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Fletcher Collins, M.D., of The Bronx, died on November 9, 1971, at the age of seventy-three. Dr. Collins graduated in 1920 from Fordham University School of Medicine. He was former director of obstetrics and gynecology at Fordham and Westchester Square Hospitals and St. Elizabeth Hospital. Dr. Collins was a Fellow of the American College of Obstetricians and Gynecologists and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Maurice Maldwin Dinowitz, M.D., of Brooklyn, died on October 21, 1971, at the age of sixty-six. Dr. Dinowitz graduated in 1941 from the Royal College of Physicians and Surgeons (Edinburgh). He was a member of the American Academy of General Practice, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Samuel Eschwege, M.D., of New York City, died on October 8, 1971, at the age of eighty-four. Dr. Eschwege received his medical degree from the University of Berlin in 1913. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Marcus A. Feinstein, M.D., of New York City, died on November 29, 1971, at the age of seventy-two. Dr. Feinstein graduated in 1930 from New York Homeopathic Medical College and Flower Hospital. He was an attending physician in peripheral vascular disease at Beth Israel Medical Center, a consulting physician at Metropolitan Hospital, and a physician emeritus at Flower and Fifth Avenue Hospitals. Dr. Feinstein was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, a Fellow of the American College of Angiology, and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Herman Freund, M.D., of Rye, died on October 15, 1971. Dr. Freund graduated in 1914 from Columbia University College of Physicians and Surgeons.

Benjamin Jablons, M.D., of New York City, died on October 27, 1971, at the age of eighty-four. Dr. Jablons graduated in 1908 from Cornell University Medical College. He was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Cardiology, a Fellow of the American College of Angiology, and a member of the Endocrine Society, the Clinical Society, New York Diabetes Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Mollie Hubon Kothe, M.D., of New York City, died on November 22, 1971, at the age of forty-three. Dr. Kothe graduated in 1952 from Harvard University Medical School. She had been active with the New York Bureau of Child Guidance. Dr. Kothe was a member of the American Psychiatric Association, the New York County Medical Society, and the Medical Society of the State of New York.

Arthur Brown Lee, M.D., of Brooklyn, died in November, 1971, at the age of sixty-three. Dr. Lee graduated in 1935 from Howard University College of Medicine. He was an assistant attending ear, nose, and throat physician at Coney Island Hospital. Dr. Brown was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Frank F. Marino, M.D., of New Rochelle, died on November 9, 1971, at the age of seventy-one. Dr. Marino graduated in 1924 from Boston University School of Medicine. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Arthur Mitchell, M.D., of Freeport, died on November 30, 1971, at the age of fifty-three. Dr. Mitchell graduated in 1943 from New York University College of Medicine. He was an assistant attending obstetrician and gynecology at Mercy Hospital and an associate attending obstetrician and gynecologist at Nassau Hospital. Dr. Mitchell was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Post, M.D., of New York City, died on November 7, 1971, at the age of sixty. Dr. Post received his medical degree from the University of Bern in 1935. He was an honorary roentgenologist at Harlem Eye and Ear Hospital and an assistant attending radiation therapist at Bellevue Hospital. Dr. Post was a Diplomate of the American Board of Radiology and a member of the Radiological Society of North America, Inc., the American Academy of Compensation, Inc., the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ernest Ralph Raphael, M.D., of Kings Park, died on November 3, 1971, at the age of sixty-two. Dr. Raphael received his medical degree from the University of Dusseldorf in 1934. He was an emeritus physician in general practice at the John T. Mather Memorial Hospital (Port Jefferson) and an attending physician in general practice at Smithtown General Hospital. Dr. Raphael was a member of the American Academy of General Practice, the American Public Health Association, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Robbins, M.D., of New York City and The Bronx, died on November 28, 1971, at the age of sixty-two. Dr. Robbins graduated in 1935 from University of St. Andrews Conjoint Medical School, St. Andrews and Dundee. He was an associate attending surgeon at Knickerbocker, Misericordia, and Lincoln Hospitals and an assistant attending surgeon at New York Polyclinic Hospital. Dr. Robbins was a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the New York Academy of Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sarah E. Worob Rossien, M.D., of Huntington Station, died on November 20, 1971, at the age of seventy-one. Dr. Rossien graduated in 1924 from the Woman's Medical College of Philadelphia. She was a member of the New York Academy of Gastroenterology, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Sohn, M.D., of Floral Park, died on November 15, 1971, at the age of seventy-two. Dr. Sohn graduated in 1923 from University and Bellevue Hospital Medical College. He was a member of the internal medicine staff at Deepdale General Hospital. Dr. Sohn was a Diplomate of the American Board of Internal Medicine and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

William T. Wilson, Jr., M.D., of Rockville Centre, died on November 14, 1971, at the age of fifty-one. Dr. Wilson graduated in 1944 from the University of Rochester School of Medicine and Dentistry. He was a member of the general practice staff at South Nassau Communities Hospital. Dr. Wilson was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Aaron Lionel Winderman, M.D., of The Bronx, died on November 29, 1971, at the age of seventy-five. Dr. Winderman graduated in 1919 from Fordham University School of Medicine. He was an associate attending orthopedist (off service) at Bronx-Lebanon Hospital Center. Dr. Winderman was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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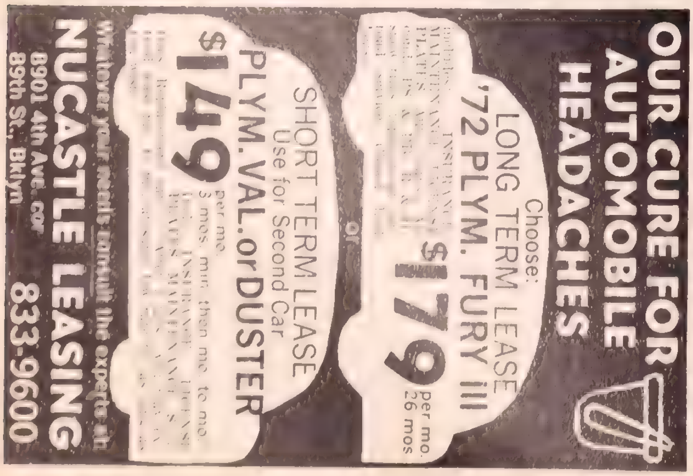

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The Human Adrenal Cortex. With 23 authors. Edited by Nicholas P. Christy, M.D. Quarto of 552 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $25.

Beck's Obstetrical Practice. Ninth edition. By E. Stewart Taylor, M.D. Quarto of 665 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.75.

Surface and Radiological Anatomy. For Students and General Practitioners. Fifth edition. By W. J. Hamilton, M.D., G. Simon, M.D., and S. G. Ian Hamilton, M.A. Quarto of 397 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $17.

Pathobiology Annual. Volume 1, 1971. Series Editor, Harry L. Ioachim, M.D. Quarto of 380 pages, illustrated. New York, Appleton-Century-Crofts, 1971. Cloth, $16.

Legal Abortion: The English Experience. By Anthony Hordern, M.D. Octavo of 322 pages. Oxford, England, Pergamon Press, Ltd., 1971. Cloth, $10.

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The Medical Clinics of North America. Volume 55 Number 6, November 1971. Symposium on Modern Concepts in Renal Disease. Guest Editor, Franklin D. Schwartz, M.D. Octavo, illustrated. Philadelphia, Pa., W. B. Saunders Company, 1971 Published Bimonthly (six numbers a year). Cloth, $21. per year.

Modern Treatment. Volume 8 Number 3, August 1971. Current Status: The Management and Treatment of Poisoning. Guest Editor, Jay M. Arena, M.D. **Special Articles: Current Treatment of Potential Tetanus: An Ongoing Problem of Universal Importance.** By Norman A. Christensen, M.D. **The Current Status of Digitalis Therapy.** By Edward K. Chung, M.D. **The Eye as a Mirror to Neurologic Disease.** By Richard D. Cunningham, M.D. Octavo, illustrated. New York, Harper & Row, Publishers, 1971. Published Quarterly (four numbers a year). Cloth, $20. per year.

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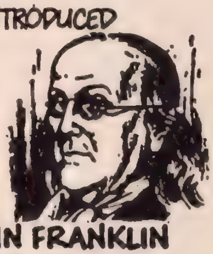

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Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

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NEW YORK CITY AREA

January 16, 1972 / January 30, 1972
9:00 a.m.–Noon, Sundays

The Boulevard Hospital
46-04 31st Avenue
Long Island City

CARDIOLOGY

B. WECHSLER and/or D. SUMMERS, M.D.'s
Downstate Medical Center

FEE: $100 (Part of the Course on Intensive Review for Community Physicians which started October 17 and continues through March 26)

CREDIT: AAGP and C-1

Sponsor: Queens County Academy of Medicine

January 16 / January 19, 1972

Columbia University School of Public Health and Administrative Medicine
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ACTION FOR FAMILY PLANNING: WHAT IS THE HEALTH OFFICER'S ROLE?

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Write: Program of Continuing Education, Columbia University School of Public Health and Administrative Medicine, 21 Audubon Avenue—Room 305, New York, N.Y. 10032, or telephone: (212) 568-4334

January 17, 1972 / January 31, 1972
3:30 p.m., Mondays

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway
'Elmhurst

January 17
Management of Breast Carcinoma
MANUEL OCHOA, JR., M.D.
Memorial Hospital

January 24
Abrasive Soap Pneumoconiosis
IRVING J. SELIKOFF, M.D.
Mount Sinai School of Medicine

January 31
The Medical Management of Hypertension
STANLEY GITLOW, M.D.
Mount Sinai School of Medicine

MONDAY, JANUARY 17

4:30 p.m.

The New York Academy of Medicine, Section on Radiology with New York Roentgen Society
2 East 103rd Street

GASTROINTESTINAL RADIOLOGY

Moderator:
RALPH SCHLAEGER, M.D.
Columbia Presbyterian Medical Center

Panelists:
THOMAS BENEVENTANO, M.D.
Montefiore Hospital
JACK FARMAN, M.D.
Downstate Medical Center
BERNARD S. WOLF, M.D.
Mount Sinai School of Medicine

7:00 p.m. (Hosack Hall)

RESIDENT'S QUIZ

JAKOB SMULEWICZ, M.D., Quizmaster
Queens Hospital Center

8:00 p.m. (Hosack Hall) Evening Diagnostic Lecture

THE LOWER ESOPHAGEAL FUNCTIONAL MUSCULAR RING—DIAGNOSTIC AND THERAPEUTIC SIGNIFICANCE

BERNARD S. WOLF, M.D.
Mount Sinai School of Medicine

8:00 p.m. (Room 441) Evening Therapy Session

BENIGN EYE CONDITIONS INCLUDING PTERYGIA

SIDNEY RUBENFELD, M.D.
N.Y.U. Medical Center

Panelists:
RAMON CASTROVIEJO, M.D.
St. Vincent's Hospital
GEORGE MERRIAM, M.D.
Columbia-Presbyterian Medical Center
MILTON ZARET, M.D.
Bellevue Hospital Center

Guest Speaker:
MANUEL LEDERMAN, M.D.
Royal Marsden Hospital, London

8:00 p.m.

The New York Academy of Medicine, Section on Ophthalmology with
New York Society for Clinical Ophthalmology
2 East 103rd Street

MANAGEMENT OF DIFFICULT CATARACTS

Moderator:
ARTHUR GERARD DeVOE, M.D.
Edward S. Harkness Eye Institute

1. **Surgery for Cataract and Uveitis**
   ROBERT COLES, M.D., N.Y.U. Bellevue Hospital
2. **Surgery for Cataract in the Young Adult**
   IRA JONES, M.D.
   Edward S. Harkness Eye Institute
3. **Surgery for Cataract and Glaucoma**
   JAMES E. BURRIS, M.D.
   New York Eye and Ear Infirmary
4. **Surgery for Cataract and Corneal Disease**
   GEORGE BUXTON, M.D.
   New York Eye and Ear Infirmary
5. **Surgery for Cataract with Peripheral Retinal Degeneration and Retinal Detachment**
   HARVEY LINCOFF, M.D.
   New York Hospital

January 18 and January 25, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

NEWER CONCEPTS IN MEDICINE
GEORGE POLLACK, M.D., Moderator

January 18
X-Ray of Chest
H. FRIEDMAN, M.D.

January 25
Peptic Ulcer
E. EDELMAN, M.D.

CREDIT: C-1

January 18 and January 25, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building, 4th Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Programs

January 18
Growth Problems in Childhood
RAPHAEL DAVID, M.D.
N.Y.U. School of Medicine

January 25—11:00 a.m. Coney Island Hospital
Clinical Pathological Conference in room 2 W1
KURT GERSTMANN, M.D.
Downstate Medical Center

WEDNESDAY, JANUARY 19

11:00 a.m.

Jewish Memorial Hospital
Broadway and 196th Street

ACUTE, SUBACUTE AND CHRONIC GLOMERULONEPHRITIS

KURT LANGE, M.D.
Flower-Fifth Avenue Hospital

CREDIT: C-1

3:30 p.m.

The Roosevelt Hospital
Winston Conference Room
428 West 59th Street

ALCOHOLIC LIVER INJURY AND ALCOHOL DEPENDENCE: CAUSE OR EFFECT?

CHARLES LIEBER, M.D.
Mount Sinai School of Medicine

CREDIT: C-1

4:00–5:00 p.m.

Flushing Hospital and Medical Center
Parsons Boulevard and 45th Avenue
Flushing

SKELETAL GROWTH DISTURBANCES IN CHILDREN

GEORGE KASSNER, M.D.
Downstate Medical Center

4:00–5:30 p.m.

Westchester Square Hospital
Conference Room
1625 St. Peters Avenue
Bronx

ONCOLOGIC THERAPEUTICS

GEORGE ESCHER, M.D.
Albert Einstein College of Medicine

CREDITS: AAGP and C-1

January 19, 1972 / February 2, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF MARITAL PROBLEMS IN MEDICAL PRACTICE

BENJAMIN J. BECKER, M.D.

NO FEE CREDIT: C-1

Apply: HARRY GERSHMAN, M.D., at the above address.

January 20 and January 27, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
Second Floor Conference Room
757 Bushwick Avenue
Brooklyn

January 20
Medical Staff Quarterly

January 27
Mortality Conference
SOL GLOTZER, M.D.

Moderator: WILLIAM Le STRANGE, M.D.

THURSDAY, JANUARY 20

8:00 p.m.

The New York Academy of Medicine
The Harvey Society
The Rockefeller University Caspary Hall
York Avenue and 66th Street

HEROIN ADDICTION AND CRIME

VINCENT P. DOLE, M.D.
Rockefeller University

FRIDAY, JANUARY 21

8:00–9:30 a.m.

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

ABDOMINAL PAIN

EPHRAIM SCHARFMAN, M.D.
Downstate Medical Center

FEE: $20 (Course on Pediatrics, Gynecology, Surgery and Medicine for the Family Physician, October 22, 1971 / April 21, 1972)

CREDITS: AAGP and C-1

8:00 p.m.

Staten Island Family Service
25 Victory Boulevard
Staten Island

PSYCHIATRIC PROBLEMS OF AGING

I. EMERY BREITNER, M.D.
Institute of Human Relations

NO FEE CREDIT: C-1

Contact: Sid Herling, MSW, Dir., above address

January 24, 1972 / January 28, 1972
9:00 a.m.–5:00 p.m., Monday–Friday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
100th Street and Fifth Avenue

LABORATORY METHODS IN HEMATOLOGY

LOUIS R. WASSERMAN, RICHARD ROSENFIELD, SOLOMON ESTREN, M.D.'s and the Members of the Mount Sinai Faculty
Mount Sinai School of Medicine

FEE: $300

MONDAY, JANUARY 24

1:00 p.m.

Downstate Medical Center
Basic Science Building, Lecture Hall 4
450 Clarkson Avenue
Brooklyn

Hematology Lecture

CLINICAL AND EXPERIMENTAL STUDIES OF THE HL-A SYSTEM

FELIX T. RAPAPORT, M.D.
N.Y.U. School of Medicine

TUESDAY, JANUARY 25

9:00 a.m.

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

DISSEMINATED LUPUS ERYTHEMATOSUS

MARTIN MELTZER, M.D.
N.Y.U. Medical Center

9:00 a.m.–4:30 p.m.

Harlem Hospital Center
136th Street and Lenox Avenue

COMPREHENSIVE CARE FOR STROKE AND HYPERTENSION: A COMMUNITY PROJECT

RALPH W. RICHTER, M.D.
Director, Harlem Regional Stroke Program

1. **Stroke in an Inner City Community**
   BERTEL BRUUN, M.D.
2. **Hypertension—Newer Aspects**
   MARGARET KILCOYNE, M.D.
3. **The Aftermath of Stroke—Rehabilitation Medicine**
   ROY BROWN, M.D.
4. **The Nurse Clinician—Role in Stroke Patients**
   CECELIA MACAULEY, R.N.
5. **Social Service Components**
   ELSIE ATWELL, M.S.W.
6. **Community Health Services: The Contributions and Role of Community Health Workers**
   PEGGY A. ALSUP, M.D.

Contact: RALPH W. RICHTER, M.D., Above address.
(212) 621-3365

CREDIT: C-1

8:30 p.m.

The New York Psychoanalytic Society
247 East 82nd Street

LIBIDINAL OBJECT CONSTANCY: SOME DEVELOPMENTAL CONSIDERATIONS

JOHN B. McDEVITT, M.D.

WEDNESDAY, JANUARY 26

8:30 p.m.

Association for the Advancement of Psychoanalysis
329 East 62nd Street

THE MYTH OF FEMININITY: A PANEL

MARIE R. BADARACCO APOLITY, M.D.
RUTH MOULTON, M.D., William Alanson White Institute
ALEXANDRA SYMONDS, M.D., N.Y.U. School of Medicine
MARTIN SYMONDS, M.D., Moderator

8:30 p.m.

The New York Academy of Medicine
Section on Historical Medicine
2 East 103rd Street

CONTRACEPTION THROUGHOUT THE AGES AND TODAY

ABNER I. WEISMAN, M.D.
The Weisman Museum and Archives of Ancient Medicine of the Americas, Cold Spring, New York

---

January 27, 1972 / Fifteen Sessions
7:00–8:30 p.m.

Postgraduate Center for Mental Health
124 East 28th Street

OFFICE AND CLINIC PSYCHOTHERAPY FOR PSYCHIATRISTS

FRED U. TATE, M.D., Chairman

1. **Psychodynamics of Neuroses and Psychoses**

2. Technique of Psychotherapy

3. Group Experience

4. Psychotherapeutic Practice

5. Supervision

Speakers:
SAMUEL V. DUNKELL, HENRY G. GRAND, NORMAN J. LEVY, SARA SHEINER, DAVID WEISSELBERGER, M.D.'s

Apply: Samuel V. Dunkell, M.D., above address

THURSDAY, JANUARY 27

8:30 p.m.

The Schilder Society for Psychotherapy and Psychopathology
Academy of Science
2 East 63rd Street

Paul Schilder Memorial Lecture

LITHIUM IN THE TREATMENT OF MANIC-DEPRESSIVE PSYCHOSIS

SIDNEY MALITZ, M.D.

January 31, 1972 / February 2, 1972
9:00 a.m.–5:00 p.m., Monday–Wednesday

Columbia University P & S
St. Luke's Hospital Center
Amsterdam Avenue and 114th Street

PLASTIC AND RECONSTRUCTIVE SURGERY

Plastic Surgical Staff and graduates of St. Luke's Hospital Center

FEE: $150

NEW YORK CITY FUTURE EVENTS

February 1, 1972 / May 26, 1972
9:00 a.m.–4:00 p.m., Monday–Friday

French and Polyclinic Medical School and Health Center
345 West 50th Street

BASIC SCIENCES FOR FOREIGN MEDICAL GRADUATES AND QUALIFIED STUDENTS PREPARING FOR PART I OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

All communications concerning the course should be addressed to the Office of the Dean, at the above address. Application must be made prior to January 15, 1972.

February 1, 1972

French and Polyclinic Medical School
345 West 50th Street

NURSING HOME ADMINISTRATION COURSES

First Session of each Course:
February 1—6:00–9:00 p.m.

Nursing Home Administration

February 1, 1972—7:00–9:00 p.m.

Seminar in Nursing Home Administration

February 3, 1972—6:00–8:00 p.m.

Frontiers of Geriatrics

February 4, 1972—6:00–8:00 p.m.

Environmental Sanitation

Write: The Dean at the above address.

February 1, 1972 / April 27, 1972
8:00–10:00 p.m., Tuesdays and Thursdays

French and Polyclinic Medical School
345 West 50th Street

MEDICAL REVIEW COURSE FOR GENERAL PRACTITIONERS

NO FEE CREDIT: AAGP and C-1

February 4, 1972 and February 5, 1972

***Memorial Sloan-Kettering Cancer Center**
444 East 68th Street

Two-Day Symposium on

PROBLEMS OF THE FEMALE BREAST AS RELATED TO NEOPLASMS AND RECONSTRUCTION

FEE: $100 ($50 for Residents in training)

Requests for application forms should be addressed to: REUVEN K. SNYDERMAN, M.D., at the above address.

* co-sponsor: The American Society of Plastic and Reconstructive Surgeons, Inc.

February 7, 1972 / February 11, 1972

The Page and William Black Post-Graduate School of Medicine
Mount Sinai Medical Center
100th Street and 5th Avenue

SURGERY OF THE PARANASAL SINUSES

JOSEPH L. GOLDMAN, KARL M. MORGENSTEIN,
SHEPPART SIEGEL, DANIEL C. BAKER, JR., M.D.'s
Mount Sinai School of Medicine

FEE: $400

February 8, 1972 / May 16, 1972
1:00–6:00 p.m., Tuesdays

Downstate Medical Center
Queens Hospital Center Affiliation, Department of Radiology
82-68 164th Street
Jamaica

MEDICAL USES OF RADIOACTIVE ISOTOPES

LESTER LEVY, M.D. with LAWRENCE SILVER,
DONALD MARGOULEFF, M.D.'s and MR. GERALD SHAPIRO
and invited lecturers

FEE: $275

To register, contact: Lawrence Silver, M.D., Division of Nuclear Medicine, Long Island Jewish Medical Center/Queens Hospital Center Affiliation, at the above address.

February 10, 1972 / February 12, 1972
9:00 a.m.–4:30 p.m., Thursday–Saturday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
100th Street and 5th Avenue

NEUROPHARMACOLOGY

GERARD M. LEHRER, M.D., JACK PETER GREEN, Ph.D. and the Members of the Faculty, Mount Sinai School of Medicine

FEE: $150

February 10, 1972 / February 24, 1972
3:00–5:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

ACCOMMODATIVE AND NON-ACCOMMODATIVE ESODEVIATIONS

EDWARD L. RAAB, M.D.
Mount Sinai School of Medicine

FEE: $60

February 13, 1972 / February 17, 1972

Medical Society of the State of New York
The Americana Hotel

ANNUAL CONVENTION

Address all inquiries to the chairman, Medical Society of the State of New York, 420 Lakeville Road, Lake Success, N.Y. 11040.

February 21, 1972 / March 3, 1972
9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine

TEMPORAL BONE SURGERY

HARRY ROSENWASSER, SIMON C. PARISIER,
DONALD J. NALEBUFF, KENNETH H. BROOKLER, M.D.'s
Mount Sinai School of Medicine

FEE: $500

March 2, 1972 / April 27, 1972

Beth Israel Medical Center
10 Nathan D. Perlman Place

8-Week Series

DRUG USE, ABUSE, DEPENDENCE, TREATMENT

For further information, please contact A. STAUFFER CURRY, Ph.D., Coordinator, Program of Continuing Education, Department of Psychiatry, the above address.

SUBSCRIPTION

Subscriptions to "WHAT GOES ON" are being offered at less than cost. The $3.00 one-year subscription rate guarantees you 22 issues mailed first class in advance of the *New York State Journal of Medicine.*

BUFFALO AREA

January 20, 1972 and January 27, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

January 20
- **The Jugular Pulse**
  - **Jugular Contours**
    - **Normal AC and V Waves**
    - **Normal X, X¹ and Y Descents**
    - **Clinical Recognition of Contours**
    - **Differential From Carotids**
    - **Right Versus Left Jugular**
    - **Internal Versus External Jugular**

January 27
- **The Jugular Pulse**
  - **Jugular Contours**
    - **A Wave Abnormalities**
    - **V Wave Abnormalities**
  - **Jugular Pressure Measured by Inspection**
    - **Abdominal Compression Test**
    - **Venous Pressure by Manometry**
  - **Intermission**
  - **Case Presentations**

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State University of New York at Buffalo
2211 Main Street
Buffalo, N.Y. 14214
Tel. (716) 831-5526.

TENTATIVE SCHEDULE FOR WINTER-SPRING 1972

Cardiac Clinics and Physical Examination of the Cardiac Patient
Community Psychiatry
Neurology Seminar Day
Gynecology and Obstetrics
Medical and Surgical Aspects of Urology
Endocrine Diseases
Surgical Aspects of Gastroenterology
Anesthesiology
Thirty-Fifth Annual Spring Clinical Days
Refresher Seminar in Pediatrics
Child Development

TELEPHONE LECTURE NETWORK

The State University of New York at Buffalo School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, and Allegany in New York State and Erie

County and McKean County in the Commonwealth of Pennsylvania.

Programs are presented in five series.

1. A weekly series of general interest considered useful to all physicians presented at 11:30 a.m. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. A new monthly series of Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A new series sponsored by the Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 a.m.

For further information, please contact Continuing Medical Education, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

NASSAU COUNTY

WEDNESDAY, JANUARY 12

8:00 a.m.

Mercy Hospital
MacArthur Hall
Rockville Centre

Surgical Conference

ABDOMINO-TRANSSACRAL RESECTION AND ANASTAMOSIS FOR MID-RECTAL CANCER

S. ARTHUR LOCALIO, M.D.
N.Y.U. Medical Center

NO FEE

WEDNESDAY, JANUARY 19

9:00 a.m.

Mercy Hospital
MacArthur Hall
Rockville Centre

Medical Conference

CURRENT THERAPY OF LEUKEMIA

S. BENHAM KAHN, M.D.
Hahnemann Medical College and Hospital

NO FEE CREDIT: C-1

January 19 and January 26, 1972
4:00 p.m., Wednesdays

Nassau County Medical Center—Meadowbrook Hospital
X-Ray Classroom
2201 Hempstead Turnpike
East Meadow

Department of Radiology Lectures

January 19
Workup and Staging of Hodgkin's Disease and Lymphomas
BRUCE SAXE, M.D.
Nassau Hospital

January 26
3-Dimensional Time Sequence Roentgenography
REUBEN HOPPENSTEIN, M.D.
Mount Sinai School of Medicine

January 20 and January 27, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

January 20
Obesity in Children
LEWIS M. FRAAD, M.D.
Albert Einstein College of Medicine

January 27
Circadian Rhythms
THOMAS R. SISSON, M.D.
Temple University, Philadelphia

SYRACUSE AREA

THURSDAY, JANUARY 20

1:00 p.m.

St. Joseph's Hospital Health Center and Upstate Medical Center
Gotham Motor Inn—Exit 35
New York State Thruway
Syracuse

Department of Family Practice

GASTROENTEROLOGICAL PROBLEMS OF CHILDREN AND YOUNG ADULTS

RICHARD G. FARMER, M.D.
Cleveland Clinic, Cleveland, Ohio

NO FEE CREDIT: C-1 and AAGP

PHYSICIANS' PLACEMENT

CORNING, N.Y., Steuben County, needs a G.P. and an Internist.

CONTACT: Professional Development Committee, Corning Hospital Medical Staff, Corning Hospital, Corning, N.Y. 14830. Tel. (607) XF6-4611.

CROGHAN, N.Y., Lewis County. G.P.

CONTACT: MR. BERNARD BERGMANN, Village of Croghan, N.Y. 13327.

CUBA, N.Y., Allegany County, desires a G.P. and Specialists in Ob/Gyn and Internal Medicine.

CONTACT: MR. GERALD B. COLE, Adm., Cuba Memorial Hospital, Cuba, N.Y. 14727. Tel. (716) 968-2000.

ELMONT, N.Y., Nassau County. Solo Pediatrician for very active diversified practice. Good income guaranteed. Salary first year, leading to early partnership.

CONTACT: ALBERT SHERWYN, M.D., 2266 Dutch Broadway, Elmont, N.Y. 11003. Tel. (516) PR 5-0493.

FULTON, N.Y., Oswego County. G.P.

CONTACT: Administrator, Lee Memorial Hospital, Fulton, N.Y. 13069.

GENESEO, N.Y., Livingston County. Internist and/or Pediatrician to help form a group practice.

CONTACT: RALPH C. PARKER, M.D., University of Rochester Medical Center, 260 Crittenden Blvd., Rochester, N.Y. 14620. Tel. (716) 275-4540.

GREENE, N.Y., Chenango County. G.P. for Clinic.

CONTACT: JAMES GILROY, M.D., N. Chenango Street, Greene, N.Y. 13778. Tel. (607) 656-4115.

HERKIMER, N.Y., Herkimer County. Two G.P.'s and Specialist in Ob/Gyn.

CONTACT: MR. JOHN SYMONS, Adm., Herkimer Memorial Hospital, 690 West German Street, Herkimer, N.Y. 13350. Tel. (315) 866-3330.

HILTON, N.Y., Monroe County, needs G.P.'s

CONTACT: ROBERT BLODGETT, M.D., Village of Hilton, N.Y. 14468. Tel. (716) 392-4114.

HOLLAND PATENT, Oneida County. G.P.

CONTACT: MR. RENO A. B. VENTRE, Chm. Holland Patent Physician Committee, P.O. Box 177, Holland Patent, N.Y. 13354. Tel. (315) 865-4233.

HUDSON, N.Y., Columbia County, needs a Pediatrician for community and hospital.

CONTACT: STANLEY BARDWELL, M.D., 848 Columbia Street, Hudson, N.Y. 12534. Tel. (518) 828-9721.

HUDSON, N.Y., Columbia County. Specialist in Gastro/I.M. to assist G./I.M. in development of a G/IM unit.

CONTACT: JAMES A. HALSTED, M.D., 848 Columbia Street, Hudson, N.Y. 12534. Tel. (518) 828-1410.

LITTLE FALLS, N.Y., Herkimer County. Specialists in Anesthesiology, G.P., and Pediatrics.

CONTACT: MR. RICHARD S. QUINLAN, Little Falls Hospital, Little Falls, N.Y. 13365. Tel. (315) 823-1000.

EVENTS RECEIVED AFTER DEADLINE

January 11, 1972 / January 25, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
Main Conference Room
101 Castleton Avenue
Staten Island

Continuing Postgraduate Education Family Practice Section

January 11
Diabetes Mellitus—Subtle Signs of
LOUIS GIANVITO, M.D.

January 18
Cardiac Arrhythmias
MARIE C. ROSATI, M.D.

January 25
Respiratory Infections and Antibiotics
CHARLES CHERUBIN, M.D.

Credit: C-1

TUESDAY, JANUARY 11

1:00 p.m.

Downstate Medical Center
Continuing Education Conference Center
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

Visiting Scientist Seminar

ADVERSE EFFECTS OF IODIDES IN PATIENTS WITH PREVIOUS OR UNDERLYING THYROID DISEASE

LEWIS E. BRAVERMAN, Prof.
Tufts University School of Medicine

WEDNESDAY, JANUARY 12

8:00 p.m.

The New York Allergy Society
Hotel Commodore
42nd Street

Roundtable

CROMOLYN SODIUM IN THE TREATMENT OF ASTHMA

MICHAEL H. GREICO, M.D., Moderator
St. Luke's Hospital

Discussants:
PETER MAWDSLEY, M.D., Fisons Corporation
EARL B. BROWN, M.D., Lenox Hill Hospital
MURRAY DWORETZKY, M.D., New York Hospital
JOHN T. CONNELL, M.D., Roosevelt Hospital

FRIDAY, JANUARY 14

8:30 p.m.

American-Hungarian Medical Association
The New York Academy of Medicine
2 East 103rd Street

1. **Vascular Surgery, Appraisal and Prediction**
   ROY CLAUSS, M.D.
   New York Medical College
2. **Acute Pancreatitis, New Concepts in Diagnosis and Treatment**
   ROBERT B. PFEFFER, M.D.
   N.Y.U. School of Medicine

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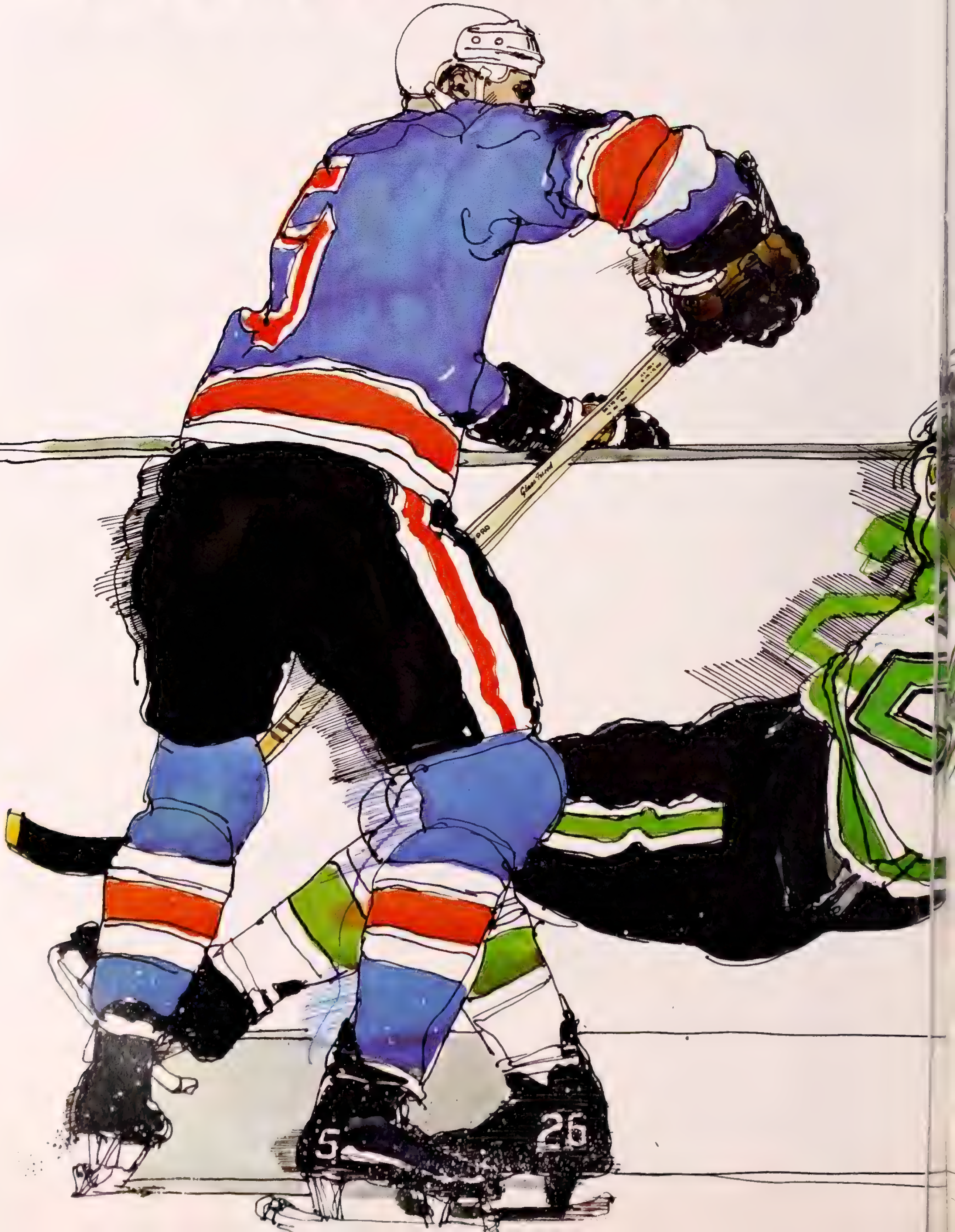

26
Ken Dallison

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Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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New York State Journal of Medicine

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Are they too old to swing?

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Use in mild asymptomatic diabetic patients with abnormal glucose tolerance tests not responding to diet therapy may result in improvement of the glucose tolerance test.

Use in conjunction with phenformin is indicated when optimal control is not obtained with Orinase or phenformin alone.

Contraindications: Orinase alone is not effective in juvenile or growth-onset diabetes nor in unstable brittle diabetes where insulin therapy is required.

Orinase should not be used: when diabetes is complicated by acidosis, ketosis, or coma, or when a history of repeated bouts of acidosis or coma is obtained; in the presence of other acute complications such as fever, severe trauma, or infections; and in patients with severe renal insufficiency. Insulin is indicated in these circumstances.

Pregnancy Warning: The safety and usefulness of Orinase during pregnancy has not been established either from the standpoint of the mother or the fetus. Animal studies have demonstrated feticidal and teratogenic effects of doses of 1,000-2,500 mg./kg./day, but application to human subjects unknown. Therefore, Orinase is not recommended for the pregnant diabetic, and when administering Orinase to women of childbearing age, these facts should be borne in mind.

Precautions: Diagnostic and therapeutic measures necessary for optimal control with insulin are also necessary with Orinase. The patient on Orinase must be fully instructed: about the nature of his disease; how to prevent and detect complications; how to control his condition; not to neglect dietary restrictions, develop a careless attitude or disregard instructions relative to body weight, exercise, personal hygiene, and avoidance of infection; how to recognize and counteract impending hypoglycemia; how and when to test for glycosuria and ketonuria; how to use insulin; and to report to the physician immediately if he does not feel as well as usual.

Caution, very close observation, and careful adjustment of dose are necessary when: insulin is withdrawn during the trial period in order to avoid ketosis, acidosis, and coma; thiazide diuretics are administered which may result in aggravation of diabetic state and increased tolbutamide requirement, temporary loss of control, or even secondary failure; treating patients with impaired hepatic and/or renal function and debilitated, malnourished, or semistarved patients in order to avoid severe hypoglycemia which may require corrective therapy over several days; and treating patients with severe trauma, infection, or surgical procedures where temporary return to insulin or addition of insulin may be necessary. Response to tolbutamide is diminished in patients receiving therapy with beta blocking agents.

As some diabetics are not suitable candidates, it is essential that the physician familiarize himself with the indications, limits of application, and selection of patients for therapy.

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(tolbutamide, Upjohn)

cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

Although usually not serious, gastrointestinal disturbances (nausea, epigastric fullness, and heartburn) and headache appear to be dose related and frequently disappear with reduction of dose or administration with meals. Allergic skin reactions (pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions) are transient, usually not serious, and frequently disappear with continued administration. Orinase should be discontinued if skin reactions persist. Recent reports indicate that long-term use of Orinase has no appreciable effect on body weight.

Orinase appears to be remarkably free from gross clinical toxicity: crystalluria or other renal abnormalities have not been observed; incidence of liver dysfunction is remarkably low and jaundice has been rare and cleared readily on discontinuation of drug (carcinoma of the pancreas or other biliary obstruction should be ruled out in persistent jaundice); leukopenia; agranulocytosis; thrombocytopenia; hemolytic anemia; aplastic anemia; pancytopenia; and hepatic porphyria and porphyria cutanea tarda have been reported.

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Month in Washington

With the exception of House-Senate conference resolution of legislation designed to step up the nation's efforts to find a cure for cancer, the 92nd Congress' activity in the area of health legislation in this session has probably ended.

Senate consideration of the Social Security Amendments (Medicare and Medicaid changes) has been postponed until after the first of the year and the House Ways and Means Committee hearings on national health insurance have come to a halt after six grueling weeks and executive sessions will not be scheduled until early 1972.

The House approved 350 to 5 an expanded $1.6 billion cancer research program within the National Institutes of Health. The bill differs from a Senate measure which provided that the head of the National Cancer Institute report directly to the White House, bypassing the director of the National Institutes of Health. Under the House bill, the head of the Cancer Institute would be elevated to associate director of NIH, and the budget for cancer would be handled separately by the president's office of budget and management. A House-Senate conference must now determine how to reconcile the important organizational differences in the measures.

The Senate's reluctance to come to grips with the Social Security Amendments of 1971—unfinished business in the last session of the previous Congress—has been attributed to wide disagreement among members as to how to proceed with that portion of the proposed legislation that would establish a new family assistance welfare plan.

On the positive side, however, with respect to the 92nd Congress' attention to health matters is its success with legislation designed to sharply increase the training of physicians, nurses, and other medical personnel.

On signing this legislation, President Nixon called on Congress to appropriate $350.2 million in additional funds to pay for the program for the rest of the fiscal year that runs through June 30, 1972.

The measure provides grants to medical schools and nursing schools to help finance additional construction and to encourage the enrollment of additional students. It also provides loans and grants directly to medical and nursing school students.

Merlin K. DuVal, M.D., assistant HEW secretary for health and scientific affairs, said the nation faces a shortage of 50,000 physicians and as many as 200,000 nurses by the end of this decade unless action is taken.

DuVal said the legislation could increase by about 1,200 first-year enrollment of physician candidates in medical schools next year, a 10 per cent increase in the first-year places.

DuVal predicted that if HEW law is adequately funded each year it could eliminate the shortage of physicians by 1980. He said he was unable to make a similar prediction concerning the nursing shortage.

* * *

Prepared by the Washington, D.C., Office of the American Medical Association.

The American Medical Association's testimony before the House Ways and Means Committee hearings on national health insurance attracted for one of the few times during the marathon sessions most of the committee members, although Chairman Wilbur Mills was away on the campaign trail.

The AMA urged adoption of its national health insurance proposal, Medicredit, as a program that "can be put into operation now."

The AMA proposal, which offers both basic and catastrophic coverage of all Americans not covered by Medicare, was set forth in testimony before the House Ways and Means Committee by Max H. Parrott, M.D., chairman of the AMA Board of Trustees, and Russell B. Roth, M.D., Speaker of the AMA House of Delegates.

"I do not want to suggest to this committee that our present system of health care is perfect. It is not. It needs modification and change. And it will serve people better with the kind of government supported health insurance we propose in our Medicredit bill," Dr. Parrott told the committee.

"It (Medicredit) avoids the mistake inherent in proposals such as H.R. 22 (the Kennedy-Labor bill), which would lock medicine into a rigid, monolithic, no-choice, bureaucratic system before there is any real evidence that it would make things better," he said.

In contrast to H.R. 22, Dr. Roth stated, Medicredit builds on outstanding accomplishments of American medicine "which has shown a capability of being the best in the world."

"And it can be put into operation now. It has no dependence on untried theory of dubious economics. It does not require an unreasonable expenditure of Federal dollars, and it does not jeopardize the funding of other vitally necessary programs to improve the nation's health. It places emphasis on greater financial support for persons needing this assistance. It does not create an unreasonable, unrealistic, and burdensome administrative bureaucracy," Dr. Roth added.

The AMA Medicredit proposal, whose 160 sponsors in Congress are the most for any national health insurance proposal, would provide both basic and catastrophic coverage for all Americans under age sixty-five. (Medicare would continue for all those over sixty-five years old.) It is based on a system of tax credits with the government paying the cost for those who have little or no income. The government would also pay the premiums on the catastrophic coverage for all citizens. (The AMA estimates Medicredit would cost about $14 billion a year. H.R. 22 would cost at least $60 billion a year in new tax money, according to a recent study by the Department of Health, Education, and Welfare.)

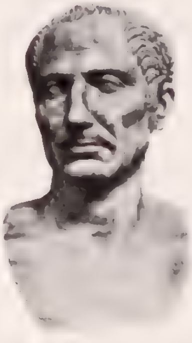
Under the basic coverage, Medicredit provides comprehensive benefits in respect to hospital inpatient and outpatient services, as well as full physician services. Its catastrophic coverage includes full hospitalization and additional extended care, with a continuation of outpatient services and full physician services.

"It puts these benefits within the reach of all Ameri-

continued on page 208

Cleopatra and Caesar, Wine Lovers

...a story that every Doctor and Nurse should know.


Julius Caesar 102–44 B C.

Cleopatra, 69–30 B.C. For their first secret meeting, she had herself "delivered" to Caesar rolled up in a rug.

JULIUS CAESAR wasn't a doctor, but thanks partly to the wiles of a young woman named Cleopatra — who wasn't a nurse — he changed the history and the practice of medicine!

(Incidentally, Caesar was a tremendous influence in wine, too. He sponsored plantings in conquered lands which were to become France, Germany, Italy, Switzerland, Spain and Portugal — the six nations from which California derives its classic vine and its wine traditions.)

To compress history just a bit, here's how Caesar did it:

Visiting Egypt, he dallied with Cleopatra in Alexandria (48–47 B.C.), and sired their son Caesarion. He also observed the wondrous university where Cleopatra's Ptolemaic Dynasty had preserved Greek medical and scientific treasures for three centuries—including the teachings of Hippocrates!

Impressed by Greek genius (Cleopatra was Greek, too, remember), Caesar returned to Rome and freed the Greek doctor slaves. This gave them Roman citizenship and the right to practice. They brought into Rome's primitive patient care more modern precepts, ethics, diagnostics, and wine therapy, thus raising medical standards for the next twenty centuries.

His fascinating lady friend had moved to Rome, and they might have lived happily ever after—but remember the Ides of March, 44 B.C.—*Thou too, Brutus? Then fall, Caesar!* . . . And sadly Cleopatra Ptolemy never became Mrs. Julius Caesar, queen of the world.

At his death, Caesar was not only master of the world, but its best known wine connoisseur. Two years before, he had celebrated a triumph (Dictator for Life), inviting everybody in Rome to a feast, and serving them *four* famous vintage wines, those of Falernum, Chios, Mamertinum, and the wine of Lesbos.

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2 USES OF WINE IN MEDICAL PRACTICE, 64 pp.; contains references to the results of 30 years of scientific medical research in U.S. and abroad on wine in nutrition, convalescence, gastroenterology, various clinical conditions, covers Indications, Contraindications, Bibliography, wine in Hospital and Nursing Homes.

3 WINE COOKERY THE EASY WAY, 24 pp., 53 recipes for "gourmet meals in a hurry" with convenience foods; and CALIFORNIA WINE COOKERY AND DRINKS, 24 pp., 88 recipes; ideas, for home fun of good cooking, serving, and entertaining. Both booklets free.

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Fifth Annual Symposium on

MEDICAL ASPECTS OF SPORTS

Sponsored by the

Medical Society of the State of New York
Committee on Medical Aspects of Sports

Saturday, February 12, 1972 9:00 a.m. to 5:00 p.m.
Americana Hotel, New York City

Registration—8:30 a.m., Georgian Foyer (No Registration Fee)

9:00 a.m. Greetings: George Himler, M.D., *President Medical Society of the State of New York;* Thomas Sheldon, Ph.D., *Deputy Commissioner, State Education Dept.*

DRUG ABUSE AND DRUGS IN SPORTS—Georgian Ballroom A

Program—Morning Session—9:00 a.m.

Moderator, Max Novich, M.D., *Orthopedic Surgeon, Perth Amboy, N.J.*

9:15–11:00 a.m.

1. BASIC PHARMACOLOGY OF COMMONLY ABUSED DRUGS
   Harold Borgstedt, M.D., *Assoc. Prof. of Pharmacology, University of Rochester*

2. CARE AND TREATMENT IN DRUG ABUSE CASES
   Leonard L. Heimoff, M.D., *Clin. Assoc. Prof. of Medicine, Cornell University Medical College*

3. DRUG ABUSE IN SPORTS
   Fred L. Allman, Jr., M.D., *Team Physician, Georgia Institute of Technology*

11:00 a.m. FILM: WHAT DID YOU TAKE? Discussion by Donald C. Walker, M.D., *Asst. Dir., Office of Medical Manpower, N.Y. State Dept. of Health*

GIRLS PROGRAM—Georgian Ballroom B

11:00 a.m. Health Aspects—Medical Views on Girls Interscholastic Sports. Moderator, Lewis C. Obourn, *Chairman, Safety*
12:30 p.m. *Committee NYSPHSAA*

Greetings: Thomas Sheldon, Ph.D., *Deputy Commissioner, State Education Dept.*

1. MEDICAL VIEWS ON GIRLS' INTERSCHOLASTIC SPORTS
   Thomas E. Shaffer, M.D., *Prof. of Pediatrics, Ohio State University College of Medicine*

2. PSYCHOLOGICAL ASPECTS—CONSIDERATION OF FEMALE COMPETITIONS
   Dorothy V. Harris, Ph.D., *Pennsylvania State University*

3. FUTURE OF GIRLS' SPORTS IN NEW YORK STATE
   Katherine Ley, Ph.D., *Past Chmn., Commission on Intercollegiate Athletics for Women, State University of New York at Cortland*

11:15 a.m. CLINICAL DEMONSTRATIONS—Versailles Terrace
12.30 p.m. Coordinator, Joseph N. Abraham, Ph.D., *Dir. of Physical Education, Hobart College, Geneva*
John Dziegiel, *Trainer, New York Giants Pro Football Team*
John Kundson, *Trainer, Wagner College Athletic Teams*
Fritz Massansan, *Trainer, New York Nets Pro Basketball*

12:30 p.m. LUNCHEON—Royal Ballroom A and B. Toastmaster, Ralph S. Emerson, M.D., *Chairman, Committee on Medical Aspects of Sports;* Guest Speaker, Richard Forzano, *Head Coach, United States Naval Academy*

2:00 p.m. Scientific Program—Georgian Ballroom A
Moderator, Alexius Rachun, M.D., *Team Physician, Cornell University*

1. HOWS AND WHYS OF INJURIES
James M. Robey, Ph.D., *University of North Carolina*

2. THE SUBLUXATING SHOULDER IN ATHLETES
Anthony De Palma, M.D., *Dir., of Orthopedic Surgery, New Jersey College of Medicine & Dentistry*

3. CARDIOVASCULAR AND CARDIORESPIRATORY HEALTH
Nicholas Alexiou, M.D., *N.Y. State Department of Health*

4. WEIGHT CONTROL—all year round conditioning & training of athletes
Thomas De Lorme, Jr., M.D., *Harvard University*

GIRLS PROGRAM—Georgian Ballroom B

2:00–3:30 p.m. Moderator, Miss Rita Eichenger, *Chairman, State Comm. for Girls' Athletic Activities,* N.Y.S.P.H.S.A.A.

1. TEAM SPORTS
Miss Iris Carnell, President-elect, AWPENYS, Assoc., Prof. Ithaca College

2. THE INDIVIDUAL SPORTS
Mrs. Lura Wilson, *Past President,* AWPENYS

3. GYMNASTICS
Mrs. Muriel Grossfeld, *U.S. Women's Gymnastic Olympic Team, 1956, 1960, 1964*

4. TRACK AND FIELD
Nell C. Jackson, Ph.D., *Coach, U.S. Girls Olympic Track Team*

PANEL—QUESTION AND ANSWER PERIOD
Chairman, Joseph Abraham, Ph.D., *U.S. Olympic Trainer, Womens Gym and Volleyball Team*
Penelists: Thomas E. Shaffer, M.D., *Prof. of Pediatrics, Ohio State University College of Medicine;* Katherine Ley, Ph.D., *State University of New York at Cortland;* Muriel D. Grossfeld, *Coach, Olympic Womens' Gymnastic Team*

3:30 p.m. REPEAT CLINICAL DEMONSTRATION—Versailles Terrace

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continued from page 204

cans under age sixty-five as a prepaid insurance package," Dr. Roth told the committee. "The benefits are uniform for all citizens under the program. For those with little or no income, the cost would be borne by the Federal government from general revenues. For those with a capability to pay part of the costs, the program is realistically geared to encourage them to do so. The motivation for participation would, we believe, be especially strong because of our incorporation of tax credits."

Dr. Parrott, in his testimony, drew the attention of the committee to many achievements in American medicine:

> Those who criticize our system of medicine imply that it is static and must be replaced. Let me call your attention to some of the salient accomplishments of our pluralistic medical system. Accomplishments that are obscured in the radical chic, by a disaster lobby which stridently proclaims a need for revolutionary change.
>
> Probably our highest achievement is in the quality of medical care in this country. The world standard of medicine is here in this country. American medical schools produce men and women with the best medical education there is. Our technology is unsurpassed. The ranks of allied health manpower continue to grow in terms of both size and sophisticated training.

Dr. Parrott cited the 25 per cent drop in the nation's infant mortality rate in the last decade and the steady growth of life expectancy in the United States as evidence "that American medicine—our pluralistic, evolving, pragmatic system—is changing things for the better, that we are making progress."

American medical schools, Dr. Parrott noted, have increased from 89 in 1967 to 108 this year, and first-year enrollment has grown from 9,000 to 12,000 students. The number of new physicians each year exceeds 8,000 due in part to "an almost revolutionary telescoping of the traditional medical education." This means, Dr. Parrott said, that the physician population is growing at a rate "more than double" the general population rate.

Organized medicine has also undertaken initiatives to bring medical costs under control, Dr. Parrott told the committee. This is being accomplished mainly through medical society foundations, based on the concept of peer review, which screen hospital admissions and review medical procedures.

"On balance, we have a medical system with impressive accomplishments, a system that is flexible and innovative, a system responsive to the need for change and improvement. In whatever action this committee chooses to take the American Medical Association strongly urges that you build on the very real strength that now exists," Dr. Parrott concluded.

* * *

The American Hospital Association told the House Ways and Means Committee hearings on national health insurance that its *Policy Statement on the Provision of Health Services* provides a direction for national health policy and serves as the basis on which the committee can frame goals and programs for the nation's health care.

Jack A. L. Hahn, the American Hospital Association's president, told the committee that once goals and priorities have been set, "what needs to be done is to embark immediately on a rationally staged program within an overall framework of established goals and objectives. Government must take the lead in providing the framework for required changes."

Later in his testimony Hahn said:

> The AHA program has been drafted as a legislative proposal, however, the initial draft is being restudied and revised by the Association. The bill-drafting process showed that simple and readily attainable solutions to complex problems do not exist." Hahn added that the association had not come with a legislative proposal for consideration by the Committee, but with "recommendations that can be taken now and that can serve as building blocks for the attainment of much broader goals for the system.

* * *

Elsewhere on Capitol Hill, the AMA told the Senate Health Subcommittee headed by Senator Edward Kennedy that is now exploring the feasibility of Health Maintenance Organizations that "the concept of the HMO has not yet been tested."

"Our strong recommendation is that we find out whether economics can be achieved before such a major commitment is made," declared John R. Kernodle, M.D., vice-chairman of the AMA Board of Trustees.

Stressing that the AMA supports and encourages further experimentation with HMO's, Dr. Kernodle said "HMO's are just one form of health care delivery and no one knows at this time just what impact they will have or how successful they will be in universal application."

With reference to the Nixon Administration's announced goal to make HMO's available to 90 per cent of the population within a decade, Dr. Kernodle said:

> To us, (AMA) this is an open-ended commitment. Because of the many unknown factors regarding HMO's we feel it is a rather dangerous blank check for the Congress to issue. For any time you are talking about a program that will affect 90 per cent of the people, you are, in fact, inaugurating a new medical system. It would seem to be the better part of wisdom to be certain of all the facts and cognizant of all pitfalls before embarking on such a course.

Clinton S. McGill, M.D., vice-chairman of the AMA Committee on Private Practice, told the subcommittee that less than 4 per cent of the population—generally only highly selective parts of the population—is served by prepaid group practices. "There is little experience with high-risk segments of the population. This, in our opinion, constitutes too narrow a base on which to construct a new universal system."

* * *

President Nixon has appointed a 21-member Committee on the Health Services Industry to oversee inflation in health care costs as part of the Phase 2 economic program. Chairman of the advisory group is Mrs. William C. Dunn, Commissioner of the Department of Consumer Protection for Connecticut.

The Administration intends to cover physicians' services as well as those of all other providers of services in the cost control effort, but the manner in which this will be carried out has not yet been established.

While the government obviously can control to some extent payments in Federal programs, such as Medicare, especially for hospitals, regulating physicians' fees in the private sector is something else again. Apparently, a

continued on page 217

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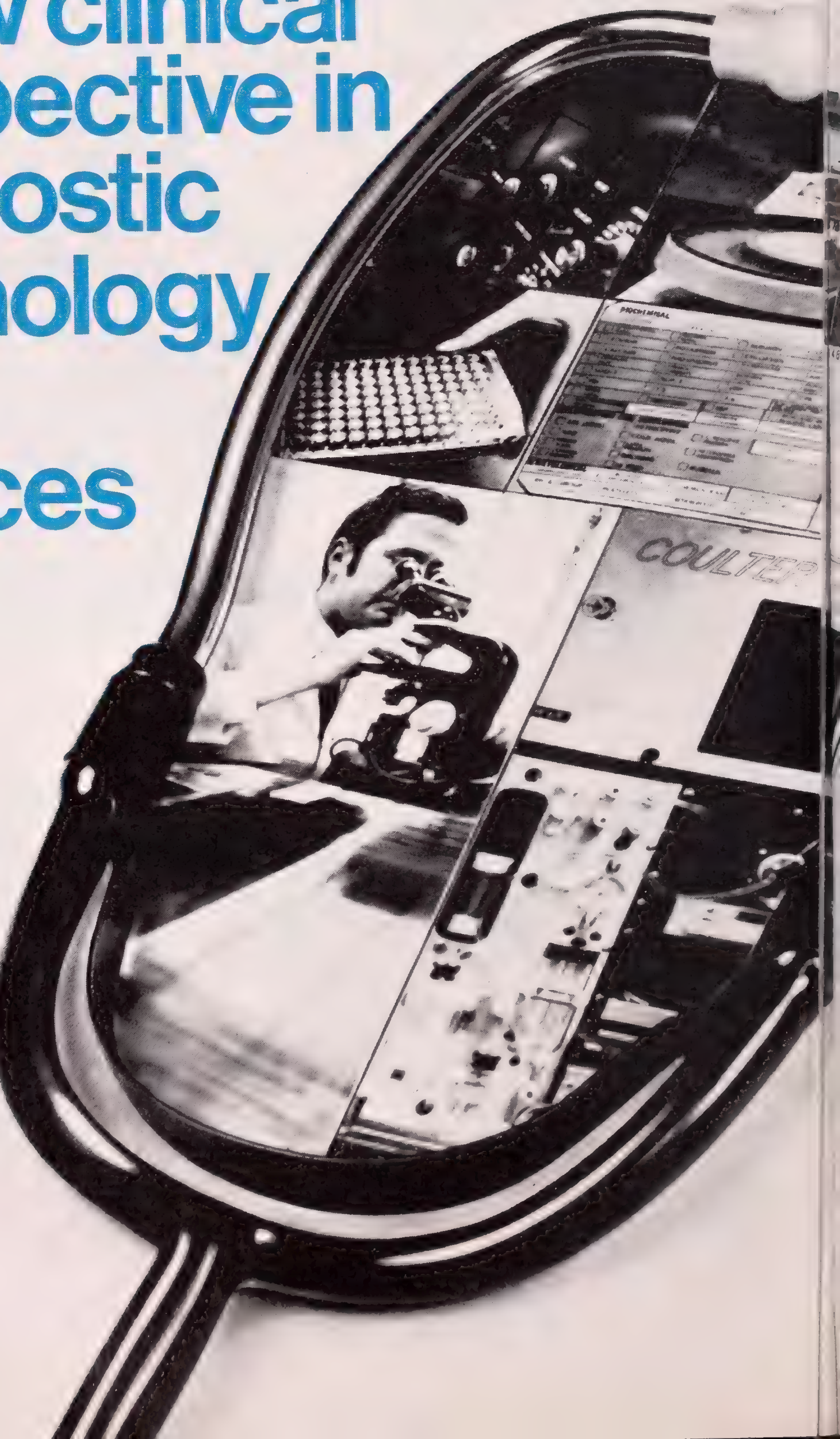

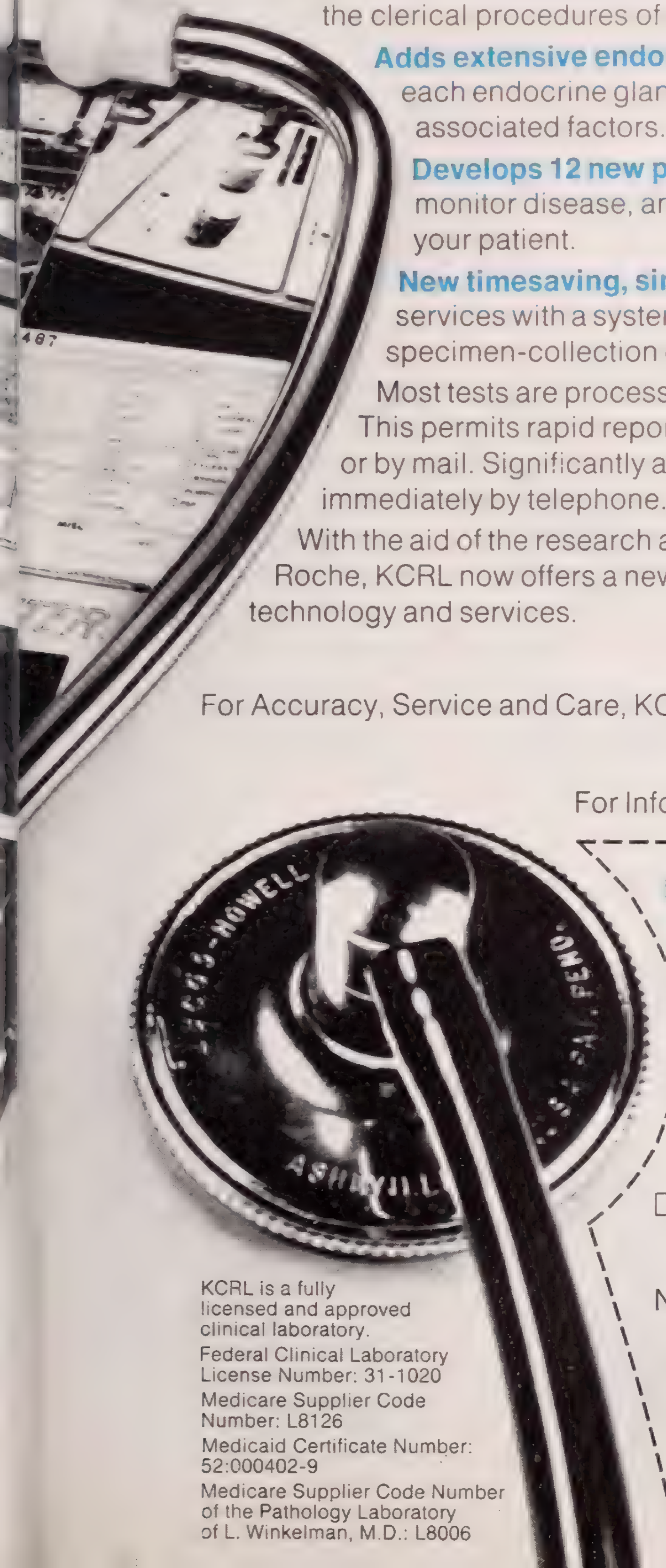

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TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

The following chart was adapted by the Suffolk County Medical Society from one prepared by the Suffolk County District Attorney's Office

Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana ("Pot," "Grass")	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines ("Pep Pills," "Ups")	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates ("Goof Balls," "Downs")	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

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Abstracts

Graubert, D. M., and Edmonson, J. H.: Psychologic adaptation of patients isolated in protected environments, ***New York State J. Med.*** **72:** 227 (Jan. 15) 1972.

Fourteen granulocytopenic patients were observed during treatment in plastic isolators for a total of 718 days. Considering the stressful nature of their illnesses and the treatment in an unnatural environment, these patients suffered remarkably few difficulties of psychologic adaptation. Psychotropic drugs in small doses were frequently used; however, no patient required removal from the protected environment for predominantly psychologic reasons.

Herbert, W. H.: Limitations of pulmonary artery end-diastolic pressure; As reflection of left ventricular end-diastolic pressure, ***New York State J. Med.*** **72:** 229 (Jan. 15) 1972.

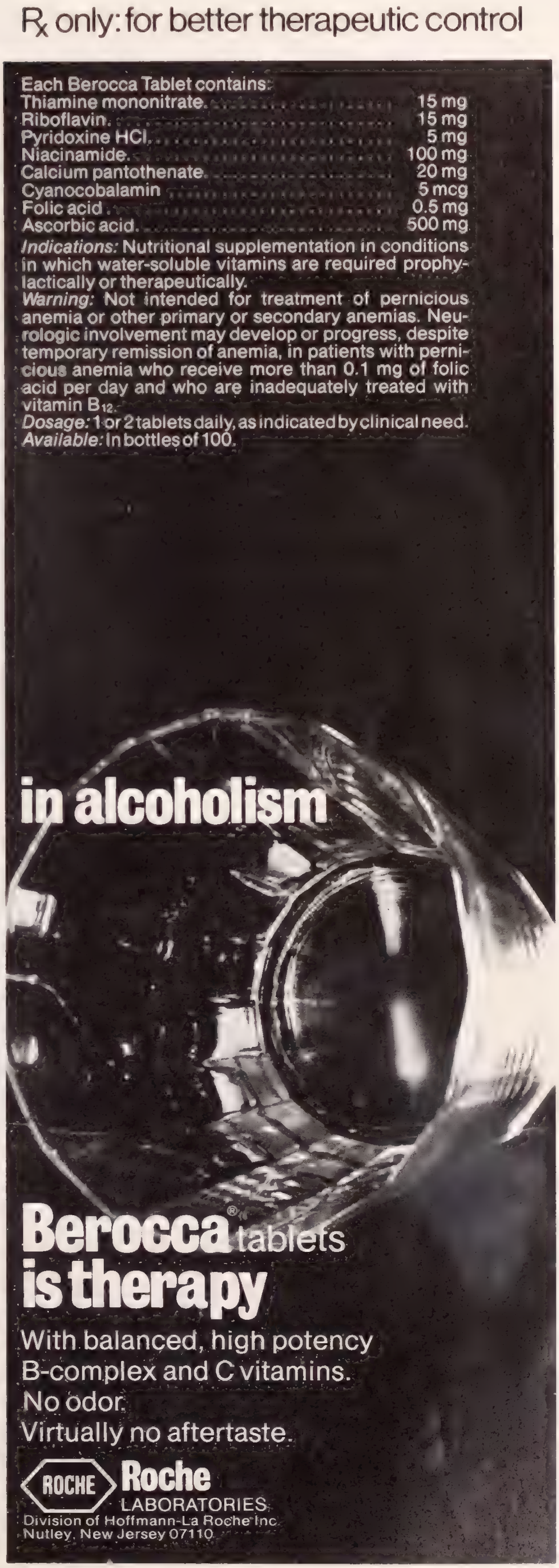
The clinical application of the principle of the pulmonary artery end-diastolic pressure as an accurate reflection of the left ventricular end-diastolic pressure is increasing. The ease of recording the pulmonary artery pressure has made this a suitable monitoring method in coronary and intensive care units. The limitations in the use of pulmonary artery end-diastolic pressures as an assessment of left ventricular end-diastolic pressures has been related to pulmonary vascular disease, pulmonary venous or mitral block, right bundle branch block, aortic insufficiency, and left atrial pressure below pulmonary capillary "critical closing" pressure. In these abnormalities the pulmonary artery end-diastolic pressure is either higher or lower than the left ventricular end-diastolic pressure.

Gibbs, Stanley L.: Dental aspects of surgical orthodontics, ***New York State J. Med.*** **72:** 233 (Jan. 15) 1972.

Many problems of dental origin and scope exist in the proper planning of surgical orthodontic procedures. Successful completion depends on a thorough understanding of the factors involved. Complete investigation involving photographs, moulages, casts, periapical radiographs, proper cephalometric evaluation, and a multiplicity of model surgical procedures are invaluable tools to evolve the correct solution.

Lenczyk, J. M., and Mahoney, W. D.: Surgery in cancer of head and neck; Use of posterior cervical flap, ***New York State J. Med.*** **72:** 239 (Jan. 15) 1972.

When problems of wound dehiscence, fistula closure, vessel protection, and resurfacing are encountered in surgery for cancer of the head and neck, permanently based regional flaps are frequently used. Such flaps are particularly necessary if the operative region is scarred from previous procedures or irradiation. The technic is outlined, and four cases in which the posterior cervical flap was utilized, are described. In each instance no flap breakdown occurred.



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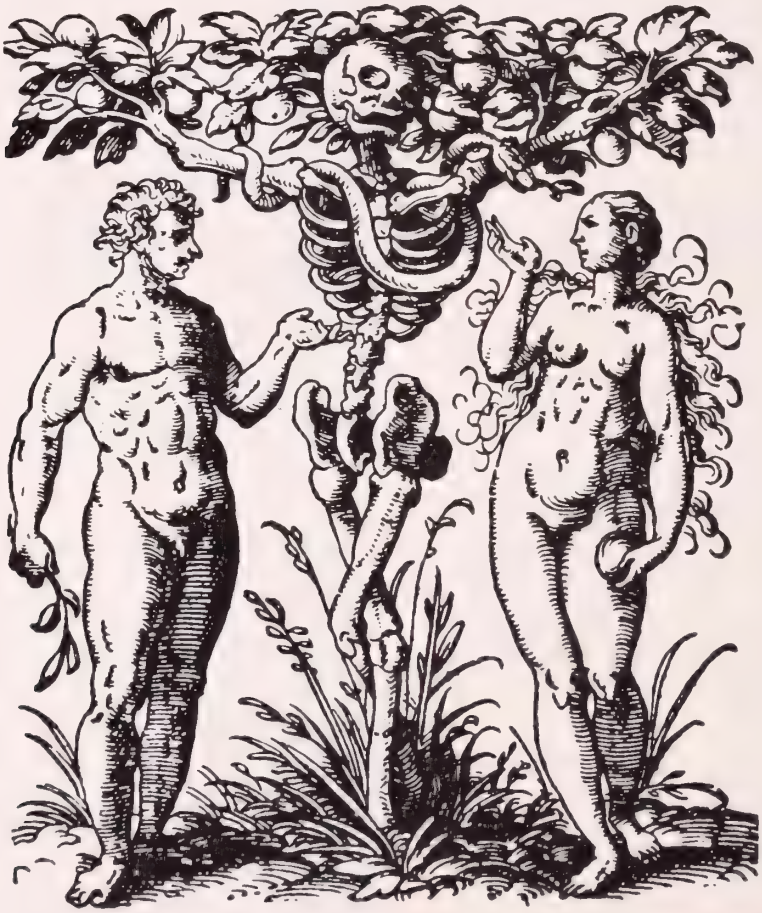

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Indications: Acute gonorrheal urethritis and proctitis in the male and acute gonorrheal cervicitis and proctitis in the female when due to susceptible strains of *N. gonorrhoeae*.

Contraindications: Contraindicated in patients previously found hypersensitive to Trobicin. Not indicated for the treatment of syphilis.

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Warnings: Antibiotics used to treat gonorrhea may mask or delay the symptoms of incubating syphilis. Patients should be carefully examined and monthly serological follow-up for at least 3 months should be instituted if the diagnosis of syphilis is suspected.

Safety for use in infants, children and pregnant women has not been established.

Precautions: The usual precautions should be observed with atopic individuals. Clinical effectiveness should be monitored to detect evidence of development of resistance of *N. gonorrhoeae*.

Adverse reactions: The following reactions were observed during the single-dose clinical trials: soreness at the injection site, urticaria, dizziness, nausea, chills, fever and insomnia.

During multiple-dose subchronic tolerance studies in normal human volunteers, the following were noted: a decrease in hemo-

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Note: Antibiotics used in high doses for short periods of time to treat gonorrhea may mask or delay the symptoms of incubating syphilis. Since the treatment of syphilis demands prolonged therapy with any effective antibiotic, and since Trobicin is not indicated in the treatment of syphilis, patients being treated for gonorrhea should be closely observed clinically. Monthly serological follow-up for at least 3 months should be instituted if the diagnosis of syphilis is suspected. Trobicin is contraindicated in patients previously found hypersensitive to it.

---

*Data compiled from reports of 14 investigators. **Diagnosis was confirmed by cultural identitication of *N. gonorrhoeae* on Thayer-Martin media in all patients. Criteria for cure: negative culture after at least 2 days post-treatment in males and at least 7 days post-treatment in females. Any positive culture obtained post-treatment was considered evidence of treatment failure even though the follow-up period might have been less than the periods cited above under "criteria for cure" except when the investigator determined that reinfection through additional sexual contacts was likely. Such cases were judged to be reinfections rather than relapses or failures. These cases were regarded as non-evaluatable and were not included. JA72 1848-6

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globin, hematocrit and creatinine clearance; elevation of alkaline phosphatase, BUN and SGPT. In single and multiple-dose studies in normal volunteers, a reduction in urine output was noted. Extensive renal function studies demonstrated no consistent changes indicative of renal toxicity.

Dosage and administration: Keep at 25°C and use within 24 hours after reconstitution with diluent.
Male—single 2 gram dose (5 ml) intramuscularly. Patients with gonorrheal proctitis and patients being re-treated after failure of previous antibiotic therapy should receive 4 grams (10 ml). In geographic areas where antibiotic resistance is known to be prevalent, initial treatment with 4 grams (10 ml) intramuscularly is preferred.
Female—single 4 gram dose (10 ml) intramuscularly.

How supplied: *Vials, 2 and 4 grams—with ampoule of Bacteriostatic Water for Injection with Benzyl Alcohol 0.9% w/v.* Reconstitution yields 5 and 10 ml respectively with a concentration of spectinomycin dihydrochloride pentahydrate equivalent to 400 mg spectinomycin per ml. For intramuscular use only.
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Abstracts in Interlingua

Graubert, D. M., e Edmonson, J. H.: Adaptation psychologic del patientes in ambientes insolate protegite, ***New York State J. Med.*** **71:** 227 (15 de Januario) 1971.

Dece-quatro patientes con granulocytopenia esseva observate durante le tractamento in insulatores plastic per un lapso de 718 dies. Considerante le stressante natura de lor morbos e le tractamento in un ambiente non natural, istes patientes experimentate notablemente pauc difficultate ab le adaptation psychologic. Le drogas psychotropic, in parve doses, esseva usate frequentemente; nonobstante, alicuno del patientes requireva le retiro del ambiente protegite predominantemente per rationes psychologic.

Herbert, W. H.: Limitationes del pression diastolic final del arteria pulmonari como reflection del pression diastolic final del ventriculo sinestre, ***New York State J. Med.*** **72:** 229 (15 de Januario) 1972.

Le application clinic del principio del pression diastolic final del arteria pulmonari como un reflection exacte del pression diastolic final del ventriculo sinestre, es augmentate. Le facilitate del registro del pression del arteria pulmonari ha facite que iste registro sia un methodo monitori adequate in le unitates coronari e de cura intensive. Le limitationes del uso del pressiones diastolic final del arteria pulmonari como evalutation del pressiones diastolic final del ventriculo sinestre, ha essite relationate con le morbo vascular pulmonari, le bloco mitral o venose pulmonari, le bloco de ramo derecto, le insufficientia aortic, e le pression del auricula sinestre. In istes abnormalitates, le pression diastolic final del arteria pulmonari es plus o minus elevate que le pression diastolic final del ventriculo sinestre.

Gibbs, S.: Aspectos dental del chirurgia orthodontic, ***New York State J. Med.*** **72:** 233 (15 de Januario) 1972.

Multe problemas de origene e interes dental existe in le planeamento adequate del procedimentos chirurgic orthodontic. Le successose completion depende del intendimento complete de omne factores implicate. Le investigation complete con inclusion de photographias, fundimentos ("moulages" e "casts"), radiographias periapical, evalutation cephalometric adequate e le multiplicitate de procedimentos chirurgic modello es elementos valutabile per obtener le solution correcte.

Lenczyk, J. M., e Mahoney, W. S.: Chirurgia in le cancer del capite e collo; Uso del portion cutaneo-cervical posterior, ***New York State J. Med.*** **72:** 239 (15 de Januario) 1972.

In caso de problemas de dehiscentia de ferimentos, occlusion de fistulas, protection de vasos e coperturas trovate in chirurgia per cancer del capite e collo, portiones de pelle regional con base permanente es usate frequentemente. Istes portiones cutanee es particularmente necessari quando le region operatori es cicatrisate depost previe operationes o irradiation. Le technica es describite, como etiam quatro casos tractate con portiones cutaneo-cervical posterior. In onne casos, le portiones non esseva disfacite.

continued from page 208

major thrust of the Phase 2 program as it affects physicians will be to urge voluntary compliance.

The Administration's aim is to keep charges from rising to a point where the unit profit is higher than it was in the past. Fee rises stemming from higher costs of doing business will be okay as will a certain percentage to take into account general rises in the cost of living.

The lack of a penalty-backed policing role by the government—at this date anyway—might seem to make the Federal program toothless. But Administration officials are confident that public concern and public and peer pressures will make it difficult for individual physicians to hike fees substantially. Furthermore, the Administration is certain that most physicians are willing to cooperate.

Four physicians are on the panel, which also includes representatives of state and local government, consumers, hospitals, related health occupations and industries, and the health insurance companies.

Physician members are: William Lotterhos, M.D., president of the American Academy of General Practice and former chairman of the AMA's section on General Practice; James Haviland, M.D., former acting dean of the University of Washington School of Medicine; Earl Brian, M.D., director of the California Department of Health Care Services; and James Cowan, M.D., Commissioner of Health for the State of New Jersey.

C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association and former general counsel for the AMA, is also a committee member.

* * *

The decision of HEW to kill the Public Health Service's commissioned corps is sure to fan congressional interest in a separate department of health.

HEW Secretary Elliot Richardson said he was adopting a special advisory commission's recommendation of last summer that the corps—composed of 5,500 physicians, dentists, engineers, nurses, pharmacists, and veterinarians—be phased out and replaced with a civilian system.

While this would solve a serious internal personnel problem at HEW, the move does nothing to further Richardson's relations with Congress which has had a soft spot for the Public Health Service Corps for many years.

Until recent years, the corps functioned as a semi-autonomous unit at HEW, with the Surgeon General reporting directly to Congress, thus to some extent bypassing higher authorities at HEW. A close liaison with Congress was built up and still lingers on, hence the outcry when the Administration recently moved to close down Public Health Service hospitals.

The reorganization of HEW carried out under HEW Secretary John Gardner firmly placed the secretary and assistant secretaries in control of the agency's health programs and diluted the powers of the Surgeon General to the extent that they are now difficult to define.

However, memories of the old days when Congress was able to call the shots at Public Health Service remain strong and are one reason why such influential men as Rep. Paul Rogers (Democrat, Florida) are set on establishing a separate, cabinet-level department of health. The reasoning is that only this would give Congress the power it seeks over how the Federal government administers its huge health empire.

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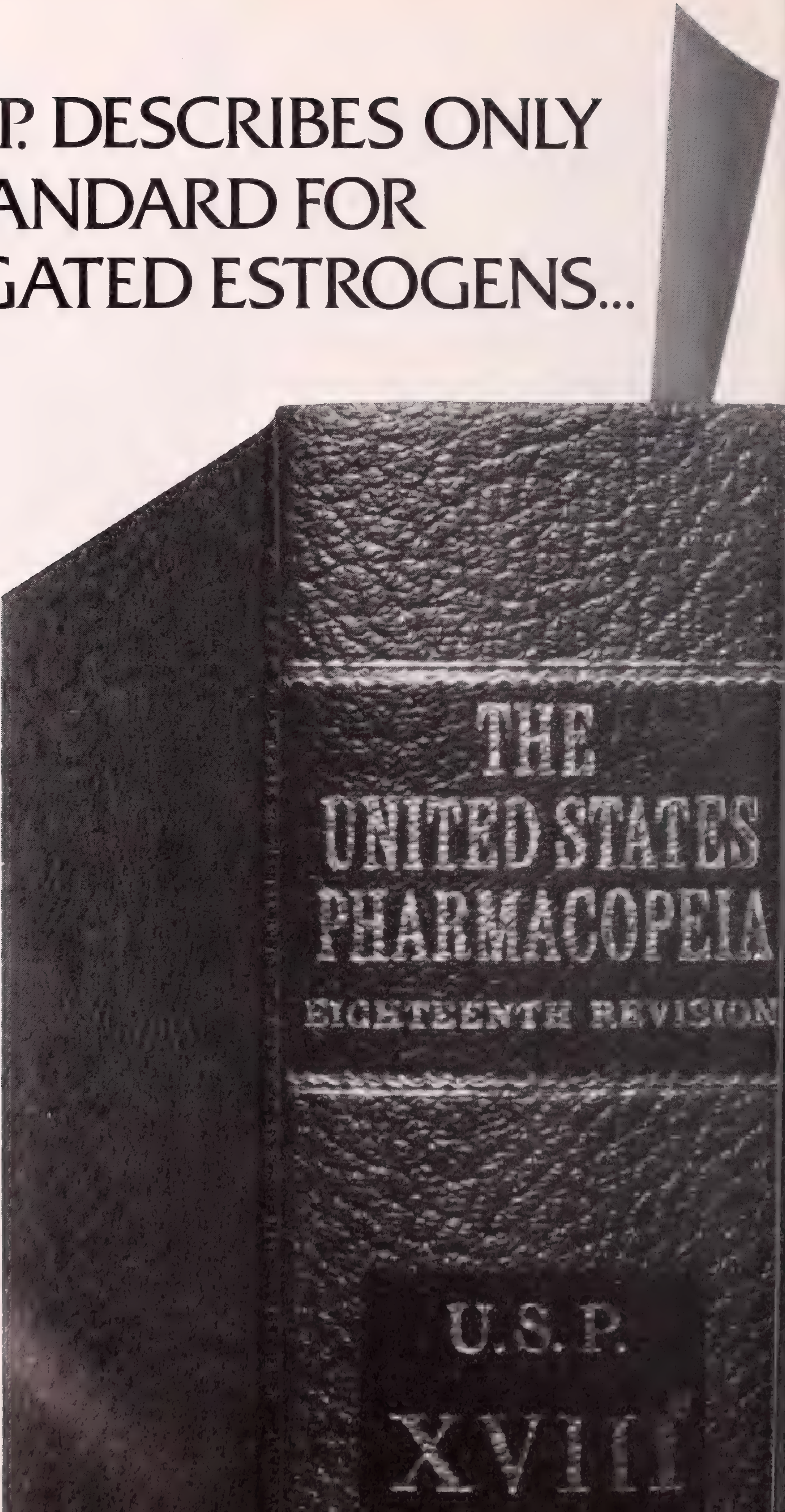
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Precautions: *In the female:* To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.

Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

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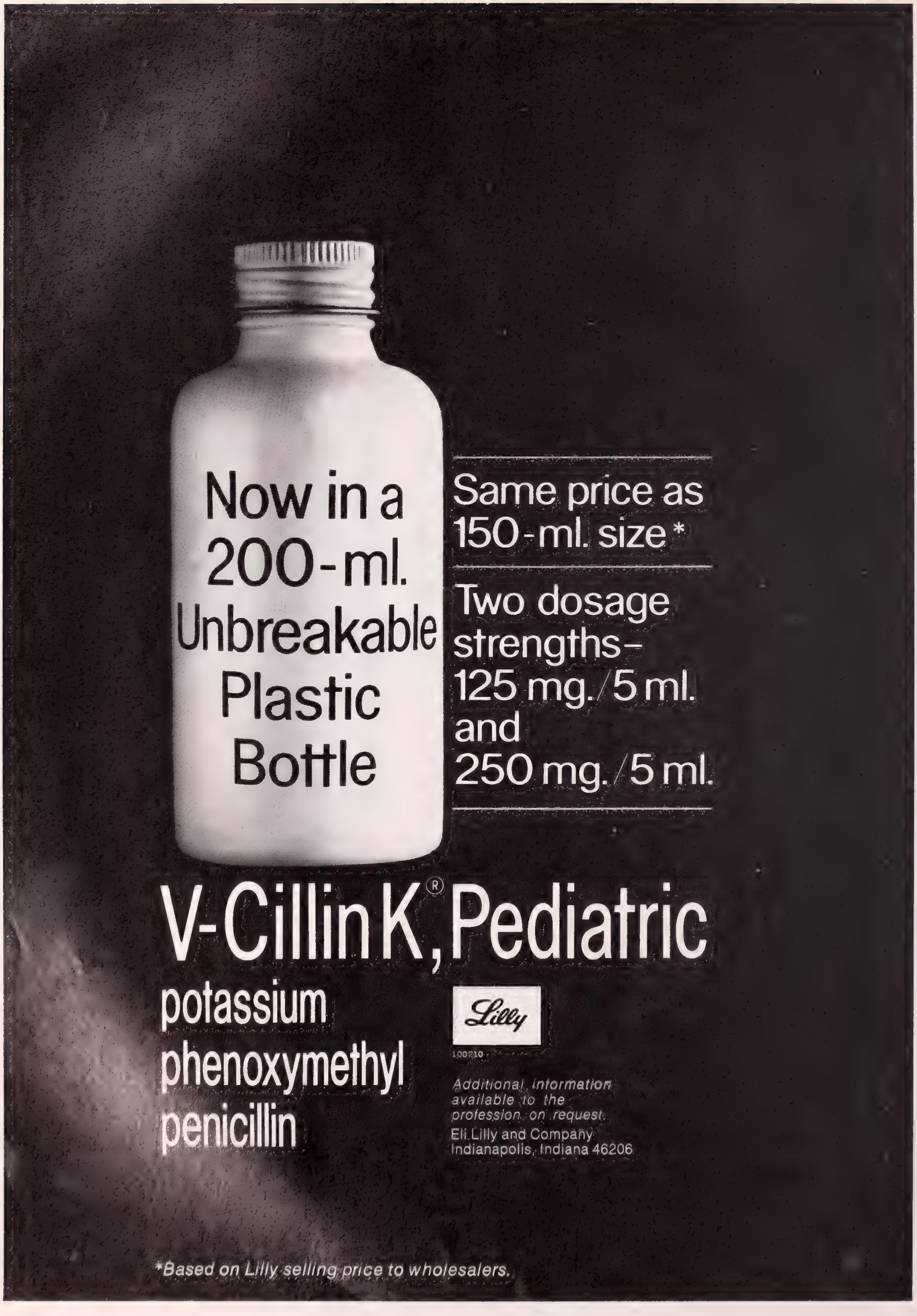

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Much can be done in preparation for outdoor cold by the nature of the clothing worn. Thermal underwear, boots not too tight, wool socks over socks, outer pants, and jacket made of tightly woven, wind-repellent material, all contribute to comfort in the cold. Clothing does not have to be heavy to be warm. Heavy clothing can be a fatigue factor.

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At 20° F. with the wind at 20 miles per hour, the effect is the same as −9° F. on a calm day.

The following chart gives the Wind Chill Index under various conditions as they may be met on the ski slopes and back-country roads.

Wind chill index: equivalent temperature in cooling power on exposed flesh under calm conditions

	Temperature						
Wind (mph)	30	20	10	0	−10	−20	−30
10	16	2	−9	−22	−31	−45	−58
15	11	−6	−18	−33	−45	−60	−70
20	3	−9	−24	−40	−52	−68	−81
25	0	−15	−29	−45	−58	−75	−89
30	−2	−18	−33	−49	−63	−78	−94
35	−4	−20	−35	−52	−67	−83	−98
40*	−4	−22	−36	−54	−69	−87	−101

* Wind speeds above 40 mph have little additional chilling effect.

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PSYCHOLOGIC ADAPTATION OF PATIENTS ISOLATED IN PROTECTED ENVIRONMENTS*

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Fourteen granulocytopenic patients were observed during treatment in plastic isolators for a total of 718 days. Considering the stressful nature of their illnesses and the treatment in an unnatural environment, these patients suffered remarkably few difficulties of psychologic adaptation. Psychotropic drugs in small doses were frequently used; however, no patient required removal from the protected environment for predominantly psychologic reasons.

Various plastic and glass enclosures for providing protected environments around patients are currently being studied at several institutions.[1-3] All of these enclosures have at least one feature in common: the patient is separated from other persons in a condition devoid of direct human touch. The patients treated in these human isolators ordinarily are people who, because of extraordinary degrees of granulocytopenia, are very susceptible to microbial infection. Most of these patients have had acute leukemia or other neoplastic disease, and they have been placed in isolators during intensive treatment with cytotoxic antineoplastic drugs. Such drugs also suppress bone-marrow cells and further reduce the leukocytic defenses which are under stress during treatment in a protected environment and during the medical management of the problems of psychologic adaptation encountered.

Physical environment and treatment procedures

Two total-barrier patient isolators† were installed in a room designed for use as a 6-bed ward. This brightly decorated room on the south side of the hospital has low-silled large windows which admit direct sunlight during all seasons. At least one registered nurse was engaged throughout every day and night in the care of one or two isolated patients in this room. A system of sound-resistant, accordion-like sliding partitions separated the patients from each other and from the nursing and storage areas. These partitions were opened and closed according to the immediate wishes of the patients. Patients received oral antimicrobial drugs to promote gastrointestinal sterility. They received only sterilized foods, and all other objects which were placed in the sterile isolator environment were presterilized. The patients prepared for entry into the isolator by frequent showers and scrubbings and the use of antibiotic sprays and ointments. While living in these isolators patients had free access to a telephone and individual remotely controlled color television sets. Any object which a patient requested was sterilized and introduced into the isolator. Such items as dentures, eye glasses, reading materials, transistor radios, and handicraft supplies were regularly provided in sterile condition.

Since all patients had diseases characterized by bone-marrow failure, transfusions of blood and fresh platelets were frequent. The microbial flora of each patient was cultured twice each week from multiple sites, and blood specimens were taken frequently for chemical tests. Finger pricks for hemoglobin and blood cell counts were performed daily. Persistent diarrhea resulting from the oral antimicrobial drugs required continual pharmacologic control. The patients are described in Table I.

Comment

The patients treated in this special unit have been predominantly very poor-risk patients with acute leukemia who have failed previously to respond to appropriate chemotherapy. Most of them have had previous infections, and some were infected at the time of admission to the isolator. These patients have been treated and cared for vigorously despite the poor prognosis for success.

Psychologically these patients have been quite varied; yet with few exceptions they have easily adapted to the ritual and restrictions of life in

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* Supported in part by U.S. Public Health Service grant CA 10047

† Life Island, Matthews Research Inc., Alexandria, Virginia.

TABLE I. Fourteen patients observed during 16 periods of treatment in isolators for a total of 718 days

Age, Occupation	Diagnosis	Time (days) in Isolator and Response to Medical Treatment	Personality Traits	Psychologic Adaptation in Isolator
53, accountant, husband, father	Acute myelocytic leukemia	50–died of sepsis and uremia in the isolator	Passive, stable individual who exhibited obsessive compulsive behavior	Irritability, preoccupation with physical symptoms; feelings of depersonalization during periods of severe infectious illness
25, junior executive, bachelor	Hodgkin's disease	47–remission of disease; discharged in good health	A gambler who was adamantly independent	Remained alert, cooperative, and generally cheerful
29, housewife, mother	Acute myelocytic leukemia	38–died of sepsis in the isolator	Defiant, suspicious, evasive and depressed	Regressed when physically ill, demanding much attention, crying and presenting multiple complaints
33, housewife	Acute myelocytic leukemia	30–died of sepsis in the isolator	Outwardly friendly and cooperative; inwardly depressed	Depression and chronic apprehension of death increased as she developed illness and air hunger
28, printer, husband	Acute myelocytic leukemia	40–died of sepsis in the isolator	Passive, cooperative with occasional aggressive outbursts	Euphoria developed from glucocorticoids; became depressed and rebellious when these drugs were suddenly stopped
40, widow, mother	Acute lymphocytic leukemia	67–died of sepsis in the isolator	Very depressed but striving for life; superstitious	Experienced mood improvement in isolator; expressed premonition of death
64, taxi driver, husband	Acute myelocytic leukemia	64–remission of disease; discharged in good health	Dependent, fatalistic, melancholy, labile	Demanded much attention, whined a great deal, crying; became bored with isolation
43, housewife, mother	Acute lymphocytic leukemia	69–died of sepsis in the isolator	Obsessive, controlling, narcissistic individual	Remained unperturbed by a prolonged period of isolation and treatment
65, businesswoman, wife	Chronic myelocytic leukemia (aplastic stage)	60–transferred to ward unimproved	Overly friendly and ingratiating, but really controlling and demanding	Demanding much attention and expressed jealousy of her roommate
50, housewife, grandmother	Ovarian carcinoma	8–recovered from leukopenia; discharged improved	Whining, manipulative, dependent, and fearful	Adjusted well to the isolator and responded favorably to the regimentation; fearful of leaving the isolator
41, housewife	Acute myelocytic leukemia	9–remission of disease; discharged in good health	Stable, cooperative, optimistic, aggressive	Remained cooperative, but was at times impatient for recovery
30, female	Acute myelocytic leukemia	208–improved and left hospital twice; died of sepsis in the isolator during third admission	Extraordinary infantility	Adapted extremely well to dependency circumstances of the isolator
29, housewife	Chronic myelocytic leukemia (aplastic stage)	6–removed from isolator for treatment of bleeding	Fearful, passive	Remained cooperative and passive, but became apprehensive from air hunger
69, widow, grandmother	Acute myelocytic leukemia	22–died of sepsis in the isolator	Passive, hopeful	Remained cooperative, passive, and hopeful to the end

the isolator. The staff members have, of course, attempted to adapt their procedures, the diet, and the physical environment to suit the tastes of each individual patient.

One striking observation in these cases has been the relatively minor concern of the patient with the integrity of the canopy and the sterility of his environment. This situation contrasts sharply with the patient on renal dialysis who is preoccupied with the vascular shunt, the proper functioning of the machine, and the skills of his nursing personnel in handling the apparatus. Only one of our patients had some fleeting concern about fire hazard, and this patient also had occasional feelings of unreality and suspension.

Some of the dreams of these patients have related to a sense of guilt or a fear of joining dead relatives. Sexual dreams and expressions of a wish to return to mother have also been noted. No dream of levitation or flying has been recorded; however, one patient dreamed that he was hanging over a cliff, an event which could have been related to a sense of suspension. In general one derives the impression that the isolation apparatus and the elaborate procedures are viewed by the patient as a very temporary arrangement which he sees as not too significant a part of the treatment relationship between the oncologist and the patient.

Psychotropic medications have been used frequently in these patients; however most such treatment has been aimed at controlling the nausea and other side-effects of antineoplastic drugs. Chlorpromazine (Thorazine) in small doses has been adequate for this purpose in most cases. In depressed patients amitriptyline hydrochloride (Elavil) has been used with apparent success; however the mainstay of psychologic management of these patients has been supportive psychotherapy. The psychiatrist and other members of the staff have been most appreciated when they have assisted the patient in maintaining his illusion of the temporariness of his isolation rather than accepting long-term involvement. The majority of patients have been resentful of inquiries by the psychiatrist into their personal lives and past histories. Considering the stressful nature of their illnesses and the treatment in an unnatural protected environment these patients have suffered remarkably few difficulties of psychologic adaptation, and no one has required removal from the isolator for predominantly psychologic reasons.

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LIMITATIONS OF PULMONARY ARTERY END-DIASTOLIC PRESSURE*

As the reflection of left ventricular end-diastolic pressure

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The clinical application of the principle of the pulmonary artery end-diastolic pressure as an accurate reflection of the left ventricular end-diastolic pressure is increasing. The ease of recording the pulmonary artery pressure has made this a suitable monitoring method in coronary and intensive care units. The limitations in the use of pulmonary artery end-diastolic pressures as an assessment of left ventricular end-diastolic pressures has been related to pulmonary vascular disease, pulmonary venous or mitral block, right bundle branch block, aortic insufficiency, and left atrial pressure below pulmonary capillary "critical closing" pressure. In these abnormalities the pulmonary artery end-diastolic pressure is either higher or lower than the left ventricular end-diastolic pressure.

It has been recently demonstrated in man that the pulmonary artery end-diastolic pressure may be an accurate reflection of the left ventricular end-diastolic pressure.[1-7] Since continuous monitoring of the pulmonary artery end-diastolic pressure is easily accomplished, the relationship between it and the left ventricular end-diastolic pressure has been utilized in the assessment of left ventricular function in critically ill patients.[2-4,8,9] The direct clinical application of this observation requires an appreciation of the multiple factors which may cause the pulmonary artery end-diastolic pressure to be lower or higher than the left ventricular end-diastolic pressure.

The ranges of normal for pulmonary artery end-diastolic pressure[10-12] and left ventricular end-diastolic pressure,[13,14] as have been reported, have not been considered as to their relationship to each other. In spite of several early studies demonstrating that the pulmonary artery pressure falls exponentially to the end-diastolic pressure of the left artrium,[15,16] most observers considered pressures of the right and left sides of the heart separately. Further, if each was recorded within the normal range, they considered any discrepancy between them to be normal as well. This reasoning is contrary to the more current view that normally there is no gradient at end-diastole across the pulmonary vascular bed.[1-7] There are, however, frequent instances in which this relationship does not pertain. The major categories are pulmonary vascular disease, pulmonary venous or mitral obstruction, right bundle branch block, aortic insufficiency, and left atrial pressures below pulmonary capillary "critical closing" pressures.

Causes of pressure differences at end-diastole

Pulmonary vascular disease may cause severe elevations in pulmonary artery pressure with large gradients at end-diastole across the pulmonary vascular bed. No assumption of the left ventricular end-diastolic pressure from such a trace is possible. This, the most obvious limitation in the assessment of left ventricular end-diastolic pressure from pulmonary artery end-diastolic pressure, was appreciated initially.[1] Jenkins, Bradley, and Branthwaite[7] and Falicov and Resnekov[6] reported diminishing correlations between left ventricular end-diastolic pressure and pulmonary artery end-diastolic pressure with increasing pulmonary vascular resistance. Figure 1A demonstrates a simultaneous pulmonary artery and left ventricular pressure trace recorded with matched[17] Statham P23db gauges. The pulmonary artery pressures are grossly elevated in a patient with cor pulmonale precluding any reflection of the normal left ventricular end-diastolic pressure.

In the absence of pulmonary vascular disease, the pulmonary artery pressure rapidly seeks the left atrial level.[15,16] Pulmonary venous obstruction or mitral block, however, will again preclude the assessment of left ventricular end-diastolic pressure from pulmonary artery end-diastolic pressure. Figure 1B demonstrates simultaneous traces recorded from the pulmonary artery, the left ventricle, and the "wedge." There is no end-diastolic

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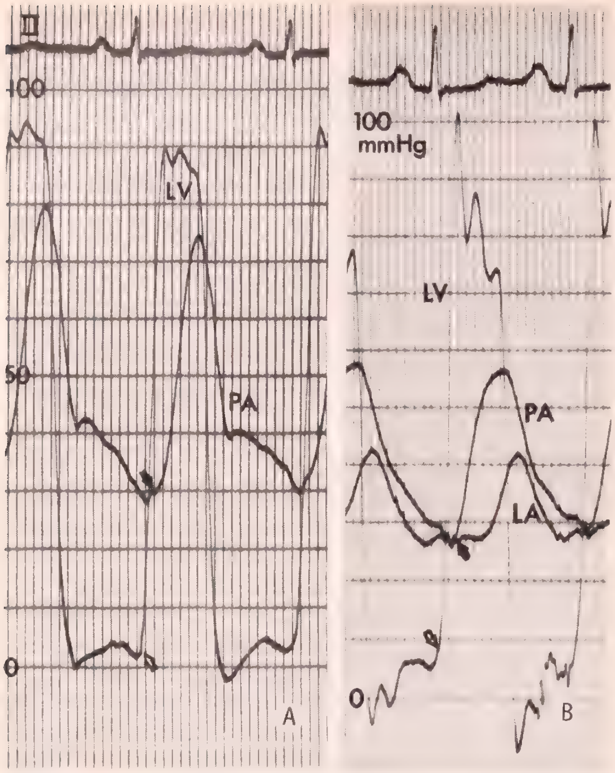

FIGURE 1. (A) Simultaneous left ventricular (L.V.) and pulmonary artery (P.A.) pressure recording from patient with cor pulmonale. Left ventricular end-diastolic pressure (open arrow) of 3 to 4 mm. Hg would not be appreciated by monitoring only pulmonary artery pressure. Pulmonary artery end-diastolic pressure (closed arrow) is 30 mm. Hg. II designates standard electrocardiographic lead II. Horizontal lines indicate increments of 10 mm. Hg; time lines 0.04 second. (B) Simultaneous left ventricular (L.V.), pulmonary artery (P.A.), and "wedge" reflection of left atrial (L.A.) pressure in patient with mitral stenosis. There is no gradient at end-diastole across pulmonary vascular bed (closed arrow). A 17-mm. Hg gradient at end-diastole is measured across mitral valve. Open arrow designates left ventricular end-diastolic pressure. Horizontal lines are increments of 10 mm. Hg; time lines 0.04 second.

gradient across the pulmonary vascular bed. The pulmonary artery end-diastolic pressure-left ventricular end-diastolic pressure gradient is due to mitral stenosis.

The equilibration of the pulmonary artery end-diastolic pressure with left atrial pressure is so rapid (in the absence of pulmonary vascular disease) that a right-sided conduction disturbance, by delaying right ventricular systole, permits the pulmonary artery pressure to continue to fall with that of the left atrial x descent. Reverse gradients (pulmonary artery end-diastolic pressure-left ventricular end-diastolic pressure) up to 7 mm. Hg have been reported.[17] In such an instance the pulmonary artery end-diastolic pressure may not correctly reflect a significantly higher left ventricular end-diastolic pressure. Figure 2A displays the simultaneous recordings of the pulmonary artery and left ventricular pressures of a patient with right bundle branch block (QRS 0.12 second). The pulmonary artery end-diastolic pressure is 6 mm. Hg lower than that recorded in the left ventricle.

Aortic insufficiency effects a premature closure of the mitral valve and, by doing so, interrupts the left ventricular-left atrial pulmonary vascular bed-pulmonary artery continuity requisite for diastolic equilibration.[18–24] Therefore, there may be normal or near-normal left atrial and pulmonary artery pressures in the presence of severe elevation in the left ventricular end-diastolic pressure.[18,23,24] In effect, the premature mitral valve closure prevents the left atrium and the pulmonary vascular bed from "seeing" the grossly elevated left ventricular end-diastolic pressure.[18,22–24] Although the advantage to the right side of the heart and pulmonary vascular bed is obvious, this is yet another instance in which the pulmonary artery end-diastolic pressure does not mirror the left ventricular end-diastolic pressure.[18,23,24] Figure 2B demonstrates this relationship. The left ventricular end-diastolic pressure is higher than the systolic pressure in the simultaneously recorded pulmonary artery trace.

The last category relates to the critical closing pressure in the pulmonary capillary. It has been observed that when the left atrial pressure is low, pulmonary vascular resistance is elevated.[1,25–29] When the left ventricular end-diastolic pressure drops to approximately 5 mm. Hg or less, a demonstrable gradient exists at end-diastole across the pulmonary vascular bed. The higher pulmonary artery end-diastolic pressure may give false assurance as to the level of left ventricular filling pressure. Figure 3A demonstrates the simultaneous traces of a patient with low (3 mm. Hg) left ventricular end-diastolic pressure and a 7 mm. Hg pulmonary artery end-diastolic pressure-left ventricular end-diastolic pressure gradient at rest. During exercise the left ventricular end-diastolic pressure rose to 10 mm. Hg and was then accurately reflected by the pulmonary artery end-diastolic pressure (Fig. 3B).

Comment

An assessment of left ventricular function of the critically ill patient is advantageous both in terms of management and prognosis.[30] Today intensive care and coronary care units equipped with pressure monitoring devices make such information readily accessible. There are, however, varying degress of reliability between the technics used. Although the easiest, in terms of placement, is the central venous pressure catheter, it has proved unreliable and should not be used to reflect left ventricular function.[31] A fine polyethylene catheter may be left in the left atrium following thoracic surgical procedures. Although this provides an extremely accurate reflection of left ventricular

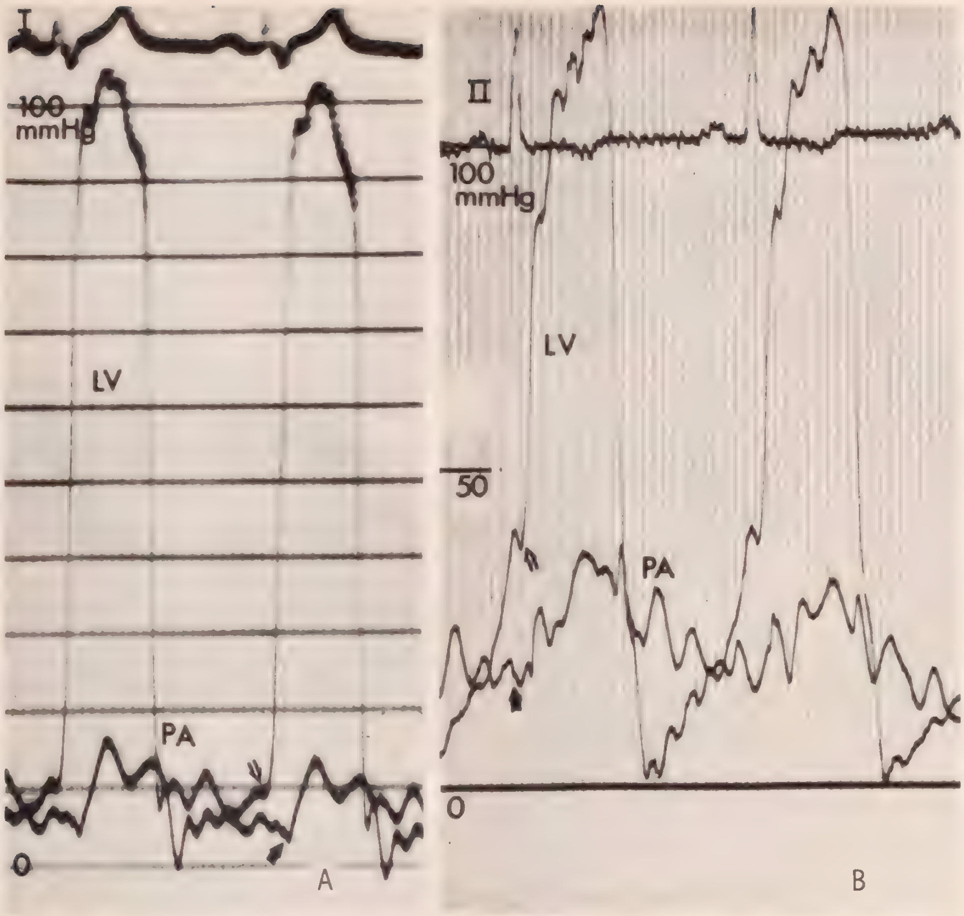

FIGURE 2. (A) Simultaneous left ventricular (L.V.) and pulmonary artery (P.A.) pressure recording in patient with right bundle branch block. Left ventricular end-diastolic pressure (open arrow) is 10 mm. and 6 mm. Hg higher than pulmonary artery end-diastolic pressure of 4 mm. Hg. I is standard electrocardiographic lead I. Horizontal lines are increments of 10 mm. Hg. Time lines are 0.04 second. (B) Simultaneous left ventricular (L.V.) and pulmonary artery (P.A.) pressure recording in patient with aortic insufficiency. Left ventricular end-diastolic pressure (open arrow) is higher than pulmonary artery systolic pressure. Pulmonary artery end-diastolic pressure (closed arrow) is therefore substantially lower than that in left ventricle. II is standard electrocardiographic lead II. Time lines are 0.04 second.

filling pressure, it is of necessity limited to patients undergoing thoracotomy. The bedside retrograde catheterization of the left ventricle has also been described.[30] In experienced hands it is a reasonably safe technic, although the danger of clotting and embolization within the systemic circulation exists. Since the catheter is positioned and remains in the left ventricle, there is the greater likelihood of precipitating ectopic beats or rhythms. Positioning in the left ventricle is achieved in only 80 per cent of cases.

Although the subject of this communication is the limitations in the use of still another technic, the advantages of monitoring the pulmonary artery end-diastolic pressure are such as to recommend it. It is a simple matter to float a polyethylene catheter into the pulmonary artery.[2,31] Failure is unusual. There is no great likelihood of mechanical irritability, and clot or emboli, although always serious, are screened by the pulmonary vascular bed.

In the absence of the limitations previously described, the pulmonary artery end-diastolic pressure accurately reflects the left ventricular end-diastolic pressure.[1-7] The critically ill postoperative, myocardial infarction, or trauma patient can be easily and safely monitored by this technic. An added advantage is that pulmonary arterial blood (mixed venous blood) is easily obtainable. When combined with an arterial blood sample, the resultant arteriovenous oxygen difference will reflect changes in the cardiac output as well.[2]

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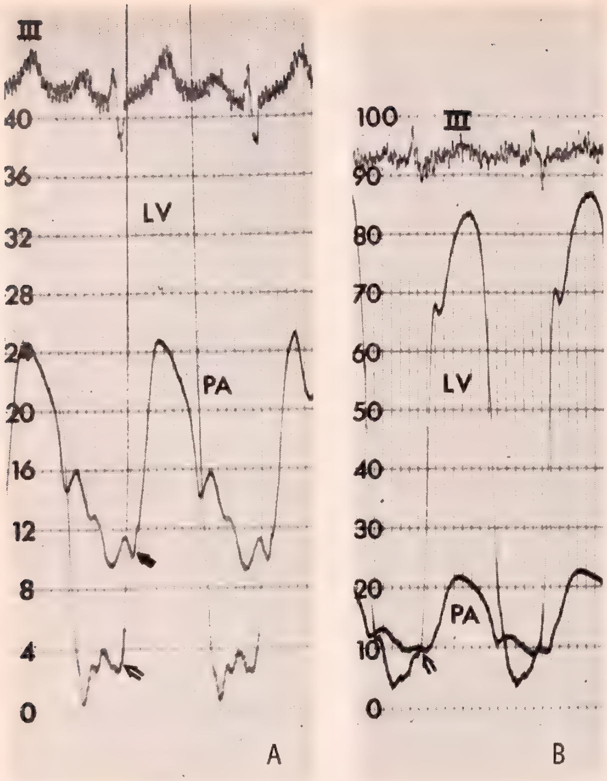

FIGURE 3. Simultaneous left ventricular (L.V.) and pulmonary artery (P.A.) pressure recordings at rest (A) and during exercise (B) in patient with low (3 mm. Hg) resting left ventricular end-diastolic pressure (open arrow, A). Resting pulmonary artery end-diastolic pressure (closed arrow, A) is 7 mm. Hg higher. Exercise stress caused left ventricular end-diastolic pressure to rise and this level was then accurately reflected by pulmonary artery end-diastolic pressure (open arrow, B). Horizontal lines are increments of 4 mm. Hg in A and 10 mm. Hg in B. III is standard electrocardiographic lead III. Time lines are 0.04 second.

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DENTAL ASPECTS OF SURGICAL ORTHODONTICS

Many problems of dental origin and scope exist in the proper planning of surgical orthodontic procedures. Successful completion depends on a thorough understanding of the factors involved. Complete investigation involving photographs, moulages, casts, periapical radiographs, proper cephalometric evaluation, and a multiplicity of model surgical procedures are invaluable tools to evolve the correct solution.

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It has not been many years since the only surgical procedures requested by the orthodontist were the removal of unwanted teeth, impacted or not, the exposure of desired impacted teeth, frenulumotomies, an occasional surgical repositioning of a tooth, or the rare surgical intervention for the treatment of a mandibular prognathism.

Within the past few years the picture has drastically changed,[1] principally as the result of surgical rationalization technics by Obwegeser[2] and his group in Zurich and Henry and Wreakes[3] and Hovell[4] in London. Surgical procedures for both mandibular and maxillary deformities are becoming increasingly prevalent. At the City Hospital Center at Elmhurst we are averaging about one such procedure each week. Naturally, this is caused, in part, by the excellence of current surgical procedures, the increased accuracy in the diagnostic ability of present-day orthodontics, the fine integrated teamwork between the orthodontist and surgeon, and then perhaps to the courage of the early investigators.

Needless to say, the vast majority of malocclusions are amenable to treatment by the conventional methods of orthodontic therapy. Our modern orthodontist, by virtue of his intense training, is quite capable of bringing his treatment to a successful conclusion. However, since not all treatment objectives are attainable, he may be prepared to accept a result that falls short of the ideal. If, however, after a thorough investigation he believes that the proposed treatment plan will fall far from the ideal because of a poor skeletal pattern, he may resort to a new approach involving surgical intervention; for it must be remembered that the orthodontist is primarily a mover of teeth, not of bone.

The surgical technic also is of great value in situations of delayed orthodontic therapy in which adults are involved. These delays may have been due to poor health or financial or emotional stumbling blocks. Many adults not wishing to wear orthodontic appliances for any prolonged period of time are anxious for short-term treatment, and in these cases surgical orthodontic intervention may be the answer.

Lest we omit any pertinent step in planning our procedures, let us examine a hypothetic patient. Our diagnostic investigation is divided into six parts, namely, (1) case history, (2) visual examination, (3) digital examination, (4) complete radiographic examination and cephalometric analysis, (5) photographic record, and (6) analysis of the study models of the teeth and, in addition, the facial moulage in some cases.

Case history

An adequate case history must be obtained. General physical health may not per se be an etiologic factor in the malocclusion but may definitely affect treatment response and patient cooperation. Mental health and attitude should not be overlooked. The growth pattern of the individual should be investigated if surgical procedures are to be resorted to. Growth should have been finalized. The wrist radiograph is an invaluable tool for such an assay.[5] The presence of oral habits should be determined; prolonged thumb sucking and perverted tongue habits are some that could cause relapse of any treatment.

Are there any allergies that could relate themselves to malocclusion? Does the patient breathe through his nose or mouth? The mouth-breathing individual is endowed with a flaccid upper lip which in turn allows for flaring of the maxillary incisors.[6] The normal tighter lip holds the upper front teeth in the position of equilibrium against the internal oral pressures. A flaccid upper lip could easily lead to a relapse. It is interesting to note at this time that in these cases the nasal cavity is usually deprived of the flow of air which acts as an impetus for normal growth. This usually results in a high palatal vault and a resulting crossbite in the molar area. The maxillary sinuses are also distorted.

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Visual examination

The skull and face should be classified. Are there any asymmetries? Are the lips competent? The oral soft tissues are investigated. Is there an abnormally large tongue? Is a frenectomy in order?[7] What is the gingival condition? Should periodontal treatment be instituted?

Finally, the teeth are brought under scrutiny. The state of oral hygiene is noted, caries susceptibility is examined, and tooth vitality questioned. Tooth size, alignment, unusual inclinations, and other malpositions are observed. The occlusion is classified.

At this time it would be wise to clarify our Angle orthodontic classification. The Angle classification is based on the position of the upper first molar as it occludes with the lower first molar. This description is not to be used as a diagnostic aid but only as a semantic tool and a means of communication. The Class I relationship, said to be normal, finds the mesiobuccal cusp of the upper first molar occluding with the buccal groove of the lower first molar. In the Class II malocclusion the lower first molar is distal to this position. However, today we do not believe in the stability of the upper first molar as a reference point as we realize that the mesiodistal relationship of the teeth is influenced by their size, position of the incisors, and muscle balance, among other things.

Digital examination

The maxillary and mandibular base relationships should be palpated. Are the teeth on basal bone? The shape of the mandible can be readily determined digitally. Is there a steep mandibular plane, and is there a hard chin button? Is the chin pad in the right place, or has it been elevated as the result of lip stretching to achieve competency? This action, if of long duration, also may mould the mental protuberance. Are there any loose teeth? Are there any temporomandibular joint symptoms?

Radiographic examination

The important diagnostic tool of radiography consists of periapical and bite-wing films, a panoramic film, and cephalometric radiograph. The periapical films give us an accurate estimate of supporting bone levels and axial inclination, root structure, and periapical disorders. The bite-wing films reveal the caries. The panoramic radiograph reveals the presence of disease and impacted teeth located out of the field of the usual periapical film.

The third part of this examination is the cephalometric radiograph. This unique diagnostic aid is one of great usefulness in both conventional and surgical orthodontic procedures. It is taken under carefully controlled conditions that can be reproduced at any future date. This unusual feature insures proper interpretation of the date for comparison at both pre- and post-treatment times. The patient is positioned in a cephalostat which is a device to keep the head in a fixed position. The x-ray target to film distance is standardized at five feet. A tissue outliner is used to delineate the soft tissue. The result becomes a cephalometric radiograph containing much valuable information.

To the early investigators, men like Hellman, Pacini, Broadbent, and Downs, we owe a great deal, because of their work in collating, relating, and interpreting the latent statistics. The "ceph" (cephalometer) has become a valuable instrument in the world of orthodontics. In our orthodontic literature we find several important cephalometric analyses. Downs, Wylie, Steiner, Margolies, Bjork, Moorees, and Sassouni are among the most popular.

The cephalometric radiograph utilizes osseous landmarks which are quite visible on the film (Fig. 1). In 1948 William B. Downs, D.D.S., introduced what has come to be known as the Downs analysis. This was a scheme in which the dental facial pattern was measured, recorded, analyzed, and compared with an established norm. As stated by Downs,[8] "While individuals vary greatly in facial type and pattern those possessing optimum oral health, functional balance and esthetics have certain common profile characteristics."

At our hospital we routinely use a modified Downs[8] analysis breaking it down into two components, a skeletal analysis and a denture analysis, which do not necessarily conform. The facial type and determination of anteroposterior basal arch relationships are found by the skeletal analysis.

The denture analysis appraises the relationships of the maxillary and mandibular dentitions to each other and their individual basal boney structures. At the same time the soft-tissue profile can be related to the hard underlying boney structures. Thickness and competence of lips can be determined as well as what effect the position of the anterior teeth has on the soft tissues.

The skeletal pattern is determined by five measurements:

1. The facial angle is determined by the intersection of the facial plane (N-Pog) with the Frankfort horizontal. This measures the prominence of the chin.
2. The angle of convexity (N-A-Pog) is the measurement of the anterior position of the maxillary dental base in relation to the rest of the profile. This angle is read as a difference from 90 degrees. A minus reading is associated with a relative mandibular prognathism and a positive reading with a Class II relationship.
3. The angle between AB plane and facial plane is an index of harmony in the positions of the maxillary and mandibular denture bases. If point B lies behind point A, the angle is considered to be negative.

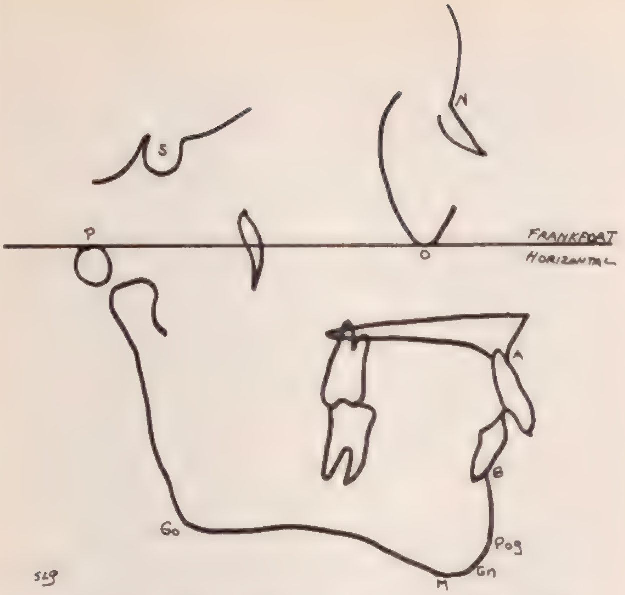

FIGURE 1. Cephalometric landmarks: N, nasion; S, sella; P, porion; O, orbitale; A, point A; B, point B; Pog., pogonion; Gn., gnathion; Go., gonion; M, menton.

4. The mandibular plane angle lies between the mandibular plane and the Frankfort plane. It is considered significant in evaluating mandibular development, ramus height, and tends to be large in unfavorable facial patterns. Note that this feature is independent of tooth position, and many times, although tooth position has been improved in routine orthodontics, the unfavorable facial pattern has not been changed at all.

5. The Y axis is the angle formed by the intersection of line S-Gn with the Frankfort horizontal. This angle is large in Class II patterns and small in Class III tendencies.

The denture pattern is likewise determined by five measurements:

1. The cant of the occlusal plane is the angular relationship between the occlusal plane and the Frankfort horizontal. Open bite and extreme overbite tend to modify this measurement.
2. The Interincisal angle is the angle between the upper and lower incisors, measuring the degree of procumbency and as correlated with tooth to basal bone relationship.
3. The angle of the lower incisor to the occlusal plane relates the incisors to their functioning surface at the occlusal plane.
4. The angle of the lower incisor to the mandibular plane relates the position of the lower incisor over its basal bone.
5. The protrusion of the maxilliary incisors is the distance of the incisal edge to line A-P and indicates the amount of maxillary dental protrusion.

To complement the Downs analysis we borrow two measurements from the Steiner[9] analysis. These are S-N-A and S-N-B. Their difference measures for us the relative difference between the

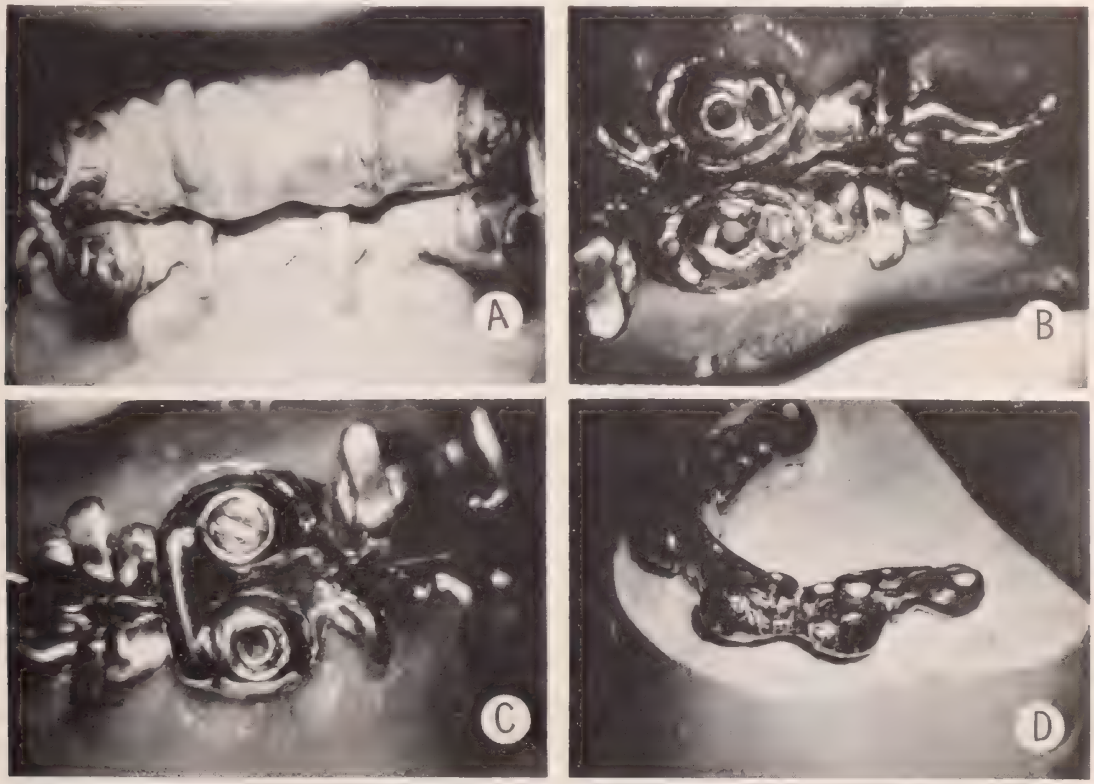

FIGURE 2. Cast-cap splints. (A) Splints in place with locking bars to immobilize mandible. (B) Close-up showing screw holes for locking bars. (C) Close-up showing locking bar with one screw in place. (D) Splint used in conjunction with lower labial ostectomy allowing complete mobilization of mandible.

maxillary and mandibular apical bases. The larger the difference between the apical bases the more difficult it is to adjust the occlusion and maintain the integrity of the relationship of teeth to basal bone. This can put a limit to normal orthodontic procedures and may call for surgical intervention.

Occasionally the Wylie[10] assessment of anteroposterior dysplasia is used to measure relative differences of the various segments to determine the true source of the skeletal pattern. However, even with the employment of all three analyses, certain problems still remain. Ultimately new cephalometric research will resolve them.

When the cephalometric analysis is completed, it can become apparent that the correction of the severe orthodontic problem lies in the judicious application of both wires and scalpel.

There is a large assortment of surgical procedures to correct the discrepancies. However, none of these should be performed until the proper repositioning of the boney parts has been determined from the cephalometric work-up.

An ostensibly retrognathic mandible may actually be a maxillary dysplasia. Apparent mandibular prognathism may be deficiency of the middle third of the face. Sometimes the deliberate creation of a conforming deformity will achieve facial harmony.

A differential diagnosis must be made, one that is in keeping with good surgical and orthodontic practice. At times we can only compromise, but at all times we must keep our procedures in the best interest of our patient.

In a typical Class II situation, the maxillary labial ostectomy could be performed to bring point A back and also decrease the extreme overjet and overbite. When this deformity is coupled with an over-all deficient mandibular length, an alloplastic onlay or a sliding osteotomy can be utilized to advance pogonion to a normal position.

If, in an apparent Class II, we find a normal maxillary configuration, we can utilize the sagittal split of the rami to bring the entire mandible forward.

Some Class III deformities can be ameliorated by corrective surgery of the mandible. This would bring back the entire mandible. If, however, this procedure were done in cases in which pogonion was in the correct place, an apparent Class II effect would result. In these cases a mandibular labial ostectomy should be performed to correct the anterior cross-bite and leave the chin point un-

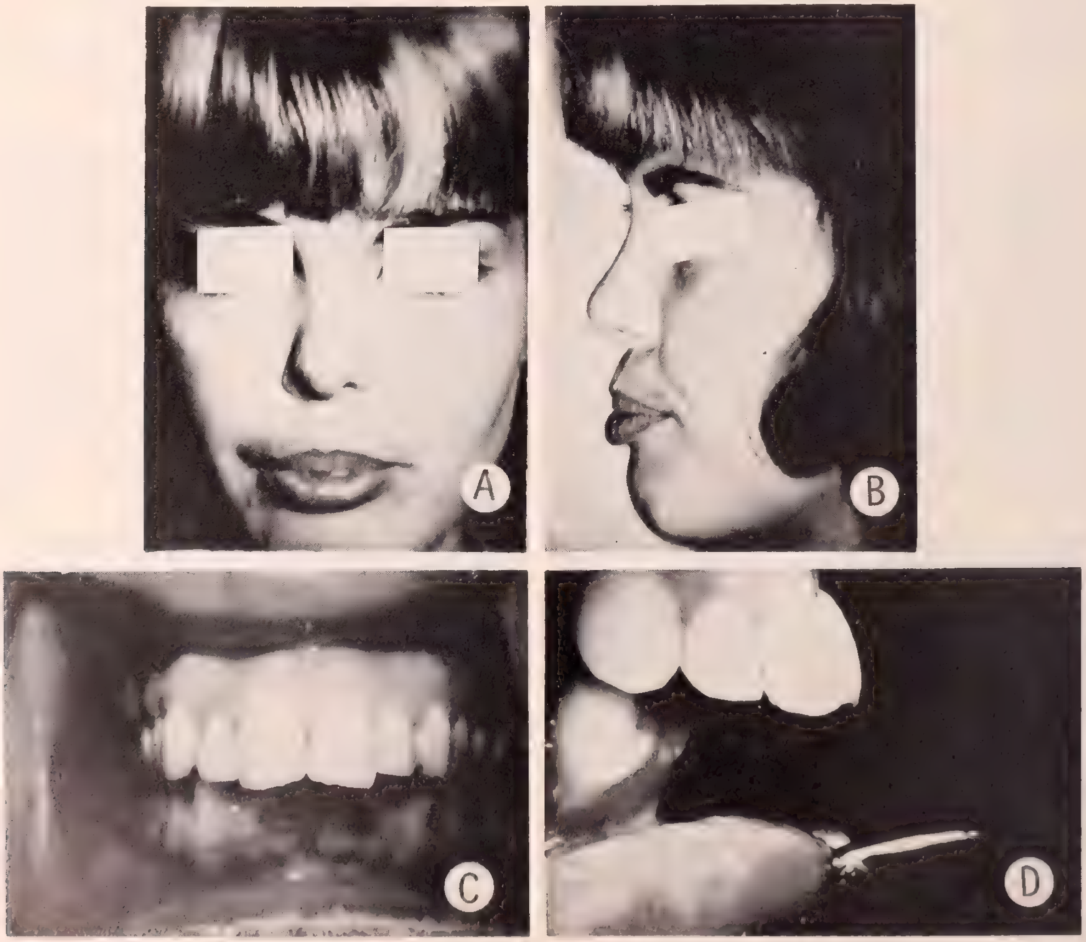

FIGURE 3. Preoperative views of labial arch surgery of both mandible and maxilla. (A) Full face. (B) Profile. (C) Labial view of anterior teeth. (D) Excessive overjet of anterior teeth.

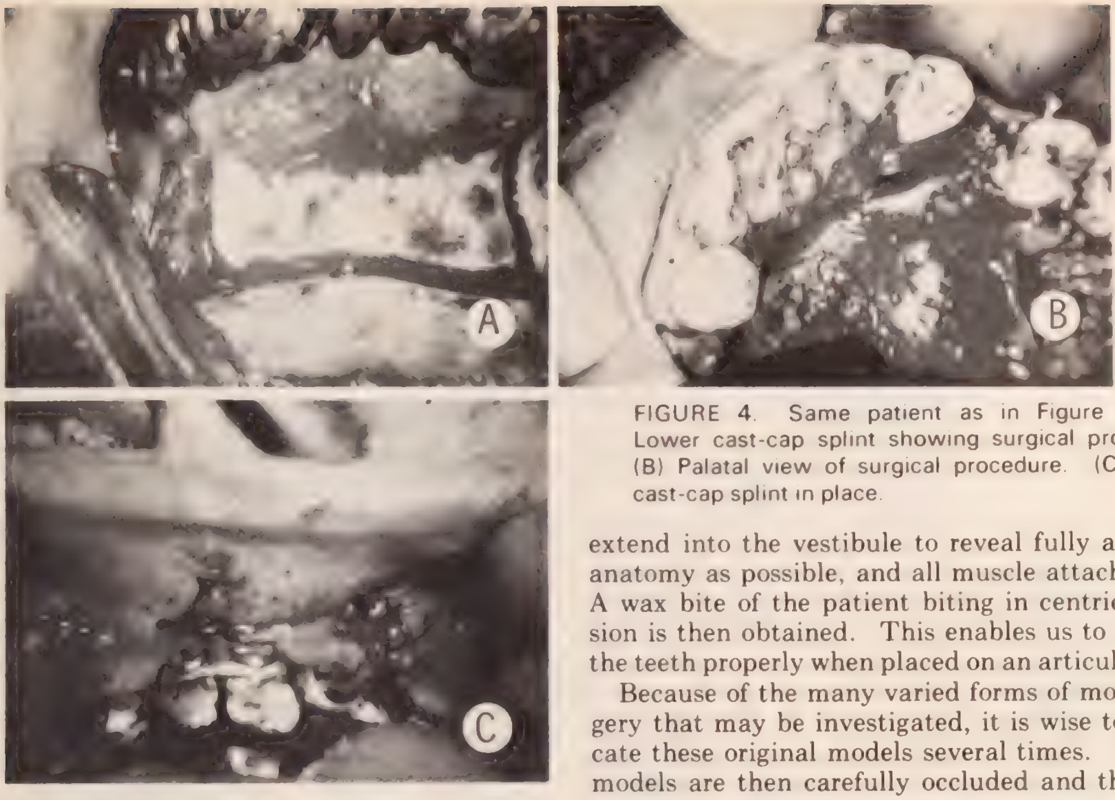

FIGURE 4. Same patient as in Figure 3. (A) Lower cast-cap splint showing surgical procedure. (B) Palatal view of surgical procedure. (C) Upper cast-cap splint in place.

touched. In cases in which a small reduction in the chin point is needed, a reduction of the boney chin point alone would be sufficient.

Photographic record

A complete set of color slides are then taken. These should include a profile and a full face view, as well as intraoral views. Occasionally, three dimensional slides are also made. Our photographs are excellent case records with which to correlate other diagnostic data, show the original problems, and help appraise the degree of success in our treatment and aid in our teaching programs and patient education.[11] Black and white photographs are also desirable for chart records and for visual planning in some cases, such as "conforming deformities."

Study models

We now consider the models that we obtained from full mouth impressions of each jaw and from the facial moulage.

The facial moulage is produced through the use of alginate, reinforced with plaster bandage, and is poured up as a hollow mask. It serves in much the same way as the photographs and can also be used by the maxillofacial technician for the fabrication of any onlays. It should extend from slightly below the hairline, go below the chin, and incorporate the inferior borders of the mandible.

To insure the reproduction of all the salient features, the full mouth impressions should not only include the crowns of the teeth but should also extend into the vestibule to reveal fully as much anatomy as possible, and all muscle attachments. A wax bite of the patient biting in centric occlusion is then obtained. This enables us to occlude the teeth properly when placed on an articulator.

Because of the many varied forms of model surgery that may be investigated, it is wise to duplicate these original models several times. A set of models are then carefully occluded and the teeth marked to indicate this original position.

In keeping with the findings of the cephalometric analysis, an attempt is made to rearticulate the models in the new position. If necessary, model surgery is then performed. It is then decided whether or not any orthodontic therapy is necessary to permit this postsurgical articulation. If necessary, conventional orthodontics is then performed on the patient. This presurgical orthodontic treatment can range from the elimination of a simple cross-bite of a single tooth to complete rapid palatal expansion or realignment of the anterior segment. New models are then taken with the teeth in a new position and then articulated.

Model surgery is then performed, if necessary, on both models. They are rearticulated, any prematurities noted, and the models are ground into the best future centric relation. This grinding is carefully documented and then repeated in the mouth. New impressions of the individual are taken, and the models undergo the same surgery once more.

At this point a silver alloy cast-cap splint is fabricated on the new models (Fig. 2). For many the cast-cap splint may be a new concept, but it has existed for many years in England. At the Mount Sinai Services at City Hospital Center at Elmhurst we imported an English maxillofacial technician to aid in preparation and casting of these devices. The splint insures proper placement and stabilization of the fragments. Absolute alignment is assured by the use of the screw-in locking bars. The splints are usually cemented on the teeth prior to the surgical procedure

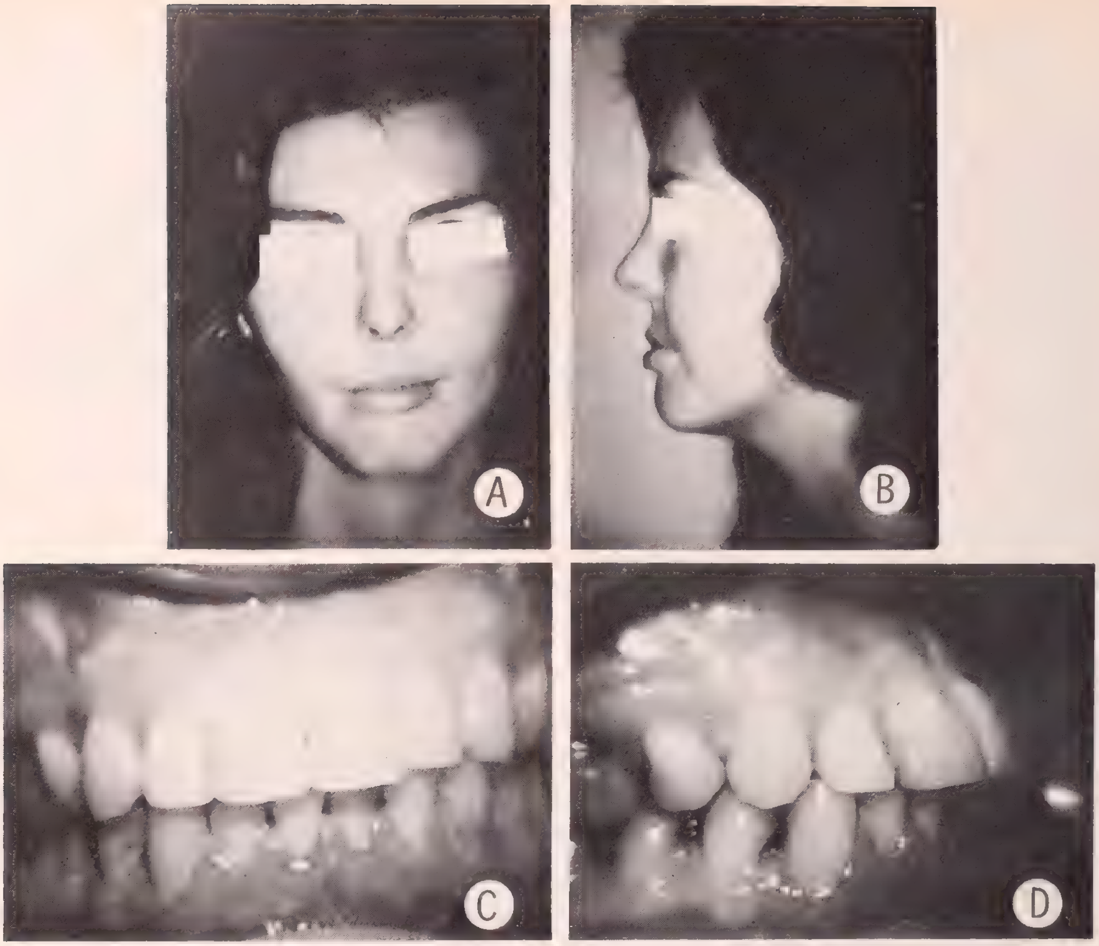

FIGURE 5. Postoperative views of patient in Figure 3. (A) Full face. (B) Profile. (C) Labial view of anterior teeth. (D) Corrected overjet of anterior teeth.

with Durelon, a carboxylate nonstaining cement, or black copper cement.

In the case of labial or buccal osteotomy there is complete freedom of jaw movement, allowing the patient to eat and converse (Figs. 3, 4, and 5). The locking bars are fitted during the surgical phase to insure that the correct amount of movement has been accomplished. They are screwed into place and kept this way for approximately six weeks. In the event of an alveolar ostectomy, the Hawley retainer is used for an additional six weeks. In instances of the saggital split of the ramus or subcondylar osteotomy after six weeks we replace the locking bars (which stabilize the lower jaw to the upper) with intermaxillary elastics. The elastic tension is tapered off gradually, and the proper alignment is checked periodically by the replacing of the locking bars.

When boney union has been accomplished, the cast-cap splint is removed with the aid of a crown splitter and a Jennings crown remover.

This multidisciplined technic of surgical orthodontics is one that can offer a safe and fast approach to the solution of many orthodontic problems and often the solution to problems that are sometimes beyond the scope of the normal concepts of orthodontics. It is the close cooperation and understanding between the surgeon and the orthodontist that is the key to success.

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SURGERY IN CANCER OF HEAD AND NECK

Use of posterior cervical flap

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When problems of wound dehiscence, fistula closure, vessel protection, and resurfacing are encountered in surgery for cancer of the head and neck, permanently based regional flaps are frequently used. Such flaps are particularly necessary if the operative region is scarred from previous procedures or irradiation. The technic is outlined, and four cases in which the posterior cervical flap was utilized, are described. In each instance no flap breakdown occurred.

Permanently based regional flaps are frequently used in the surgical management of cancer of the head and neck. Their use should be considered when the problems of wound dehiscence, fistula closure, vessel protection, and resurfacing are encountered. They are particularly necessary if the operative region is scarred from previous procedures or irradiation.

This article is intended to review the use of one of these regional flaps, the posterior cervical or shoulder flap. Mutter[1] first described this procedure when he used a "shoulder" flap to repair a neck defect in 1842. This defect resulted from the release of a burn contracture. Subsequent modifications of this basic technic have led to numerous conditions in which its use is indicated. This flap has been frequently used with success on the head and neck surgery service at Walter Reed General Hospital. Four cases illustrating indications for this procedure will be presented.

Technic

The method used is that outlined by Conley,[2] Zovickian,[3] and Corso, Gerold, and Frazell.[4] The anterior edge of the flap parallels the anterior border of the trapezius muscle. Following radical neck dissection it closely corresponds to the usual vertical neck incision. When the use of the posterior flap is anticipated, it can, therefore, be elevated at the time of neck dissection.[5] The posterior margin is the posterior midline of the neck. The superior boundary is the occiput, which limits rotation of the flap. The inferior margin is variable and may extend over the deltoid region for greater length. This flap may be based superiorly or inferiorly, although the former is by far more common. A two-to-one length-width ratio is preferred, particularly in a heavily irradiated neck. Superiorly, the arterial supply is from the occipital and posterior auricular arteries, and inferiorly from the superficial cervical and transverse cervical arteries. This flap may be transferred immediately or delayed depending on the need for lining, as in fistula repair. It is a full-thickness flap which includes the investing fascia covering the trapezius muscle. The donor site is resurfaced with a split-thickness skin graft.

The area is first outlined preferably in the sitting position. A folded gauze, as depicted by Corso, Gerold, and Frazell,[4] is then held at the intended base and rotated to the desired flap position. By this method the correct width, length, and position of the flap can be determined. It is then sharply elevated and may be immediately transferred to the recipient site. When used as a lined flap, a two-stage procedure is necessary. The first stage consists of elevation and lining of both the flap and its bed with a split-thickness skin graft. Transfer takes place in approximately three weeks. Retrieval of the attached and unused portion is not necessary (Fig. 1).

Case reports

Case 1. A fifty-year-old Caucasian female was found to have squamous-cell carcinoma involving the right posterior third of her tongue. This extended along the lateral pharyngeal wall to the vallecula. A 1-cm., hard, nonfixed lymph node was present in the contralateral superior deep cervical lymphatic chain.

Treatment consisted of four 30-mg. doses of methotrexate intramuscularly and external irradiation, 4,000 r to both sides of her neck and 6,000 r to the primary lesion. Three weeks later composite resection was performed.

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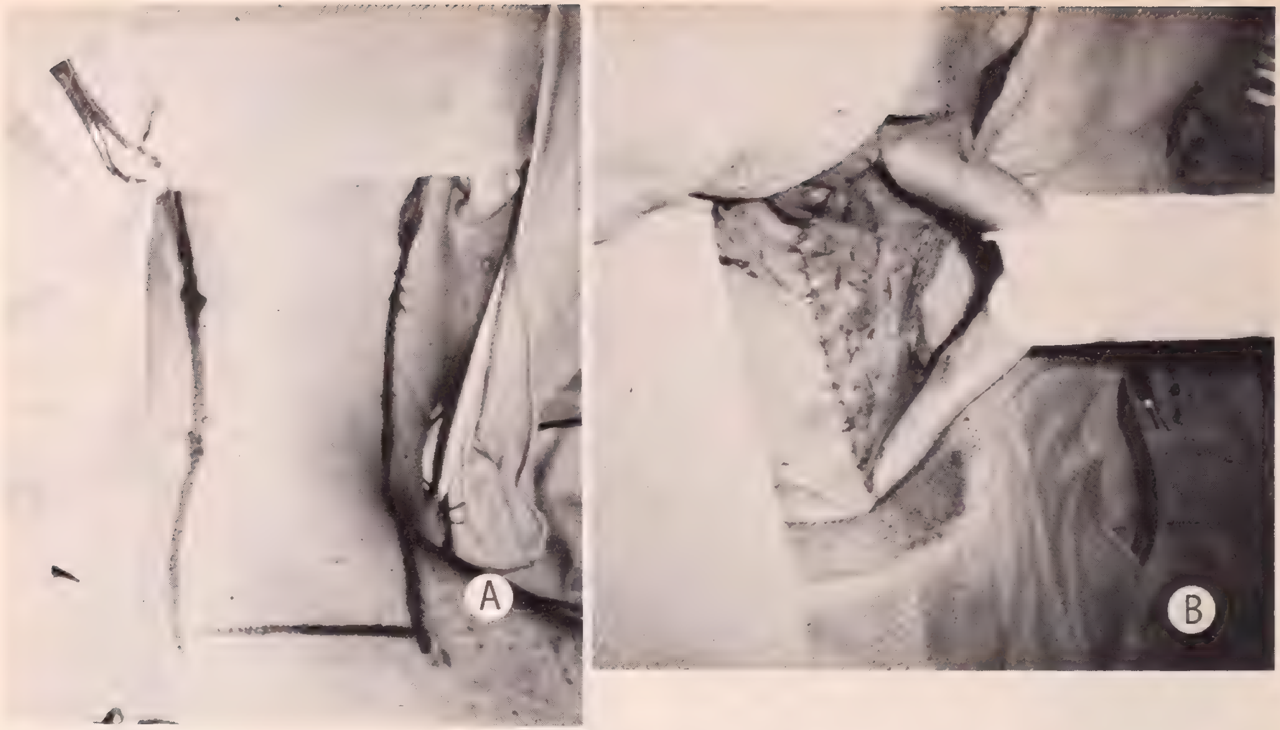

FIGURE 1. (A) Outline of right posterior cervical flap. (B) Flap elevated with superior and inferior attachments intact and flap bed covered with split-thickness skin graft.

This included right radical neck dissection, right hemimandibulectomy, partial pharyngectomy, hemiglossectomy, and modified left radical neck dissection. Postoperatively, a wound infection developed (Staphylococcus aureus and Pseudomonas aeruginosa). Dehiscence of both horizontal and vertical portions of the right cervical incisions occurred. Following ten days of local care and superficial debridement, a superiorly based posterior cervical flap was immediately elevated and transferred to the neck wound. This flap not only filled the majority of the neck wound but afforded carotid vessel protection as well. Following satisfactory healing, the patient was discharged (Fig. 2).

Case 2. A ninety-one-year-old Caucasian male was found to have squamous-cell carcinoma of the right parotid gland. Treatment consisted of radical parotidectomy and right radical neck dissection. Six months postoperatively a right infra-auricular recurrence developed. Treatment at this time consisted of wide local excision. Primary repair was carried out by utilizing a right inferior-based posterior cervical flap which was immediately transferred. The wound healed without complication (Fig. 3).

Case 3. A fifty-five-year-old Caucasian female was seen seven years previously with squamous-cell carcinoma of the left anterior floor of the mouth. Treatment consisted of radium "plaque" application followed by left hemimandibulectomy and radical neck dissection. Five years later a recurrence was noted in the left anterior floor of the mouth, treated by wide local excision and split-thickness grafting. Two years later recurrence was noted posterior to the graft, and she was treated with supravoltage irradiation (6,100 r) followed by radon seed implantation (1,500 r). In 1967 she was found to have recurrence in the left anterior cheek. It was elected to perform wide local resection to include the entire left cheek.

In the first stage, a bipedicle posterior flap was elevated and lined with a split-thickness skin graft. Three weeks later wide excision was carried out including the remaining floor of the mouth, the left lateral border of the remaining tongue, and full thickness of the cheek up to the angle of the mouth. The lined posterior flap was then transferred into the operative site. The wounds healed without incident (Fig. 4).

Case 4. The patient was a thirty-eight-year-old Caucasian male found to have a large exophytic squamous-cell carcinoma involving the laryngeal surface of the epiglottis in January, 1968. Treatment consisted of 4,000 r external irradiation to the tumor and both sides of the neck, followed by left radical neck dissection and supraglottic laryngectomy. The postoperative course was complicated by wound infection (Staphylococcus aureus) and fistula formation. This included most of the anterior and lateral portions of the neck. A left posterior neck flap extending over the shoulder was first delayed then elevated three weeks later to line the majority of the neck region. Subsequent healing has been without complication and with an excellent functional cosmetic result (Fig. 5).

Comment

One of the most challenging aspects of head and neck surgery lies in the reconstruction and repair of the resultant surgical defects. The posterior cervical flap and regional flaps in general are ideal for this purpose. The principles on which such flaps are utilized have been best described by Brown, Fryer, and McDowell,[6] who wrote "In re-

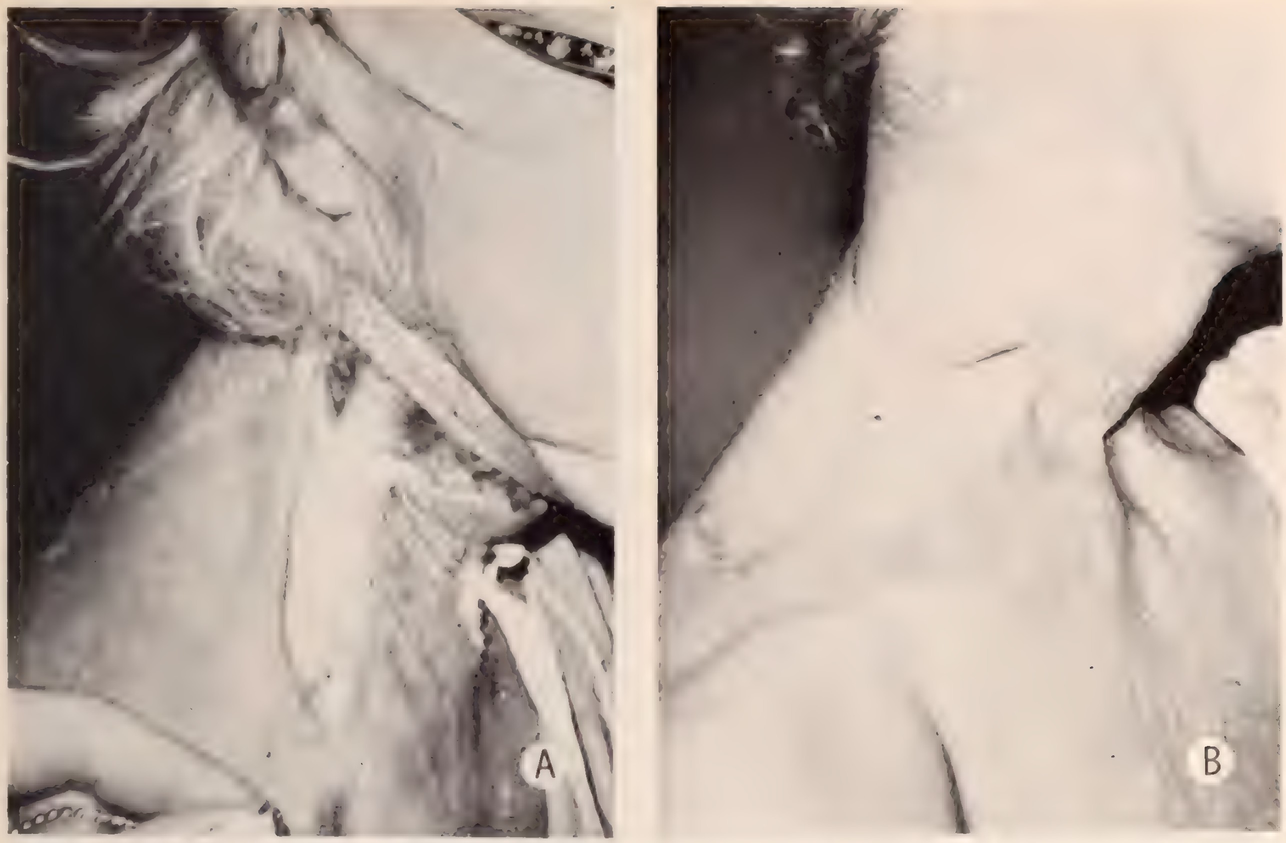

FIGURE 2. Case 1. (A) Right cervical wound breakdown. (B) Appearance of right cervical region three months after transfer of posterior cervical flap.

pairing a defect in a heavily scarred area with diminished vascularity it may be advantageous to use a flap with a permanent blood supply coming in through a permanent pedicle that does not have to be detached from its donor site."

Conley[2] points out the necessity of including plans for immediate regional flap transposition when performing surgery in a devitalized or heavily scarred region. The posterior cervical flap offers the advantage of being easily elevated during such surgery. Cosmetically, it is usually less disfiguring than the forehead or chest flap, and the defect is covered by the hair in the female and in most males.

The specific situations in which this flap should be considered include the following: repair of anterior neck defects, repair of pharyngeal fistula and pharyngostoma closure, repair of postoperative wound dehiscence following radical neck dissection, repair of full-thickness cheek defects, and resurfacing of oropharyngeal surfaces following composite resection.

During the past one and one-half years we have used this flap in a variety of circumstances. In all instances, the involved tissues had been subjected to previous operative procedures and/or irradiation. No instance of flap necrosis has occured during this period in 10 cases. Extension of the flap outline onto the shoulder will permit complete coverage of the anterior neck when indicated.

It is our suggestion that the regional flap be considered because of its ease, versatility, and cosmetic acceptance in the management of wound problems in the head and neck region.

Summary

The posterior cervical shoulder flap is a valuable adjunct in the management of head and neck surgical wounds. The uses and methods of elevation

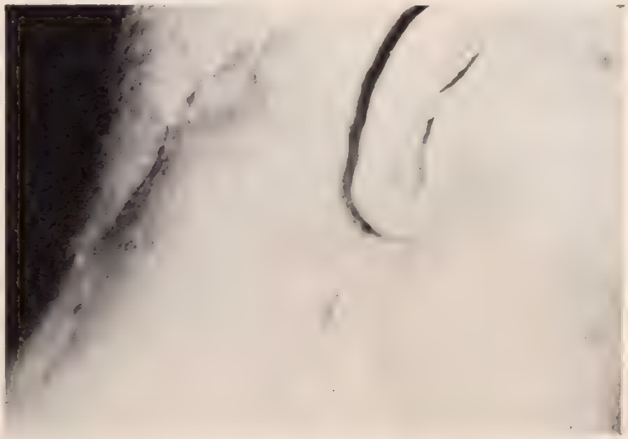

FIGURE 3. Case 2. Appearance of right postauricular region six months after transfer of posterior cervical flap.

of this flap are outlined. Four illustrated cases are presented demonstrating the versatility of the surgical method. In 10 instances of its uses in surgically scarred and irradiated tissues no flap breakdown has occurred.

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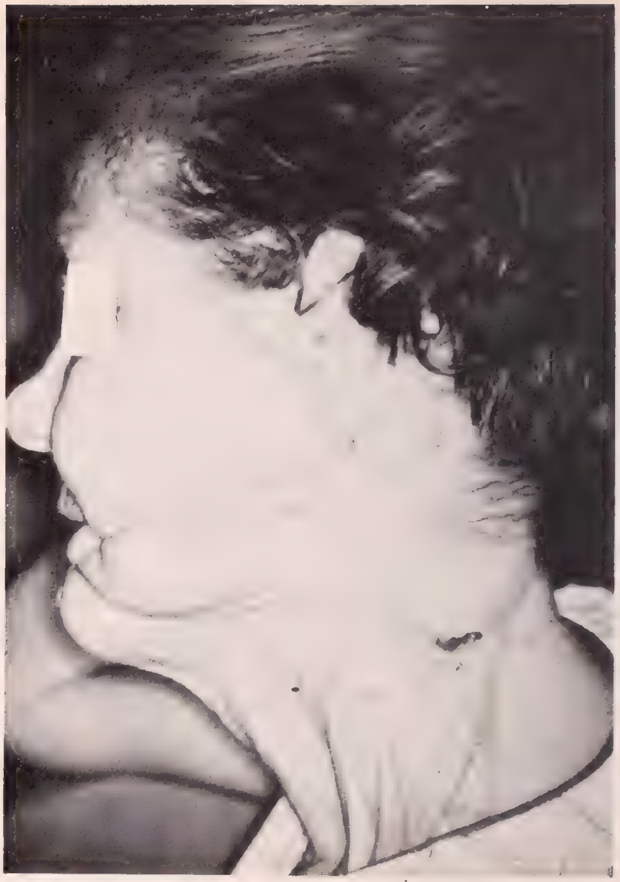

FIGURE 4. Case 3. Appearance of left check one week after reconstruction with lined posterior cervical flap.

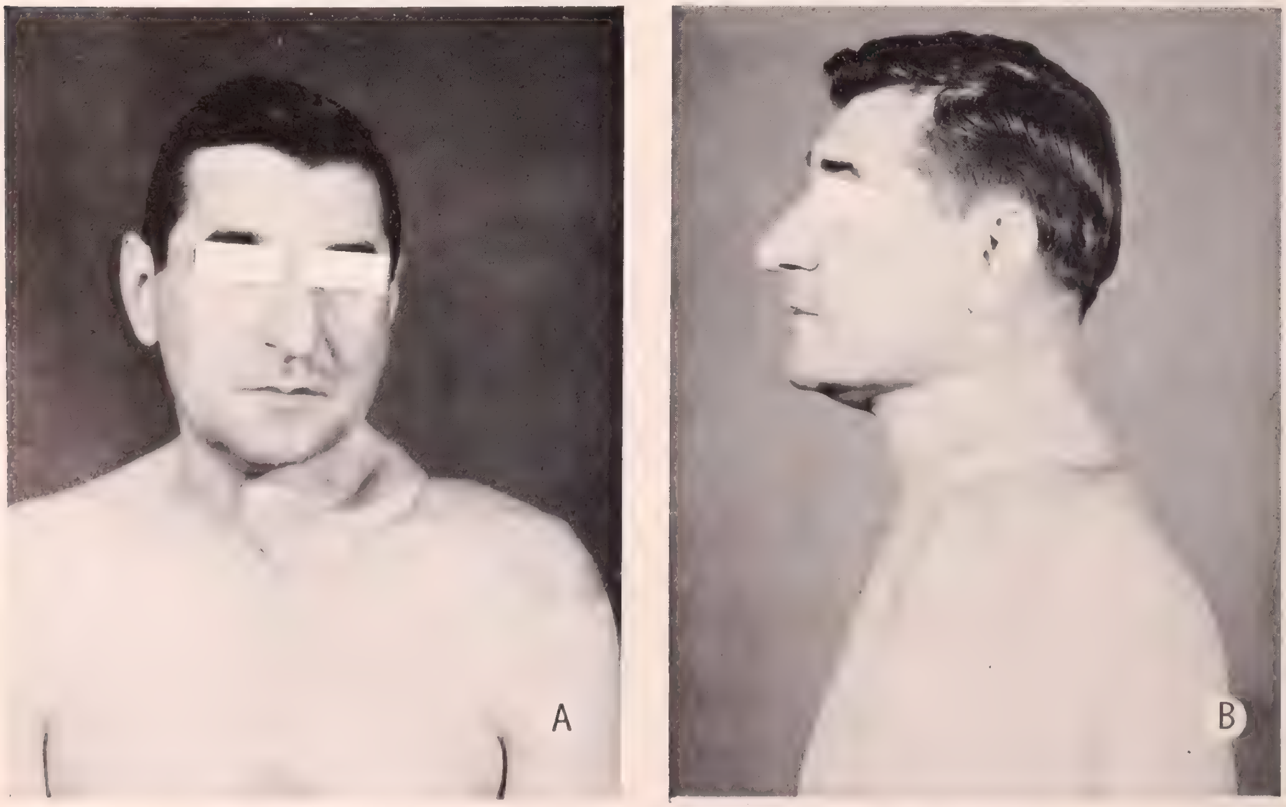

FIGURE 5. Case 4. (A and B) Appearance nine months postoperatively.

Clinicopathologic Conference

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Conducted by JOHN T. FLYNN, M.D., and
CHARLES M. KARPAS, M.D.

Discussed by WILLIAM T. FOLEY, M.D.

HYPERTENSION, CARDIAC ENLARGEMENT AND UREMIA

Case history

Lourdes U. Loreto, M.D.: A twenty-two-year-old unemployed white male was brought to the emergency room after alleged cold exposure of unknown duration. No additional medical or past history could be obtained because of mental inadequacy and confusion.

Physical examination on admission to the surgical service revealed a blood pressure of 118/70 mm. Hg, a pulse of 90, and respirations of 36 per minute; the temperature was 99.8 F. The skin was coarse and the lips and tongue were dry and coated. The lung fields were clear; the heart rhythm was regular, and no murmurs were audible. There were ecchymoses over both elbows and both feet, with edema below the knees; small superficial ulcerations of the skin were noted over both heels. The dorsalis pedis pulses were not palpable; the extremities were cold and cyanotic.

Urinalysis showed a specific gravity of 1.015, a 1 plus test result for albumin, a negative result for sugar, and a large amount of acetone, with negative microscopic findings. The hemoglobin was 12.9 Gm. per 100 ml., the hematocrit 38, and the white blood cell count 14,800 with 81 per cent polymorphonuclear leukocytes. The blood urea nitrogen was 76 mg. per 100 ml., the carbon dioxide content was 21, the serum potassium 5.6, the serum sodium 124, and the serum chlorides 94 mEq. per liter. The result of the VDRL test was nonreactive. The serum glutamic oxalic transaminase, serum glutamic pyruvic transaminase, and lactic dehydrogenase were within normal limits.

The initial chest x-ray film showed no abnormalities of heart or lungs (Fig. 1).

During the first two weeks in the hospital the patient continued to have fever between 100 and 102 F. Vesicles formed in the ecchymotic areas on the lower extremities; ulceration progressed over both heels, with sloughing of tissue and blister formation. With parenteral fluids and penicillin, his general condition improved, but he continued to be confused and apprehensive. The psychiatric consultant believed that the patient might be mentally retarded but possibly also schizophrenic. Repeat urinalysis showed a specific gravity of 1.022 with negative findings for albumin and sugar; the microscopic examination showed 10 to 20 white blood cells and a few amorphous crystals only. The blood urea nitrogen decreased to 15 mg.

In the third hospital week the skin over both ankle regions was debrided, but the areas failed to granulate satisfactorily due to repeated scratching. Necrosis spread, and the tendons over the dorsum of the right foot became exposed. During the seventh and ninth hospital weeks skin grafts were applied to portions of the ulcerated areas with

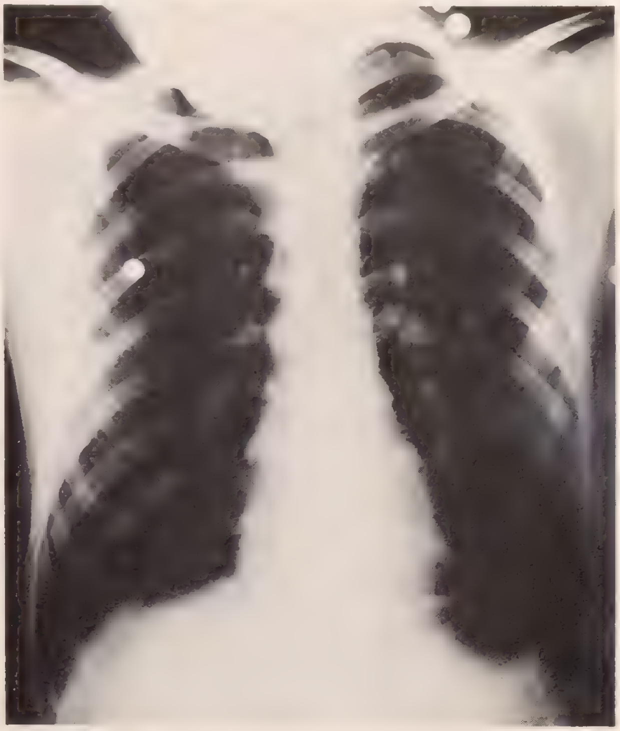

FIGURE 1. Admission x-ray film showing normal heart and lungs.

only partial success. Culture of the right ankle lesion revealed Staphylococcus aureus, coagulase positive, and Proteus species only. Shortening of the Achilles tendon gradually developed with both feet fixed in plantar flexion. The neurologic consultant noted limitation of motion of the ankles, bilateral foot drop, atrophy of intrinsic hand muscles, weakness of the interossei bilaterally, suggestive atrophy of the shoulder girdle muscles, marked clonus of the left knee, and bilateral Hoffmann's sign, compatible with a spinal cord syndrome of undetermined cause. Because of shortening of the Achilles tendon and the persistent skin infection, the patient remained nonambulatory in spite of physiotherapy.

Five months after admission the patient began to complain of lower retrosternal chest pain and was found to be pale and sweating, with a temperature of 102.2 F., a pulse of 100 per minute, and a cardiac rhythm that was irregular at times. The medical consultant on examination noted a blood pressure of 170/120 mm. Hg, slight ptosis of the right eyelid, a scleral hemorrhage in the left eye, and loud coarse breath sounds at both lung bases but no rales. The heart was enlarged but no murmurs were audible. The peripheral pulses were barely palpable. Urinalysis showed a specific gravity of 1.017 and a 3 plus test result for albumin; 25 to 30 white blood cells, 20 to 25 red blood cells, 10 to 15 red blood cell casts, and innumerable coarsely granular casts per high-power field were noted. The hemoglobin was 9.4 Gm. per 100 ml., the white blood cell count 7,000 with 87 per cent mature polymorphonuclear leukocytes. The blood urea nitrogen was 50 mg., the serum creatinine 1.9 mg., and the uric acid 9.3 mg. per 100 ml. The carbon dioxide content, serum potassium, sodium, and chlorides, thymol turbidity and cephalin flocculation test results, total cholesterol, total serum protein and albumin-globulin ratio, serum bilirubin, fasting glucose, acid and alkaline phosphatases, serum amylase and lipase, serum glutamic oxaloacetic and pyruvic transaminases were within normal limits; the lactic dehydrogenase was 725 and 1,010 units (normal 200 to 600 units). The result of the stool guaiac test was negative.

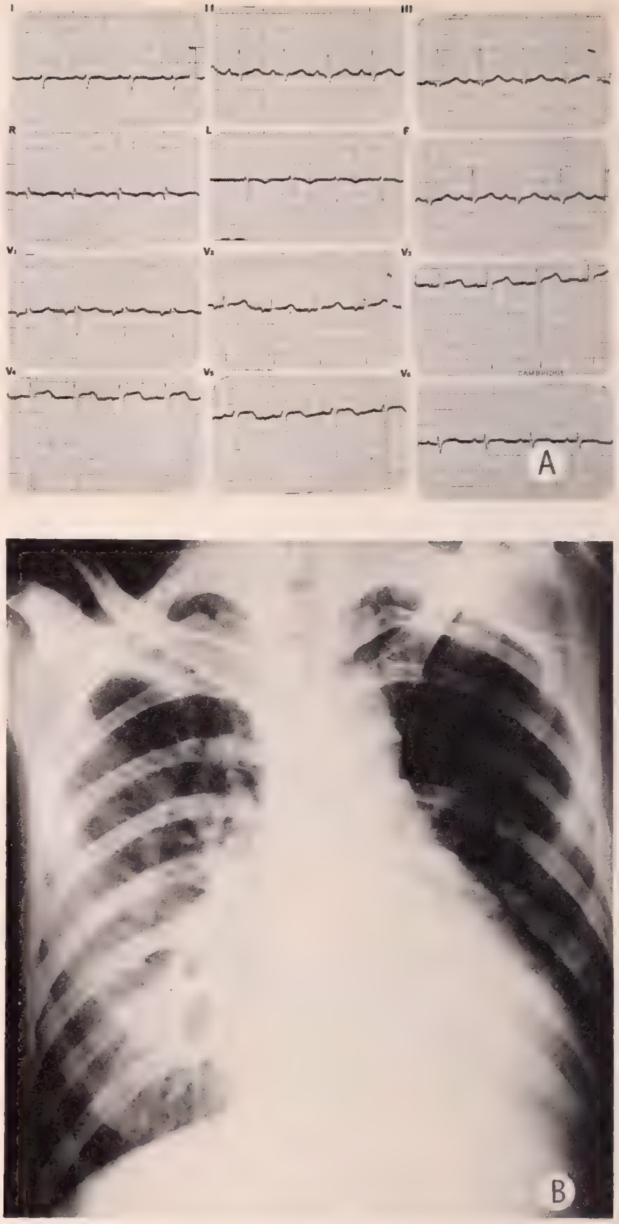

FIGURE 2. (A) Electrocardiogram five months after admission suggesting right ventricular heart strain. (B) Rentgenogram of chest five months after admission, indicating cardiac enlargement and pulmonary congestion.

Shortly thereafter the patient was transferred to the medical service; he continued to complain of lower retrosternal pain not pleuritic in type and not relieved by analgesic or antacid drugs. The temperature fluctuated between 100 and 103 F., the pulse rate between 120 and 145 per minute, and the blood pressure between 170 to 190/130 to 110 in both arms. No petechiae were observed. The heart was enlarged to the anterior axillary line with an S_3 gallop at the apex but no murmurs. Right ventricular strain was suggested on the electrocardiogram by deep S waves in V_5 and V_6 (Fig. 2A). Roentgenogram of the chest revealed a markedly enlarged heart with minimal evidences of pulmonary congestion and pleural reaction in both costophrenic angles (Fig. 2B). Subacute glomerulonephritis secondary to skin infection and to bacterial endocarditis was suspected; the patient was treated with ampicillin, chlorpromazine (Thorazine), a low-salt diet, and reserpine. His peculiar affect was attributed to mental deficiency, although a definite diagnosis could not be determined.

Three days after transfer to the medical service the patient complained of severe shortness of breath and became cyanotic, without change in other physical signs. He was digitalized and given oral diuretic agents; lung scan revealed normal perfusion throughout. Two days later on the one hundred sixty-seventh hospital day, the patient suddenly went into vascular collapse; marked sinus bradycardia and eventually a blood pressure of 180/130 mm. Hg were noted after resuscitation measures were initiated. The electrocardiogram revealed first-degree atrioventricular block and shortly thereafter reverted to normal sinus rhythm. The patient was transferred to the intensive care unit; he remained drowsy but agitated and restless when aroused and unable to answer questions.

During the next eighteen days of observation, the temperature fluctuated irregularly below 100 F. The blood pressure remained elevated, the pulse rapid, with persistent gallop rhythm and a few basilar rales. The hemoglobin was 10 Gm. per 100 ml., the white blood cell count 13,600 with 79 per cent mature polymorphonuclear leukocytes and 2 per cent reticulocytes; the platelet count was 151,000 per cubic milliliter. The urine output remained between 1,000 and 2,500 cc. per day, with urine specific gravities of 1.015 to 1.035, with 1 plus and 2 plus test findings for albumin, many white blood cells, and many red blood cells, with 1 to 2 coarsely granular casts per high-power field. Blood gas studies indicated that the patient was in persistent respiratory alkalosis with a pH of 7.5 to 7.52. The carbon dioxide content was 8 mEq., the serum potassium 6.5 mEq., the sodium 136 mEq., and the chlorides 92 mEq. per liter. The blood urea nitrogen gradually rose to 124 mg., the creatinine to 3.8 mg., and the uric acid to 16.6 mg. per 100 ml.; the serum glutamic oxaloacetic transaminase to 252 units (normal 1 to 27), the serum glutamic pyruvic transaminase to 440 units (normal 1 to 40 units), the lactic dehydrogenase to 1,950 units (normal 200 to 600 units), the creatine phosphokinase to 1,080 International Units (nor-
spinal fluid protein was 54 mg. the sugar 84 mg.
drogenase to 1,740 units (normal 320 to 675). The partial thromboplastin determination was 74.5 seconds (control 70.3 seconds) (normal 60 to 100 seconds). The prothrombin time was 20.4 seconds (control 14.5 seconds). The electrocardiograms showed sinus tachycardia with flat or inverted T waves in the limb leads, in aVl, aVf, and V$_1$ through V$_6$, suggesting myocardial ischemia or possibly myocarditis (Fig. 3). Repeated blood cultures showed no growth; the antistreptolysin titer was 333 Todd units. The ophthalmology consultant observed scattered retinal hemorrhages and a suggestion of early papilledema bilaterally. In spite of the use of hydralazine (Apresoline) and reserpine, the patient's blood pressure remained unchanged. He gradually lapsed into semi-stupor and was responsive only to painful stimuli. The neurologic consultant found no localizing signs, although the patient had bilateral Babinski reflexes; a diffuse encephalopathy possibly of toxic metabolic origin was suspected. A spinal tap revealed an opening pressure of 270 mm. of water; the fluid was clear, with no white blood cells and only 2 red blood cells per cubic millimeter; the spinal fluid protein was 54 mg. the sugar 84 mg. per 100 ml., and the chlorides 128 mEq. per liter. The serum amylase was 283 units and 267 units (normal 50 to 180 units). The serum glutamic oxaloacetic transaminase eventually remained at 50 to 60 units, the lactic dehydrogenase at approximately 1,000 units, and the serum glutamic pyruvic transaminase at 70 to 80 units. Repeat creatine phosphokinase determination showed persistent elevation to a level of 460 to 680 International Units. The total blood lipids were normal. Results of the direct Coombs test, the heterophil agglutination test, and three lupus erythematosus preparations were negative. The serum electrophoresis showed only small increases in the alpha 1 and alpha 2 globulins. Persistent shallow rapid breathing continued to be accompanied by evidences of respiratory alkalosis on blood gas studies. Erythromycin and cephalothin were substituted for ampicillin without effect on the fever, which remained between 100 and 102 F.; results of the repeated blood cultures remained negative.

During the final hospital week the patient passed tarry stools. The hemorrhagic areas in the conjunctivas remained evident; the fundi showed no new hemorrhages. The heart sounds were of poor quality with persistence of an S$_3$ gallop; the lungs remained clear to auscultation. Petechiae were observed over the extremities together with muscle fasciculations and twitching of all the extremities. The hemoglobin with the aid of five transfusions stabilized at first at 10 Gm. per 100 ml. but terminally fell to 6 Gm. per 100 ml. The white blood

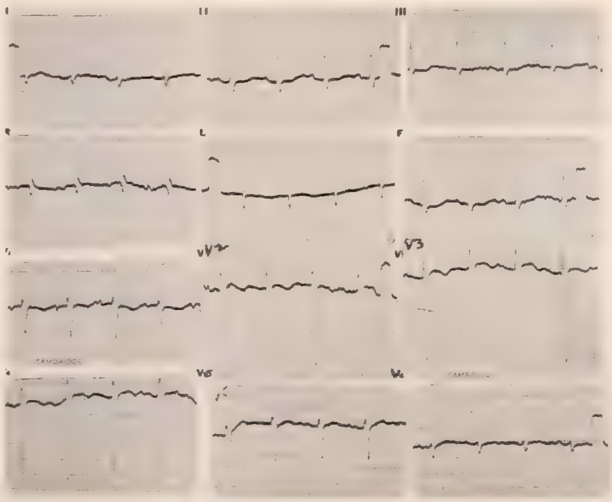

FIGURE 3. Preterminal electrocardiogram compatible with myocardial ischemia or myocarditis.

cell count was 11,000 with 80 per cent polymorphonuclear leukocytes, 3 per cent band forms, and 17 per cent lymphocytes; at no time was eosinophilia observed. The prothrombin time was 25 seconds (control 14.6 seconds). A repeat platelet count was 108,000 per cubic millimeter. Profuse epistaxis developed but no new evidence of gastrointestinal bleeding; vitamin K was administered parenterally without evident effect. The urinary output gradually diminished to less than 400 cc. per day; the urine protein content was 224 mg. per twenty-four hours (normal 25 to 70 mg.); the result of the test for homocystine was negative. Stool cultures showed only Klebsiella and Proteus. The blood urea nitrogen increased to 165 mg. per 100 ml. and the serum creatinine to 9.9 mg. per 100 ml.; the carbon dioxide content was 7.5 mEq., potassium 3.2 mEq., and chlorides 110 mEq. per liter. The serum calcium was 9 mg. per 100 ml.

On the one hundred seventy-ninth hospital day, the patient's blood pressure was 100/60 mm. Hg, the respirations slow and labored, and the lung fields clear. Following peritoneal dialysis the blood urea nitrogen decreased to 140 mg., the serum creatinine to 6.0 mg., and the potassium to 2.5 mg. per 100 ml.; the carbon dioxide content was 14.5 mEq. per liter. On the following day the patient lapsed into coma with progressive hypotension and finally expired.

Discussion

William T. Foley, M.D.*: In the course of investing myself with this particular case I involved the entire gamut of internal medicine. I can review these clinical events only in a chronologic fashion; and I will have to ask a few questions along the way.

This young man of twenty-two years died six months after admission, of a chronic illness with a series of complications. The one helpful aspect of this protocol is the adequate history of the hospital course, even though his earlier medical history remains incomplete. Recently we tried to analyze at Cornell with the aid of computers, a series of very difficult problem cases, with the aim of determining what type of information led most effectively to the proper diagnosis. We found that the history deserved a weightage of 70 per cent, the physical examination 10 per cent, x-ray examinations 5 per cent, laboratory tests about 5 per cent, and the clinical course about 10 per cent. When we start with no history at all, we are already at a serious disadvantage. We are told that nothing of this patient's past medical problems could be learned; apparently he had mental deficiency and confusion, but what kind of behavior led you to diagnose those conditions?

John T. Flynn, M.D.: Because the primary reason for his admission was a local surgical condition apparently not related to his brain, not much attention was paid to his mental status. Fortunately, he was seen early by one of our experienced neurologists, Stefan Shanzer, M.D., who might give us his impressions of the mental state of the patient.

Stefan Shanzer, M.D.: Before I ever examined him, I saw this patient many times on occasions when I made consultations on other patients in the same room. This boy kept screaming much of the time; it was impossible to enter the room without attracting his attention; he was always afraid that a physician was coming to do something to him. He also was full of demands, not always relevant. I could not tell whether he was oriented, because I never tested him at the time. Later when I did a formal neurologic examination on him, it was impossible to determine his degree of orientation, because he would overwhelm the examiner with constant demands for reassurance that nothing was going to be done to him. A detailed intellectual study on this young man was impossible. I saw his mother at his bedside several times and her intellectual endowment did not appear any greater than his.

As far as the neurologic examination is concerned, I think the findings are fully listed in the protocol.

Dr. Foley: Did he manifest any extraneous or adventitious movements?

Dr. Shanzer: No, he had no choreiform movements, nor any other unusual repetitive activities.

Dr. Foley: I gather from the description that this boy was fearful and hostile. He was confined to bed and to a wheelchair for six months. At the time of admission here, he had had prolonged exposure to cold, but April is not usually a cold month, so he was not seriously frozen.

Basil Moumgis, M.D.: During the two or three days prior to his admission the local temperature ranged from 35 to 51 F., according to local Weather Bureau records.

Dr. Flynn: Actually, we have no clear-cut history of cold exposure.

Dr. Foley: At any rate, he had lesions on the heels and on the elbows, which apparently were quite difficult to treat. He received the usual therapy, including debridement and plastic surgery, which was not successful because he scratched the affected areas and infected them.

So far my diagnoses must include mental deficiency, possibly on a hereditary basis.

On admission, his blood pressure was normal, but he had a blood urea nitrogen of 76 mg. per 100 ml., which would probably indicate an element of dehydration, but even at that point we must consider a diagnosis of underlying renal disease. Acute glomerulonephritis can be brought on by infections of the skin, although I do not think it likely here. Acute nephritis in young people is most often associated with a sore throat caused by an acute hemolytic streptococcus infection. However, he recovered from this initial episode of azotemia, and the urea nitrogen returned to normal. Later a fever developed. An initial chest x-ray film was taken. Could we have Dr. Batillas' comments on it?

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John Batillas, M.D.: The roentgenogram of the chest on admission showed the lung fields to be clear. There was no evidence of pleural reaction, and the cardiac silhouette appeared perfectly normal both as to size and configuration (Fig. 1).

Dr. Foley: During his four-month stay on the surgical service the skin lesions did not heal, and a shortening of the Achilles tendon developed which we can explain in several possible ways. In patients with lesions of the heels a shortening of this tendon sometimes develops without any neurologic cause. However, limitation of motion of the ankles, bilateral full foot drop, atrophy of the intrinsic hand muscles, weakness of the interossei bilaterally, suggestive atrophy of the shoulder areas, and marked left knee clonus developed in this patient. Could we again hear from our neurologist, Dr. Shanzer, at this point?

Dr. Shanzer: When I first examined him, I had no way of knowing whether the neurologic findings were present before his admission or not, since there was no detailed neurologic examination recorded at the time of admission to the hospital. The findings as described point to one thing only, that is, disease of the spinal cord. With no adequate history available, I could only speculate about possible congenital disease involving the nervous system. My opinion was based on a single neurologic examination. A number of diagnostic tests that we requested apparently could not be done; therefore, the neurologic study was not adequate until shortly prior to his terminal catastrophic illness. It should be emphasized that all the neurologic findings on my examination in the ninth hospital week could be explained by a single lesion of the cervical spinal cord, even though diffuse lesions of the cord can be responsible for a similar clinical picture.

Dr. Foley: Dr. Shanzer, did you take his blood pressure during your first neurologic examination?

Dr. Shanzer: No.

Dr. Foley: Shortly thereafter, during the fourth month in the hospital, we suddenly find the patient desperately ill with a blood pressure of 170/120 mm. Hg, whereas his blood pressure when he was admitted was perfectly normal. In addition he was febrile; red blood cells and casts including coarsely granular casts were found in the urine; the hemoglobin decreased while the blood urea nitrogen and uric acid levels rose. Is this an acute nephritis in the course of persisting skin infections? It is quite possible, but I remain doubtful, since I am impressed that the first serum uric acid determination was considerably elevated even for someone with a profound kidney lesion. We will have to return our attention to that uric acid determination a little later.

Following his transfer to the medical service five months after admission, he continued to have a spiking fever and high blood pressure. At that time, the diagnostic possibilities included subacute bacterial endocarditis, which would have explained almost the entire clinical picture, including nephritis, brain lesions, cerebral hemorrhages, and a progressive wasting illness. However, I do not think that he had subacute bacterial endocarditis; no organism was identified, and in any event the antibiotic therapy should have influenced the clinical course favorably which it did not. Treatment of the high blood pressure by means of low-salt diet and reserpine was ineffective. An episode of cyanosis and signs of congestive heart failure then developed. At this point we should review the x-ray films of his chest.

Dr. Batillas: The remaining roentgenograms of the chest were obtained during the final two to three weeks of hospitalization (Fig. 2B). We see a striking increase in the cardiac size when compared with the initial study; in addition there has been accentuation of the pulmonary vasculature, slight thickening of the hilar regions, and evidence of Kerley's B lines, so that we see the changes of pulmonary congestion. The costophrenic angles are obliterated because of pleural effusions. The subsequent films demonstrate evidence of pulmonary edema and varying degrees of pulmonary congestion. A lung scan was normal; there was no evidence of pulmonary infarction.

Dr. Foley: Would you consider pericarditis with effusion as the cause of the enlarged cardiac silhouette?

Dr. Batillas: I cannot exclude it entirely. On the basis of the final film I would favor an enlarged heart, left ventricular in type, rather than a pericardial effusion.

Dr. Foley: The x-ray interpretation suggests an enlarged left ventricle, but the electrocardiogram appeared to favor a diagnosis of strain of the right side of the heart.

Occasionally with left ventricular strain, which we would expect from persisting high blood pressure, a right axis deviation can eventually develop. However, I would suggest that this right-axis deviation might fit in better with the long, narrow configuration of the chest, and I would agree that this man does have an enlarged heart as the result of persisting high blood pressure probably of fairly acute onset. Of course multiple pulmonary emboli can give rise to strain of the right side of the heart and right axis deviation and would explain many of the symptoms. Multiple pulmonary emboli in the small branches of the third-degree pulmonary arteries can happen over a period of years and give rise to heart failure on the right side; but this patient had no cough with sputum, no hemoptyses, and no pleuritic chest pain. Perhaps in this very disturbed young man it might have been very difficult to evaluate any such symptoms. If he has a diffuse disorder of the blood-clotting mechanism that could lead to intravascular clotting with emboli into the lungs, he might not present obvious signs of thrombophlebitis. We would have to suppose that he was also having arterial thrombi or emboli in the kidneys to account for the urinary findings. I have seen many instances of blood-clotting disorders, but the usual ones would not fulfill this entire clinical picture.

With the worsening of this man's condition, we find signs of infarction in the brain and finally semistupor with responsiveness only to painful stimuli. Again the neurologic consultation and the spinal tap, together with many laboratory procedures, are helpful, but none lead to a definitive diagnosis.

What are we left with? Dementia, cold exposure, possible frost bite, always the question of drug addiction in the background, possible phlebitis, high blood pressure, and a kidney lesion. Can we properly suspect some genetic metabolic disease? Some of the latter are intriguing, especially those associated with high blood pressure. One which is associated with dementia is porphyrinuria, but I should think that during six months in the hospital someone would have observed color changes in the urine. The same would be true for alcaptonuria which is also associated with dementia. I was quite intrigued here with the elevated serum uric acid, from the first right through to the end, so let us look at the differential diagnosis of hyperuricemia. First of all, the congenital abnormality of purine metabolism that we associate with gout is common. Any of the leukemias can be associated with a rapid breakdown of nitrogenous products and elevated blood uric acid, but leukemia was not present. Another type of congenital disturbance in uric acid metabolism at a young age would explain the dementia; this is usually apparent in early childhood, together with prominent choreoathetosis, sufficient to inflict harm on the patient. In addition the patient bites his lips and fingers; in the literature there are pictures of such patients who have bitten off their own fingers. These cases of the Lesch-Nyhan syndrome develop a type of nephritic picture quite similar to this one, with high blood pressure and the other clinical features that developed in this man. The only congenital disease that I can offer, which would explain all the findings here, would be the Lesch-Nyhan syndrome with its congenital defect in uric acid metabolism.[1]

If, however, a congenital abnormality cannot be implicated in this patient's final illness, I would have to postulate, as I previously indicated, some type of diffusely abnormal clotting disorder with widespread involvement of many blood vessels; but I must admit that if it is present, its character and pathogenesis escape me, as it might have with the clinicians who were taking care of the patient.

Charles M. Karpas, M.D.: If you believed that these changes were due to an inborn error of metabolism in uric acid, would you not expect to have found uric acid crystals at some time in the urine, with this degree of renal failure and uremia?

Dr. Foley: Yes, but I think that uric acid crystals are often overlooked in the urine, unless they are specifically looked for.

Dr. Karpas: That is dependent in part on the urinary pH. If a urine specimen does not arrive at the laboratory until several hours after it is voided, the uric acid crystals certainly will disappear.

Harold H. Coppersmith, M.D.: Dr. Karpas, would the pathologists be able to help with a diagnosis of Lesch-Nyhan syndrome?

Dr. Karpas: The renal changes in the Lesch-Nyhan syndrome are not specific but could be present in a patient whose urine showed granular casts, red cells and white cells, but in which uric acid crystals might not have been observed. Dr. Foley, to what do you ascribe the increased prothrombin time in this patient?

Dr. Foley: Increased prothrombin times can, of course, be due to liver disease, probably profound. Surreptitious bishydroxycoumarin (Dicumarol) ingestion would not have been possible in this man. We have seen it in cases of gastrointestinal disease with diarrhea which resulted in the removal of the precursors of prothrombin from the gut. This patient had antibiotic agents for a period of six to eight weeks in large doses which can change the intestinal flora and can cause prolonged prothrombin time.

Yi-Nan Chou, M.D.: Dr. Foley, if this is a so-called Lesch-Nyhan syndrome, would you not expect to see gouty arthritis, renal stone, or tophi in soft tissues?

Dr. Foley: The first 2 cases that have been reported, only seven years ago, did not have any tophi or joint changes.[1] At present a total of 60 cases have been reported. Older children tend to manifest the other changes that we usually see with gout. In general, with any dominant defective gene, life tends to be short; but the less dominance of that gene in a propositus, the longer the life and the more frequent the appearance of a forme fruste or only partial manifestation of the corresponding physical abnormality or syndrome.

Asuncion Luyao, M.D.: In those 60 cases of Lesch-Nyhan syndrome reported in the literature were any over twenty-one years of age?

Dr. Foley: I was not able to find many of the case protocols of these patients. At a recent conference, Dr. Nyhan stated that among the 60 cases, the eldest was twenty-eight years of age.[2]

Dr. Coppersmith: I would like to ask Dr. Foley whether he considered polyarteritis nodosa in the differential diagnosis.

Dr. Foley: Perhaps I should have. Most of the cases of polyarteritis nodosa that I have seen have peripheral vascular lesions and later heart lesions develop. Both visceral and cerebral manifestations are common. I would say that this patient could have had fulminating periarteritis nodosa.

Dr. Shanzer: This young man's neurologic findings were not exactly those which I would expect to see in patients with polyarteritis. Such patients present a clinical picture of multiple peripheral mononeuropathy, and sometimes in the later stages they show a diffuse severe symmetric radiculoneuropathy with severe motor and sensory involvement of the legs and possibly of the arms. Such cases would not demonstrate increased reflexes, clonus, Babinski signs, or other evidence of primarily central neurologic involvement. I believed and still believe that on my first examination some of the neurologic findings could have been due to involvement in the upper spinal cord.

Clinical diagnoses

1. *History of frostbite, both lower extremities with ulceration, and Achilles tendon shortening*
2. *Subacute glomerulonephritis, with hypertension and renal failure, secondary to skin infection*
3. *? Subacute bacterial endocarditis*

Dr. Foley's diagnoses

1. *? Lesch-Nyhan syndrome with uropathy and renal failure*
2. *? Diffuse vascular disease of undetermined cause*

Pathologic discussion

Dr. Moumgis: We expected to find multisystem disease in this patient. He was a very asthenic individual, 6 feet tall, weighing approximately 120 pounds, cachectic but looking younger than twenty-four years. There was evidence of a hemorrhagic diathesis with scattered crops of petechiae on the skin, scleral hemorrhages, and blood about the external nares. Viscerally we found evidence of polyserositis, with small bilateral blood-tinged pleural effusions, a pericardial effusion of about 150 cc. and 1,000 cc. of ascitic fluid, all of which could be attributed to prolonged uremia. Residual fluid from the peritoneal dialyses may have been present. Microscopically, there was evidence of chronic peritonitis, chronic pleuritis, and chronic pericarditis of the types that are associated with uremia.

The kidneys were enlarged and presented a typical flea-bitten appearance, with multiple small hemorrhages. Otherwise the kidneys were pale, and the surfaces showed large depressed scars, with interposed areas of edema. A very marked hemorrhagic cystoureteral pyelitis was present.

The heart was enlarged, weighing 440 Gm., with diffuse hypertrophy of both sides of the heart. The valves did not show any basic deformity that might be attributed to underlying disease; however, on both the tricuspid valves and the mitral valve there were bland vegetations of so-called thrombotic nonbacterial "marantic" endocarditis, and microscopically this impression was confirmed. The myocardium contained gross lesions that suggested small foci of ischemia, some fairly recent, some fibrotic, scattered throughout the entire left ventricle and septum. It appeared to me that these lesions indicated small-vessel involvement.

The lungs showed evidence only of acute and chronic passive congestion and some foci of bronchopneumonia. The liver was enlarged but showed only congestion and a small hemangioma. The spleen and lymph nodes were enlarged, but no intrinsic disease was evident. The brain on gross examination was pale, slightly edematous, and mildly congested.

Microscopically, there was evidence of an angiopathy in almost every organ, confined primarily to capillaries, arterioles, and very small arteries. The vascular lesion was histologically very similar to or indistinguishable from that of so-called thrombotic thrombocytopenic purpura. Small thrombi were present within the lumina, sometimes appearing to be outside the lumen with endothelial proliferation. When these lesions involved larger vessels they sometimes showed evidence of organization; the largest involved a coronary branch about 1 mm. in diameter, with an organized thrombus. Microscopically, the lesions in the myocardium were ischemic foci and infarcts in both the left and the right ventricle; I saw none in the sections of the atria (Fig. 4).

The kidney lesions were principally vascular. We found evidence of infarcts, focal areas of fibrosis, and older regions of scarred renal tissue (Fig. 5A and B). In addition, a focal membraneous glomerulonephritis was present, but it was not typical; we failed to see evidence of crescents, although there were some adhesions, minimally increased cellularity of some of the glomeruli, and a suggestion of so-called wire-looping in scattered glomeruli. The lower urinary tract gave evidence of pyelitis, ureteritis, and cystitis. The inflammation obscured the finer details of the very small vessels in many areas of the urinary tract, so that it was difficult to determine whether vascular lesions were a contributing cause or whether an as-

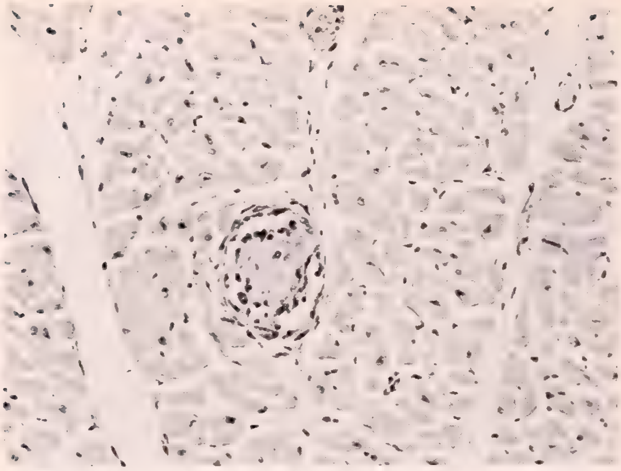

FIGURE 4. Endothelialized organized thrombus partially blocking small arteriole in myocardium.

cending infection was responsible. Vascular changes were also found in the adrenal glands with multiple microinfarcts of the cortices. We saw infarcts of the pancreas, again associated with vascular lesions.

The brain did not look abnormal grossly, but in random sections through the cerebral cortex, the basal ganglia, and the cerebellum we found multiple microscopic infarcts, in which loss of tissue and proliferating capillaries suggested a duration of many days to several weeks. Even in many apparently normal parts of the brain we saw the microangiopathy of the capillaries, although not in the pons, the medulla, or upper spinal cord (Fig. 6). The lower spinal cord was not examined.

The lesions of the feet were acutely and chronically ulcerated and infected; the blood vessels showed changes such as one would expect in any ulcer; several random sections of skin, including some with petechiae, appeared normal without vascular lesions.

So we have widespread involvement of the tiny blood vessels by an apparently bland thrombotic material, practically but not completely occluding the lumen of the vessel. This would fit the clinical and pathologic picture of thrombotic thrombocytopenia purpura, although we never could document truly impressive thrombocytopenia. Still, the literature on the subject suggests that a platelet count below 140,000 per cubic millimeter is compatible with that syndrome.[3] The onset of hemolytic jaundice may give the clue to this condition, although it did not occur in this case; the peripheral blood smear did not suggest any particular damage to red blood cells.

Dr. Coppersmith: Do you explain the anemia in this patient as a manifestation of the azotemia, Dr. Foley?

Dr. Foley: Yes, together with a probable subclinical element of trauma to the red blood cells as they were driven through so many partially occluded small vessels.

Dr. Karpas: Thrombocytopenic purpura, as first described by Moskowitz[4] and further elaborated in case studies by Gore[5] and Orbison,[6] was a condition with a catastrophic course manifested clinically by neurologic abnormalities, generalized purpura, jaundice secondary to hemolytic anemia, a markedly decreased platelet count, diffuse disseminated intravascular clotting, and consumption of thrombin. Therefore, the prothrombin consumption test would not reflect the coagulation abnormality. The test which is probably most significant in diagnosing intravascular coagulation is the Fi test which determines the presence of abnormal fibrinogen products which occurs as the body tries to compensate for increased intravascular clotting by releasing an excess of fibrinolysin.

This case did not have an immediately catastrophic course, and, because of the chronicity, we probably have seen thrombi in only limited numbers of vessels at any particular time. This less active process in turn would not allow the rapid consumption of platelets, such as is seen in the

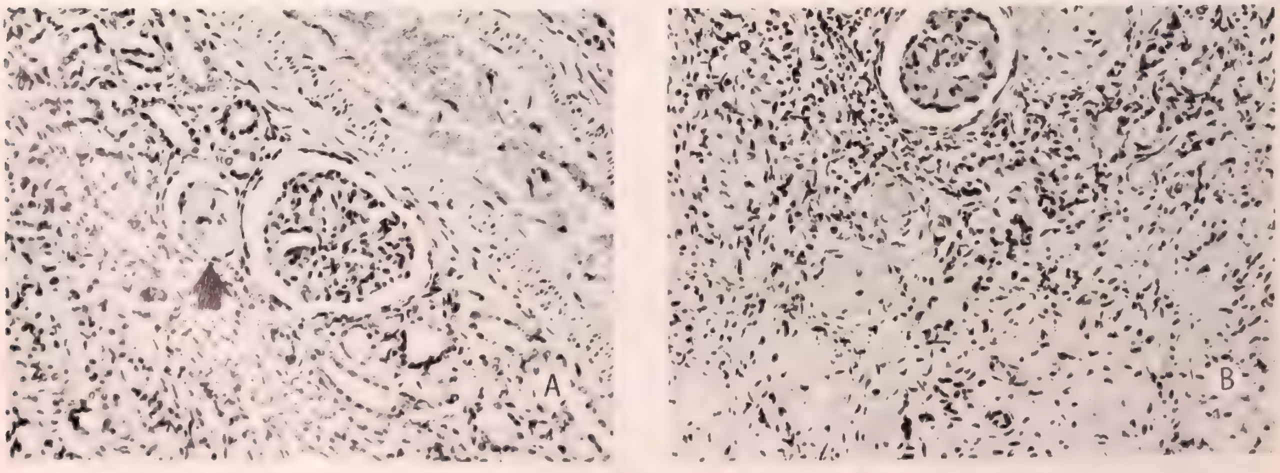

FIGURE 5 (A) Organized thrombus (arrow) within small renal vessel. (B) Scarring and fibrosis in renal cortex.

catastrophic course, and would have little or no evidence of hemolytic anemia. It is incumbent on us to call this a thrombotic microangiopathy probably with a less acute form of thrombotic thrombocytopenia purpura.

Dr. Coppersmith: Dr. Karpas, in other cases, is the kidney involvement as diffuse and extensive as in this patient?

Dr. Karpas: The kidney in many such cases, especially with survival for a week or so, may present a constellation of anatomic changes that some authors have suggested may indicate an underlying disseminated lupus erythematosus or possibly a progressive acute or chronic glomerulonephritis. There is no specificity of the kidney findings. The fact that we failed to find wire-looping is one of the reasons that lupus seemed unlikely. The fibrinoid changes, the focal glomerular proliferation, and the presence of cortical infarctions pointed to a vascular cause rather than to glomerulonephritis.

Dr. Flynn: The skin infections, then a latent period, followed by the onset and rapid progression of a renal problem naturally suggest a fulminating and continually worsening course of glomerulonephritis. An early hint of the widespread character of the disease process was contained in Dr. Shanzer's findings of an unusual dementia and corticospinal tract signs, together with later evidence of multiple petechiae, all of which would suggest thrombotic thrombocytopenia purpura; however, the platelet count never fell below 100,000 per cubic millimeter. During most of his course he had scleral hemorrhages bilaterally, but he was constantly rubbing his eyes as well as scratching the areas over his legs, so we attributed these findings to local trauma. I examined his fundi for petechiae on more than one occasion but found none. I think that in this instance the clinical course is most closely compatible with so-called thrombotic thrombocytopenia purpura of very long duration, which is often characterized by remissions sufficient to allow the platelet counts to return to normal or mildly depressed levels. To confuse the issue further, the studies by Orbison[6] at Case Western Reserve suggest that the intravascular lesion does not contain platelet substances at all; the material in these thrombi does not respond immunologically to antiplatelet antibodies, suggesting that the disease may be primarily a disorder of the blood vessel wall. The very small vessels may become dilated aneurysmally in many instances, and because of local irritation on the endothelium of the lumen, a thrombus may form, consisting mostly or entirely of fibrin clot. They stain with periodic acid-Schiff stains suggesting a mucopolysaccharide probably elaborated by the wall of the vessel.

Hugo Paganelli, M.D.: What makes us think that this condition is thrombotic thrombocytopenia purpura when we never documented more than a mild thrombocytopenia? I can claim with even better justification that this patient had multiple bland emboli from his marantic endocarditis.

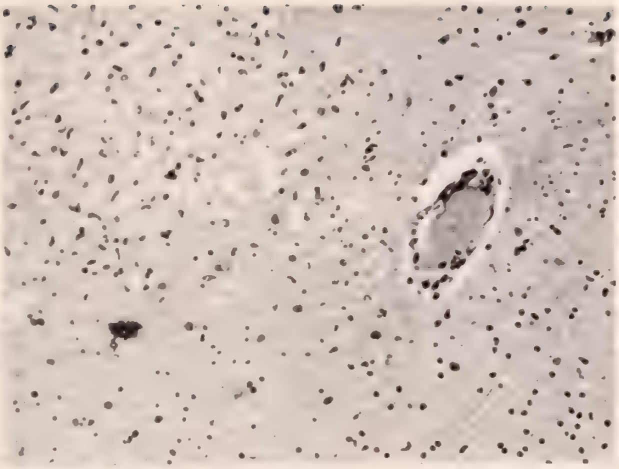

FIGURE 6. Small cerebral vessel nearly occluded by organized thrombus.

Dr. Flynn: You have a point there, but then we would have to believe that a massive number of emboli of fairly uniform size broke off from the relatively small marantic vegetations on the mitral valve, while the lungs by contrast escaped such embolization from the tricuspid valve almost entirely.

Dr. Paganelli: It does make sense though to think of disseminated intravascular coagulation as a spectrum of microthrombotic and microembolic disease. At one extreme would be the presence of a few small bland thrombi on one or more heart valves; at the other extreme would be acute catastrophic consumption coagulopathy. In the spectrum which lies in between these two extremes, we would find marantic endocarditis with few to many emboli; in situ microthrombi with or without thrombocytopenia, with or without traumatic damage to red cells as they pass through narrowed vessels; and with and without fibrin monomer breakdown products and other evidences of fibrinolysis. The spectrum would also include the hemolytic uremic syndrome of children; and we should certainly mention the possibility of the Schwartzman type of intravascular coagulation which is produced experimentally in rabbits by repeated injections of bacterial endotoxin. I admit that I could not be sure of the point at which this patient fits into the spectrum which I have mentioned.

Dr. Flynn: As I understand it, the Schwartzman reaction leads to widespread vascular thrombosis, much as this patient showed[7]; but on the other hand, is it not almost entirely confined to experimental studies in rabbits? Has such a sequence of events ever been known to occur in human beings?

Dr. Moumgis: Not experimentally, but we have to admit that a thrombotic reaction in small vessels occurs in a long list of human diseases and under the microscope resembles the pathologic findings of the Schwartzman reaction.[3] These human diseases include infections, such as lung abscess, bronchopneumonia, gram-negative and streptococcal sepsis, gastroenteritis, and wound infections; many neoplastic and debilitating diseases also appear to be associated with this kind of lesion.

Dr. Paganelli: It is of considerable interest that one of the first cases of so-called nonbacterial thrombotic endocarditis with vegetations was reported by Friedberg and Gross[8] in a patient with well-documented thrombocytopenia purpura. Perhaps this type of endocarditis is more liable to be seen in the patient who tends to survive over a considerable period of time with a neoplasm. We would not expect to find this kind of marantic endocarditis in patients who were going through an acute course, as is often associated with a catastrophic consumption coagulopathy.

Dr. Flynn: I hesitate to use the term disseminated intravascular coagulation because at least to me it appears to imply that the coagulation took place in situ in the very small vessels, whereas we cannot always be sure that what we are looking at might not represent emboli. We should bear in mind that the thrombi which we saw in this young man are really only the residua of two opposing processes, the blood coagulation process and the fibrinolytic process, which normally will oppose each other in a neatly balanced and subclinical fashion. The thrombi may persist and grow when, for reasons often unknown, this careful balance cannot be maintained by the organism. I suppose we may apply the term consumption coagulopathy to all of the conditions which Dr. Paganelli mentioned, implying that the coagulopathy is longstanding and mild in some instances and acute and catastrophic in others; but I think when we try to broaden a term of this kind, we are entering a semantic wilderness.[9-11] Just to enhance the confusion, it is well known that many healthy animals can cope with widespread intravascular coagulation with few ill effects.

Dr. Coppersmith: You were speaking a moment ago of gram-negative endotoxic shock and its relation to Schwartzman reaction; but actually the human patients who die of gram-negative septicemia do not often show this type of microthrombotic condition, such as we found in this patient.

Dr. Moumgis: Pregnant patients with gram-negative septicemia, however, are prone to develop this kind of small-vessel lesion, especially in the kidneys, and later in the adrenals, liver, pituitary glands, lungs, spleen, brain, and pancreas. But again if that patient happens to survive for a matter of weeks, all such thrombi may be completely reabsorbed.[7]

Dr. Foley: I would like to say again that the single most important clinical rule is a good history. If we had a truly adequate history here we might have been able to decide that this disease process had developed in a setting of an incidental mental defect; we would not necessarily attempt to blame the mental deficiency on a specific broader genetic disease entity, such as the Lesch-Nyhan syndrome.

In regard to the whole gamut of small blood vessel disease, we are terribly ignorant; we are inclined to blame a good many of them on abnormalities of the defense mechanisms of the body, but when we learn more about the fundamental metabolic activities of the organism, we can expect to find that many newly identified diseases will be specifically related to a defect or absence of specific enzymes. Perhaps lupus erythematosus and other so-called collagen diseases and even the kind of small blood vessel disease which we see in this patient will be similarly defined in terms of some defective gene-enzyme interrelationship.

Final diagnoses

1. *Microthrombotic angiopathy, generalized, with hemorrhagic diathesis and multiple organ infarction*
2. *Thrombotic nonbacterial endocarditis of mitral and tricuspid valves*
3. *Renal failure*
4. *Confluent bronchopneumonia*

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A series of reviews dealing with research background and clinical experience with drugs

Quarterly Review of Drugs

GOLDEN YEARS OF DRUG INTRODUCTION 1941 TO 1970

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There will never be a time like this again. A total of 917 new single drug entities were marketed in the United States during this thirty-year period, 1941 to 1970. Only 158 were withdrawn, mostly for commercial reasons. With 30 of these drugs toxicity developed on prolonged administration. Therapy has been advanced in many areas, but a cure has been achieved only with antibacterial agents used in the treatment of infectious diseases. The use of most other drugs represents palliative measures. The research effort by government, universities, and private industry has been tremendous. One has benefited from the other. From now on new drug development will become more difficult, not only because our demands for efficacy and safety are higher and require more detailed research, but primarily because we also have exhausted our basic knowledge which facilitated drug development. Amelioration of disease has been accomplished in many instances, but a cure will become much more difficult to attain.

But this advance in drug therapy has also brought turmoil and uncertainties as with any other human endeavor. The new, highly potent drugs are more likely to produce adverse reactions. They must be used with caution and circumspection, and the patient must be taught to use them properly. An international conference on adverse reaction reporting systems held by the Drug Research Board of the Division of Medical Sciences, National Research Council, on October 22 to 23, 1970, recommended that a national center for drug surveillance be established at the cost of $5 to $10 million annually. This center is expected to provide physicians with more accurate information as to what adverse reactions to expect with what drug. A five-year review of adverse reactions reported in the medical literature reveals that adverse reactions may differ within certain classes of drugs used for the same therapeutic indications; this offers the physician a choice of drugs for the individual patient. Brief reference to the adverse reactions reported in the literature will be found in this review of new drug introductions during the last thirty years.

Relief of pain

Narcotics. Two narcotics developed during the last thirty years have become widely known: meperidine (Demerol, Winthrop) made its appearance in 1944 and methadone, developed earlier in Germany by Hoechst, became available in the United States in 1947. Methadone has become a controversial drug in the treatment of narcotic addicts but is proving its value in many patients. Endo Laboratories introduced oxymorphone (Numorphan) in 1959. The latest narcotic drug is fentanyl citrate (Sublimaze Citrate, McNeil) which came from Belgium and is used primarily in surgery. Adverse reactions observed with meperidine and oxymorphone are similar to those occurring with morphine sulfate, and proper precautions must be taken in the elderly and the debilitated patient. A concerted effort is currently being made by pharmaceutical manufacturers to discover new and potent narcotic antagonists.

Analgesics. Two mild analgesic agents, salicylamide (1943) and acetaminophen (1950) are widely used today. The usefulness of acetaminophen, a breakdown product of phenacetin, was discovered by investigators at the National Institutes of Health. This drug is a strong competitor of aspirin, especially since side-effects observed are of minor nature. In spite of its close relationship with phenacetin, which in overdoses may react unfavorably on renal function, only a few such reactions have been recorded with acetaminophen. Two stronger-acting non narcotic analgesics that became available are propoxyphene hydrochloride (Darvon, Lilly), introduced in 1957, which was followed by pentazocine lactate (Talwin, Winthrop) in 1967 for parenteral administration and by pentazocine hydrochloride for oral use in 1969. Propoxyphene hydrochloride is put up in capsules which has now been followed by propoxyphene napsylate which can be pressed into tablets. But the most widely prescribed form of propoxyphene is its combination with aspirin, phenacetin, and caffeine. Adverse reactions with propoxyphene and pentazocine appear to be similar to those experienced with the narcotic drugs. Combinations of propoxyphene with aspirin and phenacetin raise possibilities of reactions in other parts of the body.

In 1962 migraine sufferers were offered a prophylactic treatment with methysergide maleate (Sansert, Sandoz). Unfortunately, with prolonged treatment there is a danger of fibrotic and vascular complications, and all patients receiving the drug require constant supervision.

Anesthesia. In 1958 the anesthetist was given an important new halogen general anesthetic agent in the form of halothane, developed by Imperial Chemical Industries in England and marketed in this country by Ayerst Laboratories as Fluothane. Some anesthetists observed liver disorders in patients receiving this drug, and halothane was subjected to one of the most extensive and controlled studies to determine the incidence of hepatic toxicity in patients anesthetized with this compound. The results gave halothane a clear bill of health but suggested certain precautions which have now become part of the routine use of halothane. A chemically related drug, methoxyflurane (Penthrane, Abbott), synthesized by the Dow Chemical Company, is now undergoing a similar evaluation in regard to its effect on renal function. In general, these two anesthetic inhalants have made anesthesia safer and more agreeable for the patient.

In 1970 Parke Davis placed at the disposal of the physician the injectable anesthetic ketamine hydrochloride (Ketalar) which is also sold by Bristol Laboratories as Ketaject. Ketamine is suitable for short and long surgical procedures, but some patients experience dreams during the awakening period. Local and topical anesthesia was revolutionized in 1949 by the rapid and prolonged action of lidocaine hydrochloride (Xylocaine, Astra) which was the brainchild of the young Swedish investigator N. Lofgren, who also cooperated in the synthesis of prilocaine hydrochloride (Citanest, Astra). Patents for lidocaine have expired, and this drug is made available today by several manufacturers and has become part of combination products. All local anesthetics have a toxic potential, and minimum quantities to achieve anesthesia should be given in each instance. An important and rather unexpected new indication for the intravenous administration of lidocaine is cardiac arrhythmia.

Inflammatory diseases

During the last thirty years no cure for rheumatoid arthritis and related conditions has been discovered, but we know much more today about the disease process and have learned a little more as to what causes inflammation and degeneration of joint tissue. Still much more research remains to be done. The promise of effecting a cure with steroid hormones was not fulfilled. But drugs have become available which reduce inflammation, relieve pain, and make the patient more comfortable. Salicylates continue to be widely prescribed for chronic therapy; acute conditions respond to corticosteroids, especially on parenteral administration. Gold salts continue to be synthesized and are being used in special conditions. The first nonhormonal antiarthritic drug was phenylbutazone (Butazolidin, Geigy) introduced in 1952. But it soon became evident that this drug, like indomethacin (Indocin, Merck Sharp & Dohme) offered in 1965, produced gastric disorders in a high percentage of patients and that alkalinization was required as a concomitant therapy in many patients.

The painful conditions of gout can now be relieved with several uricosuric agents: probenecid, 1952, (Benemid, Merck Sharp & Dohme); sulfinpyrazone, 1959, (Anturane, Geigy); and more recently allopurinol (Zyloprim, Burroughs-Wellcome) which became available in 1965.

Epilepsy

The introduction of diphenylhydantoin by Parke Davis in 1932 offered an entirely new approach to the treatment of epilepsy. Formerly patients were limited to the use of phenobarbital. Since 1946 nine additional drugs have been marketed which make it possible to treat the various forms of this disease more specifically and successfully. The incidence of epilepsy is high, and it is estimated that more than one million people suffer from this disorder in the United States.

Allergies

Patients suffering from a variety of allergic disorders have been tremendously benefited by the discovery of the antihistamines which became available in 1946. No cure is achieved, but relief of symptoms is substantial and in some combination products is even extended to the symptoms of the common cold. Basic research, carried out in France by Rhone-Poulenc resulted in the marketing of tripelennamine (Pyribenzamine, Ciba), and by G. Rieveschl in cooperation with Parke Davis which resulted in diphenhydramine (Benadryl). Until 1961, the last entry into this field, an additional 32 antihistamines were presented. The most successful among these was chlorpheniramine maleate (Chlor-Trimeton, Schering). Fortunately, adverse reactions with these drugs are minor, except that they may produce lethargy in some patients, and patients taking antihistamines should not operate machinery or drive a car.

Neoplastic diseases

In spite of the constant claim made by the American Cancer Society in their solicitation for funds that eventually a "cure for cancer" will be found, this is most unlikely to occur. Cancer is not a single disease entity but a multitude of pathologic aberrations, each requiring its own understanding and management. We still have little knowledge of the cause of cancer, the differences in the metabolic requirements of malignant and normal cells, and the genetic influences that have a bearing on this matter. Therefore, it seems arrogant to establish a new research agency under the title "Conquest of Cancer." It has been stated by its proponents that one of its advantages will be that it will be directly responsible to the President. Research is not a military operation which can be ordered what to do. We have seen the tragic result of this approach in the Vietnam war.

What has been accomplished during the last thirty years is the development of a number of alkylating agents and antimetabolites with which symptom-free remissions can be induced, and useful, relatively pain-free life can be prolonged in a high proportion of patients with certain forms of cancer. But surgery and radiation therapy also have had a great share in improving the condition of the patient. The development of alkylating agents was a consequence of World War II research which revealed that the nitrogen mustards used as chemical warfare agents suppressed lymphoid tissue. The first useful agent, mechlorethamine, developed in Czechoslovakia and in England, was marketed by Merck in 1950 and has since been supplanted by many others. Among the most important of these drugs are busulfan (Myleran, Burroughs-Wellcome, England), chlorambucil (Leukeran, Burroughs-Wellcome) also developed in England, and cyclophosphamide (Cytoxan, Mead Johnson) which came from the Asta Werke in Germany. Thiotepa of Lederle Laboratories has also found wide use.

The best known of the antimetabolites is methotrexate of Lederle which became available in 1955 and has recently also been used in the treatment of psoriasis. Mercaptopurine (Purinethol, Burroughs-Wellcome, U.S.) and fluorouracil, a joint development of the University of Wisconsin and Hoffmann-La Roche, have brought new possibilities of therapy. Eli Lilly extracted several useful alkaloids from the vinca plant. Hydroxyurea (Hydrea, Squibb) is also finding special uses in cancer chemotherapy. Other new agents comprise several antibiotics and synthetic compounds. The major drawback of all of these agents is their potential toxicity which frequently requires interruption of therapy. It will be extremely difficult to design drugs of low toxicity which offer more than a temporary amelioration or remission of the progressive disease process.

Disorders of the psyche

The age of anxiety either prompted the wide acceptance of tranquilizers and psychostimulants or the availability of these drugs made us more aware that such anxieties are inherent in the population at large and may produce physical symptoms requiring treatment. Little did the pharmacologists H. Laborit and Rhone-Poulenc of France realize in the early fifties that with the aid of chlorpromazine (Thorazine, Smith Kline & French) it would be possible to return many hospitalized patients suffering from severe mental diseases to their homes and useful lives, nor could it be foretold that with meprobamate (Miltown, Wallace), synthesized by Frank M. Berger and B. J. Ludwig, the minor anxieties of daily life could be ameliorated without causing any undue drowsiness. In the early days of the tranquilizer area in the midfifties reserpine also became a popular prescription but has now been replaced by a large number of phenothiazine derivatives, each offering an alternate form of treatment. Drugs like prochlorperazine (Compazine, Smith Kline & French), also researched by Rhone-Poulenc in France, and perphenazine (Trilafon, Schering) became well known. Thioridazine, 1959, (Mellaril, Sandoz) has also proved effective in the more severe type of psychotic disorders of hospitalized patients. Adverse reactions, especially in the higher-dose ranges, must be expected with most phenothiazines, usually manifested by the production of extrapyramidal symptoms. These can be guarded against by careful supervision of the patient and eliminated by the administration of antiparkinsonism drugs.

With the advent of the diazepins, pioneered by the research department of Hoffmann-La Roche in Nutley, a new chapter was written in the tranquilizer field. Chlordiazepoxide (Librium) and diazepam (Valium) have received wide acceptance by the medical profession. Later drugs of this category are oxazepam (Serax, Wyeth) and doxepin (Sinequan, Pfizer); the latter is claimed to produce a tranquilizing and stimulating effect. Diazepam is finding increasing use as a muscle relaxant in a variety of conditions. None of the diazepins are recommended for psychotic conditions; and if combined with antipsychotic drugs, careful titration of dose is required. In elderly and debilitated patients and in patients with cardiac disorders the dose should be kept at as low a level as possible.

An entirely new use of an old drug entered the field in 1970 with lithium carbonate. The Australian physician, J. J. F. Cade, M.D., discovered that lithium carbonate is useful for the control of manic episodes in manic-depressive patients. Lithium toxicity is closely related to serum levels and must be carefully watched for especially in outpatients. Possible adverse reactions comprise practically all body systems.

The first truly effective antidepressant was iproniazid, a monoamine oxidase inhibitor, which had to be withdrawn because of hepatic toxicity. Subsequently marketed other monoamine oxidase inhibitors have not found wide acceptance. In 1959 imipramine (Tofranil, Geigy) filled the need for an antidepressant drug. It was followed in 1964 by desipramine. Several derivatives of amitriptyline (Elavil, Merck Sharpe & Dohme), which made its appearance in 1961, have also been marketed. Cardiac, gastrointestinal, skin rashes, and effects on the nervous system must be expected with all these drugs and require monitoring of the patient.

An interesting and useful development during this period was the synthesis of hypnotic agents not related to the barbiturate molecule. These hypnotics are perhaps milder in action than the barbiturates and therefore fill a need with some patients who may otherwise experience a hangover effect, because dose adjustment of the capsule form, in which most barbiturates are supplied, cannot be achieved. Among these drugs which have found a wide acceptance are ethchlorvynol, synthesized by Pfizer and marketed by Abbott Laboratories as Placidyl and glutethimide (Doriden) which came from Ciba in Switzerland. Skin rashes may occur in some patients requiring withdrawal of the drug. Methaqualone was developed in India and is widely prescribed today on a worldwide basis. Flurazepam (Dalmane) from Hoffmann-La Roche in the United States is of too-recent origin to predict its acceptance by patients. It is a derivative of the diazepin group of tranquilizers.

The first useful general muscle relaxant was mephenesin, developed by the British Drug Houses in England and marketed by Squibb as Tolserol in 1948. Another important entry into this field was orphenadrine citrate (Norflex, Riker) which came from Brocades-Stheeman in Holland. Most widely prescribed is chlorphenesin carbamate (Maolate, Upjohn) which arrived on the scene only four years ago. The drug has proved useful as an adjunct in the short-term therapy of inflammatory and traumatic conditions of skeletal muscle. Adverse reactions with these compounds have not proved to be troublesome, but their actual usefulness in therapy is still under discussion and may receive revision as more experience is gained with their use.

The use of special muscle relaxants in the treatment of parkinsonism is more firmly established. As early as 1949 trihexyphenidyl (Artane, Lederle) helped many patients afflicted with this disease, followed in 1953 by cycrimine hydrochloride (Pagitane, Lilly); Merck Sharp & Dohme marketed benztropine mesylate (Cogentin) in 1954; and biperiden hydrochloride (Akineton) came from the German firm Knoll in 1959. An entirely new and more biologic approach for the treatment of parkinsonism came with the introduction of levodopa in 1970 by various manufacturers. The usefulness of levodopa was discovered by Cotzias and his associates of Brookhaven National Laboratory.

Metabolic disorders

The advent of oral hypoglycemic agents, a follow-up of research with sulfonamides, carried out in France and in Germany, changed the life of the diabetic patient and made therapy more tolerable as compared with the need of insulin injections previously exclusively employed. Four sulfonylurea compounds were marketed, in addition to phenformin (DBI, USV Pharmaceutical) which has its own chemical structure but is prescribed in a similar fashion. Recently questions have been raised as to the safety of the oral antidiabetic drugs on prolonged therapy. The unfavorable reports are not acceptable to all diabetic specialists, and there is difference of opinion from one country to another. Further research is needed to resolve the disputed points.

Even if the use of oral hypoglycemic agents should eventually be discontinued—no therapy is permanent—their advent has resulted in a tremendous research effort on diabetic processes. A great deal of this research was financed by pharmaceutical manufacturers. The onset and mechanism of diabetes is much better understood today, and diabetic patients have and will continue to benefit from the investigations made with oral hypoglycemic drugs and other basic studies which were undertaken in diabetes.

Among the many anticholinergic agents for the treatment of peptic ulcer synthesized during the last thirty years propantheline bromide (Pro-Banthine, Searle) has probably received the widest acceptance. This and other similar drugs in conjunction with proper diet relieve the symptoms of peptic ulcer which may aid the patient in the cure of his duodenal ulcer.

Cardiovascular diseases

Modern drug development has offered the cardiologist many opportunities to make life for his patients more comfortable and in a few instances to extend longevity. In 1941 the armamentarium of the cardiologist was small and mostly ineffective, but today he has at least a chance to ameliorate disease although not as yet to cure.

Anticoagulant therapy is becoming a routine therapeutic measure, and its value in specific conditions is generally accepted, especially since prolonged studies are now attesting its value. Heparin sodium, discovered by McLean of Johns Hopkins University, became available in 1942 and is widely prescribed today in parenteral form. It was followed a few years later by coumarin (Dicumarol) discovered by Link of the Wisconsin Research Foundation. But the most frequently prescribed coumarin derivative became warfarin sodium (Coumadin, Endo), which also derives from Wisconsin and may be given both orally and intravenously. Several other coumarin derivatives were developed, but none received the recognition of warfarin sodium. Several drugs interact with anticoagulants, and this fact requires constant vigilance.

Both hypertensive and hypotensive agents were synthesized. To raise blood pressure the physician has at his disposal since 1950 methoxamine hydrochloride (Vasoxyl, Burroughs-Wellcome), levarterenol bitartrate (Levophed, Winthrop) 1951, and angiotensin amide (Hypertensin, Ciba) discovered by Irving Page, M.D., of the Cleveland Clinic.

Essential hypertension responds today to a variety of drugs which came on the market in 1952 and later years, but no significant progress has been made since 1963. From Ciba in Switzerland came hydralazine (Apresoline), and from their U.S. research laboratories came guanethidine (Ismelin) as well as syrosingopine (Singoserp). Ciba in Switzerland also synthesized reserpine which has been prescribed since 1953. Reducing blood pressure makes the patient definitely more comfortable. Its effect on longevity remains to be established. Methyldopa (Aldomet, Merck Sharp & Dohme) attacks the problem from a different angle. It is a decarboxylate inhibitor, but whether its hypotensive effect is solely due to this action has not been fully established.

Another group of potent hypotensive agents are the thiazide diuretics as well as other diuretic drugs such as ethacrynic acid (Edecrin, Merck Sharp & Dohme) and furosemide (Lasix) of Hoechst marketed in 1966 and 1967. Combination therapy of hypotensive agents with thiazine diuretics has become routine therapy in the management of the milder forms of hypertension.

Cardiac arrhythmias have been treated since 1950 with procainamide hydrochloride (Pronestyl, Squibb). Propanolol, developed by Imperial Chemical Industries in England, has been supplied for the physician's use by Ayerst Laboratories as Inderal. In 1970 the Food and Drug Administration permitted the prescribing of the intravenous form of lidocaine for arrhythmias. Many reports have also been published for this indication for diphenylhydantoin, but the manufacturer cannot as yet make reference to this indication in the package insert.

No new coronary vasodilator has been marketed since 1961. Of the seven previously offered, the following found the physician's acceptance: pentaerythritol tetranitrate (Peritrate, Warner Chilcott), synthesized by the French Laboratory Grimault; isosorbide dinitrate (Isordil, Ives) originated with J. Krantz of the University of Maryland; and dipyridamole (Persantine, Geigy) came from Karl Thomae in Germany. Adverse reactions with these compounds appear to be a minor problem, although an occasional patient may display indiosyncrasies.

The peripheral vasodilators prescribed today were introduced prior to 1959. Tolazoline (Priscoline, Ciba) dates back to 1948. Among the more recent introductions are nylidrin (Arlidin, USV Pharmaceutical) which originated in Germany, and cyclandelate (Cyclospasmol, Ives), synthesized by Brocades-Stheeman in Holland. Adverse reactions appear to play a minor part with the use of these compounds, but they must be used with caution in patients with coronary artery disease.

Reducing cholesterol in patients at risk can now be achieved with clofibrate (Atromid-S, Ayerst), developed by Imperial Chemical Industries in England, and with the thyroid compound dextrothyroxine (Choloxin, Flint) which came from Baxter Laboratory. Clofibrate may interact with anticoagulants, and nausea may occur in 5 per cent of the patients. Interaction with anticoagulants also applies to dextrothyroxine, and this drug is contraindicated in certain cardiovascular disorders. Cholesterol-reducing agents are indicated only when dietary measures fail. Constant supervision during prolonged therapy is advisable.

The endocrines

It would require a book to describe adequately the influence the creation of some 67 steroid hormones has had on the practice of medicine. Among these are corticosteroid hormones, anabolic hormones, androgens, estrogens, and progestogens. Practically every branch of medicine has taken advantage of their availability, sometimes to the disadvantage of the patient. For these are potent agents which have a profound influence on metabolic processes. The adverse reactions of the adrenocorticoids are well known and have prevented their prolonged use in the treatment of arthritic conditions. Much hope was raised in 1950 for the treatment of arthritis when the adrenocorticoids first appeared. But the medical profession has learned to "play the therapeutic piano" of steroid therapy, and today many thousand patients benefit from these drugs. The practice of internal medicine, dermatology, ophthalmology, and of many other specialties has changed materially. Unfortunately, the production of more effective drugs that can be given at lower dose levels has not always brought about a reduction in toxicity. On the other hand, long-term experiments with gradually decreasing dose levels of progesterone-estrogen combination for ovulation control has made this form of prophylactic therapy safer. But it is doubtful that all adverse reactions can be eliminated. We are dealing here with interference with natural processes, and nature does not take too kindly to such attempts. A by-product of the synthesis of these new hormones has been a tremendous expansion of basic research in endocrinology which has led to a greater understanding of normal glandular function. It is from this new knowledge that new forms of therapy can eventually be devised.

Infectious diseases

It is in this area of fighting infection that modern drug therapy has made its greatest contribution, because with the use of new anti-infective drugs, in the form of sulfonamides and antibiotics, actual cures of disease are being achieved. Thousands of soil samples have been studied with the hope of finding a mold from which an effective antibiotic could be isolated, and again many thousands of derivatives of penicillin have been synthesized from penicillanic acid to find a new effective compound that offered a broader spectrum of action and less chance of developing resistant bacteria. It is most unfortunate that chloramphenicol (Chloromycetin, Parke Davis) has a tendency to produce blood dyscrasias in some patients, because less resistant bacteria occurred with this drug than with many other antibiotics. Among the major groups of antibiotics are the tetracyclines, erythromycins, cephalosporins, and others. In spite of the great array of new antibiotics, penicillin G and phenoxymethyl penicillin are still widely used in a variety of bacterial infections. The newer half-synthetic penicillins have broadened the spectrum of penicillin and have reduced to some extent the possibility of resistant infections.

Unfortunately, the occurrence of penicillin sensitivity has created many problems, and severe adverse reactions are recorded in the literature. Sensitivity tests are not always successful in preventing reactions. To select the most suitable antibiotic for an infection of unknown origin is not easy, and there is definite need for bacteriologic testing before effective therapy can be instituted. Excessive use of antibiotics, especially prophylactically, has created problems that are not always easy to cope with. Too often a patient with a viral infection has been prescribed an antibiotic that is of little value in these conditions. The argument about the alleged value of antibiotic combinations has now been laid to rest through an edict of the Food and Drug Administration, requiring the withdrawal of these combination products. Whether the use of antibiotics has actually decreased the incidence of bacterial infections has never been investigated. Because of the constantly increasing prescriptions for these drugs it is doubtful that this is the case. The world of bacteria is just too great to put any kind of dent in it. We have the means to cure tuberculosis if we could get the medication to the people who need it and persuade those for whom it is prescribed to take it regularly. Effective treatment requires the simultaneous use of several drugs in high dose over many months. With the aid of the nitrofurans and nalidixic acid (Neg-Gram, Winthrop) one can now effectively cope with most infections of the urinary tract. Nitrofurantoin is now available from several manufacturers at a lower cost than in the past. Many tropical diseases now succumb to drug therapy which were formerly incurable, raising longevity and the standard of living in the underdeveloped countries.

Biologicals

One brief word about the rejuvenation of biologic preparations in spite of the strides made by chemotherapy. Since the introduction of poliovirus vaccine in 1961, poliomyelitis has been practically eradicated in the major countries. This is a great achievement. Let us hope that one day the same success can be achieved with measles, rubella, and influenza. It is this type of preventive medicine that can have a tremendous influence on the health of any nation.

Gains made and responsibilities of the future

Thirty years' intensive drug research by many research institutions has brought concrete results in many areas too numerous to describe in detail. Human suffering and anxieties have been relieved, but life expectancy at age sixty-five in the U.S. population increased from 1941 to 1968 by only 1.8 years, and this may be reduced by any epidemic of respiratory diseases.

The most encouraging aspect of the last thirty years has not only been the fact that we know that effective drugs can be synthesized but also that research methods can be developed which offer us a clearer understanding of the mode of actions of drugs, their interaction with each other, their bioavalibility, and their influence on physiologic functions of the human body. The recent discoveries of the influence of aspirin on endogenous prostaglandin and the brilliant research of Sutherland unraveling the mysteries of cyclic adenosine monophosphate are examples of this continuing effort. As new ideas and new knowledge unfold, researchers, manufacturers, and government agencies must devise new methods of conveying the meaning of such discoveries to the practicing physician. The present package insert is a poor conveyer of such news, and reports published in the scientific literature are not always read by all.

Only when comprehensive and practical information is made available to all physicians called on to prescribe drugs can drugs be used effectively and safely. Drug therapy is bound to increase further in complexity, but those who master it will be gratified by the successes to be achieved.

ABDOMINAL PREGNANCY ASSOCIATED WITH OVARIAN CARCINOMA

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We report here a case of abdominal pregnancy in association with ovarian carcinoma. The abdominal pregnancy occurred twelve years after the patient had had a right oophorectomy for a serious cystadenoma. The large cystic left ovary found in conjunction with the abdominal pregnancy turned out to be a papillary serous cystadenocarcinoma. The total specimen, fetus with placenta implanted on the left adnexa with a large solitary ovarian cyst and leiomyomata uteri to eighteen weeks' size, was removed by ligating the uninvolved (right) side of blood supply first, thereby minimizing the total blood loss. To our knowledge, this is the first case report of an abdominal pregnancy associated with ovarian carcinoma.

Case report

A thirty-nine-year-old Negro female para 0-0-1-0, whose last menstrual period occurred on April 1, 1968, was admitted on September 2, 1968, to the gynecologic service of The Brooklyn-Cumberland Medical Center complaining of lower abdominal pain of three days' duration. The pain was sudden in onset, sharp, and accompanied by occasional nausea and dizziness, but not associated with shoulder pain or fainting. The abdominal pain, shortly after onset, became generalized but was not accompanied by vaginal bleeding. Past history revealed the patient's menarche occurred at age fifteen years with periods occurring every twenty-eight days and lasting four to five days. In 1956, the patient had a right oophorectomy for papillary serous cystadenoma, myomectomy, and lysis of peritubal adhesions. In 1957 a right radical mastectomy was performed for duct-cell carcinoma. In the latter part of May, 1968, one month after missing a period, the patient was seen in the emergency room of another hospital because of lower abdominal pain of two weeks' duration which subsided spontaneously. On admission to The Brooklyn-Cumberland Medical Center physical examination revealed a well-nourished, well-developed apprehensive Negress, in no acute distress, with a blood pressure of 150/90, temperature 99 F., pulse 80 per minute, and a respiratory rate of 20 per minute. The right breast was missing, but the heart and lungs were normal. The abdomen was globularly enlarged and diffusely tender with a multinodular firm mass on the right side arising from the pelvis and reaching the umbilical level. Another moderately soft and globular mass was noted to occupy the middle and left lower quadrant of the abdomen. Pelvic examination revealed the cervix to be moderately soft and axial. A firm, immovable mass was felt on the right side of pelvis, extending up to the level of the umbilicus. In addition, another soft but tender mass filling the left side of the pelvis, also extending to the umbilical level, was noted. Impression on admission was of intrauterine pregnancy estimated to be twenty weeks' size with leiomyomata uteri. Laboratory data were: hemoglobin of 11.7 Gm., hematocrit 38, and white blood cell count 6,791 with a normal differential count. Urine showed 1 plus protein, 0 to 3 red blood corpuscles, and 10 to 15 white blood cells per high-power field. Results of a plain upright abdominal roentgenogram revealed a single fetal skeleton, estimated to be about twenty weeks' gestational size, high above the pelvic brim in the left lower part of the abdomen. A lateral film revealed a single fetus in front of the maternal vertebral column.

Hospital course. Further inquiry revealed the patient had not felt fetal movements or Braxton-Hicks contractions. On the second day of hospitalization the patient's vital signs remained normal. On the third admission day, a fetal heart sound was picked up over the left lower abdomen using Doptone. However, no placental or maternal souffle could be heard. At this point, the past history of lysis of peritubal adhesions, an acute episode of abdominal pain in May, 1968, shortly after missing a period, and an abnormally high station of fetal skeleton on x-ray led us to suspect an abdominal pregnancy. An oxytocin stimulation test was performed, and no uterine contractions were felt. On the fourth day after admission the patient's hemoglobin dropped from 11.7 to 8.8 Gm., although the vital signs remained normal. A laparotomy under general anesthesia was performed, and approximately 2,000 ml. of dark clotted blood were found in the peritoneal cavity. The uterus was nodular and enlarged to eighteen weeks' gestational size secondary to leiomyomata uteri. It occupied the lower part of the abdominal cavity on the right side with adhesions to the omentum. On the left side, a twenty-two week size fetus with fetal membranes intact was present. The placenta was implanted mostly on the posterior leaf of the left broad ligament. About one sixth of it was attached to the omentum, and this was partially separated. A solitary ovarian cyst, measuring 7 by 7 cm. in size with a smooth contour and semisolid in consistency was noted behind the placental implantation site. There was no evidence of a metastatic lesion in the peritoneal cavity. In view of uterine and ovarian disease and the placental implantation effectively limited to the broad ligament, a total abdominal hysterectomy, left salpingo-oophorectomy, right salpingectomy, and removal of the fetus with placenta attached were performed en masse. Blood loss was minimized by initially ligating the right infundibulopelvic ligament and the right uterine artery during the procedure. The patient received 5 units of whole blood during and immediately following the operation. The fetus was dead, possibly having died a few hours prior to the procedure, and had an anomaly of the lower extremities (talipes equinovalgus) and a deformed head. According to Winkel[1] about one third to one half of extrauterine fetuses have been reported to have some type of anomaly. Microscopic diagnosis revealed a secondary abdominal pregnancy with papillary serous cystadenocarcinoma of the ovary. Several sections of fallopian tube showed direct continuation of lumen and placental tissue. The fetus was 25 cm. in length from crown to heel and weighed 450 Gm. The placenta was immature, and decidual reaction was present in the uterus, cervix, and fallopian tube. The ovarian cyst containing the papillary serous cystadenocarcinoma showed a smooth wall devoid of infiltration by tumor tissue and a corpus luteum of pregnancy as well (Fig. 1). Omental tissue which was removed revealed attachment of immature placental tissue with chronic inflammation. The entire specimen is shown in Figure 2.

Comment

The incidence of abdominal pregnancy has been reported to vary from 1 in 2,000[2,3] to 1 in 3,000[4-6] births although a higher incidence was reported by Barrett[4]: 1 in 261. Most authors feel that abdominal pregnancy is the result of tubal abortion, either partial or complete with reimplantation outside the tube.[2,6-8] Munnell[9] reported 3 ovarian carcinomas associated with pregnancy at the Columbia Presbyterian Medical Center from 1947 to 1961 in a period during which there were 54,294 deliveries. This is an incidence of much less than 1 in 18,000 births. Betson and Golden[10] reported an incidence of 1 in 50,000 deliveries, and Gustafson, Gardiner, and Stout[11] 1 in 100,000 deliveries. In 1960 Valenti and Sanzago,[12] from a review of world literature reported 41 cases of ovarian cancer complicating pregnancy. We reviewed the world literature for the period 1960 through 1968, and found 20 authentic cases of ovarian carcinoma associated with pregnancy including the 10 cases reported by Jubb.[7,12-19] Further, a review of the literature for the period 1949 to 1968 revealed 3 ovarian carcinomas associated with tubal pregnancy.[20-22] Our report represents the fourth case during the same nineteen-year period associated with ectopic pregnancy and the first case of ovarian carcinoma associated with an abdominal pregnancy.

Summary

The incidence of ovarian carcinoma associated with pregnancy is reviewed. A case of ovarian carcinoma associated with abdominal pregnancy is presented.

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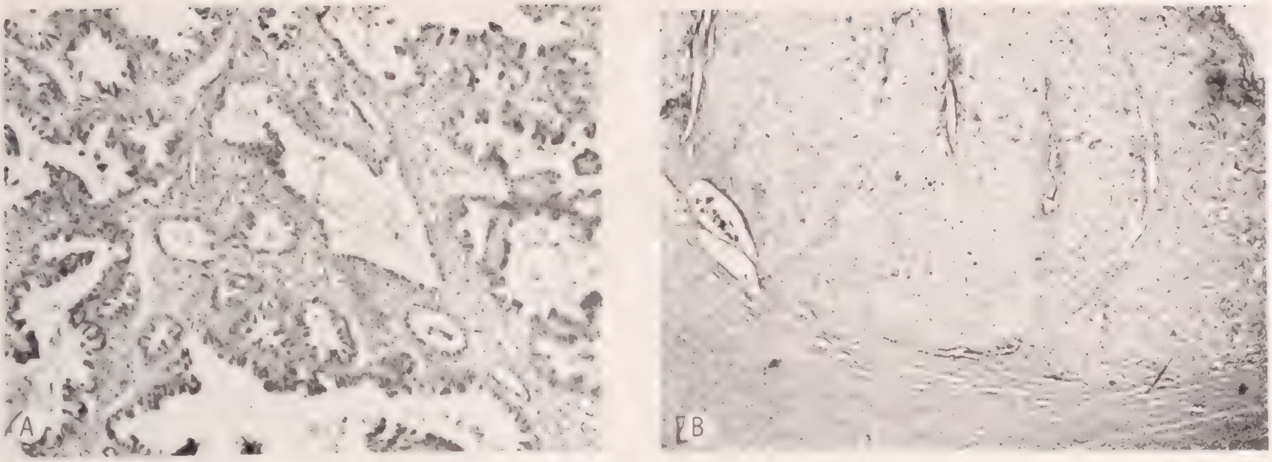

FIGURE 1. (A) Photomicrograph of papillary serous cystadenocarcinoma, left ovary. (B) Corpus luteum of pregnancy in left ovary coexisting with serous cystadenocarcinoma.

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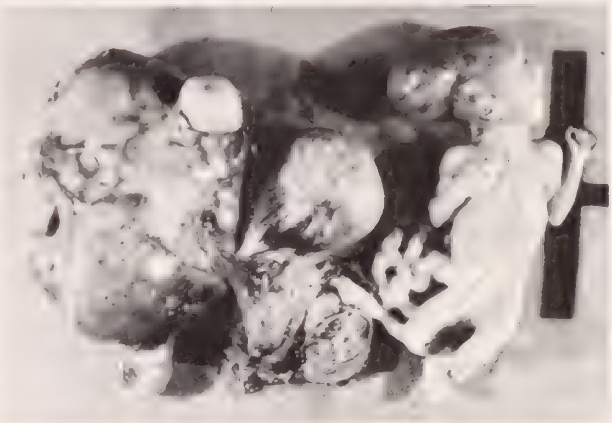

FIGURE 2. Fetus, placenta, uterus with leiomyomata, and ovary (arrow) which contains papillary serous cystadenocarcinoma.

Special Article

DRUG ABUSE

Current appraisal

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For many years a method of dealing with the narcotic problem has been advocated which has been widely adopted throughout the world but which has met with little acceptance in this country.[1-28] It is the free distribution of narcotics and other addicting materials through controlled channels such as clinics. Such a program would benefit all segments of society, particularly the majority of the population which is, of course, not addicted.

Cost of addiction

Maintenance of a narcotic habit is frightfully expensive. An average habit in New York City demands $50 a day. To support such an addiction the individual must either be independently wealthy (and few addicts are) or he must prey on society to obtain sufficient funds. For males this means stealing or shoplifting; for females, prostitution. The district attorney of New York County, Mr. Frank Hogan, has pointed out that to raise $50 by shoplifting, one must steal merchandise worth at least five times that much. Since the habit is relentlessly demanding he must do this seven days a week, every week of the year. A $50 a day addict costs society $100,000 a year in stolen goods alone.

In addition, efforts to apprehend him and his multiple trials (for he is arrested repeatedly) are a very considerable expense. The Assistant District Attorney of Richmond County tells me that a single trial of one addict lasting only a day represents the combined efforts of about 80 individuals. Sixty of these are talismen. Since each of the attorneys has a certain number of challenges, the selection of the 12-man jury requires the calling up of 60 individuals, all of whom are losing time from work. They represent a double cost to society: their stipend from the court and lost productivity. In addition, the judge, attorneys, witnesses, the bailiffs and stenographers constitute at least 20 more. If we were to assume that the time of each of these individuals was worth as little as $20 a day, a minimal figure, then the addict's day in court represents an expense to the community of at least $1,600. When one multiplies this by the roughly 260 days in the year during which the court may sit, this represents $416,000 for one court alone.

This does not include the cost of policing the narcotic problem, nor does it include the cost of operating the Federal Bureau of Narcotics, which is actively engaged in the prevention of smuggling and in the apprehension of individuals trafficking in narcotics. It is not surprising then that, with figures like these to work with, ex-Mayor Wagner of the City of New York discovered that the narcotic problem cost every man, woman and child in the city $650 annually.[29] This sum includes not only the direct tax cost, but also the value of the stolen goods used to support a narcotic habit. The individual who steals a $20 item from a shop would leave the proprietor an alternative of absorbing the loss, which might put him out of business, or increasing the price of every remaining article in his shop. This is really no choice at all.

While these figures are truly astronomical they do not include the lost productivity of the addict, who is often unemployable or uneducable. Of even greater importance to society is his wasted life and his disrupted family. Females with narcotics habits support themselves primarily by the sale of their bodies. At the New York House of Detention for Women more than 85 per cent of the prostitutes are also narcotic users. Thus the prostitution problem and the narcotic problem are frequently one and the same. Worse than any of these sets of figures is the proselytizing which the addict practices in order to help him support his habit. He constantly keeps inducing other individuals to try drugs with the hope that he can obtain from these the price of his own habit. Many maintain their habits by this technic exclusively. Thus the problem grows constantly by the addition of new addicted individuals. Children are particularly susceptible; they are introduced to drugs by other child-addict peddlers.

Attempted solutions

Attempts at self help through the Synonon and Daytop movements, somewhat similar to Alcoholics Anonymous, have yielded miniscule results which have not yet proved to be an answer to this huge problem. Individuals who move into this type of environment are helped by the other ex-addict inmates. Such treatment may continue for two years. During this period the patient passes through three stages. Phase 1 is a period in which he gives up the habit voluntarily, going through the discomforts of withdrawal without any medical help, aided only by the encouragement of the other residents. During this phase and following it he works in the establishment and lives there. After several months he may then move into phase 2, in which he works outside of the institution but continues to live there. In phase 3 he is completely rehabilitated; he lives and works outside of both the institution and the movement.

In a controlled experiment at Daytop Lodge under the aegis of the National Institute of Mental Health, very few individuals have been able to achieve phase 3.[30] Many of the phase 2 individuals continue to stay well, and these "drug fiends," as they call themselves, deserve great praise for their perseverance and courage in succeeding thus far. Some reach a modified phase 3 where they continue to work in this field, and they staff new houses. This is all salutary, but unfortunately the number of individuals who can function without some umbilical cord to the institution or their colleagues is too small. The method appeals, at best, to only a minority of addicts. Many come and stay only a few days. Stick-to-it-iveness is not a characteristic of narcotic addicts who by their nature are incapable of patience. Their immature reasoning demands instant relief for every symptom. This characteristic, as much as any other, precipitates their fall into narcotics for they cannot tolerate the vicissitudes of their environments for even a moment.

The efforts on the part of the Federal government to solve this problem through the medium of its two institutions at Fort Worth and Lexington are exemplary efforts by a multidisciplined group who attempt to rehabilitate the addict vocationally, religiously, medically, and psychiatrically. Unfortunately the relapse rate from this type of therapy is extremely high, often exceeding 95 per cent. The cost is astronomical. Five and a half months in a Federal institution costs well over $5,000 and since only 1 in 20 are likely to be helped we are speaking of $100,000 per cure.

Attempts at forcing addicts into treatment both in the State of California and the State of New York have likewise been less than successful. In the first place forcing a sick person to be treated by restraint which he does not desire and does not want is almost universally unsuccessful wherever it has been practiced in any kind of addiction. Motivation is the key word here. Individuals who do not possess it do not stay well. Similarly there are grave questions as to the constitutionality of incarcerating sick patients in jail-like hospitals. In "Richardson versus the State of California" the original law as passed in that state was declared unconstitutional by the Supreme Court of the United States.[31] Similar legislation in New York State has reached the Court of Appeals and has been upheld. It has yet to reach the U.S. Supreme Court. The law is similar to that of California and its constitutionality is open to question. At this writing 354 million dollars have been spent in this program and rehabilitated cured addicts are practically nonexistent.

Psychiatric care through the medium of intensive analysis and/or shock therapy has likewise been unsuccessful. Such technics are, unfortunately, costly and time consuming. We do not possess enough psychiatrists to take care of even a fraction of these patients by such technics even if they were successful.

Various religious organizations have attempted to deal with this problem. Their facilities are manned by dedicated workers who have given freely of themselves and their substance to help the addicted. The East Harlem Protestant Parish under Rev. Norman Eddy put an enormous amount of effort into this method of rehabilitation with only minor success.

The City of New York has twice attempted treatment schemes. One of these was with juvenile addicts who were confined to a hospital on North Brothers Island. This program was terminated because of its failure. More recently the Addiction Services Agency has had a plethora of directors all of whom were discouraged by their failure to cope with the problem through the medium of ex-addict care in the "Phoenix Houses." There are 1,000 addicts under treatment and only 130 claim to have been rehabilitated. New York City has spent 50 million dollars annually on addiction.[32] To this sum must be added the welfare checks of these patients, for these are turned over to the New York City Addiction Service Agency.

Judge Pearce, a dedicated public servant who made great efforts in his capacity as commissioner of the Narcotic Control Commission (New York State), left this position after the Governor recognized the inadequacy of the program.

Definition of the problem

Addiction is destroying the health and lives of the young. Hepatitis and heart, kidney, and brain abscesses are the hallmarks of the disease. Deaths from overdose are commonplace.

Addiction is very costly to society. According to ex-Mayor Wagner, it costs 5 billion dollars annually in New York City alone. These figures are now seven years old. There is every reason to believe that increasing addiction and inflation have added to this stupendous sum.

Addiction is the prime cause of crime in the city. The district attorney of Richmond County estimates that 75 to 80 per cent of all crime in his jurisdiction is caused by addicts. Addiction is also the cement which holds organized crime together. This is not minor purse snatching. Instead we are here concerned with multiple criminal activities which include the growing of poppies in Syria, their transfer to Marseilles for processing into heroin, their smuggling into the United States, and their distribution to peddlers, to pushers, and to addicts. So lucrative is this business (sic) that a $10 investment can produce $10,000 on the streets of our city. Small wonder that the elimination of an occasional member of these gangs never solves the problem. The officers of the Federal bureau, who, at great personal danger, try to stop this traffic have an impossible job. We never succeeded in preventing the smuggling of alcohol during prohibition. How could these officers hope to control the illegal importation of heroin—a much less bulky commodity?

Addiction destroys not only the addict but his parents, his wife, his sisters and brothers, and his children. The utter frustration of decent people who have had all their personal possessions stolen by their addicted relatives must be seen to be appreciated.

The solution

Only with these facts firmly in mind can we begin to think seriously of how we might cope with this problem. We cannot put the cart before the horse as the New York State Narcotic Control Commission does. For this method incarcerates a sick individual in a jail so that he can receive a nonexistent unproved treatment which has failed repeatedly wherever it has been tried!

It is with this background that it becomes crystal clear that we must think first of society and second of the addict. If we could find some method by which society could rid itself of this burden or reduce it to a point where it would be less costly, it would be both practical and acceptable. Thus the idea of distributing drugs free to the addict in a clinic setting staffed with physicians, nurses, lawyers, the clergy, and vocational trainers was born.

Why might this work? Let us start with organized crime. The only way that I know of to destroy a black market is to undersell it. If society will give away what the market is selling then it follows automatically that the pusher could no longer do business. What about crime in our cities? It would no longer be necessary for individuals to steal to support a habit. It might become safe to leave a door unlocked. Citizens would not be arming themselves when they are on the streets at night. It might even become safe to walk across some of our parks after dark.

Would this save money and help society? The enormous cost of addiction as has been outlined would be reduced to something much more tolerable.

Clinics, to which patients could come so that they could be exposed to a variety of disciplines which would rehabilitate them, would have to be established. The social consequences would be enormous. Individuals would no longer need to turn to a life of crime. They would instead receive the inexpensive drugs from a legitimate source. Most of all it would bring these individuals back into our society.

Perhaps this needs a word of explanation. Narcotic addicts are, for the most part, as far out of our culture and our social system as they would be if they lived on another planet. There is only one thing an addict wants and that is his drugs. If we, as a society, hold out this as bait, he will undoubtedly be attracted to it. Were he recognized as sick, the stigma of being an addict would lessen and no longer would it be necessary for him to hide his affliction.

Once exposed to medical, vocational, nursing, legal, psychiatric, and religious workers the individual might eventually be motivated to regain his health. Addicts do not "waste" money on anything but drugs; their teeth are deplorable and their general health uniformly poor. The consequences of injecting unsterile material into their bodies have weakened them and made many of them sick with hepatitis, endocarditis, brain abscesses, and the like. They all have unresolved legal, educational, and emotional problems.

Once in the salutary environment of the clinic, and after a good transference has been made to a therapist in the new clinic, it might be possible to motivate some of these individuals to give up their drugs—as they become older this becomes easier, for they will achieve some emotional maturity and acquired a certain amount of insight. Failing this we would continue to supply the individual with drugs in any quantity he required. Drugs would be given as sterile substances, so the addict would no longer be sickened, and in measured doses, so we would not have the frightful number of deaths and near deaths from overdoses.

Why so many overdoses? The drugs the individual buys are not prepared by a reputable pharmacist but instead are rather casually put in bags and distributed regardless of the content of the active alkaloids or drugs. The addict never knows what he is buying. For example, we have found the heroin content of bags confiscated from a single pusher to vary from 0 to 34 per cent. It averages about 3 per cent in the City of New York. An individual who picks up a bag containing 34 per cent heroin would then be getting ten times his usual dose. The result, disaster. L.S.D., a very potent material, is prepared in home laboratories or kitchens with no standardization whatsoever. It is usually dispensed by placing a drop on a sugar cube. A drop from a medicine dropper held vertically is smaller than one from a dropper held horizontally. Should the peddler make the error of putting two drops on one cube of sugar, the dose would be doubled. Here again, the addict has no concept of what he is getting. The cube may contain nothing or enough to kill him.

The impurity of materials makes it almost axiomatic that the drug user develop hepatitis: either from the infected substances from his friend who uses the same "works," or because the drugs themselves are hepatotoxic. In many instances these two circumstances occur simultaneously producing a lethal outcome.

The injection of medications prepared for oral use is also very dangerous. The insoluble base of the tablets lodges in the lung capillaries and produces deficient pulmonary circulation. This complication is largely incurable.

A well-run clinic would be dispensing clean drugs, accurately dosed, to a group of individuals who would be, once again, part of our society. One day, the patients might be motivated to give up the habit, to be re-employed and/or to return to school. Then they would become useful members of society again and could re-establish a normal relationship with their families and friends.

The methadone management program which has captured the enthusiasm of so many of our legislators and citizens is an extension of the use of that drug in the management of the heroin addict. For some years it had been used in diminishing doses as a temporary measure for alleviating withdrawal pangs. However, as already indicated, the relapse rate for heroin addiction is very high, sometimes approaching 100 per cent. Nyswander and Dole,[33] working at the Rockefeller University, recognized that the addict was comfortable on the orally used methadone. They reasoned that if they were to keep him on methadone permanently he would not return to heroin and his life of crime. If the dose was large enough the nerve cells might be so saturated that a subsequent illicit dose of heroin would have no effect. This proved to be the case, and permanent methadone therapy has become the most accepted method of dealing with the addict today. Several months ago hundreds of workers appeared at the Rockefeller University to attend the second symposium on methadone, where each of the speakers extolled the virtues of this treatment. The method regards the addict as being a sufferer of a deficiency disease, the deficiency being some drug that will calm and placate him. This drug is methadone, a synthetic narcotic. Dosages vary from 100 to 250 mg. per day. The individual is not rid of his habit. He is now thoroughly addicted to methadone, which has the advantage of being taken by mouth. With this material he can achieve certain of our objectives: he no longer preys on society, he is often rehabilitated to the point where he can function normally, and organized trafficking in drugs is destroyed.

I hope that in the very near future it will become possible for all physicians to treat the heroin addict by this technic. It is widely supported by legislators who have appropriated funds for the establishment of centers where this kind of therapy can be administered. Some workers, however, still believe that it is unwise for this method to be used by the average practitioner, as the treatment is still considered experimental and, in the precepts of the Bureau of Narcotics, probably illegal.

This then is the legalization of drugs about which many of us have been arguing and pleading for well over fifteen years. One drug has become legal! If this is true of methadone then it should be equally true of any other drug to which an individual may become habituated, for multiple addictions are the rule.

Patients use barbiturates, alcohol, amphetamines, LSD, and heroin, indiscriminately. I can recognize the difference between barbiturate, amphetamine, cocaine, and mescalene addiction, but the addict cannot. He uses any material available when he wants a "fix." The pusher packs all drugs he has in identical glassine bags. This accounts for many overdoses and deaths because a given bag may contain anything. Comatose patients arriving in hospital emergency rooms can rarely be treated definitively with antidotes because of the multiplicity of drugs used. One patient had heroin, barbiturates, amphetamines, glutethimide (Doriden), marihuana, and two bottles of wine on the day prior to admission.

A drug clinic would distribute materials the patient requested as long as the doses were not toxic. Proper registration could prevent the addict from attending more than one facility. The main purpose of the clinic should be not to perpetuate addiction but to attract the addict to a therapeutic community. Perhaps in such an environment he could be rehabilitated. As it is now, any "shot" of an unknown substance in unmeasured quantity may be the last thing he ever does. After he's dead he cannot be rehabilitated.

Change needed now

The control of this drug by a police organization rather than by pharmacologists and physicians is another example of the absurdities which permeate our method of dealing with drug abuse!

Physicians who are deemed capable of using digitalis or insulin for their patients could certainly handle methadone, a much less toxic material. The Food and Drug Administration has recently released L-dopa for Parkinson's disease and lithium for the manic stage of manic depressive psychoses. Why not methadone? Primarily because this has become a legal rather than a medical problem. Some 5,000 addicts have registered for treatment in New York City alone. The waiting time is almost two years. During this period many will die of overdoses; hepatitis; and brain, liver, or lung abscesses. Crimes will be committed to support their habits and endless proselytizing will continue.

The sequestering of these patients in special hospitals is a mistake. In such institutions they are kept from the mainstream of American medicine so that young physicians in training have little experience with the management of our huge addicted population.

The salutary results reported with the methadone program should be extended in the following manner: first, the illness should be insurable in every Blue Shield and Blue Cross Plan so that these patients could consult a physician of their choice for such treatment as the physician deems necessary. Second, all hospitals should accept narcotic addicts. Their addiction is only a symptom of their illness. (The efforts we regularly expend in an intensive care unit to save the life of a seventy-five-year-old cardiac patient with a heart attack might give him an additional five years. This is only a fraction of the fifty or sixty useful years one could give the teenage addict if he could be rehabilitated. It is obvious that our hospitals have seriously neglected this large obligation. We have been judging these patients rather than looking at them with compassion.)

This program would offer the medical profession an opportunity to expose this type of patient to young interns and residents who may find this area challenging. We might then find better methods of therapy.

Richmond Hospital has instituted this program: Its nursing staff, its interns and residents have become proficient in the rehabilitation of these patients. They are treated with the same respect and kindness as the patient in the next bed with pneumonia or appendicitis. They are never watched or policed; a rapport is established with the physician so the patient eventually begins to relate to this new environment. Motivation for cure starts at once. Sometimes we succeed the first time. Often it takes several sessions. We always attempt rehabilitation without permanent methadone therapy because it is our concept that since this is the ultimate goal of the methadone scheme we may as well attempt it at once. It has helped us to regard their failures as our failures, which stimulates the staff to ever greater efforts. The hospital stay rarely exceeds ten days and is followed by several months of therapy with nonaddictive drugs, and then—nothing.

There are those who feel that the British method of managing drug abuse has been a failure. The increase in addiction there, which is miniscule by our standards, emanates from three sources: (1) the emigration of many drug-using Asiatics from the former East African colonies, (2) the arrival of addicts from all over the world especially the United States so they can live in the United Kingdom with their addiction without constant fear of the police, and (3) the general increase in drug abuse which is a world-wide phenomenon. As the British began to move from their permissive method, the black market appeared, and the price of heroin has multiplied by approximately 35 times. Organized crime is moving in.[34,35]

Conclusion

For well over fifteen years a small group of workers in the field of drug addiction have attempted to secure the legalization of drugs. Such a technic would have salutary results for society as a whole, as well as for the addict, and would help to increase our knowledge of the addictive phenomenon. At long last, almost unbeknown to itself, society has, in a circumambient manner almost legalized one narcotic—methadone. This is a most successful method of dealing with the problem. It rehabilitates the addict to the point where he may again resume his schooling or be employed gainfully. It has stopped his depredations against society, for he no longer must prey on it for the price of his drugs. Even more importantly it has stopped his proselytizing so that it is no longer necessary for him to induce others into the habit to support his own. This kind of program where the care of the sick is once more placed in the hands of those who are trained to administer to them, indicates that the problem of narcotics addiction may indeed become a smaller one. Older addicts who remain incurable will eventually die off, fewer new ones will be ushered into the habit, and the narcotic problem may shrink to a manageable minimum. Should we be fortunate enough, by exposing the medical profession to this disease, to find better methods of dealing with it, then such technics may be extrapolated into the much bigger addiction problems of alcoholism and obesity.

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PROBLEMS IN HIRING DISADVANTAGED GROUPS

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On January 5, 1968, Electronics division of General Dynamics received requirements to hire 60 general assemblers (males) and 240 wire and solderers (females) for defense work. These 300 people were to be on the job by March 1, 1968, which left the company only eight weeks to fulfill the requirements.

Due to scarcity of skilled help in the Rochester labor market at that time and the desire to upgrade the inner city minority groups, the division actively sought out unskilled help. During the two-month period, 1,255 wire and solderers and 95 general assemblers were interviewed. Of these, 705 were given physical examinations for the wire and solderer positions and another 75 for the general assembler position (Table I).

The total of physical examinations approved was 526, or 68 per cent (Table II). The high rejection rate was despite a lowering of the medical standards. Of the 466 applicants who were offered training in wiring and soldering, only 408 started training. Of this number, 62 dropped out of, and 118 failed, the training course (Table III). Thus, only 228 out of 466 successfully completed the training. In total, the company hired 220 wire and solderers and 60 general assemblers (Table IV).

Medical rejection

There were six major reasons for medical rejection:

1. Pre-existing surgical conditions such as hernias, thyroid nodules, varicose veins, and ganglions.

TABLE I. Preliminary hiring data

Procedure	Number
Number interviewed for wirer & solderer	1,255
Number interviewed for general assembler	95
TOTAL INTERVIEWED	1,350
Physicals given for wirer & solderer	705
Physicals given for general assembler	75
TOTAL PHYSICALS	780

2. Hypertension, predominantly essential hypertension.
3. Anemia. Some workers with low hematocrits diagnosed as iron deficient were hired and put on iron therapy.
4. Exogenous obesity, defined as more than 30 per cent above normal standards for height, weight, and body build.
5. Genitourinary tract infection. Workers with mild cases of cystitis were hired and put on therapy.
6. Venereal disease.

Problems

There are five major problems regarding the delivery of health care to inner city residents. These all contributed to the high rejection rate.

1. Preventive medicine is not practiced. Inner city residents do not appreciate preventive medicine. The same can be said for those physicians and paramedical personnel who deliver medical care to inner city people.
2. Most inner city residents receive episodic care and no effort is made to correlate the acute medical problem to the patient's general medical condition. Too often the patient wanders from one emergency room to another, seeing first one intern and then another. Continuity of medical care is lacking.
3. Young well-trained physicians who are interested in preventive medicine are not opening practices in the inner city. Outside of clinics, inner city residents are receiving medical care from older physicians, many of whom are beyond retirement age. Some of these physicians, although well motivated, have not kept up with recent advances in medicine.
4. Good personal hygiene is not being practiced by many inner city residents. This could explain the incidence of cystitis in women due to ascending infections.
5. Many inner city inhabitants are not eating a well-balanced diet. Two of the common diagnoses found during our recent employment push were exogenous obesity and anemia. An editorial in the May, 1968, issue of *Annals of Internal Medicine,* discusses these problems which are often

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TABLE II. Results of physical examinations

Rejected	
Number of physical rejects for wirer & solderer	239
Number of physical rejects for general assembler	15
TOTAL PHYSICAL REJECTS	254
Approved	
Number of physicals approved for wirer & solderer	466
Number of physicals approved for general assembler	60
TOTAL PHYSICALS APPROVED	526

TABLE III. Training record of applicants

Number of applicants offered wirer & solderer training	466
Number of applicants that started training	408
Number of applicants that dropped out of training	62
Number of applicants that failed training	118
Number of applicants that successfully completed training	228

TABLE IV. Numbers hired

Number of wirer & solderer applicants hired	220
Number of general assembler applicants hired	60
TOTAL NUMBER OF HIRES	280

> interrelated. Diets are rich in starches and deficient in protein, iron, and vitamins. This may explain the high incidence of young obese mothers with iron-deficiency anemia.

One problem that industry faces with inner city residents is whether or not to give them total medical care. It is obvious that inner city people are not receiving the same quality of comprehensive medical care as other sections of the population obtain. The advantage to industries' treating nonoccupational illnesses is a reduction of absenteeism, workmen's compensation, and accident and sickness insurance costs. On the negative side, treating one particular population group may lead to demands for treatment of all nonoccupational illnesses.

Follow up

After one year's time, the records of the 200 inner city residents hired in January and February of 1968 were studied. Only 47 were still on the payroll. Some of the reasons workers left were:

1. Voluntary termination–personal reasons.
2. Absent without leaves.
3. Unsatisfactory probationary employe.
4. Falsification of records.
5. Voluntary termination for other employment.
6. Voluntary termination for domestic reasons.
7. Voluntary termination due to pregnancy.

Absenteeism, accident, and illness records of the employes still working in the plant have been good and these workers have been a credit to the division.

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BACKGROUND OF CLINICAL CARDIAC ELECTROSTIMULATION

III. Electrical regulation of rapid cardiac dysrhythmias

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In previous communications I have referred to the many and varied clinical states in which electricity was used with therapeutic intent.[1-5] Of that vast array very few were characterized by tachycardia, and rarer still were those situations in which electrical treatment was directed specifically at control of the disordered rapid heart rate.

Older electrical instruments

That omission is made all the more curious by considering the basic similarity of some old electrical contrivances to modern instruments used deliberately for that purpose. For instance, the following resuscitation apparatus described in 1788 is not too remote conceptually from our familiar "ventricular defibrillators"[6]:

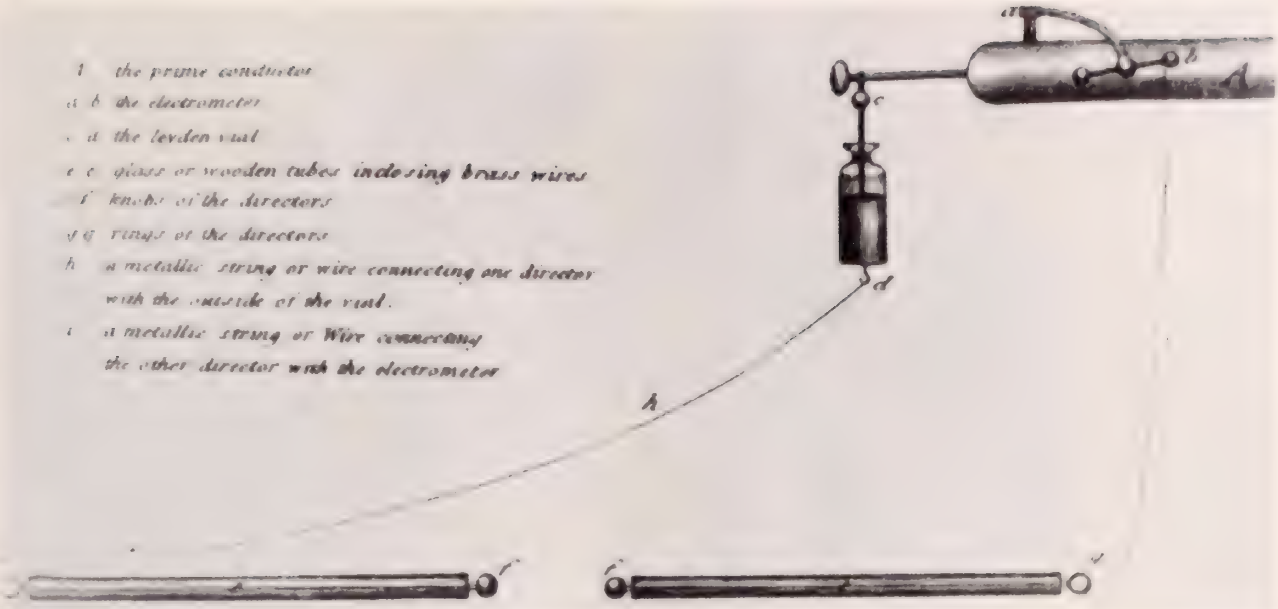
> . . . It is merely two pieces of brass-wire each two feet long, inclosed in glass tubes or wooden cases well varnished with knobs at one end, and rings at the other: the knobs are to be applied like common directors, to those parts between which we intend the (electric) fluid to pass; and one ring connected with a chain or metallic string, coming from the electrometer, and the other with a chain joined to the outside of the vial, which will be more convenient if suspended on the prime conductor. In this manner, shocks may be sent through any part of the body: and their direction constantly varied, without a probability of the assistants receiving any inconvenience. . . (Fig. 1).

The idea that cardiac tachydysrhythmias might be stilled electrically was hinted at in 1862 by Walshe[7]:

> In addition to irregular movements arising out of mechanical difficulties and modified innervation of the heart's contractility, impairment and unsteadiness of the nervous force presiding over its tonicity, may by possibility contribute a share of feeble, wavering, nonrhythmical motion.
>
> Were this view sustained, the experiments of Volkmann (which prove that tremor of a voluntary muscle may be imitated by slackening the turns of the weak rotary galvanic apparatus, so that the impulses may succeed each other at appreciable intervals of time) suggest by inversion a mode of treatment of fluttering palpitation.

The feasibility of rectifying tachycardia by electricity was demonstrated clinically by Duchenne[8,9]:

> Madame X, aged 21 years, pregnant 3 months, was attacked on 22 February 1869 with croupous angina consequent to a cold. . . . On 10 March there supervened a paralysis of the pharynx and soft palate. Alimentation became difficult and could be accomplished only with liquids, broths or gruel. Nevertheless Mme. X began to rally, and genuine convalescence seemed to be taking place, when, on 21 March, severe uterine pains presaged an imminent miscarriage. Although labor proceeded uneventfully and without hemorrhage, it was followed by extremely grave upset of the cardiac circulation and breathing. . . .
>
> On the following morning, 22 March, my honored colleagues thought of having recourse to electrization, and asked me: 1) whether in this case that treatment offered any chance of success; 2) what procedure had to be employed to direct the therapeutic action to the functions or locations of the nervous center attained by the diphtheritic intoxication; 3) how, by faradization or galvanization, we might be able to combat syncope or asphyxia which were imminent.
>
> Before replying to these questions, I examined the patient. These were the principal morbid signs which I discerned: extremely pale face, discolored lips, slight coolness of the nose and limbs; precordial oppression with stridor; mildly panting respiration but with normal breathing rhythm, without diaphragmatic paralysis, emphysema, or râles; smallness and extreme rapidity of the pulse (136 to 140 pulsations), with such irregularity and intermittences that often six or eight successive pulsations missed; impossible to distinguish the rhythm of valvar sounds on auscultation of the heart; all I could hear were a succession of muted, unequal, disorganized, small noises; no temperature rise heralding a febrile state. There also existed a paralysis of the soft palate and pharynx, antedating the accidents for which my intervention was summoned.



I the prime conductor
a b the electrometer
c d the leyden vial
e e glass or wooden tubes inclosing brass wires
f knobs of the directors
g g rings of the directors
h a metallic string or wire connecting one director with the outside of the vial.
i a metallic string or Wire connecting the other director with the electrometer
a
b
c
d
h

FIGURE 1. Resuscitation apparatus designed in 1788 by Charles Kite has features that would make it suitable for ventricular defibrillation.

I recognized, in this aggregation of cardiac and respiratory functional derangements, the characteristic manifestations of a paralytic condition of the pneumogastrics. I asserted therefore that, in our patient, the diphtheritic intoxication exerted a morbid effect on the nervous center (of the fourth ventricle in the brain) which presides over cardiac innervation.

Accordingly, from that vantage-point, what could be the therapeutic effect of faradization? Excitation of the phrenic nerve, when the diaphragm was not paralyzed and when there were no signs of asphyxia, did not seem to me to promise a favorable action on the troubles of cardiac circulation and on the sensations of suffocation. That of the pneumogastric and superior laryngeal, at the level where those nerves were associated with the lateral walls of the pharynx, might, it is true, modify beneficially the innervation of the heart and lungs. But faradization of those nerves, though easy to execute, is exceedingly dangerous, for it may provoke, even in small dosage, cessation of the heart and breathing. Hence it was not to be contemplated.

However it being urgent to act, I wished to try to modify the morbid condition of the center giving rise to the nerves of the heart and lungs by electrocutaneous excitation of the region related to that nervous center.

But might it not be that the diphtheritic intoxication, by altering the dynamic state of Mme. X, had rendered her hypersensitive to electric excitation? Would this not make me apt, were I to act too vigorously, to cause arrest of the heart?

It was after having thoroughly weighed all of those considerations that I practised cutaneous faradization, by means of the "electric hand," on the precordial region, principally over the apex of the heart, taking care to start with a very feeble dose. Then I gradually increased the intensity of the induction current, of which the intermittences were rapid, until a mild pricking was sensed by the skin. We were gratified to see our anticipations achieved; for, after a few minutes and during passage of the current, the pulse diminished in frequency, became regular and formed; finally, the precordial oppression and suffocation vanished. Several times during the day I had to reinstitute precordial cutaneous faradization, so as to definitely chase the diphtheritic perturbation of cardiac innervation which displayed some tendency to remit (Fig. 2).

Relapses during the next several days necessitated multiple faradization sessions, many of which brought prolonged relief from tachycardia. Unfortunately, Duchenne's perseverance was not rewarded by the patient's survival. The diphtheria progressed, and death ensued eleven days after the inception of the novel treatment. In his incisive critique Duchenne deduced that,

> Inasmuch as in this therapeutic experience excitation of the skin over the precordial region alone has had the power to modify and even to dissipate, by its reflex action, the serious disorders of cardiac circulation caused by a morbid state of pneumogastric innervation, it is reasonable to conclude that there exists an intimate relationship between cutaneous sensibility of the precordial zone and the origin of the pneumogastric; that is to say, the cutaneous precordial zone is reflexogenic for the pneumogastric.
>
> . . . the therapeutic deduction is: electrocutaneous excitation of the precordial region which overlies the apex of the heart is one of the best means for combating syncopes from arrest of the heart and other functional disorders of the cardiac circulation, symptomatic of a paralysis of the pneumogastric, without organic lesion. . . .

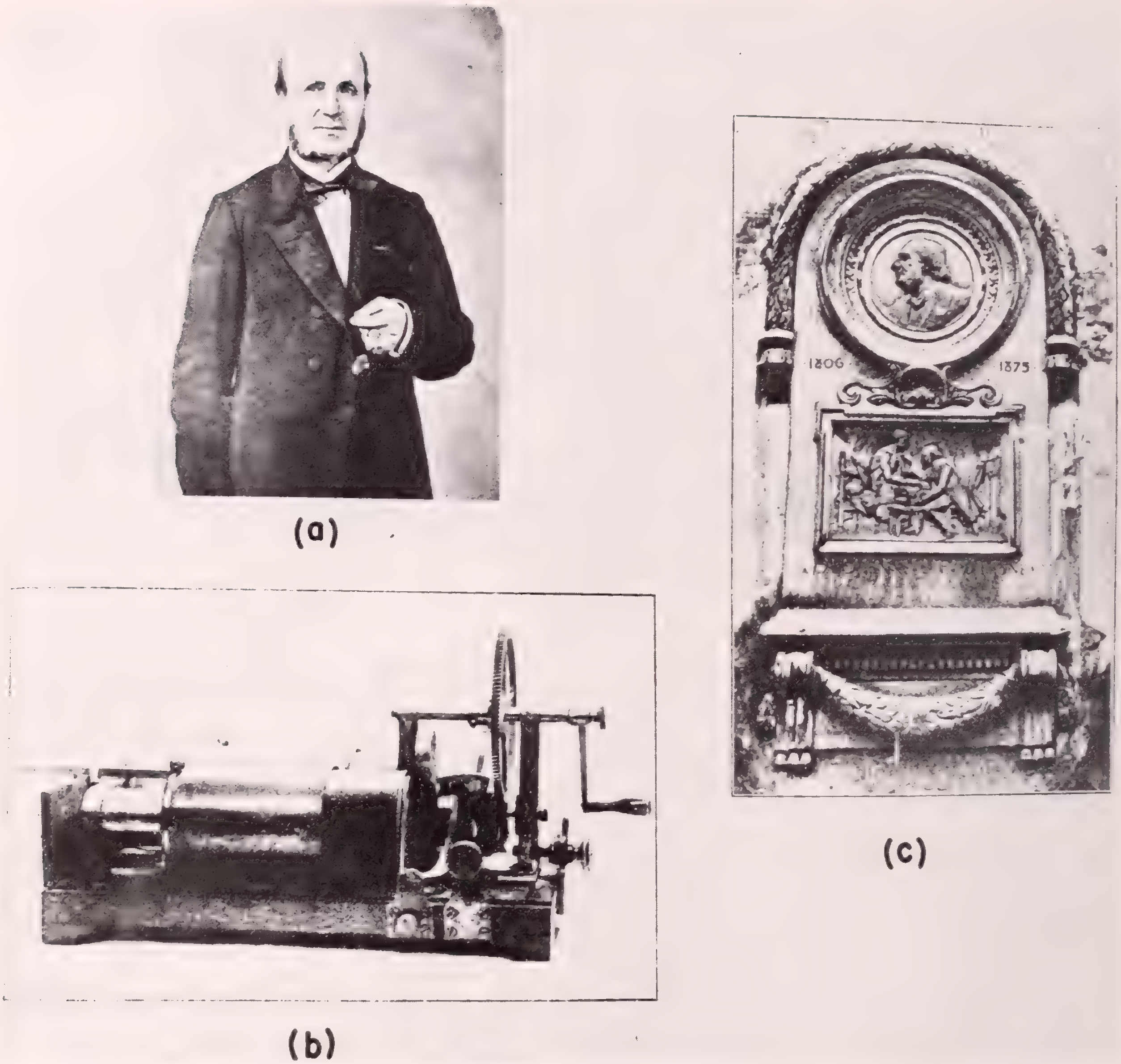


FIGURE 2. (a) Guillaume Duchenne conducted investigations on clinical applications of electricity. (b) Actual induction coil apparatus designed and used clinically by Duchenne. (c) Commemorative tablet at Salpêtrière Hospital, Paris.

> . . . mild electrocutaneous excitation of the precordial region, acting in a reflex manner on the nucleus of the pneumogastric, has restored to that nerve the power, which its paralysis had deprived it, of moderating the activity of the heart. It has, in other words, reestablished the brake over the heart; from thence, regularization of cardiac circulation and disappearance of serious nervous disturbances symptomatic of pneumogastric paralysis.

Noteworthy was Duchenne's plea that the strength of electricity be graduated to suit the circumstances, with weak currents tried at the outset:

> Well, instead of proceeding prudently, or to probe, so to speak, the degree of excitability of the patient, had I used a very intense current, the result would have been the very opposite. Indeed, that is what happened once by accident with Mme. X during a recrudescence of the disorders of cardiac innervation. I was undertaking to reverse them, by the method of faradization which hitherto had proved successful in that patient, when the apparatus was moved and its graduator tube left completely out without my being forewarned. The resultant vivid excitation was followed by faint syncope and momentary cardiac arrest. However, cutaneous faradization of the precordial region which I promptly conduced made me master again over those nervous disorders.

Althaus[10,11] treated tachycardia by electricity in an ambulatory patient.

> Where the heart's action is irregular and impaired

through derangement of the inhibitory or accelerator system of nerves, which occurs so frequently after influenza, electrical treatment may be of great assistance. This applies to tachycardia, bradycardia, delirium cordis, and the vasomotor form of angina pectoris.

> A married lady, aged 25, had rheumatic fever and endocarditis six years ago, and had since been subject to mitral disease. This did not appear to cause her much trouble until a time when she had great domestic worry and anxiety. Since then she had been subject to distressing attacks, which generally commenced about 4 p.m. She suddenly felt faint and frightened, had swimmings in the head, with great pain in the heart and left arm, and such severe palpitations that she thought she was going to die; she was covered with clammy sweat, and after a time almost collapsed. Such an attack would last till the next morning, when she gradually became more comfortable. She had been treated with digitalis, strophanthus, and nitroglycerine, but medicines appeared to have no influence on her condition. I directed the stabile anode to the pneumogastric nerve at the neck, 16 square cms. and 1 MA., the cathode of 40 square cms. being placed to the cervical spine, and allowed the current to pass for two minutes at each side. This treatment was followed for a month, and had the desired result (Fig. 3).

Nervous palpitation

Flies[12] employed electricity to treat "nervous palpitation of the heart." In 24 cases, 5 of which were associated with organic cardiac disease, he observed improvement in all. In numerous instances of palpitations on a functional basis, complete recovery took place after five to six sittings. The method consisted in the application of moderately strong galvanic current to each vagus for one to two minutes daily. In the beginning the effect was merely subjective, but soon became noticeable objectively by a diminution of the frequency and intensity of the action of the heart. Erb[13] remarked,

> I have treated a case of severe palpitation and irregularity of the heart with intense cardiac asthma (probably due to organic disease), with the galvanic current (to the pneumogastric in the neck and the region of the heart), with relatively very favorable palliative results. . . .
>
> As a matter of course, it is entirely rational in such cases to appeal first to the inhibitory action of the pneumogastric and to stimulate this nerve with the current. Whether cases do not occur in which a depressing effect upon the cervical sympathetic or the excitomotor centres in the spinal cord (anode stabile upon the cervical cord) will produce a similar effect can be determined alone by further experience.
>
> In addition, trial may be made of the direct action of the galvanic current upon the intracardial nerves, according to Ziemssen's method, in order to regulate the action of the heart. This procedure consists in the passage of very strong currents from the spine to the cardiac region with very large electrodes, and with changes of polarity regularly performed at definite intervals. An increase in the frequency of the heart's action may be readily effected; diminution of the number of beats requires very considerable strength of current, at least in the normal heart. It goes without saying that great caution is necessary in such experiments.

Tachycardia and hyperthyroidism

Another variety of tachycardia which was curbed electrically was the one associated with hyperthyroidism. A great many clinicians, including authorities like Jean Charcot and Frantisek Chvostek, upheld this mode of therapy, which comprised applications of current to the neck and precordium.[14-18] Persons with thyrotoxicosis, who were unlucky enough to be racked by paroxysms of palpitations, received gratefully the benefits conferred by electricity, even when these were fugitive (Fig. 4). This was Charcot's regimen:

> 1. The positive electrode, with a large rheophore, is applied to the posterior and inferior part of the neck, and the negative electrode, with an olive-shaped rheophore, is strongly pressed upon the region of the carotid artery, under the angle of the lower jaw. It is found that the effects of faradisation are much more telling than those of galvanism. In some cases there is an immediate change in the color of the cheek upon the faradised side, while the temperature there is lowered, and the feeling of orbital tension either diminishes or disappears. The two carotid regions are successively faradised at the same sitting.
> 2. The negative electrode is then passed lightly over the eylids, so as to cause the contraction of the orbicular muscles.
> 3. The thyroid tumor is faradised, and the sterno-hyoid and thyroid muscles, which should be made to contract.
> 4. Lastly, the precordial region is galvanised. The large rheophore connected with the negative pole being retained at the back of the neck as before, the positive pole, fitted with a large flat intercostal rheophore, is applied to the inner part of the third interspace. The force of the current should vary from 50 to 70 dix milliemes (ampere). With this last part of the operation the violence of the heart-beats diminishes at once, even if their frequence remains the same; but it is always the most difficult part of the treatment to permanently modify the heart's action. The whole sitting should occupy ten or fifteen minutes, equally distributed over the carotid, thyroid, and cardiac regions. It should be repeated every alternate day. At first merely transitory, the effect lasts longer after each operation, and by degrees it becomes permanent. The exophthalmos and the goitre are the earliest symptoms to yield. The complete cure requires six months' treatment at least. It is only exceptional to find cases which resist the treatment.

A sizable bibliography has blossomed, since that era, on the use of electricity to quell unruly dysrhythmias. Relying on far sounder rationale and considerably more serviceable apparatus, contemporary methodology is frequently intended to wrest control of the heart beat from the domination of abnormal excitation foci. This was started originally, some fifteen years ago, by means of alternating current shock.[19–23] The latter has since been superseded by synchronized direct current shock, a technic designated "cardioversion."[24–29] Another method involves the use of artificial pacemakers, temporarily or permanently, set at a speed faster than the average normal heart rate, to suppress the ectopic centers causing the dysrhythmia.[30–46]

Yet another mechanism for surmounting tachy-

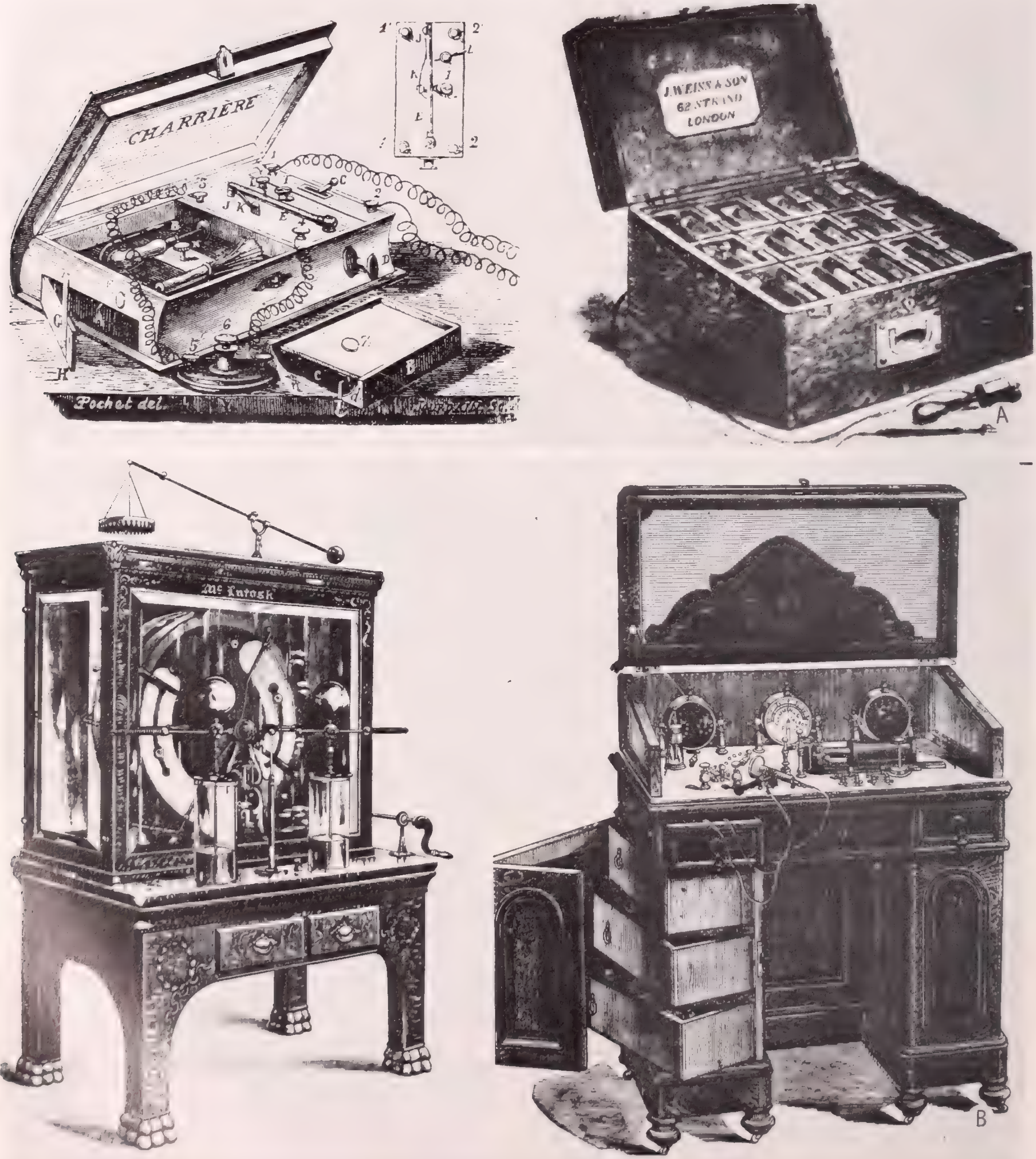


FIGURE 3. (A) Portable electric chests used about one hundred years for variety of medical purposes, including treatment of cardiac dysrhythmias. (B) Affluent physician's electric cabinets at turn of last century.

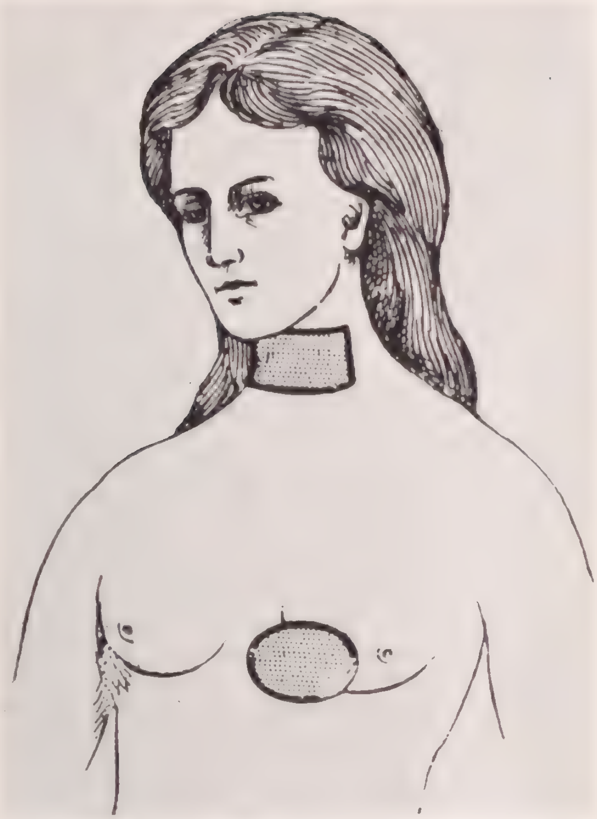


FIGURE 4. Electrode placement recommended for bridling "runaway heart" in hyperthyroidism.

dysrhythmia is that of "postextrasystolic potentiation" produced either by paired stimulation or by coupled stimulation. In the first method twin electrical stimuli are administered to the ventricles in an effort to override atrial impulses; whereas in the second, a single delayed stimulus is applied to the ventricles in response to each spontaneous ventricular depolarization. The net effect is reduction in the frequency of ventricular contractions combined with a postextrasystolic enhancement of ventricular performance. Ironically, one dysrhythmia is combated by deliberately instituting another.

The conceptual background of postextrasystolic potentiation is not recent.[47] Indeed, knowledge about this phenomenon dates virtually since the earliest studies of the influence on sequential patterns of heart contractions of electrical discharges applied during different phases of the cardiac cycle.[48–59] However, specific preoccupation with postextrasystolic potentiation began in 1885 with the work of Langendorff,[60–62] whose lead was then followed by a great many other scientists.[63–87] There appears to be little doubt that the potential applicability of the phenomenon to clinical situations was not overlooked. Thus one author's article in 1915 dealt with the halving of the ventricular rate by means of induction shocks.[75] Nevertheless the method apparently never left the laboratory domain during all those years.

Dysrhythmia and cardiac surgery

To my knowledge, the first clinical application of paired electrical stimulation to counter tachydysrhythmia was undertaken in 1954 by Francis Dammann[88] (Fig. 5) and his associates Marvin Darsie, Jr., M.D., William Muller, Jr., M.D., Chester Smith, M.D., William Whalen, M.D., and Thomas Nolan, M.D. They reported their experience that same year at conferences of the Society of Western Anesthesiologists, the Second World Congress of Cardiology, and the California Heart Association. The following is an abstracted composite of their presentations at those meetings:

> Cardiac surgery in the severely decompensated child has presented many major obstacles. One important obstacle has been the tendency for the decompensated patient to develop arrhythmias which, if permitted to continue, decrease cardiac output and coronary blood flow leading frequently to ventricular fibrillation or cardiac standstill. Following the lead of Zoll we have applied an artificial electrical cardiac stimulator in instances of cardiac slowing or standstill. Furthermore, we have extended Zoll's work and attempted

FIGURE 5. J. Francis Dammann, Jr., who headed team that demonstrated early advantages of electricity for controlling dysrhythmias complicating cardiac operations.

with some success to control a tachycardia by an artificial cardiac stimulator combined with an additional electrical stimulus aimed at delaying normal repolarization. In animal experiments we have triggered our square wave cardiac stimulator with the animal's own QRS complex. By this means we are able to add a square wave stimulus during myocardial repolarization in order to change the point of time at which the next cardiac contraction takes place. This square wave stimulus can be altered both as to phase of the cardiac cycle it is applied as well as its amplitude, and duration. It may be applied externally or over any portion of the heart. Using this method we have successfully varied the pulse rate of the normal dog without affecting the blood pressure adversely.

As has been demonstrated, the square wave cardiac stimulator is effective applied both externally and locally to the slow or stopped heart. The circumstances in which this application is effective however, are limited. In our experience, the problem of tachycardia is far more common; a tachycardia that increases rapidly until coronary circulation can no longer be maintained and ventricular fibrillation occurs. Several approaches to the problem of tachycardia were evaluated. Control by means of drugs or a change in anesthetic agent was successful in good risk patients. General body cooling was effective in cyanotic patients not in cardiac failure. Local cooling of the area of the sino-auricular node or local application of drugs to this area is under investigation. Our chief interest, however, has been in the application of the square wave cardiac stimulator. It seemed possible to us that, if a stimulus could be applied to the heart during the refractory period of the myocardium, repolarization would be delayed and therefore the onset of the next beat might be delayed. An additional circuit was added to the stimulator. The amplified R wave of the patient's own QRS was used to trigger a delay circuit. This delay circuit could be shortened or prolonged from less than a tenth of one second to a full second. The break of the delay circuit triggered the second stimulating circuit. Thus a stimulus of variable duration and intensity could be applied at a controlled interval of time after the patient's own QRS.

Our first attempt at slowing the heart rate of an experimental animal was in the dog. The first slide represents the type of electrocardiographic and pressure tracing obtained from the dog when the stimulator was applied to the auricle and to the ventricle. It is clear that the rate was slowed. The degree of slowing was approximately 50%. Pressure obtained from the femoral artery did not suggest a ventricular extrasystole, yet in the electrocardiogram there is a delayed T wave and the interval between the end of the stimulus and the T wave is the same as the Q-T interval in the control tracings. Furthermore, when the stimulus was applied to the ventricle a change occurred in the T wave. This suggested that either the heart rate was slowed by delaying repolarization or that a ventricular extrasystole of insufficient force to open the aortic valve occurred with a subsequent compensatory pause. Note that ventricular fibrillation occurred when the stimulus was applied to the ventricle.

For a more detailed investigation of this problem the frog heart was used. The frog heart was removed and suspended in such a position that multiple electrocardiograms could be recorded. The ventricle was cannulated and the pressure generated with each ventricular contraction was recorded. Auricular contractions were recorded by means of a tie placed around the caval end of the auricle and attached under tension to a transducer. A stimulus was applied to the heart through two fine silver wire electrodes. A slide shows a typical example of control of the frog heart rate. The stimulus was applied to the auricle in the region of the sino-auricular node. The effect of the stimulus was to produce an auricular extrasystole as shown clearly by the auricular pulse wave pattern. However, a ventricular extrasystole does not follow the auricular extrasystole. There is nothing to indicate a ventricular extrasystole, either in the ventricular pressure curve or in the electrocardiogram. When the delay circuit is prolonged, the auricular extrasystole appears later. If the delay is prolonged sufficiently, the auricular extrasystole is followed by a clear cut ventricular extrasystole. Apparently, then, when the delay period is short, the auricular extrasystole stimulates the ventricle during its refractory period and hence no ventricular or an inconsequential ventricular extrasystole is produced. Shortening the duration of the stimulus has no effect on the pattern produced as long as the stimulus is applied to the auricle. If however, the stimulus is applied to the ventricle, a ventricular extrasystole does appear. Interval measurements suggest that this extrasystole is caused not by the make but by the break of the stimulus.

Control of the heart rate is not complete. In the many experiments that we have carried out to date, we have been able to slow the pulse rate from 40 to 60%. The exact amount of slowing is unpredictable. We know that an auricular extrasystole is produced which, depending upon the delay period, may or may not be conducted through to the ventricle. In addition, however, a change takes place in the normal intrinsic pacemaker following a stimulus. For reasons that are not clear a normal auricular beat does not follow in its expected time relationship with the preceding auricular beat. This is not because the auricle is refractory, for time measurements demonstrate an ample interval for auricular repolarization. Apparently, the intrinsic pacemaker itself has been affected by the stimulus, thus altering the heart rate. How or what this alteration is, we still do not know. That it is an alteration in the intrinsic pacemaker is also suggested by the fact that control of the pulse rate was not as easily brought about if the stimulus was applied far out on the auricle away from the node.

This method of control of the pulse rate has been tried clinically on only one occasion. It was successfully accomplished in a seven week old infant who was moribund following several major surgical procedures, and who had been kept alive by positive pressure controlled respirations for 24 hours. The stimulus was applied through a wire inserted through a #6 catheter which in turn was threaded through a femoral vein into the right auricle. The neutral electrode was attached to a needle inserted under the skin over the anterior left precordium. Femoral artery pressures were recorded. Control was maintained for a period of 50 minutes without interruption. In (a) slide the end of the 50 minute stretch and a short period of normal

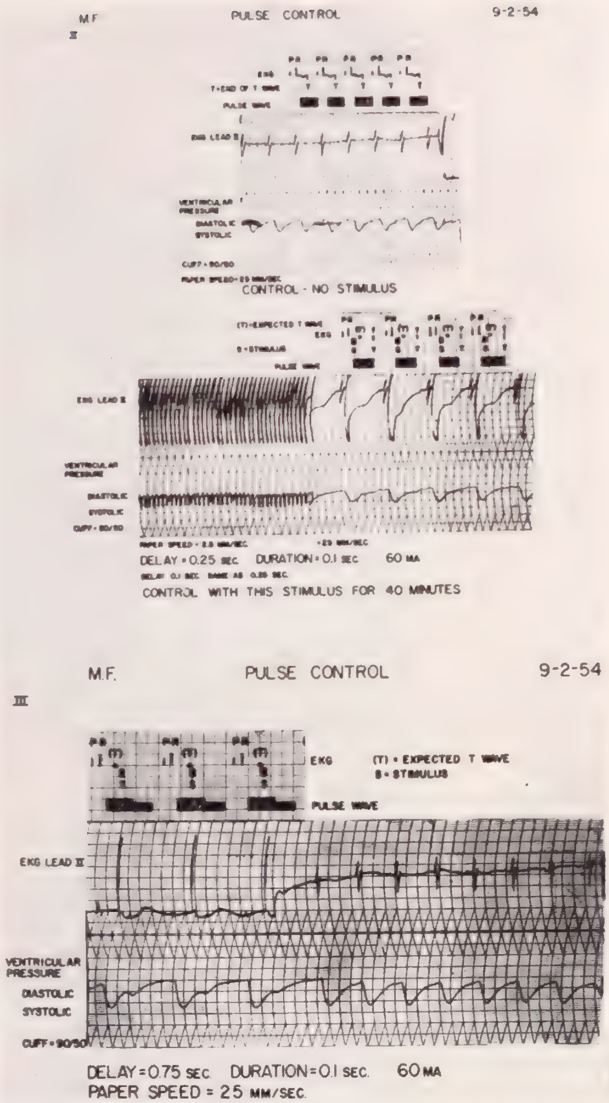
> rhythm are depicted. It is clear that an adequate pulse pressure was obtained and that there was no evidence from either the electrocardiogram or the pulse pressure tracing of a ventricular extrasystole. Rate was reduced from 90 to 60 beats per minute. Peripheral circulation appeared better than before and the infant showed signs of returning to consciousness.
>
> The delay period and the duration of the stimulus were then altered. In (the following) the results of these alterations are recorded. When the delay period was prolonged so that the stimulus fell after the T wave, a clear cut ventricular extrasystole resulted. This is clearly shown in the femoral pressure tracing and also in the electrocardiogram. Alteration of the duration of the stimulus had no effect. The response of this patient's heart to the stimulus was just like the response of the frog. When the delay period was set so that the stimulus was applied during the peak of the T wave on two separate occasions, ventricular tachycardia resulted. On both occasions, the stimulator was stopped and rhythm returned to normal. During the next few hours the infant's general condition deteriorated. Pulse rate fell so that the stimulator was shifted from patient-triggering to self-triggering and the heart was successfully driven in a standard manner. Blood pressure gradually fell and the heart finally failed to respond to the stimulus. This we do not feel represents a failure on the part of the pacemaker, for the infant's condition was terminal.
>
> Obviously, much more information must be obtained before this method of pulse rate control can be used clinically in the way that we desire. For the present we cannot attempt such control at the point when a patient begins to get into trouble. It must be reserved for terminal cases until we are more certain as to the risks and the good that can be expected. Our work to date, both in the experimental animal and in several patients leads us to hope that control of the pulse rate by an electronic square wave stimulator will prove both practical and effective.
>
> We hope that this tool will be a helpful adjunct in maintaining an efficient circulation thus giving time to the surgeon to complete his work or, as in the first case, time for healing to take place within the heart (Fig. 6).

Regrettably, this work did not go to press. Investigations on postextrasystolic potentiation persisted in a few laboratories,[89–96] but practically no heed was paid to it until the reports of Lopez, Edelist, and Katz[97,98] appeared in 1963. Clinical corroboration of its merits became available the next year.[99–103] The method continues to be a source of fascination to physiologists but has yet to receive widespread acceptance as a therapeutic modality.[104–109]

There remains, in this section regarding tachydysrhythmias, but to consider the subject of ventricular defibrillation.

Ventricular defibrillation

If empiricism, in large measure, formerly guided attempts to tame tachydysrhythmias by electricity, there was at least one condition in which the latter was eventually proved scientifically to be mandatory for treatment. That dysrhythmia was ventricular fibrillation. In 1850 Ludwig and Hoffa[110] showed that strong currents to the heart caused it to assume peculiar incoordinated movements resulting in circulatory collapse. "Herz-delirium," "fibrillar contraction," "trémulations fibrillaires," "delirium cordis," or "intervermiform movements," as ventricular fibrillation became variously known, was studied in depth by MacWilliam.[111] In 1887 he advanced the then startling proposal that it was fibrillation which probably precipitated the strange deaths sometimes supervening on anesthesia. Provocative though this thesis may have been, it was allowed to lie fallow for another decade. What eventually provided the real incentive for thoroughly examining the matter


M.F.
PULSE CONTROL
9-2-54
II
EKG
T-END OF T WAVE
PULSE WAVE
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VENTRICULAR PRESSURE
DIASTOLIC
SYSTOLIC
CUFF = 90/50
CONTROL - NO STIMULUS
(T) = EXPECTED T WAVE
S = STIMULUS
PULSE WAVE
EKG LEAD II
VENTRICULAR PRESSURE
DIASTOLIC
SYSTOLIC
CUFF = 90/50
DELAY = 0.25 SEC DURATION = 0.1 SEC 60 MA
CONTROL WITH THIS STIMULUS FOR 40 MINUTES
M.F.
PULSE CONTROL
9-2-54
III
EKG
(T) = EXPECTED T WAVE
S = STIMULUS
PULSE WAVE
EKG LEAD II
VENTRICULAR PRESSURE
DIASTOLIC
SYSTOLIC
CUFF = 90/50
DELAY = 0.75 SEC DURATION = 0.1 SEC. 60 MA
PAPER SPEED = 25 MM/SEC.

FIGURE 6. Effects of postextrasystolic potentiation by paired electrical stimulation. Data shown here are from Dammann, and associates and have hitherto been unpublished. (Courtesy of Dr. Dammann.)[88]

of ventricular fibrillation was the widening scope of high-tension currents in industry, with its concomitant mounting incidence of fatalities from accidental electrocution.

Most clinicians tacitly accepted the contention of D'Arsonval[112] and others[113–116] that electrocution extinguished life by profound central nervous system damage which carried in its wake respiratory paralysis: ". . . the condition after the shock is merely one of suspended animation in which the respiratory function is suspended." Precise information about the pathophysiologic derangements resulting from electrocution emerged from the gargantuan labors of Prevost and Battelli.[117–120] Their writings on the subject are classics. Pertinent to our theme, and of major importance from a clinical standpoint, was their irrefutable demonstration that fibrillary contractions induced by electricity could often be abolished by another powerful discharge of either alternating or direct current. Their data were expressed quantitatively.

Prevost and Battelli were not alone in showing that fibrillation could be halted by countershock. In the same year that these authors first announced their findings, Cunningham[121] published a thoughtful article on resuscitation after electrocution in which he insinuated the statement,

> The satisfactory results of several preliminary experiments performed at that time, with rather imperfect apparatus for generating oscillatory currents of high potential, appear to indicate that the application of such a current to the fibrillating dog's heart, in conjunction with the perfusion of the coronary vessels with defibrinated blood (preferably undiluted with saline), very materially hastens the restoration of the coordinated heart beat.

Robinovitch,[122–130] to whom I shall allude in a future article, worked diligently and wrote prolifically on resuscitation from electrocution. One of her outstanding contributions was her insistence that the head should be excluded from the path of the current used to reverse the effects of the initial shock. Another was her emphasizing that rhythmic electrical applications were superior to haphazard ones. Yet another was her designing portable electric resuscitation apparatus for ambulance service. Inexplicably, and unfairly, her name is never cited in the medical literature nowadays.

One would think that the aforementioned evidence would have supplied enough motivation to physicians for electrical defibrillation to be granted clinical trial. Instead, the procedure was greeted with strong reservation. I suppose that in large measure the apathy toward it may be explained by the fact that the profession was engrossed at the time with many other technics of cardiac reanimation. These included the injection of drugs, blood transfusions, polyelectrolyte infusions, irritation of the heart by needling, cardiac massage, rhythmic traction on the tongue (Laborde procedure), and so forth.[131–146] The most prominent investigator in this field, D'Halluin,[133,136,138,144] was adamantly opposed to defibrillation by electroshock, preferring infusions of potassium chloride instead. Crile and Macleod,[137,143] equally authoritative, were noncommittal on that score. Others rejected electricity out of hand (Fig. 7).[147–149]

Why it should have ever been thought that electrical defibrillation and the methods referred to previously were mutually exclusive is an enigma. However, being apparently viewed in that light, they were kept separate. Studies on the pathophysiology of fibrillation,[150–158] aided in 1914 by the first electrocardiographic display of this dysrhythmia,[159] ignored countershock. Finally, in 1932, after a long lull, the matter was reexamined by Kouwenhoven[160,161] and his associates, to whom much is owed for enunciating the proper employment of this potent therapeutic weapon (Fig. 8). They underscored its being combined with cardiac massage, infusion of drugs, and other supportive measures. Shortly after, Wiggers,[162–164] and Wegria and Wiggers,[165–167] who dove into the problem of ventricular defibrillation with great zeal, suggested that "the method should prove of value in (the) revival of exposed human hearts that fibrillate accidentally during (the) course of cardiac operations."

Despite the publications of others attesting to the efficacy of electric countershock in the restoration of normal rhythmicity to the fibrillating heart,[168–172] it was not until 1947 that the method was taken to the operating room, where it was used successfully by Beck, Pritchard, and Feil[173] (Fig. 9). Reminiscing ruefully on the tribulations which preceded this landmark in the chronicles of human resuscitation, Beck[174,175] remarks,

> (In 1937) Beck and Mautz presented the subject to the American Surgical Association using a motion picture. This is probably the first presentation to surgeons—and surgeons were the only clinicians who could apply the method, for it had to be done in the operating room and preferably when the chest was already open.
>
> Doctor Evarts Graham was the President of the American Surgical Association. There was no discussion of "this very beautiful work," and Doctor Graham stated that the surgeons were not familiar with ventricular fibrillation. . . . Where would heart surgery be if the heart could not be defibrillated!
>
> The writer made preparations for defibrillation in the hospital where he worked. Sterile electrodes were placed in the operating rooms and in the accident ward. He gave many laboratory demonstrations and lectures on the subject. He had several successes in defibrillating the human heart, but the brain was damaged and the patients did not recover. This was the dawn of human application.

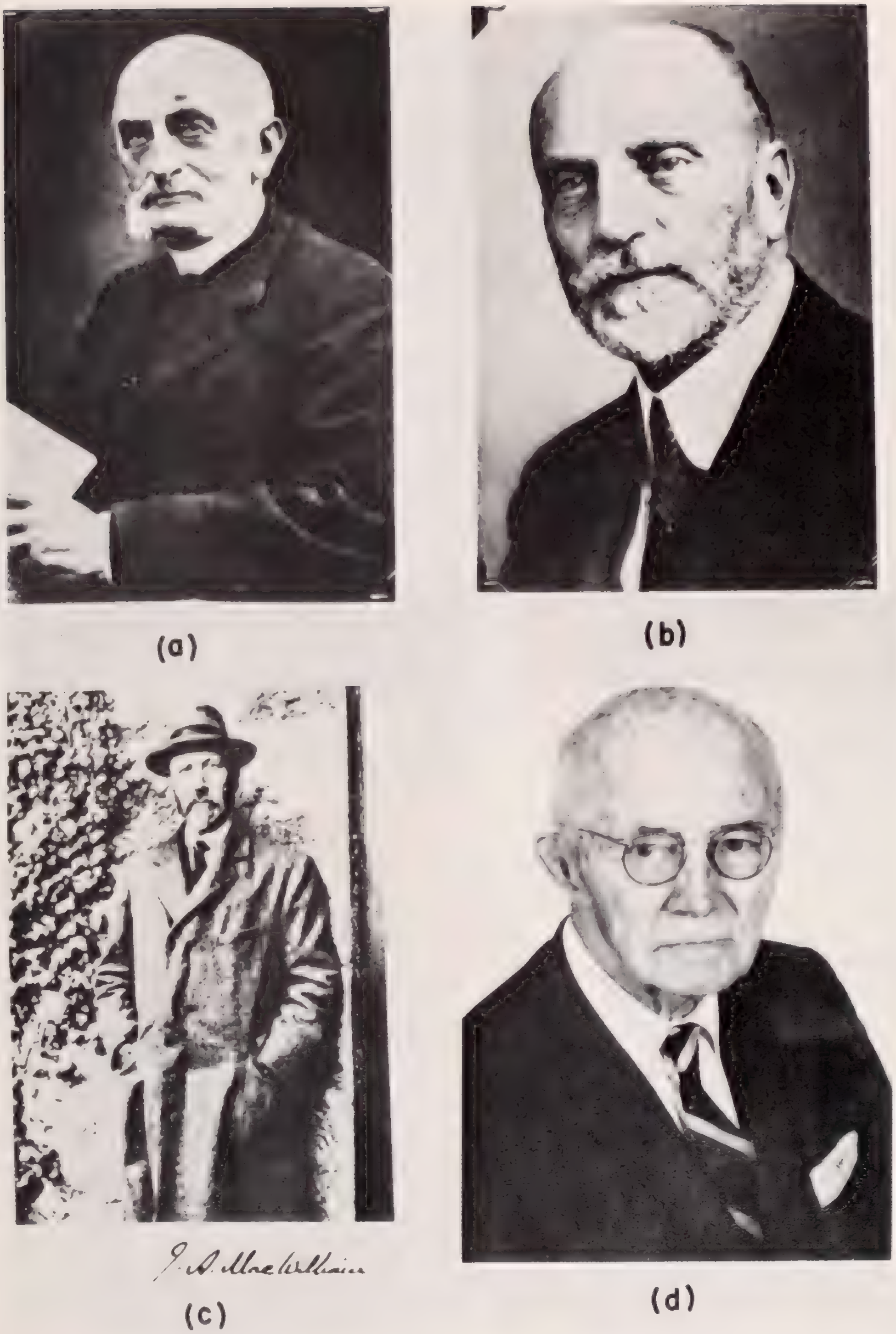

FIGURE 7. (a) Jean Prevost and (b) Frederic Battelli demonstrated that death from electrocution was due to ventricular fibrillation. (c) John MacWilliam elucidated pathophysiology of ventricular fibrillation. (d) William Kouwenhoven together with D. Hooker and O. Langworthy prepared ground for clinical ventricular defibrillation by clearly defining appropriate current dosage, designing reliable apparatus, and insisting, like Carl Wiggers, that defibrillation not be divorced from adjuncts such as cardiac massage, medications, and assisted breathing.

Progress was, indeed, slow. In 1942 he requested permission to organize a Resuscitation Squad to function at the battlefront, but this was not granted. He was politely told not to take the medical officers' time to listen to lectures on the subject. The first successful defibrillation of the human heart was then achieved (1947). This achievement was generally considered as nothing more than a routine example of successful resuscitation, as from drowning. However, the writer knew that it cut across the very fundamentals of coronary artery disease. Application of the method then moved to the medical wards, to the doorstep of our hospital where an M.D. dressed in street clothes had a fatal heart attack; it was reversed, and the victim is alive years later with the same heart.

The writer advocated that open chest defibrillation be done outside the hospital. This step encountered hostility from the Dean of Western Reserve University Medical School, who stated that the writer was not a safe man to have on the faculty. Open chest defibrillation was then done successfully on victims who died outside the hospital. Then came the closed chest method. It was not necessary now to get your hands dirty to do it.

Whatever hesitancy or disinclination existed originally about using electrical countershock for ventricular defibrillation, they gradually melted away. One reason was certainly the pressing necessity for that very procedure in the burgeoning specialty of cardiac surgery. But just as important was the crusade on its behalf championed by per-

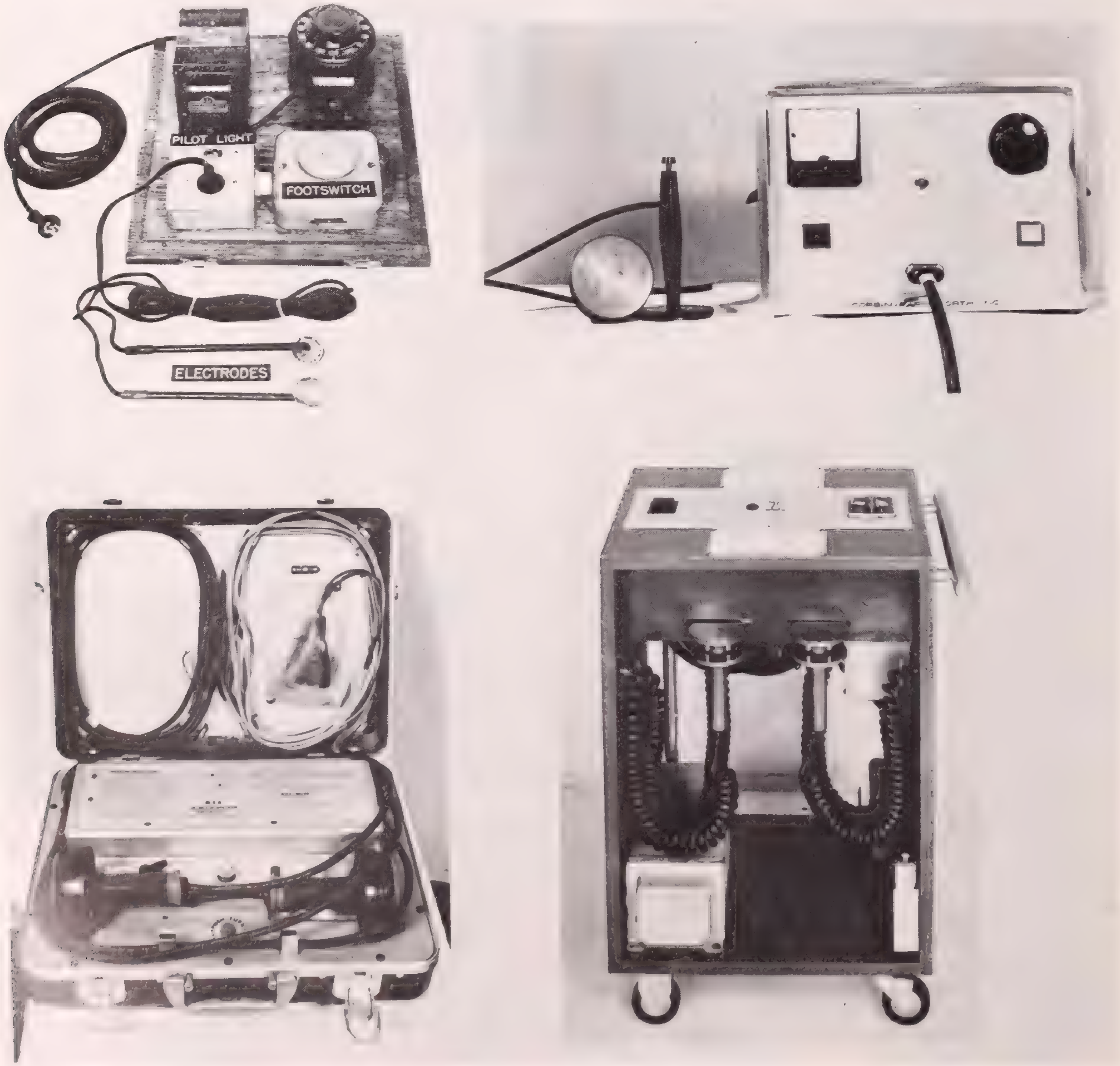

FIGURE 8. Prototypal equipment used for ventricular defibrillation. (Courtesy of Dr. Kouwenhoven.)

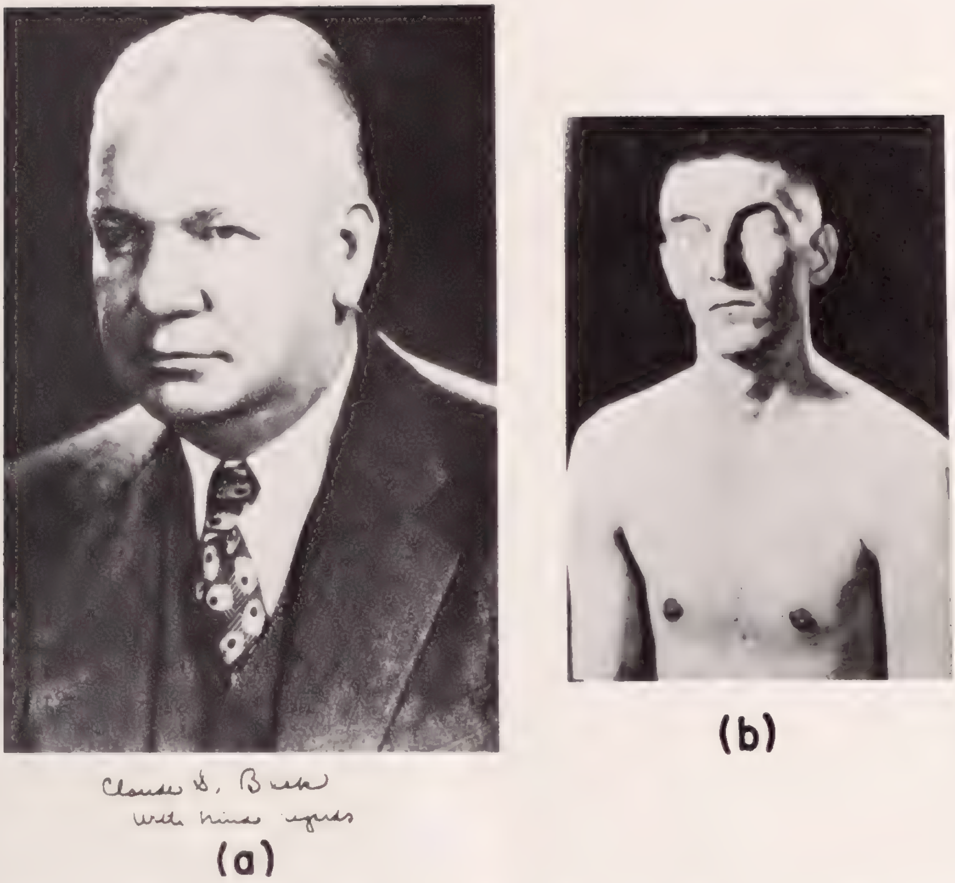

FIGURE 9. (a) Claude Beck, perfervid apostle of cause for cardiac resuscitation. (b) Patient in whom ventricular fibrillation was successfully reversed with electroshocks. (Courtesy of Dr. Beck.)

severing and dedicated physicians like Beck.* Who among us does not remember his repeated impassioned pleas to save "hearts that are too good to die," "hearts that have mileage left in them," and "hearts that only need a second chance to beat!"

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*Dr. Beck died recently.

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Additional Annual Reports

Instructions from 1971 House

Résumé of instructions of the 1971 House of Delegates and actions thereon by the Council, Board of Trustees, Officers, and committee chairmen*

Amendments to Constitution and Bylaws (pages 1272 to 1274). The House adopted resolution 70-16, "Amendment to Bylaws (Chapter XIV, Section 3) Concerning Conformity of Election Date of Officers of Component County Medical Societies." The county societies were informed of this action, and the change has been incorporated in the printed Constitution and Bylaws. The House also adopted a substitute for resolution 70-96 (part 2) adding a second paragraph to Chapter III, Section 1 of the bylaws regarding absence from meetings of the Council or the Board of Trustees. This change has been incorporated in the printed Constitution and Bylaws for 1971.

The House referred to the Ad Hoc Committee to Study the Constitution and Bylaws resolution 70-96 (part 1) calling for an addition to Chapter I, Section 6 of the bylaws which would deny the right to hold office to life members who have moved from the State. Due to the request of its chairman that the Ad Hoc Committee be discharged, the Council referred this part of resolution 70-96 to the House Committee on Constitution and Bylaws.

The House also referred to the Ad Hoc Committee to Study the Constitution and Bylaws resolution 70-97, asking for stricter definition of reinstatement of a delinquent member and reelection of a member who has previously resigned in good standing. Similarly, the Council referred this resolution to the House Committee on Constitution and Bylaws.

***Principles of Professional Conduct*—Revision (page 1276).** Resolution 70-17 was referred by the House of Delegates to the Committee on Ethics with the request that an ad hoc committee be appointed to study the *Principles* and to update and revise it with specific reasons given for the proposed changes. The Executive Committee and the Council voted in March to constitute the Committee on Ethics as the Ad Hoc Committee to Revise the *Principles of Professional Conduct* and to refer this matter to it.

The Ethics Committee submitted a completed resolution to the House Committee on Constitution and Bylaws prior to its meeting on October 6, 1971.

Student American Medical Association (page 1292). The House adopted a recommendation of the Reference Committee on Reports of Officers that activities of the students be extended to the committee level of their county medical societies. A memorandum to county medical society presidents, secretaries, and executive secretaries conveyed this information.

County Medical Society Representation at Council Meetings (page 1330). The House adopted a recommendation of the Reference Committee on Reports of Officers that resolution 71-63, "County Society Representation at Council Meetings," be referred to the Council. The reference committee stated: "It is necessary that the sense of the resolution be implemented by the Council but impractical to present this as a mandate." The resolution would require that a representative of each county medical society be invited to attend Council meetings at his county society's expense and be given an opportunity to speak on issues before the Council.

At its March meeting the Council reaffirmed the president's right to invite members of a county society to a Council meeting. It was voted that executive secretaries and other laymen may be invited to present specific information in areas of special interest but not as a matter of routine.

Walter F. Harrison, Jr., M.D., a member from Warren County, was present at the March Council meeting. George Boolukos, M.D., a member from Clinton County, attended the September meeting. The presidents of the Broome County Medical Society and of the Medical Society of the County of Cattaraugus were invited to attend the September Council meeting, but they were not present. In his letter of invitation Dr. Himler stated, "I am establishing the program of inviting presidents of county medical societies to the meetings of our Council."

Standards for Approval of Medical Care Plans (page 1376). The House voted, on recommendation of the Reference Committee on Medical Services, that the paragraph on "Physician Participation" in the "Standards for Approval by the Medical Society of the State of New York of New York State Medical Care Plans" be amended to read:

> The physicians on the governing body shall be physicians who are designated by the local county

Pages referred to are from the Minutes of the 1971 Annual Meeting of the House of Delegates as published in the ***New York State Journal of Medicine,*** June 1, 1971, pages 1255 through 1463.

* As of November 15, 1971

medical society or societies and/or the Medical Society of the State of New York.

An amended version of the "Standards," containing this paragraph, was circulated on March 29, 1971.

Radiologic Services: Blue Shield Coverage (page 1376). The House of Delegates adopted a reference committee report which stated:

> It was also noted that, pursuant to resolution 70-76 ... arrangements are being made to meet with a representative of the New York State Department of Insurance to discuss the subject of reimbursement for radiologic services by Blue Shield instead of Blue Cross. Your reference committee concurs with the recommendation of the committee (on Medical Care Insurance) that Blue Shield plans offer radiologic services to all its members.

This was referred to the Committee on Medical Care Insurance. The committee reported to the Council that it met in June with Mr. Robert Lomicky, Supervising Actuary of the New York State Insurance Department, Harold N. Schwinger, M.D., chairman of the Insurance Commission of the American College of Radiology, and Mr. William Stronach, executive director of the American College of Radiology. At the meeting it was decided that radiology representatives would develop and present factual data to support their position and that, again in September, all parties would hold a meeting which a representative of Blue Cross plans would be invited to attend. At the September committee meeting, the subject was not discussed due to a crowded agenda. It will be the only item on the agenda for a meeting to be held on December 15.

Third-Party Committee (page 1383). The House referred resolution 71-11 to the Committee on Medical Care Insurance. The resolution calls for a standing committee to advise and negotiate with the health insurance carriers, to review existing health insurance programs, and to make recommendations to the Society. The chairman of the Committee on Medical Care Insurance was informed of the action of the House of Delegates.

The committee reported to the Council in September that the chairman would designate one or more members as a subcommittee to deal with such subjects as they arose.

United Medical Service Contracts (page 1384). The House adopted resolution 71-12, opposing the $2,500/$4,000 and the $4,000/$6,000 United Medical Service Contracts, requesting discontinuance of the $2,500/$4,000 contract, and directing that the New York State Superintendent of Insurance be informed of this action. This resolution, as adopted by the House, was referred to the Committee on Medical Care Insurance.

The committee reported to the Council in September its general agreement "that the State Medical Society should make known to the Superintendent of Insurance of the State of New York our opposition to the continuance of the $2,500/$4,000 contract after January 1, 1972. A copy of the resolution was sent to the Superintendent of Insurance on October 13, 1971.

Workmen's Compensation Fees for Anesthesiologists (page 1384). The House adopted resolution 71-13, calling on this Society to petition the Workmen's Compensation Board to reimburse anesthesiologists on a fee structure based on the Relative Value Guide of the New York State Society of Anesthesiologists. This was referred to the Committee on Workmen's Compensation.

The committee reported to the Council in May that it wished to postpone action and pursue this in conjunction with the forthcoming negotiations on a new relative value fee schedule for workmen's compensation. The Workmen's Compensation Committee's annual report states, "In view of the ongoing negotiations for a changeover to a relative value scale in 1972, it was decided that this resolution be effected through these negotiations."

Collective Bargaining Procedure (page 1388). The House adopted an amended version of resolution 71-14, providing that (1) the scope of the Policy and Negotiating Committee on Government Supported Health Plans be broadened to cover all health programs with the exception of Workmen's Compensation; (2) the members of the Medical Society of the State of New York and all agencies be urged to accept all agreements negotiated by the committee; and (3) the Council report any failure of negotiations to the membership and state that decisions for further action must be made on an individual basis.

This was referred to the Policy and Negotiating Committee.

Service Benefit Contracts with Fixed-Fee Schedule and No-Income Limit (pages 1384 and 1385). The House adopted resolution 71-15 providing that (1) the Society reaffirm its position (1969) "that the no-income-level, service-benefits contracts with fixed-fee schedules based on hospital accommodations, such as those of Group Health Insurance Inc., are contrary to the usual, customary, and reasonable fee concept embodied in Medicare and endorsed by the American Medical Association and the Medical Society of the State of New York"; (2) the Society reaffirm its position (1970) that it "urge each of its members to reevaluate his participation in insurance programs, Federal, State, or municipal which reimburse for medical services on the basis of a fixed-fee schedule regardless of the subscriber's income; (3) the Society engage in discussions with Group Health Insurance, Inc., which offers such contracts with the objective of eliminating those features which have adverse effects on the public, physicians, and other health care insurance programs; and (4) the Society inform the public, labor and management organizations, and its members of these efforts to the end that each may evaluate the advisability of participating in this program.

The House also adopted the statement of the Reference Committee on Medical Services, expressing the feeling "that, since this matter has been approved at two previous sessions of the House of Delegates, the matter deserves implementation by the Council."

This was referred to the Committee on Medical Care Insurance. The committee reported to the Council that George W. Melcher, Jr., M.D., a representative of Group Health Insurance, Inc., was invited to discuss this resolution at a committee meeting. The committee agreed to discuss the matter further at a later meeting.

Hospitalization: Cost of (page 1385). The House amended and adopted resolution 71-39 "that the Medical Society of the State of New York join with other interested organizations to undertake a study of hospital charges and charges for the technical components of x-ray and laboratory examinations and recommend methods to promote uniformity of such charges based on actual cost, consistent with good quality medical care and on sound principles of pricing and billing." This was referred to the Committee on Economics.

The committee reported in May:

> This matter has been discussed properly by liaison committees of the insurance carriers, Blue Cross, Blue Shield, and the government, they being involved with and in possession of the basic cost factors that determine laboratory charges. When such a group requests it, we will be pleased to cooperate with it.

The Council voted that no further action be taken at that time.

Family Practice: Workmen's Compensation Specialty Rating and Code Letters (pages 1379, 1385, and 1386). The House adopted a reference committee report which stated:

> The committee reported that it had considered resolution 70-88 regarding Workmen's Compensation Code letters for the newly designated specialty "Family Practice" and, following a meeting with representatives of the New York State Chapter of the Academy of General Practice, agreed that the development of increased standards for qualification warrant a specialty designation. It was suggested that the designation "FP" would be appropriate. This recommendation was presented to the Council of the State Medical Society. . . . Your reference committee . . . feels that encouragement should be given to the new family practice specialty by according them a specialty rating.

This was referred to the Committee on Workmen's Compensation.

The House also amended and adopted resolution 71-40, requesting that the Council immediately notify the chairman of the Workmen's Compensation Board . . . that the Medical Society of the State of New York endorses the establishment of a separate Workmen's Compensation specialty rating, as well as appropriate new code letters, for the specialty of family practice.

This, too, was referred to the Committee on Workmen's Compensation. The committee reported in May that it wished to make this request and also to request an increase of fees of family practitioners for first home visits and first office visits. The committee also reported that the Advisory Committee to the chairman of the Workmen's Compensation Board had voted not to approve this request because they could not see anything in the field of Family Practice that was specifically applicable to the treatment of workmen's compensation cases. The annual report of the Workmen's Compensation Committee states that the request was formally denied on October 14, 1971.

Current Procedural Terminology (page 1386). The House adopted resolution 71-41, approving the use of the current and all subsequent editions of the 1970 American Medical Association's Current Procedural Terminology, urging all prepayment plans and insurance companies in New York State to adapt their records to the five-digit Current Procedural Terminology, and urging that this five-digit system be adopted and used by all physicians and third-party agents. This was referred to the Committee on Economics.

The committee reported to the Council that it recommended the use of the AMA Current Procedural Terminology. Its annual report states:

> This was acted on. With particular reference to the Relative Value Scale Study, the American Medical Association five-digit code, current procedural terminology, has been used.

Information has been supplied orally by the director of the Division of Medical Services that the current procedural terminology is being used by all carriers.

Automated Laboratory Test Batteries (page 1386). The House amended and adopted resolution 71-45, deploring and condemning any method of charging for multichannel laboratory determinations which fails to transmit the economic advantages of automation to the patient. This was referred to the Committee on Economics.

The committee's report in May to the Council stated that it deplored and condemned this. The Council agreed that this required no further action.

Usual, Customary, and Reasonable Fee Concept (page 1387). The House adopted resolution 71-48, that this Society actively support efforts to achieve usual, customary, and reasonable fee programs and participate in efforts to overcome obstacles that prevent the achievement of this goal.

This was referred to the Policy and Negotiating Committee on Government Supported Health Plans.

Diagnostic Blue Cross Insurance Benefits: Prehospitalization (page 1387). The House adopted resolution 71-57, directing that the Society urge the Superintendent of Insurance to disallow the new benefits recently proposed by Associated Hospital Service which would provide coverage for preadmission testing under Blue Cross contracts and to reject that portion of the premium increase requested that relates to such testing. The resolution also directs that a copy be sent to the Coordinating Council of the First District Branch, to the Governor, and to each member of the State Legislature.

This was referred to the Committee on Economics.

Workmen's Compensation Hearings (page 1387). The House adopted resolution 71-60, providing that the Society urge the Workmen's Compensation Board to keep hearings involving the appearance of physicians to an absolute minimum and request the chairman of the Workmen's Compensation Board to set a fee of no less than $100 for physicians' attendance at hearings.

This was referred to the Committee on Workmen's Compensation. The committee's annual report states that the Advisory Committee to the Workmen's Compensation Board agreed that a recommendation would be made that the request for hearings involving the appearance of physicians to be kept to a minimum be brought to the attention of the supervising referee with a request that he pursue the matter with all the referees. The report also states that the Advisory Committee postponed action on the question of a fee for physicians' attendance at hearings with the understanding that this would be made a part of the ongoing fee schedule negotiations.

Foundations for Medical Care (pages 1387 and 1388). The House adopted a substitute for resolutions 71-61 and 71-65, providing that this Society give encouragement and direction to the State's various subdivisions to create and expand the foundation concept and help influence its total impact. The substitute resolution also provides that guidelines for the construction and incorporation of such foundations be created and distributed to all component county medical societies.

This was referred to the Committee on Foundations.

The committee reported in May that it was in the process of forming an Institute to be incorporated for the purpose of developing compatible systems of data accumulation and recording for the use of organizations engaged in the delivery of health care in New York State and to operate a center to process those data by advanced electronic methods, acting in cooperation with foundations and other health-care organizations in the development of peer review parameters. The report stated that prepared material would be made available to foundations on a local level on request, and that a kit would be assembled to be distributed to organizations seeking guidance and direction in establishing their own foundations.

Diagnostic Work-Ups: Out of Hospital Preadmission Testing (page 1388). The House adopted resolution 71-71, providing that (1) this Society call on hospitals to accept "out-of-hospital" properly qualified diagnostic reports of a pretesting hospital admission program, (2) negotiations be carried out with a view to establishing standards of quality that would facilitate the acceptance of these reports, and (3) the Society urge Blue Shield plans and other insurers of medical services to increase the scope of their coverage to include preadmission testing with due regard to the avoidance of unnecessary costs of duplication.

This was referred to the Committee on Economics, the Committee on Medical Care Insurance, and the Committee on Hospital and Professional Relations.

Emergency Room Service (page 1360). The House adopted a recommendation of the Reference Committee on Standards of Medical Care, after reviewing the report of the Committee on Hospital and Professional Relations, "that the Council consider a more detailed, in-depth study for action in this field (emergency room service) and that the appropriate recommendations be made."

The Council referred this to the Subcommittee on Emergency Room Service of the Committee on Hospital and Professional Relations for study. The chairman of the Committee on Hospital and Professional Relations was so informed.

Allied Health Personnel (page 1363). The House adopted a reference committee statement that, "There is a definite need to study and define the areas under which an allied health person would perform." This was referred to the Committee on Nursing and Allied Health Professions.

Nursing Education (pages 1363 and 1370). The House adopted a reference committee report commending recommendations of the Committee on Nursing and Allied Health Professions which called for (1) scholarships for nursing students, (2) funds for diploma schools of nursing, and (3) significant, meaningful credit for diploma school graduates toward a baccalaureate degree. The chairman of the committee was informed of this action.

The House also amended and adopted resolution 71-84, "To Avert Termination of Diploma Schools of Nursing," (1) expressing disfavor toward the intent announced by the State Department of Mental Hygiene to phase out six diploma schools of nursing by refusing to accept freshmen for the fall term, (2) petitioning the Commissioner to reconsider his announced intent and to consider reopening these schools, and (3) providing that this Society take every step feasible to prevent further closing of diploma schools of nursing.

This was referred to the Committee on Nursing and Allied Health Professions.

Peer Review (page 1368). The House voted that the supplementary report of the Committee on Peer Review Mechanisms (Report 71-H, pages 1365 and 1368 of the June 1, 1971, issue of the ***New York State Journal of Medicine***) should be required reading and should be made available to the county societies to familiarize them with the importance of peer review. The House also voted that this Society should take active leadership, as soon as the law (amendment 851 to H.R. 17550) is implemented, so that county societies will have some guidelines in structuring their own peer review committees.

These actions were referred to the Committee on Peer Review Mechanisms.

The committee reported to the Council in May, giving the relationships and functions of the State Society's Peer Review Committee and the functions of county medical society or regional peer review committees. This information is included also in the committee's annual report to the House of Delegates.

Abortions: Advertising and Solicitation (page 1368). The House of Delegates amended and adopted resolution 71-26, "Abortion and the Principles of Professional Conduct," (1) reaffirming the principle that solicitation of patients . . . is unethical, (2) stating that the *Principles of Professional Conduct* do not prohibit a physician from performing an abortion . . . in accordance with good medical practice and the laws of the community but does imply that no physician shall be compelled to perform any act which violates his good medical judgment and personally-held moral principles, (3) placing the Society on record as being vehemently opposed to commercial exploitation by abortion referral services, and (4) directing that this resolution be submitted to the Judicial Council of the American Medical Association.

The House also adopted resolution 71-43, "Solicitation of Patients for Abortion, Unethical," deploring and condemning the solicitation of patients for abortion as unethical in accordance with Chapter I, Section 4 of its *Principles of Professional Conduct.*

These were referred to the Committee on Ethics. The committee has sent a copy of resolution 71-26 to the chairman of the Judicial Council of the American Medical Association. The committee's annual report records disposition of complaints and inquiries on the subject of abortion referral services in accordance with the principles adopted by the House of Delegates.

Abortions: Medical Standards (page 1369). The House adopted resolution 71-55, "Amendment of Subdivision 3, Section 125.05 of the Penal Law entitled, 'Justifiable Abortional Acts,' " (1) declaring that this procedure must be done in accordance with the highest standards of medical practice in an effort to protect the rights of the patient, and (2) reemphasizing the principle enunciated by the AMA Judicial Council that "the medical societies and also the public must cooperate to preserve and protect the highest standards of medical practice in all its aspects."

This was referred to the Committee on Ethics. The committee's annual report records disposition of complaints and inquiries in accordance with the principles adopted by the House of Delegates.

Blood and Human Tissues, Provision of: Definition; Liability (pages 1369 and 1437). The House adopted resolution 71-35, calling on the Society to take any steps necessary to secure passage by the New York State Legislature of a bill defining the provision of blood, blood products, or human tissues or organs as medical services rather than as the sale of commodities. The House also amended and adopted resolution 71-38, providing that the Society support legislation protecting physicians, hospitals, and blood banks from liability in connection with the administration of blood, its components, and products unless negligence is proved.

These were referred to the Committee on State Legislation.

The committee reports that a bill supported by the State Medical Society was enacted and signed into law by the Governor which declares various activities incident to the providing of blood to be a public health service and not the sale of a commodity (Chapter 195, Laws of 1971) and that this measure affords hospitals and physicians some protection against damage actions arising from the providing of blood.

Hospital Privileges: Objective Standards (page 1369). The House amended and adopted resolution 71-44, "Establishment of Objective Standards for Granting Hospital Privileges," endorsing the concept that all hospitals have public, objective standards, based on professional competence, for the granting of hospital privileges.

This was referred to the Committee on Hospital and Professional Relations.

Municipal Hospitals as Semiprivate Facilities (page 1370). The House adopted resolution 71-82, "'Open' Municipal Hospitals as Semiprivate Facilities," as amended by the Reference Committee on Standards of Medical Care. The resolution provides that this Society recommend that the New York City municipal hospital system adopt a policy of "open" hospitals staffed by physicians who practice in the area who may admit their patients for hospitalization as semiprivate patients when indicated, these physicians to render concurrent or total care within the limits of their training and competence. The amended resolution directs that the New York State Health Planning Commission, the Mayor's Organizational Task Force, the New York City Health and Hospitals Corporation, and other interested parties be informed of this recommendation.

This was referred to the Committee on Hospital and Professional Relations.

Medicare: Administrative Services and Reimbursement Formula (page 1287). The House of Delegates adopted a substitute resolution proposed by the Reference Committee on Medicare and Medicaid for resolutions 71-28, 71-30, 71-31, 71-32, and 71-33. The substitute resolution calls on the Medical Society of the State of New York to "express to the fiscal intermediaries and the Social Security Administration its dissatisfaction with the lack of progress in improving administrative services and its feeling that this failure has been prejudicial and has worked hardship on patients and physicians alike" and that the Society also "inform the American Medical Association and the Social Security Administration regarding the inequities in the present reimbursement formula."

This was referred to the Policy and Negotiating Committee on Government Supported Health Plans. Copies of the substitute resolution were also sent to Social Security Commissioner Robert M. Ball and to Ernest B. Howard, M.D., executive vice-president of the American Medical Association.

Commissioner Ball replied, enclosing a report from the director of the Bureau of Health Insurance in the Social Security Administration. The report states, "Some time ago, modifications were designed in the approach to limitations on fees which are reimbursable under Medicare which make the problem of release of the data on the guidelines used less acute. For these reasons, the entire issue is now being given very careful consideration."

Medicaid Program (page 1288). The Reference Committee on Medicare and Medicaid proposed two resolutions as a substitute for resolution 71-29, "Medicaid Program." The House of Delegates adopted Resolution 1 of the Reference Committee, providing that this Society again attempt to initiate a series of discussions with Medicaid administrators in the State of New York designed to strengthen the program and that the results of these efforts be made known to the members.

This was referred to the Policy and Negotiating Committee on Government Supported Health Plans.

Urban Poor: Health Care (page 1288). The Reference Committee on Medicare and Medicaid proposed two resolutions as a substitute for resolution 71-29, "Medicaid Program." The House of Delegates amended and approved resolution 2 of the Reference Committee. The amended substitute resolution requested the Council to initiate a study of practical methods of providing health care to the poor and medically indigent people in urban areas.

The Council referred this to the Committee on Research and Planning. The committee's annual report mentions the possibility of integrating an indigent population with a paying membership in the Kaiser-Permanente health plan and the experience of a prepaid, capitation, group practice plan of health care in impoverished areas of Baltimore and Boston. The report states, however, "For the forthcoming meeting of the committee, the agenda will be medical care for the urban poor."

Sterilization for Contraceptive Purposes: Payment by Medicaid (page 1289). The House amended and adopted resolution 71-72, "Payment for Contraceptive Sterilization Procedures on Medicaid Patients," directing that this Society seek the introduction of and support legislation designed to make it legal for the State of New York to pay for such procedures.

This was referred to the Committee on State Legislation.

Alcohol Detection (page 1391). The House of Delegates adopted a portion of the report of the Reference Committee on Public Health and Education emphasizing a recommendation of the Committee on Accident and Injury Prevention that determinations of the amount of alcohol in the system be made on a much broader basis and specifically on all patients admitted to hospital emergency rooms.

This was referred to the Committee on State Legislation.

Snowmobiles (page 1391). The House adopted a portion of the report of the Reference Committee on Public Health and Education which stated:

> The committee notes that snowmobiles have become a major cause of injury and concurs with the committee's request (that is, the request of the Committee on Accident and Injury Prevention) for greater legislative control.

This was referred to the Committee on Federal Legislation and to the Committee on State Legislation.

Postgraduate Academy (page 1397). The House adopted a portion of the report of the Reference Committee on Public Health and Education commending the Committee on Continuing (Postgraduate) Education for its proposal of a Statewide postgraduate educational mechanism and recommending that the House take the following actions recommended by the Postgraduate Education Committee:

1. Affirm an official position on continuing education by means of a communication to its members and all of the groups represented at the invitational meeting held on September 21, 1970;
2. Take steps (cooperatively with the other concerned educational forces) to initiate local postgraduate centers, to invite each physician to affiliate, to provide continuing education opportunities (in the broad sense), and to document individual learning acquired from a flexible variety of optional sources, emphasizing immediate clinical relevance;
3. Commit augmented Medical Society resources to continuing education to permit immediate planning for inauguration of an improved Statewide system based on postgraduate affiliation of each physician with a particular center or office and coordinated by a properly representative Statewide council or academy structure; and
4. Facilitate publication of the edited invitational meeting protocol in the ***New York State Journal of Medicine.***

At its meeting on March 25, 1971, the Council adopted a position paper proposed by the Committee on Continuing (Postgraduate) Education.

At its meeting on May 27, 1971, the Council voted, at the committee's request:

A. That President Himler invite ad hoc Statewide representatives of the medical schools, State Health Department, regional medical programs, and professional specialty societies to meet during the latter part of June, 1971, to plan a September, 1971, organizational meeting (requesting three official representatives from each of the above groups) to launch the projected new Statewide system for continuing education. The Council stipulated that "no more than 15 people be invited to the organizational meeting."

B. That detailed investigation be made about how the hospital code and the Joint Accreditation Commission might be approached to encourage establishment of learning resource centers in hospitals.

C. That the chairman of the Continuing Education Committee be requested to present a budget and specific recommendations of activities associated with this program which would require expenditure of money.

D. That the ***New York State Journal of Medicine*** be encouraged to publish the proceedings or a summary of the September invitational meeting in the earliest possible issue and, in the same issue, carry an editorial on the Society's position and plans concerning continuing education.

The committee's annual report states:

> Working toward a Statewide approach, the committee has asked the medical schools, regional medical programs, the New York State Department of Health, and the professional specialty societies to join the medical society as partners. In addition, it is planned to invite simultaneous input from national sources and liaison with the licensing authority, the New York State Department of Education.
>
> A protocol of the extemporaneous discussion (at the September, 1971, meeting) is in press . . . in the ***New York State Journal of Medicine.***

The annual report of the Commission on Public Health and Education states:

> On September 30, 1971, a meeting . . . was held . . . (at which) details of formation of a New York State Council on Continuing Education were discussed. It was felt that such a council should be set up as soon as possible, should have equal representation from the various organizations involved, and should be funded through the Empire State Medical, Scientific and Educational Foundation.

Automated Multiphasic Health Testing (page 1399). The House of Delegates adopted a portion of the report of the Reference Committee on Public Health and Education which stated:

> The reference committee wishes to emphasize that this type of testing should continue under the aegis of the medical profession and that the physician-patient confidential relationship should be maintained at all times.

This was referred to the Committee on Health Care Technology.

The committee's annual report contains guidelines for the development of acceptable multiphasic health testing programs which prescribe that the local medical profession must be involved in the planning and development of such a program, that the operation of the program must be under the supervision of a qualified physician, and that the confidentiality of the patients' data must be maintained.

Deaths: Standards for Reporting (page 1400). The House adopted a reference committee report containing the following statement:

> The reference committee was advised that emphasis should be on uniform standards of reporting of deaths to medical examiners or coroners throughout the State.

This was referred to the Committee on Forensic Medicine.

The committee's annual report states:

> Our Committee continues to be concerned with trying to improve and make more uniform the official investigation of all deaths that have medical-legal implications . . . . A questionnaire concerning this

has been sent to all county medical examiners and coroners, and to date there has been a 71 per cent return.

Physician Assistants: Development of Guidelines for Physician Employers (page 1403). The House of Delegates adopted a portion of the report of the Reference Committee on Public Health and Education "emphasizing" recommendations made to the Council in November, 1970, that an ad hoc committee be appointed to establish guidelines for physicians employing physician's assistants and to accomplish related tasks.

This was referred to the president.

Rehabilitation Services in Nursing Homes and Extended Care Facilities (page 1407). The House of Delegates adopted a portion of the report of the Reference Committee on Public Health and Education which stated:

> Your reference committee recommends continuation of the close liaison between this committee, that is, Committee on Physical Medicine and Rehabilitation, and the Committee on Aging and Nursing Homes for the purpose of working with the New York State Department of Health to revise the State Hospital Code. The suggestion that this committee meet with the Committee on Health Manpower to discuss educational programs for allied health personnel is a step in the right direction.

This was referred to the Committee on Physical Medicine and Rehabilitation and to the Committee on Health Manpower.

The annual report of the Committee on Physical Medicine and Rehabilitation states that word was received from the chairman of the Committee on Health Manpower suggesting discussion of the problems relative to that subject affecting physical medicine and rehabilitation, and that the chairmen of both committees will work toward setting up a joint meeting.

Papanicolaou Smears (page 1411). The House adopted a substitute proposed by the Reference Committee on Public Health and Education for resolution 71-16, "Broadening of State Requirement in the Use of the Papanicolaou Smear." The substitute resolution recommends that the State requirement be broadened to require Papanicolaou smears from all hospitalized female patients, where clinically indicated, and, in addition, that the two-year interval be lowered to one.

In discussion of the substitute resolution, it was pointed out that "where clinically indicated" was understood to mean "where not clinically contraindicated."

This resolution was transmitted to Commissioner Ingraham of the New York State Department of Health. Dr. Ingraham replied that during the summer months a study would be made to assess the present implementation of the regulation concerning Papanicolaou smears. He stated, "Following the study, our Bureau of Cancer Control will have recommendations to make to the State Hospital Council early in the fall."

Family Practice Department of State University of New York Downstate Medical Center (page 1411 and 1412). The House adopted resolution 71-18, "Establishment of a Valid Family Practice Department at the Downstate Medical School," as amended by the Reference Committee on Public Health and Education. The amended resolution places this Society on record as urging Downstate Medical Center to comply with the Conklin-Cook Law to set up a Family Practice Department and provides that the Society so notify the Downstate Medical Center and request that they accomplish this task during the present school year.

This action was reported to Dr. Chandler McC. Brooks, acting president and dean of the State University of New York Downstate Medical Center.

Continuing Education Programs: Teachers as Locum Tenens (page 1412). The House referred resolution 71-19, "Academicians in Continuing Education Programs to Relieve Community Physicians While They Meet Postgraduate Study Requirements," to the Committee on Continuing (Postgraduate) Education "by way of the Council." The resolution provided that teachers in the continuing postgraduate education of physicians serve as locum tenens to relieve community physicians while they are meeting postgraduate study requirements.

The action of the House was reported to the Council in March. The Council discussed the matter and refrained from taking any action.

Student American Medical Association: Medical Education Community Orientation (page 1413). The House adopted resolution 71-70, "Approval and Support of Student American Medical Association—Medical Education Community Orientation." The resolution provided that the Society endorse and strongly support this program and so inform the deans of all medical schools in the State, stressing the importance of this program as it would relate to the distribution of physicians in the nonmetropolitan areas.

The Special Committee to Study the Participation of Medical Students in the Medical Society of the State of New York has been in touch with SAMA officers involved in the Medical Education Community Orientation program and has asked for plans for initiating such a program in this State in the summer of 1972. The chairman of the Special Committee has written to the deans of the medical schools in New York State enclosing copies of resolution 71-70, lists of SAMA officers in each school, a description of the project, a pamphlet on the subject published by the Student American Medical Association, and a reprint of an article in the April, 1971, issue of the *Journal of the American Hospital Association*, by Mr. Bruce Fagel, director and founder of the project.

The Special Committee's annual report states:

> Your committee has worked with national, regional, and local SAMA representatives to develop this project for the summer of 1972, and we have had excellent cooperation from the Hospital Association of New York State and the New York State Academy of Family Practice.

Hospitals: Acute Care Beds in Oneida County (page 1413). The House referred resolution 71-73, "Acute Care Hospital Beds in Oneida County," by way of the Council to the Committee on Mental Hygiene for study. The resolution, if adopted, would provide that this Society suggest to the Governor and the Commissioner of Mental Hygiene that consideration be given to the utilization of empty State hospital beds for the custodial care of certain patients who no longer require hospitalization in the regional acute-care institutions.

At its meeting on March 25, the Council referred this to the Committee on Mental Health. The committee reported its recommendation "that first priority be given to the treatment of the drug addict" instead of allocating empty beds in State hospitals for use by the elderly.

Cancer Quackery (page 1413). The House of Delegates adopted resolution 71-74, "Quackery," providing that (1) the Legislation Committee join with the Committee on Cancer and the New York State Health Department in drafting legislation to protect unsuspecting cancer victims from the purveyors of worthless methods of treatment; (2) professional education articles concerning unproved methods be published in the ***New York State Journal of Medicine;*** and (3) county and local societies be encouraged to expose to the public the worthless methods of cancer therapy that are being carried out or being offered to the people of their community.

This was referred to the Committee on State Legislation.

The annual report of the Cancer Committee states:

> It is our hope that next year our Legislature will see fit to enact a law equal to the California law. A copy of a model Cancer Remedy Act as well as a report . . . concerning ten years' experience with the California law were presented (to the Commission on Public Health and Education) for information. The committee seeks the help of all members of this Commission in securing the presentation and passage of this legislation.
>
> A memorandum has been sent to the presidents and the chairmen of cancer committees of county medical societies requesting that they bring this film "Journey into Darkness," to the attention of the members of their societies . . . . A list of divisions of the American Cancer Society where this film may be procured (with addresses and telephone numbers) has also been sent to each county.

Cancer of the Colon and Rectum (page 1414). The Reference Committee on Public Health and Education proposed and the House adopted a substitute for resolution 71-75, "Colon and Rectal Cancer." The substitute resolution provides that this Society (1) encourage and advise its members to adopt routine testing for occult blood in the stool, rectal examination, and sigmoidoscopy, when indicated, on all patients as a method of screening in the office and in the hospital, and (2) use the medium of the ***New York State Journal of Medicine*** to educate its members concerning the merits of such screening.

This was referred to the Committee on Cancer and to the editor of the ***New York State Journal of Medicine.***

The annual report of the Commission on Public Health and Education states that the Cancer Committee has "sponsored a letter to all physicians in the State from the Commissioner of Health and the president of the Medical Society urging physicians to take advantage of the diagnostic value for cancer of the gastrointestinal tract of occult blood in the stool."

Research, Basic, and Applied: Funding (page 1414). The House adopted resolution 71-76, "Support of Continued Funding for Basic and Applied Research," providing (1) that the Society reaffirm its interest in promoting research and the further advancement of medical knowledge; (2) that the Society join in the efforts of other organizations toward the restitution and maintenance of budget funds for research; (3) that a similar resolution be introduced at the next meeting of the American Medical Association's House of Delegates; and (4) that a copy of our resolution be forwarded to the Secretary of the U.S. Department of Health, Education, and Welfare and to such other individuals, organizations, and agencies as, in the judgment of the Council and the president of the Society, can be helpful in achieving the objectives of the resolution.

This was referred to the chairman of the Committee on Federal Legislation, the chairman of the New York Delegation to the American Medical Association, and the Honorable Elliot L. Richardson, Secretary of the Department of Health, Education, and Welfare. On behalf of Secretary Richardson, Mr. Storm Whaley, associate director for Communications of the Department of Health, Education, and Welfare, replied, stating, "There are many signs of increased interest in health-related research. The President's recent health message stressed its value in the words, 'We must reaffirm—and expand—the Federal commitment to biomedical research. Our approach to research support should be balanced—with strong efforts in a variety of fields.' There are a number of bills before the present Congress calling for a greatly expanded program of research in the cancer field. We feel that this focus will result in a broader concern for the entire spectrum of the research effort."

Our resolution 71-76 was presented at the AMA House of Delegates under the designation 8-A71. The AMA House of Delegates adopted the resolution after inserting the word "clinical" between the words "applied" and "research."

The annual report of the Committee on Federal Legislation states that the Committee decided to take no action on this resolution since it was to be introduced in the American Medical Association House of Delegates.

Heart Rehabilitation Center (page 1415). The Reference Committee on Public Health and Education proposed a substitute for resolution 71-85, "Use of Facilities of State Tuberculosis Hospital at Raybrook as Heart Rehabilitation Center." The "resolved" portion of the substitute resolution is as follows:

> *Resolved,* That the Medical Society of the State of New York support in principle the establishment of a pilot program of a heart rehabilitation center in conjunction with State tuberculosis hospitals, which facilities are to be separate in jurisdiction but to have access to the joint services of custodial, purchasing, professional, and laboratory facilities.

The House of Delegates referred this to the Council. At its meeting on March 25, the Council voted to adopt the resolution. This was referred to Commissioner Ingraham of the State Health Department.

Bills to amend the Public Health Law to create a New York State heart reconditioning center in the State Health Department were introduced in the Senate and the Assembly but died in committee.

Journal:* Solicitation of Students' Papers (page 1276).** The House of Delegates adopted a recommendation of the Reference Committee on Scientific Activities and Publications that "although the ***Journal currently receives far more manuscripts than can be published, the editorial board solicit suitable scientific articles from medical students and encourage the submission of their prize-winning essays and other competitive scientific manuscripts."

This was referred to the editor of the ***New York State Journal of Medicine.***

What Goes On: Expansion (page 1276). The House adopted a portion of the report of the Reference Committee on Scientific Activities and Publications which stated:

> *What Goes On* continues to be a useful supplement to the ***Journal.*** Your committee believes that this section should be expanded as a practical method of announcing programs for 'Continuing Medical Education.' Undoubtedly many hospitals conducting 'Teaching Days,' important lectures, and similar programs should utilize *What Goes On.* Your reference committee suggests that the medical schools and teaching hospitals be reminded of this opportunity to publicize their programs.

This was referred to the editor of the ***New York State Journal of Medicine*** and to the editor of *What Goes On.*

The executive vice-president reports, regarding *What Goes On*:

> During the period since our last annual report, October 1, 1970, to October 1, 1971, 1,275 announcements were published. These announcements were sent to the editor's office by all of the medical schools in the State, more than 75 hospitals, about 120 nonprofit specialty societies and allied groups, including foundations, academies of medicine and science, as well as chapters of the American Academy of General Practice. Four special notices were published; three inviting deans of medical schools and administrators of hospitals to send in notices for publication of postgraduate courses and important lectures. The other notice was about preceptorships in Buffalo.

Archives (page 1277). The House adopted a portion of the reference committee report which stated:

> The county societies again are requested to forward suitable material for repository at the Olin Library, Cornell University, at Ithaca. Any material so deposited is available on request of the president or executive vice-president within twenty-four hours after receiving the request.

This was referred to the Committee on Archives.

Scientific Exhibits on Basic Research of Clinical Interest (page 1279). The House of Delegates adopted a portion of the report of the Reference Committee on Scientific Activities and Publications which suggested that the Convention Committee "actively solicit more exhibits on basic research, particularly those of clinical interest, from the National Institutes of Health, the Rockefeller University, and the various medical schools in the State of New York."

This was referred to the Convention Committee.

Annual Meeting Date (page 1279). The House adopted a portion of the report of the Reference Committee on Scientific Activities and Publications which stated:

> Your reference committee notes the increased attendance at the scientific meetings on Sunday and Monday, perhaps coincidental to the holiday weekend. Your committee appreciates that arrangements have been made for three years in advance, but it is hoped that in the future the convention date of the Medical Society of the State of New York will coincide with the holiday weekend.

This was referred to the director of the business division.

Physicians' Placement: Young Physicians (page 1280). The House adopted a portion of the reference committee report which stated:

> During the past year between 400 and 500 inquiries were received by the Physicians' Placement Bureau. Your committee notes that there are many areas within the State of New York that are in dire need of the services of a physician. We urge that increased efforts be made to attract young physicians to these areas, either through the Placement Bureau or by other means.

This was referred to the Committee to Study the Participation of Medical Students in the Medical Society of the State of New York, the Physicians' Placement Bureau, and the Division of Scientific Activities.

County Medical Societies: Visits from Council Members (page 1284). The Reference Committee on Scientific Activities and Publications presented a report containing the following statement:

> In reviewing the relationship between the district branches, the State Medical Society, and the county medical societies, we note that the president of the district branch is mandated to visit each of its component county medical societies. While your reference committee appreciates the difficulties that may be entailed in complying with this duty, we urge that this be done. Furthermore, to improve communication between the Council and the county medical societies, we believe that the councilor of each district should be similarly mandated to visit each component county medical society.

The House of Delegates referred this to the Council. The Council voted to change the wording in the recommendation from "mandated" to "urged" and adopted a suggestion that a letter be sent to each county medical society informing them that councilors are available to visit if they are so requested.

This information was transmitted to the secretaries and executive secretaries of the county medical societies on May 20, 1971, with the further information that a list of members of the Council appears in each issue of the ***New York State Journal of Medicine.***

The President reported to the Council in September that Dr. Callin, Dr. Collins, and Dr. Eberle had reported to their county societies and district branches as Councilors, and that their reports had been well received. He expressed the hope that other Councilors would do the same thing.

Occupational Medicine Section (page 1284). The House adopted resolution 71-47, changing the name of the Section of Industrial Medicine and Surgery to "Section on Occupational Medicine."

This was referred to the Convention Committee.

Physician's Assistant: Status and Clinical Laboratory Services: Billing (page 1425). The House of Delegates adopted a portion of the report of the Reference Committee on Public and Professional Affairs which recommended that, when the bills became available and were accepted by the Council, the members of the House study and support (1) a bill on the status of the physician's assistant proposed jointly by the Committee on State Legislation and the Committee on Health Manpower, and (2) a bill to amend the General Business Law with regard to billing for clinical laboratory services being drafted by the State Legislation Committee. Summaries of both bills were included in the State Legislation Committee's March report to the Council, with the information that both had been introduced in the Legislature.

The State Legislation Committee reports (1) that nine proposals providing for physician's assistants, including one sponsored by the Medical Society of the State of New York, were introduced into the State Legislature and that the Governor's bill on the subject, which was in general acceptable to the State Medical Society, was the measure finally signed into law, including a chapter vehemently opposed by the State Society; (2) "The so-called clinical laboratory bill (S. 4767—A, Hudson) which would have restored the physician's right to bill a patient for laboratory services performed in his behalf was reported out of committee in the Senate but died on the calendar of that House."

Legislators: Liaison Physicians (page 1425). The House voted to urge the representatives of each of the county societies to be certain that the names of liaison physicians, selected to contact State assemblymen, State senators, and members of Congress, be supplied to the State Medical Society.

The State Legislation Committee sent a memorandum on this subject on April 12, 1971, to county medical society presidents.

Education Law Revision (pages 1427 and 1428). The House adopted a portion of the report of the Reference Committee on Public and Professional Affairs approving the five provisions agreed to be sought in a revision of the Education Law, listed in supplementary report 71-R (page 1427 of the June 1, 1971, issue of the ***New York State Journal of Medicine***) and suggesting that the phrase "or preventing" be attempted to be inserted in the definition of the practice of medicine. These points of agreement had been approved by the Council at its meeting in January, 1971. The House then adopted the following statement by the reference committee.

> In testimony before the reference committee it was reported that, in order to obtain approval of a law incorporating these ideas, it was also necessary to include a proviso for the definition of the activities of clinical psychologists, marriage counsellors, pastoral counsellors, and psychiatric social workers. This proviso was unacceptable to certain members of the Society who appeared before the reference committee. We feel that this difference of opinion should be referred to the Council for resolution.

This was discussed at the Council meeting on March 25 and was referred to the Committee on Education Law Revision.

The committee reported to the Council in May that this difference of opinion appeared to be incapable of solution.

New York State Medical Assistants Association (page 1428). The House approved the following recommendations of the Advisory Committee to the New York State Medical Assistants Association: (1) that the Society continue to urge its members to advise their medical assistants to join and participate in the activities of the New York State Medical Assistants Association; (2) that the Society urge its assistants to form groups if there are none in the area; (3) that the Society urge its members to pay all or part of the medical assistants' dues in this organization; and (4) that the Society continue to provide communication facilities for the New York State Medical Assistants Association as heretofore.

This was referred to the director of the Division of Public Affairs and to the editor of the *News of New York*.

Yellow Pages (page 1429). The House adopted a recommendation of the Reference Committee on Public and Professional Affairs "that this unsolved problem be referred to the Council," urging that the Council take "a strong, affirmative approach to the solution of the problem."

At its meeting on March 25, the Council took no action but noted that the Attorney General was looking into this question.

Abortion Law (pages 1430, 1431, and 1432). On recommendation of the Reference Committee on Public and Professional Affairs, the House of Delegates reaffirmed the guidelines and the caution which were approved by the Council in May, 1970, (see pages 1429 and 1430 of the ***New York State Journal of Medicine*** for June 1, 1971). The House adopted a reference committee recommendation amended to read:

> Your reference committee recommends that at this time no basic changes in the abortion law be proposed with the exception of the time of pregnancy within which this procedure may be performed in this respect: "The Medical Society of the State of New York recommends that the performance of abortions be limited to the first twenty (20) weeks of gestation except for those patients where an abortion beyond the twentieth week of gestation is necessary to protect the life or health of the mother."

The House also voted to amend resolution 71-80, "Amendment of the Abortion Law," so that the *Resolved* portion reads:

> *Resolved*, That the Medical Society of the State of New York go on record that, if the abortion laws are to be amended or if the advice of the Medical Society of the State of New York is sought, it favors amendments to the abortion law to (1) limit the term of pregnancy during which a patient may be aborted to twenty weeks; and (2) require that abortions be performed only in approved hospitals or clinics or in public health department approved facilities and prohibit abortions in physicians' offices under any circumstances; and be it further
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> *Resolved*, That the Medical Society of the State of New York recommend that there be no residence requirement, since no other medical or surgical procedure is subject to such a requirement.

This was referred to the Committee on Abortions.

The annual report of the Committee on Maternal and Child Welfare states that the chairman testified before the Senate Committee on Health at an executive session on possible health problems presented by the current abortion law.

Mood-Changing and Analgesic Drugs: Advertise-

ments (pages 1432 and 1433). The House of Delegates amended and adopted resolution 71-1, "Advertisements in Mass Media on Mood-Changing and Analgesic Drugs," condemning the advertising practice which suggests that drugs are necessary in meeting the demands of life; directing that a resolution be introduced in the American Medical Association's House of Delegates that the American Medical Association undertake a study of and institute a program regarding the banning of advertisements in the mass media which promote the use of mood-changing and analgesic drugs. This was referred to the chairman of the New York delegation to the American Medical Association.

The American Medical Association House of Delegates adopted a substitute for resolution 7 (A-71) expanding the provisions of resolution 71-1 and making them more specific.

Telephone Narcotic Orders (page 1433). The House adopted resolution 71-2 as amended by the Reference Committee on Public and Professional Affairs. The resolution provides that the Society "take all necessary steps to secure the enactment of Federal and State legislation or the modification of Federal and State regulations to permit the administration of narcotic drugs in hospitals holding a valid operating certificate on the telephone order of the attending physician to the nursing supervisor."

This was referred to the Committee on State Legislation and to the Committee on Federal Legislation.

The annual report of the Committee on Federal Legislation states:

> Committee voted that the chairman send a letter to the Director, Division of Narcotics, U.S. Department of Justice, Washington, D.C., concerning this resolution, with copies to be sent to New York State Congressmen. No definite response has yet been received.

Drug Addiction: Treatment (pages 1433 and 1434). The House adopted a substitute for resolution 71-2, "Repeal of Public Health Laws Requiring Reporting of Drug Addiction," and resolution 71-4, "Treatment of Drug Addiction." The substitute resolution provides that the Society adopt the following principles and take all steps necessary to assure their implementation by appropriate State and Federal authorities: (1) that physicians be encouraged to accept the treatment of persons with drug addiction or drug dependence as a proper medical function in their private offices, in groups, or in clinics; (2) that any licensed physician may affiliate with a recognized narcotics treatment center; and (3) that the office of a physician so affiliated be regarded as a satellite center for the care and treatment of drug-dependent persons.

This was referred to the Committee on State Legislation, the Committee on Federal Legislation, and the Committee on Alcoholism and Drug Abuse.

The annual report of the Committee on Alcoholism and Drug Abuse noted this action of the House of Delegates and "the urgent need for administering narcotics to patients on an ambulatory basis and attempting to detoxify them under similar conditions."

The annual report of the Committee on Federal Legislation states that no action was taken on this resolution because it was under consideration by the Committee on Alcoholism and Drug Abuse and by the Committee on State Legislation. The resolution is not mentioned in the annual report of the Committee on State Legislation. Supplementary reports may be received from these committees.

Peer Review Committee Members: Immunity (page 1434). The House of Delegates adopted resolution 71-5, "Peer Review Immunity," after the *Resolved* portion had been amended by the Reference Committee on Public and Professional Affairs to read:

> *Resolved,* That the Medical Society of the State of New York seek the introduction of and actively support legislation in the New York State Legislature to provide the following: No physician who serves as a member of a peer review committee shall be liable in damages to any person for any action taken or recommendation made by him within the scope of his function as a member of such committee, nor shall any physician be liable in damages to any person because of action taken in response to the recommendation of such committee if such action was taken or such recommendation was made without malice and in the reasonable belief that such action or recommendation is warranted by the facts known to him after reasonable effort by him to ascertain the facts on which such action is taken or such recommendation is made.

This was referred to the Committee on State Legislation. The committee's annual report states that bills initiated and supported by the Medical Society of the State of New York for this purpose were passed by the Legislature and signed into law.

Contract Laboratories: Billing (pages 1434 and 1435). The House adopted resolution 71-6, "Contract Laboratories," after amending it to read:

> *Resolved,* That the Medical Society of the State of New York work to amend Section 394-D of the General Business Law to read:
>
> "It shall be unlawful for any physician, osteopath, dentist, or podiatrist, or purveyor of clinical laboratory services to bill or receive payment, reimbursement, compensation, or fees on account of clinical laboratory services unless the person or purveyor to whom the bill has been or will be rendered or from whom payment is received is furnished with an itemized statement at or before the time of billing or at or before the time of receipt of payment, which statement shall indicate the charge for clinical laboratory services and that portion of the charge allocable to the person or purveyor performing such services in whole or in part"; and be it further
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> *Resolved,* That the savings thus effected be passed on to the patient in the form of appropriate charges.

At the March, 1971, Council meeting, the chairman of the Committee on State Legislation reported that a bill, S. 4767 (Hudson), to amend Section 394-D of the General Business Law in this manner had been introduced in the legislature. The committee's annual report states that this bill was reported out of committee in the Senate but died on the calendar of that House.

Universal Health Insurance: Reimbursement for Anesthesia Services (page 1435). The House adopted resolution 71-7, "Universal Health Insurance," providing that the Society take all measures possible to ensure that any universal health insurance legislation enacted in New York State include anesthesia services as professional services with provision for reimbursement on the basis of the New York State Society of Anesthesiologists' Relative Value Scale.

This was referred to the Committee on State Legislation and to the Policy and Negotiating Committee on Government Supported Health Plans.

Physicians: Limitations of Authority, Judgments, and Legal Responsibility (page 1435). The House adopted resolution 71-8, "Opposition to Legislation and Regulations which deprive attending Physicians of their Proper Authority," disapproving legislation, regulations, and administrative decrees, including the requirement of prior authorization for hospitalization, as they deprive attending physicians of their proper authority in the care of their patients and directing that the Society unequivocally reject such legislation, regulations, and decrees unless they simultaneously relieve attending physicians of legal responsibility for the untoward results of interference with the prompt effectuation of the procedures and hospitalizations they deem necessary.

This was referred to the Committee on State Legislation and to the Policy and Negotiation Committee on Government Supported Health Plans.

Social Security: Qualifying Dates (page 1436). The House adopted resolution 71-10, "Amendment to Social Security Act to Change Qualifying Dates," providing that the Society, through the New York delegation, urge the American Medical Association to reaffirm resolution 45 of its 1966 annual meeting, "Amendment to the Social Security Act to Change Qualifying Dates," and to instruct the agency to which implementation of this resolution is directed to assign this matter a top priority category and work for a date five or less years prior to the effective date of the amended Act, 1962, as equitable for counting the quarters and average monthly earnings for physicians.

This was referred to the New York delegation to the American Medical Association. It was introduced in the American Medical Association's House of Delegates as resolution 9 (A-71) and was adopted, with an added provision that the American Medical Association's House of Delegates be informed at the November, 1971, session of the actions that have been taken to implement the resolution.

Nursing: Definition (page 1437). The House amended and adopted a substitute for resolution 71-36, "Opposition to Change in the Definition of Nursing in Education Law," and resolution 71-83, "Proposed Amendment to Article 139, Title VIII, of the State Education Law (Section 6901), Senate Int. 1918; Assembly Int. 2065." The resolved portion of the substitute resolution as amended and adopted reads:

> *Resolved,* That the Medical Society of the State of New York, through its appropriate committees and personnel, actively oppose the adoption of legislation which will change the definition of the practice of nursing to be diagnosis and treatment of human responses to actual or potential health problems and which will remove the supervision of practical nursing from licensed physicians and dentists, and specifically oppose the adoption of Senate Int. 1918 and Assembly Int. 2065.

This was referred to the Committee on State Legislation and to the Committee on Revision of the Education Law.

The State Legislation Committee's annual report describes the Society's opposition to the 1971 bills for redefinition of the practice of nursing and includes the information that they were vetoed by the Governor.

Pornography and Obscenity (page 1437). The House adopted resolution 71-37, "Opposition to Public Display of Smut, Obscenities, and Pornography." The resolution calls on the Medical Society of the State of New York to condemn and deplore the public display of smut, obscenities, and pornography in all forms; to denounce the use of the United States mails for distribution of unwanted, unsolicited filth; and to advise the responsible leaders of our country, State, and city to that effect.

Copies of the resolution were sent to President Nixon, Postmaster General Blount, Governor Rockefeller, and Mayor Lindsay. A reply was received from the Mayor stating, "I have distributed copies to appropriate City officials for their study and information. I very much appreciate your taking the time to write me on this most important subject." Mr. T. N. Hurd acknowledged receipt of the resolution on behalf of the Governor.

Medical Research (pages 1438 and 1439). The House adopted resolution 71-58, "Scientific Research," calling on the Society to oppose Assembly Bill 1837 and all similar bills because they prevent the progress of medical research for the general population. The resolution also urges the Society to notify all legislators of the shortcomings of this contemplated legislation and to inform all medical schools and research hospitals of the intent of this bill.

This was referred to the Committee on State Legislation. The committee's annual report states, "Other bills also opposed by the Medical Society of the State of New York and failing to come out of committee included one that would have established a State Board of Human Research in the Education Department (A. 1837, Stavisky)."

X-Ray Technologists: Qualifications for Licensing Examination (page 1439). The House adopted resolution 71-59, "Licensure of Service Trained X-Ray Technologists," which called on the Society to seek modification of the regulations to permit evaluation of training and experience gained in the military service, grant credit where training is deemed adequate, and facilitate supplementary training where necessary. The resolution also directed that a copy be sent to the director of the Bureau of X-Ray Technology of the New York State Department of Health.

A copy of the resolution was sent to Mr. Harold L. Goldman, director of the Bureau of X-Ray Technology. The resolution was also referred to the Committee on Health Manpower and to the Committee on Nursing and Allied Health Professions.

Mr. Goldman replied that, under a provision of the existing law, applicants who had attended one of the recognized service schools and who had a total of at least two years of this training and supplementary clinical experience acquired while in the service had been admitted to the examination and that the Bureau had proposed an amendment to the law which would enable persons having x-ray technology experience acquired in the service to petition the X-Ray Technician Board of Examiners for acceptance of their qualifications under more lenient standards. Mr. Goldman also described the Bureau's attempts to provide supplementary training which is less than a full two-year course.

The annual report of the Committee on Health Manpower states, "This problem had already been solved by the Department of Health."

Legal Intoxication: Blood Alcohol Level (page 1439). After defeating the recommendation of the Reference Committee on Public and Professional Affairs that resolution 71-87, "Revision of Laboratory Criteria to Establish 'Legal Intoxication.'" be referred to the Committee on Accident and Injury Prevention, the House of Delegates referred the resolution to the Council "for verification of the criteria" quoted. The *Resolved* portion of the resolution read:

> *Resolved*, That the Medical Society of the State of New York go on record to support the New York State Traffic Safety Council in its efforts to have our State legislators change the law to lower the required blood alcohol level from the present 0.15 mg. to 0.1 mg. per milliter as proof of driving while intoxicated.

At its meeting on March 25, the Council voted to defer action on this referral until it considered the report of the Committee on Accident and Injury Prevention which was presented at the same meeting. The committee's report to the Council contained no specific reference to resolution 71-87 but did contain the following statement:

> The Medical Advisory Board (to the State Department of Motor Vehicles) recommended that the statutory blood, urine, and breath test levels be reduced 0.10 for legal intoxication and 0.07 for legal impairment. The committee strongly concurs in these recommendations. A letter will be written to the MSSNY legislative committee with copies to the Commissioner of Motor vehicles.

The Council voted approval.

This information was transmitted to the chairman of the Committee on Accident and Injury Prevention.

The committee's annual report repeats the information presented to the Council in March and records the Council's approval.

Nursing: Diploma School Graduates (pages 1439 and 1440). The House adopted resolution 71-88, "Baccalaureate Academic Credit to Graduates of Diploma Schools of Nursing," which provides that the Society give increasing support to and encourage legislation which will (1) give two years of credit (for the three-year program) toward the four-year bachelor's degree program, as requested in the S. 749, Flynn, and A. 1102, Suchil Bill, and (2) encourage scholarships both for the diploma-school students and for advanced students, as requested in A. 1866, Gold; S. 1650, Thaler; and S. 731, Powers Bills, which make allowances for scholarships and stipends.

This was referred to the Committee on State Legislation.

Professional Medical Liability Insurance (pages 1354 and 1355). The House referred to the Council a substitute proposed by the Reference Committee on Organization, Policies, and Legal Matters for resolutions 71-23, "Professional Medical Liability Insurance"; 71-25, "Abolition of Contingency Fees"; 71-42, "Increases in Professional Medical Liability Insurance Premiums and Limiting of Awards"; and 71-49, "Professional Medical Liability Insurance." The substitute resolution calls for establishment of a special committee to study the advisability and feasibility of establishing an institute either within or outside the Medical Society, composed of physicians, attorneys, representatives of the insurance industry and hospitals, and other appropriate personnel, voluntary and compensated, from the Medical Society and the public. The functions of the institute would be study, action, and communication regarding many facets of the question of professional medical liability.

At its meeting on March 25, the Council voted to take no action "since investigation is being done in many areas."

At its September meeting, the Council approved the appointment of an ad hoc committee to study the problems of professional medical liability insurance. The ad hoc committee will submit a report to the House of Delegates.

Student Membership Category and Student Participation at House of Delegates Meeting (pages 1355 and 1356). The House approved resolution 71-24, "Student Membership in the Medical Society of the State of New York and Its Component County Medical Societies," and referred it to the Council for implementation "with the additional recommendation that, until the Medical Society of the State of New York establishes a category of student membership, the same invitation and privileges offered this year be extended again next year and that a student representative be accorded the privilege of the floor at the 1972 meeting of the House of Delegates."

At the March Council meeting, Dr. Fineberg stated that a special category of student membership requires a revision of the Constitution and Bylaws. Noting that the Speaker can grant students the privilege of the floor, the Council took no action.

Neurology and Psychiatry Section (page 1356). On recommendation of the Reference Committee on Organization, Policies, and Legal Matters, the House of Delegates amended resolution 71-90, "Change of Name and Function of the Section on Neurology and Psychiatry to Two Separate Sections," by adding:

> *Resolved,* That this resolution be referred to the Council Committee on Constitution and Bylaws, and, if they agree that these two individual disciplines have been fulfilling the requirements of Chapter XII, Section 6 of the Constitution and Bylaws, that, at the next annual meeting, they shall have qualified to be two separate sections with individual rights.

The reference committee report adopted by the House also stated: "If the Committee on Constitution and Bylaws does not accept this premise, then the two disciplines will have to meet separately for the next two years to fill the requirements of Chapter XII, Section 6."

Since this question does not fall within the scope of the Council Committee on Constitution and Bylaws, the Council was requested to act on it.

At its March meeting, the Council voted that the section on Neurology and Psychiatry have separate sessions for two years so that they could qualify to become separate sections and that, while doing so, during the next two years, the Section on Neurology and Psychiatry be kept in order that they might retain their delegate.

At its May meeting, the Council reconsidered the matter and voted:

> That the present Section on Neurology and Psychiatry be divided, the section to be renamed 'the Section on Psychiatry' and to retain the officers and delegates;
>
> That a new Session on Neurology be established and function as such for two years. After two years, the record of the Session on Neurology is to be reviewed, and, if warranted, the session changed into a Section on Neurology.

At the same meeting, the vice-chairman of the Section on Neurology and Psychiatry was appointed chairman of the Session on Neurology.

Deadline for Resolutions (page 1356). The House adopted resolution 71-91, "Deadline for the Unrestricted Introduction of Resolutions into the House of Delegates," providing that the deadline for the unrestricted introduction of resolutions be advanced from 10:00 A.M. on the third day to 4:00 P.M. on the second day.

This was referred to the Speaker.

Government Health Centers

To the House of Delegates, Gentlemen:

The members of the Government Health Centers Subcommittee are as follows:

Leonard L. Heimoff, M.D., *Chairman*	Bronx
Carl Goldmark, Jr., M.D.	New York
John Edward Lowry, M.D.	Queens
Thomas W. Mou, M.D.	Albany

The subcommittee had no matters referred to it this year; therefore, no meetings were held.

Respectfully submitted,
Leonard L. Heimoff, M.D., Chairman

Legal Counsel

To the House of Delegates, Gentlemen:

In the spring of 1928, on my graduation from Columbia Law School, I entered the office of Lloyd Paul Stryker who was then counsel to the Medical Society of the State of New York. I was with Mr. Stryker and his successor, Lorenz J. Brosnan, for fourteen years, and shortly after the untimely death of the latter, I was appointed to the office so that this is my twenty-ninth annual report as Counsel. As an assistant in the office, I began the trial of cases; for several decades, I tried the vast majority of our upstate cases as well as many in the city. I have thus had the opportunity to meet a great number of physicians, lawyers, and judges, and I cherish the friendships that I have made. I have been blessed with the assistance of very able personnel.

Except for a brief time, when he was in the Navy in World War II, Robert J. Bell, the attorney for the Society, has been with us continuously since 1933.

I knew Harold Shapero as early as the first day I was in Mr. Stryker's office since he was a law clerk at that time prior to his admission to the bar. When Mr. Stryker resigned to concentrate on the trial of some of the greatest cases in the history of this State, Harold went with him, and a year or so before Mr. Stryker's death, and with his wholehearted approval, he came back to this office.

Bob Bell and Harold Shapero are both members of the American College of Trial Lawyers, and they are held in the highest regard by the judiciary, their fellow lawyers, and a vast number of physicians who are indebted to them for their skillfull and kindly services.

John J. DeLuca has been engaged in appellate and pretrial work with us for twenty-six years. He is the son of a distinguished former lieutenant governor of this State and carries on a great family tradition in the practice of the law.

Donald J. Fager, who manages our Syracuse office, has not only tried a host of cases throughout the State but has lectured extensively at the various campuses of the State University, to hospital groups and bar associations. He has recently been appointed one of the attorneys for the Society, and that is a distinct benefit because of the number of problems that are handled to a conclusion in the upstate office.

Anthony L. Schiavetti has been with us for eleven years and is engaged almost exclusively in the trial of cases in the Supreme Court, particularly in New York City.

Francis P. Bensel came with us six years ago from one of the large corporate firms. He is the son of a great trial lawyer, and it is a source of pride to us that he has tried so many cases successfully.

Daniel Boone, Jr., is another second-generation lawyer. He has tried cases, argued appeals, and as of recent date, has been engaged before the new tribunal system in the County of New York about which I will speak at some length later.

George van Setter came to us after graduation as a Root Tilden Scholar from the New York University School of Law and has accomplished all that one could expect of him. He has done a great deal of research, tried a number of cases, written briefs, and attended meetings of various county committees.

Walter G. Alton, Jr., started with our New York City office and then assisted Don Fager upstate for several years, during which time he tried to a successful conclusion a number of cases in the Supreme Court. He is now back in the New York City office and has continued his fine record as a trial lawyer.

A. Baisley Sheridan, who retired from the legal department of Pan American Airways, has been engaged in the preparation of and attendance at examinations before trial. Many physicians who have participated at these hearings can testify to the patience that is required to prepare for them and see that they are moved along to a conclusion. Baisley Sheridan has done particularly well at this.

Steven C. Mandell, our managing clerk before he graduated from law school and who now has been admitted to the bar, continues to supervise the detail work in the office to the great satisfaction of us all. He has attended a number of examinations before trial and tried Supreme Court and Civil Court cases. With the aid of two law school students, he prepares the schedules of our court work.

We were most fortunate to have as an assistant to Don Fager in the upstate office, John Ganotis. After graduating from Syracuse University and Duke Law School, he spent several years in general practice in Syracuse. He has just won two supreme court cases in as many counties. I just received a letter from the Medical Society of the County of Monroe thanking us for the excellent speech he gave at the indoctrination session for their new members.

Joseph Story, who was with us for several years, retired from the practice of law to join a business venture which seems to offer him an attractive future. We were pleased with his work and wish him well.

Richard Young, a graduate of Brown University and the University of Virginia Law School, came with us last year. He has conducted depositions, assisted in a number of trials, and has tried several cases on his own. He has been most helpful with the State Society problems and has assisted George Himler, M.D., president, with several time-consuming projects.

Luke Pittoni has just joined our staff. He is the son of the Hon. Mario Pittoni, a distinguished Supreme Court Justice in Nassau County. Luke attended Holy Cross College and Fordham Law School. He is awaiting admission to the Bar.

I have mentioned that the members of our staff attend the malpractice review meetings of the various county societies, the meetings of the specialty advisory committees, and the meetings of the Professional Medical Liability Insurance and Defense Board. I attend all the meetings of the Council and Board of Trustees and a number of other committee meetings at the State Medical Society.

This year the problems associated with our new headquarters building at Lake Success have been time consuming. They were quite complex, and it is just a delight to see that, as I am writing this report, the Medical Society will be in its new building.

Each senior member of our office speaks at a number of meetings at hospitals, law schools, legal and medical forums, and others. To illustrate the range of these activities, I will mention those at which I appeared. As a member of the Joint Committee of the American Bar Association to cooperate with the American Medical Association, I was at several meetings over the last year, each of which entailed a weekend in Chicago where we arranged for the biennial symposium on medicolegal matters which was held at the Americana of New York on March 18, 19, and 20, 1971, and at which I moderated the panel discussion on malpractice. I spoke at a symposium on medicolegal matters at the annual meeting of the American Medical Association in Atlantic City. At the time of the American Bar Association meeting in London, I attended a meeting of the British Medical Protective Society and had an interesting exchange of experiences with some of the most distinguished physicians in the British Empire. I spoke on physician and hospital liability to the International Association of Insurance Counsel at the Shoreham Hotel, in Washington, D.C. I discussed medicolegal problems at a Columbia University symposium at Harlem Hospital; spoke at the annual banquet of the Marathon County Medical Society in Wausau, Wisconsin, which was attended by physicians from northern Wisconsin and western Michigan; addressed the members at the annual dinner of the Niagara County Medical Society; attended an all-day meeting in Albany of Senator Tarky Lombardi's committee on the problems of medical malpractice; attended two meetings with the Hon. Harold A. Stevens, Presiding Justice of the Appellate Division First Department, where plans were outlined for the new tribunal that he has created to discuss malpractice cases; and addressed a symposium on malpractice at the Association of the Bar of the City of New York.

Manhattan College, my alma mater, at the June commencement, conferred on me the honorary degree of Doctor of Laws and Letters. The citation spoke of my years of service to the medical profession.

Professional Liability. The multitude of malpractice suits that have been brought against the physicians of this country present a real hazard to the profession, and this was mentioned by President Richard Nixon in his opening remarks at the annual convention of the American Medical Association, in Atlantic City, where he referred to the problem in a most sympathetic way and hoped something could be done to improve the situation. Subsequently, the U.S. Department of Health, Education, and Welfare conducted a nationwide survey on the problem of medical and hospital liability, and a commission was appointed to implement the same. Recently, *American Medical News,* one of the fine publications put out by the American Medical Association, reported that the commission has just held its first hearing in California, and that there would be a series of further sessions to be held in the Midwest, South, and New York City. A member of the commission is Mr. John E. Linster, vice-president of the Employers Insurance of Wausau, the carrier of the Society's plan. Generally, at the California hearing, physicians complained that the contingent fee system encouraged a great number of cases often with catastrophic results and with such an increase in insurance premiums that some physicians were leaving the state and others were deciding they could no longer afford to carry on their careers. In the high-risk area of neurosurgery, there was talk of some physicians paying premiums in excess of $15,000.

In the November, 1971, issue of *Fortune,* there is an article entitled "Toward the Socialization of Injury," which discussed the rather widely held belief that every person should be entitled to compensation for an untoward injury, and wherein some leaders in the plaintiff's negligence field surmise that if the "no fault" system is adopted in automobile cases, sooner or later it would be adopted in professional liability cases. Of course, that remains to be seen.

I think the following quote from this article should be of interest: "Nevertheless, the contingent fee does give lawyers a direct financial interest in the outcome of their client's case. It tends to aggravate the present liability system's inherently heavy pressures to shade the truth and exaggerate the client's injury. The prospect of big contingent fees, furthermore, often tempts lawyers to engage in solicitation of business from accident victims, a practice commonly called 'ambulance chasing.' While negligence lawyers generally insist that little of this goes on, the evidence runs otherwise. 'All of the big cases are chased,' says Melvin Belli. 'There's a hell of a lot of chasing in the United States, brutal and bad, and I think the bar associations are unctuous about it.' "

Time does not allow of our telling of all the cases that are reported around the country; however, a few cases which were printed in a recent publication put out by the plaintiff's bar speaks of verdicts in California, Washington, D.C., Louisiana, Massachusetts, New Hampshire, Indiana, Delaware, Kansas, and Pennsylvania. One of the California cases involved a failure to do a urinalysis, which would have disclosed diabetes. Although complaints indicated the presence of the disease in a twenty-nine-year-old man, it was claimed that the failure to diagnose the disease resulted in his death, and the case was settled in the sum of $250,000. In the same state a twenty-six-year-old housewife experienced cardiac arrest during the repair of a right inguinal hernia. She had an iron deficiency and a hemoglobin of 8.7 Gm. It was claimed that she was not a proper candidate for surgery, that the spinal anesthesia was given improperly, and that the resuscitation measures were ineffectual, as a result of which the plaintiff was a quadriplegic. The case was settled by the surgeon, the anesthesiologist, and the internist for a total of $400,000. The case then went to the jury, and a verdict was returned in the sum of $600,000 against the hospital and another anesthesiologist. The $400,000-settlement figure was subtracted from the verdict of $600,000. Thus the hospital was liable for $200,000, and the total net recovery against all defendants was $600,000. In the United States District Court for the Southern District of New York, there was a case involving the administration of the "pill" to a nineteen-year-old hemiplegic girl which allegedly caused a cerebrovascular accident. The case was settled for $85,000.

In Oregon there was a recent decision which spoke of the tort of "outrage," in which the Supreme Court recognized the mother's right to recover for emotional distress suffered by her as a result of the defendant-doctor's outrageous misconduct in rudely refusing to treat her baby who was injured in an automobile accident. The plaintiff, her ten-month-old daughter, and her mother-in-law were injured in an auto accident on a winter evening when the weather was severely cold. The plaintiff and her mother-in-law suffered cuts and bruises, and the baby was rendered unconscious and apparently suffered from severe shock and head injuries.

A passing motorist took the plaintiff, the baby, and her mother-in-law to the defendant's office where the defendant treated the plaintiffs in a very rude fashion from the moment they met. He insisted there was nothing wrong with any of them, including the unconscious baby (who in fact was suffering from a skull fracture), and when the defendant finally with the utmost reluctance examined the child, the defendant told the mother that there was nothing wrong and that the child's vomiting had been caused by overfeeding. Although the plaintiff was bleeding from cuts on her face and inside her mouth and the baby was visibly unconscious, the defendant insisted several times that there was nothing wrong with them and urged them to go elsewhere for treatment, to go out into the night with below-freezing weather when the baby's clothing and blanket were wet with vomit and told them to wait outside by a nearby streetlight until someone came to get them. The plaintiff was given emergency treatment at the hospital and released, and her baby spent about a week in the hospital undergoing surgery to elevate a depressed skull fracture. The court said: "Certainly a physician who is consulted in an emergency has a duty to respect (plaintiff's interest in peace of mind), at least to the extent of making a good-faith attempt to provide adequate treatment or advice. We think a jury could infer from the evidence that the defendant willfully or recklessly failed to perform that duty."

In our office we have had a number of settlements in six figures, and in one case with several codefendants the total settlement was $650,000. In other states there have been several verdicts in excess of a million dollars. There is literally no field of practice that is immune from suit by a patient. There has been much speculation about the reasons for this great increase in litigation, and over and over again there is stressed a lack of close personal relationship that used to exist between the doctor and the patient. This is most succinctly expressed in Alvin Toffler's book, "Future Shock," from which I quote the following paragraph:

> And the same trend toward time-truncated relationships is reflected in the demise of the family doctor. The late lamented family doctor, the general practitioner, did not have the refined narrow expertise of the specialist but he did, at least, have the advantage of being able to observe the same patient almost from cradle to coffin. Today the patient doesn't stay put. Instead of enjoying a long-term relationship with a single physician, he flits back and forth between a variety of specialists, changing these relationships each time he relocates to a new community. Even within any single relationship, the contacts become shorter and shorter as well. Thus the authors of "Crestwood Heights," discussing the interaction of experts and laymen, refer to "the short duration of any one exposure to each other. . . . The nature of their contact, which is in turn a function of busy, time-pressed lives on both sides, means that any message must be collapsed into a very brief communique, and that there must not be too many of these. . . ." The impact that this fragmentation and contraction of the patient-doctor relationships has on health care ought to be more seriously explored.

While I am on this general subject, it is probably well to reflect for a moment on the attitude of some plaintiff's lawyers in these cases. I have always said they sue everyone whose name appears anywhere on the hospital record. We had an instance of this recently where the name V. O. Davis appeared as a defendant on the face of the pleadings, but the plaintiff's attorney was never able to serve such a person, and well he should not have because that was taken from a note in the hospital record which said: "2 aspirin. V. O. Davis, signed Nurse A." So the only part anyone named Davis played was to give "a verbal order" for two aspirin when the treating doctor was not available.

In the September 6, 1971, issue of *American Medical News*, there is a summary of a recent California symposium wherein 3 plaintiff's lawyers "disagreed over what they admitted as a 'real point of irritation' with physicians—the 'shotgun' approach to malpractice suits. (One) said bluntly that he endeavors to 'sue everybody who might have been involved' to avoid leaving a potential legal loophole. This also increases the insurance coverage and provides a greater possibility of settlement, he said. . . . While conceding that it is easier to file a suit naming everyone who had anything to do with the medical problem, there are times when this is the wrong approach,' he concluded."

Every year I have tried to offer some advice to the doctors as to how to improve their patient-relationship and avoid the chance of a lawsuit. In a recent issue of *American Medical News*, there is a useful group of suggestions:

1. Be certain that there is a pathologic condition or symptoms that warrant surgery.
2. Be sure the consent obtained for surgery is an informed consent. This must be to the mental level of the patient.
3. Do not undertake any procedure unless you are fully qualified and competent to do it. Robert J. McNeil, M.D., a Los Angeles obstetrician and gynecologist, advocated use of "quality control sheets" to limit the surgical and medical procedures each physician is authorized to perform. This would prevent a physician from "stepping beyond the bounds of what he is really capable of doing." Dr. McNeil said.
4. If there is a problem or a doubt, be certain adequate consultation is obtained.
5. If an accident occurs during surgery, explain it carefully and fully.
6. Maintain current, accurate, and legible records. Attorney Lewis L. Fenton warned physicians not to attempt to "assist in their own defense" by changing, modifying, or adding to patient records after a claim becomes known. "There is no more certain way to ruin a potentially defensible case than to horse around with your records," he declared.
7. Discuss your fees frankly and in advance of the care.
8. In the event the patient is not compatible with your method of practice, sever the relationship as easily and as quickly as possible.
9. Do not assume that you are infallible and that your judgment is perfect, and do not assume an arrogant attitude when your procedures or ability are questioned by an unhappy or dissatisfied patient.
10. When discussing a condition with a patient that involves another physician, carry the level of the conversation as though the second physician were invisibly present and hearing all that is said.

The publications of the American Medical Association have been of great assistance to our office. Under the able leadership of Bernard Hirsch and his associate, Richard Bergen, the *Citation* periodically reviews medicolegal decisions from all over the country. Even our opponents admit it is very fairly written and most informative.

The *J.A.M.A.* has a column entitled "Medicine and Law" which correlates cases in different branches of medicolegal litigation.

I have in many of my annual reports called attention to the perils which are presented in hospital emergency rooms. This subject was discussed at length in the October 5, 1971, issue of *The Wall Street Journal*. The headline of the article reads: "*Grim Diagnosis* More Americans Turn to Emergency Rooms and Receive Poor Care—Flooded with Patients, Units in Many Hospitals are not Well-Staffed or Equipped—Best Doctors Often Absent." The point to be made is that an emergency room should be adequately staffed at all times, and the needs of the patients should be taken care of promptly. With the ever increasing use of emergency rooms by patients who do not even attempt to get a private physician as a first resort, hospitals and doctors are faced with the growing problem of how to staff them, but it is very much to the interest of all concerned that those people who come to the emergency room are handled with the same kind and skillful help that they would receive in the hands of a physician of their own selection. Typical of several of our outstanding New York City hospitals is one which has a chart in its emergency division with the names of physicians in the important specialties who are on call twenty-four hours a day to confer with the admitting doctors about the problems of a particular patient. Ofttimes, thorough examination and prompt diagnosis by a specialist may make a tremendous difference in the end result.

New York State. The Illinois case of *Cunningham* v. *MacNeal Memorial Hospital*, 266 NE2d 897, decided by the highest court of that State, caused great concern to hospitals throughout this country. It decided that when a hospital provided blood for a patient there was an implied warranty of fitness for use, and should hepatitis result, the hospital is automatically responsible. The opposite result was reached some years ago in New York State by the Court of Appeals in the case of *Pearlmutter* v. *Beth David Hospital*, 123 NE2d 792, where by a 4 to 3 vote it was held that when blood was provided, it was a service and not a sale, and no implied warranty of fitness for use existed. The New York State Hospital Association and the Medical Society of the State of New York recommended legislation to clarify the situation, and there was recently adopted Chapter 195 of the Laws of New York, which reads as follows:

> The collection, processing, storage, distribution or use of blood or a blood derivative for the purpose of diagnosis, prevention or treatment of disease or the assessment of medical condition is hereby declared to be a public health service and shall not be construed to be, and is declared not to be, a sale of such blood or blood derivative for any purpose or purposes whatsoever.

This change does not mean, however, that should a hospital and/or blood bank fail to follow the accepted practice recommended by experts at a given time that they would not be held liable on a theory of negligence.

Last year in my report I mentioned that I considered very unjust the decision in the case of *Flanagan* v. *Mt. Eden General Hospital,* 24 NYS2d 427, which held that in a foreign-body case the statutory period started to run at the time of the discovery of the foreign body. I called attention to the fact that as soon as that decision was announced a considerable number of ancient foreign body cases were commenced, in all of which the discovery occurred within three years of the date of suit, but in several of which the previous surgical procedure had been done a decade or more before the discovery. There are other states that have extended this so-called "discovery rule" to other than foreign-body cases, but this is not so in New York State as is indicated in the recent case of *Schiffman* v. *Hospital For Joint Diseases,* decided by the Appellate Division Second Department on February 2, 1971, the headnote of the case reads as follows:

> The plaintiff alleges that, in 1959, his surgeon operated upon him at the defendant hospital; during the operation, a specimen of his tissue was examined by members of its staff; they reported that the tissue indicated malignancy, and his surgeon so informed him. The slides of the biopsy upon which that report was made were reviewed in 1967, and no malignancy was revealed. On September 21, 1967, the plaintiff was told that no malignancy had existed; he claims that he did not know this fact before that date, and he could not have reasonably discovered it previously. By reason of the negligence of the defendants, the plaintiff suffered the administration of unnecessary radiation, that caused him personal injury, and he accordingly, seeks damages. In his action begun on June 10, 1969, the motion by the defendant hospital to dismiss the complaint was granted. The Appellate Division affirmed this order upon the ruling by Special Term that the action was barred by the three-year statute of limitations. The Court of Appeals has limited its modification of the general rule, that measured the running of the statute from the time the negligence occurred. That modification was phrased to apply to an action based on the negligent failure to remove a foreign object. In these cases alone, does the modified rule measure the running of the statute from the time of the discovery by the patient that the foreign objects have been left in the site of an operation. The instant claim relates to a misdiagnosis of ailment. It is extremely doubtful whether an intermediate appellate court has authority to depart further from the traditional view of the statute. Apart from that consideration, the preference for repose outweighs in this case the disadvantages to the plaintiff which result from an adherence to the general rule.

One of the statutory changes suggested by the State Society would call for a statutory period in a foreign-body case that would limit the time to three years after the date of treatment, or at the most, one year after the discovery.

On August 26, 1971, Senator Tarky Lombardi, Jr., chairman of the Senate Health Committee, called a conference on medical and hospital malpractice. He said in part:

> The purpose of this meeting is to seek solutions to this serious problem. I will first call upon the Medical Society of the State of New York, who has recently been exceedingly critical of this Legislature, to come forth with their suggestions. I sincerely hope that we can work together harmoniously not for the benefit of the doctor, or the lawyer or the insurance company, but for the welfare of the patient.

At this meeting the State Society was represented by George Himler, M.D., Henry I. Fineberg, M.D., J. Richard Burns, J.D., Martin J. Tracey, Frank Appleton, our legislative representative, Georgy Foy, and myself. Representatives of the Employers Insurance of Wausau, the plaintiff's bar, and the public participated. A number of statutory changes were offered, and one of the senators was favorably impressed by our suggestion that a bond should be posted in the sum of at least $500 by anyone bringing a malpractice action, and he said he would sponsor such a measure. We heard nothing from the Senate Committee until Senator Lombardi asked for a great deal of material from the State Society, and its insurance carrier stating in words or substance that at the hearing: "No one had come up with any constructive ideas." Our recollection is otherwise.

In New York City there has been a most interesting development which at the present time centers only in the County of New York. As a result of many conferences of the joint committee of the New York County Lawyers Association and the Medical Society of the County of New York sponsored by the Hon. Harold A. Stevens, Presiding Justice of the Appellate Division First Department, a system was worked out for the review of all malpractice cases on the ready calendar with the aim of saving time and expense to all concerned. I have a feeling that Mr. Justice Stevens, who presides over one of the busiest courts anywhere in this world, was motivated in part to initiate this project by a case that was tried for seventeen days only to result in a mistrial, and then the retrial took another sixty-one days. Since it is now on appeal, detail discussion of it would not be appropriate at this time. With a view toward relieving this situation, the following rule was issued in the First Department to apply only in New York County. I think the program is best described by a quote from the August 13, 1971, issue of the *New York Law Journal:*

> Mediation as an effective cure to the increasing burden being placed on the courts by medical malpractice actions will be tested in New York this fall under a pioneering plan of the Appellate Division, First Department, that will bring together the combined abilities of the Bench, Bar and medical profession against unnecessary trials. Describing it as the first program of its kind in the nation, Presiding Justice Harold A. Stevens of the First Department yesterday announced that the three-member mediation panels will sit in the opening of the fall term of Supreme Court, New York, in September.
>
> Presiding Justice Stevens said the panels to preside over a new special part of Supreme Court, are to consist of a justice, a lawyer and a physician.
>
> "The panels will initially hear every medical malpractice case brought in New York Supreme Court and attempt to arrive at an early amicable disposition," Presiding Justice Stevens said.
>
> "Every case brought in court against a physician or a hospital will be processed through one of the panels for an informal hearing," he said adding: "This is the first time to our knowledge that mediation has been used to assist the courts in dealing with our heavy caseloads."
>
> *Test of Mediation*
>
> The presiding justice said the cooperative effort between the courts and both professions "will also act as a pilot project for measuring the effectiveness of mediation for the disposition of other kinds of court matters."
>
> The panels are to make recommendations for the disposition of each case in an attempt to have the parties themselves reach agreement on the issues involved. The voluntary nature of the disposition will be stressed.
>
> The panels' focus in the effort to avoid unnecessary lengthy trials will be on highly technical medical matters.
>
> "To encourage (dispositions), statements made during the course of the hearings will not be admissible to any subsequent trial. The judge presiding over a panel and the phy-

sician and lawyer members of the panel would be ineligible to act as judge, witness, counsel or otherwise thereafter in the case," Presiding Justice Stevens pointed out.

Genesis of Plan

The plan was developed at a public conference sponsored last year by the Interprofessional Committee of Doctors and Lawyers in a year-long series of studies and conferences by the Appellate Division and the committee.

Interprofessional Committee members are appointed by the Presiding Justice of the Appellate Division. The committee, with half of its members from the medical profession and half the legal profession "is concerned with all problems in which each profession relates to the other," Presiding Justice Stevens said.

Operational aspects of the panels are:

Each panel will attempt to resolve one or more of the issues involved in the case. In some cases the basic issue of liability will be settled; in others there will be no settlement and some cases will have partial settlements.

The hearings will be informal and without stenographic record.

Parties may be represented by counsel. Any disposition agreed upon, either as to the entire case or any part of it, will be incorporated into an order of the court.

The names of the panelists and calendars of cases to be assigned them are scheduled to be published in September in the *Law Journal* with other calendars and assignments.

I was not on the committee, but I was called on, as a representative of the defendants in these cases to discuss the plan. I urged on the court that none of the lawyers representing either the plaintiff's side or the defendant's side should be asked to recommend the lawyer-members to sit on these tribunals. Several of the plaintiff's representatives insisted, however, that they were entitled to name plaintiff's lawyers. The net of it was that everyone compromised to a degree. After all, under the plan as it presently exists, there is no finality to its recommendations, and the point was made that it would be interesting to see how objective a plaintiff's lawyer could be should he sit as a member of the panel. About that I do not wish to comment. However, I had strong views which I expressed before a decision was made.

It is much too early to analyze the results of this program. We have promised Mr. Justice Stevens and his associates that we will do everything we can to try to make it a success. I personally think the panels should have more authority with the aim toward disposing of cases rather than having them go on to jury trials. The performance of the panels has varied from good, to indifferent, to bad. I am convinced that if the judges who rotate as the presiding members of these panels got together among themselves and discussed some of the frustrations that presently exist, much could be done to improve the program. That it has disposed of a number of cases which would have taken a great deal of time and expense to try, is quite true. Except in the rare instance where we feel the panel is mistaken in its recommendation to settle a case, we have followed its advice and disposed of a considerable number of cases. But in those cases, and there are several of them, where the panel has told the plaintiff's attorney that he has no case and that he should discontinue, or at least, recommend such a course of action to this client, the attorneys for the plaintiff have reacted with a uniform sense of outrage. In fairness I should say that some genuinely think the panel is wrong, but others have frankly told the panel that even though they agree with the fact that they probably have no case, they still insist if they can get their case before a jury they might win. Obviously, if this failure to cooperate persists, to that extent the plan will fall into discredit. I have reason to believe there is great determination on the part of the administrative officials of the Court to see that the plan does succeed, and if certain adjustments are necessary in its procedure, there will be a firm effort to see that such takes place.

Another hopeful sign in the courts throughout the city is the adoption of the so-called "troika" system where the oldest cases on the calendar are assigned to a group of three judges who have demonstrated an ability to cooperate with one another. The system admits of practically no adjournments and seeks final disposition of the cases to clear up the court's calendar. I think this system is working well and is of great efficacy particularly in death cases where interest makes a verdict expensive for the defendant. It is difficult to see why a defendant should be blamed in a death action because there is a delay of several years in reaching a trial with interest rates set at 7 per cent or more in the meantime.

Acknowledgments. Finally, I must express my gratitude to the marvelous cooperation extended to us by Henry I. Fineberg, M.D., executive vice-president, and J. Richard Burns, J.D., assistant executive vice-president of the Medical Society of the State of New York.

Frank Appleton and his associates, George Wright, Thomas Baldwin, and John Fiore of H. F. Wanvig, Inc., have, as always, been most helpful to us over the past year, and to them we extend our appreciation.

I am deeply grateful to the officers of the Employers Insurance of Wausau for the kind, considerate, and skillful services they have rendered to us throughout the year; they are: C. F. Schlueter, president; William Morse, vice-president; J. E. Linster, Raymond Bohl, D. R. Uhthoff; Messrs. Marx, Hanner, Bourbeau, Andreotta, Tonn, Shalley, Gordon, Ressa, and McIntyre of the New York City office; Messrs. Bollman, Duggan, Unger, and Byrne of the Syracuse office; and to Mr. Lester of the Buffalo office.

I cannot close without extending to William Hammond, M.D., every wish for health and happiness in his forthcoming retirement as editor of the ***New York State Journal of Medicine.***

Respectfully submitted,
William F. Martin, Legal Counsel

Necrology

Arthur Cecil Allison, M.D., of Bronxville, retired, died on December 5, 1971, at the age of sixty-six. Dr. Allison graduated in 1929 from Queen's University Faculty of Medicine, Belfast, Ireland. He had been an attending pediatrician at Lawrence Hospital.

S. Averett Arnold, M.D., of Bay Shore, died on November 19, 1971, at the age of sixty-seven. Dr. Arnold graduated in 1929 from Cornell University Medical College. He was an attending surgeon at Southside Hospital. Dr. Arnold was a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans Fritz Brinitzer, M.D., of New York City, died on November 16, 1971, at the age of seventy-eight. Dr. Brinitzer received his medical degree from the University of Breslau in 1920. He was a senior clinical assistant otolaryngologist (off service) at The Mount Sinai Hospital and an associate in ear, nose, and throat at Jewish Memorial Hospital. Dr. Brinitzer was a Diplomate of the American Board of Otolaryngology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bernard Einig, M.D., of New York City, died on July 23, 1971, at the age of seventy-three. Dr. Einig received his medical degree from the University of Vienna in 1924. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Michael Gosis, M.D., of Fort Lauderdale, Florida, formerly of South Ozone Park, died on December 13, 1971, at the age of sixty-five. Dr. Gosis graduated in 1930 from Long Island College Hospital. He was a member of the Academy of Psychosomatic Medicine, the American Academy of General Practice, the American Geriatrics Society, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Morris Grayson, M.D., of New York City, died on December 13, 1971, at the age of sixty-two. Dr. Grayson received his medical degree from the University of Lausanne in 1937. He was a Preceptor in psychiatry at The Mount Sinai Hospital. Dr. Grayson was a member of the American Psychiatric Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clara Regina Gross, M.D., of New York City, died on December 6, 1971, at the age of seventy-two. Dr. Gross graduated in 1926 from Johns Hopkins University School of Medicine. She was an attending physician in vascular disease at The New York Hospital Outpatient Department and a consulting physician in chest disease at Bellevue Hospital. Dr. Gross was a Diplomate of the American Board of Preventive Medicine, Inc. (Aviation Medicine), a Fellow of the American College of Chest Physicians, and a member of the American Thoracic Society, the Aerospace Medical Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anatole Kaminsky, M.D., of New York City, died on November 22, 1971, at the age of seventy-six. Dr. Kaminsky received his medical degree from the University of Moscow in 1919. He was an assistant attending physician at Sydenham Hospital. Dr. Kaminsky was a member of the American Academy of General Practice, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward J. Kempf, M.D., of Wading River, died on December 12, 1971, at the age of eighty-six. Dr. Kempf graduated in 1910 from Western Reserve University School of Medicine. He was a member of the American Psychiatric Association, the Association for Research in Nervous and Mental Disease, the New York Academy of Medicine, the New York Neurological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul Klein, M.D., of New York City and Forrest Hills, died on December 10, 1971, at the age of seventy-nine. Dr. Klein received his medical degree from the University of Vienna in 1916. He was a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the International College of Surgeons, and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gerard Ludwig Moench, M.D., of The Bronx, died on November 24, 1971, at the age of eighty-three. Dr. Moench graduated in 1910 from Cornell University Medical College. He was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York Obstetrical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis A. Rosenblum, M.D., of Forest Hills, died on December 4, 1971, at the age of sixty. Dr. Rosenblum graduated in 1936 from Long Island College of Medicine. He was an associate attending physician at St. John's Queens Hospital. Dr. Rosenblum was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Gastroenterology, a Fellow of the American College of Physicians, and a member of the New York Academy of Medicine, the New York Academy of Gastroenterology, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Louis Herbert Schwartz, M.D., of Yonkers, died on November 17, 1971. Dr. Schwartz graduated in 1907 from Columbia University College of Physicians and Surgeons. He was an honorary ophthalmologic surgeon at Harlem Eye and Ear Hospital.

Julius Howard Shlesinger, M.D., of College Point, died on November 29, 1971, at the age of sixty-one. Dr. Shlesinger graduated in 1935 from New York University College of Medicine. He was a member of the general practice staff at Parsons Hospital. Dr. Shlesinger was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Sol Shlimbaum, M.D., of Bay Shore, died on November 26, 1971, at the age of ninety. Dr. Shlimbaum graduated in 1912 from Columbia University College of Physicians and Surgeons. He was a member of the surgical staff at Southside Hospital and a consulting surgeon at Pilgrim State Hospital. Dr. Shlimbaum was a Fellow of the American College of Surgeons and a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

I. Daniel Shorell, M.D., of New York City, died on June 29, 1971, at the age of seventy-two. Dr. Shorell graduated in 1923 from Georgetown University School of Medicine. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Sonnenfeld, M.D., of New York City, died on November 15, 1971, at the age of seventy-three. Dr. Sonnenfeld received his medical degree from the University of Berlin in 1922. He was a senior clinical assistant physician (off service) at The Mount Sinai Hospital and an associate attending physician at Medical Arts Center Hospital. Dr. Sonnenfeld was a Fellow of the American College of Chest Physicians and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Russell Merwyn Weidler, M.D., of Frewsburg, died on October 18, 1971, at the age of eighty. Dr. Weidler graduated in 1924 from the University of Buffalo School of Medicine. He was an attending physician at Woman's Christian Association Hospital (Johnstown). Dr. Weidler was a member of the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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in honor of

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* * *

Friday, February 18, 1972

* * *

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NEW YORK STATE **February 1–15, 1972**

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Please send information to the Editor, WHAT GOES ON,
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NEW YORK CITY AREA

February 1, 1972 / February 15, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
Main Conference Room
101 Castleton Avenue
Staten Island

Continuing Postgraduate Education
Family Practice Section

February 1
Bursitis, Tendinitis, Epicondylitis, DeQuervain's Disease, Carpal Tunnel Syndrome, etc.
STEPHEN POLLACK, M.D.

February 8
Evaluation of the Comatose or Semicomatose Patient
CONRAD SCHROEDER, M.D.

February 15
Rheumatic Syndromes
SYDNEY LANG, M.D.

CREDIT: C-1

February 1, 1972 / April 27, 1972
8:00–10:00 p.m., Tuesdays and Thursdays

French and Polyclinic Medical School
345 West 50th Street

MEDICAL REVIEW COURSE FOR GENERAL PRACTITIONERS

NO FEE CREDIT: AAGP and C-1

February 1, 1972 / February 15, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway—Conference Room
Brooklyn

Newer Concepts in Medicine
Lecture Series

Moderator: GEORGE POLLACK, M.D.

February 1
Review Highlights of Previous Lectures
GEORGE POLLACK, M.D.

February 8
Gall Bladder Disease
I. WEINER, M.D.

Credit: C-1

February 15
Colon Disease
N. FREUND, M.D.

Credit: C-1

February 1, 1972 / May 26, 1972
9:00 a.m.–4:00 p.m., Monday–Friday

French and Polyclinic Medical School and Health Center
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February 1, 1972 and February 8, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

February 1
Myoplasma Pneumonia
BERNARD SIMBERKOFF, M.D.
Manhattan V.A. Hospital

February 8
Papillary Muscle Dysfunction
NICHOLAS DePASQUALE, M.D.
Lenox Hill Hospital

February 1, 1972 / February 15, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building, 4th Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Program

February 1
General Effects of Hypoxia with its Clinical Implication in the Fetus and Newborn
NATHAN RUDOLPH, M.D.
Downstate Medical Center

February 8
Hyperactive Child
JEROME TEPPERBERG, M.D.
Downstate Medical Center

February 15
Present-Day Problems in Tuberculosis in Children
MORRIS STEINER, M.D.
Downstate Medical Center

February 1, 1972 / March 23, 1972
4:30–6:00 p.m., Tuesdays and Thursdays

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Nursing Home Administration

February 1, 1972—7:00–9:00 p.m.

Seminar in Nursing Home Administration

February 3, 1972—6:00–8:00 p.m.

Frontiers of Geriatrics

February 4, 1972—6:00–8:00 p.m.

Environmental Sanitation

Write: The Dean at the above address.

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7:00 p.m.

The New York Academy of Medicine
Section on Dermatology and Syphilology
2 East 103rd Street

Presentation of Cases
Members 7:00–7:45 p.m.
Non-Members 7:45–8:30 p.m.

From the Departments of Dermatology at:
New York Hospital
St. Vincent's Hospital
Harlem Hospital
Brooklyn V.A. Hospital

TUESDAY, FEBRUARY 1

8:30 p.m.

Jewish Memorial Hospital
Broadway and 196th Street

DRUG REACTIONS

WILLIAM B. ABRAMS, M.D.
Director of Clinical Research, Ayerst Laboratories

CREDIT: C-1

WEDNESDAY, FEBRUARY 2

4:00–5:30 p.m.

Westchester Square Hospital
Conference Room
1625 St. Peters Avenue
Bronx

MEASUREMENT OF THYROID FUNCTION

M. DONALD BLAUFOZ, M.D.
Albert Einstein College of Medicine

CREDITS: AAGP AND C-1

February 3, 1972 and February 10, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
2nd Floor Conference Room
757 Bushwick Avenue
Brooklyn

AUTO IMMUNIZATION
Parts I and II

EDWARD SALERNO, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

February 4, 1972 and February 11, 1972
8:00–9:30 a.m., Fridays

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

Pediatrics, Gynecology, Surgery and Medicine for the Family Physician

February 4
Acute Dermatologic Problems in Children
YEHUDI FELMAN, M.D.
Downstate Medical Center

February 11
Ectopic Tachycardias
STERLING JONAS, M.D.
Downstate Medical Center

February 4, 1972 and February 5, 1972

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8:30 p.m.

Society for the Scientific Study of Sex
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PAUL SACERDOTE, M.D.

FEE: $83

For additional information call: Dr. George Kaufer or Mrs. Seligman, Secretary, Postdoctoral Program 212-598-2645 or Dr. Sacerdote 914-668-5527.

SUNDAY, FEBRUARY 6

9:00 a.m.–Noon

The Boulevard Hospital
46-04 31st Avenue
Long Island City

Intensive Review for Community Physicians

OBSTETRICS AND GYNECOLOGY

JAMES R. JONES, M.D.
Downstate Medical Center

FEE: $100 (for entire course from October 17–March 26)

CREDIT: AAGP and C-1

Sponsor: Queens County Academy of Medicine

February 7, 1972 / February 25, 1972

Columbia University School of Public Health and Administrative Medicine
21 Audubon Avenue, Room 305

THE ADMINISTRATION OF NURSING HOMES AND EXTENDED CARE FACILITIES

FEE: $400

February 7, 1972 / February 11, 1972
8:30 a.m.–5:30 p.m., Monday–Friday

The Page and William Black Post-Graduate School of Medicine
Mount Sinai Medical Center
100th Street and 5th Avenue

SURGERY OF THE PARANASAL SINUSES

JOSEPH L. GOLDMAN, KARL M. MORGENSTEIN,
SHEPPART SIEGEL, DANIEL C. BAKER, JR., M.D.'s
Mount Sinai School of Medicine

FEE: $400

MONDAY, FEBRUARY 7

8:00 p.m.

New York Society for Clinical Ophthalmology
2 East 103rd Street

1. **Microaneurisms and Shunt Vessels in Diabetic Retinopathy: An Hypothesis on Pathogenesis and Prevention**
   A. KORNZWEIG, M.D.
2. **Phaco-Emulsification and Aspiration**
   C. KELMAN, M.D.
   F. HURITE, M.D., Pittsburgh, Pa.
3. **The Uremic Eye**
   L. HARRIS, M.D.
4. **A New Approach to Complete Abducens Paralysis**
   F. VESEY, M.D.

All Speakers are from New York except those noted otherwise.

8:30 p.m.

Rudolf Virchow Medical Society
2 East 103rd Street

1. **Fever of Unknown Origin**
   KARL F. HOFFMAN, M.D.
2. **Treatment of Early Breast Cancer**
   HENRY PATRICK LEIS, JR., M.D.
   New York Medical College

February 8, 1972 / May 16, 1972
1:00–6:00 p.m., Tuesdays

Downstate Medical Center
Queens Hospital Center Affiliation, Department of Radiology
82-68 164th Street
Jamaica

MEDICAL USES OF RADIOACTIVE ISOTOPES

LESTER LEVY, M.D. with LAWRENCE SILVER,
DONALD MARGOULEFF, M.D.'s and MR. GERALD SHAPIRO
and invited lecturers

FEE: $275

To register, contact: Lawrence Silver, M.D., Division of Nuclear Medicine, Long Island Jewish Medical Center/Queens Hospital Center Affiliation, at the above address.

TUESDAY, FEBRUARY 8

1:00 p.m.

Downstate Medical Center
Continuing Education Conference Center
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

STUDIES ON PROLACTIN IN MAN

ANDREW G. FRANTZ, M.D.
Columbia University P & S

WEDNESDAY, FEBRUARY 9

Noon

Downstate Medical Center
Fourth Floor Pediatric Library, Room B4-462
State University Hospital
445 Lenox Road
Brooklyn

Research Pediatric Seminars

SERUM HISTIDINE LEVELS IN JUVENILE RHEUMATOID ARTHRITIS

ELIZABETH SMITHWICK, M.D.

2:00 p.m.

The Catholic Medical Center
Department of Surgery—Division of Orthopedics
St. John's Hospital Auditorium
90-02 Queens Boulevard
Elmhurst

Visiting Professor Program in Orthopedics

BIOPHYSICAL PRINCIPLES AND BONE REMODELING

ANDREW BASSETT, M.D.
Director of Orthopedic Research Laboratories
Columbia University

SURGICAL TREATMENT OF CLUBFEET

JOSEPH L. GOLDNER, M.D., Professor and Chairman
Division of Orthopedic Surgery
Duke Medical Center
Durham, North Carolina

4:00-5:00 p.m.

Flushing Hospital and Medical Center
First Floor Conference Room
Parsons Boulevard and 45th Avenue
Flushing

ANSWERING THE DRUG LINE

PHILIP KAUFMAN, M.D.
Queens County Medical Society

CREDIT: C-1

8:00 p.m.

Bronx Pediatric Society
Jacobi Hospital
Fourth Floor Auditorium
Pelham Parkway and Eastchester Road
Bronx

HOSPITAL NIGHT

8:00 p.m.

New York Surgical Society
2 East 103rd Street

Case Report:

Hypercalcemia in Breast Carcinoma—Reversible by Radical Mastectomy
SIMON D. FINK, HERBERT GERSHBERG,
HARBANS CHHABRA, M.D.'s

Papers

1. **Chemical Acidification of Wounds**
   H. H. LeVEEN, M.D., G. FALK, B.S., B. BOREK, Ph.D.,
   C. DIAZ, M.D., B. J. WYNKOOP, M.D.,
   G. A. MABUNDA, M.D.
2. **A Study of 20 Cases of Chronic Pancreatitis Treated by a Modified Puestow Operation**
   ROBERT GARDINER, M.D.
3. **Quantifying the Need for Circulatory Support in Human Myocardial Infarction Shock**
   JOHN H. SIEGEL, M.D., EDWARD J. FARRELL, B.S.,
   ISAAC LEWIN, M.D.

February 9, 1972 and February 16, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF EMOTIONAL PROBLEMS IN CHILDREN IN MEDICAL PRACTICE

GERALD T. NILES, M.D.

February 10, 1972 / February 12, 1972
9:00 a.m.–4:30 p.m., Thursday–Saturday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
100th Street and 5th Avenue

NEUROPHARMACOLOGY

GERARD M. LEHRER, M.D., JACK PETER GREEN, Ph.D. and the Members of the Faculty, Mount Sinai School of Medicine

FEE: $150

February 10, 1972 / February 24, 1972
3:00–5:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

ACCOMMODATIVE AND NON-ACCOMMODATIVE ESODEVIATIONS

EDWARD L. RAAB, M.D.
Mount Sinai School of Medicine

FEE: $60

SATURDAY, FEBRUARY 12

8:30 a.m. Registration

Medical Society of the State of New York Committee on Medical Aspects of Sports
Americana Hotel
Seventh Avenue and 52nd Street

FIFTH ANNUAL SYMPOSIUM

February 13, 1972 / February 17, 1972

Medical Society of the State of New York
The Americana Hotel

ANNUAL CONVENTION

Address all inquiries to the chairman, Medical Society of the State of New York, 420 Lakeville Rd., Lake Success, N.Y. 11040.

MONDAY, FEBRUARY 14

1:00 p.m.

Downstate Medical Center
Fourth Floor Lecture Hall
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

R. Janet Watson Hematology Lecture

STIMULATION OF ERYTHROPOIESIS IN MICE BY SERA FROM PATIENTS WITH POLYCYTHEMIA VERA

ESMAIL D. ZANJANI, M.D.
Mount Sinai School of Medicine

3:30 p.m.

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway—Auditorium
Elmhurst

ECTOPIC HORMONAL SYNDROMES

DOROTHY KRIEGER, M.D.
Mount Sinai School of Medicine

8:30 p.m.

Beth Israel Medical Center
Dazian Pavilion, 12th Floor Conference Room
10 Nathan D. Perlman Place

THE EXTRAVASCULAR WATER VOLUME OF THE LUNG

GERARD M. TURINO, M.D.
Columbia University P & S

NEW YORK CITY FUTURE EVENTS

February 18 and 19, 1972
9:00 a.m. Friday and Saturday

New York Heart Association
The Waldorf-Astoria
50th Street and Park Avenue

Symposium

REGULATION OF CATECHOLAMINE METABOLISM IN THE SYMPATHETIC NERVOUS SYSTEM

Write: New York Heart Association, 2 East 64th Street, New York, N.Y. 10021.

February 28, 1972 / March 3, 1972

New York University Post-Graduate Medical School
550 First Avenue

A Symposium on

ARTHRITIS AND RELATED DISORDERS

FEE: $150

Write: Office of the Recorder, N.Y.U. Post-Graduate Medical School, at the above address.

March 2, 1972 / April 27, 1972

Beth Israel Medical Center
10 Nathan D. Perlman Place

8-Week Series

DRUG USE, ABUSE, DEPENDENCE, TREATMENT

For further information, please contact A. STAUFFER CURRY, Ph.D., Coordinator, Program of Continuing Education, Department of Psychiatry, the above address.

BUFFALO AREA

February 1, 3, 8 and 10, 1972
8:00–10:30 p.m.

Regional Medical Program for Western New York
Continuing Medical Education, State University of New York at Buffalo
Kenwell Auditorium, Millard Fillmore Hospital
Buffalo

PRINCIPLES OF RESPIRATORY CARE

FEE: $30 CREDIT: C-1

Concept: This evening program will consist of four sessions dealing with modern principles and techniques of respiratory care. It will include basic concepts of anatomy and physiology but will focus on the pulmonary patient requiring intensive care. Sessions will deal with ventilation and perfusion parameters, blood gas concepts, IPPB, oxygen therapy, monitoring and support of the patient on mechanical ventilators, etc. Other related physiological parameters will also be discussed. In the fourth session office spirometry, pre-operative care will be reviewed at length. Practical demonstrations of arterial puncture, intubation and office spirometry will be carried out. Convenient evening hours have been chosen to facilitate the attendance of practicing physicians in the Western New York State region.

Please contact: Continuing Medical Education Program, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

PRECEPTORSHIPS

GENERAL

Preceptorship type experience is available in a wide variety of medical fields arranged on request on an individual basis.

Those interested should write to Continuing Medical Education indicating their field of interest, time available for study, preferred dates and phone number. A faculty member who can provide the desired instruction will then contact the applicant directly.

Preceptorship in Clinical Cardiology

This fall a special preceptorship is offered in cardiology, with emphasis on the cardiac patient, electrocardiography, and the management of patients with heart disease, including acute coronary care.

The program will be directed by Dr. Jules Constant at the Buffalo General Hospital. The fee will be $10 per day or $200 a month. The schedule will be arranged in consultation with the applicant and only one physician will be accepted at a time.

For information on preceptorships, write Continuing Medical Education, 2211 Main Street, Buffalo, New York 14214.

February 3, 1972 and February 10, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and
Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

February 3
- **Precordial Pulsations**
  - **The Normal Apex Beat**
  - **Site**
  - **Palpability**
  - **Character**
  - **The Apex Beat in LVH and/or Dilatation**
  - **Sustaining**
  - **Atrial Hump**
  - **Differential Diagnosis of Left Parasternal Movements**
  - **Intermission**
  - **Case Presentations**

February 10

- **Auscultation**
  - **The Stethoscope**
    - **Chest Piece**
    - **Tubing**
    - **Ear Pieces**
  - **Grading of Heart Sounds and Murmurs**
  - **The Auscultogram**
  - **Intermission**
  - **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

NASSAU COUNTY

February 2, 1972 and February 9, 1972
4:00 p.m., Wednesdays

Nassau County Medical Center
Meadowbrook Hospital X-Ray Classroom
2201 Hempstead Turnpike
East Meadow

Department of Radiology

February 2
Diseases of the Small Bowel
DAVID FAEGENBURG, M.D., Nassau Hospital

February 9
Evaluation of the Renal System with Radioisotopes
HAROLD ATKINS, M.D., Brookhaven National

February 3, 1972 and February 10, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

February 3
Diagnosis and Management of Intersex
JORDAN FINKELSTEIN, M.D.

February 10
Cardiomyopathy in Children
DENNISON YOUNG, M.D.

Speakers are from Montefiore Hospital and Medical Center

NASSAU COUNTY FUTURE EVENT

WEDNESDAY, MARCH 22

10:30 a.m.–Noon

Division of Obstetrics-Gynecology
North Shore Hospital
Auditorium
Manhasset

A COTHERAPY APPROACH

PHILIP SARREL, M.D., Yale University School of Medicine
MRS. LORNA J. SARREL, M.S.W., Yale University

WESTCHESTER COUNTY FUTURE EVENT

WEDNESDAY, FEBRUARY 23

4:30–5:30 p.m. and 8:30 p.m.

Grasslands Hospital
Eastview Hall—Conference Room C

Introduction: BARRY M. SEGAL, M.D., New York Medical College

PHEOCHROMOCYTOMA

KARL ENGELMAN, M.D.
Hospital of the University of Pennsylvania

Evening Session—Carl and Lily Pforzheimer Memorial Building

RENAL AND ADRENAL HORMONAL MECHANISMS IN ESSENTIAL HYPERTENSION

JOHN H. LARAGH, M.D.
Columbia University P & S

EVENTS RECEIVED AFTER DEADLINE

SATURDAY, JANUARY 22

9:00 a.m.

Downstate Medical Center
Fourth Floor Lecture Hall, Basic Sciences Building
450 Clarkson Avenue
Brooklyn

MANAGEMENT OF CARCINOMA OF THE MAXILLA

ROBIN MARTIN RANKOW, Columbia University P & S

TUESDAY, JANUARY 25

9:00 a.m.–5:00 p.m.

New York Heart Association
The Waldorf-Astoria Hotel
Park Avenue and 50th Street

MYOCARDIAL REVASCULARIZATION

Advance Registration will be required

WEDNESDAY, JANUARY 26

Noon

Downstate Medical Center
4th Floor Pediatric Library
450 Clarkson Avenue
Brooklyn

TIMED PRIORITY SYSTEM FOR IDENTIFYING AND MONITORING THE SERIOUSLY ILL IN THE O.P.D.

RAYMOND M. RUSSO, M.D.

MONDAY, JANUARY 31

4:00 p.m.

Downstate Medical Center
First Floor Lecture Hall, Basic Sciences Building

Annual Murray B. Gordon Lecture

SEARCHING FOR NATURAL SELECTION IN HUMAN GENETIC POLYMORPHISMS

T. EDWARD REED, University of Toronto

PHYSICIANS' PLACEMENT

LONG LAKE, N.Y., Hamilton County. G.P. Attractive guaranteed salary as Town/School Health Officer.

CONTACT: Medical Procurement Committee, P.O. Box 83, Long Lake, N.Y. 12847 or call MRS. THOMAS LAMOS (518) 624-3441.

MAINE, N.Y., Broome County. G.P. partnership.

CONTACT: MORRIS EBER, M.D., 2 Church Street, Maine, N.Y. 13802. Tel. (607) 862-3251.

MARGARETVILLE, N.Y., Delaware County. Anesthesiologist interested in G.P. or p.t. Emergency Room Service.

CONTACT: MR. KOIT LILLEP, Adm., Margaretville Hospital, Margaretville, N.Y. 12455.

MASSENA, N.Y., St. Lawrence County. G.P., Internist and Pediatrician.

CONTACT: JOHN CLOUGH, M.D., 176 Maple Street, Massena, N.Y. 13662. Tel. (315) 769-6227 (call collect).

MEDICO (Service of Care) needs G.P. for new post in Honduras (2 years).

CONTACT: LEONARD COPPOLD, Dir., Contract Personnel, MEDICO 660 First Avenue, New York City, N.Y. 10016. Tel. (212) 683-3110

MEDINA, N.Y., Orleans County. One or more G.P.'s and Specialists in Urology. Cardiology, Internal Medicine and Ob/Gyn.

CONTACT: JOHN E. HAMILTON, M.D., Adm., Medina Memorial Hospital, Medina, N.Y. 14103. Tel. (716) 798-2000.

MORAVIA, N.Y., Cayuga County. G.P.

CONTACT: WILLIAM M. FOSTER, Exec. Sec. Cayuga County Medical Society, 187 E. Genesee St., Auburn, N.Y. 13021.

NEWARK, N.Y., Wayne County, needs an Ob/Gyn Specialist, Internist and Pediatrician.

CONTACT: MRS. SOPHIE P. ZIEGLER, Adm., Newark-Wayne Community Hospital, Inc., Driving Park Ave., Newark, N.Y. 14513.

NEWARK, N.Y., Wayne County, needs Ob/Gyn for group or solo practice.

CONTACT: J. WILLIAM LUDEMANN, M.D., 1000 Driving Park Avenue, Newark, N.Y. 14513. Tel. (315) 331-1732.

NORFOLK, N.Y., St. Lawrence County. G.P.

CONTACT: MR. B. J. SHORT, Norfolk, N.Y. 13667. Tel. (315) 384-4531.

OGDENSBURG, N.Y. St. Lawrence County. Specialists in Ophthalmology, Pediatrics, Internal Medicine and G.P.'s.

CONTACT: Administrator, A. Barton Hepburn Hospital, Ogdensburg, N.Y. 13369.

PLATTSBURGH, N.Y., Clinton County. ENT, G.P., Neurologist, Ophthalmologist.

CONTACT: HERBERT KOERNER, M.D., Champlain Valley Physicians Hospital Medical Center, Plattsburgh, N.Y. 12901. Tel. (518) 561-3900.

PLATTSBURGH, N.Y., Clinton County. Orthopedic Surgeon (Associate)

CONTACT: DRISS HASSAM, M.D., 202 Cornelia Street, Plattsburgh, N.Y. 12901. Tel. (518) 561-2023 or 7595.

PORT BYRON, N.Y., Cayuga County. Two Family Practitioners for group.

CONTACT: MR. ROBERT BLAKE, Pharmacist, Port Byron, N.Y. 13140. Tel. (315) 967-4531 or 4370.

POTSDAM, N.Y., St. Lawrence County. G.P.'s, ENT, Orthopedic Surgeons, Radiologist, Genito-Urinary.

CONTACT: HENRY VINICOR, M.D., Chief of Staff, Potsdam Hospital, Potsdam, N.Y. 13676. Tel. (315) 353-2341.

RED CREEK, N.Y., Wayne County. G.P.

CONTACT: MR. RALPH D. DeMAS, Chm., The Red Creek Physicians Committee, Red Creek, N.Y. 13143.

RIVERHEAD, N.Y., Suffolk County. Board/Eligible or Board/Certified Ob/Gyn to direct Maternal Health and Family Planning Service.

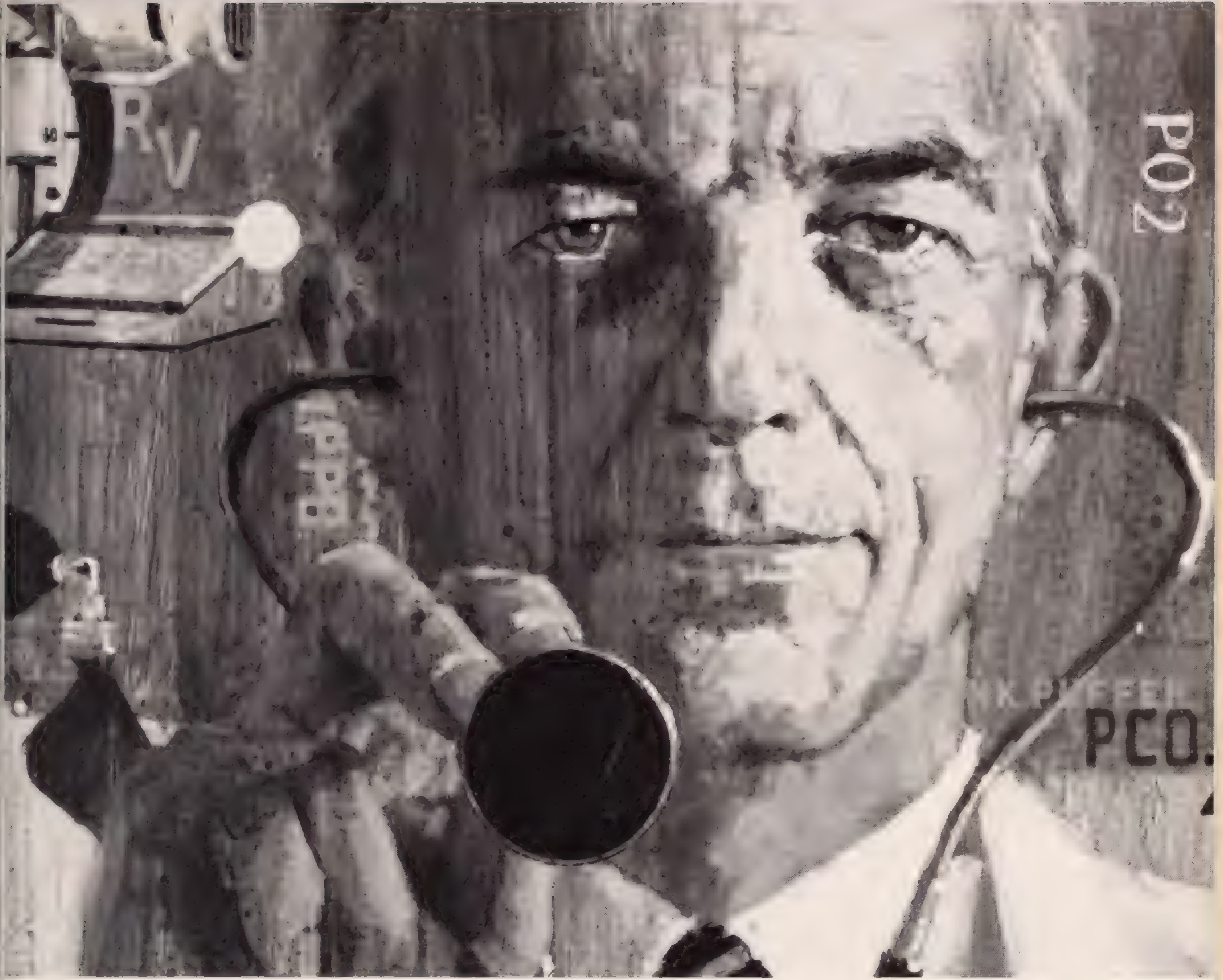
CONTACT: GEORGE E. LEONE, M.D., Commissioner of Health, Suffolk County Health Department, Suffolk County Center, Riverhead, N.Y. 11901. Tel. (516) 727-4700, ext 341.

WHAT GOES ON IN MEDICINE

New Address:
Medical Society of the State of New York
420 Lakeville Road, Lake Success, N.Y. 11040
Telephone: 516-488-6100, ext. 241

The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
March 1–15	January 10
March 16–31	January 25
April 1–15	February 10
April 16–30	February 25
May 1–15	March 10
May 16–31	March 25
June 1–15	April 10
June 16–30	April 25
July 1–31	May 10
August 1–31	June 10
September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25
November 1–15	September 10
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25



outlook in Emphysema

BRONKOTABS®

Each tablet contains ephedrine sulfate 24 mg; glyceryl guaiacolate 100 mg; theophylline 100 mg; phenobarbital 8 mg (warning: may be habit-forming).

BRONKOMETER®

Contains Dilabron® (brand of isoetharine mesylate) 0.6%; phenylephrine HCl 0.125%; thenyldiamine HCl 0.05%.

BRONKOTABS–RECOMMENDED DOSAGE: One tablet every 3 or 4 hours, not to exceed five times daily. Children over 6: one half adult dose. PRECAUTIONS: Sympathomimetic side effects are minimal, and there are none of the dangers or side effects associated with steroid therapy. However, frequent or prolonged use may cause nervousness, restlessness or sleeplessness. Bronkotabs should be used with caution in the presence of hypertension, heart disease or hyperthyroidism. Drowsiness may occur. SUPPLIED: Bottles of 100 and 1,000 scored tablets.

BRONKOMETER–COMPOSITION: Each ml of solution supplies at the mouthpiece 20 metered doses of 350 mcg isoetharine mesylate (0.6%), 70 mcg phenylephrine HCl (0.125%) and 30 mcg thenyldiamine HCl (0.05%) with saccharin and menthol plus fluorochlorohydrocarbons as gaseous propellants. Preserved with ascorbic acid 0.1% and alcohol 30%. RECOMMENDED DOSAGE: The average dose is one or two inhalations. Occasionally, more may be required. It is important, however, to wait one full minute after the initial one or two inhalations in order to be certain that another is necessary. In most cases, inhalations need not be repeated more often than every four hours, although more frequent administration may be necessary in severe cases. CONTRAINDICATION: Hypersensitivity to any component. PRECAUTIONS: Although Bronkometer is relatively free of toxic side effects, too frequent use may cause tachycardia, palpitation, nausea, headache, changes in blood pressure, anxiety, tension, restlessness, insomnia, tremor, weakness, dizziness and excitement as is the case with other sympathomimetic amines. Bronkometer should not be administered along with epinephrine or other sympathomimetic amines as such drugs are direct cardiac stimulants and may cause excessive tachycardia. They may, however, be alternated if desired. Dosage must be carefully adjusted in patients with hyperthyroidism, hypertension, acute coronary disease, cardiac asthma, limited cardiac reserve and in individuals sensitive to sympathomimetic amines, since overdosing may result in tachycardia, palpitation, nausea, headache or epinephrine-like side effects. HOW SUPPLIED: Bronkometer tpr 10 ml Refill with Actuator (Code No. 1184); Bronkometer tpr 10 ml Refill only (Code No. 1183); Bronkometer 10 ml Vial with Oral Nebulizer (Code No. 1193); Bronkometer 20 ml Vial with Oral Nebulizer for desk or bedside (Code No. 1182).

Fifth Annual Symposium on

MEDICAL ASPECTS OF SPORTS

Sponsored by the

Medical Society of the State of New York
Committee on Medical Aspects of Sports

Saturday, February 12, 1972 9:00 a.m. to 5:00 p.m.
Americana Hotel, New York City

Registration—8:30 a.m., Georgian Foyer (No Registration Fee)

9:00 a.m. Greetings: George Himler, M.D., *President Medical Society of the State of New York;* Thomas Sheldon, Ph.D., *Deputy Commissioner, State Education Dept.*

DRUG ABUSE AND DRUGS IN SPORTS—Georgian Ballroom A

Program—Morning Session—9:00 a.m.

Moderator, Max Novich, M.D., *Orthopedic Surgeon, Perth Amboy, N.J.*

9:15–11:00 a.m.

1. BASIC PHARMACOLOGY OF COMMONLY ABUSED DRUGS
   Harold Borgstedt, M.D., *Assoc. Prof. of Pharmacology, University of Rochester*

2. CARE AND TREATMENT IN DRUG ABUSE CASES
   Leonard L. Heimoff, M.D., *Clin. Assoc. Prof. of Medicine, Cornell University Medical College*

3. DRUG ABUSE IN SPORTS
   Fred L. Allman, Jr., M.D., *Team Physician, Georgia Institute of Technology*

11:00 a.m. FILM: WHAT DID YOU TAKE? Discussion by Donald C. Walker, M.D., *Asst. Dir., Office of Medical Manpower, N.Y. State Dept. of Health*

GIRLS PROGRAM—Georgian Ballroom B

11:00 a.m.–12:30 p.m. Health Aspects—Medical Views on Girls Interscholastic Sports. Moderator, Lewis C. Obourn, *Chairman, Safety Committee NYSPHSAA*

Greetings: Thomas Sheldon, Ph.D., *Deputy Commissioner, State Education Dept.*

1. MEDICAL VIEWS ON GIRLS' INTERSCHOLASTIC SPORTS
   Thomas E. Shaffer, M.D., *Prof. of Pediatrics, Ohio State University College of Medicine*

2. PSYCHOLOGICAL ASPECTS—CONSIDERATION OF FEMALE COMPETITIONS
   Dorothy V. Harris, Ph.D., *Pennsylvania State University*

3. FUTURE OF GIRLS' SPORTS IN NEW YORK STATE
   Katherine Ley, Ph.D., *Past Chmn., Commission on Intercollegiate Athletics for Women, State University of New York at Cortland*

11:15 a.m.–12:30 p.m. CLINICAL DEMONSTRATIONS—Versailles Terrace
Coordinator, Joseph N. Abraham, Ph.D., *Dir. of Physical Education, Hobart College, Geneva*
John Dziegiel, *Trainer, New York Giants Pro Football Team*
John Kundson, *Trainer, Wagner College Athletic Teams*
Fritz Massansan, *Trainer, New York Nets Pro Basketball*

12:30 p.m. LUNCHEON—Royal Ballroom A and B. Toastmaster, Ralph S. Emerson, M.D., *Chairman, Committee on Medical Aspects of Sports;* Guest Speaker, Richard Forzano, *Head Coach, United States Naval Academy*

2:00 p.m. Scientific Program—Georgian Ballroom A
Moderator, Alexius Rachun, M.D., *Team Physician, Cornell University*

1. HOWS AND WHYS OF INJURIES
   James M. Robey, Ph.D., *University of North Carolina*

2. THE SUBLUXATING SHOULDER IN ATHLETES
   Anthony De Palma, M.D., *Dir., of Orthopedic Surgery, New Jersey College of Medicine & Dentistry*

3. CARDIOVASCULAR AND CARDIORESPIRATORY HEALTH
   Nicholas Alexiou, M.D., *N.Y. State Department of Health*

4. WEIGHT CONTROL—all year round conditioning & training of athletes
   Thomas De Lorme, Jr., M.D., *Harvard University*

GIRLS PROGRAM—Georgian Ballroom B

2:00–3:30 p.m. Moderator, Miss Rita Eichenger, *Chairman, State Comm. for Girls' Athletic Activities, N.Y.S.P.H.S.A.A.*

1. TEAM SPORTS
   Miss Iris Carnell, President-elect, AWPENYS, Assoc., Prof. Ithaca College

2. THE INDIVIDUAL SPORTS
   Mrs. Lura Wilson, *Past President, AWPENYS*

3. GYMNASTICS
   Mrs. Muriel Grossfeld, *U.S. Women's Gymnastic Olympic Team, 1956, 1960, 1964*

4. TRACK AND FIELD
   Nell C. Jackson, Ph.D., *Coach, U.S. Girls Olympic Track Team*

PANEL—QUESTION AND ANSWER PERIOD
Chairman, Joseph Abraham, Ph.D., *U.S. Olympic Trainer, Womens Gym and Volleyball Team*
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New York State Journal of Medicine

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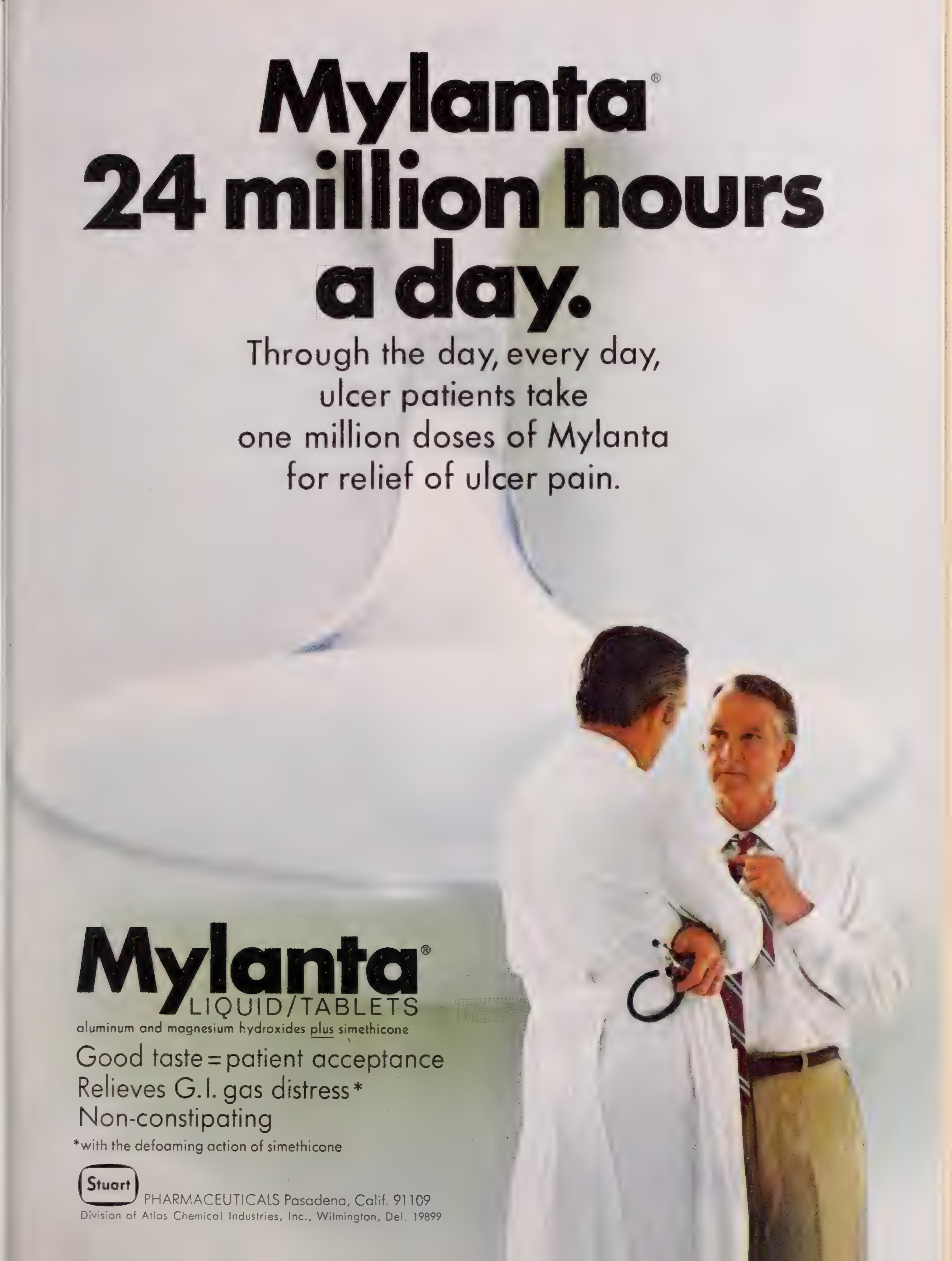

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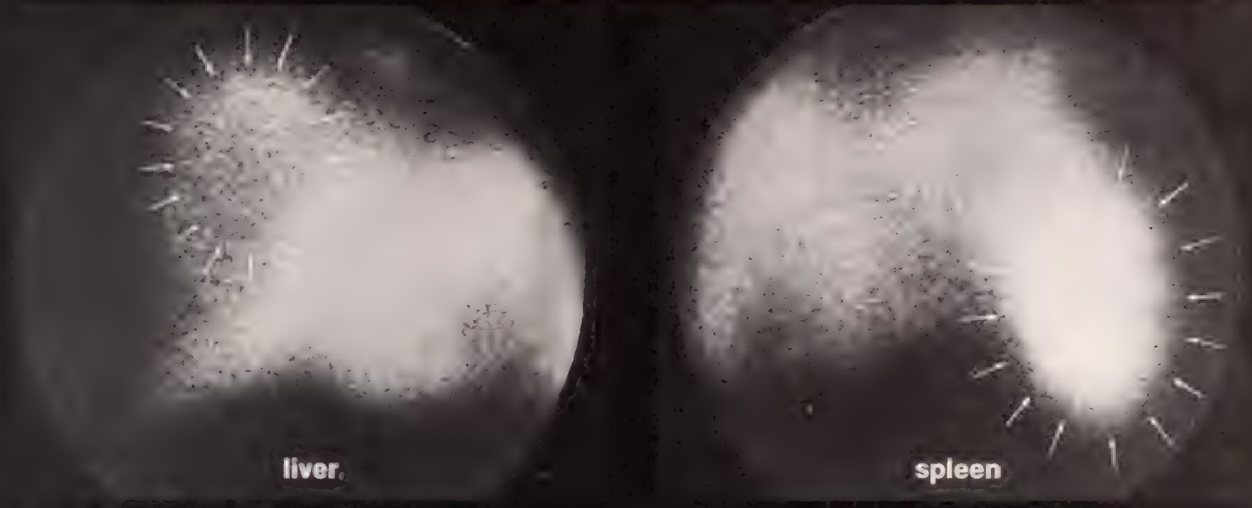

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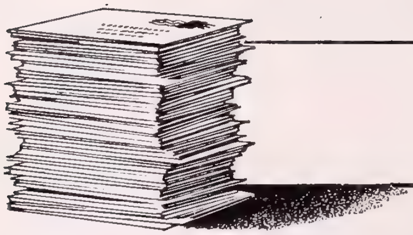

Letters to the Editor

Question and answer

To the Editor: The following was written primarily as a "take-off" on the highly stylized questions in the board examinations offered by the American Board of Preventive Medicine, Inc., and to show the problems which a public health physician is frequently called on to face.

You are a public health physician, working in a large metropolitan state mental hospital as a clinician-administrator on the geriatric service. You are responsible for clinical and rehabilitative services for 250 patients on five wards who are elderly and infirm; many of them are senile and incontinent. Your working conditions are difficult. Your hospital lacks competent staff, supplies, equipment, supportive services, medications, and other tangible evidence of public support.

Questionnaire

You will be given 15 situations in which a professional decision is indicated. Choose the best possible answer. Where indicated, you may check more than one answer.

You have half an hour to complete this section.

Supplies. On Friday afternoon of a three-day holiday weekend, the nursing supervisor informs you that 72 sheets have been delivered for 197 patients. This is the total linen supply for three days for patients who are predominantly incontinent of urine and feces and usually require 2 to 3 changes per day. Your alternatives are the following:

A. Pick the 10 patients with the worst bedsores and assign all sheets to them.
B. Pick the 10 patients who are most likely to develop bedsores and assign all the sheets to them.
C. Tear all sheets in half and instruct nurses that they be placed over the middle of the bed to cover the perineal area.
D. Send memorandums to all personnel involved stating your outrage and demanding that priorities be shifted as soon as the chief of the linen room returns from her vacation.
E. Stage a sit-in in the office of the director.

Answer. The correct answer is B. Patients who have bedsores have already been put on the critical list and can get into no further trouble. Tearing sheets in half will not provide enough surface area and will enrage the staff in the linen room. The sit-in achieves nothing. Memorandums are useless.

Housekeeping. The hopper on ward 32-A has been stopped up for many months. You feel that it is a health hazard for hospital personnel to continue any longer to empty human excreta in the sink. The usual channels have been exhausted. Your choices are:

A. Try to find a loophole in Article 28 of the state health code, which otherwise leaves you without legal recourse.
B. Personally prowl the hospital to find the trysting places where the plumbers attend the student nurses, omitting only the utility rooms, where they never show.
C. Send a memorandum to all personnel involved stating your outrage and demanding that priorities be shifted as soon as the plumbing supervisor can be transferred to another post.
D. Develop a rotating detail of "working patients" to carry slop buckets off the ward twice a day.
E. Cancel all orders for laxatives for one month.

Answer. The correct answer is D. There are no loopholes in Article 28. The plumbers are too clever to be found "goofing-off." Memorandums are useless. If laxatives are withheld, another plumbing problem will develop.

The plumbers of your hospital, notorious for drunkenness and lechery, are now staging a vendetta against the hospital because they had to clean out a hopper three and one-half months ago. They deliberately destroy the only working toilet system on day-center ward 29-A. You know for a fact that they have entered the premises on a weekend and removed several inexpensive parts vital to the plumbing. You have no proof. Your day-care center cannot function until obscure parts are ordered from Chicago. Your next step is:

A. Do a study of the power structure of the plumbing staff, locate the key man, offer him a cash incentive to get the boys back to work.
B. Ask the chief social worker, who has recently built himself a summer home, if he could locate the parts, bring them in, and assemble them himself. (He is to be reimbursed by the remainder of the professional staff.)
C. Send a memorandum to all personnel involved stating your outrage and demanding that priorities be shifted as soon as the new plumbing supervisor can be transferred to another post.
D. Lock the toilets permanently and take patients by wheel chair and stretcher to another floor every four hours.
E. Bring commodes from another floor and again empty human excreta into the sink.

Answer. The correct answer is A. This is the most honorable of the solutions given. The social worker is dog-tired from fighting with the plumbers. Memorandums are useless. The toilets cannot be locked. No sense solving one problem and creating another.

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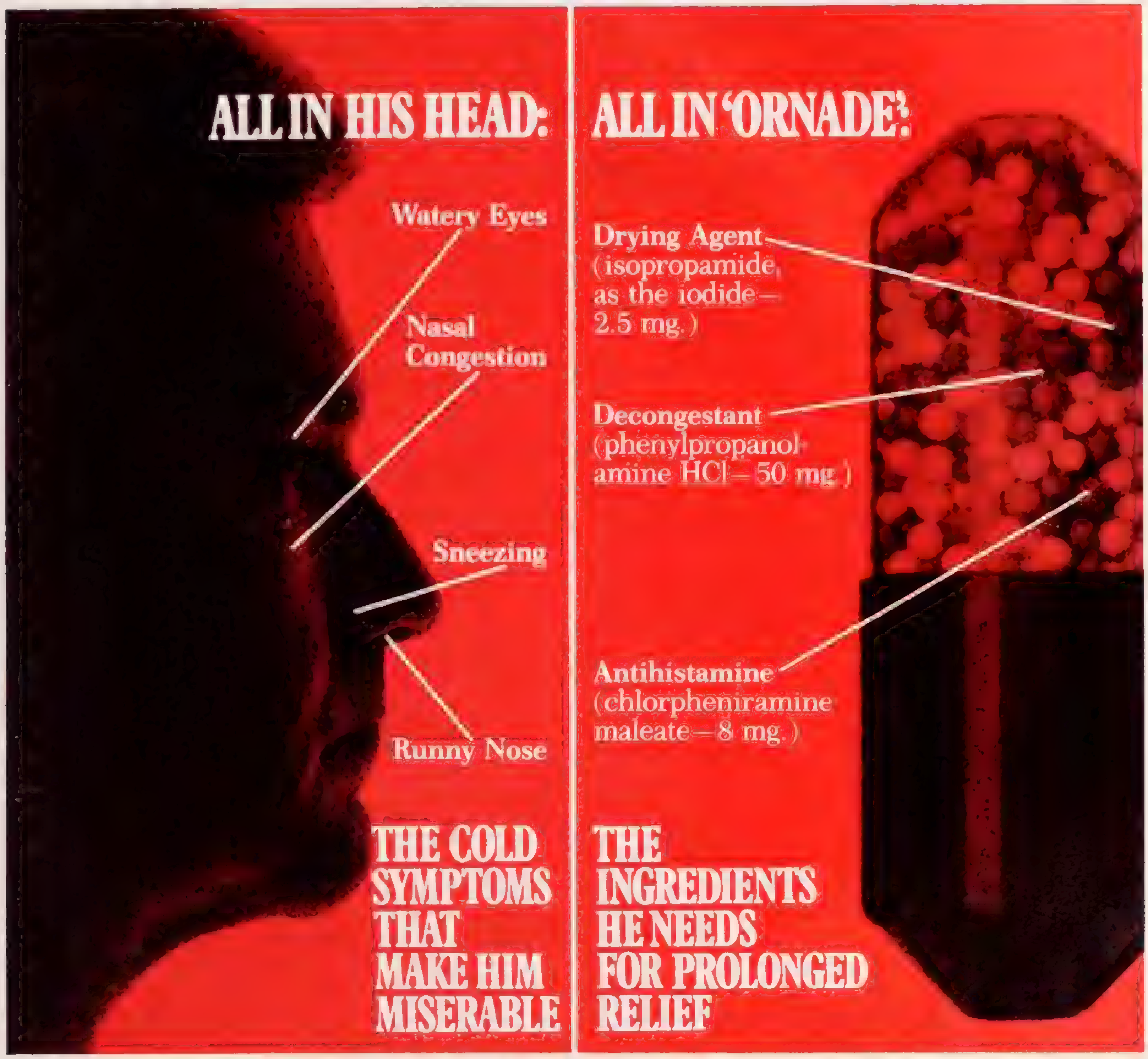
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UNCOMMON RELIEF FOR COLD SYMPTOMS

continued from page 332

The elevators in your building are manually operated, easily tampered with, and virtually nonfunctional. You, like other employes, may wait up to fifteen minutes for an elevator. Some of the lower echelon staff members illegally hold the key that controls the elevator; you do not. This week an acutely ill patient died while waiting for an elevator, held open by an employe who went off for a drink. Your best recourse is:

A. Steal the key and have a duplicate made for yourself.
B. Confiscate all keys so no one will have one.
C. Distribute 437 duplicates of the key to everyone you see to deliberately shatter the system.
D. Send a memorandum to all personnel involved stating your outrage and demanding that four new automatic elevators be installed.
E. Move your office to the second floor.

Answer. The correct answer is A. Self preservation is the first law of the jungle. Confiscation of keys is done every week as a routine procedure. A total of 437 duplicate keys is expensive. Memorandums are useless. The second floor is already occupied by your immediate superiors.

Dietary. Many of your patients have illnesses requiring special diets. The diet kitchen offers only one standard diet. You are concerned about the diabetic, the hypertensive, the cardiac, and the obese patients. First line of action is (choose one or more):

A. Send a memorandum to all personnel involved stating your outrage and demanding that facilities be set up for diet supervision as soon as your hospital fills its line for a dietician.
B. Arrange for the coin-operated vending machines in the lobby to be opened only by special tokens which are not available to the diabetic patients.
C. Do not permit any cardiac, hypertensive, or fat patients to leave the ward, since they will go straight to the community store and buy salty food.
D. Tell all patients what they may or may not eat, and encourage them to swap portions with other patients who have dissimilar diseases.
E. Enlist the cooperation of relatives in bringing in food daily, so that sick patients do not have to eat the hospital food.

Answer. The correct answer is E, although D may also be acceptable. Memorandums are useless. The vending machines do not work for anyone, much less the diabetic patients. It is not fair to lock patients in, even if they are sick.

Social Services. You firmly believe that elderly, mentally ill patients need to be visited by family to feel loved and secure and to prevent further deterioration. One sweet little old lady has not had a visitor in three and one-half years. The most common reason for this is:

A. She has no living relatives.
B. Her relatives do not know that she is still alive.
C. Her family is too old and feeble to navigate the long subway and bus ride to the remote corner of the world where the hospital is located.
D. Her granddaughter's dancing lesson coincides with the hospital's midweek visiting day, and the mother cannot be in two places at once.
E. Like many sweet old ladies, she is really a virago and is cordially hated by her children, who would not visit her if we paid them by the hour.

Answer. All answers are correct.

Patient population. You wish to discharge as many patients as possible from your geriatric service. You do a statistical study of placement possibilities for your case load of patients. Of 100 patients the average distribution will be as follows:

A. 20 can go to a nursing home, 10 can go to an old-age home, 40 can go to live with family, and 30 can go to another facility.
B. 40 can go to a nursing home, 20 can go to an old-age home, 30 can go to live with family, and 10 can to another facility.
C. 3 can go to a nursing home, 1 can go to an old-age home, 0 can go to live with family, and 2 can go to another facility.
D. 60 can go to a nursing home, 0 can go to an old-age home, 10 can go to live with family, and 30 can go to another facility.
E. 40 can go to a nursing home, 5 can go to an old-age home, 25 can go to live with family, and 30 can go to another facility.

Answer. The correct answer is C. Anyone who misses this question has no business taking the specialty board examinations. It was only inserted to raise the marking curve.

You decide to change the nature of your study. You have become interested in the vast number of patients who do not belong in a state mental hospital. The commonest reason for their continued presence on your ward is:

A. They are too "institutionalized" to want to go out.
B. They want to go out but the welfare department cannot place them.
C. The families do not want them.
D. If they are sent out and get into trouble, the hospital will be held accountable.
E. They are good "working patients," and the staff does not want to let them go.

Answer. The correct answer is E. Although all answers are correct, I believe that the choice of E separates the public health professional from a pale imitation of one.

Staffing. There are over 50 beds on each ward, with an average monthly census of over 85 per cent. Your assignment of attendants include 6 to 9 employes per ward, of whom 3 to 4 show up for work each day. Their duties include mopping floors; changing linens; bathing, dressing, and feeding patients; giving medication; running errands; transporting patients to therapy units and activities off the ward; and so on. Arrange the following duties in order of importance:

A. Mopping floors.
B. Giving medications.
C. Feeding patients.
D. Changing soiled bed linens.
E. Coffee break.

Answer. The correct order of answers is A, D, C, E,

continued on page 336

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and B. This is easily explained: It is impossible to accomplish anything until the stench of urine and feces has been removed from the floor and until patients are dry. Only then need they be fed. It is unwise to give medications until the staff has had a chance to have coffee.

Pharmaceutical therapy. Patients on regular medications may or may not get their medications on any given day. One day you discover that none of your diabetic patients have had any insulin for almost three days. A quick investigation reveals that on this occasion, the pharmacy is blameless. Stifling your surprise, you investigate. Which of the following are you most likely to find? (Choose one or more.)

A. The charge nurse failed to pick up the physician's orders.
B. The charge nurse is neither an R.N. or an L.P.N. and is not allowed to give medications.
C. No one on the ward knows who the charge nurse is this week.
D. The employe who steals medications from the locked cabinet made a mistake and took the insulin instead of his regular haul.
E. The mopping of floors did not get done on time, and giving medications is low on the list of priorities.

Answer. All answers are correct.

X-ray examinations. The hospital has one x-ray technician for 3,300 patients. He must also do employe health examinations. An elderly patient falls and sustains a probable fracture of the hip. It is Wednesday, the day new employes have chest films taken. The technician refuses to alter his weekly routine. Your solution is:

A. Because pain and deformity are noted, there must be a fracture; therefore, no x-ray film is necessary. Send the patient to the surgical ward and let them worry about it.
B. Postdate the accident report one day, give the patient propoxyphene hydrochloride (Darvon), and reorder the x-ray examination in one to three days.
C. Send a memorandum to all personnel involved, stating your outrage and demanding that priorities be shifted so that patients can be treated before employes.
D. Send the patient to the x-ray department with a "new employe chest x-ray request slip" pinned to his gown and hope that when he is on the table, they will take an x-ray picture of his hip at the same time.
E. Send a telegram to his family notifying them the patient has been placed on the critical list.

Answer. The correct answer is D. If you stick the surgeons with something like this, they will surely do you dirt in revenge. Falsification of hospital records should be done only as a last resort. Memorandums are useless. Sending a telegram, while correct, is not urgent until the patient's blood pressure begins to fall.

Laboratory. Please label each of the following statements true or false:

A. Blood samples sent down with working patients are always lost.
B. Blood samples sent down with employes are always lost.
C. Blood samples which reach the laboratory are then always lost.
D. Blood samples which are not lost are clotted.
E. A competent physician on the geriatric service must learn to function without laboratory services.
F. It is psychologically unwise to continually yearn for a functional laboratory.

Answer. All statements are true.

Education and training. In your efforts to upgrade the hospital, you attempt to hire a director of medical education for the residents. You are faced with a tactical maneuver of utmost importance. Should you tell him that none of the residents speak English? Mark yes or no. If yes, be prepared to defend your position.

Answer. Under no circumstances should a prospective professional employe be told the truth about unpleasant conditions at the hospital. If he is not bright enough to find out for himself before he arrives, you do not want him. The only acceptable reason for telling him the truth in this case would be the possibility that he, too, does not speak English.

Employe relations. Your hospital has a race-relations problem. Assume that most employes are Negro, militant, and underpaid. Assume that you are white, liberal, and underpaid. (You are both beautiful.) How would you handle the following problem in employe relations?

One morning an elderly patient is noted to have multiple fresh hematomas over three extremities and an abrasion of the forehead. No one knows how it happened. You assume:

A. That the patient fell from bed or wheelchair, and it is nobody's fault.
B. That the patient was left carelessly untied and fell from bed or wheelchair, and that it may be the attendant's fault.
C. That the patient was assaulted by another bedridden or wheelchair-bound patient.
D. That the patient has had spontaneous rupture of small blood vessels near the skin caused by increasing fragility of old age.
E. That the patient was beaten by an employe for reasons known only to the offender.

Answer. No one, not even a board diplomate, could answer this question with impunity. One assumes nothing, sees that the patient is attended, and leaves the floor rapidly.

Community relations. You would like your hospital to become an integral part of the community it serves, to enter the mainstream of local activity, and to become known to the public. Your best method of achieving this is to:

A. Send a press release to the medical editor of your local paper.
B. Send an anonymous letter to a state senator.
C. Incite the concerned members of the hospital community to riot.
D. Threaten to resign on network television.
E. Encourage your discharged patients to tell everybody what a nice hospital it is.

Answer. The correct answer is E. A happy patient should be your best advertisement.

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Abstracts

Kuhns, W. J.: Newer trends in intraoperative blood replacement, ***New York State J. Med.* 72:** 359 (February 1) 1972.

Technology has made possible the process of individual components such as platelets, leukocytes, packed red blood cells, fresh-frozen plasma, and factor VIII concentrates, from whole blood. One or several specific components can be used in the required amount to correct deficiencies as indicated by clinical need and diagnostic test. Case presentation illustrates special clinical problems responding to component therapy: (1) emergency bleeding complicated by hypovolemia and thrombocytopenia, (2) traumatic situations complicating hemophilia, (3) uses of frozen and thawed rare blood in patients with sensitivities to multiple cellular antigens, and (4) hypovolemic shock corrected by packed red blood cells and volume expanders. Undesirable reactions arising from blood use are discussed to indicate the favorable aspects of components in relation to adverse transfusion.

Cherubin, C. E., Szmuness, M., and Winter, J.: Antibiotic resistance of salmonella; Northeastern United States—1970, ***New York State J. Med.* 72:** 369 (Feb. 1) 1972.

During the summer of 1970, Salmonella enteriditis became the most common salmonella isolated in New York City. This was not the case in Upstate New York or in other cities in the Northeastern United States.

Hoffmeister, F. S.: Treatment of facial trauma, ***New York State J. Med.* 72:** 373 (Feb. 1) 1972.

Maxillofacial injuries sustained by a high-speed traveler whose head, on contact, decelerates with the force of 50-plus gs is discussed. The management of these injuries consists of three phases: emergency, such as secure airway and rule out critical injuries elsewhere; interim, define nature of injury by clinical symptoms and by use of x-ray films and Waters' stereoscopic view; and definitive, which includes injuries to soft tissue, mandible, maxilla, malar, and fracture of orbital floor. Because of the variety of symptoms involved, a patient with severe facial injury is best served by those willing to work closely and noncompetitively with their colleagues in other specialities.

Giardiasis

In a recent article by R. R. Babb *et al.* (Giardiasis. A cause of traveler's diarrhea, *J.A.M.A.* **217:** 1359 [Sept. 6] 1971) it was pointed out that infestation of Giardia lamblia may be an important cause for traveler's diarrhea. Of 70 patients with giardiasis diagnosed by stool examination in a clinic parasitology laboratory, 58 (83 per cent) developed symptoms while travelling abroad. Typical symptoms were nausea, weight loss, and nonbloody diarrhea with abdominal cramps. Treatment with quinacrine hydrochloride, 100 mg. taken orally three times a day for five to seven days is recommended. Alternately, 250 mg. taken orally of metronidazole two to three times a day for five to ten days may be used.

Medical Meetings

Women's Medical Association to meet

The American Medical Women's Association, New York State Branch 18, will hold their annual meeting in the Monte Carlo Suite, the Americana of New York, on Saturday, February 12, at 2:00 P.M.

The topics and speakers are as follows: "Changing Family Patterns," Natalie Shainess, M.D., lecturer in psychiatry, Columbia University; and "Consent, Confidentiality, and the Law," Adele Hofmann, M.D., director of the adolescent medical unit, Department of Pediatrics, New York University Medical Center.

The following are candidates for the 1972–1974 term of office: president, Janith Stewart Kice, M.D., Garden City; president-elect Ruth R. Knobloch, M.D., Little Valley; vice-president, Elizabeth Coryllos, M.D., New York City; secretary, Mary Bruno, M.D., Hempstead; treasurer, S. Elizabeth Vuornos, M.D., Liberty; and Board of Directors: Eugenia L. Fronczak-Bukowski, M.D., Buffalo; Marguerite McCarthy-Brough, M.D., Syracuse; Hazel Miller, M.D., Garden City; Edith Peritz, M.D., Chatham; Adelaide Romaine, M.D., New York City; Theresa Scanlan, M.D., New York City; Annis Thomson, M.D., Yonkers; and Alice Weber, M.D., The Bronx.

Arthritis topic of symposium

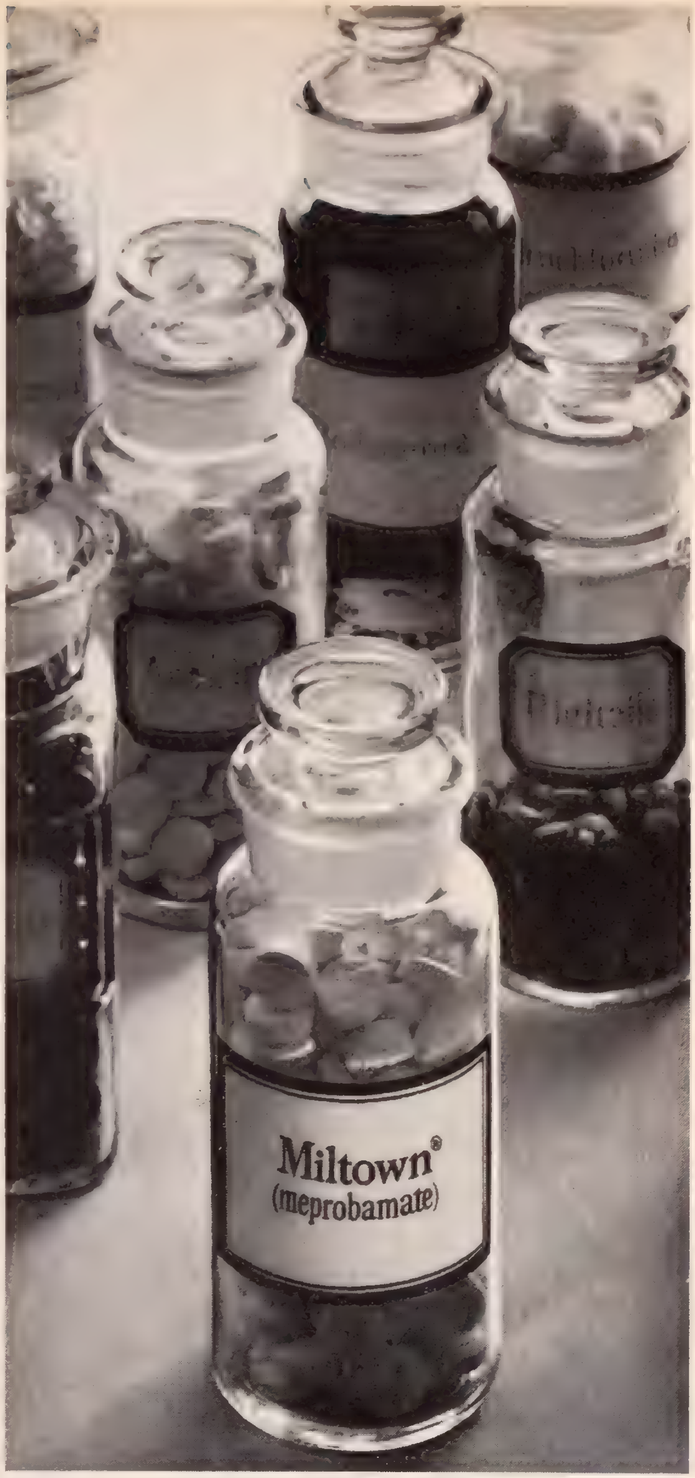
A symposium on arthritis and related disorders will be held at New York University Post-Graduate Medical School, 550 First Avenue, New York City, on February 28 through March 3. The symposium is designed for physicians and researchers seeking detailed knowledge of a number of forms of arthritis, rheumatic fever, systemic lupus erythematosus, and gout.

A panel of distinguished lecturers composed of faculty members of the New York University School of Medicine and a number of other medical schools and clinical laboratories will present recent information about these disorders and analyze current thought about basic disease mechanisms and treatment approaches.

Specific topics to be discussed will include: "Immunology and Inflammation," "Connective Tissue and Cartilage," "Pathogenesis of Inflammation in the Joint," "Rheumatoid Arthritis and Systemic Lupus Erythematosus and Related Disorders," and "Osteoporosis."

A tuition fee of $150 is payable in advance with an application for enrollment directed to the Office of the Recorder, New York University Post-Graduate Medical School, 550 First Avenue, New York, New York 10016.

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.



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Abstracts in Interlingua

Kuhns, W. J.: Nove tendentias in le reimplaciamento intraoperatori de sanguine, ***New York State J. Med.*** **72:** 359 (1 de Februario) 1972.

Le technologia ha facite possibile le preparation o processamento del componentes individual del sanguine total, como thrombocytos, leucocytos, erythrocytos concentrate, plasma fresc congelate e concentrates del Factor VIII. Un o varie componentes specific del sanguine pote esser usate in le quantitate necessari pro corriger deficientias indicate per le necessitate clinic e le tests diagnostic. Le presentation de casos illustrate problemas clinic special que responde al therapia con le componente sanguine correspondente: (1) hemorrhagia de emergentia complicate con hypovolemia e thrombocytopenia, (2) complicationes traumatic del hemophilia, (3) uso de typos raros de sanguine congelate o disgelate in patientes sensitive a multiple antigenos cellulairi, e (4) shock hypovolemic corrigete con erythrocytos concentrate e expansores del volumine sanguine. Le reactiones adverse causate per le sanguine usate es discutite pro indicar le aspecto favorabile del componentes sanguine in relation con le transfusiones adverse.

Cherubin, C. E., Szmuness, M., e Winter, J.: Resistentia del Salmonellas al antibioticos; le Nord-Est del Statos Unite—1970, ***New York State J. Med.*** 72: 369 (1 de Februario) 1972.

Durante le Estive de 1970, le Salmonella enteriditis deveniva le typo de Salmonella plus commun isolate in le citate de New York. Iste non esseva le caso in le Nord del Stato de New York, e in altere citates del Nord-Est del Statos Unite.

Hoffmeister, F. S.: Tractamento del trauma facial, ***New York State J. Med.*** 72: 373 (1 de Februario) 1971.

Le injurias maxillofacial sufferite per un viagiator a elevate velocitate, cuje capite, al contacto, desaccelerate con un fortia de 50+ gs, es discutite. Le tractamento de istes injurias ha tres phases: emergentia, incluso le permeabilitate del vias respiratori e le exclusion de injurias critic in altere sitos; intertanto, le studio del natura del injurias mediante le evalutation del symptomas clinic e le examination radiologic con le vista stereoscopic de Waters, e definitive que debe includer le injurias del texito blande, le mandibula, le maxilla, le malar, e le fracturas del solo orbitari. Debite al varietate del symptomas presente, le patiente con un injuria facial grave debe melior esser tractate per le medicos que desira laborar proximemente, e sin competentia, con le collegas de altere specialitates.

Agranulocytosis

A. V. Pisciotta has stated in a recent article (Studies on agranulocytosis: A biochemical defect in chloroprimazine-sensitive marrow cells, *J. Lab & Clin. Med.* 78: 435 [September] 1971) that when susceptible patients are treated with chlorpromazine, which inhibits cell division, agranulocytosis may result. These patients apparently have an underlying deficiency of DNA polymerase activity in marrow cells, and thus limited marrow DNA synthesis.

Books Reviewed

Management of Hodgkin's Disease and Other Lymphomas Journal Articles. A collection of current published articles related to Hodgkin's Disease and the other Lymphomas. By Edward S. Greenwald, M.D., and Warren Zeitlin, M.D. Quarto of 358 pages, illustrated. Flushing, N.Y., Medical Examination Publishing Co., Inc., 1971. Paperback (spiral), $12.

This book consists of 29 photocopied reproductions of contemporary journal articles on the management of Hodgkin's disease and the other lymphomas. The articles, all representative of the latest trends in these fields, were chosen by E. S. Greenwald, M.D., adjunct attending physician in oncology, and Warren Zeitlin, M.D., assistant resident, division of medicine, Montefiore Hospital and Medical Center. The material is a good cross section of current information concerning lymphomatous disease. The contents are divided into sections on pathology, clinical course of the diseases, radiotherapy, chemotherapy, and combined chemotherapy and x-irradiation. There is a table of contents but no index. The copied articles are identified on each title page by author, journal, volume and date but the original page numbers are omitted, creating a small nuisance. The book can be recommended for those interested in, or specializing in, the subject matter. It is recommended for those preparing for examinations in these fields. It is an important collection because the trends in therapy have recently changed with great improvement in outlook.

Without criticism of the particular articles chosen for reproduction, most of which are very superior, there is something immodest about putting one's name on the title page of a collection of scientific papers which have been lifted in toto from the literature, even though the individual authors have been credited. At least some of the authorities in these fields must have objected to this format since permission was not invariably granted for reproduction. On the other hand, the publisher displays the quintessence of nerve by copywriting the contents and warning that "no part of this publication may be reproduced in any form or by any means, electronic or mechanical, including photocopy, without permission in writing from the publisher." This should not detract from the value of the contents which are at a high level of expertise. In fact, I xeroxed some of the xeroxes. **Mortimer R. Camiel, M.D.**

Laboratory Aids in Diagnosis. By Stephen H. Holt, M.D. Octavo of 185 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $8.75.

It is the stated aim of the author of this book to provide the practicing physician with a ready reference to the laboratory procedures available in the diagnosis of

continued on page 344

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and
AMERICAN MEDICAL WRITERS ASSOCIATION
Metropolitan New York Chapter

Morning Session

Presiding:
Mr. Robert Orsetti, Vice President, Metropolitan New York Chapter, American Medical Writers Association

9:00 A.M. Registration, *Royal Ballroom Foyer, second floor*

9:30 A.M. Welcome, *Royal Ballroom, second floor*
William Hammond, M.D., Scarsdale, New York
Editor, *New York State Journal of Medicine*
Lloyd T. Barnes, M.D., New York City
Associate Editor, *New York State Journal of Medicine*

PANEL: THE FUTURE IN MEDICAL COMMUNICATION
Moderator: Mr. Robert Orsetti, Vice President, Metropolitan New York Chapter, American Medical Writers Association

1. **From the Point of View of the Foundation**
   Mr. Donald H. Higgins, Public Relations Director, Association for Voluntary Sterilization, New York City
2. **From the Point of View of Audio Visual Material**
   James Lieberman, Ph.D., Video Records Inc., Westport Connecticut
3. **From the Point of View of the Medical Journal**
   Mr. Robert O'Leary, Assistant Editor, *New England Journal of Medicine*
4. **From the Point of View of the Advertiser**
   Mr. John Kallir, President, Kallir, Philips, Ross Inc.

Panel Discussion

12:00 NOON Cocktails, cash bar, *Versailles Ballroom, second floor*

12:30 P.M. Luncheon, *Versailles Terrace, second floor*

Presiding

Lloyd T. Barnes, M.D., New York City
Associate Editor, *New York State Journal of Medicine*

LUNCHEON ADDRESS: The Future of the American Medical Writers Association
Henry Moss, M.D., President, American Medical Writers Association; Associate Clinical Professor of Surgery, Albert Einstein Medical Center & Temple Univ. Health Sciences Center, Philadelphia, Pa.

Afternoon Session

2:00 P.M. **WORKSHOPS: COMMUNICATING WITH THE U. S. GOVERNMENT**

1. *Biarritz Suite, fourth floor*
   Mr. Henry Purdue, Director, Government Liason, Ayerst Laboratories, New York City

2. *Malmaison Suites 6 and 7, third floor*
   Mr. Vincent Downing, Treasurer, Metropolitan New York Chapter, American Medical Writers Association; Lederle Laboratories, Pearl River, New York

REGISTRATION Medical Communications Day / Friday, February 18, 1972

THE AMERICANA, NEW YORK CITY

Advance registration at reduced fee of $10.00 for members (Medical Society of the State of New York or American Medical Writers Association), $11.00 for nonmembers, if received by February 16. ($12.00 and $13.00 after this date.) Registration fee includes morning and afternoon session, and luncheon. *Tickets will be held at door.*

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disease. Dr. Holt, who appears to have a great deal of practical experience in the area of clinical pathology, admits that this task is a formidable one and this reviewer agrees. Unfortunately, this book does not clear the hurdle and is full of numerous inaccuracies and omissions. For example, in discussing the porphyrias no distinction is made between acute intermittent porphyria and porphyria cutania tarda. These can be distinguished on the basis of differing patterns of porphyrin and porphyrin precursor excretion, but the author fails to show this laboratory distinction. Furthermore, hyperchromic anemia is listed as a finding in sickle cell-thalassemia while in fact it is usually hypochromic. It is also stated that in this condition hemoglobin electrophoresis shows hemoglobin S with a trailing (A). At pH 8.6, if hemoglobin A can be demonstrated (rarely), it leads hemoglobin S.

In addition, this "cook book" approach to the laboratory diagnosis of disease tends to lead the physician to rote thinking about disease diagnosis rather than striving for a better understanding of the pathophysiology involved. In this reviewer's opinion, this book is not recommended for the physicians for whom it was written. **Richard D. Levere, M.D.**

Hepatitis convalescence

Capt. William E. Lukash reports in *Military Medicine* **136:** 234 (March) 1971, a study of 40 young men convalescing from infectious hepatitis and 20 normal controls that indicated that vigorous exercise did not aggravate the condition of patients in whom (after an average of 56 days of hospitalization) serum enzymes had returned to normal. While there was a transient rise in serum enzymes after exercise, there was also a rise (although somewhat less) in the control group. The author notes that since both liver and muscle contain transaminase, either could be a source of serum transaminase in response to exercise. On the other hand, total and direct serum bilirubins, which are specific for the liver, showed no effect from exercise in either group. This suggests that the muscle activity may have caused the transient rise. It has been shown that poorly conditioned persons tend to show greater enzyme activity after vigorous exercise than athletic persons. After an average of almost two months of inactivity and bed rest the patient group could be described as poorly conditioned. Lukash also cites Repsher and Freeborn (*New England J. Med.* **281:** 1393 [1969]), who showed that hepatitis patients who started vigorous exercise when their mean total bilirubin was 7.5 mg. per 100 ml., apparently had a clinical course about the same as a similar group of patients treated with rest and limited physical activity. On the basis of these two studies, the author suggests, a more liberal approach regarding exercise should be recommended for previously healthy young men convalescing from infectious hepatitis. Patients should, he believes, be allowed to resume normal activities after liver function tests return to normal.

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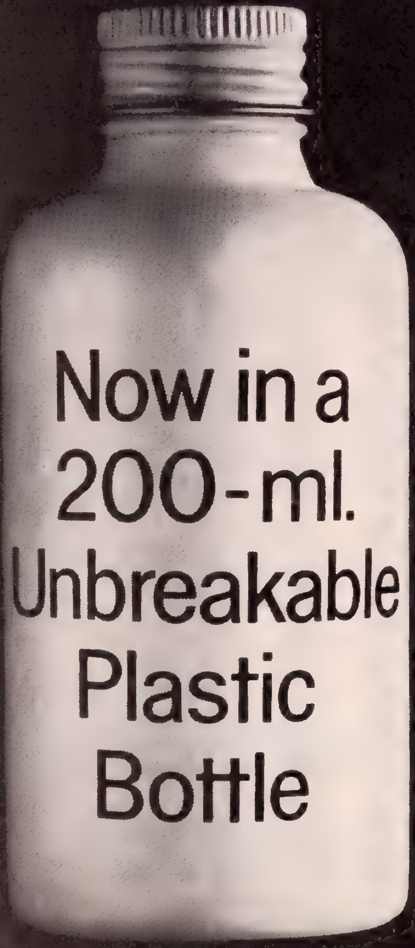
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February 1, 1972 Volume 72 Number 3

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Editorials

A self-assessment—warts and all

Since questionnaires and polls by their ubiquitousness tend to subscribe to a law of diminishing returns, we were not altogether sanguine that the results of the questionnaires concerning the ***Journal***, distributed by members of the Division of Public Affairs under Mr. Guy Beaumont, would be either useful or revealing (Fig. I). Like the Queen in *Alice Through the Looking Glass*, we knew that on the ***Journal*** "it takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!" But our feedback is limited, and we needed a varied cross section of our readers' opinions to know how adequately the ***Journal*** is serving its purpose: wherein lie our strengths and weaknesses.

Questionnaire I

Questionnaire I was distributed at meetings in Upstate New York during the late summer and fall months. Some were also deployed to hospitals and teaching centers. Most of the forms were given out and returned by hand, and so there has been, throughout, a remarkably high return, approximately 40 per cent. Also, since the questionnaires were anonymous, the respondents could express themselves more freely than might otherwise have been the case.

The first questionnaire went out to some 2,000 physicians; 866 responded. Of these 767 were favorable; 99 were considered negative because they did not fill in any of the boxes.

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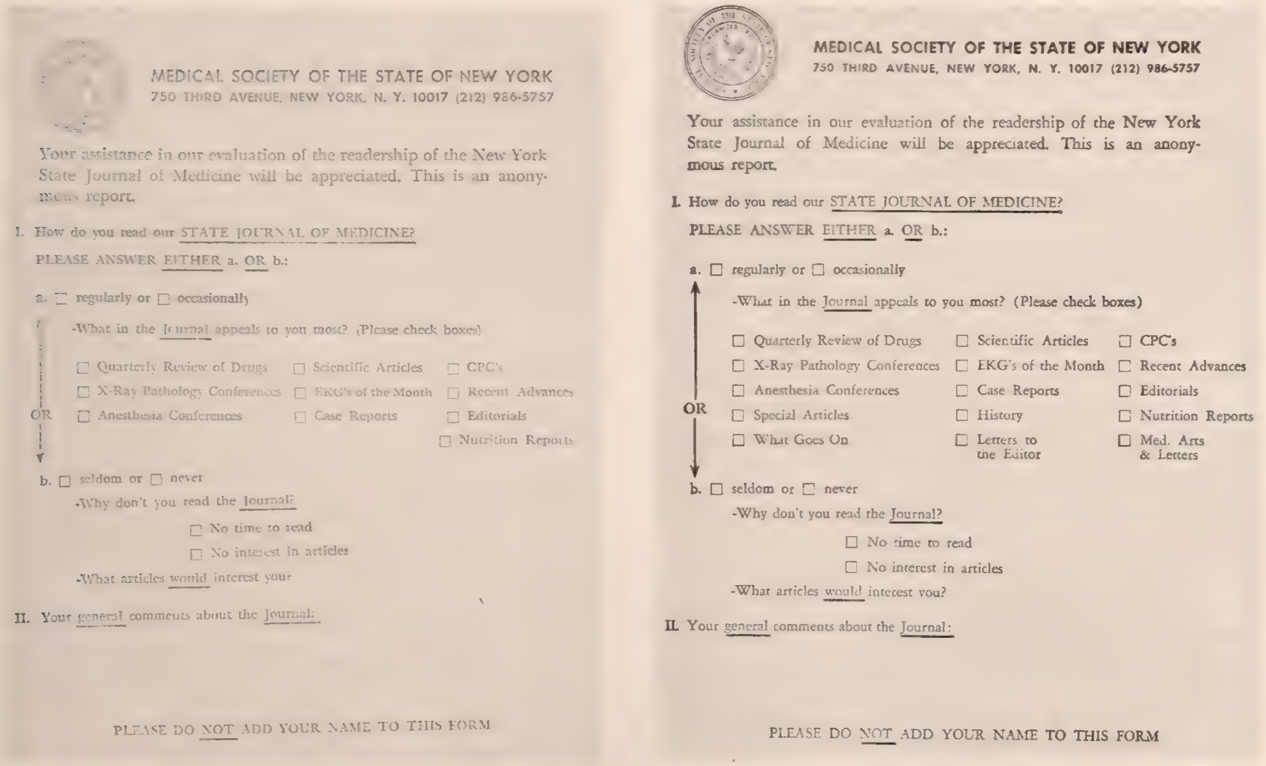

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a. ☐ regularly or ☐ occasionally

-What in the Journal appeals to you most? (Please check boxes)

☐ Quarterly Review of Drugs
☐ X-Ray Pathology Conferences
☐ Anesthesia Conferences
☐ Special Articles
☐ What Goes On
☐ Scientific Articles
☐ EKG's of the Month
☐ Case Reports
☐ History
☐ Letters to the Editor
☐ CPC's
☐ Recent Advances
☐ Editorials
☐ Nutrition Reports
☐ Med. Arts & Letters

OR

b. ☐ seldom or ☐ never

-Why don't you read the Journal?

☐ No time to read
☐ No interest in articles

-What articles would interest you?

II. Your general comments about the Journal:

PLEASE DO NOT ADD YOUR NAME TO THIS FORM

FIGURE 1. Questionnaire I (left) and Questionnaire II (right).

slowly, then in increasing numbers, we became excited as we read what you, our supervisors and public, had written. We found that we had not been flying blind: that you had opinions, expressed them, and let us know that we were doing something right. Thank you.

We analyzed Questionnaire I in routine fashion, and the results are tabulated in Table I. Comments were broken down into three main groups: Favorable (these were the enthusiastic, good to excellent group); Moderate (pretty good on the whole or average, usually suggesting more material in specialty subjects); and Negative (from damning to sobering). On the whole, those who took the trouble to write were most helpful in their suggestions, and we are deeply grateful. The first questionnaire went out before the new format appeared with the January 1, 1971, issue, and we were gratified to find that many of the suggestions re format from this group had already been incorporated into planning for the new design.

Questionnaire II

Questionnaire II differed from Questionnaire I in that certain departments were added: Special Articles, What Goes On, History, Letters to the Editor, and Medical Arts and Letters. It was distributed to urban areas that had not been reached by the earlier questionnaire and during the months February through May, 1971. It was also a feature at the Annual Convention ***Journal*** booth. Questionnaire II was distributed to approximately 1,750 physicians. Of these 774 responded; 708 were favorable and 66 did not check any boxes. We felt a truly representative cross section of our readers had expressed themselves.

Again the returns were generally favorable to the ***Journal,*** its contents, and the direction taken in editorial policy. Questionnaire II was notable for reactions to the new format. The cover, check boxes, binding, the improved reproduction of illustrative material, greater legibility, and the general typographic design and layout received enthusiastic comments. The one criticism is that the enlarged format necessitates amplifying library shelves! Again the results were tabulated as found on Table I, where the two questionnaires can be compared. The additions to Questionnaire II must be considered separately since they were not included in Questionnaire I.

TABLE I. Results of Questionnaires I and II. This represents 39+ per cent positive return of those distributed. Of 2,000 copies Questionnaire I sent, 866 returned, 767 positive, 99 negative. Of 1,750 copies Questionnaire II, 774 returned, 708 positive, 66 negative.

Items	QI	QII	Totals
A READ			
Regularly	384	456	840
Occasionally	350	211	561
SECTIONS			
QR Drugs	153	193	346
Radio-Pathology	115	146	261
Anesthesia	66	39	105
Special Articles	. . .	371	371*
What Goes On	. . .	248	248*
Scientific Articles	491	414	905
EKGs	125	182	307
Case Reports	212	192	404
History	. . .	93	93*
Letters to Editor	. . .	86	86*
CPCs	173	160	333
Recent Advances	322	307	629
Editorials	249	199	448
Nutrition	33	43	76
MAL	. . .	57	57*
B READ			
Seldom	42	27	69
Never	13	12	25
No Time	48	33	81
No Interest	27	17	44
GENERAL COMMENTS			
Favorable	136	166	302
Moderate	90	84	174
Adverse	49	33	82†

* Results only from Q II.
† Adverse less than 5.5 per cent of positive returns.

Comment

We realize that a large proportion of our readers could not be reached. But we are always glad to hear from you and welcome your comments and suggestions. To those of you who troubled to respond, our deep gratitude and appreciation. All of your remarks appear in the Addendum.

Now we know that you are out there and attending! We do not need to "gyre and gimble in the wabe."

Addendum

Questionnaire I comments

More articles on changing conditions in the delivery system and/or method of financing care, particularly experiences elsewhere.

As with other General Journals I have found those articles relating to my field of interest to be of a positive nature.

Should be absorbed by the JAMA ca section for the state or eliminated entirely. There is too much reduplication.

Helpful and Informative.

Up to date.

It's okay.

I pick out the orthopedic articles only.

Difficult to read and too abstract.

Very informative.

Editorials and articles are improving.

Good.

Poor quality medical information.

Make sure there is an article for each specialty.

I'm satisfied.

Quarterly. Too many journals.

Good journal.

Articles on Medical Emergencies and

Geriatric care. Removed and placed in permanent file. Not in active practice.

Adequate.

Excellent.

Quite good.

(1) Letters section should be encouraged. (2) Things like "Conferences" CPC's etc. not interesting. (3) State society news and county news section should be expanded.

Good.

Articles generally helpful.

Promote a more academic approach.

Good.

Satisfactory.

Not high calibre for a state this size. Qualified writers would prefer *NEJM* etc. Should have weekly journal, less political, more scientific.

I consider it the most informative medical journal available.

Fine.

Not too many articles apply to an older G.P.

Good.

Journal is good. I'm too tired to read except for specific information.

Really good review articles. Literature digests. Unread copies that no one wants are piling up.

Would like to drop out of AMA and keep up with State Medical Society.

I think the journal should be monthly at the most.

Not needed. Too many journals come to the office anyway.

More orthopedic papers.

Obs. Gyn.

It's a fine high school grade magazine.

Discontinue publication and use the money for building your new building! Any NYS med articles could easily be published in one of the myriad of medical journals already in publication and most with much wider circulation.

Material geared to office practice and not a display of some research talent.

It is an aid in keeping abreast—the articles are usually not so esoteric as some other journals.

A poor magazine—needs a major overhaul. Good articles by top flight physicians (interest)

Basically a good journal.

Good reference, good index for referrals.

Quite a good journal.

Less important than other journals and economy of time.

The boxes checked in A are well done and of value to the physician.

Should have enlarged table of contents with/or a synopsis section: what every MD should check in the current issue or on medical front: recommended reading.

Wish you continue the same excellent way.

I think it is a very good journal.

The Journal should be bound with glue only eliminate the staples so articles can be easy removed for reprint files.

It suffers from being a state journal!

It is a good journal.

Excellent.

A very poor format; very hard to read.

Not regularly read.

Very acceptable.

Comparable to other state Journals.

Other medical informational material, more concise (for) busy practice, rarely have time to read a full article.

Excellent.

I read it as much as I do any Journal.

Very satisfied with present form.

Like the Obituary column.

Good.

The editors should exercise more critical judgement re: acceptance of papers, many of which have been, in my opinion, of questionable scientific accuracy.

A good journal.

Frequent good articles of personal interest.

Good job. Keep it up. Thank you.

Very poor. Better scientific articles (interest).

Not very interesting.

Ophthalmologic (interest).

OK. Interest, limited, must be confined to specialty journals (pediatrics).

Needs larger format—Will be done in Jan. 71!

More articles and information relating to medical care, access, programs in the State, local and general problems, regional efforts, and facilities available, new approaches, group practice, use of allied women in NYS.

Established Physicians Politics Page—explain simply implications of Universal Health Ins., educate the practitioner who can educate his patients—so they can all be sort of a truly informed Electorate. Too long a delay in publication of current reports. Recommend: Within 1 month of presentation of paper at State Convention, publish all reports in a Special Issue. This keeps those papers current—and all the papers to be published will be kept to date.

Excellent.

Good.

Much Improvement!

A relatively constant proportion of articles based on and directed toward clinical medicine—less toward research.

Has improved tremendously in past two years.

I like it.

A good "State" Journal.

I am in a special field and read articles related to my field.

New format. *Art* approach!

I believe it is very helpful in keeping up with recent advances.

Should receive more cooperation from the huge number of M.D.s in N.Y.C.

Those in practice teaching and research.

Just the right size and not too many articles. Series of therapeutic articles would be of value.

Have own Specialty Journals (X-Ray).

Format not interestingly presented.

It's good and getting better.

Format excellent. Enjoy the historical articles etc.—Ober, Carson etc.

Good.

Satisfactory.

Surgical-Research (interest).

A useful periodical.

Excellent.

Necessary.

Hobbies of the Doctors (interest).

More news in greater depth about state legislation.

Helpful attrition.

Excellent.

I have been surprised by the tremendous foreign circulation.

Level of scientific articles should be improved.

As dermatologist, there are very rarely articles in this field.

No Comment.

More Specialty sections.

An excellent journal.

Continue.

Would like to see one month on (one article a month) alternating on the various specialties.

Helpful.

Very poor reflection of intellectual output of New York advances in Medicine and Surgery.

I like it, as is.

Good.

Good.

It is comprehensive therefore not all is pertinent to all—BUT—where useful—it is a big help.

Good.

Labors under the handicap of too many journals.

Good.

Good journal.

Material useful in every day G.P.

Adequate Journal.

Nothing wrong with the Journal. Too little time for reading all the journals we receive.

Why?

Not as clinically informative of modern medicine as other journals.

Scientific articles hold little interest for me.

Not generally pertinent to my specialty or interests.

Good coverage.

The Journal is the source for info on official Society positions on matters of legislative importance.

Generally good.

Quite good.

Good.

Good. Advances in medicine (interest).

Articles stoogy (sic)—written as if no one else knows but the writer.

Good.

A good journal.

More special articles.

Very worthwhile.

Very good.

Excellent.

Good—but just don't have time to read.

Have mainly specialty journals and can't get thru them.

Good in those areas in which I have interest.

Pornography (interest).

Good variety, not too obtuse, not too lengthy or flamboyant. OK as is.

Much more in way of practical help in practice than for instance the New England Journal.

Excellent.

Articles on diagnosis and treatment (interest).

Fair journal.

Good.

Good journal.

Read mainly psychiatric papers. Generally good quality—hope they interest non-psychiatrist too.

OK-.

One of many.

Generally a poor journal.

Haven't enough time to read regularly.

No complaints.

Many better Journals available. See no need for each State to have their own Journals. N.E.J. Med. & Southern Med. Assoc. J. are good.

Regular Depts. should change editors periodically—i.e. ECG of Month, etc.

More or less ok. Suggest more material for the G.P. emphasizing the pitfalls of So-called "Normal Obstetrics."

Doing pretty well.

Basically not good. Not keeping up with modern medicine.

Redundant articles. Unnecessary journal.

An unnecessary publication.

Slightly more esoteric lead articles would help.

Too many scientific journals to read. ? Could publish NYSJ. of Med. less often.

Socioeconomic and legislation (interest).

Marked improvement in recent years.

Quality of scientific articles generally could be improved.

Journal of Interest. No change in articles would change interest in Journal.

O.K.

O.K.

Unnecessary publication.

Do away with it.

Poor scientific articles.

I do not think it adds much to my education.

Some day I'm going to read it!

This publication would be markedly improved by the addition of a centerfold as found in another well read magazine.

No or very few articles on basic science or surgery.

Too many journals!

It's far from what I hoped.

Poor. Should have better general review articles.

Unnecessary publication in regard to specialists.

Very good.

Improving gradually.

Too many journals. State journals not justified.

Need more info. on Current Therapy.

Good scientific articles.

Valuable content.

Increase the Scientific Reviews.

It's helpful.

Serves a purpose.

More prulpess (?). Good; print too small.

Satisfactory.

Articles of interest to G.P. such as Reviews etc. (interest).

It doesn't attract the caliber of articles as say NEJM.

Orthopedic articles (interest).

I like it!

Generally very good.

Good.

Very good.

Doing a good job!

On the whole a good journal.

Informative—clear concise.

Good journal for a state Journal. Dermatological—my specialty (interest).

Excellent publication.

I believe the level of quality is generally quite satisfactory and useful.

Pretty good.

Of general interest, particularly regarding legislative programs, educational programs, etc.

The variety of subjects apropos to gen. med. audience.

A darned good journal. Reprint requests reflect its popularity and readability.

Very helpful and interesting.

It does a good job.

Excellent.

Good reading.

Good quality—not superior.

Very good for a State Journal.

Rates one of the better State medical journals. Anesthesia, articles on (interest).

Not informative as to economics. Medical politic (interest).

Articles on how Drs. can contribute to community welfare—Drugs (inter).

Satisfactory.

I feel I should read it more often.

Present format (interest).

The last place you submit an article. If NYS J Med. won't print it, nobody will. Why does it not rival, intellectually, the New England Journal? It seems more commercially-oriented, "more conservative" politically, more dedicated to economic interests of the G.P.

Fair.

Improve the format of the Journal.

More information of legislative proposals & advice.

Not good quality of articles.

Fair.

Choice of articles not selective enough.

Well printed & edited—but most of the articles are of little clinical interest.

Not a successful competitor for limited reading time.

The contents are irrelevant.

Could stand improvement in quality of many articles.

Some of the articles seem superficial—perhaps this is due to limited space available—or it may be some one wants "to get there first."

Find it pretty adequate for the purpose.

Very good: orientation in American Medical World.

Historical articles v. good; business of the State Society.

Occasional good article.

Adequate, practical.

Excellent when I get a chance to read it.

I am tired of medical schools esoteric articles.

Better quality control of articles.

Generally articles don't seem to contain information I find of interest personally.

Believe it is doing a good job.

Good!

Approve the Journal in general.

Fairly good.

Needs change in general format.

The people are simply demanding more Drs. & nurse services (interest).

Needs modernization.

O.K.

Not much value to me.

I mean to read it but just don't.

Good.

Satisfactory.

Good.

Better all the time. Keep What Goes On—very helpful.

Rather good.

Satisfactory. Keep the format.

Could be published less frequently and be more selective about the articles.

Decrease advertising pages (too repetitious in all medical advertising).

Good.

Well written. Concise and very informative.

Good.

Good journal. Pertinent. Articles brief and easy to read. Surgery and allied fields, Trauma (interest).

Good.

Sometimes excellent articles, at others not worth printing.

I believe its main trouble is that it is swamped by other magazines giving similar material.

Generally enjoy it and find it worthwhile.

Size??

Not enough political involvement editorially speaking.

Read for general information other than medical or scientific. In this regard other journals in my field or(sic) far superior.

As a surgeon, not as valuable to me as some other journals.

I feel that fewer articles in a journal only three or four times a year would be more desirable!

Very good. Suggest more Case Reports along the detail of the NEJ of Med.

It has to compete with other Journals for my time to read.

Historical, neuropathy perspective and

non pseudo-scientific articles (interest). Good journal but second rate scientific articles.

Emphasize how to do it and why.

Should have more scientific articles.

Scientific (interest).

I like it as it is except for "ads."

Good.

Good format.

Radiologist. More articles related to Radiology.

Fairly good.

Willingness to publish articles by State Society membership.

Excellent in all categories.

Questionnaire II comments

A few pages on State Medical legislation and State society efforts would be useful.

Psychiatric (interest).

It is a good journal. I find it all interesting.

Very good journal.

I enjoy the entire contents and make a point of reading it regularly.

Consider it only fair.

Good.

Excellent.

Useful but not as good as N.E.J.M.

The newer format is much better than before.

Satisfactory but I don't get to it.

I like better the new Journal.

O.K.

The new format is a great improvement.

It has improved greatly in recent years.

As a specialist (urologist) I read the State Journal only to a limited degree because I have too much to read already in my area of special interest.

Good.

Articles are of uneven quality. This may be necessary to appeal to wide ranging audience.

The CPC's are sometimes not well presented. Scientific articles are good.

Fair.

The new format is much more attractive.

Fair.

Excellent. I read mostly what pertains to my specialty. There is much material to read, and not too much time.

Best of the state journals and better than some of the "name" journals.

Average quality and interest of articles is only fair.

Excellent.

New format a distinct advantage.

Some of the scientific articles are interesting but usually not in depth.

Good.

Excellent.

Like the change in the appearance of the Journal.

Comment about the questionnaire: There may be confusion about the difference between "occasionally" and "seldom."

Do Orthopedics and find journal only fair.

Psychiatry (interest).

A reasonably well balanced journal.

I read articles relevant to my specialty of psychiatry and a few others on topics that I have maintained interest in over the years.

More newer articles on controversial subjects (interest).

More recent research reports (interest).

If possible more articles in Pediatrics.

The overall caliber of this journal is far below the level of medicine practiced in N.Y. State. Articles not of broad scope. Review articles OK. Could be extended. I personally find the historical sketches dull.

I think the quality of the journal has improved considerably during the past 10–15 years.

Very poor journal. Better scientific articles (interest).

Excellent.

It is good as it is.

Good.

More illustrations.

Very well edited. Helpful.

Far superior to most state Journals.

Larger print (interest). In general a good job.

Fair.

Very interesting and helpful.

New format is better.

Good as State Medical Journals go. Could be better—Review articles, etc.

Good local journal.

The new size is great.

Fair.

A fair journal, with occasional good articles in my specialty.

I like the new format.

Internal Medicine (interest). Could be improved.

Excellent.

Helpful.

Favorable.

More general review articles.

Like its clinical, practical orientation.

Good.

Excellent check boxes on cover.

It's the No. I.

Recent advances in Diagnosis.

I like the new format. How about more Psychiatry!

New format is good.

Fine.

It is a worthwhile publication.

Symposium on "----" (i.e. *meat*) not somebody's rehash.

Anesthesiology (interest). More information on health legislation and how MSSNY is coping with it.

Suggest more frequent articles suitable for Anesthesiologists.

Better scientific articles. Less politics.

More info. on N.Y. Med. Soc. meetings & how to participate.

Generally best for me in review articles on scientific—biologic-physiologic etc.—present status of research etc. in given subject.

I like the entire Journal and am interested.

Likes obits.

Fairly good.

Greatly improved.

Excellent.

More practical pointers.

What Goes On should be separate (as before).

Like the new format.

Very helpful.

Pretty good.

Good but delivered too late for WGO schedules.

Fair.

The new size & format is excellent.

A positive need.

Excellent improvement recently.

Surgical (interest).

Good.

Excellent.

Public health (interest). Constantly improving.

Excellent.

Has improved in last few years.

I like it.

It is O.K.

No suggestions.

Quick scan is all one has time for. Special articles most helpful.

Treatment of addicts (interest).

The society should eliminate the Journal to save money.

Journal is interesting and should be continued as usual.

I like it.

Serves its purpose well; generally informative.

Good and Useful.

Good Journal.

OK.

Excellent for NYC.

Good Journal.

Keep it coming.

Appealing.

Advances in diagnosis and Therapy in Clinical Medicine (interest).

A good presentation of useful information.

Problem is that scientists do not send their best stuff to a State journal.

Good journal.

The general scientific level is rather mediocre.

Quite good.

Very useful.

There are enough scientific journals. The New York State Journal should be primarily concerned with news about N.Y. Medicine.

I would like to see the NY State Journal emphasize N.Y. State problems—in all aspects: history thru sociology to medicine etc.

Excellent.

It is moderately poor in real value.

I don't believe that the articles are well chosen—The editor should attract more scientific articles from members of faculty of various schools and hospitals.

Occasionally—too much space devoted to trivia e.g. "How to Defeat a Discussant"—10–12 pp. Note It is hoped that the larger physical size of the journal does not portend more words.

Very interesting and enlightening.

Not keen about the new format—red blood upper ¼ cover.

The scientific articles are good and timely.

Articles are not of the best quality.

A good journal, well organized, easy to read.

Few articles are in my specialty—psychiatry.

I like articles on Parking (sic), Abortion, Medical Economics.

Better journals available. Send a small report of business activities & save your money.

Calibre of scientific articles not great. Prefer other journals.

Just fair.

Seems well edited to me. I find little new in it but think the literature reviews are useful.

The Journal is one of the best scientific papers.

Journal is instructive and serves the needs of a practicing physician.

It is a very good Journal. I would like to see more subjects on Psychiatry.

Too superficial.

Excellent and Concise.

Keep it brief.

Good.

Very good.

Generally poor.

Public Health (interest). Those articles relevant to my own work I have enjoyed and found useful.

Generally a good journal. Would like to see more "Recent Advances" in specialties.

Keep up the good work!

I enjoy it. Its subject matter is good. Keep up the good work.

Very good.

Well done.

Good deal of mediocrity.

Better quality original & review articles. X-ray path. conferences.

It's OK—But there are too many journals—How to keep up?

Rather than read I skim thru the Journal, only reading those articles of interest to me. With so little time to read & so much written, I can barely keep up with developments in my own field.

Good. Office management & purchasing (interest).

Fairly good.

Suggest the publication of scientific articles (non-medical) of general interest (one in each issue) in fields of sociology, anthropology, philosophy, physics, etc.

Format could be improved.

Quite good.

It is getting better.

The articles are good but I have no time to read it regularly.

Need more of the articles in depth.

Good—serves its purpose.

There are too many journals.

I always look at the Table of Contents.

Is most concerned with business and procedures than academically.

Probably could be discontinued without significant loss.

Well edited.

Good.

Appreciate Ober's articles especially.

Level of articles not very high. Too esoteric generally.

Articles verbose, poorly edited; illustrations poorly reproduced.

Original investigation (interest).

Helpful.

It is excellent.

Improving each year.

Good publication.

Don't like the new size.

Would appreciate more on NY State Medical Economics as it relates to general or group practice.

I think that it is done well.

Try to achieve greater readability.

Our "Journal" & all others are too scientific—with charts and tables of redundant articles because of "Publish or Perish" attitude!

Good.

Good diversity.

Good.

Better organized for ready reference.

One of the best State Med. Journals.

Very good.

Very good. Neurology (interest).

Good.

Possibly best state journal.

I like the new format—for ease of reading, scanning, etc.

Fair; "scientific" articles are too unscientific & not comprehensive enough.

Good but sometimes a little late.

Good.

Not a top flight journal.

Very helpful.

Excellent.

Valuable journal particularly for information on non-scientific activities of importance to MDs.

(1) Some articles too verbose & require editing for that reason and for good English. (2) Word for word reports are a waste of space and time; should be summarized. (3) Obituaries are unsatisfactory. Should include hospital & other scientific activities by priority.

An addition—once in a while—articles on school health. At least—give us the up to date legislation.

Would like to see several thorough articles on the corrupt & "messy hospital"* situation in New York City—preferably written by an honest & courageous "solo" practicing physician, who has "no ax to grind.*—private (not municipal).

(1) Not enough brief, concise information about new developments, aimed to instruct GP or specialists in other fields. (2) Poor quality of "scientific" papers.

Gynecology (interest). The Journal is good. New articles should not be accepted for publication if they deal with subjects covered in earlier journals.

I preferred the smaller format.

Fair. More original articles, not so much editorializing.

Community Psychiatry (interest) & Psychopharmacology.

Fair.

Change the paper—Change the type—Arrange it better.

Very good!!

It just takes a low position in the pecking order. Too many journals!

On the whole as good as any journal, but are so many journals necessary.

Improving steadily. And is now excellent.

Well organized and well presented. One criticism; Too many journals these days. I think it should be published every two or three months.

Generally quite readable.

Good.

Excellent.

Specialty (interest).

It is truly below average in quality. In fact—it is poor.

Has been satisfactory to me in the past. Proper "Clinical Evaluation" of reports of FDA in withdrawing of certain drugs (interest).

Splendid.

Generally worthwhile.

Fair.

I consider it good, with broad coverage both of scientific & social-professional issues.

Very helpful.

Well organized & concise articles—which are most effective.

Too much competition. Competent reviews of controversial subjects (interest).

Its level improved in the past couple of years.

Prefer others. JAMA, N.E. Journal, Archives Int. Med. Annals Int. Med.

More interpretive articles as opposed to specialty journals.

A good journal.

Sometimes the articles seem out of the mainstream of general thought on the particular subject. Probably they need more authoritative reviewing.

Mediocre but one can usually pick up 1 or 2 points of interest.

Not worth the cost of publication if there is a cost of advertising revenue.

I read only the articles pertaining to ophthalmology.

Very interesting and helpful.

Minimum of articles of interest to ophthalmology.

Informative.

The Journal is interesting & well edited, although it mostly does not deal with subjects which interest me directly. Articles on psychiatric subjects (interest).

Very well produced, might be improved with more humorous articles.

Good of its kind.

I enjoy it & look forward to it.

Good.

Generally satisfactory. With number of general & special journals it is difficult to get to all of them.

I regret that recent issues are in a larger size format. This prevents storage in usual size book cases. The smaller size was compact, easily carried etc. Change back to old way.

Psychiatric. General socio-medical (interest).

The change in size is good and conforms with other periodicals.

Journal—Fair. My reading time occupied by other journals more applicable to my specialty i.e. Int. Med.

Journal now is minor addition to A.M.A. More controversial areas in sociological, political-medical areas (interest).

More letters to the Editor.

Excellent publication.

General up-to-date information medical journal.

I enjoy it and find it profitable.

Well balanced.

Editorials are glanced at. If nothing current or of interest in them, not read thoroughly.

It is informative; relaxing; printed nicely. Would appreciate a monthly article on item such as "Current Trends that Affect You and Your Private Practice in N.Y.S."

Since there are ample specialty journals, keep telling the men in active Gen. Practice what to do. Have section on "Quick Tips," "Nuggets" etc.

Well worth reading.

Good articles of practical nature—minimum of the esoteric.

Excellent!

More articles concerning the social professional situation in the State!

I receive it much later (in Queens) than the Drs. in Manhattan! In general it is an excellent Med. journal, much better than any similar!!!

Would like short articles on "hints in practice" "experiments in practice."

Would like to see more treatment methods and a question & answer dept.

Larger special articles. Great improvement in new format!

For me, a retired surgeon, it replaces practice.

Selective excellent articles that I chose.

Good issues.

Interesting clinical cases. Too commercial.

Superfluous scientific articles with other medical publications.

I find the State journal better than the AMA Journal. There are so many other journals that are superior. One can only read selected items in any journal.

The State Journal does a fairly good job.

Would like to see more articles on the economic side of medicine discussed.

Format good, quality good.

The journal should (be) more scientific.

None.

Poor overall in comparison to JAMA, NEJM, Annals, BMJ. Is it worth having?

Very good.

It's an excellent Journal.

New format has improved from old one.

Excellent—one of the best.

Good.

I find it satisfactory but not enough articles in my specialty appear.

Clinicopathologic conferences (interest). Very interesting.

Good. In general mediocre in quality. Lacks scientific distinction.

Seminar on

FOUNDATIONS FOR MEDICAL CARE

Answer to the Medical Care Dilemma

A special MSSNY-sponsored pre-convention seminar to acquaint delegates, all physicians and others interested in foundation for medical care organization and function.

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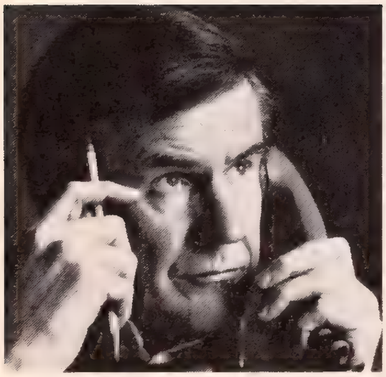

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NEWER TRENDS IN INTRA-OPERATIVE BLOOD REPLACEMENT

WILLIAM J. KUHNS, M.D.
New York City

Associate Professor, Department of Pathology, New York University School of Medicine; Director, Bellevue Hospital Blood Bank, Bellevue Hospital Center

Technology has made possible the process of individual components such as platelets, leukocytes, packed red blood cells, fresh-frozen plasma, and factor VIII concentrates, from whole blood. One or several specific components can be used in the required amount to correct deficiencies as indicated by clinical need and diagnostic test. Case presentation illustrates special clinical problems responding to component therapy: (1) emergency bleeding complicated by hypovolemia and thrombocytopenia, (2) traumatic situations complicating hemophilia, (3) uses of frozen and thawed rare blood in patients with sensitivities to multiple cellular antigens, and (4) hypovolemic shock corrected by packed red blood cells and volume expanders. Undesirable reactions arising from blood use are discussed to indicate the favorable aspects of components in relation to adverse transfusion.

The primary function of this report is to present new developments in transfusion technology, namely the processing and use of blood components and how they can be applied to operative patients. In addition, I will briefly discuss (1) adverse effects of blood transfusion, (2) massive bleeding and massive transfusions, and (3) hepatitis and the physician's responsibility.

Blood component therapy

Whole blood is living tissue composed of many parts. It is important that we be selective in utilizing portions of blood to correct specific deficits rather than be wasteful in transfusing whole blood when it may not be needed. Specific blood component therapy has been made possible by the development of high-speed refrigerated centrifuges and a multiple plastic bag system in which parts of blood can be separated without danger of bacterial contamination (Fig. 1). The accompanying flow chart indicates that a single donation of whole blood can be prepared and transfused as components such as packed red blood cells, leukocytes, leukocyte-depleted blood, platelets, factor VIII concentrate, factor VIII-depleted plasma, or fresh-frozen plasma[1-3] (Fig. 2).

Packed red blood cells. Packed red blood cells were previously prepared from glass bottles and thus introduced the chance of bacterial contamination. This problem has been resolved by the multiple plastic bag system which allows the refrigerated storage of packed red blood cells for twenty-one days. If all transfusion requests for red blood cells were met by the use of packed red blood cells, there would be enough blood components such as factor VIII and platelets to meet these specific needs without extra blood donations. Packed red cells are specific for the treatment of all patients, bleeding or not bleeding, who need red blood cells. However, there are many conditions in which packed red cells are not only desirable, but are essential. Comparisons between packed red blood cells and whole blood are listed in Table I. The savings in volume, electrolytes, and unwanted antibodies achieved in the use of packed red blood cells can be calculated.

A convenience in the transfusion of packed red cells is the Y administration set which can be utilized for administration of packed cells along with electrolytes or other components (Fig. 1d).

The following case illustrates the use of packed cells as therapy for anemia in a patient with ulcer and pulmonary edema.

Case 1. The patient was admitted with a remote ulcer history and a two-week history of melena. The chief complaint was shortness of breath. Because of the rapid development of signs of peritonitis, a diagnosis of perforated gastric ulcer was made. At surgery a perforated ulcer of the lesser curvature was found and surgical repair was carried out. Extreme caution was employed in

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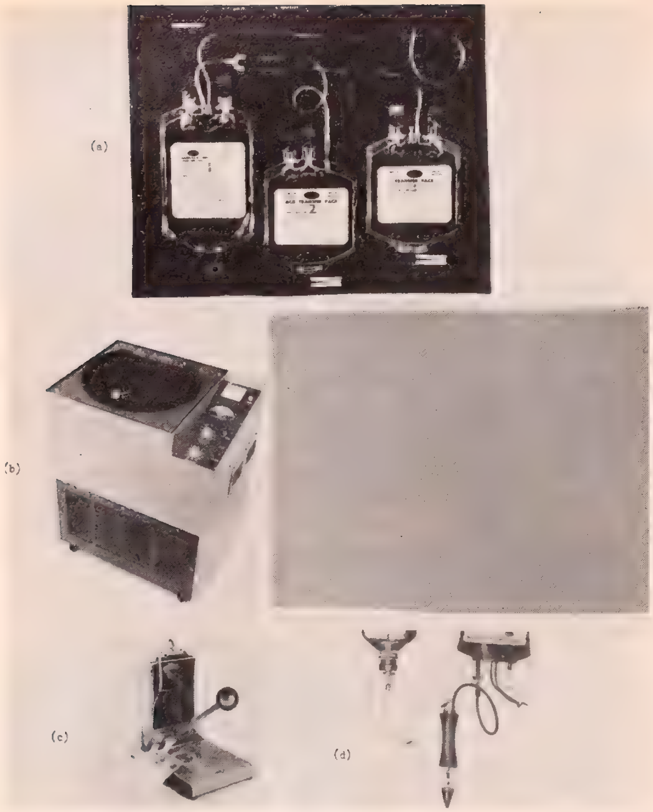
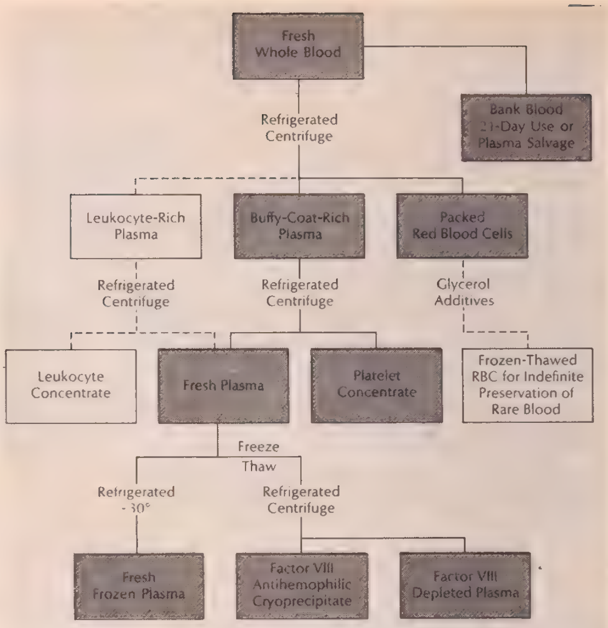


FIGURE 1. Supplies and equipment used in processing of blood components and in administration of packed red blood cells. (a) Triple plastic container—original collecting bag attached sterilely to two satellite bags. (b) Refrigerated centrifuge. (c) Expressor for removing buffy coat-rich plasma from red blood cells. (d) Y administration set for transfusing packed red cells together with other intravenous fluids. (Courtesy of Fenwal Laboratories.)


Fresh Whole Blood
Bank Blood 21-Day Use or Plasma Salvage
Refrigerated Centrifuge
Leukocyte-Rich Plasma
Buffy-Coat-Rich Plasma
Packed Red Blood Cells
Refrigerated Centrifuge
Refrigerated Centrifuge
Glycerol Additives
Leukocyte Concentrate
Fresh Plasma
Platelet Concentrate
Frozen-Thawed RBC for Indefinite Preservation of Rare Blood
Freeze
Thaw
Refrigerated -30°
Refrigerated Centrifuge
Fresh Frozen Plasma
Factor VIII Antihemophilic Cryoprecipitate
Factor VIII Depleted Plasma

Modern techniques permit derivation of components from whole blood, as schematized here. Solid lines represent usual processing, broken ones specially used alternates.

FIGURE 2. Blood processing and the preparation of components. (Reprinted with permission of *Hospital Practice.*)

TABLE I. Comparisons between whole bank blood and packed red blood cells

Variable	Whole Blood	Packed Red Blood Cells
Volume	517.5 ml.	300 ml.
Red blood cells	200 ml.	200 ml.
Hematocrit	39	69
Plasma	250 ml.	78 ml.
Protein	49 Gm.	36 Gm.
Albumin	12.5 Gm.	4 Gm.
Globulin	6.3 Gm.	2 Gm.
Citrate	67.5 ml.	22 ml.
Plasma sodium	45 mEq.	15 mEq.
Plasma potassium	15 mEq.	4 mEq.
Plasma acid (citric) (lactic)	80 nanoEq.	25 nanoEq.
Plasma ammonia	2,159 micrograms	680 micrograms

the administration of fluids because of the pulmonary problem. Anemia was successfully corrected by the use of packed red cells before, during, and after the operation. A total saving of 1,600 ml. of fluid was achieved as the result of utilizing packed red cells rather than whole blood (Fig. 3).

Leukocyte-depleted blood. Patients sensitized to leukocyte antigens, when transfused with leukocytes, show a reaction characterized by chills and temperature elevations of up to 104 F. They display malaise and headache; and may have associated nausea, vomiting, chest pain, and occasionally a shock-like syndrome. These symptoms, which may last as long as eight hours from the start of the blood transfusion, can be prevented by transfusing these patients with blood deficient in leukocytes.

Case 2. Figure 4 illustrates the development of marked hyperprexia and hypotension in an ulcer patient transfused with compatible whole blood. Because leukocyte sensitivity was demonstrated in the first series of transfusions, blood was processed to remove leukocytes and transfusions were then accomplished without incident.

Inverted centrifugation of the freshly collected unit of whole blood is one convenient method of preparing leukocyte-poor red blood cells. During centrifugation, the white blood cells settle out to form a buffy layer, sometimes referred to as a "buffy coat," between the heavier red blood cells and the lighter plasma. The bottom 80 per cent of the red blood cells can be drained off to be transfused to the sensitized patient. This method has proved clinically effective in reducing the incidence of the leukocyte febrile transfusion reaction. Other methods are available to achieve even finer leukocyte separation if this should be needed, including the use of washed red blood cells and frozen and thawed blood. These methods are especially useful for transfusion in exquisitely sensitive patients.

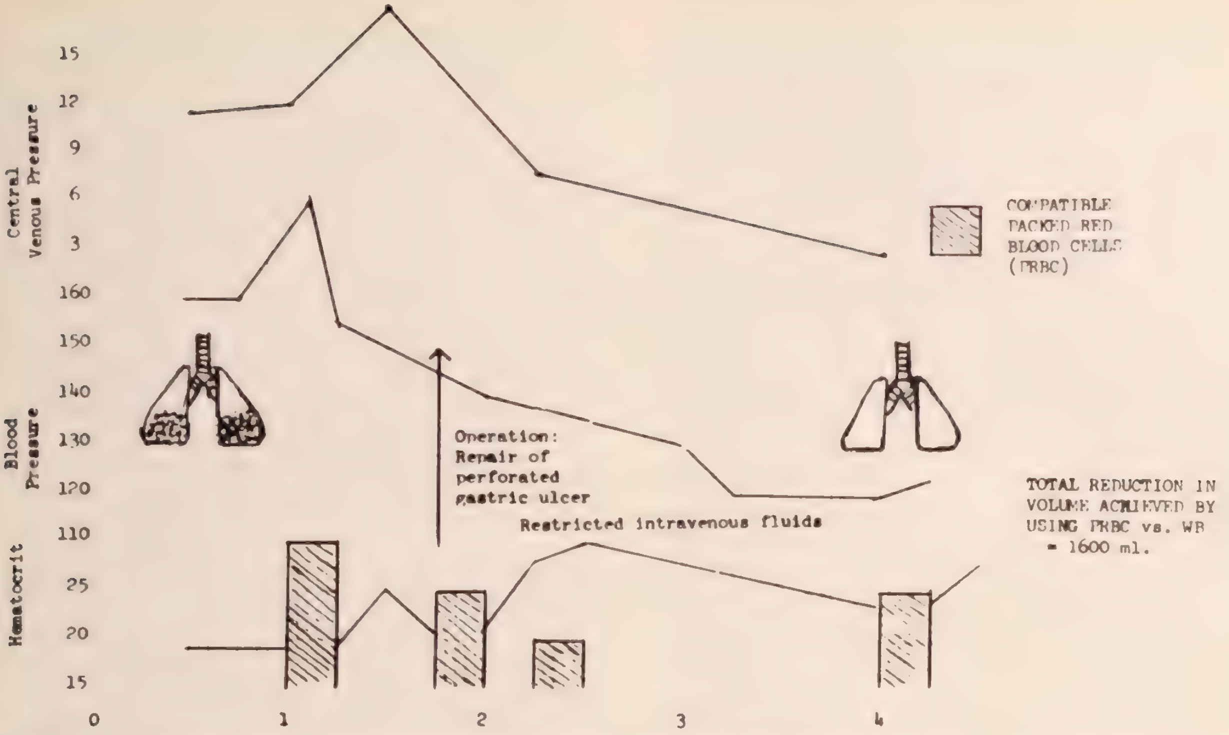


FIGURE 3. Perforated gastric ulcer and peritonitis complicated by pulmonary edema in a forty-four-year-old male (Group A).

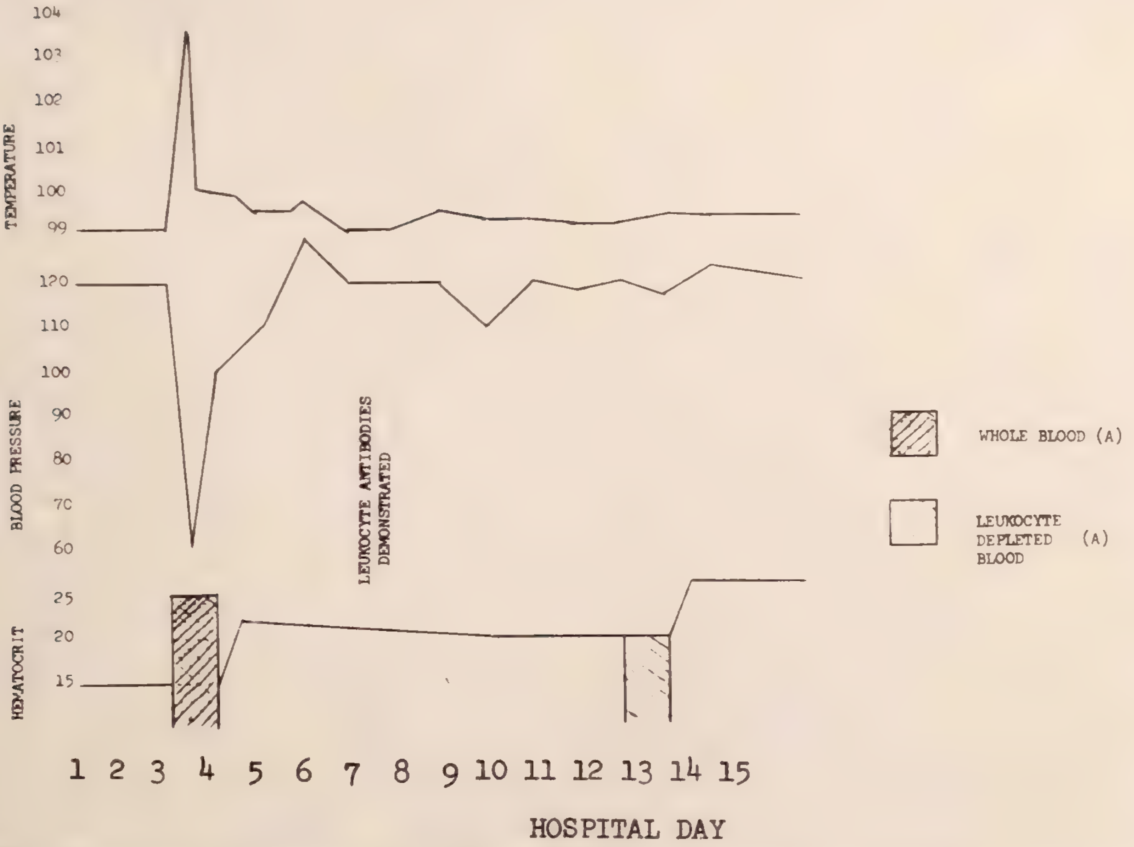


FIGURE 4. Hypotension and hyperprexia in a thirty-year-old ulcer patient caused by sensitization to leukocytes (blood group A).

Platelets. Platelets are an important by-product of blood component processing. They are used in numerous types of thrombocytopenia, some of which may occur as complications of surgical bleeding. Diminished or absent platelet counts and the existence of a bleeding problem serve as the indications for platelet infusions. Occasionally, platelets are important as supportive therapy when surgery must be carried out in patients who are thrombocytopenic for one of several medical reasons; for example, splenectomy in idiopathic thrombocytopenic purpura. Massive bleeding and massive infusions with bank blood will reduce platelets to low levels at times and thus interfere with surgical repair. Occasionally, the resulting thrombocytopenia will create a serious bleeding problem which can be corrected if large quantities of platelets pooled from several individuals can be administered over a short period of time. However, the platelet content of individual units administered as fresh whole blood may not prove adequate because of the inability to achieve high concentrations of platelets in a short period of time.

Some important considerations in platelet concentration preparation and administration are as follows:

1. A unit of platelets must be prepared from a fresh donation of blood.
2. Platelet concentrates are pooled according to major blood group. However, they are frequently infused without regard to blood group, and can be beneficial even if they are blood group incompatible.
3. At the time of infusion, concentrates must be kneaded and manipulated to produce a uniform platelet suspension. Although platelet filters are available, smooth platelet suspensions can be infused without a filter. The bag should be milled and rolled so that the entire volume is infused into the patient.
4. A platelet count of under 50,000 per cubic millimeter in a bleeding patient is considered to be an indication for platelet infusion. One unit of platelets will generally raise the platelet count from 12,000 to 15,000 per cubic millimeter. The usual platelet infusion consists of from 6 to 12 pooled concentrates.
5. The platelets should be administered within six hours if maximum benefit and platelet survival are to be expected. However, the platelets are useful for as long as twenty-four hours after donation to stop hemorrhage, and recent studies suggest that platelets up to seventy-two hours old may be efficacious in the cessation of bleeding—to maintain this effect platelets should be held at room temperature in individual bags and pooled just prior to use.

It is important that the clinical effectiveness of the platelet transfusion be evaluated. This is illustrated by 2 cases complicated by surgical bleeding and thrombocytopenia (Fig. 5).

Cases 3 and 4. Both patients had ruptured aneurysms, the surgical correction of which required large quantities of blood. Although massive bleeding and thrombocytopenia were complications in both cases, control of bleeding and satisfactory platelet levels (black bars) were achieved satisfactorily when platelet concen-

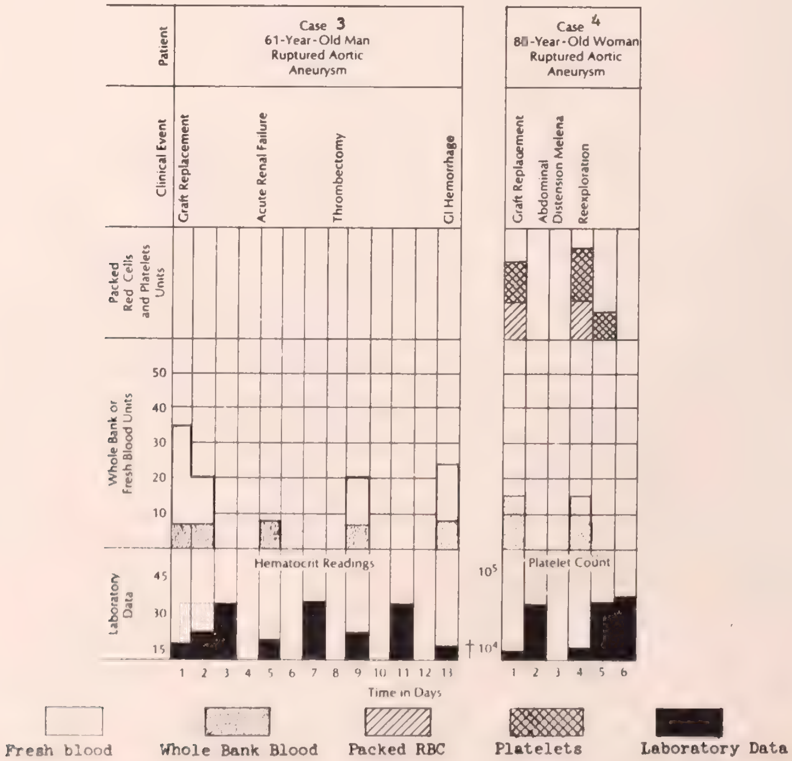


FIGURE 5. Charts summarizing blood (Case 3) and blood component (Case 4) utilization in two patients.

TABLE II. Plasma products arranged according to hepatitis risk entailed in their use

Hepatitis Risk	Product
Increased	Pooled plasma
Increased	Pooled lyophilized plasma
Increased	Pooled factor VIII concentrate
Increased	Pooled factor II-IX concentrate
Increased	Pooled fibrinogen
Identical to whole blood	Single donor plasma, fresh plasma, or plasma component
Identical to whole blood	Single donor platelet rich plasma or plasma concentrate
None	Immune globulin
None	Heat-treated fractions, such as plasma protein fraction
None	Albumin

trates (black bars) were employed along with packed red cells to correct these specific deficits in Case 4; control of bleeding proved difficult, and satisfactory platelet levels were not achieved when fresh whole blood and bank blood were the sources of replacement in Case 3. Reduction of the bleeding risk associated with thrombocytopenia seemed to be achieved best when rapid correction was accomplished with platelet concentrates. In such cases packed red cells may be utilized for the correction of anemia. Platelet increments are reduced in patients with platelet antibodies or enlarged spleens, or if there is fever or sepsis.

Plasma and plasma fractions. The products which can be prepared from plasma are arranged in Table II according to the hepatitis risk entailed in their use; this risk will decrease as satisfactory tests to screen hepatitis carriers are placed in general use. The plasma from fresh whole blood can be used as single donor plasma—fresh-frozen or fresh-frozen lyophilized available for use in the treatment of multiple coagulation factor deficiencies. When pooled, the plasma may be fractionated by chemical methods to prepare albumin, fibrinogen, factor VIII, factor II–IX complex, and gamma globulin. Plasma from outdated blood is used to replace various forms of protein loss, such as those resulting from burns, pancreatitis, and protein-losing enteropathies. Since this plasma has been stored, usually at room temperature for long periods of time, it is not suitable for the treatment of coagulation factor deficiencies. Albumin and plasma protein fraction are obtained from whole plasma, then heat treated to be hepatitis free. The plasma protein fraction contains about 85 per cent of the albumin present in whole plasma, plus some of the alpha and beta globulins. These products can be stockpiled at room temperature, and they have a long shelf life. They are used in the initial treatment of shock due to hemorrhage, plasma loss, or dehydration. They are useful in expanding blood volume in hypovolemia and in various forms of protein loss. Since no coagulation factors are present in these materials, they cannot be used for the treatment of blood coagulation factor deficiencies.

Factor VIII—Antihemophilic globulin. At times, surgery is complicated by bleeding due to deficiencies in specific plasma factors. An example of this is the patient with hemophilia who requires surgery. Before and during surgery any patient of this type must have sufficient quantities of factor VIII, the antihemophilic factor, to minimize bleeding problems. Factor VIII may also be dangerously reduced in some radical forms of liver surgery. In the past, whole blood or fresh plasma were required. In many situations cases were complicated by the development of hypervolemia, because of a need for large volumes to achieve satisfactory factor VIII levels. Now it is possible to prepare factor VIII as a minute cryoprecipitate from plasma by a simple freeze-thaw method. It can be applied to every unit of blood donated, for rarely does anyone other than the hemophilic patient require this labile factor. All other persons have an excessive capacity to produce it.

The technic is to quick freeze the plasma which has been separated from blood within a few hours after donation. An ethanol and dry ice mixture is used to carry out this procedure, while the accompanying packed red blood cells are maintained at a temperature of from 4 to 6 C. The firmly frozen plasma is placed in a refrigerator to allow the ice crystals to thaw slowly. During the thawing, threads of whitish material, the cryoprecipitate, are formed. The thawed plasma is centrifuged in a refrigerated centrifuge and the cryoprecipitate, about 3 ml., is packed in the bottom of a bag. The plasma, which is drained off, is used to reconstitute the whole blood, as single donor plasma, or it is pooled with other similar units and fractionated to prepare albumin, fibrinogen, and gamma globulin. Sometimes referred to as cryoprecipitate-depleted plasma, it functions as does whole plasma, except for its factor VIII content. The cryoprecipitate functions as a source of concentrated factor VIII and contains about 70 per cent of the antihemophilic globulin that was present in the fresh-frozen plasma. It contains about 26 per cent of the fibrinogen, but the other clotting factors—prothrombin, proconvertin, factor IX, the Stuart-Prower factor, factor XI, and the Hageman factor—are present only in trace amounts. Consequently a diagnosis of hemophilia should be established before administering the cryoprecipitate to a bleeding patient.

Cryoprecipitate has been shown to be of some benefit in patients suffering from von Willebrand's disease. The individual bags of cryoprecipitate are put in cardboard boxes and stored in a freezer at a temperature below 20 C. Storage for periods of up to three years has resulted in virtually no loss of the factor VIII activity of the cryoprecipitate.

The dose of cryoprecipitate is based on the fact that every milliliter of fresh plasma contains about one unit of factor VIII, and that one unit is needed to raise every 100 ml. of deficient plasma by 1 per cent. Thus, the patient's plasma volume must be estimated in arriving at a treatment schedule. The cryoprecipitates are prepared for patient infusion by adding 10 ml. of sterile, normal saline to the thawed material. The contents of the individual bags are then pooled in a bottle, a bag, or a syringe. There are virtually no reactions to infusion of this material other than a rare case of hepatitis, and occasionally hemolysis if large numbers of group O cryoprecipitates must be used in group A or B patients. Factor VIII has a half-life of from twelve to fourteen hours, and so reinfusions are necessary at least this often to maintain a hemostatic level of factor VIII.

The best evaluation of the effectiveness of therapy is cessation of bleeding, but this should be implemented by laboratory tests, particularly when hemostatic factor VIII levels are desired for scheduled surgery.

In addition to cryoprecipitate, fresh-frozen plasma is available to treat the hemophilic patient, but it possesses the potential drawback of causing pulmonary edema, congestive heart failure, and hyperproteinemia. The infusion of cryoprecipitate with its scant protein can be repeated at frequent intervals without threat of hyperproteinemia or circulatory overload. Lyophilized factor VIII concentrate is also available from commercial manufacturers; this material does not have to be stored frozen, since it is stable at refrigerator and room temperature, is easily reconstituted, and is easily infused. However, there is an insufficient quantity to satisfy the needs of all hemophilic patients.

Factor IX and fibrinogen. A plasma derivative now available and extremely useful in treating hemophilia B, that is factor IX deficiency or Christmas disease, is the factor II–IX complex. The material is obtained by fractionation of fresh plasma. Each vial contains the clotting protein of two units of fresh-frozen plasma, but in a volume of only 40 ml. with 1 Gm. of protein. Since this material contains only factors II-VII-IX and X, one must be certain of the exact diagnosis of the patient before infusing this material. Enough should be infused to maintain a hemostatic level, particularly if surgery is contemplated.

Figure II–IX complex is of proved value in raising prothrombin levels in patients who bleed after treatment with sodium warfarin (Coumadin) drugs or who are to undergo emergency surgery. The package insert has recommended dosages based on body weight. In the absence of volume problems, Christmas disease may also be treated with cryoprecipitate-depleted plasma. Patients hemorrhaging from multiple factor deficiencies, such as are seen in hepatic dysfunction, or from specific deficiencies when specific concentrates are not available, can be treated with fresh-frozen plasma, platelet-rich plasma, or fresh-frozen lyophilized plasma.

Hypofibrinogenemia, the lack of fibrinogen, can result in serious hemorrhage, and treatment with fibrinogen may be lifesaving. The lack of fibrinogen may be congenital or acquired. Patients with congenital diseases deficient in fibrinogen can tolerate low levels without threat of hemorrhage; however, if hemorrhage does occur infusions of fibrinogen are mandatory. Acquired hypofibrinogenemia is of two types: one is caused by primary fibrinolysis, the other is caused by diffuse intravascular clotting. It is not our purpose to discuss the many complicated aspects of these syndromes, but rather to indicate the supportive role of fibrinogen as a therapeutic adjunct, particularly as required to correct a complication of surgical bleeding or to sustain a surgical patient who may suffer from a primary fibrinogen deficit. The specific need for fibrinogen must be demonstrated by laboratory test.

Adverse effects of blood transfusion

The almost casual manner in which surgeons and clinicians use blood is a tribute to the development of transfusion technology and to its importance in assuring safety for the patient. For example, many practicing physicians and surgeons as well as residents in training have never seen a hemolytic transfusion reaction. Today's typing, cross matching, and screening technics have substantially lessened the likelihood of its occurrence. But the director of the blood bank should remind the surgeon and clinician, repeatedly if necessary, that there remains a 4 per cent chance that the transfused patient will suffer some serious ill effect and that there is at least a 1 per cent chance he will contract hepatitis, which in turn carries a 10 per cent mortality rate. He should also remind them that the blood recipient may make antibodies that will remain to complicate his case when some future transfusion is needed. Not uncommonly, complications include hemolysis.[4]

Case 5. A forty-two-year-old male was transferred from another hospital following the onset of peritonitis, jaundice, and anuria. Two weeks before admission he had had partial gastrectomy and jejunostomy for a bleeding ulcer. Eighteen units of blood were transfused during the operation. It was stated that difficulties had been experienced in cross matching his blood, but the transfusion was done, nevertheless, in view of the emergency nature of his problem. On transferral to our hospital, diagnosis of his serologic problem proved difficult and was complicated by an urgent need for hemodialysis and for abdominal surgery because of the detection on x-ray film of a blown-out duodenal stump. The work-up in the blood bank indicated a positive Coombs test result, and sensitization to three blood factors—rh$''$, hr$'$, and Duffy^a—when absorption studies and panel tests were carried out on serum specimens. Thus, it was obvious that one of the problems was a delayed hemolytic transfusion reaction. It was possible by extensive cross matching to locate three units of compatible blood which were utilized for emergency hemodialysis. Subsequent abdominal surgery was accomplished successfully during which procedure multiple units of rh″, hr′, and Fy^a compatible blood were transfused, some of them provided as frozen and thawed red cells.

I call to your attention the possibility of using frozen and thawed red cells when compatible blood is difficult to locate because of multiple sensitivities. Among the advantages of frozen red cells are (1) they can be processed in advance of the need, to include rare blood types or rare combinations; and (2) they are totally devoid of plasma and buffy coat owing to the thawing and washing procedure, and thus are excellent to correct anemia complicated by marked sensitivities to these agents. For lesser degrees of sensitivity, the use of washed red cells or buffy coat-depleted blood is usually adequate.

Massive bleeding and massive transfusion

When large volumes of blood are given over a short period many problems may be presented simultaneously. They include increases in volume and changes in temperature, pH, and electrolytes; all of which can complicate the problem of surgical repair.[5] Our technology is not yet sufficient to cope with some problems, the sheer magnitude of which may exhaust a blood bank inventory within an hour or two. For example, in a recent catastrophic bleeding problem, 53 units of group O blood were required within a space of four hours.

A year's analysis of cases at Bellevue Hospital requiring massive transfusion (defined as a requirement for at least 20 units in twenty-four hours) is presented in Table III. It indicates that the mortality rate in such patients is high. Although the clinical aspects of such cases frequently are deciding factors in mortality, there is much that can be done to improve the transfusion aspects. More packed red cells will reduce hazards such as citrate and electrolyte excess and the adequate warming of rapidly transfused blood may also be lifesaving at times. Improved preservatives, such as citrate-phosphate-dextrose as an alternate to existing anticoagulant preservatives, should be more thoroughly studied in surgical bleeding cases. Methods used for cell preservation should ideally maintain levels of organic phosphates, so that the preserved red cells will have a normal oxygen affinity at the time of transfusion.

Hepatitis and physician's responsibility

Finally, I would remind you all of the continuing problem of hepatitis, for which a rapid, accurate screening test may be available in the foreseeable future. Hospital blood banks frequently find it necessary to purchase commercially recruited blood when voluntary sources are inadequate. This is unfortunate, in our location at least, because commercial sources are more apt to transmit viral hepatitis than are voluntary donors.[6] For public health reasons, among others, physicians who utilize blood should try to remedy the problem by stimulating voluntary donations in their local hospitals. Or, if some pay system is necessary, "pedigreed" donors should be utilized to minimize the risk of transmitting hepatitis. In any event, active involvement by the physician in voluntary donor recruitment programs can be expected to yield rewards in the form of reduced morbidity and mortality rates from this long-standing risk associated with blood transfusion.

TABLE III. Mortality associated with massive blood transfusions*

Number Of Operative Cases 20 or more Transfusions Within a Twenty-four-Hour Period	Died	Survived
67	55 (82 per cent)	12 (18 per cent)

* Whole blood transfusions:	1,702
Packed red cells and other components:	1,410
Total transfusions:	3,112

Summary

Current trends in transfusion therapy are toward the use of the blood component or fraction that is specifically lacking in the patient. The aim is to avoid giving the patient substances he does not need, a reversal of the long-standing tendency to consider transfusion in terms of whole blood. This approach reduces the exposure to risks such as hepatitis, while simultaneously preserving other blood fractions for patients who have specific needs for them. The operative uses of packed red blood cells, leukocyte-depleted blood, platelets, factor VIII concentrates, coagulation factors, and plasma and plasma fractions are discussed.

The special transfusion problems of massive bleeding and massive transfusions are outlined.

The practicing physician is reminded to stimulate voluntary blood donations in whatever way possible, to cope with the hepatitis problem associated with transfusion of commercially derived units of blood.

550 First Avenue
New York, New York 10016

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Lincomycin and vancomycin

J. Joseph Marr, M.D., reports in *Missouri Medicine* **68:** 377 (June) 1971, that both lincomycin and vancomycin are active against gram-positive cocci. Their use, especially that of the latter, should be restricted to treating infections caused by gram-positive organisms.

The structural configuration of lincomycin is different from other microbial agents. Like the macrolides, it inhibits bacterial growth by interfering with protein synthesis. Its spectrum is relatively narrow. It is active at about 2 to 5 micrograms per milliliter or less. It is bacteriostatic, but bacteriocidal levels may be obtained at concentrations about thirty times those for bacteriostasis. About 20–30 per cent of an oral dose is gastrointestinally absorbed in the fasting state; 500 mg. by this route produces an average peak plasma value of about 2–5 micrograms per milliliter. Activity reaches its height at two to eight hours and is still present at twelve hours. Oral administration after meals reduces serum levels about 50 per cent. Although it does not penetrate the blood brain barrier significantly in subjects with normal meninges, fluid concentrations may be 40 per cent of the plasma levels in meningitis. Essentially, lincomycin is the same as erythromycin pharmacologically and therapeutically, but it may produce higher concentrations in bone, and hence be useful in osteomyelitis. While its penetration of bone may possibly be superior to penicillin, it is not yet certain whether it is any more effective at the site of the bone infection than lower concentrations of penicillin.

Vancomycin is a bacteriocidal agent effective only against gram-positive cocci. At present its only clinical application appears to be in severe infections by methicillin-resistant staphylococci and perhaps enterococci. Bacterial resistance is not a problem at present. Vancomycin is not absorbed from the alimentary tract and causes pain and necrosis when given intramuscularly, so it must always be given intravenously. A dose of 1 Gm. every twelve hours will give adequate blood levels against most staphylococci. It does not enter the cerebrospinal fluid or bile; about 90 per cent is excreted in the urine. Because of the latter, azotemia is a relative contraindication; the drug should not be used in patients who have been recently exposed to other nephrotoxic or ototoxic agents. Staphylococcal enterocolitis is an infection where the use of vancomycin is particularly well suited. Since the drug is not absorbed, 0.5 Gm. in water or juice will give favorable results. The drug is also being used increasingly in severe infections due to methicillin-resistant staphylococci. It has also been indicated in other studies that it may be an acceptable alternative to penicillin and streptomycin in enterococcal endocarditis. At present it is the only bacteriocidal agent effective against methicillin-resistant staphylococci. So far only a relatively small number of patients have been treated, however, and final judgment must await accumulation of more experience.

Synergism in vivo has been demonstrated between vancomycin and streptomycin; this combination may ultimately be of value in patients unable to tolerate penicillin, although toxicity of the combination probably will be high.

TACHYPNEA AND ALKALOSIS IN INFANTS OF NARCOTIC-ADDICTED MOTHERS[*]

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Infants of mothers addicted to narcotics frequently exhibit tremors, high-pitched cry, "jitters," convulsions, and tachypnea.[1–5] Although these symptoms are well known, there is little information available concerning the pathophysiology of these symptoms. This report presents data on 9 newborn infants of such mothers in whom tachypnea and respiratory alkalosis were noted. It is suggested that this abnormal state is an explanation of some of the symptoms.

Material and methods

Arterial blood gases were measured in infant number 1 because of tachypnea. When alkalosis was noted, similar studies were made on the next 8 infants of addicted mothers admitted to the neonatal intensive care unit at The New York Hospital. Blood was sampled from the temporal artery

TABLE I. Observations and biochemical data on infants of drug-addicted mothers

Infant Number	Birth Weight (Gr.)	Gestational Age (Weeks)	Age at Onset of Symptoms (Hours)	pH	Arterial		Respiratory Rate (Breaths per Minute)	Serum Calcium (mg. per 100 ml.)	Serum Phosphorus (mg. per 100 ml.)	Blood Sugar (mg. per 100 ml.)	Total Protein (Gm. per 100 ml.)	Albumin	Ionized Calcium (mg. per 100 ml.)	Rectal Temperature (C.)	Symptoms	Last Dose of Narcotics and Hour Before Delivery	
					P_{CO_2}[*] (mm. Hg)	P_{O_2}[†] (mm. Hg)										Hours	Drugs
1	2,020	40	24	7.500	19.7	72.0	70 to 100	8.0	5.0	64	. . .	. . .	. . .	36.2	Irritable, tremulous	4	Heroin
2	3,520	40	24	7.485	31.3	65.0	60	9.4	6.2	98	. . .	. . .	. . .	37.5	Tremulous, tachypneic	24	Heroin
3	2,800	40	48	7.650	26.6	80.5	60 to 80	8.4	. . .	. . .	7.7	5.7	4.8	35.8	Hypertonic, tremulous, jittery	24	Heroin
4	1,840	31	36	7.377	40.5	53.0	72	9.8	. . .	80	. . .	. . .	. . .	37.1	Tremulous, nasal congestion	48 to 72	Heroin
5	2,780	38 to 40	24	7.545	30.7	84.4	60 to 80	9.0	. . .	106	. . .	. . .	. . .	36.7	Irritable, tremulous	1.5	Heroin
6	2,230	38 to 40	48	7.605	29.0	53.6	40	7.1	6.6	77	6.5	4.0	4.5	37.8	Jittery, hyperthermic	9	Heroin
7	1,620	34 to 35	36	7.556	23.5	71.7	64	9.3	. . .	36	4.9	3.1	6.5	36.5	Jittery, irritable	9	Heroin
8	2,900	Unknown	36	7.495	27.3	80.5	70	9.5	4.0	57	. . .	. . .	. . .	37.2	Jittery, hypertonic	?	Heroin
9	2,800	Last menstrual period 11 months before delivery	36	7.530	26.3	73.2	80	9.7	. . .	15 at 3 hr. 70 at 36 hr.	. . .	. . .	. . .	37.2	Jittery, irritable, hypertonic	4	Heroin

[*] Carbon dioxide pressure.
[†] Oxygen pressure.

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in all but 1 in whom the femoral artery was used. Determinations of pH and carbon dioxide and oxygen pressures were made immediately after sampling with an IL Ultramicro* blood system. The electrodes were calibrated with gas and blood. Results were corrected to the infant's body temperature. Blood glucose was measured by the Glucostat enzyme method and calcium by atomic absorption spectrophotometry. Ionized calcium in 3 infants was calculated according to Peterson, Feigen, and Crismon.[6] The patients had no clinical or radiologic evidence of hyaline membrane disease and were breathing room air when studied.

Results

Birth weight, gestational age, age at onset of symptoms, time of mother's last dose of narcotics, respiratory rate, and chemical data are presented in Table I. All but 1 infant (number 4) demonstrated respiratory alkalosis when compared with normal arterial pH and blood gas values in this laboratory of pH 7.395 ± 0.052 and carbon dioxide pressure 41.9 ± 8.0 mm. Hg. All were symptomatic, and all except infant number 6 demonstrated tachypnea. Infant number 9 had a blood sugar of 15 at three hours of age, otherwise blood glucose and serum calcium values were normal.

Comment

Respiratory alkalosis as a result of hyperventilation or complication of ventilatory therapy has been associated with neurologic abnormalities including tremors, asterixis, coma, electroencephalographic abnormalities, and personality disturbances.[7,8] Reduced cerebral blood flow has been postulated as the cause of this disorder.[7] On the other hand, the tetany of alkalosis has been attributed to an alteration of ionized calcium, although there are insufficient data to support this.[9] Alkalosis in infants of addicted mothers suggests that some of the symptoms may be directly related to this disturbance in acid-base metabolism.

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ANTIBIOTIC RESISTANCE OF SALMONELLA

Northeastern United States—1970

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Several surveys of transferable antibiotic resistance in Salmonella have appeared in this country.[1-3] These studies have shown that resistance was most common to streptomycin and tetracycline, and that there was a higher incidence of drug resistance in S. typhimurium strains than in other Salmonella serotypes. Anderson[4] in England has suggested that the use of antibiotics in rearing livestock plays a role in the development of drug resistance, but there is no evidence available to confirm this. Our own previous data indirectly support an opposite hypothesis that resistance is produced in human passage in urban areas.[3]

The present study was initiated to determine whether or not there had been any change in the incidence of drug resistance in S. typhimurium and other Salmonella serotypes in the north eastern United States between 1969 and 1970. The influence of age, economic status, urban or rural home background, and hospital contacts of the patients with strains with antibiotic resistance was again studied. The relative resistance to different antibiotics was evaluated extensively since ampicillin has assumed a major role in therapy of acute salmonellosis, while streptomycin and tetracycline are declining in use. Transferable antibiotic resistance was not studied, since the results obtained in the previous study were entirely similar to those of other authors.[1-3]

During the summer of 1970, Salmonella enteriditis became the most common salmonella isolated in New York City. This was not the case in upstate New York or in other cities in the Northeastern United States.

Patients and methods

The materials tested were sequential human isolates of Salmonella submitted for serotyping to the New York Salmonella Center at the Beth Israel Hospital between March, 1970, and September, 1970, from the majority of large voluntary and municipal hospitals in New York City and from other large hospitals and medical centers in Boston, Buffalo, Washington, D.C., Long Island, Northern New Jersey, Pennsylvania, and Delaware. Information on the origin of the specimen (age of patient, sex, source, symptoms, and type of hospital) was obtained when available. All duplicate cultures from the same individual were tested but not included in the statistical analysis. Antibiotic sensitivity profiles were done by the method of Bauer *et al.*[5] The following sensidiscs were used: ampicillin 10, streptomycin 10, tetracycline 30, cephalothin 30, and chloramphenicol 30 micrograms. Information was also obtained on antibiotic usage and bacterial sensitivity of coliform organisms in a municipal hospital in an area of high Salmonella incidence.

Results

Table I presents the distribution of the 315 Salmonella isolates in the present 1970 study, and that of the previous samples taken during the winter of 1968 to 1969.[3,6] Also presented in this table for comparison are the isolates studied by Gill and Hook,[1] drawn from the same source in the winter of 1965, and those of the National Communicable Disease Center survey of all nationally reported Salmonella isolates for June, 1970. S. typhimurium, at a frequency of about 40 per cent, has been for the past six years the most prevalent human isolate in New York City and the northeastern United States.[1,3,6-8] In the National Communicable Disease Center national surveillance, S. typhimurium has accounted for only about 25 per cent of isolates. In general, the National Communicable Disease Center national Salmonella surveillance reports reflect a lower frequency of S. typhimurium and higher frequency of the more unusual serotypes than is found in this area. A relatively large proportion of the national reporting data consists of unusual serotypes. This may be related to a bias by which the less common serotypes are preferentially serotyped and reported to the National Communicable Disease Center. The serotypes submitted during the summer of 1970 differed from the previous samples, with far fewer S. typhimurium (27 versus 44 per

TABLE I. Per cent distribution of Salmonella serotypes, Beth Israel Salmonella Center, National Communicable Disease Center

Salmonella Serotypes	1965[1]	Dec. 68–Mar. 69[3]	Apr. 70–Aug. 70*	June 70†
S. typhimurium	42.5	44.0	26.9	25.7
S. enteriditis	9.5	14.0	19.6	8.8
S. heidelberg	8.4	6.5	8.8	6.4
S. newport	7.1	1.7	1.6	5.7
S. infantis	7.1	4.5	2.8	6.3
S. saintpaul	3.2	6.5	6.6	5.5
S. thompson	0.8	3.8	2.5	3.4
Other serotypes	21.4	19.0	31.2	39.0
TOTAL	100 (254)*	100 (292)	100 (315)	100 (1259)

* Present study.

† Salmonella surveillance National Communicable Disease Center Report No. 99, Aug. 1970, Atlanta, Ga.

** Numbers in parentheses refer to number of isolates.

TABLE II. Percentage Salmonella distribution for isolates from New York City and out-of-city sources—summer 1970

Serotype	New York City	Other areas
S. typhimurium	24.4	31.0
S. enteriditis	27.0	7.6
Other serotypes	41.6	61.4
TOTAL	100.0 (196)*	100.0 (119)

* Parentheses indicate number.

TABLE III. Percent resistant Salmonella by serotype

Salmonella Serotype	Nov. 1965–Feb. 1966[1]	Dec. 1968–Nov. 1969[3]	Apr. 1970–Aug. 1970*
S. typhimurium	18.5 (20)†	36.7 (47)	29.4 (25)
S. enteriditis	4.2 (1)	4.9 (2)	9.6 (6)
S. heidelberg	2.9 (6)	10.5 (2)	28.5 (8)
S. saintpaul	1.3 (1)	21.0 (4)	9.5 (2)
S. infantis	5.7 (1)	0	11.1 (1)
S. thompson	0	0	0
S. muenchen	50.0 (1)	22.2 (2)	0
S. blockley	0	0	25.0 (2)
S. newport	17.0 (3)	20.0 (1)	0
S. derby	0	0	0
Others	4.8 (2)	14.7 (5)	13.0 (11)
TOTAL	13.8 (35)	21.6 (63)	17.4 (55)

* Present study.

† Figures in parentheses are actual number of resistant isolates.

cent), and with far more S. enteriditis (20 versus 14 per cent). The changes appear entirely attributable to the New York City isolates (Table II). In May of 1970, S. enteriditis became the most common serotype submitted for serotyping from New York City. From May through August, there were 86 isolates of S. enteriditis as compared with 67 isolates of S. typhimurium. In contrast, in 1969 for the same period there were 90 S. typhimurium and only 37 S. enteriditis isolates. The totals remain about the same, but the proportions seem to have changed.

Antibiotic resistance. The per cent of isolates resistant to one or more of the antibiotics tested increased from 13.8 per cent in 1965 to 21.6 per cent in the winter of 1969 and then decreased, somewhat, to 17.4 per cent in the present study. The initial change was mainly due to an increase in the antibiotic resistance of S. typhimurium. The decline in resistance in the 1970 summer sample appeared to be due to a decreased frequency of this serotype, since what appears to be a drop in the antibiotic resistance of this serotype is within the limit of random sampling error ($p > 0.05$) and is probably not read. Resistance in other serotypes has shown an upward trend. Part of the resistance of Salmonella heidelberg and of other serotypes not listed separately in Table III, was due to hospital and family outbreaks of antibiotic-resistant Salmonella strains.

The great majority of resistant strains were multiply resistant (71 per cent), and thus, similar to our findings of last year.[3,6]

The percentage of isolates resistant to each of the antibiotics studied is presented in Table IV. Resistance to streptomycin and tetracycline was noted to be the most frequent in the earliest study of Gill and Hook[1] of 1965. The frequency of resistance to these agents has remained fairly stable. Indeed, streptomycin resistance was found in all resistant S. typhimurium strains tested. Only 7 isolates (all non S. typhimurium) out of the 55 resistant ones were not resistant to streptomycin. Resistance to ampicillin had increased last year to become nearly equal in frequency to that of streptomycin resistance; but this was not the case this year. Resistance to cephalothin and kanamycin was low. Chloramphenicol resistance in an initial isolate has not been seen since the 1965 study. However, heterologous resistance to chloramphenicol and streptomycin developed in a patient with S. typhimurium septicemia and abscess while therapy with chloramphenicol and other antibiotics was being given.

Epidemiology. Information on the patient's age was available for two thirds of the isolates. Resistant isolates of Salmonella were equally frequent in all age groups. In last year's study they were most frequent in infants and children. However, as was found in 1969, resistant isolates of S. typhimurium occurred more frequently in municipal hospitals than in voluntary hospitals. Table V shows the relationship between the type of hospital and the frequency of antibiotic resistance. These differences noted were statistically significant with the sample size for S. typhimurium ($p < 0.05$), but not for the other serotypes.

Comment

The sudden increase in S. enteriditis in New York City was unexpected. It was not due to any large outbreak or series of small ones. This serotype appears to be replacing S. typhimurium, in that it is increasingly isolated from clinical situations in which S. typhimurium was once most common: infants and young children with gastroenteritis in areas served by municipal hospitals and alcoholic patients with cirrhosis and Salmonella septicemia. Since the most common serotype appears to be the one with the most anti-

TABLE IV. Per cent resistance to specific antibiotics

Antibiotic	1965 1966[1,*]	1968 1969[3]		1970	
	All serotypes	All serotypes	S. typhimurium	All serotypes	S. typhimurium
Ampicillin	3.94	13.5	23.4	9.5	12.9
Cephalothin	. . .†	3.2	5.5	.9	0
Streptomycin	12.6	15.0	27.3	14.9	29.4
Tetracycline	10.2	8.2	12.5	11.7	23.5
Kanamycin	. . .†	3.3	5.5	1.9	3.5
Chloramphenicol	1.97	0	0	0	0

* Not given by serotype.
† Not tested.

TABLE V. Salmonella antibiotic resistance (per cent) in different voluntary and municipal hospitals.

Hospital Category	S. typhimurium	Other serotypes
New York City		
Municipal	43 (9/21)*	14 (9/63)
Voluntary	21 (6/29)	13 (11/83)
Out-of-town		
Municipal	60 (3/5)	50 (3/6)
Voluntary	17 (5/30)	9 (7/78)

* Parentheses indicate number resistant isolates: number isolates tested.

biotic resistance in this country, as well as in Holland and France,[3,9-11] if S. enteriditis continues to be the most common serotype in New York City, it may, within a relatively brief time, become the most antimicrobial-resistant serotype.

Subsequent to this study, in the fall and winter of 1970 to 1971, S. enteriditis isolations were only slightly less frequent than those of S. typhimurium at the New York Salmonella Center. As of the summer of 1971, the frequency of S. enteriditis was about half that of S. typhimurium. Thus, the marked increase in S. enteriditis is not a transient phenomenon.

The failure of ampicillin resistance to exceed that of tetracycline and streptomycin, as was anticipated in last year's study, is difficult to understand if Salmonella antibiotic resistance is a direct effect of selective pressures applied by antibiotic use. Streptomycin use has been relatively limited in the recent past, while ampicillin has been widely used, and tetracycline would be intermediate in use. On the other hand, an animal origin can not easily explain the frequency of ampicillin resistance. If the low levels of penicillin used for nearly two decades in animal feeds can select out ampicillin-resistant strains or R factors, why then should ampicillin resistance in Salmonella increase dramatically between 1965 and the present, the period during which ampicillin use was expanding in clinical practice?

The degree of streptomycin resistance is even more striking when it is considered that only 7 of the 55 resistant strains lacked streptomycin resistance. One would have to conclude that there exists a genetic conservation mechanism for this resistance. As a case in point, one of the patients included in this study, who was alcoholic with cirrhosis and S. enteriditis septicemia, was noted to have developed an organism resistant to both streptomycin and ampicillin, after therapy with ampicillin only. However, the evidence of a resistance transfer factor could not be obtained by conventional technics.[3]

There may also be a genetic mechanism which acts to delete ampicillin resistance over a period of time. There is experimental evidence that different antibiotic resistances do vary in their stability or persistence.[12]

Although resistant isolates were not more common in infants and children than in adults, as we found last year, they were again demonstrated to be more common in municipal than in voluntary hospitals. The lack of the association with age may be related to the far fewer specimens received this year from municipal hospitals. Since Salmonella patients in municipal hospitals were far younger than those in voluntary hospitals, an excess of the former patients would result in an inverse association between age and the frequency of Salmonella resistance. Our data might be interpreted as meaning that resistant strains are most frequent in low socioeconomic, high-Salmonella incidence, urban areas. This would be epidemiologically compatible with the production of resistant Salmonella strains in human passage in crowded inner city areas. An urban reservoir of resistance transfer factor could exist equally as well as the postulated animal reservoir. It is difficult to reconcile the knowledge that the highest incidence of salmonellosis occurs in young children and infants in slum areas in New York City[8] and the finding that the highest frequency of resistant Salmonella strains occurs in municipal hospitals serving these areas, with the hypothesis that Salmonella in general and resistant strains (or the resistance transfer factor) in particular, originate in farm animals. Unless one accepts the doubtful proposition that meat, poultry, eggs, milk, and processed food derived from them are preferentially consumed by the young and the poor, we would expect that the hypothesis of an animal origin would require that salmonellosis and resistant Salmonella isolates occur most frequently in adults and in the affluent.

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TREATMENT OF FACIAL TRAUMA

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Maxillofacial injuries sustained by a high-speed traveler whose head, on contact, decelerates with the force of 50-plus gs is discussed. The management of these injuries consists of three phases: emergency, such as secure airway and rule out critical injuries elsewhere; interim, define nature of injury by clinical symptoms and by use of x-ray films and Waters' stereoscopic view; and definitive, which includes injuries to soft tissue, mandible, maxilla, malar, and fracture of orbital floor. Because of the variety of symptoms involved, a patient with severe facial injury is best served by those willing to work closely and noncompetitively with their colleagues in other specialties.

These comments concern major maxillofacial trauma sustained by a high-speed traveler whose head, on contact, decelerates with the force of 50 plus g's. It seems as though the seat belt has increased the incidence of facial injuries, perhaps because on impact, the belted driver jackknifes, his face becoming the primary area of contact with the steering wheel or dashboard. Highway accident victims do not represent a random sample of the population. Typically, the usual candidate is a young, unmarried, drinking male; the usual time, summer weekends, the national holidays climaxing the carnage.

Emergency management: secure airway and rule out critical injuries to other systems

The gruesome appearance of the facial injury may distract the examiner's attention from less obvious but more critical injuries elsewhere, which may compromise survival or functional integrity.

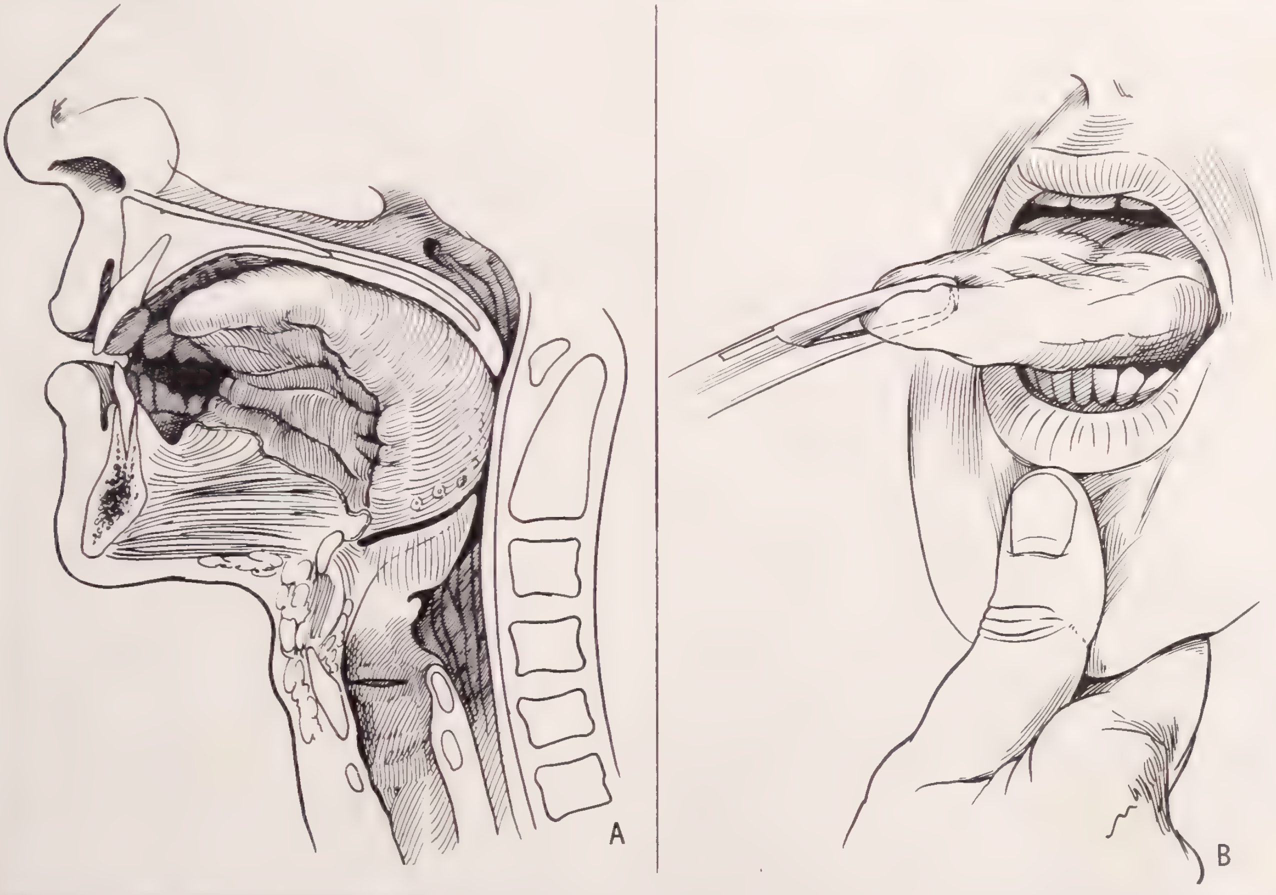

FIGURE 1. (A) Obstruction of oropharynx from backward displacement of tongue. (B) Tongue pulled forward with towel clip (note vertical insertion of clip in midline).

Securing the airway followed by ruling out life-threatening injuries have highest priority.

Secure airway. The absence of cyanosis and of noisy or labored breathing is not necessarily indicative of a patent airway. A conscious patient is asked whether or not he is able to breathe freely; in the unconscious, the examiner's face or the back of his hand is placed toward the patient's face. If obstruction is present, its cause must be determined without delay.

The most frequent cause of upper airway impairment is obstruction of the oropharynx by the tongue, due to loss of consciousness or to comminuted fracture of the symphysis, providing attachment for the tongue musculature (Fig. 1A). In an unconscious patient, when the intact mandible has retracted, the tongue is brought forward manually. In a comminuted fracture of the symphysis, pulling the tongue forward with a towel clip is simple and life saving. Since injury to the lingual artery or to the hypoglossal nerve may result from horizontal insertion of the clip, it should be inserted vertically, in the midline (Fig. 1B).

There are other less common causes of airway obstruction. Broken dentures may occlude the larynx, and, occasionally, blood clots accumulate in the oropharynx. Infrequent, but easily overlooked, is the "midfacial mash," resulting from a heavy blow against the midface, comminution of the maxillae, backward displacement of the midfacial segment, and impaction of the soft palate into the naso- and oropharynx. The "dish-face" deformity is the telltale sign of this injury. Airway obstruction produced by "midfacial mash" is corrected by hooking the fingers around the soft palate and bringing forward the entire segment.

If the patient is not exchanging despite a free upper airway, one must consider such cases as flail chest, pneumothorax, or massive hemothorax. The diagnosis and management of these conditions are beyond the scope of this discussion.

In unexplained obstruction, the patient should be laryngoscoped to rule out fracture or cartilaginous dislocation of the larynx with collapse or edema of the glottis.

When conservative therapy fails, three alternatives are available: indwelling endotracheal tube, coniotomy, or tracheostomy. In complete obstruction, an endotracheal tube is passed immediately. In partial obstruction which is severe enough to prohibit transfer of the patient to the operating room, coniotomy is done in the emergency room (Fig. 2). In less severe obstruction, tracheostomy is the procedure of choice. Coniotomy is preferred to tracheostomy under less than optimal conditions, as well as in children under local analgesia.

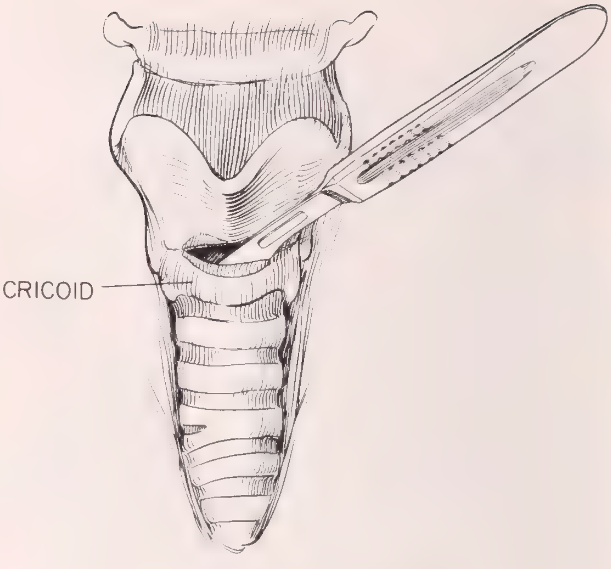

FIGURE 2. Coniotomy.

Rule out critical injuries to other systems. Since hemorrhage from facial trauma is rarely severe enough to produce hypovolemia, the presence of shock is indicative of other injuries. On the other hand, its absence is not reassuring. Nothing is more misconceived than to engage in the minutiae of repair of soft or hard facial tissue while critical injuries elsewhere threaten survival. One should proceed in a systematic manner, literally from head to toe, to rule out trauma to the head, spine, chest, abdomen, and extremities, in this order.

Interim management: define extent of facial injury

This phase consists of a detailed clinical examination of the eyes, facial bones, dental arches, nasal airway, and auditory canal, followed by x-ray studies.

Vision is tested and the findings recorded. In injuries involving the orbit, vision is checked periodically and the need for decompression assessed.

Diplopia may be present on admission and later subside, or, conversely, may be initially absent and develop later. When present, one must consider the possibility of a "blowout" fracture of the orbital floor and rule out trapping of the inferior rectus muscle since an unrecognized trapping produces irreversible damage to the muscle. The significance of diplopia, the tests for trapping, and the management of blowout fractures will be discussed under fractures of the orbit.

Because of edema of the soft tissue, bimanual palpation of the infraorbital rims, malar bones, zygomatic arches, nose, anterior antral walls, and mandible is essential (Fig. 3). The mandible is palpated simultaneously both extra- and intraorally for points of tenderness, mobility, breaks in mucosal continuity, and protrusion of bony fragments. Maxillary fractures are determined by firmly grasping the upper jaw and testing for mobility. Since distorted occlusion suggests a fracture of the upper or lower jaw, the occlusal relation-

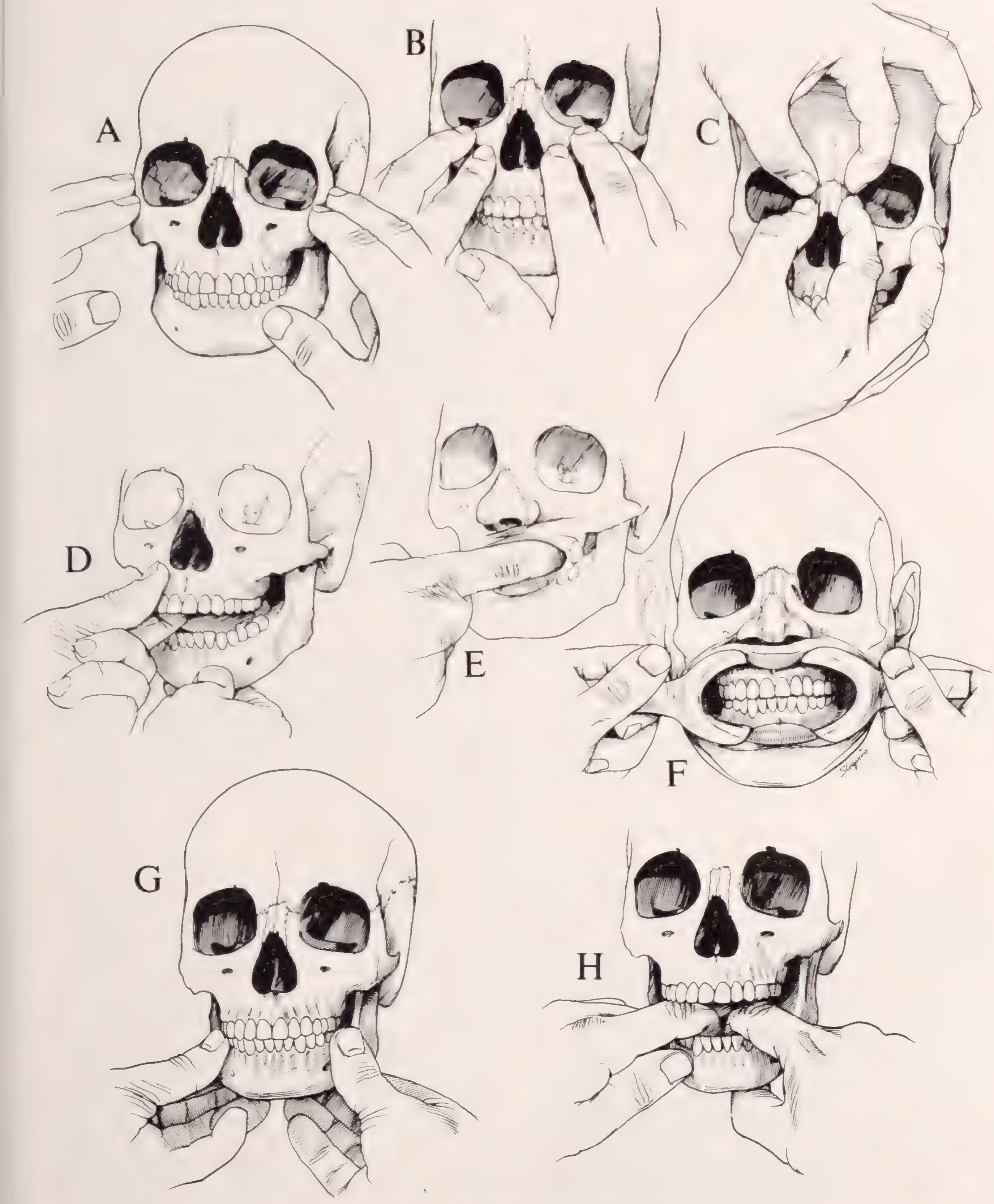

FIGURE 3. Palpation of facial skeleton.

ship of the dental arches is determined (Fig. 4). Because in malocclusions an abnormal occlusion represents the norm, it is important to inquire whether or not the bite was normal prior to injury.

At times, useful information may be obtained by asking, "how does it feel when you bite?" The statement that the teeth "bite only on one side" is characteristic of a fracture of the condyle.

Next, the nasal passages are inspected for displaced septum, patency, and the presence of cere-

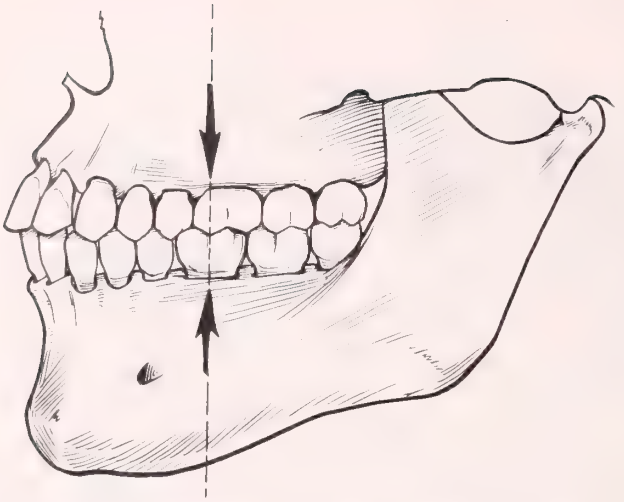

FIGURE 4. Relationship of upper to lower first molar in determining occlusal relationship of upper to lower jaw.

brospinal fluid. Finally, the auditory canal is checked for blood and cerebrospinal fluid leak and rupture of the tympanic membrane.

X-ray studies follow, not precede, clinical examination. The conventional request for "facial studies" is deplorable, yielding minimal diagnostic benefits at maximum expense to the patient. The radiologists are not to be censored for embarking on superfluous and uninformative studies. It is up to the examining surgeon to specifically request the two projections which give adequate over-all views of the facial skeleton, the p-a mandible (Fig. 5) and Waters' views, preferably stereoscopic (Fig. 6). Because of the frequency of fractures of the cervical spine, cervical spine film should be included in the routine work-up of a patient with major facial injury. Other facial projections should be requested only when indicated on the basis of clinical examination.

Definitive management

With the exception of the emergencies mentioned, facial trauma is best treated electively in the operating room. Definitive corrective surgery of major facial injuries should not be attempted in the emergency room, at night, or by a tired and hurried junior house staff.

Repair of facial lacerations. Repair of the soft tissue of the face differs from the hand in two important aspects. Because facial soft tissue has a richer blood supply and a higher resistance to infection, the time element is less critical than in the hand. Facial lacerations may be closed twenty-four or more hours after injury, which is inconceivable in trauma of the hand. Further, unlike repair of the hand, debridement must be minimized. It is desirable to save all fragments of facial tissue, no matter how tenuously attached. Frequently, they survive; if not, the incidence and severity of infection is negligible. On the other hand, soft tissue necrosis in the hand is likely to result in infection with functionally disastrous results. The leading principle in the repair of soft facial tissue is preservation; in the hand, debridement.

The face is prepared by thorough washing with copious amounts of saline, soap, and a lipolytic agent. To avoid secondary removal of a traumatic tattoo, the road dirt ground into the lacerations is removed by irrigation and gentle scrubbing with a brush. Shaving the eyebrows is to be avoided, because in some individuals they do not grow back.

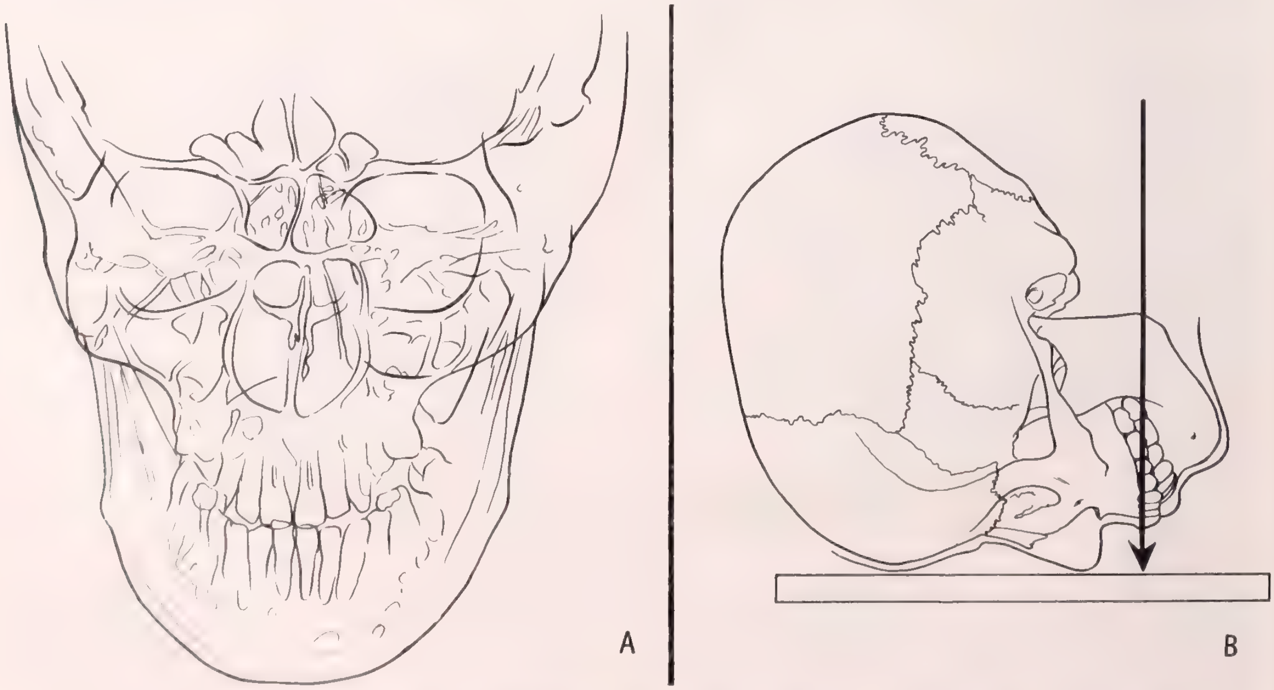

FIGURE 5. (A) P-A view of mandible gives most satisfactory overall view and (B) positioning of head.

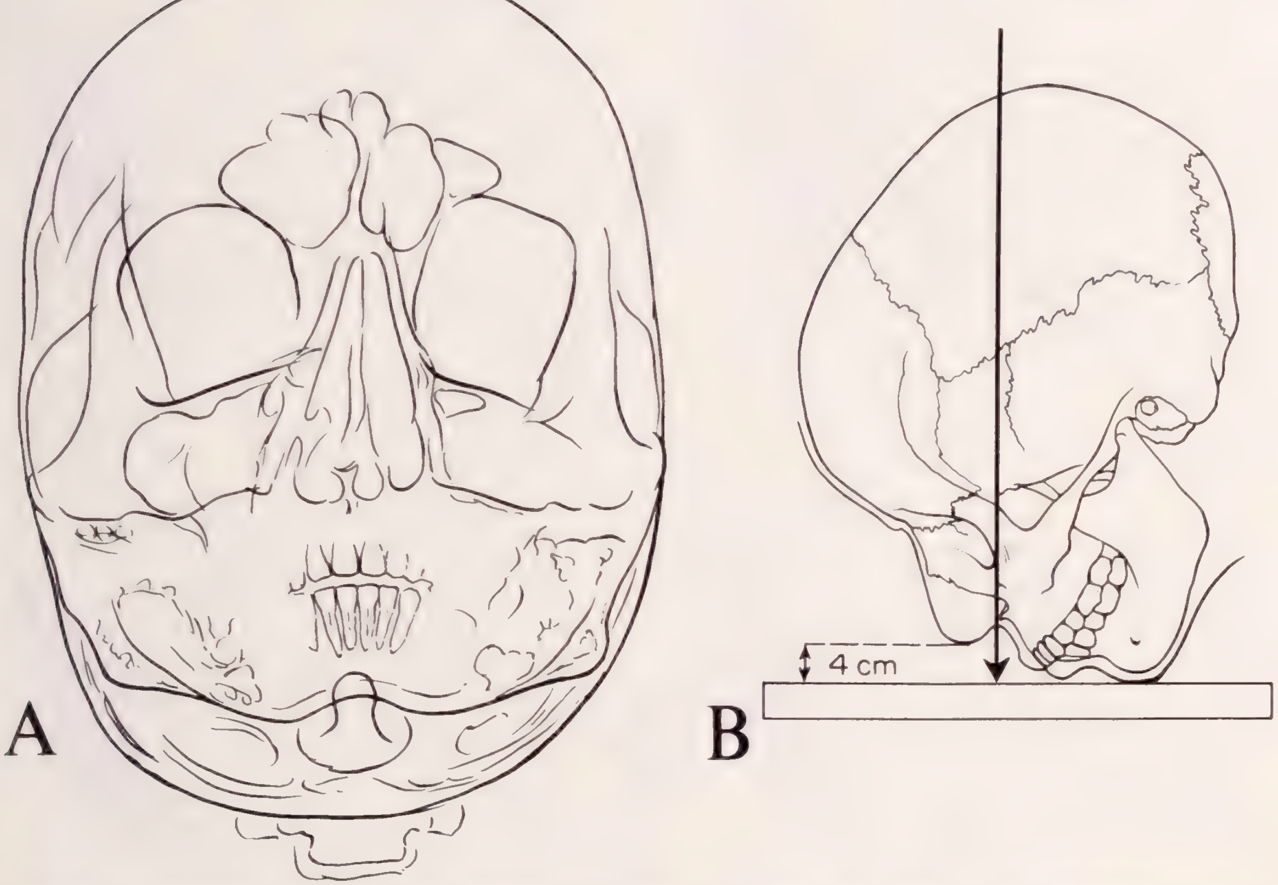

FIGURE 6. (A) Waters' stereoscopic view gives best overall view of midface and orbits and (B) positioning of head.

General anesthesia is preferable; if local analgesia is used, injecting the agent through the margins of the lacerations is more considerate to the patient.

The appearance of the scars is determined by the finesse and type of *deep,* rather than of the superficial dermal suture layer. The author prefers a nonabsorbable material which prevents spread of the scars. Our optimal results have been obtained using 5-0 clear Ethilon on a PS-4 needle. The technic, however, is more demanding than with catgut. The deep dermal sutures must be placed at the deep dermal edges; anchored in the subcutaneous tissue, they do not prevent spreading of the scar. Placed more superficially, they are liable to be extruded.

The superficial dermal sutures are placed so that they provide impeccable coaptation, and these must be tied without tension to avoid puckering of the scar (Fig. 7).

Lacerations crossing skin tension lines form unsightly scars, especially on the forehead and cheek. If at all possible, such wounds should be converted into closures paralleling the facial wrinkles (Fig. 8).

Postoperatively, I prefer "open" treatment with meticulous suture-line care to a dressing, particularly in such exposed areas as the face. An open regimen allows cleansing of the suture line and, unlike a dressing, does not provide the moist medium conducive to infection. If edema of the soft tissues is present, a pressure dressing is indicated. The typical "protective" dressings provide neither pressure nor protection.

Fractures of mandible. Reduction and fixation of mandibular fractures is an elective procedure. Because they are late to consolidate, there is no deadline and, therefore, no reason to reduce them under less than ideal circumstances.

A number of rather complex although useless classifications, based on the location of the fracture, have been developed, with various methods of fixation proposed for fractures of the symphysis, body, angle, etc. Excepting the condyle, the principles of management of mandibular fractures are identical, regardless of location. In deciding the fixation to be used, only two factors are essential: (1) the orientation of the fracture plane, and (2) the presence or absence of teeth.

Mandibular fractures have a tendency for dis-

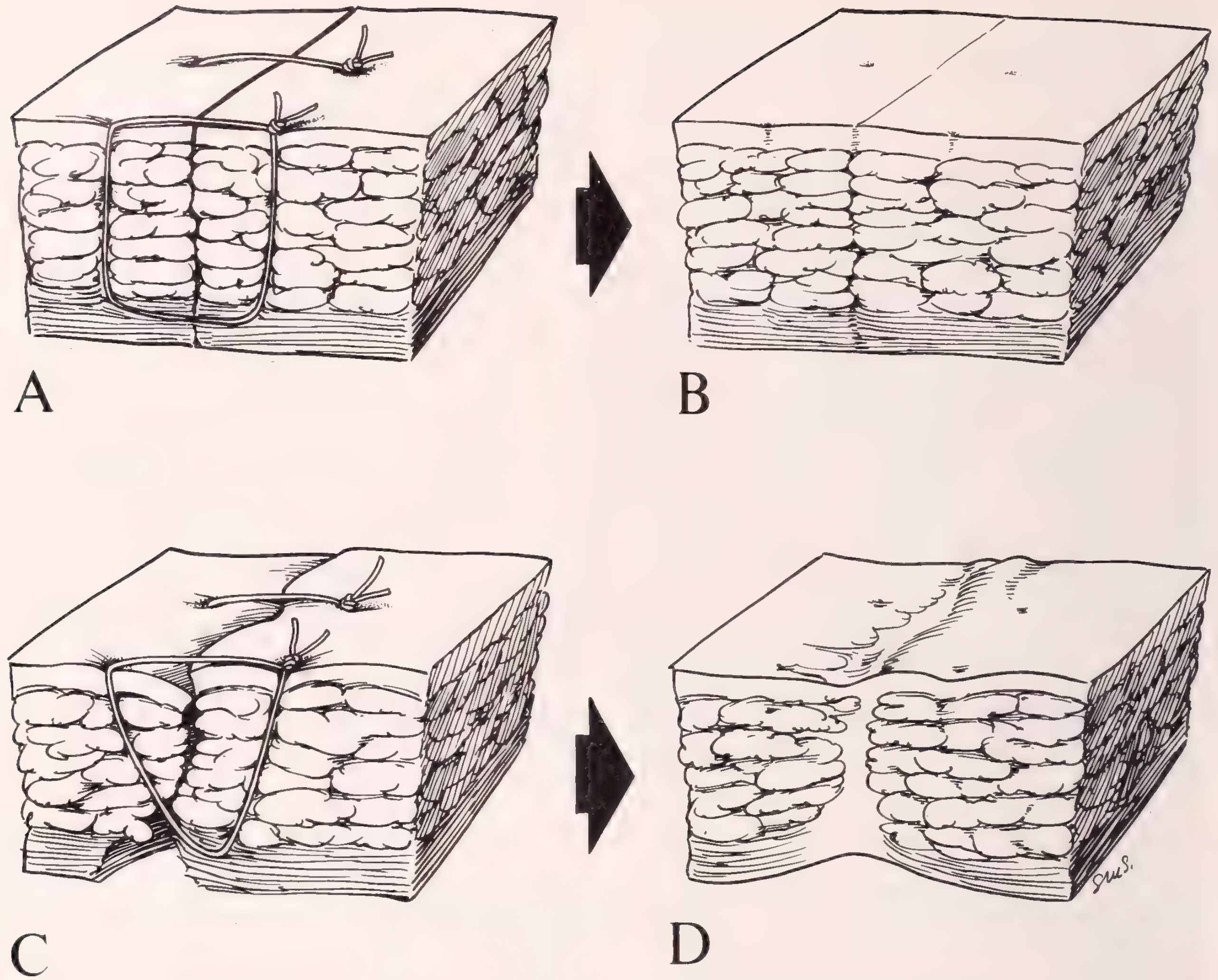

FIGURE 7. (A) and (B) Good technic: superficial dermal sutures placed equidistant from margins of wound to provide impeccable coaptation of margins. (C) and (D) Poor technic: if sutures not placed equidistant, uneven and unsightly scar results.

placement by muscular pull. The anterior fragment is pulled down and backward by the geniohyoid, mylohyoid, and anterior belly of the digastric. The posterior fragment is pulled upward and medially by the masseter and lateral pterygoid (Fig. 9). Whether or not the fragments become displaced by the muscular forces depends on the direction of the fracture plane. When it is parallel to the muscular pull, it allows displacement of the fragments ("unfavorable" fracture) (Fig. 10A); when perpendicular, it prevents displacement ("favorable" fracture) (Fig. 10B). Favorable fractures are self retaining and require less stable fixation.

If teeth are present, bars may be used for fixation; when absent, we must resort to transosseous or circumferential wiring. Considering these factors, four basic types of fixation are indicated in mandibular fractures (Table I).

Erich fracture bars adjust more easily to the shape of the dental arch than do the other types. The Robinson wire twister* reduces the time necessary to wire in the bars, provides a neat twist, and minimizes breakage (Fig. 12).

Fracture bars and transosseous wiring have simplified the management of mandibular fractures and have made obsolete the use of extraoral appliances. Kirschner wire has not replaced transosseous wiring because in less experienced hands its insertion is difficult and the fixation less stable than that provided by transosseous wiring.

Fractures of condyle. There is no consensus on the management of fractures of the condyle. There is no agreement on the merits of the reduction, on the relative virtues of closed versus open reduction, or on the indications for and the timing of immobilization and mobilization.

Our philosophy is based on several considerations. First, the results following reduction have

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*Manufactured by R. C. Robinson Company, Sacramento, California. Originally designed for bottling champagne, its use for wiring fracture bars was suggested to us by Harold Welch, M.D., Albany Medical Center.

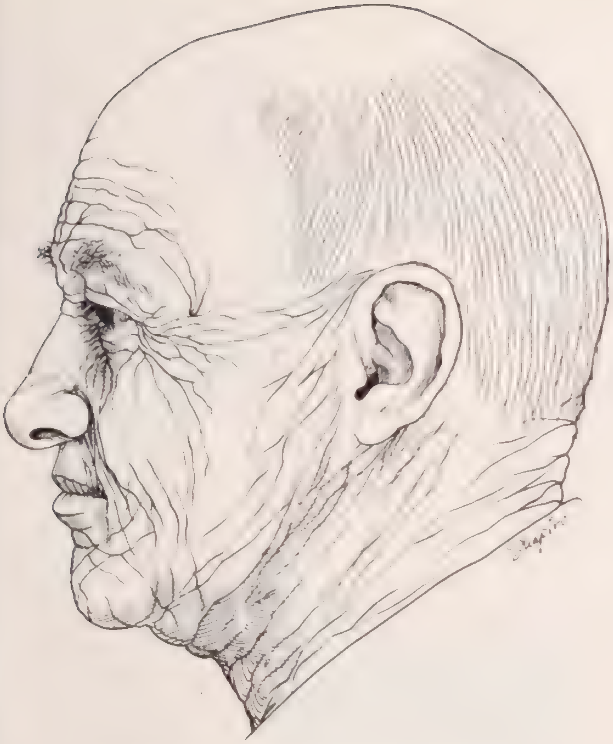

FIGURE 8. Pattern of facial wrinkles.

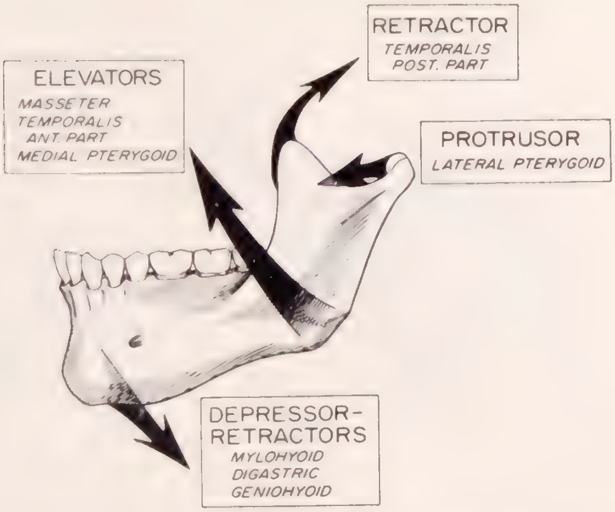

FIGURE 9. Muscular forces displacing mandibular fractures

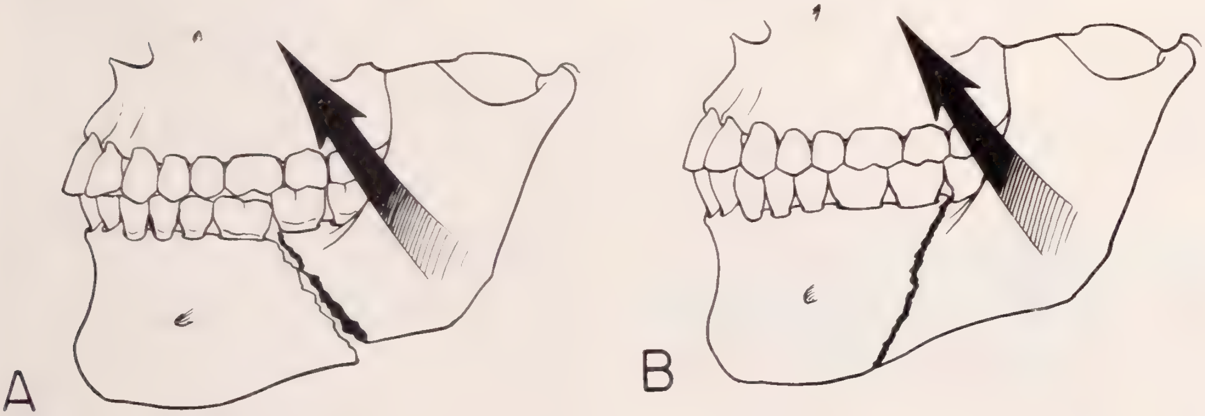

FIGURE 10. (A) "Unfavorable" fracture: Fracture plane parallel to muscular pull allows displacement of posterior fragment, and (B) "Favorable" fracture plane perpendicular to muscular pull preventing displacement.

been disappointing; a displaced fracture of the condyle is difficult to reduce and almost impossible to maintain. Further, when mobilized early, displaced fractures develop a functionally adequate pseudojoint. Finally, a distorted occlusion resulting from a foreshortening of the ramus in a permanently displaced condylar fracture may be corrected by occlusal equilibration (cusp grinding). We have thus adopted the following concept.

In a slightly displaced condylar fracture, with the condylar head in the fossa, our objective is a bony union. To this end, the mandible is immobilized for six to eight weeks. On the other hand, if the condylar fragment is grossly displaced or the head dislocated from the fossa, our objective is to obtain a pseudoarthrosis at the fracture site. Here, no reduction is attempted, and the patient is encouraged to move his jaws early and as much as tolerated. Eventually, the occlusion is equili-

TABLE I. Types of fixation

Teeth	Fracture Plane	Fixation
Present	Favorable	Bimaxillary bars and elastics (Fig. 11A)
	Unfavorable	Bimaxillary bars and elastics, supplemented by transosseous wiring (Fig. 11B)
Absent	Favorable	Transosseous wiring (Fig. 11C)
	Unfavorable	Transosseous wiring, supplemented by circumferential wiring around splints or dentures (Fig. 11D)

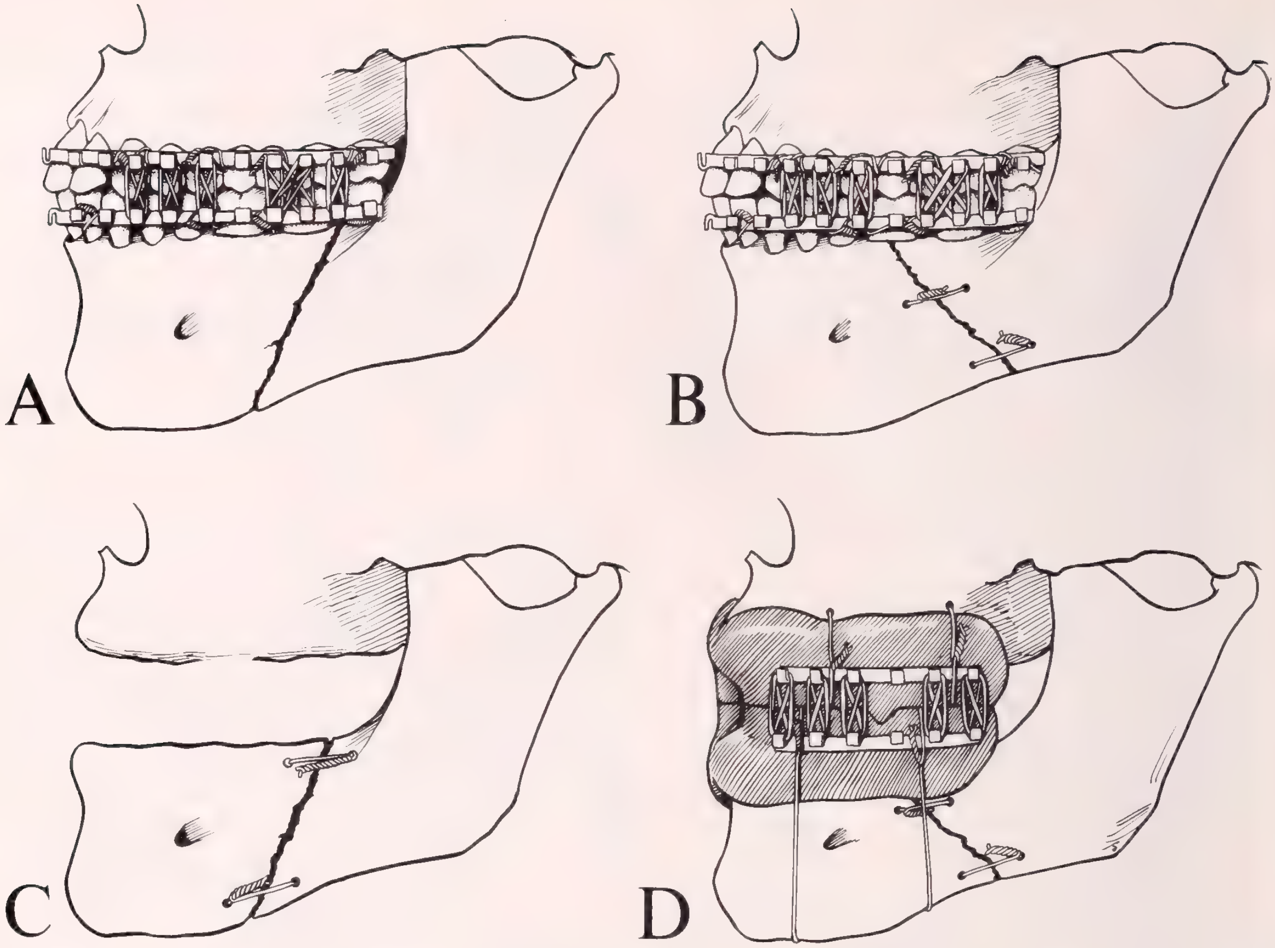

FIGURE 11. Four basic types of fixation in mandibular fractures: (A) teeth present and "favorable" fracture, and (B) "unfavorable" fracture. (C) Teeth absent "favorable" fracture, and (D) "unfavorable" fracture.

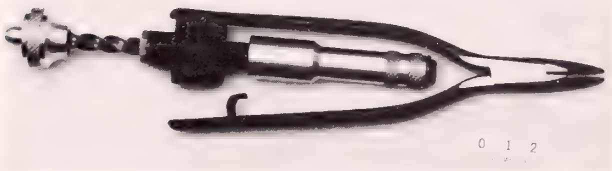

FIGURE 12. Robinson wire twister.

brated by grinding the ipsilateral dental cusps to compensate for the foreshortened ramus. We have been so gratified by the results of this management that we have completely abandoned any attempts to reduce displaced condylar fractures.

Fractures of maxilla. Fractures of the maxilla are recognized by (1) mobility of the upper jaw, (2) deranged relationship of the upper to the lower dental arches, (3) palpable or crepitant fracture line, and (4) "dish-face" deformity produced by elongation of the distance between the eyes and lips and a "caved-in" appearance of the midface (LeFort II and III). Maxillary fractures are confirmed radiologically, (Waters' projection, (Fig. 6)). Tomograns are informative in fractures which are difficult to interpret on conventional views.

As mentioned, grossly comminuted fractures of the midface (midfacial mash) which obstruct the airway must be immediately reduced. Non-obstructing fractures are reduced electively, but their consolidation is rapid, and reduction must be expedited. Maxillary fractures are easily reduced within three days; after five days, reduction is difficult and at times impossible.

Clinically, LeFort's classification of fractures is still the most useful (Fig. 13, Table II).

In grossly comminuted maxillary fractures, transantral reduction through a Caldwell-Luc approach and packing the antrum with uterine gauze soaked in balsam of Peru, (still the most effective agent used in keeping the oral cavity and antrum clean) keeps the fragments in proper position. The packing is removed in one to two weeks.

Although anatomically a fracture of the antrum, the blowout fracture relates clinically to the eye and will be discussed under fractures of the orbit.

Fractures of malar bone. The majority are

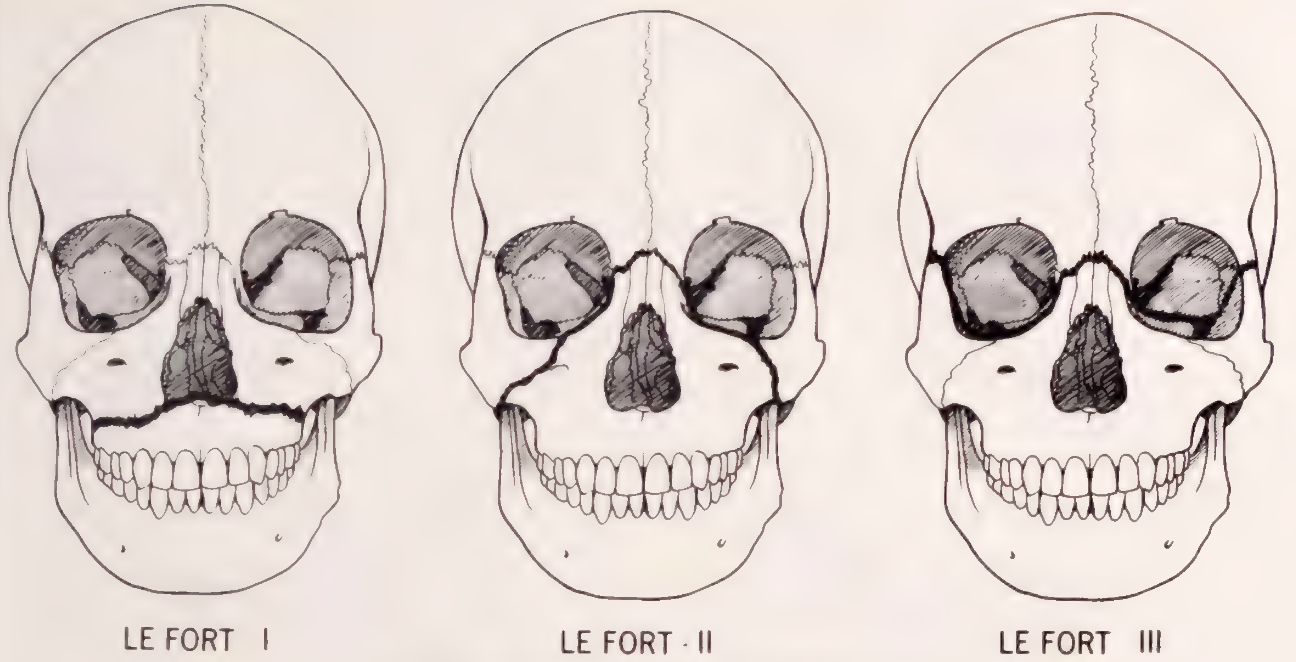

FIGURE 13. LeFort classification of maxillary fractures.

TABLE II. LeFort's classification of fractures

Classification		Teeth	Fixation (Fig. 14)
LeFort I:	(Guerin's fracture). A transverse fracture, the fragment containing the upper alveolus with teeth and palate	Present	Bimaxillary bars with elastics
		Absent	Dentures or splints with circumferential wiring
LeFort II:	In addition, the fragment includes the nasal bones and frontal processes of the maxillae	Present	Bimaxillary bars with elastics, wiring to malar
		Absent	Dentures or splints with circumferential wiring, wiring to malar
LeFort III:	(Craniofacial dysjunction) The fracture extends beyond the confines of the upper jaws. Both maxillae, the nasal bones and the malar compounds are torn from their moorings to the skull	Present	Bimaxillary bars with elastics, frontal suspension with pull-out wires
		Absent	Dentures or splints with circumferential wiring, frontal suspension with pull-out wires

dislocations rather than fractures (Fig. 15). They are suggested by a flattening of the cheek and confirmed on palpation and x-ray (stereoscopic Waters') (Fig. 6). Displacement of the lateral canthal ligament, asymmetry of the lateral canthus, deviation of the interpupillary line from the horizontal plane, and diplopia may be present (Fig. 16). Because they consolidate rapidly, malar fractures are best reduced within three days. Impacted fractures are difficult to reduce no matter how early reduction is attempted.

Gillies' maneuver is simple and effective (Fig. 17). Leverage is obtained by an elevator introduced through a three-quarter inch incision in the hair-bearing skin of the temple, and carried under the zygomatic process of the malar (Fig. 18). Counterpressure exerted by the opposite hand guides the malar into proper position, preventing overcorrection. Fixation is unnecessary in a stable fracture, usually recognized by a "click" on reduction. In an unstable fracture, intraosseous wiring provides the necessary fixation (Fig. 19). The fronto- and maxillozygomatic sutures are the two areas typically used for intraosseous wiring of malar fractures.

Fractures of the zygomatic arch are notoriously unstable. They are also reduced using the Gillies' maneuver (Fig. 20). Transosseous wire fixation and circumferential, pull-out wire carried through or around an aluminum splint stabilize the reduced fragments (Fig. 21). Caution must accompany the Gillies' procedure. Unless cushioned by the fingers, an elevator applied directly against the skull may fracture the temporal bone; further, ex-

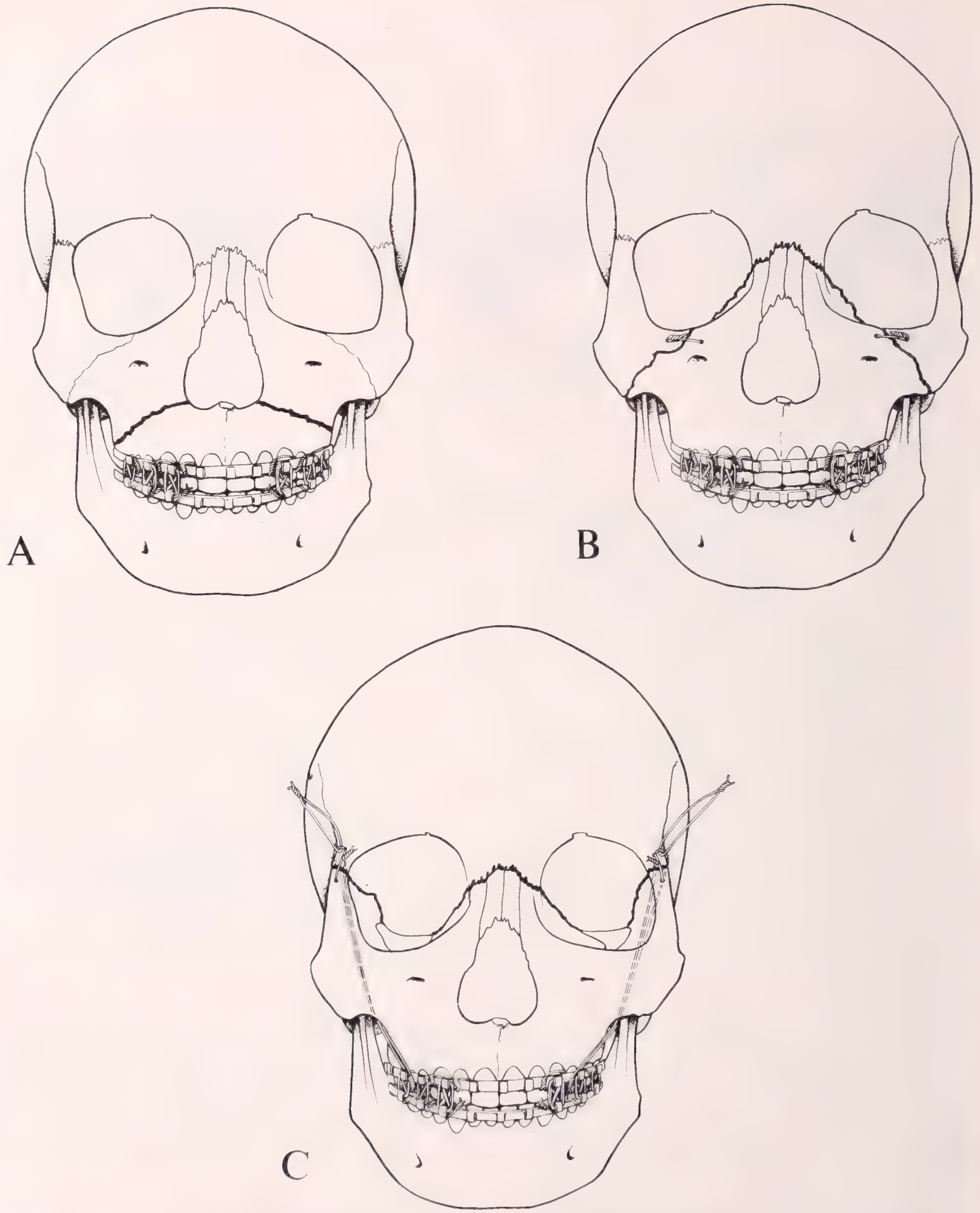

FIGURE 14. Three basic types of fixation of maxillary fractures: (A) LeFort I, (B) LeFort II, and (C) LeFort III (Table II).

cessive force and failure to apply counterpressure during reduction may tear the malar bone from its moorings.

Fractures of orbit. Because a number of bones form the confines of the orbit (maxilla, malar, lacrimal, ethmoids, palatine, sphenoid, and frontal), fractures of the orbit will be discussed as a unit.

Of greatest clinical significance is the fracture of the floor with or without herniation of the orbital content into the antrum. Diplopia is the cardinal sign of displacement of the orbital content. It is

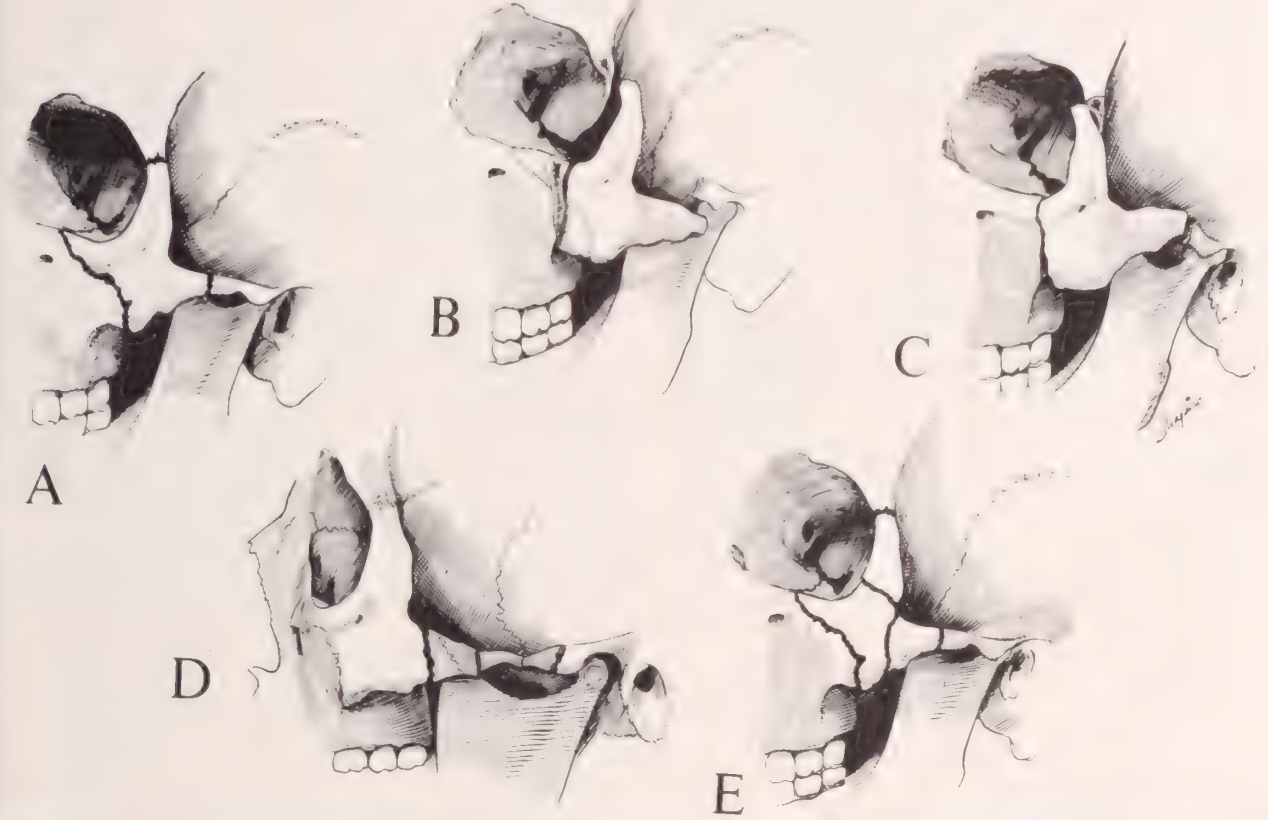

FIGURE 15. Type of fractures of malar bone: (A) impacted, "pushed-in" fracture without rotational displacement; (B) frontal process rotated outward and (C) inward; (D) fracture of zygomatic arch; and (E) comminuted fracture.

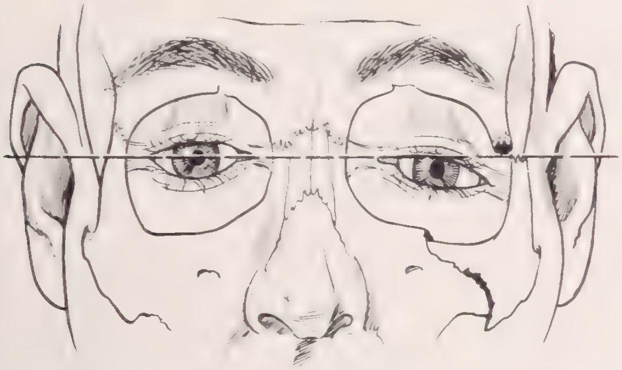

FIGURE 16. Displacement of lateral canthal ligament.

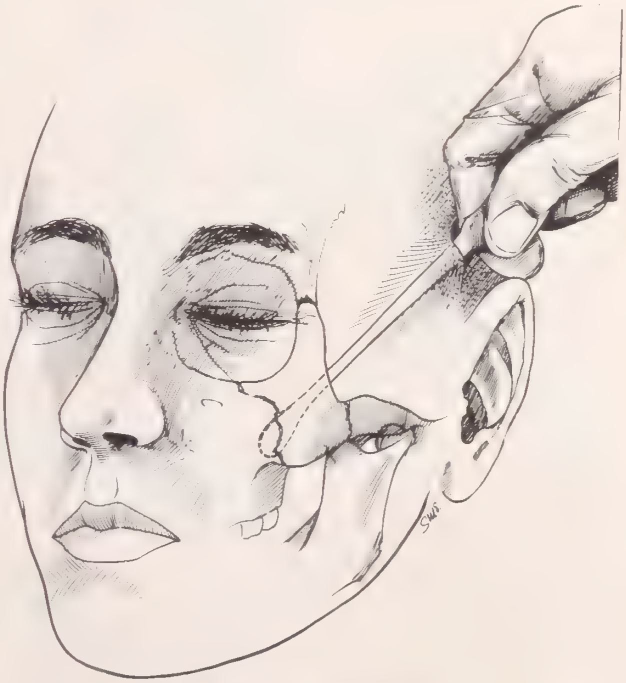

FIGURE 17. Gillies' maneuver.

important to differentiate between "functional" diplopia, produced by hemorrhage or edema, and "anatomic" diplopia, produced by loss of orbital support and downward displacement of the eyeball. Functional diplopia is transient and only occasionally requires orbital decompression, while anatomic diplopia calls for immediate surgical intervention if accompanied by trapping of the inferior rectus muscle. Anatomic and functional diplopia is differentiated clinically and radiologically. Enophthalmus suggests an increased capacity of the orbit produced by loss of the orbital support. Exophthalmus indicates increased orbital content due to hemorrhage or edema. Stereoscopic Waters' views are of help in diagnosing frac-

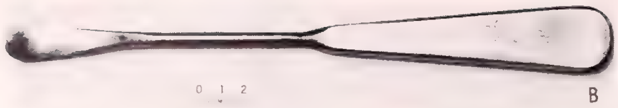

FIGURE 18. Modified tire iron for Gillies′ maneuver.

tures of the orbital floor and tomograms in defining them in more detail as to location, extent, and herniation of the orbital content.

An infrequent but functionally critical orbital-floor injury is the blowout fracture produced by the impact of a flat object against the orbital rim, increase in intraorbital pressure, "explosion" of the orbital floor into the antrum, and herniation of the content (Fig. 22). This may or may not combine with "trapping" of the inferior rectus muscle between the comminuted fragments, recognized by the patient's inability to gaze upward or, in an unconscious patient, by the traction test. Under topical analgesia, the inferior rectus is grasped by the forceps through the conjunctival sac and pulled forward. Failure to move the eyeball upward indicates trapping. A blowout fracture with trapping is a surgical emergency, since the inferior rectus may be irreversibly damaged unless the trapping is immediately corrected. The patient must be taken to the operating room without delay, the trapping released, and the continuity of the orbital floor restored. A blowout fracture without trapping may be electively reduced within a few days.

Opinions differ on the surgical approach to fractures of the orbital floor. Some prefer incision just below the border of the lower eyelashes, with separation of the muscle and elevation of the periosteum from the floor of the orbit. This, however, affords limited exposure, particularly if the fracture is located posteriorly. Further, surgical intervention within the orbit through this incision represents gross and unnecessary interference with the orbital content and may produce postoperative edema or hematoma. The transantral approach through a wide Caldwell-Luc avoids this. The

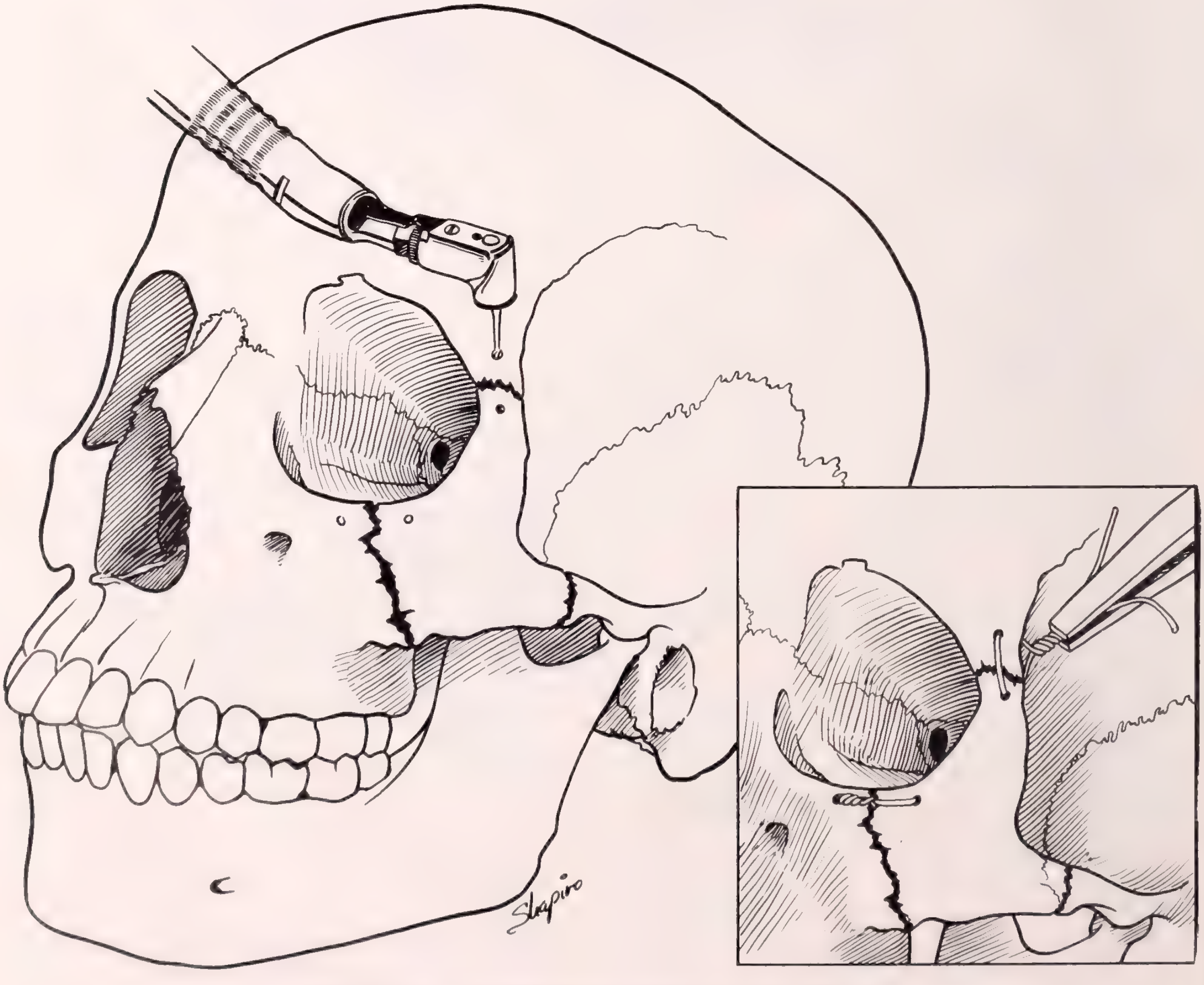

FIGURE 19. Intraosseous stabilization of malar fractures.

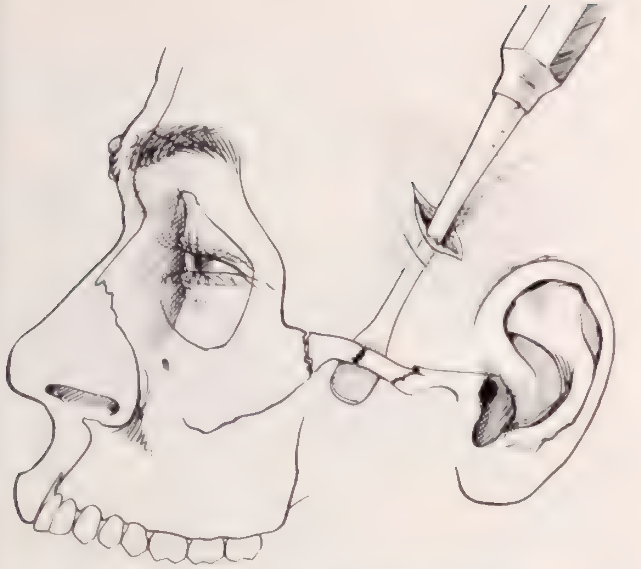

FIGURE 20. Reduction of fractures of zygomatic arch.

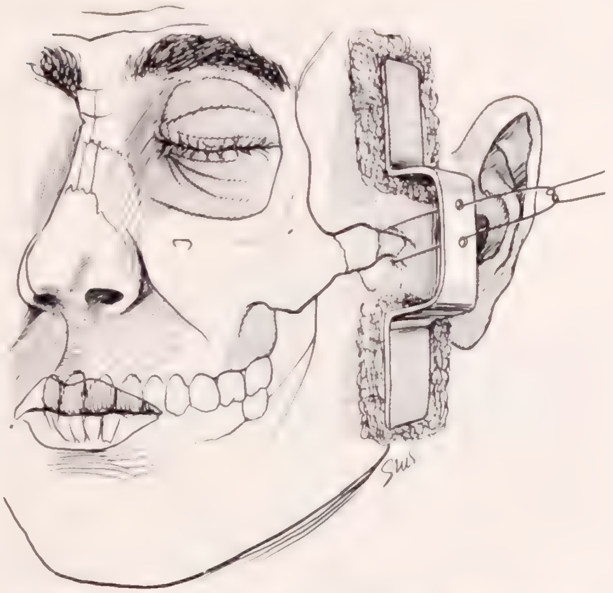

FIGURE 21. Fixation of fractures of zygomatic arch.

opening should be large enough to allow direct inspection and palpation of the orbital floor. The herniated content and the bony fragments are reduced and the antrum packed to provide firm support for the comminuted orbital floor. With negligible exceptions, we have been able to reconstitute the floor of the orbit without resort to implants, which we have limited to secondary reconstruction of previously nondiagnosed or ill-reduced orbital-floor fractures.

Fractures of nose. These are the most frequent as well as the most easily managed facial fractures and are included for the sake of completeness rather than for any special problems they present. They are recognized by displacement and distortion of the nose, tenderness, breathing obstruction, and septal displacement. X-ray examinations are of negligible value and unnecessary in deciding for or against reduction.

Nasal fractures are easily reduced within five days. General anesthesia is helpful in children but unnecessary in adults. Reduction is accomplished using any blunt elevator applied intranasally, concomitantly manipulating the nasal bones with the opposite hand (Fig. 23). Nasal splint and intranasal packing maintain the reduced fragments in position for about five days.

In comminuted fractures of the bridge of the nose, aluminum, lead, or plastic plates applied to the lateral walls of the nose and stabilized by transnasal wires may be necessary to maintain the fragments in position.

A severe impact against the bridge of the nose may comminute the ethmoids, lacrimal and nasal bones. This so-called "canthal crush" is often accompanied by obstruction of the lacrimal ducts, epiphora, dacryocystitis, and hyperteloric appearance. Correction is effected by a combination of bilateral pressure against the nasal bones and the medial orbital wall using Ash forceps, with a simultaneous pull on the wire carried through the nasal bones (Fig. 24).

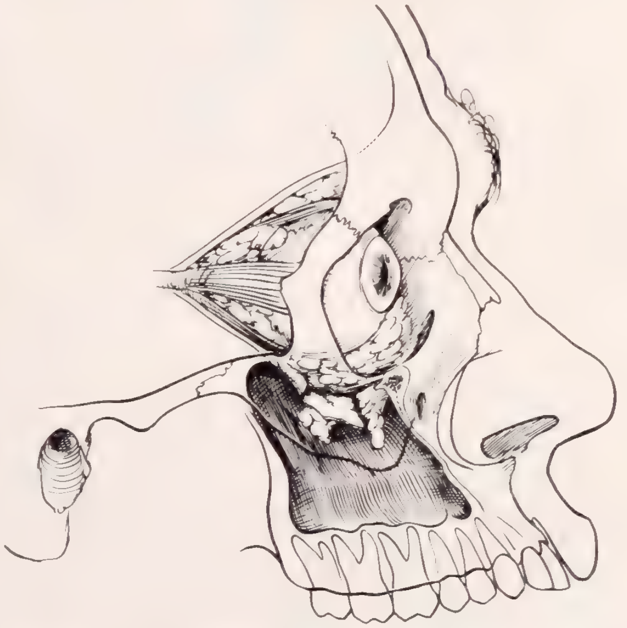

FIGURE 22. Blowout fracture; note comminution of orbital floor and herniation of orbital content into antrum.

Special problems.

Facial trauma in children. Since young bone withstands considerable trauma without fracture, and since children are less exposed to car accidents, pediatric fractures from highway accidents are infrequent.

General anesthesia is mandatory. The management of jaw fractures in children differs from adults in that deciduous teeth cannot be used as an

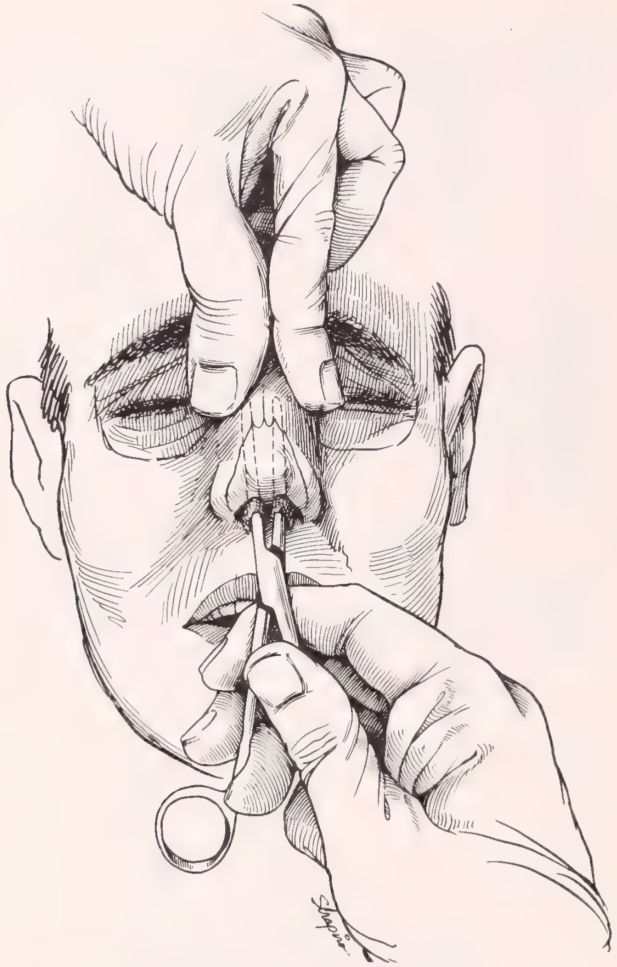

FIGURE 23. Reduction of nasal fractures.

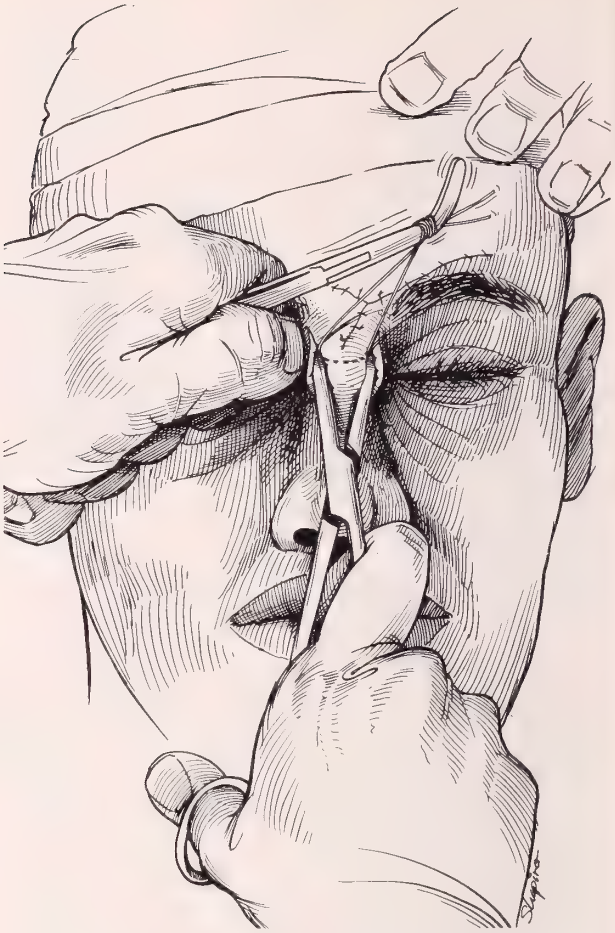

FIGURE 24. Surgical correction of canthal crush.

anchorage for the fracture bars, and intraosseous wiring is required to maintain the fragments.

Fractures of the mandibular condyle in children may result in impairment of growth, asymmetry of the face, and deviation of the chin toward the injured side. Therefore, it is theoretically desirable to reduce them. Practically, the attempts to do so are even more frustrating than in adults.

Severance of tear and Stenson's ducts. Primary anastomosis is preferable to secondary repair. After the severed ends of the duct have been identified, the duct is anastomosed over a polyethylene catheter. Injecting the cannaliculus and Stenson's papilla with dye aids in locating the severed end of the duct.

Severance of facial nerve. Immediate repair is indicated whenever possible, since the results of primary anastomosis are superior to secondary union or nerve graft. The recovery of function following immediate repair is well worth the effort and time spent in locating the severed branches.

Summary

Blalock used to say pensively, "The head is too small for all the specialists." He was referring to the jurisdictional disputes he was called on to arbitrate among the plastic surgeons, oral surgeons, otolaryngologists, and ophthalmologists. Because of the variety of systems involved, a patient with severe facial injury is best served by those willing to work closely and noncompetitively with their colleagues from other specialities.

Emergency Management

Secure airway:
- tongue fallen back
- blood clots
- broken dentures
- midfacial mash
- trauma larynx
- trauma chest

In persistent obstruction:

complete	indwelling catheter stat
partial severe	coniotomy in emergency room
partial mild	tracheostomy in operating room

Rule out critical injuries elsewhere:
- head
- spine
- chest
- abdomen
- extremities

"Facial" Emergency: "blowout" fracture. Immediate Caldwell-Luc if trapping present

Interim Management

Define nature of injury clinically eyes: vision, diplopia
facial bones, infraorbital rims, malars, nose, maxilla, mandible
dental arches occlusion
nasal airway cerebrospinal fluid
auditory canal cerebrospinal fluid

x-ray posterioanterior mandible, stereo Waters', cervical spine

Definitive Management

Soft Tissue: Within twenty-four hours. Minimize debridement. Impeccable deep dermal closure, loose skin sutures.

Mandible: No deadline
- teeth present
  - favorable bars with elastics
  - unfavorable bars with elastics plus transosseous wire
- teeth absent
  - favorable transosseous wire
  - unfavorable transosseous wire plus dentures or splints with circumferential wire

Maxilla: Within five days

LeFort I	arch bars with elastics
LeFort II	arch bars with elastics plus wiring to malar
LeFort III	arch bars and elastics plus frontal suspension

Malar: Within three days. Gillies' maneuver
Orbital floor: Within three days. Differentiate between functional and anatomic diplopia. Caldwell-Luc.

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Cholecystogastrocolic fistula is a rare type of multiple spontaneous internal biliary fistula. From a perusal of the available English literature we were able to find only 2 reported cases. Robson in 1909[1] described a gallbladder which had separate communications to the colon and stomach. Another case was found by Mirizzi,[2] among 78 cases, in 1951. Among 55 spontaneous internal biliary fistulas seen in the Millard Fillmore Hospital over the past twenty years, there was 1 case of cholecystogastrocolic fistula.

Case report

A sixty-seven-year-old woman was admitted to this hospital on October 12, 1967, with the complaint of vomiting of two days' duration and pain in the right upper quadrant of the abdomen. About twenty years previously x-ray examination had shown gallstones, but the patient refused surgery. Since that time she had been having intermittent attacks of nausea, vomiting, intolerance to fatty foods, and mild right upper-quadrant and epigastric pain radiating to the back. About ten years before admission she had had an acute attack of abdominal pain, vomiting, and jaundice, which subsided spontaneously, and five years later an episode of chills, fever, and jaundice which responded to antibiotic therapy.

Two days before admission she experienced aching to sharp pain in the right upper quadrant of the abdomen, associated with nausea and vomiting. The emesis had a fecaloid odor. She stated that she had noticed clay-colored stools on one occasion and usually had loose stools. She also said she had lost weight over the past two years.

On admission the patient was well developed, fairly well nourished, and in acute distress. Vital signs were normal; the temperature was 98° F. The skin and mucous membranes were dry. There was no jaundice. The chest and heart were normal. The abdomen was flat, and there were no palpable masses, although there was fullness with tenderness on deep pressure over the right upper-quadrant region. Bowel sounds were normoactive. Pelvic and rectal examinations disclosed no abnormalities.

The pertinent laboratory findings obtained on admission were as follows: The hemoglobin content of the blood was 16.7 Gm. per 100 ml. and the hematocrit level 47. The leukocytes numbered 7,125 per cubic millimeter of blood, with a differential count of 44 per cent segmented cells, 18 per cent band forms, 31 per cent lymphocytes, 1 per cent eosinophils, and 6 per cent monocytes. The serum enzymes and electrolytes were all within normal limits. A cholecystogram on October 14, 1967, showed a nonfunctioning gallbladder, and x-ray examination with barium enema revealed a reflux of barium into the stomach and duodenum, which was interpreted as duodenocolic fistula.

Intravenous fluids were administered, and four days after admission abdominal laparotomy was performed. Dense adhesions were found in the right upper quadrant. The gallbladder was small and fibrotic, and its fundus had two communications, one to the colon and one to the stomach. The common duct was dilated. Cholecystectomy was performed, and the fistula, with the involved portions of the stomach and colon, was resected. Exploration of the common duct showed stenosis of the sphincter of Oddi; this was dilated to 7 mm. Microscopic examination of the gallbladder showed fibrosis, thickening, and hypertrophy of the muscular wall. There was also a moderate amount of round-cell infiltration in the lamina propria mucosae.

On the tenth postoperative day a T-tube cholangiogram showed patency of the common duct. The patient was discharged on the thirteenth day, following an uneventful course. The patient has remained asymptomatic to the present time and has gained 20 pounds.

Comment

The majority of spontaneous biliary tract fistulas (60 to 73 per cent) are of the cholecystoduo-

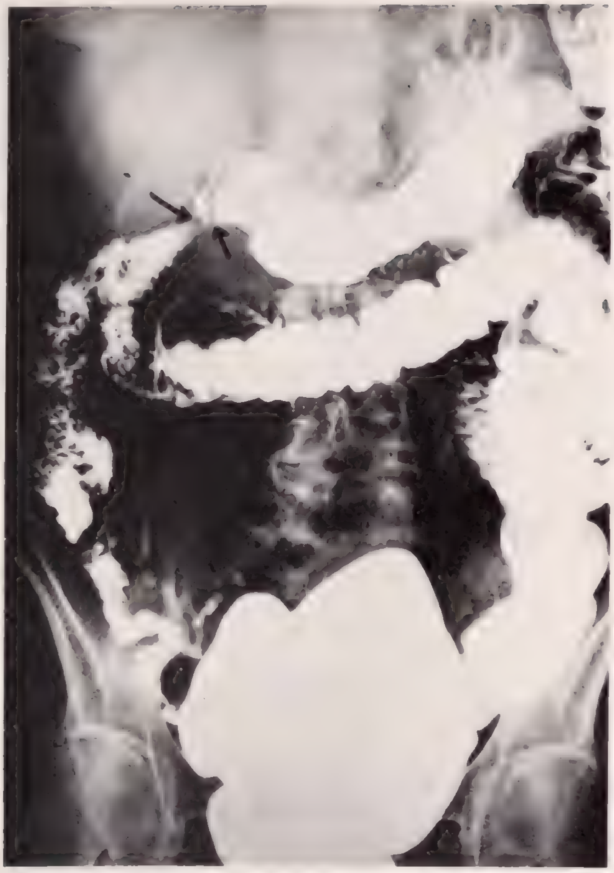

FIGURE 1. Note reflux of barium from transverse colon through gallbladder and into stomach. Arrows point to two separate fistulas of gallbladder connecting with colon and stomach.

denal type.[3,4] This is explained by the proximity of these structures. Rarely, distant organs, such as the colon and stomach, have been involved ("multiple" or "complex" fistula). Wakefield, Vickers, and Walters[5] reported 11 instances of multiple fistula among 176 cases but no instance of cholecystogastrocolic fistula. Chronic biliary tract disease is the cause of internal biliary fistulas in 85 per cent of cases, with the remaining 10 to 15 per cent caused by peptic ulcer, carcinoma, or congenital anomalies, according to Levowitz.[6] This author remarked that internal biliary fistula is a late complication of neglected biliary tract disease.

The patient invariably has a history of gallbladder trouble. Nonspecific gastrointestinal symptoms may be present, such as epigastric pain, distention, nausea, and vomiting. In cholecystogastrocolic fistula the symptoms will be referable to the biliary tract as well as to the stomach and colon. An interesting aspect of the history of the case presented here was abatement of the initial abdominal distress and jaundice following development of the fistula. This apparently is nature's attempt to protect the patient from further serious injury.

In general, the signs and symptoms found in spontaneous internal biliary fistula are caused by complications and sequelae arising from the fistula. In the present case the patient had chills, fever, and jaundice, indicative of ascending cholangitis. On admission the symptom complex of diarrhea, fecaloid breath, and loss of weight indicated reflux of colon contents to the stomach. Fullness in the right upper abdominal quadrant represented inflammation around the fistulas. Intestinal obstruction due to gallstones did not occur. The laboratory findings were nonspecific.

The most helpful diagnostic procedure when spontaneous biliary fistula is suspected is roentgenographic study. A nonfunctioning gallbladder is a presumptive clue to the diagnosis. Thirty per cent of all biliary tract fistulas will show air in the biliary tree in a plain radiograph of the abdomen.[7] However, roentgenographic study with a contrast medium is of most value for diagnosis and localization of the fistula. In the present case the roentgenogram with barium enema revealed a reflux of contrast medium into the stomach, which had been interpreted as caused by duodenocolic fistula, but study of the films after surgery showed the gallbladder also to be filled with barium, which had been missed initially (Fig. 1). A barium enema will demonstrate gastrocolic fistula in 95 per cent of cases and barium meal in only 10 per cent, according to Lewis, Levick, and Gazzaniga.[8]

We believe the treatment, as in all biliary fistulas without intestinal obstruction, is elective surgery. It is important to improve the general condition of the patient preceding surgery. Metabolic derangement, deficits in proteins and prothrombin time, electrolyte imbalance, and anemia should all be corrected. Bowel preparation likewise is important. In the present case, cholecystectomy and en bloc excision of the fistula as well as the involved portions of the colon and stomach were performed. The common duct was explored, as emphasized by others.[4,9] Also the intestinal tract was carefully explored to rule out any asymptomatic gallstone that might eventually produce obstruction. A piece of omentum might also be interposed between the suture lines, although in this case we did not find it necessary.

Spontaneous internal biliary fistula has a mortality rate of 10 to 31 per cent[6,10]; and when it is associated with gallstone ileus, the mortality rate rises significantly, to 47 to 75 per cent.[6,11] Whether the multiple type of fistula described here would influence these rates adversely must remain speculative until sufficient cases have been reported.

Summary

A case of cholecystogastrocolic fistula, presumed to be the third case on record, has been reported. The triad of symptoms, namely, loss of

weight, fecaloid breath, and diarrhea in a patient with a nonfunctioning gallbladder, should lead one to suspect the presence of this rare type of biliary fistula. Only x-ray studies, using a contrast medium, will demonstrate the lesion.

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A Warning on Hazards of Laundry Products Used in Newborn Nursery

Substances which may be hazardous to premature and full-term newborn infants are still being used in the laundering of clothing, diapers and bedding for hospital nurseries, the American Academy of Pediatrics has warned in a current *Newsletter.* In a statement issued by the AAP's Committee on Drugs, the Academy points out that cases have occurred in which premature and full-term newborn infants have contracted methemoglobinemia, a condition caused by various poisons resulting in a lack of oxygen, after their diapers were rinsed with the bacteriostatic agent 3-4-4′ trichlorocarbanilide (TCC). Reports in pediatric literature have indicated that aniline–a well known cause of methemoglobinemia has resulted from the break down of TCC during sterilization of infant diapers. It is possible for aniline to be absorbed through the skin of infants from diapers and other nursery clothing.

The Academy points out that although most hospital laundry procedures have abandoned TCC in treating clothing and bed linens of newborn infants, "sporadic instances of neonatal methemoglobinemia associated with exposure to this substance still come to the attention of local, state and national health agencies, manufacturers, and the AAP Committee on Drugs."

The AAP further indicates in its statement that deaths and severe illness have previously been reported in one maternity hospital when sodium salt of pentachlorophenol (PCP) intoxicated babies when it was absorbed through the skin. The PCP was present in the antimicrobial neutralizer product used in the final rinse of the laundry process for diapers, infant undershirts, and crib linens for the nursery.

The Academy statement further raises concern over newer laundering agents such as enzyme-detergent combinations and optical brighteners. "The biology of the premature and full-term neonate demands that even the most innocent appearing substance in their environment be scrutinized for the possibility of adverse effects," the Academy statement concludes. "Until data on toxicity are available for various substances which are proposed for introduction into the nursery, clinical judgment would dictate avoiding them."

SELF-INFLICTED STAB WOUNDS TO PREGNANT UTERUS AND FETUS AT TERM

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The incidence of traumatic injury to the abdomen in pregnancy may be increasing due to exposure of gravidas to larger numbers of automobile accidents and other violent injuries. Because of its pertinence to today's changing practice of obstetrics, we feel it pertinent to relate the following report of trauma caused by self-inflicted stab wounds to the pregnant abdomen and the fetus at term. No report of a patient with a comparable injury has been found in a review of the medical literature.[1-7]

Case report

A twenty-seven-year-old woman married, white, para 2-0-1-2, was admitted to the Nassau County Medical Center in the thirty-ninth week of her third pregnancy with multiple self-inflicted stab wounds of the abdomen. During the sixth month of this pregnancy the patient had voiced numerous somatic complaints and had been sent to an internist for evaluation. Physically she was found to be completely normal. She then began to exhibit numerous delusions and hallucinations. She was seen by a psychiatrist and was admitted to a psychiatric unit elsewhere with a diagnosis of schizophrenia. She was hospitalized for three weeks and received psychotherapy and medication. Subsequent to her discharge, she began to express a desire to be rid of the fetus. On the evening prior to admission, the patient took a 6-inch kitchen carving knife and stabbed herself seven times in the abdomen. The patient's husband called a police ambulance. She was admitted to the hospital thirty-five minutes later. Her blood pressure was 130/90, pulse 102 per minute and regular, respirations 26 per minute, and temperature 99 F. She had seven bleeding stab wounds in the abdomen. Omentum was seen protruding from the 4-cm. wound situated just to the left of the umbilicus above the uterine fundus. No fetal heart tones could be heard in the emergency room. An intravenous infusion of Ringer's lactate was started through a 16-gauge intracatheter. Blood was drawn for typing, and 12 units of whole blood were cross-matched. The admission hemoglobin was 10 Gm. per 100 ml., hematocrit 31, and white blood count 7,100 per cubic millimeter. The patient was taken to the operating room, where on reexamination a strong fetal heartbeat of 140 per minute was heard. A pelvic examination revealed the cervix to be 4 cm. dilated, 50 per cent effaced, with the fetal vertex floating out of the pelvis. The blood pressure then was 110/80, and the pulse was 110 per minute.

It was decided to perform an immediate abdominal exploration. Under general anesthesia an incision was made in the lower midline of the abdomen. When the abdominal cavity was explored we encountered four stab wounds on the anterior fundal portion of the uterus. These were oozing a small amount of blood. Two smaller non-bleeding lacerations were present on the top of the uterine fundus. A low-flap transverse incision cesarean section was performed. The male infant had an Apgar score of 8 at one minute and weighed 2,835 Gm. (6 pounds 4 ounces). The infant had two superficial lacerations on his back and left flank. The infant did well post partum. Inspection of the uterus after the placenta was delivered showed that four anterior fundal lacerations had penetrated into the uterine cavity. The cesarean section incision was closed in layers, and the lacerations were sutured at the serosal surface with 0 chromic catgut.

On examination of the upper abdomen two superficial lacerations of the liver were seen. Since they were not bleeding they were not sutured. The stomach, spleen, and small and large bowels were thoroughly examined and found to be uninjured. No mesenteric bleeding or hematomas were present. The peritoneal sites of the abdominal wall lacerations were sutured with number 2 chromic catgut suture from within the abdominal cavity. The skin openings were debrided and closed in layers. The lower abdominal incision was also closed in layers. During the operation the patient received two units of whole blood.

The patient's postoperative course was smooth and uneventful. On the first postoperative day the patient was evaluated by the hospital's psychiatrist. His diagnosis was schizophrenia, schizo-affective type, depressive reaction. On the sixth postoperative day the patient was transferred to the psychiatric ward for further evaluation and treatment. She is at present being treated at a state mental hospital.

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Comment

This case raises two important considerations: (1) the immediate surgical management of the case, and (2) the psychiatric background which led to the incident and possible implications for prevention.

When this patient was brought to the operating room with seven stab wounds in the abdomen, immediate laparotomy was indicated to determine the extent of the injury. The finding of multiple lacerations of the pregnant uterus warranted immediate cesarean section to evaluate injuries to the fetus and the extent of both intra- and extrauterine bleeding. At surgery it was suggested that hysterectomy be part of the procedure. We felt, however, that the surgery should be minimized, if possible, and limited to delivery of the fetus and repair of the uterine stab wounds. Had the stab wounds caused an irreparable rent in the uterus, we would have been forced to perform a hysterectomy to save the mother's life. This was not the case. Sterilization was also discussed. For legal, religious, and psychiatric reasons it was not done. It is our feeling, however, that when the patient's psychiatric condition is stabilized, the subject should be discussed with her. She should probably be encouraged not to conceive again.

Her psychiatric background is of considerable interest. The patient came from a small family with one sister. The patient's mother was very protective. She herself was always very quiet and introverted. Her obstetrician said that the previous deliveries had been normal. After her last delivery, however, a period of depression had been noted lasting several weeks. It appeared to have been self-limited.

In the early months of this pregnancy, the patient refused to see a physician. She then began to complain of heart disease. She said a high school teacher had convinced her she had a disease of her heart valves. She also felt that the physicians were in collusion against her. In the fifth month of pregnancy, the patient's husband convinced her to be examined by an internist. After the entire examination failed to show any physical abnormalities, the patient was referred to her obstetrician for maternity care. She continued to insist that she had heart disease.

She was referred to a psychiatrist who diagnosed paranoid schizophrenia. During his interview she expressed the feeling that physicians were plotting against her, and she related that her husband was against her as well. She stated that her grandmother had said her husband would "cut her and the baby up into pieces" after her third delivery. On the basis of this interview the patient was hospitalized for psychiatric treatment. During her hospital stay, she was treated by psychotherapy. She appeared superficial, depressed, and withdrawn. She was concerned about her "heart disease," and felt she was about to die. After three weeks of hospitalization the patient was discharged. The diagnosis on discharge was paranoid schizophrenia, encapsulated and controlled. The prognosis was felt to be guarded, and the recommendation was made that the patient be rehospitalized if paranoid symptoms returned.

The patient was advised to continue to see a psychiatrist as an outpatient, but she did not see him. On the several visits she made to her obstetrician her general medical condition was good. However, toward the end of the pregnancy she began to express the desire to be rid of the fetus. She began to get progressively agitated. Two hours before the incident occurred the patient went to a priest for advice. On her return she went to her bedroom where she was found several minutes later with the kitchen knife and the seven abdominal stab wounds.

This detailed accounting of the patient's psychiatric background and treatment leads to several conclusions: (1) The patient's depressive episode after the last pregnancy should not have been ignored; (2) hospitalization for psychotherapy should probably have been extended; and (3) much closer psychiatric follow-up should have been instituted when the patient was discharged from hospital psychiatric care before delivery. If these points had been observed in this case it is conjectured that the patient would probably not have stabbed herself and the fetus. To prevent similar occurrences in emotionally unstable patients it is appropriate that close attention be paid by the obstetrician particularly to any hints suggesting serious underlying psychiatric problems. Any problems expressed by the patient should be followed up in detail. The effects on the infant are hard to determine. Any effect on the child's psyche may be masked by the environmental role of the mother's continuing association with him during his development. As to the mother, it will be difficult at best to determine whether or not she will be affected by the child's presence, serving as a constant unpleasant reminder to her of this episode.

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Electrocardiograms of the Month

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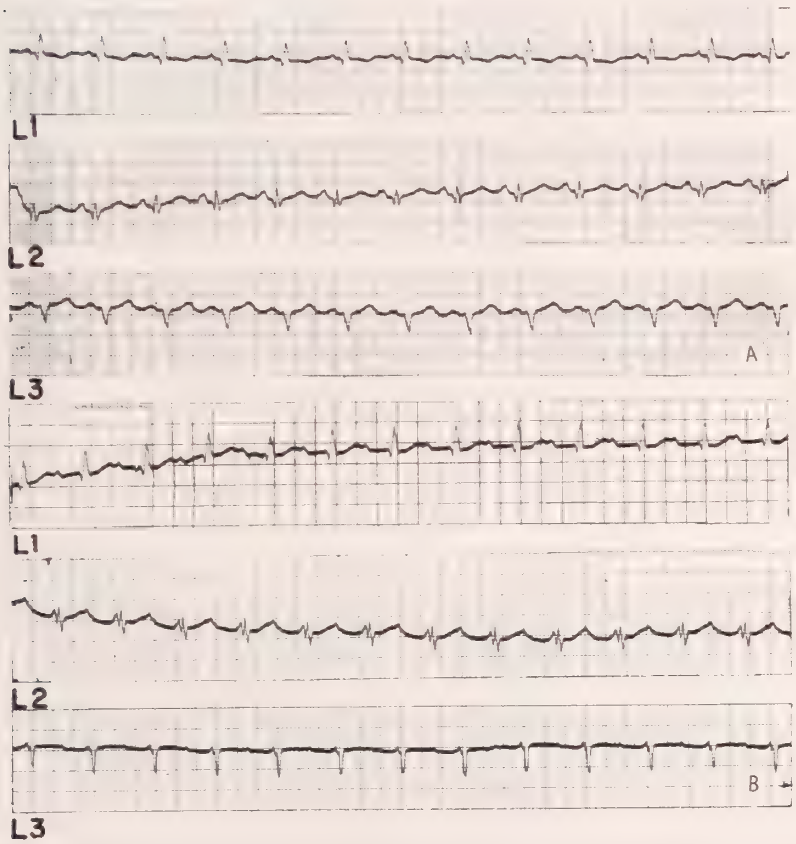
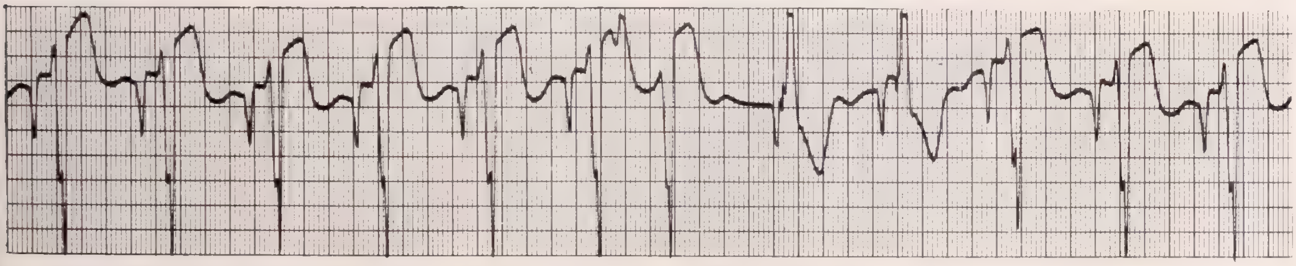


QUESTION 101. This sixty-six-year-old man, receiving digitalis, was admitted with congestive failure. Figure A was obtained on admission. Figure B was taken three days later after further digitalis therapy. The manifestations of failure had increased. What is the electrocardiographic interpretation? Should the digitalis dose be increased, decreased, or remain unchanged?



QUESTION 102. What is the rhythm? This tracing was obtained from a monitor in the coronary care unit.

ELUCIDATION

Question 101. (A) This record shows sinus tachycardia at a rate of 100. Q waves are visible in leads I and II, and T is inverted in lead I. (B) The rhythm has changed to atrial tachycardia at a rate of 185 with 2:1 block. Alternate P waves are superimposed on the T wave and the initial portion of the QRS. The QRS in lead II is deformed by the P wave, masking the Q wave. This rhythm is evidence of digitalis toxicity, and the drug should be stopped.

Question 102. The rhythm is regular sinus for the first six beats. The giant P waves and high voltage QRS complex are due to distortion of the nonstandardized monitor lead. The sixth QRS is followed by a premature ectopic atrial beat with prolongation of the PR interval and slightly aberrant conduction of the initial 0.02 second of the following QRS. The ensuing beat is a ventricular escape beat occurring immediately following the sinus P wave and is obviously not conducted from this. The next QRS is also a ventricular escape preceded by a nonconducted P wave. Sinus rhythm then resumes. The diagnosis is sinus rhythm with a premature atrial contraction, with prolongation of the PR interval and slightly aberrant intraventricular conduction. In addition, there are ventricular escape beats followed by resumption of sinus rhythm.

BACKGROUND OF CLINICAL CARDIAC ELECTROSTIMULATION

IV. Early studies on feasibility of accelerating heart rate by means of electricity

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Probably the first physiologic observation made in regard to electrification was that mild tachycardia commonly accompanied it. Kratzenstein[1] noticed that sequel in 1744. Jallabert[2] remarked that electricity had caused the pulse rate of 1 of his patients to rise from 80 to 96 per minute and had made the menstrual flow more abundant in others. To make sure that these phenomena were not from apprehension or excitability alone, he submitted patients to different strengths of shocks during phlebotomy. The volume of blood and forcefulness of the jet were noticeably augmented, an effect which Jallabert nicknamed "electric siphon."

Others confirmed these findings. De Sauvages[3] investigated sphygmic reactions to electricity in himself and his assistants and found that it brought about an average rise of 12 beats per minute. Rackstrow declared,

> The circulation is increased by a person only standing on a cake of resin and so electrified, and the effects are so moderate that they only serve to cheer and raise the animal spirits: for when it acts the strongest, it will increase the number of pulses three or four in half a minute, and when weak about two: and even then, as I apprehend, may prove of very great service. But what tends to the greatest good are the shocks given moderately and with some judgment: and I am well assured that it will remove many obstructions and be of great use in paralytic cases. It helps the digestion, quickens the circulation of the blood, provokes urine, and causes a free respiration and perspiration. All these I have often observed and doubt not but that many other things beneficial to man may further be discovered . . .[4]

The peripatetic John Wesley likewise observed,

> Open a vein in a person standing on resin and the blood will fly out to a certain distance. But let him be electricized and it will spin out with a much greater force and to a far greater distance.[4]

Richard Lovett in 1756 proceeded to put such assertions to a quantitative test.[4] His method of measurement is not surprising since minute watches were lacking in his day. Referring to Rackstrow's account of tachycardia induced by electrification, Lovett said,

> This surprising account of it I own I could hardly credit, for which reason I was determined to prove it on myself. This I did by counting the number of my pulses in half a minute several times when standing on the floor and wrote them down in the window . . . . That the experiment might be made as accurately as possible, I kept at a due distance from the clock so as not to be disturbed in my reckoning by hearing the vibrations of the pendulum. Then, standing on the electric cake, the person at the clock gave me notice by naming the first vibration loud enough for me to hear and also the last. This method of knowing the time of only the first and last vibrations left no room for mistake, particularly as I repeated the experiment several times, which I found to answer so truly to his account of it that it left as little room for doubt.

In 1784 Mauduyt[5] concluded from his researches that "positive electricity accelerates the pace of the pulse, whereas the negative diminishes the number of pulsations." This premier observation was applied therapeutically, and more than two hundred fifty years later the "electropositive bath" was still being used to enhance the circulation and the "electronegative bath" to lower tachysphygmia.[6-9]

Speculations on cardiac neuroexcitatory action of electricity

It is rather odd, in retrospect, that the influence of electricity on the pulse should have been attributed predominantly to a neural effect rather than to a direct alteration of cardiac activity per se. Jallabert's[2] works reflected such a conviction:

> The action of electricity on the pulse may be explained by its effect on the nervous fluid which it may

> cause to flow more rapidly and abundantly in the motor nerves of the heart; and this acceleration in the circulation of the blood must entrain a greater heat in all the body by its friction against the lining of the vessels.

I have quoted Fontana elsewhere relevant to his attempts to modify the heart rate by maneuvers either on the cardiac nerves or on the spinal cord.[10,11] Galvani,[12] who twenty years later performed similar experiments, was able to arrest the heart of frogs by transaction or perforation with needles of the cord. He called this effect incantessimo (enchantment). He extended this finding to the proposition of using a converse mechanism, namely, nerve stimulation, to overcome paresis in any organ, the heart included.

> It is difficult, in fact, to perceive whether the disease originates from damage to the structure of the nerves or brain, or from the existence of a non-conducting substance in the interior of the nerve or in other bodily parts wherein we know that an electric circuit is completed. In the first instance, artificial electricity, in whatever way it is employed, would be of little efficacy, and perhaps even very harmful. In the second instance, it seems to me that benefit might be derived from it, by dissolution of the non-conducting substance or by augmenting the strength of animal electricity. Doubtless some day practice and experience will shed full light on the worth of this deliberation.

It was not until another half-century before the major preoccupation with studies on the neural regulation of cardiac action began. The watershed of this aspect of electrophysiology was the disclosure by the Weber brothers[13] of the role of the vagus on the heart beat. In consequence of this demonstration, more attention was directed to controlling the rate of the heart by influencing the vagus and sympathetic nerves than was paid to direct stimulation of the myocardium. Even when Duchenne[14,15] caused cardiac acceleration by the passage of induction currents across the precordium, he ascribed this effect to arousal of nervous "reflexogenic" zones on the chest wall rather than to excitation of the heart itself.

Amid the vast assemblage of physicians who became engrossed with this approach one finds such personages as Lister,[16] Marey,[17,18] Mayer,[19] Julius Budge,[20] François-Franck,[21] and others no less noteworthy.[22-24]

In 1862 Walshe[25] commented,

> ... the heart's action may be reexcited after stoppage by galvanic stimulation of the roots of the spinal accessory nerve, and of the first four cervical nerves, and of the sympathetic filaments belonging to the organ. Schiff states that increase of the heart's vigor takes place under very gentle stimulation of the pneumogastric. The recent experiments of Mr. Lister seem to establish the general conclusion that very mild galvanic currents passed from the posterior region of the spine, in the course of the vagi, and through the cardiac sympathetic excite, while strong currents exercise an "inhibiting" influence upon the heart's actions. But when exhaustion has occurred in the animal experimented upon, a much stronger current is required to stimulate the heart than when its nervous energy is scarcely or not all impaired. The practical guidance seems clear as to the force of galvanic currents to be employed in cases of protracted syncope in the human subject. The gentlest amount of galvanic stimulus should first be tried: but it is clear, if there has been much previous exhaustion, a very powerful current, which under ordinary circumstances would have arrested the heart's play, may be required to revive it.

Beard and Rockwell[26] made sphygmographic recordings of what ensued from galvanization and faradization currents directed to the neck:

> From these experiments we derive the following conclusions:
>
> 1. Both currents—faradic and galvanic—when applied in such a way as to traverse the region of the neck in which the pneumogastric and cervical ganglia of the sympathetic are situated, markedly affect the pulse.
> 2. The effect is chiefly shown in abruptness of the systole, and in abruptness of the diastole, and in shortening of the interval between the cardiac impulse and the arterial impulse. In general it may be said that the force of the pulse is increased. Its rapidity may be either increased or diminished, according to the length of the application and the strength of the current, and analogy would lead us to believe that the effect must widely vary with the individual. The arterial impulse increased probably from the effect on the vaso-motor nerves.
> 3. The effect of general faradization was to prolong the systole and the interval between the cardiac and the arterial impulse. The abruptness, and the systole that is so marked during and after faradization through the neck, was not observed after general faradization. A calming, sophorific influence is very frequently produced by general faradization, and the effect on the pulse harmonizes with this observation.
> 4. These effects on the pulse gradually pass away, but are distinctly traceable for a number of minutes after the electrodes are removed.
>
> The effect of the current thus applied on the circulation is probably a complex resultant of the effect of the electricity on the pneumogastric, the sympathetic, the depressor, and the spinal cord. To differentiate these effects is manifestly impossible.

The studies of others substantiated this last remark. Althaus[27] suggested that electricity might be beneficial to quicken the heart in bradycardia due to "spasm of the vasomotor center":

> In this form of spasm the pulse is small and threadlike, the skin cold and pale, the face sallow, the hands cold and clammy, and the feet feel like ice. The patient appears anaemic, but is not really so, for the number of red blood-cells is normal. The condition is apt to be worse after meals. As the cortex is equally badly supplied with blood as the peripheral parts, the patient feels low, depressed, lethargic, indifferent

to everything, and experiences faint feelings when he is obliged to rouse himself for some mental or physical effort. A preacher is apt to faint away in the pulpit, just when about to commence his sermon; and a barrister feels as if he must faint when beginning a speech in Court. At times an actual fainting fit occurs, while on other occasions the patient just steers clear of it, or may show signs of angina pectoris.

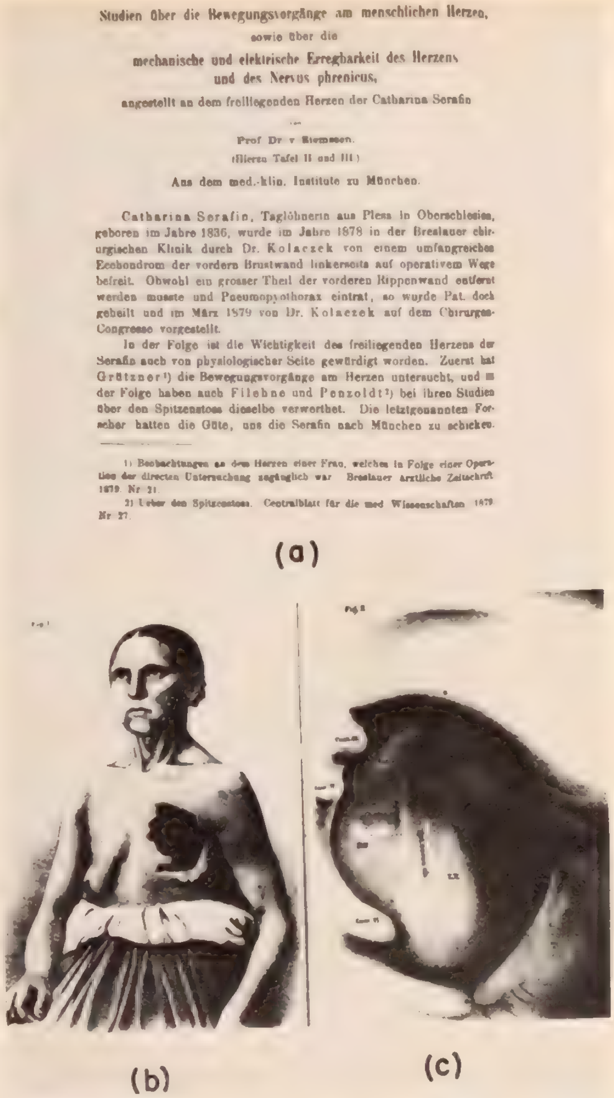
There are few nervous affections in which the beneficial influence of electricity is so quick and remarkable as in the one just described. The principal application is that of the medium-sized anode to the cervical spine, and the circular small cathode to the auriculo-maxillary fossa. In general two MA.'s, for three minutes on each side, is sufficient to raise the pulse, to make the hands dry and warm, and send a pleasant feeling of glow through the whole system. Five or six such applications are frequently sufficient for the cure of an affection which may otherwise last for years, and spoil the public career of a patient; while purely medicinal remedies in general completely fail to relieve it.

Spurred by such attestations from medical luminaries of the day, clinicians used electrotherapy with great abandon for diversified conditions in which there was even the barest suspicion that the circulatory system might be flagging in some way. I have already discussed elsewhere the technic of "electrohydriatics" (or "electrobalneotherapy"), the "static bath with cephalic douche," the "four cell bath of Schnee," "solenoid auto-conduction," Bergonié's "electrogymnastic" method, and others devised for the same purpose.[28] The cardioaccelerator influence of these procedures was readily demonstrated by measurement, but it was generally assumed that the effect was mediated principally by neural pathways. Absolute proof was lacking that electricity speeded basal cardiac action in the intact human by the same direct myocardial excitation shown on the cadaver.[11]

Direct stimulation of the beating heart

The opportunity to observe the actively contracting heart in a nonoperated, live human being has been afforded with great rarity in medicine. William Harvey, for one, had the privilege of seeing and feeling the beating heart of a nobleman in whom a cannonball had avulsed part of the chest wall. Far more spectacular was the celebrated case of Catharina Serafin. This forty-two year-old woman had a huge defect of the anterior left thoracic wall consequent to resection of an enchondroma. The heart, covered only by skin, was visible and palpable (Fig. 1). Von Ziemssen[29] performed detailed studies, most of them electrical, on this conveniently exposed normal heart and reported his findings in 1882.

Experiments were made by placing electrodes either within the area of the wound, or one directly on the surface of the heart, and the other on the sternum or below the left scapula. The sphygmic response was monitored from the heart or from the radial artery. The faradic current elicited no discernible effect on the pulse rate, whereas a distinct influence was exercised by the voltaic current applied in certain ways. When the circuit was closed with a strong voltaic current, the pulse was quickened two- or threefold, promptly returning to normal when the circuit was opened. When a regular series of interruptions was made in the circuit, exceeding in rapidity the normal pulsations of the heart, the cardiac tempo increased so as to become synchronous with the frequency of the interruptions. When the rate of interruptions was below that of the normal heart beats, the pulsations were slowed but not with regularity. The strongest current under that condition failed to produce synchronism between the cardiac contractions and the interruptions, beats belonging to the normal sequence being from time to time


Studien über die Bewegungsvorgänge am menschlichen Herzen,
sowie über die
mechanische und elektrische Erregbarkeit des Herzens
und des Nervus phrenicus,
angestellt an dem freiliegenden Herzen der Catharina Serafin
von
Prof Dr v Ziemssen.
(Hierzu Tafel II und III.)
Aus dem med.-klin. Institute zu München.

Catharina Serafin, Taglöhnerin aus Pless in Oberschlesien, geboren im Jahre 1836, wurde im Jahre 1878 in der Breslauer chirurgischen Klinik durch Dr. Kolaczek von einem umfangreichen Enchondrom der vordern Brustwand linkerseits auf operativem Wege befreit. Obwohl ein grosser Theil der vorderen Rippenwand entfernt werden musste und Pneumopyothorax eintrat, so wurde Pat. doch geheilt und im März 1879 von Dr. Kolaczek auf dem Chirurgen-Congresse vorgestellt.

In der Folge ist die Wichtigkeit des freiliegenden Herzens der Serafin auch von physiologischer Seite gewürdigt worden. Zuerst hat Grützner[1]) die Bewegungsvorgänge am Herzen untersucht, und in der Folge haben auch Filehne und Penzoldt[2]) bei ihren Studien über den Spitzenstoss dieselbe verwerthet. Die letztgenannten Forscher hatten die Güte, uns die Serafin nach München zu schicken.

---

[1]) Beobachtungen an dem Herzen einer Frau, welches in Folge einer Operation der directen Untersuchung zugänglich war. Breslauer ärztliche Zeitschrift 1879. Nr. 21.

[2]) Ueber den Spitzenstoss. Centralblatt für die med. Wissenschaften 1879. Nr. 27.

FIGURE 1. (a) Hugo von Ziemssen's report on Catharina Serafin who had large wound of chest wall after resection of enchondroma. Heart was covered only by skin. (b) Picture of Frau Serafin depicting expanse of wound. (c) View of exposed heart and its topography.

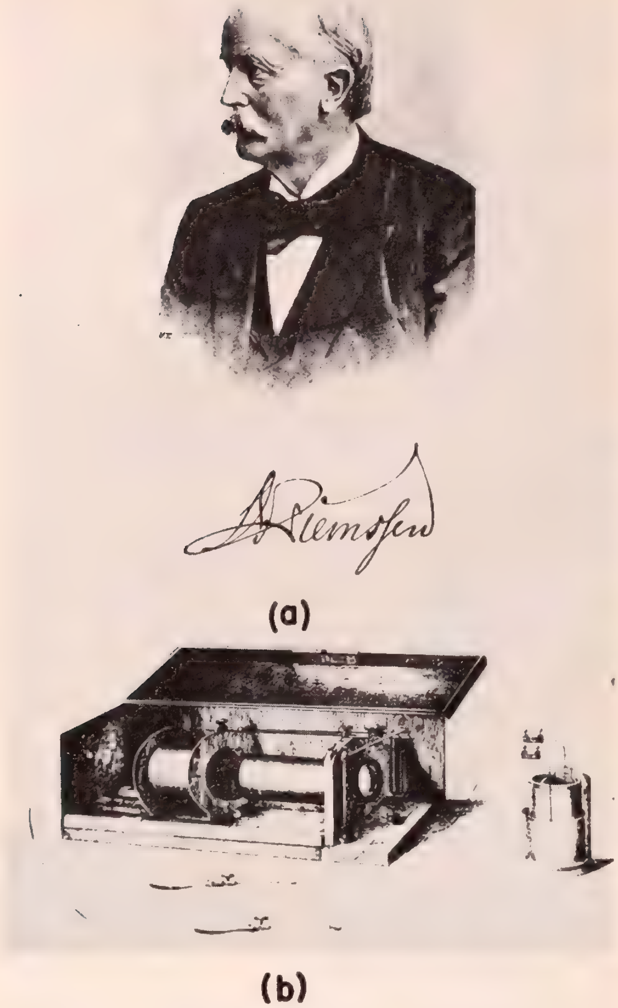


FIGURE 2. (a) Portrait of Hugo von Ziemssen. (b) Electric stimulator used by him in celebrated Serafin case.

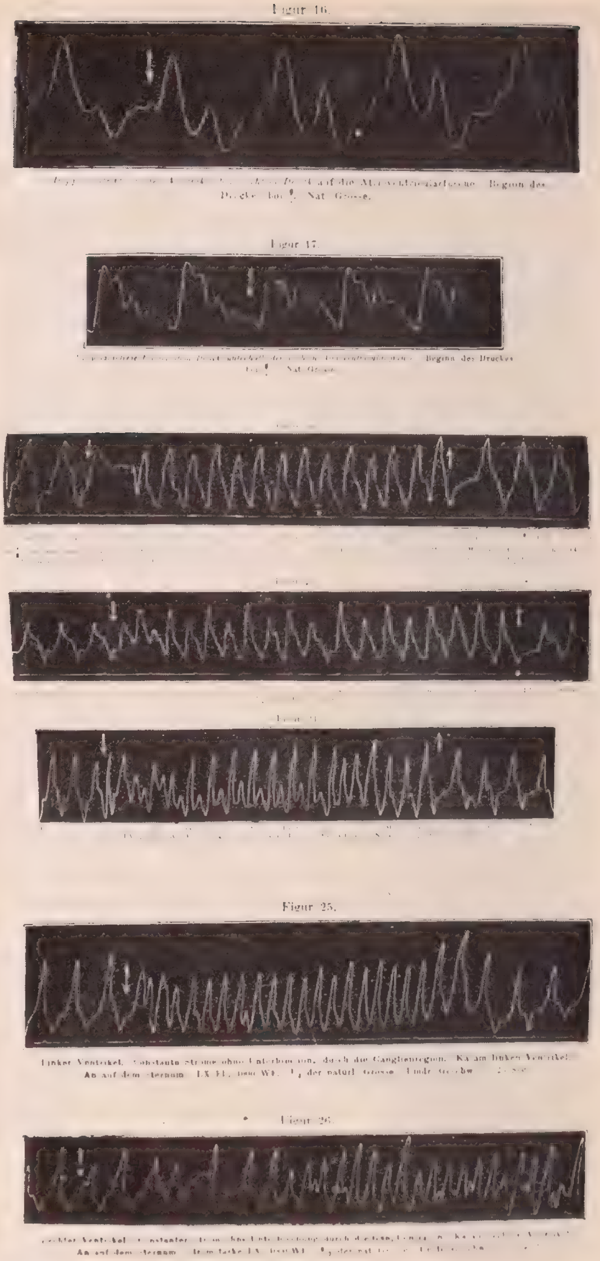


FIGURE 3. Graphs in von Ziemssen's article indicating the consequences of regional excitation of the normal heart (including discrete stations in the conduction system) with currents of varying intensity and frequency.

slipped in between the artificially retarded pulsations (Figs. 2 and 3).

The results of these experiments induced von Ziemssen to try the effect of the voltaic current in persons with the thorax intact, and he arrived at the conclusion that it was possible to modify at will the action of the heart by means of currents of sufficient intensity and frequency.

It is worth while to reflect on von Ziemssen's deductions in the light of present knowledge. His demonstration that the cadence of the normal heart had to be surmounted by a faster interrupted current for that current to impose an artificial rhythm was of great significance. It is regrettable that he did not extend his research to bradycardia, such as that of heart block. In a related connection, however, was another observation of his which is truly fascinating, since it was made more than one decade before Wilhelm His, Jr., described the atrioventricular bundle. The observation in question was that there was a sharply localized region for optimal electrostimulation of the heart and that as little as a 2-cm. deviation from that position results in an abrupt change in effect. That zone, von Ziemssen said, was the atrioventricular groove and its immediate vicinity, where the concentration of cardiac "ganglia" was most dense, a zone whose accentuated sensitivity to electrical excitation had already been demonstrated on isolated amphibian hearts.[30]

Other physiologists were unable to duplicate von Ziemssen's results, doubtless because they used different subjects and dissimilar electrical circuitry.[31,32] One of them, Dixon Mann,[32] ended an otherwise analytical report with the incautious sweeping statement,

> It appears tolerably clear that little is to be expected from electricity as a therapeutic agent in the treatment of heart disease.

Cardiac acceleration by rhythmic electrical stimuli

Much of the timorousness regarding endeavors to speed the heart rate electrically had to do with the lack of knowledge about the import of sundry categories of bradycardia, and hence of enunciated indications for using electricity in those conditions. Another reason was that the various electrical media elicited disparate and, at times, seemingly erratic reactions. The brilliant MacWilliam[33-37] busied himself with elucidating these complexities, and he concluded that restoration of a normal heart beat depended on the administration of repetitive electrical stimuli. Within several of his provocative and lucid essays may be found the germ of the idea of artificial pacing of a sluggish heart:

> It is, of course, only in a very limited number of the cases of cardiac failure that the question of artificial excitation of the heart beat becomes one of practical importance. In the majority of instances where a more or less sudden heart stoppage occurs there are underlying conditions which obviously render direct stimulation of the organ inapplicable or hopeless. But, on the other hand, in certain forms of cardiac arrest there appears to be a possibility of restoring by artificial means the rhythmic beat, and tiding over a sudden and temporary danger. Such is especially the case in those instances where cardiac failure assumes the form of an inhibition of the heart beat by impulses reaching the organ along the vagus nerves. There is much reason to believe that among cases of sudden and fatal syncope such a mode of heart failure is not very rare. It probably obtains in many of those instances where sudden death has been caused by blows upon the praecordia or stomach (apart from the occurrence of any important visceral lesion): also in many cases of death from fright, and, as Lauder Brunton has urged, from irritation of sensory nerves (for example, the fifth) in certain phases of the administration of chloroform. It is in regard to sudden cardiac failure from the last-mentioned cause that the question of direct excitation of the heart becomes most important. There is much probability in the view that sudden stoppage of the heart under chloroform may often be due to a sudden excitation of the cardio-inhibitory centre in the medulla oblongata and a consequent arrest of the cardiac beat by inhibitory impulses carried down from the medulla by the vagus nerves; such appears to be especially probable when the heart suddenly stops, early in an operation, when a comparatively small amount of chloroform has been given and the anaesthesia may be more or less incomplete.
>
> Now we know that when the mammalian heart has been inhibited through the vagus nerve it is quite possible to excite an immediate renewal of the rhythmic action by direct stimulation of the organ. No doubt it is very possible, as I have already suggested in a former paper, that the fate of the heart may be sealed in cases of fatal inhibitory arrest by the supervention of fibrillar contraction or heart-delirium in the ventricles. But, apart from the occurrence of such a disastrous complication, or before its inception, artificial excitation might be useful in rousing into action a heart that has been arrested by a temporary cause; for example, by inhibitory impulses profoundly depressing the rate and force of its action, or causing it to stand still in diastole.
>
> As regards the means to be employed for the purpose of directly stimulating the cardiac action in cases of sudden failure, various expedients have been recommended—among others the application of galvanic and faradic currents to the region of the heart, electropuncture, mechanical irritation by a fine needle passed into the organ, and the application of heat to the praecordia.
>
> The application of strong galvanic and faradic currents to the ventricles is attended with disastrous results; and immediate abolition of the normal beat, and the occurrence of a wildly incoordinated, arrhythmic contraction of the ventricular muscle (fibrillar contraction or heart-delirium), attended by a great and rapid fall of blood-pressure, and, in the higher mammals (the dog at least) by speedy death. The ventricles are utterly unable to pump out the contained blood, and the circulation quickly comes to an end.
>
> If such a phenomenon had been observed simply in one or two sorts of animals, it might be urged that the human heart is possibly exempt from such a danger. But the phenomenon in question is one that occurs in more or less extreme form in every mammal examined, and, indeed, in birds as well. I have myself observed it in the hearts of the dog, cat, rabbit, hedgehog, rat, mouse, guinea-pig, hen, pigeon, and blackbird. It is, in all probability, of universal occurrence in the hearts of warm-blooded animals; and it is significant that it is more easily excited and more extreme in its character in the higher mammals than in the lower.
>
> It has been argued that the strength of current employed clinically would not be sufficient to bring about the grave result in question. In regard to this consideration there is a point of much importance, namely, that the susceptibility of the ventricular tissue to the occurrence of fibrillar contraction may become enormously augmented in certain conditions of impaired and disordered nutrition. Of this fact I have been most fully convinced in the course of my investigations on the mammalian heart, for on numerous occasions I have seen the ventricles going off into fibrillar contraction under the influence of extremely slight irritant causes, slight pressure or friction, faradic currents too weak to be felt on the tongue, etc.—causes which would have been entirely insufficient to bring about such a result in a normal, or approximately normal, heart. Now it is precisely in conditions of heart failure, where the nutrition of the cardiac tissues must necessarily be impaired and altered, that it is proposed to apply galvanic and faradic currents clinically. In the light of physiological experience such a procedure would seem to be liable to the gravest issues, and to be wholly unjustifiable. Of needle puncture, the same must be said.

On the other hand, it is to be borne in mind that von Ziemssen, Dixon Mann, Hartmann and others have described the results they obtained from the application of electrical currents (galvanic and faradic) to the human heart, and no untoward event occurred. But these experiments were conducted on healthy persons; and, as I have already stated, the susceptibility of the normal heart is not to be taken as in any measure a test of the strength of stimulating current which can be borne without disastrous result by hearts that have suffered from a derangement of their nutritive processes, and have passed into a state of unstable equilibrium. It seems to me that the experiments of the observers above mentioned do not in any way serve as proof of the safety of galvanic and faradic currents applied to the heart; they do not deal with the organ in such conditions as those in which the clinical use of such currents is frequently recommended—conditions that physiological experience shows to be frequently associated with an immensely increased susceptibility to the occurrence of fibrillar contraction and fatal collapse of the cardiac function.

Further, even if galvanic and faradic currents were free from the grave dangers to which I have alluded, there would be very little to be said in favour of their use as direct cardiac stimulants in a sudden and urgent crises. Galvanic and faradic currents, too weak to induce fibrillar contraction in a heart of depressed excitability, have a comparatively trivial influence in exciting or accelerating its beat. We want a much more effective and speedy mode of exciting rhythmic contraction, and one that will have a direct and powerful influence in calling forth a series of beats in the depressed or inhibited heart, while at the same time free from the danger of throwing the ventricles into delirium. Such a mode of excitation seems to be available in the form of a periodic series of single induction shocks sent through the heart at approximately the normal rate of cardiac action. A single, induction shock readily causes a beat in an inhibited heart, and a regular series of induction shocks (for example, sixty or seventy per minute) gives a regular series of heartbeats at the same rate. Never on any occasion have I seen fibrillar contraction excited by such a mode of stimulation. In order to elucidate more fully the influence of a series of induction shocks upon the inhibited heart, I have frequently (in the dog, cat, and rabbit) performed such experiments as the following. The animal being chloroformed, and means being taken to preserve, as far as possible, the normal temperature, the thorax and pericardial sac were laid open; artificial respiration was kept up through a cannula introduced into the trachea. The heart was inhibited by stimulation of the vagus nerve in the neck, and then a periodic series of induction shocks (regulated by a metronome) was applied to the apex of the ventricles. Contraction of the auricles and ventricles was recorded by an adaptation of the graphic method; a blood-pressure tracing was simultaneously made in the usual manner. In this way I was able to obtain an accurate record of the various changes, while at the same time some further information was obtained by direct inspection of the heart. A series of single induction shocks excites a corresponding series of cardiac beats; the ventricular contraction precedes the auricular contraction when the exciting shocks are applied to the ventricles. Each systole causes the ejection of a considerable amount of blood into the aorta and pulmonary artery, and a marked rise of the blood-pressure at each beat. The mean pressure is raised from the low point to which it had fallen in consequence of the cardiac standstill; it does not, however, attain the normal height, even though a long series of beats is elicited by the stimulating shocks. This fact is due to the feebleness of the auricular contraction under inhibitory influence. For the auricles beat so feebly (in response to the stimulation) that they are unable to pump their contents into the ventricles in the normal vigorous fashion. The ventricles fill very slowly, and, at the moment of contraction, contain much less blood than in the normal state; hence the amount of blood thrown into the aorta in a given space of time is much diminished, and the arterial pressure fails to attain its ordinary height. Nevertheless, the artificially excited beats are decidedly advantageous, inasmuch as they arrest the fall of the blood-pressure and even cause a rise—involving an improvement in the circulatory flow in the coronary system, as well as in the other vessels.

Moreover, the advantages of direct excitation of the heart are not by any means confined to the beneficial effect induced in the blood-pressure; nor to this combined with the obviating of any over-distension of the ventricular cavities with blood. For induction shocks applied to the heart exert an important influence, not only in removing the arrest of rhythmic contraction and restoring the periodic beat, but in counteracting, in marked degree, the depressing effects of vagus stimulation upon the contraction force of the cardiac muscle. During a period of inhibitory standstill, a cardiac beat excited by a direct stimulus is, as a rule, markedly weakened. But when a regular series of stimuli are employed, the contraction power becomes rapidly improved; the beats increase in force, and often approach the normal strength. Similarly, when the heart has been greatly slowed by inhibitory impulses, the spontaneous beats are frequently reduced in energy; but the application of a periodic series of induction shocks (at approximately the normal rate) leads not only to the manifestation of a regular series of beats at the same rate, but, as a rule, to a pronounced augmentation in the force of the individual beats.

Hence it is evident that, in addition to the improvement in the blood-pressure resulting from direct excitation of the heart by a series of induction shocks, there is also a beneficial effect exercised upon the contractile mechanism of the inhibited heart. The depressing influence exerted through the vagus nerve upon the rhythm and contraction force are in large measure counteracted by direct excitation of the organ. In order that such excitation should be as effective as possible it is probably best to send the stimulating shocks through the whole heart, so that the auricles may come directly under their influence as well as the ventricles. In order to do this in man one electrode should be applied in front over the area of cardiac impulse, and the other over the region of the fourth dorsal vertebra behind, so that the induction shocks may traverse the organ. The electrodes should be of considerable extent (for example, large sponge electrodes), and they and the skin should be well moistened with salt solution. The shocks employed should be strong, sufficient to excite powerful contraction in the voluntary muscles.

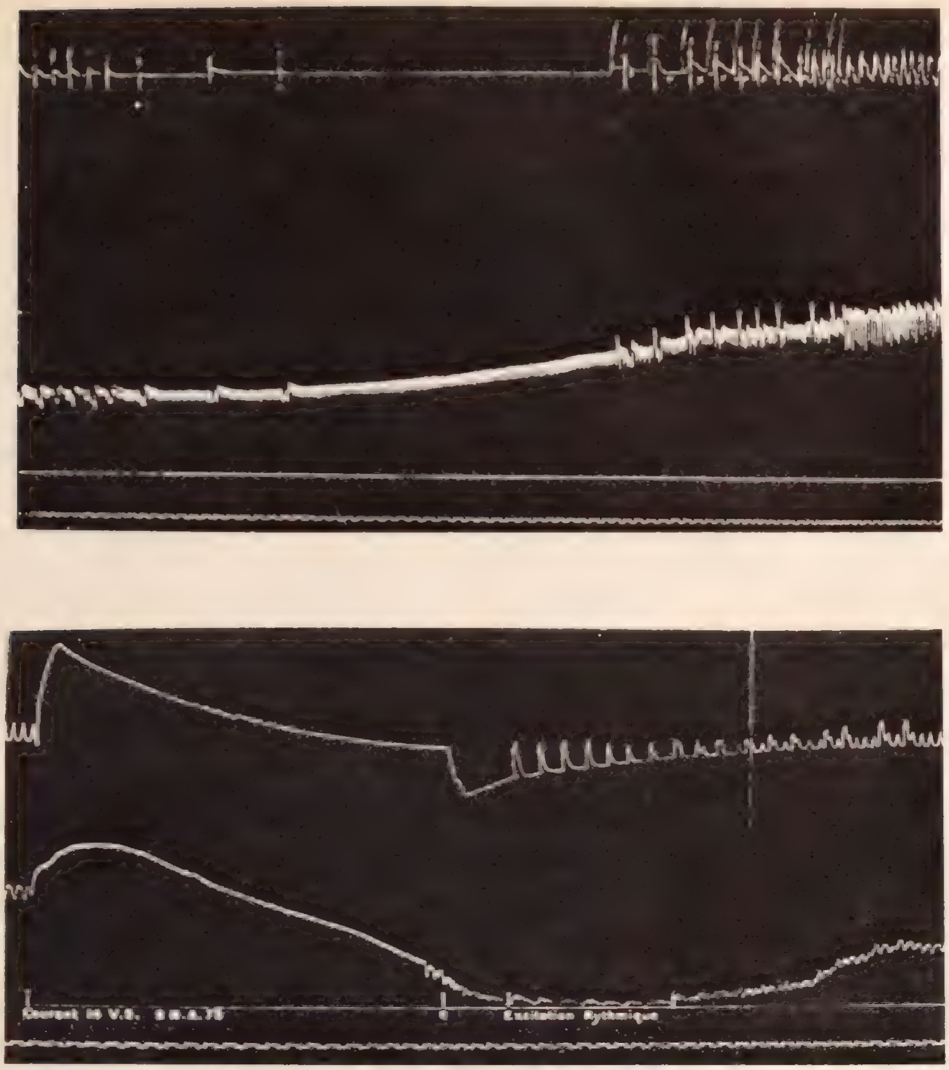


FIGURE 4. Tracings from Louise Robinovitch's article in 1908 on cardiovascular resuscitation by rhythmic excitations with an induction current.

> Such a method, it seems to me, is the only rational and effective one for stimulating by direct means the action of a heart which has been suddenly enfeebled or arrested in diastole by causes of a temporary and transient character. Of course, at the same time, the expedient of artificial respiration must by no means be neglected, but, on the contrary, most sedulously attended to.

The proponents of indirect excitation of the heart had the upper hand; and for many decades after MacWilliam's visionary concept physicians persisted in speeding the heart rate by electrostimulation in the neck of the sympathetic nerves, the "nervi accelerantes" or "augmentor nerves."

But every now and then someone returned to the proposal of accomplishing the same end by applying electricity to the chest. Thus in 1904 Andrew Smith mailed this suggestion to the Editor of the *Medical Record*:

> Sir: As a possibly successful means of resuscitation in sudden heart-failure I would suggest laying bare the pericardium over the left ventricle and applying electricity at the bottom of the wound.
>
> The usual failure of electricity applied over the praecordium to excite cardiac action is probably due in large part to the very great electrical resistance of the integument and the subcutaneous fascia characteristic of those structures. This resistance dissipates the current through a wide area, and necessitates such intensity of action as endangers deeper-lying nerve centers. With only the two layers of the pericardium between the electrode and the cardiac muscular fiber it should be easy, theoretically at least, to provoke contractions by a relatively feeble current, particularly if concentrated upon a limited area by the use of a small electrode.
>
> Moreover, the possible importance of this power of limiting and controlling the action will be apparent when we consider the possibly disastrous effect of including the inhibitory nerves in the electric stimulation.
>
> As a last resort, electric-puncture into the muscle substance might be tried, the surface of the heart

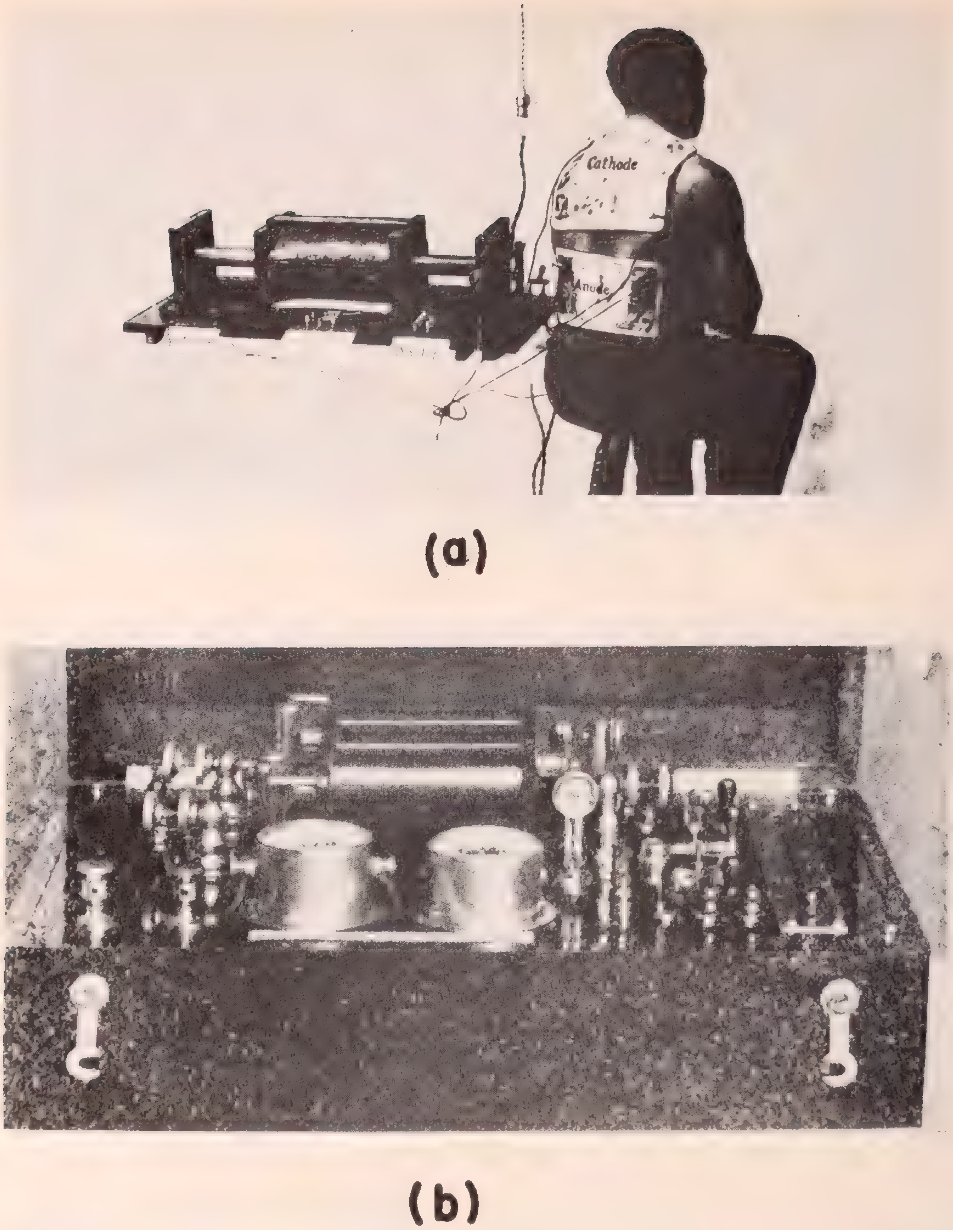


FIGURE 5. (a) Disposition of electrodes favored by Robinovitch who laid stress on exclusion of brain from electric field. (b) Portative electroresuscitation apparatus devised by her for ambulance service.

> being practically already exposed. Incidentally there would be an advantage in being able to note slight ventricular movements, of which there would be no indication if the chest-wall were intact.

Also, in 1907, Robinovitch[38-46] who, incidentally, was the innovator of "electric sleep" (electroanesthesia or electronarcosis), showed very convincingly on animals that the heart rate could be speeded by rhythmic electrical excitation. Robinovitch's work was focused primarily on resuscitation after electrocution, and it has been cited before by me in that context.[47] But she advocated rhythmic electrostimulation for cardiac syncope as well (Figs. 4 and 5). The solitary clinical case reported by her pertained to restoration by this means of normal breathing in a person suffering from severe drug-induced respiratory depression; but it is pertinent, nevertheless, in the present context, since Robinovitch emphasized that, as with experimental animals, the myocardium was stimulated simultaneously:

> December, 1908, a young woman, a chronic morphine eater, was admitted to the Ste.-Anne Asylum, Paris, Dr. Magnan's service. She had indulged daily in two grams of morphine during a period of two years. When admitted to the hospital, she was suddenly deprived of her daily dose of morphine. While waiting to be examined by Dr. Magnan, she had a sudden attack of syncope. Various means were used to revive her, and she regained consciousness. We were not present there and cannot give any details of the means used; when we came into the

receiving ward, the patient was apparently in good condition, but as Dr. Magnan was talking to us, the patient fell—in a second attack of syncope; her respirations became slow, shallow, appearing at very rare intervals—perhaps four or five per minute; the pulse was almost imperceptible, and her face was blue—almost black-blue—from asphyxia.

The assistant physicians immediately began to practice on her artificial respiration by the Sylvestre method and rhythmic traction of the tongue. These means to revive her were continued for twenty minutes—without any result. It was not thought advisable to carry the patient up to our laboratory—on the second floor, as it was feared that she might expire while being carried upstairs. Twenty minutes elasped before we had our special coil for resuscitation brought downstairs and in working order, the electrodes in their proper places for resuscitation; the cathode in the dorsal region, anode in the lumbar region. Dorsal electrode measuring 25 × 30 cts., lumbar electrode—12 × 25 cts.

The patient was, by this time, quite "black in the face" and none of those present expected any good results from the application of rhythmic electric excitations. We practiced rhythmic excitations during a period of about thirty seconds; the duration of the closure of the circuit was about ¼ of a second; and the period of the opening of the circuit was about one second. We shortened the period of the opening of the circuit—as against our own indications in our papers on the subject of resuscitation, because the patient seemed to be thoroughly asphyxiated—as we judged her condition from the color of her face. As the rhythmic excitations were being repeated, it was astonishing to see the accompanying change of color in the patient's face: the dark blue color changed to pale, then to almost natural color; at the end of the thirty seconds of rhythmic excitations, the patient took a long spontaneous breath, opened her eyes and said, "Oh, I feel so cold in my back." The cold she felt was the wet cotton of the electrodes, of course. But the interesting point is that the patient felt no other inconvenience during the rhythmic excitations—while she was in profound syncope . . .

The potential used for the patient in syncope cannot be indicated in exact figures; the current was regulated by shifting the coil so as to obtain sufficiently ample respiratory and cardiac reactions.

. . . as we have pointed out elsewhere, with our method we cause artificial heart beats as well as artificial respirations to take place . . .

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ANDREW JACKSON

The president who would not die conveniently

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To achieve one must have a daring spirit and a powerful will—even if he possesses a second or third rate intellect. Nor can any man, destitute of a daring and indomitable will, fill the sphere of action which our own countryman General Jackson filled, be the order and character of his intellect what they may—CHARLES CALDWELL, M.D.*

That Andrew Jackson lived seventy-eight years before surrendering to his ultimate enemy is indeed a signal instance of man's inexplicable propensity for confounding rational expectancies that he himself proposes. Regard this foreboding catalogue of Jackson's wounds and ailments: (1) smallpox, (2) chronic dysentery, (3) malarial fever, (4) abscess of lung aggravated by chronic bleeding, (5) probable tuberculosis, (6) bone infection, (7) serious dental problems, (8) sabre wound on brow, (9) bullet lodged for life after duel in 1806, and (10) bullet lodged in left shoulder after altercation with Colonel Benton in 1813.[1]

Jackson's amazing stamina was recognized by his Tennessee militiamen who affectionately gave him the soubriquet "Old Hickory" in 1813. The general endeared himself to his men by offering his horse to ill soldiers during the Creek War. Even the conquered Indians honored Old Hickory with terse metaphors—Painted Arrow, Big Knife, and Sharp Knife—that vividly depicted their regard for his prowess. But later, in the White House, Jackson did not enjoy the epithets hurled at him by his political foes. After he removed 500 postmasters from office in his first year, irate newspapers hailed him as the "Caesar of the White House" and "King Andrew." But to offset the opposition venom, his supporters among the common people enthusiastically cheered him as the "People's President."[2]

Fortunately for this idol of the democratic masses, not too many were aware of Jackson's aristocratic tendencies in 1796 when he was a Representative from Tennessee. In the convention at Nashville, Jackson was antirepublican, opposed universal suffrage, and stipulated that legislators must own 200 acres of land. In addition, he argued for a bill that would permit landowners to vote in every county in which they owned land.[3]

At the same time Jackson refused to vote in favor of a resolution praising President Washington for his many outstanding services to the nation. The backwoodsman who aspired to aristocracy despised Washington for his leniency towards Indians whose lands had been occupied by frontiersmen. Washington's rebuke to the settlers angered Jackson, and his anger grew when Washington avoided war with England by allowing the British to impress American sailors.[4]

Jackson was an angry man. He uttered profanities publicly, dueled vindictively, and caned at least one man over a racing bet. Thomas Jefferson warned against Jackson's temper:

> When I was President of the Senate and he was a Senator, he could never speak on account of the rashness of his feelings. I have seen him attempt it repeatedly and as often, choke with rage.[5]

John Quincy Adams, another President who disliked Jackson, regarded his political enemy as a philistine. He refused to be present at Harvard in 1833 when John Quincy, president of the College, desired to confer an honorary degree on Jackson who was then touring the New England states. In his response to Quincy's request, he vigorously demonstrated the proud New Englander's contempt for an unlettered Indian fighter:

> As an affectionate child of Harvard . . . I would not be present to witness her disgrace in conferring her highest literary honors upon a barbarian who could not write a sentence of grammar and could hardly spell his own name.[6]

John Quincy Adams was not a gracious man. Washington was not renowned for his prowess in spelling bees, and even Jefferson lapsed in spelling occasionally. Jackson, a self-educated man, read and practiced the law, became a member of the state legislature, served as governor of Florida, sat in both the House and the Senate, and occupied the White House for eight years.[7] While Adams epitomized an established aristocracy that was fearful of the influx of immigrants because they would disturb the status quo, Jackson exemplified the American dream. His parents, poor immigrants from Ireland, had a difficult time in the new world. Andrew's father died several weeks before Andrew was born, and his mother, Elizabeth, labored diligently to raise her sons, two of whom were destined to die in the Revolutionary War. Elizabeth died when Andrew was fifteen, a victim of ship fever acquired while she nursed stricken soldiers, leaving him alone in the world.

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*Caldwell, C.: The Autobiography of Charles Caldwell, M.D., edited by Harriet W. Warner, New York De Capo Press, 1855, p. 305.

Adams probably couldn't empathize with a rowdy, warlike, backwoodsman; yet in several crucial issues, when he was a Senator and Jackson was President, the crusty New Englander went against his social grain and supported the beleaguered westerner.

Boyhood pains

Although an anonymous pamphlet published in 1828 expresses doubts about the place and date of Jackson's birth,[8] later biographers agree that he was born on March 15, 1767, in Waxhaw, North Carolina, a few weeks after his father allegedly lifted a heavy log, ruptured an unspecified organ, and died.[9]

The orphaned lad was wild and reckless, a great wrestling fan, and intent on adventure.[10] He was a bright boy who read well at the age of five. Because of his reading ability, he was honored by inclusion in the small band of literates known as public readers. When he was nine he proudly read The Declaration of Independence to villagers from a copy which had arrived in the summer of 1776.[11]

The war became very real to young Andy. His brother Hugh fell in battle. When he was only thirteen, Andy and his brother Robert joined the militia company of their uncle, Major Robert Crawford. But this military expedition was shortlived. In 1781, Andy and Robert were captured by a party of British soldiers and American Tories. When a British officer demanded that he shine his shoes, Andy refused, arguing that as a prisoner of war he was not compelled to perform menial duties. The irate officer immediately struck Andy on the head and arm with his saber, inflicting wounds that the boy would carry for the rest of his life.[12]

Andy and Robert were transferred to a British prisoner of war camp in Camden, South Carolina. Facilities were primitive, beds and bedding were lacking, and the sick had no medical attention at all.[13] It was here that both boys contracted smallpox,[14] a pestilence graphically described by one of Jackson's ablest biographers:

> Ere long the smallpox—a disease unspeakably terrible at that day, more terrible than cholera or plague has ever been—broke out and raged unchecked by medicine and unalleviated by any kind of attendance or nursing. The sick and the well, the dying and the dead, those shuddering with the first symptoms and those putrid with the disease, were mingled together; and all but the dead were equally miserable.[15]

Mrs. Jackson came to take her sick boys home after a prisoner of war exchange had liberated them. Robert rode the one horse she brought; Andy walked after them until they arrived home, forty miles away.[16] Unfortunately, it rained heavily for some time, aggravating the boys' illness. Andy sometimes raved like a madman. It did not seem likely that they would survive this journey.[17]

Parton's comments on the effect of cold water on smallpox patients are quaintly narrated. It is dangerous for a smallpox patient to be bathed at a time when the loathesome sores are about to appear: "Balk that effort of nature to throw off the poison and it is nearly certain to strike in and kill; and nothing is so nearly certain to do this as a cold bath."[18] Robert died in two days. Mrs. Jackson's maternal love, medical skill, and sound constitution brought Andy out of danger, but he was an invalid for several months.[19]

Elizabeth Jackson's compassion for the sick proved to be her undoing. Attempting to cure other unfortunates, she weakened and died, leaving Andy an orphan when he was only fifteen. He lived with his Crawford relatives until he was sixteen when he received an inheritance from his grandfather in Ireland. But he quickly squandered this windfall.[20]

Before turning to the law, young Jackson worked in a saddler's shop and "he taught school, that all but universal resource of the young American ambitious of bettering his condition."[21] At seventeen he turned to law; after reading the law with Mr. Spence McKay and Colonel Stokes, he was licensed to practice law in North Carolina before he was twenty.

In 1781 he was appointed public prosecutor of the territory of Tennessee, a hazardous position that had him shuttling twenty times in seven years between Nashville and Jonesborough, a distance of 280 Indian-infested miles.[21] While boarding with the widow of Colonel John Donelson, one of the founders of Tennessee, he met Mrs. Rachel Robards, a daughter of the Colonel, who was living with her husband at the same house. Jackson fell in love with her. Robards subsequently applied to the legislature of Virginia for an act preliminary to divorce, stating that Jackson had lived in adultery with his wife.[21]

Unfortunately for Rachel and Andrew Jackson, who were wed in fall, 1791, the act of the Virginia legislature was merely a prelude to the divorce sought by Lewis Robards. In the summer of 1791, the Virginia legislature granted Robards his wish, but it wasn't until September 27, 1793, that a jury of the court of Mercer County, Kentucky, declared that the marriage between Rachel and Lewis Robards was dissolved. Chagrined, the Jacksons applied for a marriage license for the second time and were married again on January 1, 1794.[21] Unscrupulous political foes of Jackson used his "adulterous" marriage to Rachel as a campaign barb against the fuming General.

Brawls and duels

Cormier[22] estimates roughly that Old Hickory survived a hundred duels and brawls and killed several men in the process. In 1804, Jackson accused Governor Sevier of Tennessee of having practiced land frauds, an allegation hotly denied by the governor. They agreed to fight, but could not come to terms. Jackson posted a broadside accusing Sevier of cowardice. Sevier took up the gauntlet, but friends intervened and prevented them from dueling.[23]

But Charles Dickinson did not fare so well in 1806. An anonymous admirer of Jackson wrote in 1828 that Jackson fought Dickinson over a racehorse dispute,[24] but later writers agree that Dickinson had made unsavory references to Rachel, an affront to Jackson's moral sense that he could not tolerate.[25] In the duel itself, Dickinson fired first. The following accounts have been given concerning Jackson's injury:

1. Dickinson's ball grazed Jackson's skin.[26]
2. Jackson was wounded by a bullet which grazed his breast and weakened him for life.[27]
3. The ball had only broken a rib or two and raked the breastbone. The wound was painful, but not severe or dangerous.[28]
4. The wound proved more severe. Jackson could not be moved for a month without inconveniencing him. Some of his bodily viscera were permanently displaced.[29]
5. Jackson's wound was severe, the blood saturating his coat.[30]
6. Dickinson's bullet lodged too near Jackson's heart for removal. He carried it with him for the rest of his life.[31]
7. Dickinson's bullet lodged in Jackson's left lung.[32]
8. Dickinson's bullet grazed Jackson's breast and broke one or two of his ribs. Jackson drank a quart of buttermilk right after receiving his injuries.[33]

Poor Dickinson never knew that he had wounded Jackson severely. After sixteen hours of stubborn resistance to death, Dickinson succumbed to his wounds.[34]

Jackson's health was never good after this duel. Parton[35] claims "it was Dickinson's bullet that killed Andrew Jackson at last." To Amos Kendall, an early biographer of Jackson, this duel exemplified the General's extraordinary self-control. After Jackson learned of Dickinson's death he said to a friend: "Sir, I should have killed him if he had shot me through the brain,"[36] a strange example of self-control, indeed!

Seven years later, the choleric general received another grievous bullet wound in a "much-ado-about-nothing" donnybrook in Nashville. William Carroll, a friend of Jackson, challenged Jesse Benton to a duel after Benton had allegedly threatened to run him out of the country. Jackson tried to pacify the enemies, but Benton was adamant—he wanted the duel. Jackson served as Carroll's second and his partisanship was offensively reported to Colonel T. H. Benton, brother of Jesse and friend of Jackson. Benton and Jackson then engaged in an angry correspondence culminating in Jackson's threat to horsewhip Benton should they meet. On September 4, 1813, General Jackson met the Bentons on a street in Nashville. Jackson advanced on Benton who fled before his enraged adversary. Jackson, pursuing Benton to the city hotel, came on Jesse who discharged his pistol at him. Jackson fell, his left shoulder shattered.[37]

Jackson's wounds were painful and weakening, but not fatal. All the attending physicians but one advised the amputation of the arm. Jackson followed the advice of the dissenting surgeon and refused the amputation. He bled profusely but his arm healed after being dressed with poultices of slippery elm.[38]

Soldier and politician

Jackson was elected to the rank of major-general of militia in 1802, but it was not until 1813 that he was given an opportunity to display his military genius. On August 30, 1813, the Creeks massacred all the personnel at Fort Mims, an act that brought cries for revenge throughout the Southwest. Jackson, although still feeble from the effects of the Benton adventure, immediately went into action, calling for a crusade to the death against the Creeks. On October 4, he assured his volunteers: "The health of your general is restored; he will command in person,"[39] but he appeared so haggard to his contemporaries that historians agree he should have been in the hospital and not in the saddle.[40] Yet to Governor Holmes of the Mississippi Territory, Jackson seemed fit for his command.[41]

Although his left shoulder pained him almost unendurably, Jackson insisted on organizing his troops and leading them into battle. A concerned state senator of Tennessee, Enoch Parsons, doubted that Jackson could survive the rigors of an Indian campaign, but after consulting Jackson's principal physician, Dr. May, he reluctantly consented to have Dr. May accompany Jackson for three or four days.

It was a wise decision. Jackson's health prospered after Dr. May bathed him frequently from head to foot in a solution of sugar of lead to reduce his inflammations.[42]

But misfortunes continued to beset the dogged general. At the Battle of Enotochopco, on January 24, 1814, Jackson decisively defeated a major force of Creeks, but as he attempted to cut down a fleeing colonel who was leading his regiment from the field, Old Hickory broke his newly-knit broken arm. Without much fuss he placed the tormented arm back in the sling and went about his business of terminating the battle.[43]

The Creek campaign permanently impaired Jackson's health. He contracted chronic dysentery, probably from drinking contaminated water.[44] Later in life, any slight imprudence of his in eating or drinking occasioned diarrhea, a fact stressed by Jackson himself in a letter to Colonel James Gadsden who wanted to write a history of the Jackson campaign: "I have been oppressed with a violent cough and have recently vissited (sic) with my old bowell complaint, which has weakened me very much, having . . . in the last twelve hours upward of Twenty passages . . . in short, Sir, I must take a rest or my stay on Erth (sic) cannot be long."[45]

When seized with paroxysms of pain, Jackson would sit on a chair with his chest against its back, and his arms dangling forward. If the pains persisted, he would have a willow half severed and would dangle over the branch, arms extended downward until the pains subsided. His medications were simple—weak gin and water. Sometimes an hour of excitement would prostrate him for days.[46] His paralytic rheumatism so disabled him that he could barely write his reports.[47]

Jackson's fondness for foods that catalyzed his diarrhea, almonds for example, gave him considerable grief, but he tried to minimize these dietary excesses.[48] When he was ill in 1814 at New Orleans he limited his fare to three tablespoons of rice and a half cup of coffee.[49] A year later, he declined to partake of the fine feast in his honor at the governor's palace, eating instead a bowl of hominy; fearing, perhaps, an attack of the diarrhea that threatened to disembowl him.[50] At the end of the War of 1812, he returned to his sanctuary, the Hermitage, in Tennessee. His stomach was in revolt, his old wounds were inflamed, and his whole system was in a state of collapse.[51]

In 1818, the indomitable general was in the field again, this time against the Seminoles. He pursued the hapless Indians into Florida, captured Pensacola, and stirred up an international crisis by refusing to return captured forts to Spain. Unknown to Jackson, Secretary of War John Calhoun ordered his arrest. John Quincy Adams defended him. In the House of Representatives, Henry Clay prepared censure resolutions against Jackson. All actions against the furious general ceased when the United States bought Florida from Spain.[52]

After serving as Florida's first territorial governor for a short time, Jackson wrote to his friend, ex-Senator Campbell: "I am no longer a young man. I can't stand the fatigues and privations I used to. Why, bless us George, do you realize we are getting old? I'm fifty-four! And God knows I've never spared myself. . . ."[53] But Campbell consoled the melancholy fighter: "You are only tired out, and a little bit sick. That miserable climate and the wretched filth of a Spanish town have temporarily enfeebled your system. But wait, General, till our own pure air braces you up this winter. . ."[54]

But it would take more than pure air to brace up the general. Already, politicians were readying him for the Presidency, a strategy feared by Rachel who confided her anxiety to her niece in 1822: "He is not a well man and never will be unless they allow him to rest."[55]

The Jacksonian temperament

Jackson lost so much blood in his tempestuous career through wounds and bleeding that a medievalist would have wondered at his choleric disposition. One so constantly drained of the vital fluid should certainly manifest a calmer temperament.

Was Jackson unduly emotional? Nathaniel Niles, a New England Democrat and a friend of Jackson, said in June 14, 1835, that the general's ". . . whole course in life has been dictated by emotion in contradistinction to reason."[56] As a child, Jackson suffered from a nervous affliction "that manifested itself in the unpleasant phenomenon colloquially known as 'slobbering.'"[57] As a youth he had fits of passion, screaming and foaming at the mouth, although many of his opponents looked on his "fits" as acts designed to throw his enemies off guard.[58] But others attributed his hot temper and his most condemned acts to his irritations from his illnesses.[59]

Rachel's death before his inauguration saddened Jackson for life. He seemed more subdued and more temperate in speech after her passing, and Colonel Benton, now his lifelong friend, wrote that had Mrs. Jackson lived she would have been "the only being on earth who possessed the power to swerve his mighty will or soothe his fierce temper."[60]

Jackson's political peers feared his intemperate spirit. When Jackson was being considered for the ambassadorship to Russia in 1818, Jefferson exclaimed, "Why, Good God! he would breed you a quarrel before he had been there a month!"[61] Jackson himself feared it. In response to friendly feelers concerning his White House aspirations, he replied: "I know what I am fit for. I can command a body of men in a rough way, but I am not fit to be President."[62] Earlier, in 1821, he wrote a frank statement of his independent thinking: "I have an opinion of mine on all subjects, and when that opinion is formed I persue (sic) it publickly, (sic) regardless of who goes with me!"[63] Once his mind was made up there was no trimming of sails; in the Seminole War he had usurped the power of Congress to declare war and had razed forts of friendly powers.[64] In the same war he had hanged two Indian chiefs without trial and had courtmartialled two Englishmen without legal justification.[65] After a prolonged and bitter debate on Jackson's conduct in the Seminole War, Senator Lacock wrote of Jackson's alleged violent propensities:

> General Jackson is still here and by times raves like a madman. He has sworn most bitterly he would cut off the ears of every member of the Committee who reported against his conduct.[66]

Senator Lacock was truly afraid of Jackson's threats. But for a while at least, one foe of Jackson seemed to ignore his threats. Nicholas Biddle, president of the Bank of the United States, warned Jackson not to meddle with his bank. In scathing rhetoric Biddle made a brave but unprophetic show of bravado: "The worthy President thinks that because he has scalped Indians and imprisoned judges he has to have his way with the Bank. He is mistaken."[67] Jackson killed the Bank.

Perhaps Old Hickory loved a political battle as well as a military foray; at any rate, his distaste for the established order earned him the opprobrium of both Thomas Jefferson and John Quincy Adams. Jackson never forgave Calhoun and Clay for opposing him while he was both General and President. When dying of supposed consumption in the Hermitage, Jackson asked his physician, Dr. Edgar: "What act in my administration, in your opinion, would posterity condemn with the greatest severity?"

After several futile responses, Dr. Edgar gave up. Rising in his bed, Jackson said: "Posterity will condemn me more because I was persuaded not to hang John C. Calhoun as a traitor than for any other act in my life."[68]

There were fears among the people that Jackson might become a dictator, but in 1832, a passage in "Robertson's Sketches" assured the people that Jackson was not a Napoleon:

> The fire of his temper had become a flame less wild than when he was earning his military laurels . . . He has now administered the government for nearly three years, and has shown nothing of a disposition to the military chieftan.[69]

For all of his military derring-do, Jackson never sought to subvert the government. However, his action against the Bank of the United States, his threat to use force to prevent the nullifiers in South Carolina from seceding, and his political spoils system made him the target for barbs from many sections of the country. That he did not break mentally and physically is indeed a testimonial to his almost mystical will.

The presidency

Four years before he defeated John Quincy Adams for the Presidency, Mrs. Jackson wrote of her husband: "My dear husband is in better health than when we came . . . I am delighted with him. All the attention, all the parties he goes to never appear to have any effect upon him."[70]

Rachel cared little for Washington's social life. Her childless state affected her disposition deeply.[71] A relative recalls this touching scene between her and her husband. Rachel, weeping, exclaimed, "Oh husband! How I wish we had a child." Jackson, visibly moved, embraced her and said consolingly, "Darling, God knows what to give, what to withhold."[72]

Four years after Rachel wrote glowingly of her husband's health she died, leaving him a broken, desolate widower. Jackson had won the 1828 election and he and Rachel were at the Hermitage, preparing for their move to the White House. On December 17, 1828, Rachel complained of dizziness and deep pains in her chest. On Monday, December 22, she cried out in pain, and Jackson, alarmed, ordered Dr. Robertson to bleed her. When no blood flowed from her arm, Jackson cried out, "Try the temple, Doctor." Two drops, no more, stained her cap.[73]

The grieving President-elect remained beside the deathbed for sixteen hours. "How shall I describe the agony," wrote Doctor Heishell, "the heart-rending agony of the partner of her bosom?"[74] Later, Jackson attributed her heart attack to the slanders that pierced her heart. He bitterly castigated politicians and newsmen as murderers, especially those who had referred to his allegedly adulterous marriage to Rachel.[75] Finally, he had to travel alone to Washington—an old, weak, and lonely man. The nation spoke freely of his ill health and gave serious thought to his likely successor.[76]

The nation had good cause to doubt the new President's ability to complete his four-year tenure at the White House. Spitting blood frequently because of his abscessed lung, afflicted with nerve-wracking dysentery, and subject to intermittent pains from his shoulder wound, he was not a likely candidate for the three score and ten fraternity.[77] In addition, he now sported a set of teeth made by a Nashville dentist.[78]

At his inauguration Jackson was plainly dressed and appeared thin and pale. His hair was almost white and he seemed inordinately melancholy. When Chief Justice Marshall administered the oath of office, Jackson's hand trembled visibly.[79] But more ordeals were yet to come.

In the autumn of 1829, a relative described Jackson as tired, worn, sallow, and jaundiced.[80] By December he was so ill that Major Lewis and Martin Van Buren had him propped up in bed to write his political will. The will expressed Jackson's wish to have Van Buren succeed him, but to everyone's surprise, Jackson survived this illness and Van Buren had to wait until 1836 for his chance at the Presidency.[81]

By 1832 the pain in his left shoulder from Jesse Benton's bullet intensified. His left arm was almost useless, and his physicians believed that the bullet was poisoning his system. In January, a Philadelphia surgeon removed the bullet in army field hospital style. Baring his arm to the shoulder, Old Hickory took a firm grip on his walking stick. The operation was over in a few minutes and Jackson professed to feel much better soon after.[82] But not for long. Exhausted from his battle to destroy Nicholas Biddle's Bank of the United States, he complained to Martin Van Buren in July, 1832. "The Bank, Mr. Van Buren, is trying to kill me, but I will kill it."[83]

Jackson hemorrhaged frequently. Any severe strain caused him to cough violently and to spit blood. For example, his hemorrhage in Boston, 1833, was attributed to an earlier illness in New York, stemming from a strenuous bout with a wild horse that he rode in procession from the Battery to City Hall.[84] In May of the same year he was aboard a steamer bound for Fredericksburg, Virginia, when a cashiered Navy lieutenant knocked on the door of the President's cabin. The President called out, "I have a pain in my side which makes it distressing for me to rise," but the irate officer slammed his fist into Jackson's face and bloodied it.[85]

John Quincy Adams never forgave Jackson for defeating him in 1828. When the famed Dr. Waterhouse praised Jackson to Adams, the latter could not accept the physician's praise graciously. Waterhouse noted that Jackson "is so excessively debilitated that he should not be surprised if he should never reach Washington again," but Adams dubbed Jackson a sham, ignoring the physician's diagnosis, saying of Jackson:

> He is so ravenous of notoriety that he craves sympathy for sickness as a portion of his glory. He is now alternately giving out his chronic diarrhea and making Warren bleed him for a pleurisy, and posting to Cambridge for a Doctorate of Laws . . . Four fifths of his sickness is trickery, and the other fifth mere fatigue.[86]

Jackson's champions felt that he could bear any fatigue within human experience.[87] To counter the Whig attempt to make Jackson's health a vital issue of the 1832 campaign, one of Jackson's publicists replied: "The President receives from fifty to one hundred persons daily, is incessantly engaged in the dispatch of his office, and joins regularly at table his large dinner parties of from forty to fifty persons twice a week."[88]

Returning from Nashville after his second-term victory, Jackson hemorrhaged severely. Invalided in Washington, he showed his friends a clipping from the *Boston Courier* which willed his death:

> There is one comfort left: God has promised us that the days of the wicked shall be short; the wicked is old and feeble. It is the duty of every good Christian to pray to our maker to have pity on us.[89]

Jackson grinned: "I have no intention of dying for the gratification of my enemies."[90] He didn't. Somehow, he managed to live another dozen eventful years.

Before leaving office, Jackson had a near rendezvous with death. While working on his last annual message, he was seized with a violent fit of coughing and accompanying hemorrhage. He was immediately cupped, and 60 ounces of blood were bled from his weakened body. He wavered between life and death for two days, but was soon sitting up again, eager to get on with his chores.[91]

On March 4, 1837, he bade farewell to his friends and associates in Washington, and touchingly advised them that "My own race is nearly run; advanced age and failing health warn me that before long I must pass beyond the reach of human events and cease to feel the vicissitudes of human affairs."[92]

Jackson and medicine

There is nothing in Jackson's history to indicate that he had an anti-medical bias. As a major-general in the campaigns of 1812, 1813, and 1814, he must have been aware of the large number of intestinal and respiratory infections that cut down his troops, but he noted that the medical staff "did their duty with fidelity."[93] In the same report he commended two medical officers for their medical skill and bravery.[94] According to Caldwell,[95] however, the origin and nature of American epidemics was not duly observed and appreciated, a criticism that undoubtedly included the state of military medicine. For example, "The Statistical Report of Sickness and Mortality in the Army of the United States, January 1, 1819–January 1, 1839," cited blood letting, blistering, calomel salivation, tartar emetic emesis, and alcohol and opium as dubious panaceas in use.[96]

Jackson had the good fortune to be present at the remarkable ovariotomy performed by James McDowell, M.D., on the wife of John Overton, a wealthy backer of Jackson. The eminent surgeon rode several hundred miles to the Hermitage where Mrs. Overton lay awaiting his artistry. With Jackson serving as assistant, McDowell cut through four inches of fat to remove the tumor.[97]

During his second term in office, Jackson became interested in patent medicines and his administration granted many patents to charlatans and quacks who identified themselves somehow with the antiaristocratic shibboleths of the Jacksonians.[98] A satire of Jackson's alleged meddling in medicine appeared in the October–December, 1829 issue of *The Western Journal of Medical and Physical Sciences*, part of which stated:

> Oh! to take medicine "by authority" and that, too of the President, who would recommend nothing that he had not tried on himself and found useful for the people. He is the people's friend. He is a good doctor (not from book larnin') but from common sense; he once made a great speech in Congress, and that shows he is a great doctor; before that he was a lawyer, and of course he is a great doctor! he fought a great battle, and is therefore a great doctor.[99]

One particular patent medicine, "Matchless Sanative," caught the President's fancy. In 1838 he said that this remarkable preparation was making a new man of him and he recommended the cough medicine to his ailing friends, advising them "to carefully attend to . . . the directions which accompany each bottle."[100] Even at the age of seventy-four, he still admired "Matchless Sanative"; in a letter to the dying Andrew Jackson Hutchings, a friend of his adopted son, Andrew Jr., he wrote: "I urge your attention to the Matchless Sanative."[101]

Retirement and death

For eight years death toyed with Andrew Jackson at the Hermitage. Each day in retirement was agony to him—incessant headaches, one lung tubercular, the other infected, and frequent hemorrhages were his lot. In addition, he was plagued by the "mind-killing indebtedness" of his adopted son.[102]

Mrs. Polk wrote that Jackson had exhausted himself in behalf of her husband in the campaign of 1844.[103] A friend, Isaac Hill, was shocked at Jackson's appearance on March 4, 1845. Jackson's feet and ankles swelled from continuous sitting and "he bathes limbs in emolients calculated to bring a healthy reaction of the skin."[104] On May 23, Jackson walked outside his home for the last time. On June 2, his dropsy caused him great distress; an operation by Dr. Esselmann to relieve his pains left him prostrate.[105] Drugs could no longer help him sleep.[106] His letter to Polk on June 6 revealed an agile mind, but historian J. W. Ward noted that "his flesh from the waist down had literally to be wrapped to his body to keep from falling away."[107]

Two days later Dr. Esselmann knew that Jackson was dying. An hour before death he signed a letter to Polk—"stand firm—fifty-four forty. . ."[108] To his friends, and servants, his dying statement was short: "Dear children, servants, and friends, I trust to meet you all in heaven, both white and black—all, both white and black."[109] He died painlessly at 6:00 P.M.

Conclusion

In Arthur Schlesinger's poll on presidential ranking, Jackson is listed among the six "near great" Presidents. He ranks eighth in prestige, third in strength of action, and third in activeness. Interestingly, of the six presidents, only Jefferson was relatively healthy, and only Jefferson and Jackson outlived their life expectancies.[110]

These polls seem to belie the theory that a President must be in good health to function effectively, yet a consensus of medical thought on this subject might negate the hypothesis. During his last months in the White House, Jackson was so ill that he came down to his office only five times after November. Could a man this ill competently lead a nation in time of crisis?[111] History has vindicated Old Hickory.

47 Tanager Lane
Levittown, New York

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GOYA'S ILLNESS

A case of lead encephalopathy?

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> *What a strange painter, what a singular genius was Goya!. . . His method of painting was as eccentric as his talent. He scooped his colour out of tubs, applied it with sponges, mops, rags, anything which he could lay his hands on. He trowelled and slapped his colours on like a bricklayer, giving characteristic touches with a stroke of his thumb. In this extemporary way he covered thirty feet or so of wall in a couple of days . . . .*— THEOPHILE GAUTIER, *Voyage en Espagne (Travels in Spain)* 1843

The medical history of Goya's personality and illness (or illnesses) has long been the subject of investigation by art historians, biographers, clinicians, and scholars interested in the relationship between disease and creativity. The medical problems pertaining to Goya's life and artistic career are of considerable interest, not only because of his exceptional achievement as an artist—he was one of the greatest portraitists of modern times—but also because during his long life he suffered protracted periods of physical and/or psychiatric disabilities. The exact nature of these conditions has never been fully identified.

The first biographic notes we have about Francisco José de Goya y Lucientes (1746–1828) go back to 1828, the year of his death. In one of the earliest catalogues of the Madrid museum, now called el Prado, originally known as the Galería del Museo del Rey, we find the following terse entry:

> Francisco Goya. Born at Fuendetodos, Aragón, in 1746. Nominated Painter to the King in 1786 and later made Senior Court Painter; now on a pension for old age . . . . He had no other master than his own observation of famous paintings and painters in Rome and Spain, from which he drew greatest profit.

This brief entry ends on an equally succinct note: "Article communicated by himself." It contains no reference whatever to the serious, at times life-threatening disease or diseases or the permanent deafness from which Goya suffered from at least his middle forties until his death at the age of eighty-two. We know also of an earlier disability between 1778 to 1781, described as a state of depression or melancholia, which kept him partially away from his work during this period.

Effect of illness on paintings

Late in 1792 or early 1793 Goya was stricken with an incapacitating disease of apparently sudden onset, fulminating impact, and lasting consequences. From contemporary documents—letters, preserved records, and so on—we know a good deal about the symptoms of the disease which lasted for many months: paralysis of the right side; vertigo; impairment of balance, hearing, and speech; partial blindness; tremors; convulsive manifestations; resounding noises in the head; mental confusion probably accompanied by hallucinatory experiences; and comatose or semicomatose states. A man of remarkably robust constitution and vigor, Goya was able even in his late seventies to travel across the Pyrenees repeatedly on his way to France as a political exile from Spain and recovered after a year or so of convalescence. But the disease produced two lasting changes: He remained totally deaf until the end of his life, and he emerged from the ordeal a different person or, perhaps more precisely, a different artist. Once a painter of gentle genre pictures, colorful scenes of picnics and games, elegant tapestry, cartoons in rococo style, he now became a man who took a harsh, often merciless, and vengeful view of the world without and within. As the art critic, Canaday,[1] has put it: "Goya's life was split in two near its midpoint by an illness that nearly killed him. . .a new Goya emerged, Goya the humane and bitter social observer, the scourging and despairing delineator of vice and cruelty. . . whose picture of nightmares explored the most desperate realities." Although this is essentially correct, it is noteworthy that some of Goya's earlier paintings, namely, those before 1792 and 1793, also show at times a sinister note, for example, the ominous-looking gray cats in the beautiful child portrait of the

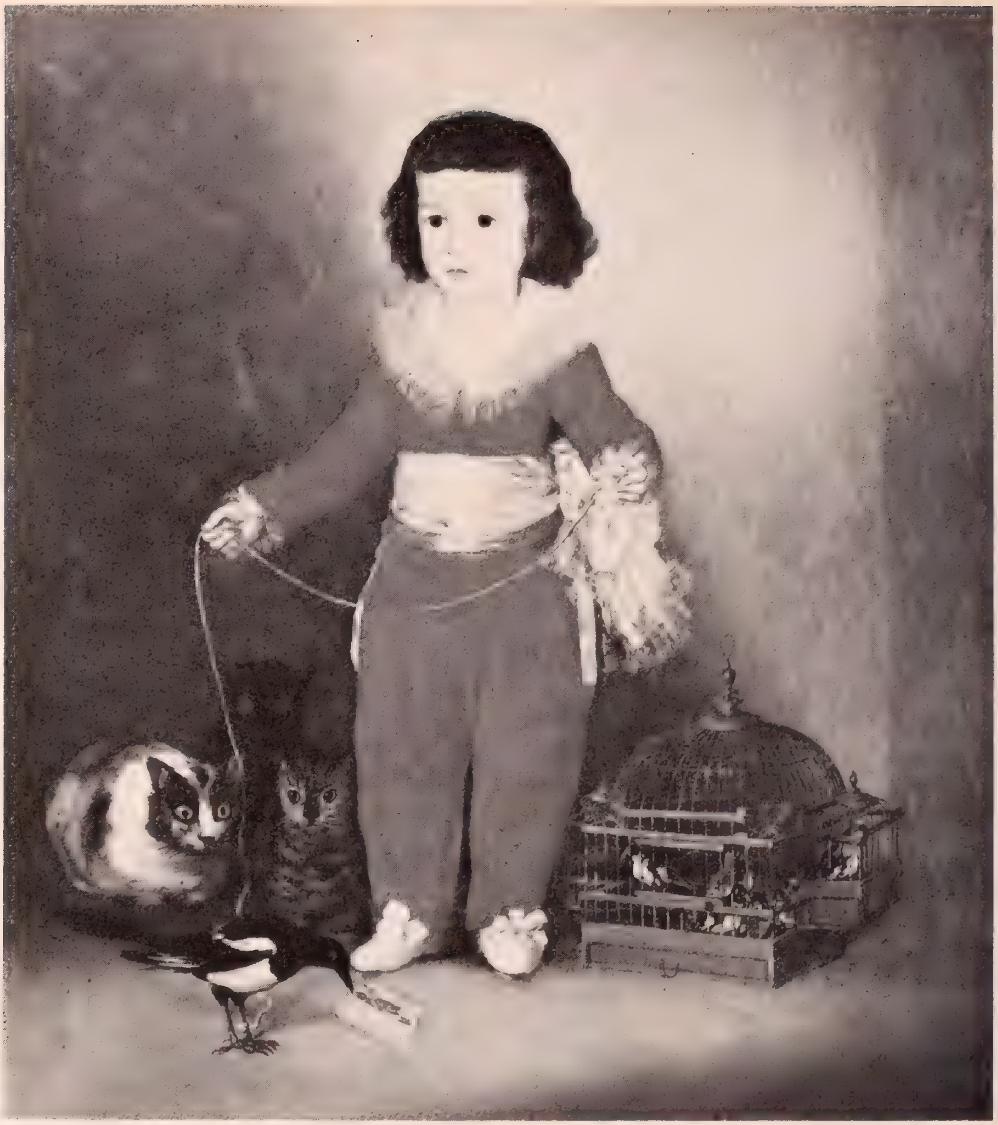

FIGURE 1. Portrait of the *Infante Don Manuel Osorio de Zúñiga*, 1788 (from the Metropolitan Museum of Art, New York).

Infante (Fig. 1), or the melancholy, almost leaden quality of the *Winter* painting (Fig. 2).

Nature of Goya's illness

What was the nature of Goya's illness? Most biographers of the nineteenth and early twentieth centuries thought it was syphilis. In support of this thesis, they adduced the allegedly 20 pregnancies or stillbirths of his wife Josefa; only one child, his son Javier, survived. However, biographers today are no longer sure about the number of Josefa's pregnancies. Some believe that in thirty-nine years of marriage she bore four or five children of whom only Javier grew to manhood. Those who still consider syphilis as the most likely cause of Goya's recurrent disabilities also point to some obscure passages in contemporary writings, for instance, a phrase in a letter by Martín Zapater, Goya's school mate and lifelong friend, which reads: ". . . Goya was led to this [the disease] by his own lack of reflection. . . ." In the present author's opinion, neither the number of the wife's pregnancies nor Zapater's critical statement can be viewed as sufficient evidence of a syphilitic condition. In fact, there appear to be other explanations available for the wife's (controversial) stillbirths or unsuccessful pregnancies, and Zapater, who remained a modest civil servant in Zaragoza while his friend was to become Primer Pintor de Cámara (first painter) at the royal court, may have, understandably, harbored unresolved feelings of rivalry and jealousy toward the latter. Also, the French author Chabrun[2] points to the fact that Goya did not die "until 35 years later" [after the almost fatal sickness of 1792 to 1793] and states that "a diagnosis of general paralysis or even cerebral syphilis cannot be upheld."

Psychiatrists, such as Reitmann and Soler, have suggested that Goya may have suffered from a "schizophrenic psychosis" or "paranoid schizo-

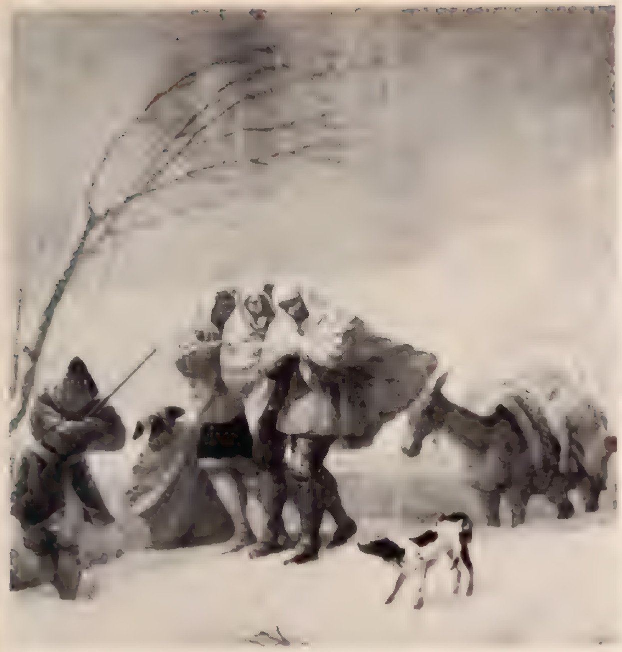

FIGURE 2. *La Nevada* (*Winter*), 1786 (from El Prado, Madrid, Spain).

phrenia associated with deafness," respectively. From a differential diagnostic viewpoint, Reitmann[3] also considers involutional melancholia and manic-depressive psychosis as clinical possibilities but ultimately arrives at the diagnosis of schizophrenia as the most likely cause of Goya's mental disabilities. In a recent book on psychotic art by Pickford,[4] this diagnosis is accepted. In a more circumspect way, Eissler[5] limits himself to pointing to a number of primary process intrusions into the painter's perceptive and cognitive processes without offering a definite diagnostic appraisal. In view of the persistent otologic symptoms (deafness, vertigo) Cawthorne[6] and various otologists who reject the diagnosis of syphilis, assume the presence of neurolabyrinthitis, with permanent deafness, temporary inflammation of the uveal tract, and sympathetic ophthalmia possibly of viral origin. However, Shapiro,[7] from an otologic standpoint, regards a luetic condition as the most likely cause of Goya's illnesses. Wolfenstein,[8] in her recent analytic study, has summed up the present status of our lack of knowledge concerning Goya's sickness in these words: "Doctors are still trying to identify this illness, but its nature remains obscure."

Possible lead encephalopathy

In an attempt to advance our medical knowledge, at least with regard to some of these obscurities, the present author has approached the problem via a different route of investigation, based partly on clinical observations with victims of lead encephalopathy and partly on studies of Goya's particular technics and manner of work as a painter.[9] As to the latter, it is known that Goya was a highly prolific and versatile artist. He never ceased to experiment in new media and innovatory processes of the graphic arts, and at the end of his long career as a portraitist, draughtsman, cartoonist, engraver of aquatints and etchings, he even mastered the novel technic of lithography. This versatility alone speaks, in my opinion, against the assumption of a schizophrenic process. He has to his credit a stupendous succession of decorative paintings and designs for tapestry; portraits of Spanish nobles and kings, magnificent in color and execution; superb artistic representations of humble workmen and farmers shown in their daily occupational doings and undoings, such as being injured or killed during the course of their work; and graphic depictions of attacks against corruption, superstition, and vice in high and low places, all in all well over 1,800 works of art, many of which have been lost. Such tremendous productivity would have been impossible without the personal factor of extraordinary speed in the execution of the works. It is said that he painted his wife's picture, now in the Prado, in one hour, was capable of completing King Fernando's large portrait in one or two sessions, and that of the Infante Don Luis in a single morning. The almost frantic speed was much admired as was the fact that the painter could execute these portraits of superb artistic quality with unusual charm and brio. Commissions from aristocratic circles in Madrid doubled and tripled and so did Goya's income. Soon he became the most sought-after portraitist in Madrid. To my knowledge, no painter before or after Goya has been able to execute a lifelike portrait so perfectly in so few hours of sitting. I believe, however, that he paid dearly for this extraordinary accomplishment and rapid success. The cost, unknown to him or to anyone else, may well have been in terms of serious damage to his personal health.

In Goya's time artists had to do their own grinding of pigments and colors. Paints are complex mixtures of solids, solvents, and various substances. In a study on Goya's technic, Schmid[10] has reproduced a picture of Goya's palette which shows the color flake white as the number 1 pigment used by the painter. Generally speaking, "it is known," Schmid writes, "that Goya painted very quickly. . . and used three tints, a light flesh tint composed of 4/5 terre verte, 1/5 light red plus 1/3 of flake white." The latter was lead white. This was one of the most important and most frequently used pigments in Goya's art work, as can be seen from his paintings in white, gray, or mother-of-pearl (Figs. 3 and 4). Although not all paintings by Goya can be accurately dated, most art historians agree that both the portrait of the Marquesa de Pontejos and the famous *Burial of the Sardine* were done prior to the outbreak of his devastating illness in 1792 to 1793, the latter paint-

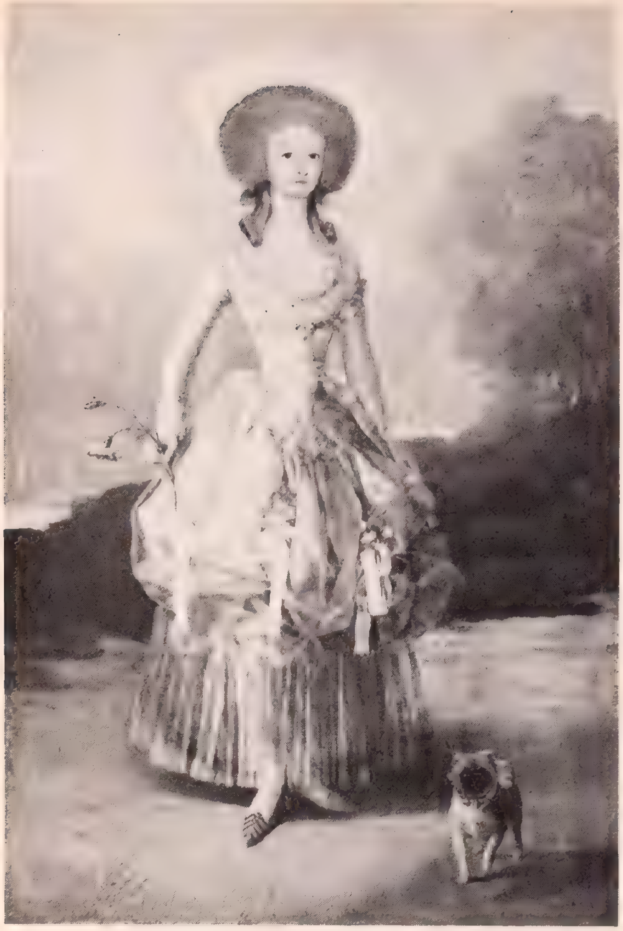

FIGURE 3. *Marquesa de Pontejos,* 1786 (from the National Gallery of Art, Washington, D.C.).

ing perhaps during or immediately before its onset. Also Doerner,[11] who has dealt with the materials Goya used in his paintings, has stated that "most of his pictures [had] grounds laid over pure white primings. . . on these he worked freely with white, achieving a peculiar charm of mother-of-pearl tones."

None among these nonmedical authors appears to have suspected that according to their own descriptions Goya must have been in frequent and direct contact with the toxic lead compound which is essentially basic carbonate of lead, namely, 2 $PbCO_3.Pb(OH)_2$. Grinding this poisonous compound into paint is particularly hazardous, since it facilitates inhalation or ingestion by manual handling. Here, again, Goya's technic deserves careful consideration. The characteristic luminosity of many of his paintings was presumably attained with the aid of certain preparations which, among other materials, contained glue, chalk, and lead white in equal parts. Innocuous white pigments, such as zinc white, lithopone, or titanium white, were introduced only during the second half of the nineteenth century or early in our century. Moreover, in examining the brilliance and luminosity of Goya's pictures, one finds that frequently the paint is brushed in with bold, liquid strokes, a procedure which may have entailed much splattering and spilling. To save time, he also painted wet paint on wet. The quotation cited previously from Gautier's *Travels in Spain* is generally considered an exaggeration. But if only half of it were true, one must take into account the fact of Goya's overexposure to lead. It is well to remember that the art of painting, especially in those days, involved the creative artist personally in all the operations and stages of the technical process, with special emphasis on the grinding of colors. Facilities for washing and other cleansing procedures were notoriously poor in Madrid particularly during the long and dry summer seasons. Thus, it can be assumed that Goya, precisely because of his capacity for painting with tremendous speed, may have been much more intensely and massively exposed, via inhalation and/or ingestion, to the noxious effects of the materials then in use. Again, I call attention to the large canvas named *Winter* with its "leaden" sky, landscape, and figures (Fig. 2). Many of Goya's canvases have an irridescent, sparkling quality, with almost infinite gradations of white, whitish gray, and twilight gray.

Turning to the clinical picture of lead encephalopathy, it was first described by Tanquerel des Planches[12] in 1839, eleven years after Goya's death. As early as 1713, Ramazzini[13] had mentioned, "I have observed that nearly all the painters whom I know, both in this or other cities, are sickly. . . for their liability to disease [because of] the materials of the colors that they handle and smell constantly. . ." It was only a century later that Tanquerel des Planches established the clinical entity which he called Encephalopathia saturnina. He distinguished four forms of the disease, encephalopathia delirians, comatosa, convulsiva, and a fourth type characterized by the occurrence of all these manifestations.

If we now examine the well-documented symptomatology of Goya's illness, we find several phenomena which, in conjunction with his known use of leaded substances, suggest the probability a severe form of lead encephalopathy may have developed. The fulminating onset of the illness, with its cerebral involvement and the manifestations of paralytic, convulsive, and mental disorder, would point to such a diagnosis. With regard to the convulsions, they were reportedly such that some authors thought of them as epileptic or epileptiform seizures. We have, of course, learned more about the occurrence of symptomatology of the disease since the days of Tanquerel des Planches. In my own work I have described further features of the general clinical picture which, I believe, are worth mentioning in this context: sudden paralysis of arms and legs, tremor, transient blindness (neuritis optica), mental confusion, at times accompanied by paranoid ideation, hallucinations, delirium, and coma. One of my patients had a

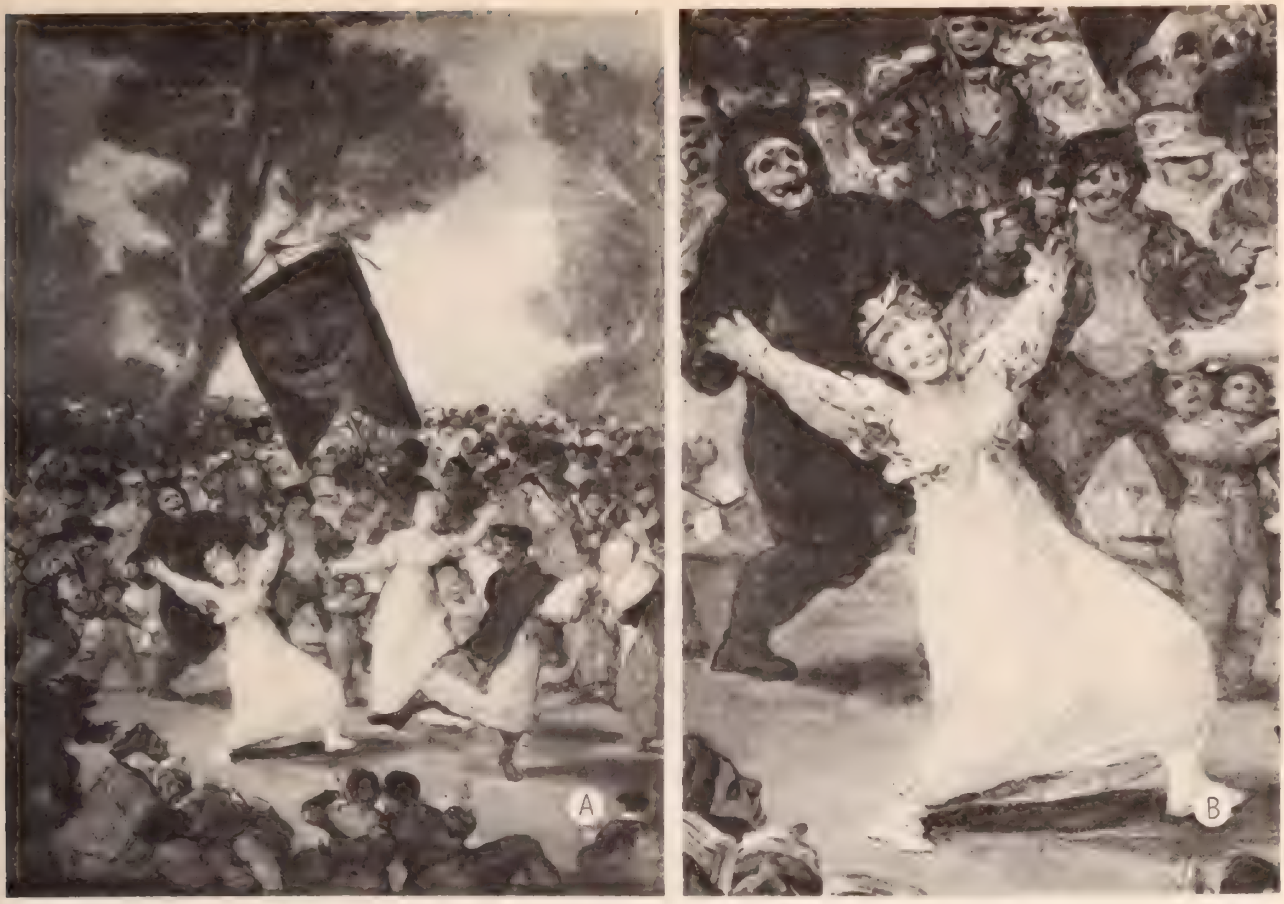

FIGURE 4. (A) *The Burial of the Sardine,* 1792–1793? (from the Academy San Fernando, Madrid, Spain). (B) Figure 4A in greater detail.

total paralysis of his left side, epileptoid seizures, was disoriented and paranoid, but recovered fully after his removal from the occupational hazard, which involved contact with lead. In 2 patients, long-lasting states of depression prevailed; they also showed personality changes, vertigo, and impairment of their visual and auditory functions. Total loss of hearing did not occur in the cases I observed, all of which developed in an industrial setting. What impressed me most was the relatively good recovery after removal from the hazardous milieu and the recurrence of symptoms in several of these patients on renewed exposure to lead-containing materials. Also, a chronic form of lead encephalopathy has been described.

In the case of Goya, encephalopathy due to plumbism, if plumbism it was, may have played a role on at least three occasions: between 1778 to 1781 when depressive symptoms prevailed; in 1792 to 1793 when a fully developed form of encephalopathia saturnina with acute brain damage, possibly Tanquerel's fourth type, may have struck him; and again in his last years, sometime between 1820 and 1825, when he once more became ill. A careful study of his artistic work indicates that each episode was preceded by the type of intense occupational activity, frequent exposure to lead white and similar toxic materials mentioned previously. One might object that white lead was the most important pigment in the history of western painting, hardly a major, prenineteenth century European painting exists without it, and that, therefore, other artists should likewise have developed similar symptoms. Here again, Goya's impetuous personality and specific modus operandi when painting his large canvases should be recalled. He worked at such a frenetic pace that he was able to complete several large canvases in the same time it would take other painters to finish only one. He therefore must have inhaled twice or three times the amount of lead white as did other painters during a comparable period of time. Furthermore, 90 to 100 per cent of all intoxications went undetected in those days.* Finally, the premorbid individual state has to be considered. Even in the industrial setting in which my patients worked, significant individual differences were observed. Of the persons exposed, only a certain number fell sick with plumbism, while others, working in the same milieu, remained well.

There are other admittedly more subtle indications which make the diagnosis of encephalopathy likely in Goya's case. Art critics have referred to "Goya's dislike of painting hands."[14] In one of his portraits, the hand of the subject is thrust into his waistcoat "in a Napoleonic gesture," as Trapier[14] puts it, "while the other. . . is of strange proportions and kept out of sight in the shadows." Similar configurations regarding the hands occur in other paintings. Could this mode of painting the subject's hands have reflected Goya's difficulties (tremor, muscle weakness) with his own hands? Although we have no evidence of a permanent damage to the nervus radialis, familiar in many cases of plumbism, we know that Goya was unable to paint during the episodes of illness and for some time thereafter, that his right arm was paralyzed during the 1792 to 1793 disease, and that at least one of his self portraits shows, in addition to markedly distorted hands, the typical pallor which we find in patients suffering from lead colic. The very intensity of the symptoms, however, may have saved his life. They forced him to give up painting almost entirely for comparatively long periods of time, that is to say, to reduce or eliminate the exposure to lead. He thus was able to regain his physical health after each episode. That his robust constitution also played a part in the recovery can be taken for granted.

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*Ramazzini[13] comments on the ill health of painters at the time, including "those of great fame," he pointedly adds.

Earlier, I mentioned his wife's unsuccessful pregnancies. Some of the children were born alive but appear to have died in early infancy. Several authors have adduced this repetitive event as evidence of paternal syphilis. Without discounting the fact that such early infant death does occur in congenital lues, it may be permissible to refer not only to the general infant mortality rates in those days but also to the increased incidence in cases of parental lead intoxication. In other words, the very argument so often adduced in support of the assumption of syphilis may well be used to corroborate the thesis of lead poisoning presented here.

There are risks inherent in all pathographic writings, particularly in a posthumous attempt, such as this one, to arrive at a clinical diagnosis ex post facto. Like previous efforts along such lines, the present study does not offer conclusive evidence; it limits itself essentially to diagnostically pertinent data. But since these data, perhaps for the first time in a study of Goya's medical history, also include documented material on the occupational hazards to which Goya undoubtedly was exposed, it is hoped that this research may serve to stimulate further work with a view to resolving the mystery of the recurrent illnesses in one of the greatest painters of the modern age.

Comment

The relationship which appears to link creativity and psychiatric illness has received much attention in the literature. Physical and/or psychic suffering, it is stated, stimulates artistic creation. In Goya's case this often discussed tie between psychiatric illness and great art, although the nature and sources of the creative process itself are still obscure, manifests itself with particular poignancy. The 1792 to 1793 illness profoundly affected not only his personal life but also his artistic style and achievement.

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Necrology

James Ellison Brown, M.D., of Ogdensburg, died on December 8, 1971, at the age of sixty-five. Dr. Brown graduated in 1928 from the University of Toronto Faculty of Medicine. He was a consulting psychiatrist at the A. Barton Hepburn and Potsdam Hospitals. Dr. Brown was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph Leslie Cudlipp, Jr., M.D., of Brasher Falls, died on August 16, 1971, at the age of fifty-one. Dr. Cudlipp graduated in 1943 from the University of Vermont College of Medicine. He was an attending physician and surgeon at Potsdam Hospital. Dr. Cudlipp was a member of the American Academy of General Practice, the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Clarence Dingman, M.D., of Spring Valley, died on December 28, 1971, at the age of ninety. Dr. Dingman graduated in 1904 from Columbia University College of Physicians and Surgeons. He was an honorary physician at Summit Park Hospital (Pomona). Dr. Dingman was a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lester Jacob Greenberg, M.D., of Lawrence, died on December 29, 1971, at the age of sixty-two. Dr. Greenberg graduated in 1933 from New York Homeopathic Medical College and Flower Hospital. He was director of pediatrics and epidemiology at St. Joseph's Hospital (Far Rockaway), an associate attending pediatrician at Queens Hospital Center, and a consulting pediatrician at Long Beach Memorial Hospital (Long Beach). Dr. Greenberg was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Sarah Koslow Greenberg, M.D., of Brooklyn, died on December 5, 1971, at the age of eighty-seven. Dr. Greenberg graduated in 1908 from Eclectic Medical Institute of New York (Rochester). She had been an associate attending obstetrician and gynecologist at Jewish Hospital of Brooklyn. Dr. Greenberg was a Diplomate of the American Board of Obstetrics and Gynecology 'and a member of the American Medical Women's Association, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Paul Pattengill Gregory, M.D., of Rome, died on December 12, 1971, at the age of eighty-five. Dr. Gregory graduated in 1912 from Albany Medical College. He was a senior emeritus physician on the medical staff at Rome Hospital and Murphy Memorial Hospital. Dr. Gregory was a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

E. Harold Hinman, M.D., of Warsaw, died on December 25, 1971, at the age of sixty-seven. Dr. Hinman graduated in 1938 from Louisana State University School of Medicine. He was a Diplomate of the American Board of Preventive Medicine (Public Health), a Fellow of the American College of Physicians, a Fellow of the American College of Preventive Medicine, and a member of the Wyoming County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Theodore C. Krauss, M.D., of Buffalo, died on November 16, 1971, at the age of sixty-five. Dr. Krauss received his medical degree from the University of Bologna in 1931. He was an assistant attending physician in general practice at Millard Fillmore Hospital, an assistant attending physician at Edward J. Meyer Memorial Hospital, and a consulting geriatrist at Buffalo State Hospital. Dr. Krauss was a member of the American Geriatrics Society, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Roman Malcewicz, M.D., of Utica, died on December 9, 1971, at the age of sixty-three. Dr. Malcewicz graduated in 1936 from Marquette University School of Medicine. He was an attending surgeon at St. Elizabeth's Hospital. Dr. Malcewicz was a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Malia John Gurnsey, M.D., of Endicott, died on December 27, 1971, at the age of sixty-two. Dr. Gurnsey graduated in 1933 from Cornell University College of Medicine. He was an anesthesiologist on the medical staff at Ideal Hospital of Endicott. Dr. Gurnsey was a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ashby Goddin Martin, M.D., of Pelham, died on December 12, 1971, at the age of seventy-one. Dr. Martin graduated in 1925 from the Medical College of Virginia. He was a consulting otorhinolaryngologist at St. Luke's Hospital Center. Dr. Martin was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology.

Robert Mullen McCune, M.D., of New York City, died on December 15, 1971, at the age of forty-seven. Dr. McCune graduated in 1948 from Johns Hopkins University School of Medicine. He was a member of the American Thoracic Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Francis Nicol, M.D., of Brooklyn, died on October 31, 1971, at the age of eighty-one. Dr. Nicol graduated in 1913 from Columbia University College of Physicians and Surgeons. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Michael Anthony Nocero, M.D., of The Bronx, died on December 19, 1971, at the age of sixty-seven. Dr. Nocero graduated in 1933 from Creighton University School of Medicine. He was an associate attending physician at Morrisania City Hospital. Dr. Nocero was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Kenneth James Pedrone, M.D., of St. James, died on December 12, 1971, at the age of fifty-seven. Dr. Pedrone graduated in 1953 from New York Medical College. He was an attending physician at Smithtown General Hospital. Dr. Pedrone was a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Kurt Salomon, M.D., of Middle Village, died on December 28, 1971, at the age of sixty-nine. Dr. Salomon received his medical degree from the University of Berlin in 1926. He was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

William Sapsin, M.D., of Canton, died on April 22, 1971, at the age of sixty-four. Dr. Sapsin graduated in 1936 from St. Louis University School of Medicine. He was a member of the internal medicine and allergy staff at Potsdam (Potsdam) and A. Barton Hepburn (Ogdensburg) Memorial Hospitals. Dr. Sapsin was a Fellow of the American College of Allergists and a member of the American Academy of Allergy, the Aerospace Medical Association, the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Caesar Schoenlank, M.D., of New York City, died on November 14, 1971, at the age of eighty-one. Dr. Schoenlank received his medical degree from the University of Hamburg in 1920. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Nicholas Anthony Scialabba, M.D., of Rockville Centre, died on December 13, 1971, at the age of forty-three. Dr. Scialabba received his medical degree from the University of Bologna in 1960. He was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Dudley D. Shoenfeld, M.D., of New York City, died on December 27, 1971, at the age of seventy-eight. Dr. Shoenfeld graduated in 1917 from University and Bellevue Hospital Medical College. He was a consulting psychiatrist at Hillside Hospital. Dr. Shoenfeld was a member of the American Psychiatric Association, the American Psychoanalytic Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Sokolove, M.D., of Staten Island, died on December 26, 1971, at the age of sixty-seven. Dr. Sokolove graduated in 1932 from the University of Edinburgh Faculty of Medicine. He was an associate attending physician at St. Vincent's Medical Center of Richmond. Dr. Sokolove was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Francis Joseph Tarsney, M.D., of Forest Hills, died on December 7, 1971, at the age of seventy. Dr. Tarsney graduated in 1927 from Tufts University School of Medicine. He was a Fellow of the American College of Surgeons and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Isabella Sanford Wakeham, M.D., of Washington, D.C., formerly of New York City, died on December 6, 1971, at the age of seventy-four. Dr. Wakeham graduated in 1943 from Long Island College of Medicine. She had been an assistant attending physician at St. Luke's Hospital Center Outpatient Department. Dr. Wakeham was a member of the American Academy of General Practice, the American Medical Women's Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Stewart Wallace, M.D., of Ithaca, died on December 28, 1971, at the age of sixty-three. Dr. Wallace graduated in 1935 from Syracuse University College of Medicine. He was an attending cardiologist at Tompkins County Hospital. Dr. Wallace was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the New York State Society of Internal Medicine, the Tompkins County Medical Society (and a former president), the Medical Society of the State of New York (and a member of the Board of Trustees and delegate to the American Medical Association), and the American Medical Association.

Tobias M. Watson, M.D., of Palos Verdes, California, formerly of Jackson Heights, died on September 2, 1971, at the age of sixty-seven. Dr. Watson graduated in 1927 from Hahnemann Medical College of Philadelphia. He was an honorary obstetrician on the medical staff at Physicians Hospital. Dr. Watson was a member of the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Weil, M.D., of South Ozone Park, died on November 29, 1971, at the age of eighty. Dr. Weil received his medical degree from the University of Prague in 1914. He was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Franz Emil Winkler, M.D., of New York City, died on December 31, 1971, at the age of sixty-four. Dr. Winkler received his medical degree from the University of Vienna in 1932. He was an assistant attending physician at Metropolitan and Flower and Fifth Avenue Hospitals. Dr. Winkler was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Zuckerbrod, M.D., of Brooklyn, died on December 8, 1971, at the age of fifty-seven. Dr. Zuckerbrod graduated in 1938 from Long Island College of Medicine. He was an attending physician at Maimonides Hospital of Brooklyn. Dr. Zuckerbrod was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

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Edgar J. Appleman,
Director

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WHAT GOES ON in medicine

NEW YORK STATE **February 15–29, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

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Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

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NEW YORK CITY AREA

February 15, 1972 / February 29, 1972
3:00–4:00 p.m., Tuesdays

Jewish Memorial Hospital
Broadway and 196th Street

Medical Grand Rounds

February 15
An Environmental Hazard in New York City
IRVING SELIKOFF, M.D.
Mount Sinai School of Medicine

February 22
Myxedema with Arthritis
U. M. KABADI, M.D., J.M.H.
RICHARD P. LASSER, M.D., Dir. of Medicine

February 29
Mortality Conference
ADAM RAFALOWICZ, M.D.

February 15, 1972 and February 29, 1972
8:30 p.m.

The New York Psychoanalytic Society
247 East 82nd Street

February 15
Lewin Memorial Meeting
JACOB A. ARLOW, M.D. and HELEN ROSS
(Program to be announced)

February 29
Sublimation
GEORGE E. GROSS and ISAIAH A. RUBIN, M.D.'s

WEDNESDAY, FEBRUARY 16

11:00 a.m.

Jewish Memorial Hospital
Broadway and 196th Street

DIAGNOSIS AND MANAGEMENT OF PATIENTS WITH INTERSEX PROBLEMS

JORDAN FINKELSTEIN, M.D.
Montefiore Hospital

3:30 p.m.

The Roosevelt Hospital
Winston Conference Room
428 West 59th Street

WHAT IS DIABETES?

RAFAEL A. CAMERINI-DAVALOS, M.D.
New York Medical College

4:00–5:30 p.m.

Flushing Hospital and Medical Center
Parsons Boulevard and 45th Avenue
Flushing

PEDIATRIC SKIN DISORDERS

ARTURO ABALLI, M.D.
Queens Hospital Center

4:00–5:30 p.m.

Westchester Square Hospital
Conference Room
1625 St. Peters Avenue
Bronx

MEASUREMENT OF THYROID FUNCTION Part II

M. DONALD BLAUFOX, M.D.
Albert Einstein College of Medicine

NO FEE CREDIT: AAGP

February 17, 1972 and February 24, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
757 Bushwick Avenue
Brooklyn

Lecture Schedule

February 17
Diabetes
SYLVESTER CORT, M.D.

February 24
Mortality Conference
SOL GLOTZER, M.D.

THURSDAY, FEBRUARY 17

8:00 p.m.

The Harvey Society
The Rockefeller University
Caspary Hall
York Avenue and 66th Street

ANTIGEN DESIGN AND IMMUNE RESPONSE

MICHAEL SELA
The Weizmann Institute of Science
Rehovot, Israel

8:30 p.m.

Postgraduate Center for Mental Health
124 East 28th Street

RESEARCH APPLICATION TO A SINGLE CASE STUDY

JOSEPH W. VOLLMERHAUSEN, M.D., Associate Dean

Discussant:

ZANVEL A. LIFF, Ph.D.

FRIDAY, FEBRUARY 18

8:00–9:30 a.m.

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

HERNIA

JOSEPH ESTRIN, M.D.
Downstate Medical Center

FEE: $20 (Course started 10/22/71—"Pediatrics, Gynecology, Surgery and Medicine for the Family Physician"—ends April 21, '72)

February 18, 1972 and February 19, 1972

New York Heart Association
The Waldorf-Astoria Hotel
Park Avenue and 50th Street

13th Annual Basic Science Symposium

REGULATION OF CATECHOLAMINE METABOLISM IN THE SYMPATHETIC NERVOUS SYSTEM

FEE: $10 (Advance Registration is recommended), write New York Heart Association, 2 East 64th Street, New York, N.Y. 10021

February 21, 1972 / March 3, 1972
9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine

TEMPORAL BONE SURGERY

HARRY ROSENWASSER, SIMON C. PARISIER,
DONALD J. NALEBUFF, KENNETH H. BROOKLER, M.D.'s
Mount Sinai School of Medicine

FEE: $500

February 22, 1972 and February 29, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

Newer Concepts in Medicine Lectures

February 22
Liver Disease
I. WEINER, M.D.

February 29
Review Highlights of Previous Lectures
G. POLLACK, M.D.

February 22, 1972 and February 29, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
Main Conference Room
101 Castleton Avenue
Staten Island

Continuing Postgraduate Education
Family Practice Section

February 22
How to Work-Up an Anemia
THOMAS G. McGINN, M.D.

February 29
Skin Manifestations of Internal Disease
DOROTHY FISHER, M.D.

February 22, 1972 and February 29, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

February 22
Clinical Aspects of Diabetic Neuropathy
MAX ELLENBERG, M.D.
The Mount Sinai Hospital

February 29
Prostatic Valves and Anticoagulation Therapy
GEORGE REED, M.D.
N.Y.U. Medical Center

WEDNESDAY, FEBRUARY 23

11:00 a.m.–12:30 p.m.

Mental Retardation Institute
105 East 106th Street–7th Floor Auditorium

NEWER CONCEPTS ON INSTITUTIONALIZATION

BERNARD TESSE, M.D., Director
Queens State School, Corona

Noon

Downstate Medical Center
4th Floor Pediatric Library
450 Clarkson Avenue
Brooklyn

Research Pediatric Seminar

EFFECTS OF GLUCOSE, GLUCAGON AND TOLBUTAMIDE IN PLASMA LEVELS OF INSULIN AND HGH IN PREDIABETES

CHUN H. LU, M.D.

February 23, 1972 and March 1, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF ADOLESCENT PROBLEMS IN MEDICAL PRACTICE

MARTIN SYMONDS, M.D.

WEDNESDAY, FEBRUARY 23

8:30 p.m.

The New York Academy of Medicine
Section on Historical Medicine
2 East 103rd Street

WOMEN DOCTORS AND SURGEONS IN THE MIDDLE AGES

CHARLES TALBOT
Wellcome Institute for the History of Medicine, London, England

---

8:30 p.m.

Association for the Advancement of Psychoanalysis
Karen Horney Clinic Building
329 East 62nd Street

THE MYTH OF MASCULINITY: A PANEL

HARRY GERSHMAN, ALAN G. MILLER,
ELEANOR YACHNES, M.D.'s

Moderator:

ARNALDO APOLITY, M.D.
New Jersey College of Medicine

SUNDAY, FEBRUARY 27

9:00 a.m.–Noon

The Boulevard Hospital
46-04 31st Avenue
Long Island City

Intensive Review for Community Physicians

HEMATOLOGY

DOROTHY M. HOLDEN, M.D.
Downstate Medical Center

Sponsored by Queens County Academy of Medicine

February 27, 1972 / March 1, 1972

The American Fertility Society
The Waldorf-Astoria Hotel
Park Avenue and 50th Street

FIFTH POSTGRADUATE COURSE AND TWENTY-EIGHTH ANNUAL MEETING

NOTE: The Postgraduate Course will be held Sunday and will consist of eight seminars to be held at the hotel. In addition, three workshop sessions at area hospitals have been planned.

For additional information and pre-registration forms, please contact: HERBERT H. THOMAS, M.D., Med. Dir., The American Fertility Society, 1801 Ninth Avenue South, Suite 101, Birmingham, Ala. 35205.

February 28, 1972 / March 3, 1972

N.Y.U. Post-Graduate Medical School
550 First Avenue

A SYMPOSIUM ON ARTHRITIS AND RELATED DISORDERS

EDWARD C. FRANKLIN, M.D., Program Director

FEE: $150

Write: Office of the Recorder, above address.

MONDAY, FEBRUARY 28

1:00 p.m.

Downstate Medical Center
Fourth Floor Lecture Hall
Basic Science Building
450 Clarkson Avenue
Brooklyn

R. Janet Watson Hematology Lecture

SICKLE-CELL DISEASES AND NON-DISEASES

SAMUEL CHARACHE, M.D.
Johns Hopkins Medical Institutions

3:30 p.m.

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

ENDOCARDITIS REVISITED

BURT MEYERS, M.D.
Mount Sinai School of Medicine

8:00 p.m.

The New York Academy of Medicine
Section on Ophthalmology
2 East 103rd Street

DISCUSSION OF CONTROVERSIAL TOPICS IN OPHTHALMOLOGY BY RETINAL SURGEONS

Moderator

MORTON ROSENTHAL, M.D.
New York Eye and Ear Infirmary

Panelists

ROBERT L. BROCKHURST, M.D.
Massachusetts Eye and Ear Infirmary
MORTON COX, M.D.
University Hospital, University of Michigan
JAMES C. NEWTON, M.D.
New York Eye and Ear Infirmary
RICHARD S. RUIZ, M.D.
University of Texas Medical School

TUESDAY, FEBRUARY 29

11:00 a.m.

Maimonides Medical Center
Coney Island Hospital
Room 2 W1
Ocean and Shore Parkways
Brooklyn

Pediatric Postgraduate Program

CLINICAL PATHOLOGICAL CONFERENCE

KURT GERSTMANN, M.D.
Downstate Medical Center

8:30 p.m.

The Bronx-Lebanon Hospital Center
The Murray Cohen Auditorium
Grand Concourse and Mt. Eden Parkway
Bronx

REGULATION OF CELL DIVISION

ALBERT SZENT-GYORGYI, M.D.
Laboratory of the Institute for Muscle Research
at the Marine Biological Laboratory
Woods Hole, Massachusetts

NEW YORK CITY FUTURE EVENTS

March 1, 1972 / March 3, 1972

9:00 a.m.–4:00 p.m., Monday–Wednesday

Columbia University P & S
Columbia-Presbyterian Medical Center
630 West 168th Street

VASCULAR SURGERY

A. VOORHEES, F. McALLISTER, M.D.'s
and Guest Lecturers

FEE: $200

March 2, 1972 / May 4, 1972

4:30–6:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
Fifth Avenue and 100th Street

HYPNOSIS FOR THE PHYSICIAN AND DENTIST

ELLIOT N. WINEBURG, M.D.
Mount Sinai School of Medicine

FEE: $75

March 2, 1972 / April 27, 1972

Beth Israel Medical Center
10 Nathan D. Perlman Place

8-Week Series

DRUG USE, ABUSE, DEPENDENCE, TREATMENT

For further information, please contact A. STAUFFER CURRY, Ph.D., Coordinator, Program of Continuing Education, Department of Psychiatry, the above address.

TUESDAY, MARCH 7

American College of Physicians
The Rockefeller University
Caspary Auditorium
York Avenue and 66th Street

Annual Regional Meeting

RECENT ADVANCES IN INFECTIOUS DISEASES

FEES: $5 Members
$7 Non-Members
$6 for Luncheon (Limited to 250)

Write: ELI FRIEDMAN, M.D., 450 Clarkson Avenue, Brooklyn, N.Y. 11203.

March 13, 1972 / March 17, 1972
9:00 a.m.–5:00 p.m., Monday–Friday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

CLINICAL NEUROLOGY

MORRIS B. BENDER, M.D. and Staff
Mount Sinai School of Medicine

FEE: $100

March 13, 1972 / March 15, 1972
9:00 a.m.–5:00 p.m., Monday–Wednesday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

LABORATORY METHODS IN BLOOD BANKS

RICHARD E. ROSENFIELD, M.D. and Members of the Hematology Staff

Mount Sinai School of Medicine

FEE: $100

March 14, 1972 / May 16, 1972
4:30–6:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

DIFFERENTIAL DIAGNOSIS IN GASTROINTESTINAL RADIOLOGY

RICHARD H. MARSHAK and MANSHO T. KHILNANI, M.D.'s
Mount Sinai School of Medicine

FEE: $50

April 13 and 14, 1972

The Department of Radiology of the State University of New York
Downstate Medical Center
Waldorf-Astoria Hotel
Park Avenue and 50th Street

Course

THE RADIOLOGY OF HYPERTENSION

For information, please contact the Department of Radiology, SUNY, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203.

BUFFALO AREA

February 17 and 24, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and
Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

February 17
Auscultation—The Second Heart Sound
Mechanism of Normal and Reversed Splitting
Ventricular and Aortic Pressure Relations
Updating A2 and P2 Nomenclature
Case Presentations

February 24
The Wide Split
The Narrow Split
The Fixed Split
The S2 in Pulmonary Hypertension
Loudness of Components of S2
Case Presentations

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

The Children's Hospital of Buffalo
219 Bryant Street

POSTGRADUATE EDUCATION IN PEDIATRICS

In 1972 The Children's Hospital of Buffalo offers a program of postgraduate education in Pediatrics, combining tutorial instruction and the opportunity to become integrally involved in clinical services at the hospital for 4–8 weeks. General Practitioners and Pediatricians accepted become immediately involved in evaluation and treatment of patients and will be able to concentrate on one of seven specialized areas: cardiology, endocrinology, general pediatrics, metabolic diseases, mental retardation, nephrology and radiology. Each participant's program is individually planned to meet his interests and requirements. Candidates are requested to apply early, specifying sub-specialty in which they are interested. Special consideration is given candidates from rural areas. Please write Dr. Thomas Aceto, Jr., chairman of postgraduate education, at the above address.

State University of New York at Buffalo
2211 Main Street
Buffalo, N.Y. 14214
Tel (716) 831-5526

SCHEDULE FOR WINTER–SPRING, 1972

February 1, 3, 8, 10
Principles of Respiratory Care

March 9
Kidney Disease, Diagnosis and Treatment: The Role of Kidney Biopsy

March 24
Child Development: On the Importance of Infancy

April 7 and 8
Thirty-Fifth Annual U.B. Alumni Spring Clinical Days

April 13 and 14
Highlights of Current Problems of Clinical Anesthesia and Intensive Care

May 4 and 5
Surgical Aspects of Gastroenterology

May 17
Pediatric Cardiology

May 19
Community Psychiatry in the General Hospital

June 5 / 9
Refresher Seminar in Pediatrics

August
School Health

PRECEPTORSHIPS

GENERAL

Preceptorship type experience is available in a wide variety of medical fields arranged on request on an individual basis.

Those interested should write to Continuing Medical Education indicating their field of interest, time available for study, preferred dates and phone number. A faculty member who can provide the desired instruction will then contact the applicant directly.

Preceptorship in Clinical Cardiology

This fall a special preceptorship is offered in cardiology, with emphasis on the cardiac patient, electrocardiography, and the management of patients with heart disease, including acute coronary care.

The program will be directed by Dr. Jules Constant at the Buffalo General Hospital. The fee will be $10 per day or $200 a month. The schedule will be arranged in consultation with the applicant and only one physician will be accepted at a time.

For information on preceptorships, write Continuing Medical Education, 2211 Main Street, Buffalo, New York 14214.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

NASSAU COUNTY

February 16 and 23, 1972
4:00 p.m., Wednesdays

Department of Radiology
Nassau County Medical Center
Meadowbrook Hospital
East Meadow, Long Island

February 16
Differential Diagnosis of the Small Kidney—Radiologic Considerations
MILTON ELKIN, M.D.
Albert Einstein College of Medicine

February 23
Extragastric Masses Involving Stomach and Duodenum
ROBERT HOCHSTIM, M.D.
South Nassau Communities Hospital

February 17 and 24, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

February 17
Adolescent Medicine
MICHAEL I. COHEN, M.D.

February 24
Clinical Application of Molecular Biology in Genetic Diseases of the Human Developing Nervous System
JOSEPH H. FRENCH, M.D.

Speakers are from Albert Einstein College of Medicine

WESTCHESTER COUNTY

WEDNESDAY, FEBRUARY 23

4:30–5:30 p.m. and 8:30 p.m.

Grasslands Hospital
Eastview Hall—Conference Room C

Introduction: BARRY M. SEGAL, M.D., New York Medical College

PHEOCHROMOCYTOMA

KARL ENGELMAN, M.D.
Hospital of the University of Pennsylvania

Evening Session—Carl and Lily Pforzheimer Memorial Building

RENAL AND ADRENAL HORMONAL MECHANISMS IN ESSENTIAL HYPERTENSION

JOHN H. LARAGH, M.D.
Columbia University P & S

EVENTS RECEIVED AFTER DEADLINE

TUESDAY, FEBRUARY 1

3:00–4:00 p.m.

Jewish Memorial Hospital
Broadway and 196th Street

THE URETER AS A MIRROR OF DISEASE

HARRY BERGMAN, M.D.

8:00 p.m.

New York Diabetes Association
Einhorn Auditorium
Lenox Hill Hospital
76th Street between Park and Lexington Avenues

IMPORTANCE OF CAMP LIFE FOR THE DIABETIC CHILD

ABRAHAM H. KANTROW, M.D.

NO FEE

February 9, 1972 / February 12, 1972

American Group Psychotherapy Association
Statler-Hilton Hotel
7th Avenue and 33rd Street

TWENTY-NINTH ANNUAL CONFERENCE

Contact: The American Group Psychotherapy Association, Inc., 1790 Broadway, Room 702, New York, N.Y. 10019.

February 9 and 16, 1972

11:00 a.m.–12:30 p.m., Wednesdays

Mental Retardation Institute
105 East 106th Street

Guest Lectures

February 9

A Twin Study of Creativity
MARTIN REZNIKOFF, Ph.D.
Fordham University

February 16

Teaching Values to the Retarded Child
REVEREND DAVID READ, Moderator
Pastor, Madison Avenue Presbyterian Church

Panelists:

MR. HERBERT GREENBERG, MRS. TERESA HARRIS and MR. THOMAS FLICK

WEDNESDAY, FEBRUARY 9

8:30 p.m.

Bronx County Medical Society
Bronx V.A. Hospital
313 West Kingsbridge Road
Bronx

METHADONE MAINTENANCE OF HEROIN ADDICTS IN PHYSICIANS OFFICE

CONGRESSMAN MARIO E. BIAGGI
WILLIAM A. TRIEBEL, M.D.
LEONARD L. HEIMOFF, M.D.

Moderator:

HOWARD S. SCHWARTZ, M.D.

FRIDAY, FEBRUARY 11

8:30 p.m.

American-Hungarian Medical Association
2 East 103rd Street

1. **Urological Emergency in a Drug Addict**
   LEOPOLD SCHEIBER, M.D.
2. **The Treatment of Parkinsonism with L-Dopa**
   RICHARD SWEET, M.D.
   Cornell University Medical College
3. **The Treatment of Rheumatoid Arthritis**
   ISRAELI A. JAFFE, M.D.
   New York Medical College

February 14, 1972 and February 28, 1972

4:00 p.m., Mondays

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

February 14

Anthropology and Population Control
MONI NAG, International Institute for the Study of Human Reproduction (Note: Discussion will be held Tuesday, February 15 at 3 p.m.)

February 28

Quantitative Aspects of Social Phenomena
ELLIOTT W. MONTROLL, University of Rochester Department of Physics-Astronomy

NASSAU COUNTY

WEDNESDAY, FEBRUARY 16

9:00 a.m.

Mercy Hospital
MacArthur Hall
Rockville Centre

RENAL HYPERTENSION

GADDO ONESTI, M.D.
Hahnemann Medical College and Hospital

NO FEE

PHYSICIANS' PLACEMENT

CARTHAGE, N.Y., Jefferson County. G.P.'s Ob/Gyn, Ophthalmologist, Orthopedic Surgeon, Internists, Pediatricians.

CONTACT: MR. CLARK A. JOHNSON, 277 State Street, Carthage, N.Y. 13619. Tel. (315) 493-3590.

RIVERHEAD, N.Y., Suffolk County. Board/Elig., Board/Cert. Ob/Gyn to Direct Maternal Health and Family Planning Service.

CONTACT: GEORGE E. LEONE, M.D., Commissioner of Health, Suffolk County Health Department, Suffolk County Center, Riverhead, N.Y. 11901. Tel. (516) 727-4700 Ext. 341.

RUSHFORD, N.Y., Allegany County. G.P. Village Health Officer and School Physician open.

CONTACT: MRS. FREDERIC D. MORRIS, Supervisor, Town of Rushford, RFD #3, Cuba, N.Y. 14727. Tel. (716) 437-2768.

SALAMANCA, N.Y., Cattaraugus County. G.P.'s wanted.

CONTACT: MRS. OTTO KRITTER, Member of the Mayor's Committee to recruit M.D.'s, 23 Fawn Avenue, Salamanca, N.Y. 14779; or MISS B. J. SOMERVILLE, Adm., Salamanca District Hospital, 150 Parkway Dr.

SAUGERTIES, N.Y., Ulster County. G.P.

CONTACT: MICHAEL E. CATALINOTTO, Barclay Heights, Route 9W, Saugerties N.Y. 12477. Tel (914) 246-4551.

SODUS, N.Y., Wayne County. Ob/Gyn and Pediatrician.

CONTACT: ARTHUR F. FISHER, D.D.S., Adm., Myers Community Hospital, Sodus, N.Y. 14551. Tel. (315) 483-9161 Ext. 30.

WHAT GOES ON IN MEDICINE
Medical Society of the State of New York
420 Lakeville Road, Lake Success, N. Y. 11040

Date____________

Name______________________________ No. of Subscriptions__________

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Trobicin®

sterile spectinomycin dihydrochloride pentahydrate, Upjohn

single-dose intramuscular treatment

High cure rate:* **96% of 571 males, 95% of 294 females**
(Dosages, sites of infection, and criteria for diagnosis and cure are defined below.)**

Assurance of a single-dose, physician-controlled treatment schedule

---

No allergic reactions occurred in patients with an alleged history of penicillin sensitivity when treated with Trobicin, although penicillin antibody studies were not performed

---

Active against most strains of Neisseria gonorrhoeae in vitro (M.I.C. 7.5-20 mcg/ml)

A single two-gram injection produces peak serum concentrations averaging about 100 mcg/ml in one hour (average serum concentrations of 15 mcg/ml present 8 hours after dosing)

Note: Antibiotics used in high doses for short periods of time to treat gonorrhea may mask or delay the symptoms of incubating syphilis. Since the treatment of syphilis demands prolonged therapy with any effective antibiotic, and since Trobicin is not indicated in the treatment of syphilis, patients being treated for gonorrhea should be closely observed clinically. Monthly serological follow-up for at least 3 months should be instituted if the diagnosis of syphilis is suspected. Trobicin is contraindicated in patients previously found hypersensitive to it.

---

*Data compiled from reports of 14 investigators. **Diagnosis was confirmed by cultural identitication of *N. gonorrhoeae* on Thayer-Martin media in all patients. Criteria for cure: negative culture after at least 2 days post-treatment in males and at least 7 days post-treatment in females. Any positive culture obtained post-treatment was considered evidence of treatment failure even though the follow-up period might have been less than the periods cited above under "criteria for cure" except when the investigator determined that reinfection through additional sexual contacts was likely. Such cases were judged to be reinfections rather than relapses or failures. These cases were regarded as non-evaluatable and were not included. JA72 1848-6

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globin, hematocrit and creatinine clearance; elevation of alkaline phosphatase, BUN and SGPT. In single and multiple-dose studies in normal volunteers, a reduction in urine output was noted. Extensive renal function studies demonstrated no consistent changes indicative of renal toxicity.

Dosage and administration: Keep at 25°C and use within 24 hours after reconstitution with diluent.
Male—single 2 gram dose (5 ml) intramuscularly. Patients with gonorrheal proctitis and patients being re-treated after failure of previous antibiotic therapy should receive 4 grams (10 ml). In geographic areas where antibiotic resistance is known to be prevalent, initial treatment with 4 grams (10 ml) intramuscularly is preferred.
Female—single 4 gram dose (10 ml) intramuscularly.

How supplied: *Vials, 2 and 4 grams—with ampoule of Bacteriostatic Water for Injection with Benzyl Alcohol* 0.9% *w/v*. Reconstitution yields 5 and 10 ml respectively with a concentration of spectinomycin dihydrochloride pentahydrate equivalent to 400 mg spectinomycin per ml. For intramuscular use only.
Susceptibility Powder—for testing *in vitro* susceptibility of *N. gonorrhoeae*.

Human pharmacology: Rapidly absorbed after intramuscular injection. A two-gram injection produces peak serum concentrations averaging about 100 mcg/ml at one hour with 15 mcg/ml at 8 hours. A four-gram injection produces peak serum concentrations averaging 160 mcg/ml at two hours with 31 mcg/ml at 8 hours.
For additional product information, see your Upjohn representative or consult the package insert. MED-B-[illegible]-S (LWB)

Upjohn The Upjohn Company, Kalamazoo, Michigan 49001

PREMARIN®
(CONJUGATED ESTROGENS TABLETS, U.S.P.)
HELPS RELIEVE EMOTIONAL SYMPTOMS OF MENOPAUSAL ESTROGEN DEFICIENCY
BECAUSE
IT GIVES HER BACK SOMETHING SHE'S LOST

...NO TRANQUILIZER CAN DO THAT!

Emotional symptoms, such as anxiety, depression, nervousness, and fatigue, may be related to a diminishing production of estrogen. In such cases, PREMARIN, by providing specific replacement of estrogen, can help relieve much of the emotional distress of the menopause . . . in addition to the classic symptoms of hot flushes and sweats.

Sedatives, tranquilizers, and psychotherapy, of course, may be helpful in some selected cases, but they cannot correct the underlying vasomotor and metabolic disturbances, nor the nonspecific emotional component related to loss of hormonal support.[1-4]

Many psychosomatic symptoms which occur at this time of life appear to correlate fairly well with declining estrogen levels.[2-5] And in patients where emotional instability has been latent, such manifestations may be unmasked and even magnified.[4]

Anxiety and depression resulting from estrogen deficiency usually respond to estrogen therapy in a relatively short time.[2] Other "psychogenic" symptoms such as headaches, crying spells, insomnia, feelings of weakness and fatigue due to estrogen deficiency may also be relieved.[1,3,5] And in the large majority of patients, PREMARIN imparts a renewed sense of well being.[6]

When your menopausal patient suffers emotional distress resulting from estrogen deficiency, PREMARIN can often help—because it gives her back some of the estrogen support she's lost.

BRIEF SUMMARY. *(For full prescribing information, see package circular.)*
PREMARIN® (Conjugated Estrogens Tablets, U.S.P.)
Indications: PREMARIN provides specific replacement therapy in the management of estrogen deficiency states, notably in the menopause and postmenopause.
Precautions: *In the female:* To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.
Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

Estrogen Deficient Atrophic Vaginitis, Kraurosis Vulvae, and Pruritus Vulvae —1.25 mg. to 3.75 mg. daily, or more, cyclically—depending on the tissue response of the individual patient.
How Supplied: PREMARIN (Conjugated Estrogens Tablets, U.S.P.). No. 865—Each *purple* tablet contains 2.5 mg. No. 866—Each *yellow* tablet contains 1.25 mg. No. 867—Each *red* tablet contains 0.625 mg. No. 868—Each *green* tablet contains 0.3 mg.

Bottles of 100 and 1,000. The 1.25 mg. potency also available in unit dose package of 100.

References: 1. Kupperman, H.S.: Medical Aspects of Human Sexuality *1*:64 (Sept.) 1967. 2. Rhoades, F.P.: J. Amer. Geriat. Soc. *15*:346 (Apr.) 1967. 3. Kerr, M.D.: Mod. Treatm. 5:587 (May) 1968. 4. Greenblatt, R.B., in Conn, H.F. (Ed.): Current Therapy 1970. Philadelphia, W.B. Saunders Company, 1970, p. 757. 5. Astwood, E.B., in Goodman, L.S., and Gilman, A. (Eds.): The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970, Chap. 69 p. 1538. 6. Tramont, C.B.: Geriatrics *21*:212 (Nov.) 1966.

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New York State Journal of Medicine

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MEDICAL SOCIETY OF THE STATE OF NEW YORK
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OFFICE OF THE
PRESIDENT

January 18, 1972

Dear Fellow Member:

If you were to decide you wanted to cure America's ills, where would you start? Certainly there's a wide choice of directions, and one thing is sure: every citizen's help is needed and wanted.

The Treasury Department, in its campaign to promote the sale of U.S. Savings Bonds, has this suggestion as a starter: TAKE STOCK IN AMERICA. That means, take a good look at America, at its strengths as well as its weaknesses. Appreciate it - and show your appreciation by doing something to make our country better.

One obvious way is to purchase U.S. Savings Bonds. That might not sound important, but it is - because Bonds help provide the necessary economic strength to build a better America, and by buying them you make yourself an active partner in the cause.

There are plenty of good selfish reasons for buying Bonds, too. For example, there's now an interest bonus of ½% which applies to all Series E and H Bonds purchased since June 1, 1970, and held to maturity. The bonus, which rewards the longer-term saver, raises the effective rate to maturity from 5% to 5½%.

Added to that are the tax advantages Bonds offer - no state or local income tax on interest, and Federal tax on E bond interest may be deferred. And Savings Bonds are the ultimate in safety, with principal and interest guaranteed by the United States.

Most of us, in addition to our day-to-day needs, have long-range goals we should be saving for - things like a college education for our children, or greater comfort in retirement. Bonds are an ideal vehicle for this purpose, and especially when they are bought on a systematic basis through the Payroll Savings Plan at work or the Bond-a-Month Plan at your bank.

So, to return to the advice we offered at the outset: TAKE STOCK IN AMERICA. And buy Savings Bonds.

Sincerely,

GH/je

George Himler, M.D.
President

P.S. A ten year extension has been granted to all older Series "E" Bonds and Freedom Shares. The interest rate for E Bonds and Freedom Shares in the extension period will be the rate prevailing for Savings Bonds at the time they enter extension. The current rate is a flat 5½% guaranteed for the entire 10 years.

Helps control the underlying problem–anxiety

Miltown®
(meprobamate)

when reassurance is not enough

Indications: Relief of anxiety and tension; adjunctively in various disease states in which anxiety and tension are manifested; and to promote sleep in anxious, tense patients.
Contraindications: Acute intermittent porphyria and allergic or idiosyncratic reactions to meprobamate or related compounds such as carisoprodol, mebutamate, tybamate, carbromal.
Warnings: *Drug Dependence:* Physical and psychological dependence and abuse have occurred. Chronic intoxication, from prolonged use and usually greater than recommended doses, leads to ataxia, slurred speech, vertigo. Carefully supervise dose and amounts prescribed, and avoid prolonged use, especially in alcoholics and addiction-prone persons. Sudden withdrawal after prolonged and excessive use may precipitate recurrence of pre-existing symptoms (e.g., anxiety, anorexia, insomnia) or withdrawal reactions (e.g., vomiting, ataxia, tremors, muscle twitching, confusional states, hallucinosis; rarely convulsive seizures, more likely in persons with CNS damage or pre-existent or latent convulsive disorders). Therefore, reduce dosage gradually (1-2 weeks) or substitute a short-acting barbiturate, than gradually withdraw. *Potentially Hazardous Tasks:* Driving a motor vehicle or operating machinery. *Additive Effects:* Possible additive effects between meprobamate, alcohol, and other CNS depressants or psychotropic drugs. *Pregnancy and Lactation:* Safe use not established; weigh potential benefits against potential hazards in pregnancy, nursing mothers, or women of childbearing potential. Animal data at five times the maximum recommended human dose show reduction in litter size due to resorption. Meprobamate appears in umbilical cord blood at or near maternal plasma levels, and in breast milk at levels 2-4 times that of maternal plasma. *Children Under Six:* Drug not recommended.
Precautions: To avoid oversedation, use lowest effective dose, particularly in elderly and/or debilitated patients. Consider possibility of suicide attempts; dispense least amount of drug feasible at any one time. To avoid excess accumulation, use caution in patients with compromised liver or kidney function. Meprobamate may precipitate seizures in epileptics.
Adverse Reactions: *Central Nervous System:* Drowsiness, ataxia, dizziness, slurred speech, headache, vertigo, weakness, paresthesias, impairment of visual accommodation, euphoria, overstimulation, paradoxical excitement, fast EEG activity. *Gastrointestinal:* Nausea, vomiting, diarrhea. *Cardiovascular:* Palpitations, tachycardia, various forms of arrhythmia, transient ECG changes, syncope; also, hypotensive crises (including one fatal case). *Allergic or Idiosyncratic:* Usually after 1-4 doses. Milder reactions: itchy, urticarial, or erythematous maculopapular rash (generalized or confined to groin). Others: leukopenia, acute nonthrombocytopenic purpura, petechiae, ecchymoses, eosinophilia, peripheral edema, adenopathy, fever, fixed drug eruption with cross reaction to carisoprodol, and cross sensitivity between meprobamate/mebutamate and meprobamate/carbromal. More severe, rare hypersensitivity: hyperpyrexia, chills, angioneurotic edema, bronchospasm, oliguria, anuria, anaphylaxis, erythema multiforme, exfoliative dermatitis, stomatitis, proctitis, Stevens-Johnson syndrome; bullous dermatitis (one fatal case after meprobamate plus prednisolone). Stop drug, treat symptomatically (e.g., possible use of epinephrine, antihistamines, and in severe cases corticosteroids). *Hematologic:* Agranulocytosis and aplastic anemia (rarely fatal), but no causal relationship established. Rarely, thrombocytopenic purpura. *Other:* Exacerbation of porphyric symptoms.
Usual Adult Dosage: 1200 to 1600 mg daily, in three or four divided doses; doses above 2400 mg daily not recommended.
Overdosage: Suicidal attempts with meprobamate, alone or with alcohol or other CNS depressants or psychotropic drugs, have produced drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse, and death. Empty stomach, treat symptomatically; cautiously give respiratory assistance, CNS stimulants, pressor agents as needed. Meprobamate is metabolized in the liver and excreted by the kidney. Diuresis and dialysis have been used successfully. Carefully monitor urinary output; avoid overhydration; observe for possible relapse due to incomplete gastric emptying and delayed absorption. REV. 10/71

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Contraindications: Hypersensitivity to barbiturates or belladonna alkaloids, glaucoma, advanced renal or hepatic disease.
Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.
Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.
Dosage: Adults: One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms. Children 2 to 12 years: One half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.

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Spring peeper (tree frog, *Hyla crucifer*): this small amphibian can expand its throat membrane with air until it is twice the size of its head.

Medical News

Study published on use of enzymes in detergents

The Food and Drug Administration made public a study by the National Academy of Sciences-National Research Council to help determine if there is evidence that the use of enzymes in detergents is harmful to human beings. The study was commissioned by the F.D.A. in November, 1970.

The Academy's report indicates that the average enzyme detergent laundry product in normal use by consumers has not produced more primary irritation of the skin than have similar products that contain no enzymes. "Under appropriate conditions, it has been demonstrated that enzymes provide an additional benefit in the removal of proteinaceous stains, and soil in general, from some types of fabrics."

Survey to be made of Cornell Medical Center archive

Spurred by the wealth of historical material discovered during the recent bicentennial celebration, the New York Hospital-Cornell Medical Center has appointed Mrs. Jane K. Zaidi medical archivist to survey its documents and artifacts and to determine the best method for their preservation. She will be at the medical center for the next year, searching for items of interest originating before 1920 and analyzing them from a historical point of view.

Old publications, correspondence, photographs, documents, news clippings, and instruments are very much desired for the proposed archive, and contributions of such material from departments and individuals would be appreciated. Any material for the archive should be sent to Mrs. Jane K. Zaidi, Cornell Medical Center, room C-05, 1300 York Avenue, New York, New York 10021.

Vacations offered diabetic youth

Parents of diabetic children can send their youngsters to Camp Nyda this summer. This unique camp, the only one of its kind in New York State and largest in the world, is entering its thirty-seventh summer season. It is located at Burlingham (near Middletown), New York.

Diabetic children of all races and creeds, chiefly from the metropolitan area, are accepted.

The camp provides a month's vacation and training in diabetic control for 400 boys and girls from six through fifteen years of age. The camp is owned and operated by the New York Diabetes Association, a nonprofit voluntary health organization, and is supervised by physicians of the Association's Clinical Society. Parents are expected to help defray costs in accordance with their means.

Application for camp attendance and informative

Material for inclusion in the medical news section must be received six weeks prior to publication date.

continued on page 450

Keeping quality up

and cost down

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JA 72 1987 6

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(potassium phenoxymethyl penicillin for oral solution)
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Caution: Federal law prohibits dispensing without prescription.

Upjohn has been able to reduce the price of potassium phenoxymethyl penicillin without reducing the quality you expect from an Upjohn product.

Uticillin® VK

(potassium phenoxymethyl penicillin, U.S.P., Upjohn)

Available in 250 and 500 mg tablets; 250 mg/5 ml and 125 mg/5 ml flavored granules for oral suspension.

Keeping quality up

and cost down

continued from page 448

folder may be secured by writing to Stanley T. Sajecki, director, Camp Nyda, New York Diabetes Association, 104 East 40th Street, New York, New York 10016.

Clinical Center to study systemic lupus erythematosus nephritis

The cooperation of physicians is requested in a therapeutic study of lupus nephritis being conducted by the National Institute of Arthritis and Metabolic Diseases at the Clinical Center, National Institutes of Health, Bethesda, Maryland. Patients with systemic lupus erythematosus may develop an immune complex nephritis which can be fatal.

Of interest are patients with lupus nephritis who would be willing to enter the Clinical Center for a three-month period. If certain clinical and laboratory criteria are fulfilled, these patients would be admitted for a therapeutic study involving cyclophosphamide or azathioprine. Additional studies under way include attempts to define the relationship of viral infection to the disease. Patients already receiving corticosteroid therapy will be considered; however, those currently receiving cytotoxic agents are excluded.

Physicians interested in referring patients for this study may write to or telephone Alfred D. Steinberg, M.D., or John L. Decker, M.D., Clinical Center, Room 9N–218, National Institutes of Health, Bethesda, Maryland 20014. The telephone number is 301–496–1961.

Funds renewed for Albany regional medical program

The Albany Regional Medical Program has received a grant award from the U.S. Department of Health, Education, and Welfare totaling $1,009,532 to continue efforts toward improvement of medical care and its delivery in the 24-county Albany Region.

The grant award, announced by Frank M. Woolsey, Jr., M.D., director of the program, will provide one year's continuation of Federal support for the Albany program which began in 1966.

The Albany Regional Medical Program was the first of 56 similar programs in the United States to become operational following 1965 Federal legislation. The mission of these Regional Medical Programs is to advance health care in their respective regions by stimulating methods of improving delivery of health care services, exploring ways to recruit health manpower, and assuring rapid application of new medical knowledge.

The 24 counties served by the Albany program include northeastern New York, southern Vermont, and western Massachusetts. This region encompasses 2 million people, 86 hospitals, and 3,000 physicians.

Clinical fellowship in corneal surgery

The Brooklyn Eye and Ear Hospital will offer a six months' practical clinical fellowship in surgery of the cornea, beginning July 1, 1972.

The fellowship is offered to applicants who have completed at least three years of residency training in ophthalmology. For further information write to A. Benedict Rizzuti, M.D., director of the Corneal Service of the Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn, New York 11238.

Untreated carcinoma of the lung subject of study

The cooperation of physicians is requested in the referral of patients with carcinoma of the lung for clinical study and treatment by the Radiation Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

All previously untreated patients with a tissue or unequivocal cytologic diagnosis of bronchogenic carcinoma, who are unresectable because of local extension only, or who refuse surgery, will be considered. Patients who have had an attempted partial resection, or patients with serious medical complications contraindicating operative procedures are not acceptable.

On completion of treatment, patients will be returned to the care of the referring physician, who will immediately receive a summary of the findings.

Physicians interested in having their patients considered for admission to this study may write or telephone Kent B. Lamoureux, M.D., Clinical Center, Room B3B–38, National Institutes of Health, Bethesda, Maryland 20014. The telephone number is 301–496–5457.

Personalities

Elected. The following officers of the Brooklyn Gynecological Society, Inc.: Carl Tafeen, M.D., president; James H. Nelson, M.D., first vice-president; Vincent Tricomi, M.D., second vice-president; Norman A. Posner, M.D., historian; Richard J. Calame, M.D., treasurer; and Aldo C. Scorza, M.D., secretary . . . Salvatore J. Vacirca, M.D., assistant professor of radiology, Downstate Medical Center, as president-elect of the Radiological and Medical Physics Society of New York . . . David Weisselberger, M.D., clinical assistant professor of psychiatry, Downstate Medical Center, as chairman-elect of the American Society of Psychoanalytic Physicians.

Named. Paul N. Yu, M.D., Sarah McCort Ward Professor of medicine and head of the cardiology unit at University of Rochester Medical Center, as president-elect of the American Heart Association.

Appointed. Russell C. Johnson, M.D., Westchester, named by New York Medical College as project director for neighborhood health center development . . . James F. Castleman, M.D., as medical director of Alcoholism Rehabilitation Center at St. Peter's Hospital.

Awarded. Reuben Tizes, M.D., assistant professor of environmental medicine and community health, Downstate Medical Center, the American Medical Association Physician's Recognition Award in Continuing Medical Education for 1969-1972 . . . Alois Vasicka, M.D., professor of obstetrics and gynecology, Downstate Medical Center, award for outstanding basic research award for his report on "Changes of Uterine Blood Flow During Contraction in Labor" at Greater Maimonides Day . . . Gilbert J. Wise, M.D., clinical associate professor of urology, and Philip J. Kozinn, M.D., clinical associate professor of pediatrics, Downstate Medical Center, first prize by the American Urological Association for exhibit on "The Significance of Yeast in Urine" . . . Jonathan W. Uhr, M.D., director of Irvington House Institute for Rheumatic Fever and Allied Diseases, the fourth annual Squibb Award of the Infectious Diseases Society of America.

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Free of central depressant action.

Lower doses of pargyline hydrochloride are made possible because of the methyclothiazide component.

Special Restrictions (see back of page):

Tyramine-containing foods (e.g. aged cheese) should be avoided. (For further listing of foods, see back of page.)

If alcohol is used, it should be used cautiously and in reduced amounts.

Patients should be warned against the concurrent use of non-prescription medications (particularly cold preparations and antihistamines), or prescription drugs without physician's consent.

Discontinue Eutron at least two weeks prior to elective surgery.

Before prescribing Eutron, see prescribing information in package insert. A brief summary appears on next page.

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Brief Summary
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INDICATIONS. EUTRON (pargyline hydrochloride and methyclothiazide) is indicated in the treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. *It is not recommended for use in patients with mild or labile hypertension amenable to therapy w th sedatives and/or thiazide diuretics alone.*

Because of the potent diuretic properties of methyclothiazide, the combination is particularly suited for use when congestive heart failure or other conditions requiring diuretic therapy coexist with hypertension, or when edema attributable to antihypertensive therapy develops.

As discussed in regard to dosage and administration, it is desirable to establish the dosage requirements for EUTRON by the administration of Eutonyl and Enduron separately.

CONTRAINDICATIONS. 1. Pargyline therapy is contraindicated in patients with pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure.

2. Pargyline should not be administered to those with malignant hypertension, or to children under twelve years of age because significant clinical information concerning the use of the drug in these conditions is not available.

3. In general, the following drugs or agents are contraindicated in patients receiving pargyline hydrochloride:

a. Centrally acting sympathomimetic amines such as amphetamine and its derivatives (also found in anorectic preparations).

Peripherally acting sympathomimetic drugs such as ephedrine and its derivatives (also found in nasal decongestants, hay fever preparations and cold remedies).

b. Aged and natural cheese (e.g., Cheddar, Camembert, and Stilton), and other foods (e.g., pickled herring, Chianti wine, pods of broad beans, chicken livers, chocolate and yeast products), which require the action of bacteria or molds for their preparation or preservation, because of the presence of pressor substances such as tyramine. Banana peels are also contraindicated. Cream cheese, processed cheese, and cottage cheese can be allowed in the diet during EUTRON therapy, since their tyramine content is inconsequential.

In some patients receiving EUTRON, tyramine may precipitate an abrupt rise in blood pressure accompanied by some or all of the following: severe headache, chest pain, profuse sweating, palpitation, tachycardia or bradycardia, visual disturbances, stertorous breathing, coma, and intracranial bleeding (which could be fatal). A phenothiazine derivative or phentolamine may be administered parenterally for treatment of such an acute hypertensive reaction.

c. Parenteral administration of reserpine or guanethidine may cause hypertensive reactions from sudden release of catecholamines. Parenteral use of these drugs is contraindicated during, and for at least one week following, treatment with EUTRON.

d. Imipramine, amitriptyline, desipramine, nortriptyline, or their analogues should not be used with pargyline. The use of these drugs with monoamine oxidase inhibitors has been reported to cause vascular collapse and hyperthermia which may be fatal. A drug-free interval (about two weeks) should separate therapy with EUTRON and use of these agents.

e. Methyldopa or dopamine, which may cause hyperexcitability in patients receiving pargyline, should not be given.

f. Other monoamine oxidase inhibitors should not be added to a EUTRON regimen since they may augment the effects of pargyline.

4. Methyclothiazide is contraindicated in patients with a known sensitivity to methyclothiazide and/or other thiazide diuretics. It should not be used in patients with severe renal disease (except nephrosis) or complete renal shutdown. Thiazide diuretics should not be used in the presence of severe liver disease and/or impending hepatic coma. Hepatic coma has been reported as a consequence of hypokalemia in patients receiving thiazide diuretics.

WARNINGS

A PATIENTS

1. PATIENTS SHOULD BE WARNED AGAINST THE USE OF ANY OVER-THE-COUNTER PREPARATIONS, PARTICULARLY "COLD PREPARATIONS" AND ANTIHISTAMINES OR PRESCRIPTION DRUGS WITHOUT THE KNOWLEDGE AND CONSENT OF THE PHYSICIAN.
2. PATIENTS SHOULD BE CAUTIONED ON THE USE OF CHEESE (SEE CONTRAINDICATIONS) AND ALCOHOLIC BEVERAGES IN ANY FORM.
3. PATIENTS SHOULD BE WARNED ABOUT THE LIKELIHOOD OF THE OCCURRENCE OF ORTHOSTATIC HYPOTENSION.
4. PATIENTS SHOULD BE INSTRUCTED TO REPORT PROMPTLY THE OCCURRENCE OF SEVERE HEADACHE OR OTHER UNUSUAL SYMPTOMS.
5. PATIENTS WITH ANGINA PECTORIS OR CORONARY ARTERY DISEASE SHOULD BE ESPECIALLY WARNED NOT TO INCREASE THEIR PHYSICAL ACTIVITIES IN RESPONSE TO A DIMINUTION IN ANGINAL SYMPTOMS OR AN INCREASE IN WELL BEING OCCURRING DURING TREATMENT WITH EUTRON.

B PHYSICIANS

1. WHEN INDICATED THE FOLLOWING SHOULD BE CAUTIOUSLY PRESCRIBED IN REDUCED DOSAGES:
   a. ANTIHISTAMINES
   b. HYPNOTICS, SEDATIVES OR TRANQUILIZERS
   c. NARCOTICS (MEPERIDINE SHOULD NOT BE USED)
2. DISCONTINUE EUTRON AT LEAST TWO WEEKS PRIOR TO ELECTIVE SURGERY.
3. IN EMERGENCY SURGERY THE DOSE OF NARCOTICS OR OTHER PREMEDICATIONS SHOULD BE REDUCED TO 1/4 TO 1/5 THE USUAL AMOUNT. CLINICAL EXPERIENCE HAS SHOWN THAT RESPONSE TO ALL ANESTHETIC AGENTS CAN BE EXAGGERATED IN PATIENTS RECEIVING EUTRON. THEREFORE THE DOSE OF THE ANESTHETIC SHOULD BE CAREFULLY ADJUSTED.
4. PARGYLINE HYDROCHLORIDE MAY INDUCE HYPOGLYCEMIA.
5. CARE SHOULD BE EXERCISED IN USING EUTRON IN PATIENTS WITH ADVANCED RENAL FAILURE

The possibility of sensitivity reactions to methyclothiazide or pargyline should be considered in patients with a history of allergy or bronchial asthma.

There have been several reports published and unpublished, concerning nonspecific small bowel lesions consisting of stenosis with or without ulceration, associated with the administration of enteric-coated thiazides with potassium salts. These lesions may occur with enteric-coated potassium tablets alone or when they are used with nonenteric-coated thiazides, or certain other oral diuretics.

These small bowel lesions have caused obstruction, hemorrhage and perforation. Surgery was frequently required and deaths have occurred.

Available information tends to implicate enteric-coated potassium salts although lesions of this type also occur spontaneously. Therefore, coated potassium-containing formulations should be administered only when adequate dietary supplementation is not practical, and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported for sulfonamide derivatives, including thiazides.

EUTRON does not contain added potassium.

USE IN PREGNANCY

Pargyline Hydrochloride. Safe use of pargyline during pregnancy or lactation has not yet been established. Before prescribing pargyline in pregnancy, in lactation, or in women of childbearing age, the potential benefits of the drug should be weighed against its possible hazard to mother and child.

Methyclothiazide. Thiazides should be used with caution in pregnant women and nursing mothers since they cross the placental barrier and appear in cord blood and in breast milk. The use of thiazides may result in fetal or neonatal jaundice, bone marrow depression and thrombocytopenia, altered carbohydrate metabolism in newborn infants of mothers showing decreased glucose tolerance, and possible other adverse reactions which have occurred in the adult. When the drug is used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus.

PRECAUTIONS

Pargyline Hydrochloride. The therapeutic response to a variety of drugs may be changed, or exaggerated, in patients receiving a monoamine oxidase inhibitor such as pargyline hydrochloride. Caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers and narcotics (meperidine should not be used), should be used cautiously and at reduced dosage in patients who are taking pargyline.

Pargyline has not been shown to damage the kidney or liver. However, laboratory studies including complete blood counts, urinalyses, and liver function tests should be performed periodically. The drug should be used with caution in the presence of liver disease. All patients with impaired circulation to vital organs from any cause including those with angina pectoris, coronary artery disease, and cerebral arteriosclerosis should be closely observed for symptoms of orthostatic hypotension. If hypotension develops in these patients, EUTRON dosage should be reduced or therapy discontinued since severe and/or prolonged hypotension may precipitate cerebral or coronary vessel thromboses.

The hypotensive effect of pargyline may be augmented by febrile illnesses. It may be advisable to withdraw the drug during such diseases.

Since pargyline is excreted primarily in the urine, patients with impaired renal function may experience cumulative drug effects. Such patients should also be watched for elevations of blood urea nitrogen and other evidence of progressive renal failure. If such alterations should persist and progress, the drug should be discontinued.

An increased response to central depressants may be manifested by acute hypotension and increased sedative effect. Pargyline also may augment the hypotensive effects of anesthetic agents and surgery. For this reason, the drug should be discontinued from at least two weeks prior to surgery.

In the event of emergency surgery smaller than usual doses (1/4 to 1/5) of narcotics, analgesics, sedatives, and other premedications should be used. If severe hypotension should occur, this can be controlled by small doses of a vasopressor agent such as levarterenol.

Pargyline therapy should not be used in individuals with hyperactive or hyperexcitable personalities, as some of these patients show an undesirable increase in motor activity with restlessness, confusion, agitation and disorientation. Clinical studies have shown that pargyline may unmask severe psychotic symptoms such as hallucinations or paranoid delusions in some patients with pre-existing serious emotional problems. This can usually be controlled by judicious administration of chlorpromazine intramuscularly, or other phenothiazines, the patient remaining supine for one hour after administration.

Pargyline should be used with caution in patients with Parkinsonism, as it may increase symptoms. In addition, great care is required if pargyline is administered in conjunction with anti-parkinsonian agents.

In experience to date, pargyline has not been associated with eye changes or optic atrophy as reported with the use of some hydrazine monoamine oxidase inhibitors. However, patients receiving this drug for prolonged periods should be examined for any changes in color perception, visual fields, fundi, and visual acuity.

Clinical reports state that certain individuals receiving pargyline for a prolonged period of time are refractory to the nerve-blocking effects of local anesthetics, e.g., lidocaine.

Methyclothiazide. Thiazide therapy should be used with caution in patients with severely impaired renal function because of the possibility of cumulative effects. Caution is also necessary in patients with severely impaired hepatic function or progressive liver disease.

Thiazide drugs may reduce response to levarterenol. Accordingly, the dosage of vasopressor agents may need to be modified in surgical patients who have been receiving thiazide therapy.

Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effect of the drug may be enhanced in the sympathectomized patient.

All patients should be observed for clinical signs of fluid or electrolyte imbalance, including hyponatremia ("low-salt" syndrome). These include thirst, dryness of the mouth, lethargy and drowsiness.

Hypokalemia may occur during therapy with methyclothiazide. In such cases supplemental potassium may be indicated. Potassium depletion can be hazardous in patients taking digitalis. Myocardial sensitivity to digitalis is increased in the presence of reduced serum potassium and signs of digitalis intoxication may be produced by formerly tolerated doses of digitalis. Hypochloremic alkalosis may occur following intensive or prolonged thiazide therapy. Replacement of chloride may be indicated in such cases.

Thiazides may decrease serum P.B.I. levels without signs of thyroid disturbance.

ADVERSE REACTIONS. Generally side effects should not be severe or serious when the recommended dosages are used, and necessary precautions are observed. If side effects are severe or persist in spite of symptomatic treatment, the dosage should be reduced or the drug withdrawn. See also Warnings and Precautions.

Pargyline Hydrochloride. The most frequently occurring side effects are those associated with orthostatic hypotension (dizziness, weakness, palpitation, or fainting). These usually respond to a reduction of dosage. Patients should be warned against rising to a standing position too quickly, especially when getting out of bed. Severe and persistent orthostatic hypotension should be avoided by reduction in dosage and/or discontinuation of therapy.

Mild constipation, fluid retention with or without edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition nightmares, impotence and delayed ejaculation, rash and purpura, have also been encountered. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Gain in weight may be due either to edema or increased appetite. Drug fever is extremely rare. In some patients reduction of blood sugar has been noted. Although the significance of this has not been elucidated, the possibility of hypoglycemic effects should be borne in mind. Congestive heart failure has been reported in patients with reduced cardiac reserve.

Methyclothiazide. Side effects that may accompany thiazide therapy include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesias, weakness, skin rash, photosensitivity. Jaundice and pancreatitis also have been reported.

Blood dyscrasias, including thrombocytopenia with purpura, agranulocytosis and aplastic anemia, have been reported with thiazide drugs.

Thiazides have been reported, on rare occasions, to have elevated serum calcium to hypercalcemic levels. The serum calcium levels have returned to normal when the medication has been stopped. This phenomenon may be related to the ability of the thiazide diuretics to lower the amount of calcium excreted in the urine.

Elevations of blood urea nitrogen, serum uric acid, and blood sugar have occurred with the use of thiazide drugs. Symptomatic gout may be induced.

Although not established as an adverse effect of methyclothiazide, it has been reported that thiazide diuretics may produce a cutaneous vasculitis in elderly patients.

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1. Gordon, E. E. and Haas, A., Indust. Med. & Surg. 28:217, May, 1959.

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Medical Meetings

Cancer topic of four-day meeting

The annual meeting of the American Society of Contemporary Medicine and Surgery (formerly Society of Cryosurgery) will be held on February 28 through March 2, at the Diplomat Hotel, Hollywood, Florida. The meeting is approved by the American Medical Association as a continuing education program.

Cancer is the main subject of the four-day meeting. George Moore, M.D., of the Roswell Park Memorial Institute will open the Elmer Holmes Bobst lecture series on cancer with a discussion of clinical and research aspects of the sarcomatous diseases. Dr. Moore will also present the Society's Distinguished Service Award to Mr. Bobst, chairman of the executive committee of the American Cancer Society.

Other first-day speakers are Morris Fishbein, M.D., author and editor; Alfred Ketcham, M.D., of the National Cancer Institute; and Frederic Mohs, M.D., of the University of Wisconsin. The keynote address will be given by Michael DeBakey, M.D., president of the Society.

The program will also include symposia and discussions on laser surgery, cryosurgery for cancer, dermatologic surgery, treatment of giant-cell tumors of the bone, skin cancer, ocular tumors, oral tumors, contemporary gynecology, cryo-otolaryngology, and others.

For further information contact John Bellows, M.D., 30 North Michigan Avenue, Chicago, Illinois 60602.

Conference on rural health to be held in San Francisco

The 25th National Conference on Rural Health, sponsored by the Council on Rural Health of the American Medical Association, is to be held at the St. Francis Hotel, San Francisco, California, on March 16 and 17. The theme of the conference is "Partnership for Rural Health Care Development."

The goals of the conference are:

1. To explore roles of health team members;
2. To examine responsibilities of public and private sector for rural health-care delivery systems;
3. To review some possible solutions for rural health-care delivery systems; and
4. To assess the use of all resources in planning for and implementing health-care delivery systems.

For further information and registration contact Bond L. Bible, Ph.D., Department of Rural Health, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

Obstetric conference to be held in Paris

Anesthesiologists, obstetricians, and gynecologists are invited to attend an international meeting and postgraduate course on "Anesthesia, Analgesia and Resusci-

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

continued on page 456

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continued from page 454

tation in Obstetrical Milieu" to be held in Paris, March 29 to April 1. Group flights and post-congress tours have been arranged.

For further information contact Gabriel G. Nahas, M.D., professor of anesthesiology, College of Physicians and Surgeons, Columbia University, 630 West 168th Street, New York, New York 10032.

Symposium on forensic sciences

The ninth annual Symposium on Forensic Sciences for coroners and medical examiners of New York State and vicinity, sponsored by the Medical Society of the State of New York, the Department of Health, State of New York, the Institute of Forensic Medicine of New York University, and the City of New York, will be held at the office of the Chief Medical Examiner on April 14 through 16.

For further information contact the office of the Chief Medical Examiner, 520 First Avenue, New York, New York 10016.

Certification for family practitioners

The American Board of Family Practice announces its next examination for certification will be held on April 29 and 30 at various centers throughout the United States.

For further information contact Nicholas J. Pisacano, M.D., secretary, American Board of Family Practice, Inc., University of Kentucky Medical Center, Annex 2, Room 229, Lexington, Kentucky 40506.

Deadline for receiving completed applications in the Board office is February 1, 1972.

Unrealistic demands

A recent editorial in *Science* (172: 989 [June 4] 1971) pointed out that exaggerated notions on the part of the public about what physicians and engineers can accomplish has created an unfavorable climate for most effective service. Because the public has come to expect miracles from the medical profession, it interprets failure to produce them as simple proof that scientists and physicians are deliberately dragging their feet. Although there have been some medical advances, some aspects of medical practice have changed little in forty years. Many patients have unrealistic ideas of what physicians can do for them. Many seem to think that they can dissipate their physical resources any way they wish and that the physician can always cure them. They offer no cooperation in factors such as exercise, diet, heavy smoking, and other dissipations, and expect the physician to give them a drug as a substitute for self-control and their own efforts. These expectations of magical cures are partly responsible for the soaring incidence of malpractice suits. Malpractice suits in themselves have an adverse effect on the practice of medicine and raise the cost of medical care, because through fear of them, physicians currently find it necessary to practice medicine defensively; instead of concentrating on the well-being of the patient, they must order a large number of unnecessary tests and examinations so they will be prepared to answer questions they may be asked in court.

Scientists, engineers, and physicians cannot hope with any degree of realism that the favorable climate for their efforts of ten years ago will soon be restored. They can, however, foster an improved climate by persistently reminding the mass media and the public of the limitations of science, technology, and medicine.

Abstracts

Dole, V. P., Crowther, A., Johnson, J., Monsalvatge, M., Biller, B., and Nelson, S. S.: Detection of narcotic, sedative, and amphetamine drugs in urine; Use of ion-exchange paper extraction, ***New York State J. Med.*** 72: 471 (Feb. 15) 1972.

A method for detection of narcotics and other drugs in urine is described in detail. This procedure has proved reliable in large scale use during the past six years. A distinctive feature of the method is a preliminary extraction of the drugs on ion-exchange paper, which greatly facilitates labelling, transportation, and storage of samples. One substantial advantage is that the technic permits storage of thousands of unanalyzed urine samples in a simple filing cabinet with the option of analyzing the stored papers at any time up to several years later.

Takita, H.: Hexamethylmelamine in inoperable bronchogenic carcinoma, ***New York State J. Med.*** 72: 477 (1972).

Thirty-nine patients with inoperable bronchogenic carcinoma were treated with hexamethylmelamine. The overall response rate was 15 per cent. The response of oat-cell carcinoma was 30 per cent, and 2 cases were recorded of complete regression of the oat-cell lesions. Side effects encountered in the therapy were gastrointestinal symptoms, which can be severe enough to warrant discontinuation of therapy, and a mild, reversible hematoxicity. No neurotoxic effects were observed.

Huntington, P. P., Gensini, G. G., Delmonico, J. E., Jr., and Heitzman, G. C.: Internal Mammary Artery Implantation; Experience in a community hospital, ***New York State J. Med.*** 72: 481 (Feb. 15) 1972.

The experience of a community hospital in the utilization of the Vineberg procedure of internal mammary artery implantation is critically evaluated. Surgical mortality of the 47 patients was 6.4 per cent. One year after the surgery, 82 per cent showed a disappearance or an improvement of angina pectoris, and at the time of the last follow-up, 57 per cent still showed improvement. Selective internal mammary arteriography one year after the surgery demonstrated that 79 per cent of all implants were patent and 54 per cent communicated with preexisting coronary artery vessels. Those patients with good angiographic results showed sustained clinical improvement, while those with poorly functioning implants did not show sustained improvement.

Murphy, G. P., Allen, J. E., Staubitz, W. J., Sinks, L. F., and Mirand, E. A.: Erythropoietin levels in patients with Wilms' tumor; Follow-up evaluation, ***New York State J. Med.*** 72: 487 (Feb. 1) 1972.

The present report evaluates the follow-up or screening value of erythropoietin (ESF) determinations postoperatively in patients with Wilms' tumor. The study revealed no ESF elevations in urine or plasma specimens in the absence of metastatic disease; in metastatic active disease elevations were always seen; and in apparent clinical cure of metastatic disease there were persistent ESF elevations in both urine and plasma specimens, but these ultimately fell to normal. No detectable influence was observed in patients receiving radiation or chemotherapy, and variations in the ESF assay were not related to interruption of treatment.

Loré, J. M., Jr., and Zingapan, E.: External traction for depressed facial fractures, ***New York State J. Med.*** 72: 490 (Feb. 15) 1972.

Occasionally there is a need for external forward traction in depressed fractures of the facial bones. This is particularly evident in delayed reductions of the so called "dishpan" deformity, as well as depressed comminuted fractures of the maxilla and malar bones, which do not respond to the usual wiring technics. A technic utilizing tibial bolts placed in the zygomatic process of the frontal bones, is presented. These bolts are then bridged with a Lane plate which forms the purchase for the outward traction wires. The equipment used can be found in any operating room and the technic does not require any special devices.

Book Notes

Muscles. Testing and Function. Second edition. By Henry Otis Kendall, P.T., Florence Peterson Kendall, B.S., P.T., and Gladys Elizabeth Wadsworth, Ph.D., P.T. Quarto of 284 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.75.

A detailed account of the testing procedures, and of the functional significance of muscle weakness and contracture, is embodied in this text. In this second edition, all the original photographs have been preserved, and, with the newer printing technics, reproductions are far superior to those in the first edition.

A Textbook for Midwives. Seventh edition. By Margaret F. Myles, S.R.N., S.C.M. Octavo of 827 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $12.75.

This is a textbook for midwives in which practical procedures and obstetric nursing have been described in detail. Practicing midwives will find a wealth of up-to-date information within the pages of this book.

Introduction to Hematology. By Samuel I. Rapaport, M.D. Octavo of 413 pages, illustrated. New York, N.Y., Harper & Row, Publishers, Inc., 1971. Paperback, $10.50.

The author feels that a basic knowledge of hematology is invaluable to the student and practicing physician caring for patients with problems in internal medicine. In this book he has sought to relate clinical findings and treatment to physiologic and pathologic processes in the belief that this is the way to build a clinical foundation that withstands the stress of difficult diagnostic problems.

Vision Index, a subject/author index. Volume 1, number 1, March, 1971. Books, theses, reports, audio-visual materials, journals, and other serials covering vision in several languages included. By Visual Science Information Center. Quarto of 235 pages. Berkeley, California, University of California, School of Optometry, 1971. Published Quarterly (four numbers a year) with annual cumulation. Paperback, $20. per year.

The Visual Science Information Center is a specialized information center covering the subject of vision. Its index, issued quarterly, with annual cumulation is an author/subject index generated from the data base of the Center.

Proceedings of the Fifth International Water Quality Symposium held at Sheraton Park Hotel, Washington, D.C., August 19-20, 1970. Sponsored by The

continued on page 462

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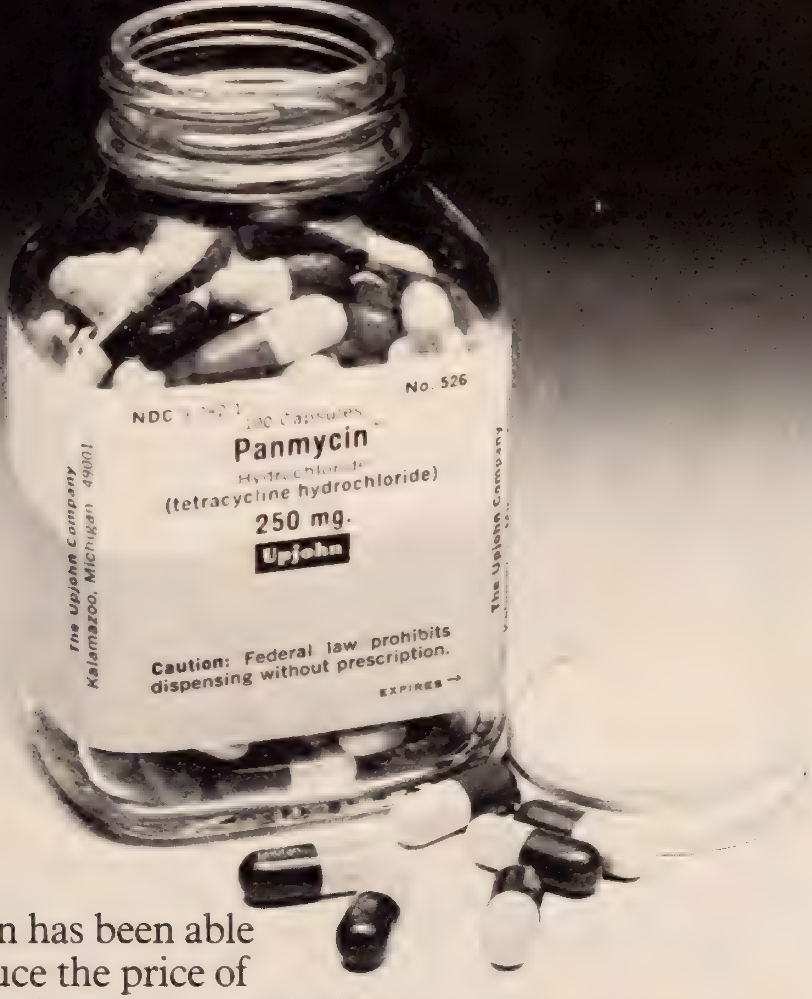
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Abstracts in Interlingua

Dole, V. P., Crowther, A., Johnson, J., Monsalvatge, M., Biller, B., e Nelson, S. S.: Detection de narcoticos, sedatives e amphetaminas in le urina; Uso del papiro extractive de intercambio resinose ionic, ***New York State J. Med.*** 72: 471 (15 de Februario) 1972.

Un methodo de detection de narcoticos e altere drogas in le urina es describite in detalio. Iste procedimento ha essite confiabile pro uso en grande scala durante le sex annos passate. Un characteristic particular de iste methodo es le extraction preliminar de drogas usante papiro de intercambio resinose ionic que facilita grandemente le etiquettamento, transportation, e botecamento del monstras. Un avantage substantial es que le technica permite le botecamento de milles de monstrans de urina (absorbite in le papiro) non analisate in solo cabinetto, con le possibilitate de analisar le papiros botecate in alicun tempore posterior, mesmo varie annos plus tarde.

Takita, H.: Le hexamethylmelamina in le carcinoma bronchogenic inoperabile, ***New York State J. Med.* 72:** 477 (15 de Februario) 1972.

Trenta e nove patientes con carcinoma bronchogenic inoperabile esseva tractate con hexamethylmelamina. Le responsa favorabile esseva 15 pro cento; le del carcinoma type "oat-cell" esseva del 30 pro cento. Un regression complete de iste typo de carcinoma esseva observate in duo casos. Le effectos collateral durante le tractamento esseva symptomas gastrointestinal, que pote esser de sufficiente intensitate como pro interrumper le therapia. Un hematotoxicitate reversibile ha etiam essite observate. Effectos neurotoxic non ha essite presente.

Huntington, P. P., Gensini, G. G., Delmonico, J. E., Jr., e Heitzman, G. C.: Implantation del arteria mammari interne; Experientia in un hospital communitari, ***New York State J. Med.* 72:** 481 (15 de Februario) 1972.

Le experientia in un hospital communitari con le utilisation del procedimento de Vineberg—implantation in le myocardio del arteria mammari interne—es criticmente evalutate. Le mortalitate chirurgic de 47 patientes esseva 6.4 pro cento. Un anno depost chirurgia, in 82 pro cento del patientes le angina pectoris habeva disparite o meliorate, e al tempore del ultime examination, 57 pro cento totevia monstrava melioration. Le arteriographia selective del arteria mammari interne, facite un anno depost le operation chirurgic, demonstrava que le 79 pro cento de omne implantationes eseva permeabile e que, in 54 pro cento, habeva communication con le ramos coronari pre-existentes. Le patientes con bon resultatos angiographic habeva un melioration clinic sustenite; in cambio, le patientes con implantationes functionalmente deficiente non habeva un melioration sustenite.

Murphy, G. P., Allen, J. E., Staubitz, W. J., Sinks, L. F., e Mirand, E. A.: Nivellos de erythropoietina in patientes con tumor de Wilms; Evalutation ulterior, ***New York State J. Med.* 72:** 487 (15 de Februario) 1972.

In iste reporto es discutite le valor del determinationes del erythropoietina ("ESF") como medio de observation ulterior o de selection, postoperatorimente, in patientes con tumor de Wilms. In le studio ha essite observate que non ha elevation del ESF in monstras de urina o plasma in absentia de morbo metastatic. In casos de morbo metastatic active, le elevation del ESF ha essite semper presente. In casos de curation clinic apparente del morbo metastatic, le ESF es persistentemente elevate in le urina e le plasma; depost, iste elevationes torna se normal. No influentia detectabile supra le ESF ha essite trovate in patientes tractate con radiationes o chimiotherapia, e le variationes del nivello del ESF non es relationate con le interruption del tractamento.

Loré, J. M., e Zingapan, E.: Traction externe pro le fracturas facial deprimite, ***New York State J. Med.* 72:** 490 (15 de Februario) 1972.

Occasionalmente es necessari usar le traction al exterior del fracturas del ossos facial deprimite. Isto es particularmente evidente in casos de reduction tardive del deformationes nominate "in casserola," e etiam de fracturas comminute deprimite del ossos maxillar e malar que non pote esser corregite mediante le tractamento usual con le filo metallic. Es presentate le technica que utilisa le pessulos ("bolts") tibial placiate in le processo zygomatic del ossos frontal. Iste pessulos es, depost, pontate ("bridged") con un platta de Lane qui forma le base pro le filos metallic de traction. Le equipamento usate pote esser trovate in omne sala de operationes, e le technica non require dispositivos special.

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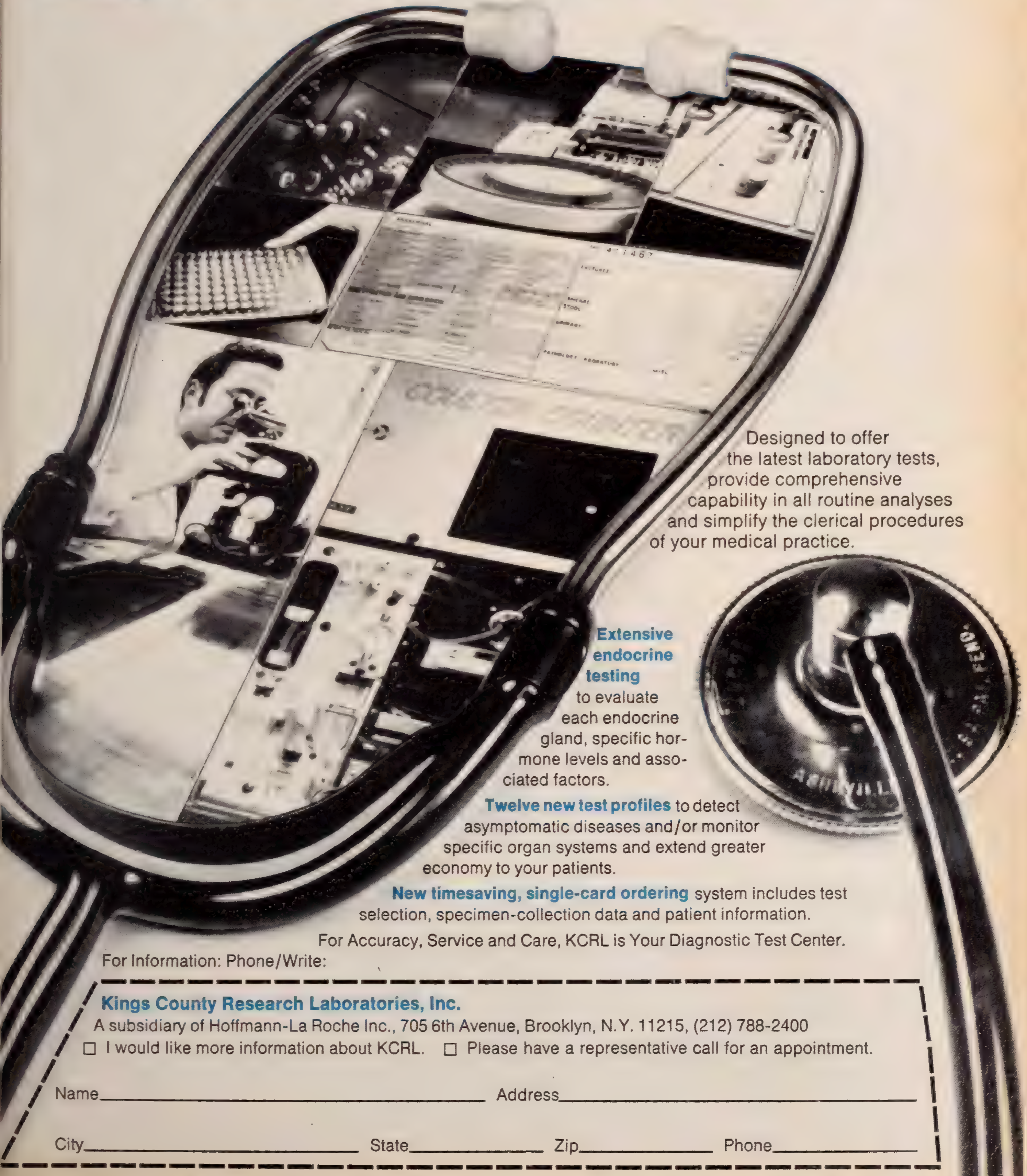
Water Quality Research Council. Quarto of 96 pages. Wheaton, Illinois, Water Quality Research Council, 1971. Paperback, $2.50.

The purpose of this symposium was to provide an educational forum in which the technical language of the leading authorities in this field might be translated so that laymen could understand it and relate it to their lives and work.

Indirect mercury poisoning

August Curley and Associates, of the Food and Drug Administration, Chamblee, and the Center for Disease Control, Atlanta, Georgia, reported in *Science* **172:** 65 (Apr. 2) 1971, the first observed case of indirect mercury poisoning of human beings in the United States. It was caused by eating mercury-contaminated meat of animals fed grain treated with an organomercurial fungicide. By means of atomic absorption spectrophotometry and neutron activation analysis, presence of mercury was demonstrated in organic extracts of seed grain and in the tissues of hogs fed grain which had been treated either with Panogen or a formulation of Ceresan. Mercury was also found in the urine, serum, and cerebrospinal fluid of a farmer and his family who ate the contaminated pork. Mass spectral analysis confirmed the mercury as organic; these results substantiated the clinical diagnosis of organic mercury poisoning. At the time the contaminated meat was being eaten by the family, the mother was pregnant. Changes in mercury concentrations in her serum and urine after delivery and the content of mercury in the urine of the newborn baby indicated placental transfer.



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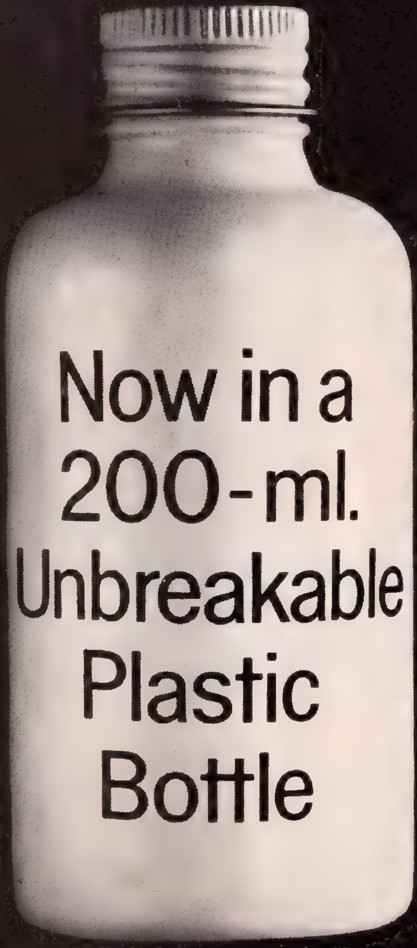
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Guidelines for the development of acceptable multiphasic health testing programs and legal responsibility of physicians for unsolicited reports from same

The Council of the Medical Society of the State of New York has approved the following guidelines on this subject. It has also made the concluding important pronouncement regarding legal responsibility involved in unsolicited reports from these agencies and how to deal with them.

Guidelines for the Development of Acceptable Multiphasic Health Testing Programs

1.0 Definition and Methodology

1.1 Multiphasic health testing programs are simply preliminary medical data acquisition methods, often utilizing automated techniques with the assistance of allied health professionals, the resulting data are then evaluated by a physician as an aid in defining the patient's health problems in relation to patient management.

1.2 The systems used should be designed to condense and validate medical data as acquired, provide capsulated summaries, and may suggest interpretations of any abnormalities.

1.3 The testing systems criteria should include reliability, accuracy of output, savings of professional and allied health professionals time, have adequate utilization, be available and customized for its local needs.

1.4 For professional value and economic feasibility the test selected ideally should be: simple, safe, easy to interpret, inexpensive, quick to perform and have acceptable sensitivity, specificity, high predictive value, and patient acceptance.

1.5 The system should establish individual, ethnic and geographic variations of normal and abnormal patterns.

1.6 The program must be appropriately accredited for quality control.

1.7 The objectives of the program must be clearly defined from the beginning, and the testing programs used should be designed to meet such varying objectives as health maintenance, diagnostic services, and management of on-going illnesses, such as chronic disease or compensated asymptomatic disease.

2.0 Relationship to Existing Health Care Delivery System

2.1 Any multiphasic health testing program must be intergrated into the existing or newly developed comprehensive and continuing medical care system.

2.2 Methods should be developed to evaluate the long-term effects of the program on illness and on need and demand for health services.

2.3 The program should, when possible, be used to serve otherwise unmet needs in the delivery of health services.

2.4 The local medical profession must be involved in the planning and development of the program.

3.0 Ethical Considerations of Multiplastic Programs

3.1 Operation of the testing program must be under the supervision of qualified physicians.

3.2 The testing program should be designed and conducted primarily for the patient's benefit.

3.3 The confidentiality of patients' data must be maintained.

3.4 The principle of free choice of physician by a patient is desirable in all testing programs.

3.5 The multiphasic testing program shall not be considered to function as the patient's physician.

Legal Responsibility of Physicians for Unsolicited Reports

WHEREAS, physicians may receive unsolicited reports from multiphasic health testing or other centers, and

WHEREAS, these unsolicited reports may be on people in whom the physician has not established a physician/patient relationship, therefore, be it

Resolved, that the physician who receives an unsolicited report from a testing center on a person in whom a proper physician/patient relationship has not been established, and the physician does not wish to establish such a relationship, the physician should sent a letter to the patient by certified or registered mail (return receipt requested) denying the existence of the physician/patient relationship and a copy of this letter with the unsolicited report to the center of origin.

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DETECTION OF NARCOTIC, SEDATIVE, AND AMPHETAMINE DRUGS IN URINE

Use of ion-exchange paper extraction*

VINCENT P. DOLE, M.D.
ALISON CROWTHER
JEAN JOHNSON
MAUREEN MONSALVATGE
BRUCE BILLER
SOL S. NELSON
New York City

From The Rockefeller University and Beth Israel Medical Center

A method for detection of narcotics and other drugs in urine is described in detail. This procedure has proved reliable in large scale use during the past six years. A distinctive feature of the method is a preliminary extraction of the drugs on ion-exchange paper, which greatly facilitates labelling, transportation, and storage of samples. One substantial advantage is that the technic permits storage of thousands of unanalyzed urine samples in a simple filing cabinet with the option of analyzing the stored papers at any time up to several years later.

Approximately 120 laboratories, receiving about 1.5 million urine samples per year, are currently using ion-exchange paper for extraction of drugs from urine.[1] The technic has proved reliable, as shown by its performance with unknown test samples. Some analysts, however, have been unable to replicate these results.[2] They might have used some of the poor batches of ion-exchange paper that were released by the supplier during the period 1966 to 1969, or else they failed to give sufficient attention to critical details. Laboratories that consulted us when they encountered similar difficulties during this period were given paper from our tested supply and were able to obtain satisfactory results.

The need for reliability of methods and for repeated checks on performance of laboratories doing drug analysis is obvious. In some jurisdictions a person may be sent to jail or discharged from a treatment program on the basis of urine reports, which from a poor laboratory could be false positives. Whatever the analytic technic employed, the laboratory must institute a regimen of quality control. The ion-exchange extraction technic, if properly used, will meet the most rigorous tests of reliability, but, like any other analytic method, is unreliable if misused.

The following report emphasizes details in this method that have proved critical and describes modifications that have been introduced in the past five years.

Extraction of urine with ion-exchange paper

Proper adjustment of pH and a sufficient time for extraction are critical factors. An attempt to extract drugs directly from urine without adjustment of pH will give unsatisfactory results.

To a 30 to 50-cc. aliquot of urine add an equal volume of water (distilled or clean tap water). With freshly voided urine, the diluted sample will be brought to a satisfactory pH (between 4 and 5) by addition of 5 cc. of acetate buffer, pH 3.2 (114 ml. glacial acetic acid, 2.48 Gm. NaOH, dilute to 1,000 ml. with water). This procedure, however, is not consistently reliable with old samples, since urine on standing produces ammonia and becomes more alkaline. Central laboratories that receive liquid specimens of urine from distant clinics should measure the pH of each specimen and adjust to the range pH 4 to 5 by the dropwise addition of 2N hydrochloric acid.

If a clinic is at some distance from the central laboratory and sends a large number of routine samples for testing, it is convenient to extract the urine locally and mail the ion-exchange papers to

---

*This investigation was supported by grants from the Health Research Council (City of New York Department of Health) and the New York State Narcotic Addiction Control Commission. Conclusions stated herein are not necessarily those of the Commission.

the laboratory. Any responsible member of the clinic staff can be taught the extraction procedure. Dilution with an equal volume of water is simple and need not be precise. The titration of urine with a strong acid and the use of pH test paper can be avoided by use of the acetate buffer which dependably brings the pH into suitable range if the urine is fresh, as it should be in the clinic.

The piece of ion-exchange paper* is marked with the patient's name, the date of urine collection, and any other clinical data of interest, using a graphite pencil, India ink, or a typewriter with carbon ribbon, before being immersed in the diluted urine. Maximal extraction is obtained by letting the urine-paper system sit overnight with occasional shaking or, more rapidly, by low-speed shaking (about 140 oscillations per minute) at room temperature for two hours. After extraction, decant and discard the liquid phase, and gently rinse the paper once with water, discarding the wash.

If the paper is to be mailed to a laboratory or is to be filed away in the laboratory for later analysis, pull the paper up into the neck of the bottle for drying, leave it there until dry, and then put it in a cellophane envelope for protection; envelopes of the proper size are available.† If the paper is to be analyzed immediately, leave it in the bottle for the next extractions.

Extraction of drugs from paper to solvents

1. **Extraction at pH 2.2** (barbiturates, glutethimide (Doriden), diphenylhydantoin (Dilantin). To the paper in the extraction bottle add 15 cc. of citrate buffer (41 Gm. citric acid + 1.4 Gm. $Na_2HPO_4 \cdot 2H_2O$ dilute to 2 L. with water) and 15 cc. of chloroform. The citrate buffer should be kept in the cold to prolong shelf life. Shake at approximately 140 oscillations per minute for fifteen minutes. Pour the solvent:buffer mixture into a separation unit, allow the phases to separate, deliver 10 cc. of lower (chloroform) phase into a 15-cc. conical centrifuge tube, discard the remainder of solvent phase and the buffer, and rinse the separation unit with 10 cc. of chloroform to avoid contamination of the next sample.

Evaporate the solvent in a water bath (50° to 60° C.) with a stream of nitrogen or filtered air blowing into the tube from a 15-gauge needle. Remove the tubes from the drying system shortly after they are dry. Do not leave the tubes unattended, since prolonged exposure of the dry samples to heat and air causes irregular losses.

2. **Extraction at pH 9.3** (narcotics and other weak organic bases). Into the extraction bottle, which still contains the ion-exchange paper, deliver 20 cc. of borate buffer (1,900 ml. saturated sodium tetraborate solution + 100 ml. 0.3N NaOH) and 20 cc. of chloroform:isopropanol (3:1, v/v) mixture. Shake for fifteen minutes at 140 oscillations per minute, and pour the solvent:buffer mixture into the separation unit. Allow the phases to separate. Occasionally the separation is quite slow. In such a case, return the lower phase and a small part of the aqueous phase to the extraction bottle, discard the remainder of aqueous phase, and then pour back the mixture into the separation unit. Usually the phases now separate satisfactorily. (Difficulty in separation of phases may be due to a lowering of the chloroform:isopropanol (3:1, v/v) ratio from evaporation of chloroform. The mixture should be kept tightly stoppered.)

Deliver 10 cc. of the lower phase into a 15-cc. conical centrifuge tube, return most of the remaining lower phase to the extraction bottle (with care to exclude the aqueous phase), discard the remainder, and rinse the separation unit with 10 cc. of chloroform to avoid contamination of the next sample. Note that this procedure differs from that of the pH 2.2 extraction in that the remainder of the organic phase is conserved for the next extraction. This step is not essential but is recommended, since a significant fraction of the amphetamines elutes at pH 9.3. The aliquot taken for analysis is evaporated to dryness as previously described.

3. **Extraction at pH 11** (amphetamines and other strong organic bases). Add 20 cc. of carbonate buffer (2,000 ml. 0.2M Na_2CO_3 + 50 ml. 0.2M $NaHCO_3$) and 10 cc. of chloroform to the extraction bottle. Shake for thirty minutes or longer and pour into separation unit. When phases separate, allow 3 cc. of lower phase to run out, then deliver 10 cc. into conical centrifuge tube. (Note: ample volume should be available since approximately 5 cc. of lower phase has been left from pH 9.3 extraction, and an additional 10 cc. of chloroform added in this extraction.) Discard the remainder and rinse the separation unit with 10 cc. of chloroform.

To each centrifuge tube add 50 microliters of glacial acetic acid:isopropanol (1:1), mix, and evaporate as described previously. Care in avoiding overheating and prolonged exposure of the sample after drying is critically important. The addition of acid before evaporation is also critical because amphetamine as free base in solvent is volatile and therefore lost in drying. If samples must be stored for several hours before chromatography, cover with foil and store in the refrigerator.

Thin-layer chromatography

Among the commercial plates now available for thin-layer chromatography, we have not found any single plate satisfactory for all fractions. Table I gives what we believe to be the three optimal

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*Grade SA-2 resin-loaded paper, 6 by 6 cm., 100 sheets per box, obtained from Reeve-Angel & Co., 9 Bridewell Place, Clifton, New Jersey.

†Number 300 MST cellophane envelopes, 2.5 by 2.5 inches, open end, obtained from Connecticut Valley Paper & Envelope Co., 3280 Broadway, New York, New York 10027.

TABLE I. Comparative rating of commercial thin-layer chromatography plates

Commercial Plates		Barbiturates	Alkaloids	Amphetamines
Analtech:	Uniplate-precoated with silica gel G 250 microns	Best	Poor	Poor
Brinkmann:	Precoated with silica gel F-254 250 microns	Poor	Best	Fair
Quantum:	Quanta-Gram precoated with series S/G Q1 silica gel	Poor	Poor	Best
Eastman:	Mylar plates-6061; silica gel without fluorescent indicator, 100 microns	Good	Fair	Fair

choices at present. Other plates undoubtedly will become available and should be tested by interested laboratories. To test, spot the new and old plates with standards in various dilutions, chromatograph, spray, and compare.

1. pH 2.2 extract. Dissolve residue in 25 microliters of chloroform or methanol. Shake briefly and spot 15 microliters on the 10 by 20-cm. thin-layer plate, drying intermittently with a hair dryer to form a small, neat spot. Put 16 samples on each plate with standards spotted on both outer margins and between every 4 samples to ensure proper identification of positives. The standard solutions contain 5 mg. phenobarbital + 5 mg. pentobarbital + 5 mg. diphenylhydantoin in 5 ml. methanol and 5 mg. glutethimide in 5 ml. methanol; spot 5 microliters.

Develop the plates in solvent system I [ethyl acetate (85):methyl alcohol (10):concentrated ammonium hydroxide (5)]. As many as ten plates can be run simultaneously in one large chromatograph tank, but the solvent system must be made fresh each day, and the solvent in the tank must be changed with each run. After the solvent front has risen to approximately 1 cm. from the top, remove the plate and dry until the odor of solvent can no longer be detected.

2. pH 9.3 extracts. Dissolve residue in 50 microliters of methanol and spot 20 microliters as for the pH 2.2 extract, using the alkaloid standard as reference (5 mg. methadone + 5 mg. morphine + 2.5 mg. quinine in 5 ml. methanol). Two elution systems are available; solvent system I gives optimal resolution for separation of morphine from interfering substances but fails to separate cocaine from methadone and methadone metabolite; solvent system 2 [ethyl acetate (28):absolute ethanol (14):n-butanol (2):concentrated NH_4OH (0.4)] gives morphine a lower R_f* and separates the more rapidly moving components. Daily preparation and use of a fresh solvent mixture for each chromatography are required with both solvent systems, and separate tanks must be used for the different mixtures. If solvent system II is used, the standard should include cocaine as reference (5 mg. cocaine in 1 ml. methanol).

3. pH 11 extract. The same technic of spotting and the same solvent system as for barbiturates are used, with the appropriate thin-layer plate and reference solution (5 mg. amphetamine sulfate in 5 ml. methanol).

Detection

1. pH 2.2 plate. Spray heavily with 1 per cent silver acetate and read plate while it is wet, taking care not to disrupt the silica-gel layer. Standards and positives in the test specimens will appear as chalky white spots against a grey background. The R_f values are given in Table II.

An alternative spray system, more sensitive for glutethimide detection, may be used. Spray the plate lightly but thoroughly with 0.01 per cent diphenylcarbazone in methanol (prepared daily from a stock solution of 0.2 per cent diphenylcarbazone in methanol). Allow the plate to dry, then overspray lightly but thoroughly with mercuric sulfate solution (dissolve 0.5 Gm. mercuric oxide in 20 ml. concentrated H_2SO_4, dilute to 200 ml. with H_2O) until the standard spots are clearly visible. Standards and positives in the test samples will appear as violet spots.

2. pH 9.3 plate. First examine the dry plate under long wave-length ultraviolet light (3,200 to 3,800 millimicrons). The quinine standard shows a bright blue-white fluorescent spot; extracts of urine containing quinine and its metabolites will show in addition to this spot, a second blue-white fluorescence at a lower R_f and a spectrum of colored bands extending down toward the origin.

Then spray the plate lightly with iodoplatinate [mix 20 ml. iodoplatinate solution (5 ml. of 5 per cent $PtCl_4$ + 45 ml. of 10 per cent potassium iodide + 100 ml. H_2O) and 20 ml. 2N HCl. This spray may be kept and used for three to five days after mixing]. Let the plate dry so that the colors can reach maximum intensity. Methadone yields a reddish-brown cobbled spot near the solvent front. With solvent system I, methadone, methadone metabolite, cocaine, and a variety of other drugs are unresolved; solvent system II separates most of these components. The metabolite runs lower than methadone, and cocaine runs higher; all stain a reddish or purplish-brown. Quinine and quinine metabolites, if present, are seen as a chain of dark bluish-purple spots starting below cocaine and extending to the origin.

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*Ratio of the distance a drug travels relative to the distance solvent front travels.

TABLE II. Fractionation and detection of drugs by thin-layer chromatography

Drug	R_f Solvent Systems I	R_f Solvent Systems II	Detection and Confirmation		
pH 2.2 Extract			*Silver Acetate (1 per cent)*	*0.01 per cent Diphenylcarbazone + Mercuric Sulfate Solution*	
(Analtech, silica gel G, 250μ)					
Glutethimide	0.95		Chalky white	Violet	
Pentobarbital	0.72		Chalky white	Violet	
Amobarbital	0.68		Chalky white	Violet	
Secobarbital	0.72		Chalky white	Violet	
Diphenylhydantoin	0.64		Chalky white	Violet	
Phenobarbital	0.40		Chalky white	Violet	
pH 9.3 Extract			*Fluorescence in ultraviolet (3,200 to 3,800 millimicron)*	*Iodoplatinate*	*NH_4OH + $AgNO_3$ + Heat*
(Brinkmann, silica gel F-254)					
Diphenoxylate	0.99	0.99		Reddish purple	
Methadone metabolite	0.98	0.58		Reddish-brown cobbled	
Propoxyphene	0.98	0.90		Reddish-brown cobbled	
Methadone	0.96	0.71		Reddish-brown cobbled	
Cocaine	0.96	0.87		Brownish purple	
Diazepam	0.96	0.91		Brown cobbled	
Chlorpromazine	0.94	0.45		Dark blue	
Amitriptyline	0.93	0.52		Purple	
Pentazocine	0.92	0.83		Purple	
Dimenhydrinate	0.92	0.55		Purple-brown cobbled	
Diphenhydramine	0.91	0.50		Purple-brown cobbled	
Imipramine	0.91	0.38		Red-brown cobbled	
Meperidine (Demerol)	0.80	0.45		Dark gray-blue	
Chlordiazepoxide (Librium)	0.70	0.76	Yellow	Reddish purple	
Quinine	0.63	0.40	Blue-white	Bluish-purple	
Oxymorphone (Numorphan)	0.49	0.61		Purple	Charcoal black
Methylmorphine (Codeine)	0.48	0.15		Slate blue	Faintly charry
Quinine metabolites	0.45 to 0.15	0.33 to 0.16	Blue-white plus other colored bands	Brownish purple, blue	
Morphine	0.28	0.18		Slate blue	Charcoal black
Hydromorphone (Dilaudid)	0.28	0.08		Bluish purple	Charcoal black
Oxymetazoline	0.28	0.04		Purple	Charcoal black
pH 11 Extract			*Ninhydrin (0.1 per cent)*	*Marquis Reagent*	
(Quantum, series S/G Q1)					
Amphetamine	0.72		Deep pink	Bright orange	
Methamphetamine	0.68		Deep pink	Bright orange	
Amphetamine metabolite	0.65		Pink	Bright orange	
Unidentified components	0.46 to 0.07		Red and brownish pink	Brown	

Morphine, the chief metabolite of heroin, can be confused with a metabolite of quinine or with some other spot if the analyst is inexperienced. A false positive finding in such a case is a serious error, since it could incriminate the subject as a user of illicit narcotic drugs. Since solvent system I provides a better separation of morphine from interfering substances, we prefer it for routine use. A second plate, therefore, is used for detection of cocaine. If, for reasons of economy, the analyst is limited to a single plate and detection of cocaine is required, solvent system II or some equivalent system giving a lower R_f to morphine must be used. In such a case the detection of morphine might be impaired, since a small amount of morphine may yield only a faint spot in a region crowded with other substances.

Morphine, when present, yields a dark, slate-blue spot best seen just after the iodoplatinate spray has dried. For positive identification this spot must have exactly the same R_f as that of a morphine standard located nearby on the same plate and give a positive result on the subsequent silver reduction test. In this confirmatory procedure the plate, after all iodoplatinate spots have been recorded, is sprayed to saturation with ammonical silver nitrate (20 ml. of 50 per cent $AgNO_3$ + 20 ml. of 5N NH_4OH plus a sufficient number of extra drops of 5N NH_4OH to clear the solution. Make up new spray every two days). This alkaline spray causes the iodoplatinate colorations to fade. Place the plate immediately in an oven (110 to 120°C.) and leave there three to five minutes. Morphine, oxymorphone, hydromorphone, or oxymetazoline, if present, reappear as charcoal-black spots; codeine reappears as a faint gray spot. Other components, previously stained with iodoplatinate, remain colorless or show only faint gray smudges which are easily distinguished from the positive test results. This silver reduction reaction, so far, has proved to be specific for morphine and related opiates except for the interference with oxymetazoline (Afrin), which is discussed in a later section of this report. Heroin, if added as a standard, also gives the opiate reaction with iodoplatinate spray and silver reduction.

Other narcotic drugs and a variety of tranquilizers and antibiotics are also detected with iodoplatinate on the pH 9.3 plate. Table II gives approximate R_f values and staining properties; for positive identification of any spot it is important to compare its position with that of a standard run on the same plate, since mobility varies with small changes in the conditions of plates and solvents.

3. pH 11.0 plate. Spray with 0.1 per cent ninhydrin-isopropanol (the commercial aerosol product* gives sharper definition and better detection of amphetamines than solutions made in our laboratories and sprayed with laboratory atomizers). Make sure that the plate is sprayed evenly but do not saturate to wetness. Immediately, put plate in oven (120°C.) and leave there for ten minutes. Amphetamine is identified as a deep pink spot with the same R_f (approximately 0.72) as an adjacent amphetamine standard; an amphetamine metabolite may also be seen at a lower R_f (approximately 0.65). Methamphetamine yields a spot with the same color and almost the same R_f as amphetamine. When both amphetamine and methamphetamine are run as standards on the same plate, they can be separated; but the difference is not great enough for discrimination in routine analyses. Since the clinical significance of a positive finding is the same for either drug, we have not complicated our routine with another solvent system and simply report any positive result as amphetamine. To confirm a positive finding of amphetamine, spray the plate very lightly with Marquis reagent [concentrated H_2SO_4 (99): HCHO (1)], and observe immediately a change in color of spot from pink to bright orange.

Sensitivity of detection

Table III gives the approximate lower limits of detection for the major drugs of interest. The sensitivity can be doubled by extracting a larger volume of urine, and a threefold increase in sensitivity of morphine detection can be achieved by preliminary enzymatic hydrolysis of the glucuronide on the ion-exchange paper, as previously described.[1] In practice, however, these extra procedures have not been found worth the effort; for the occasional sample requiring special study, the dried extract remaining in the conical centrifuge tube can be treated with trimethylsilane or with pyridineacetic anhydride and the derivatives examined with gas-liquid chromatography. The most efficient strategy in monitoring a treatment program is to make frequent checks with a simple method, rather than fewer tests with a more elaborate procedure.

TABLE III. Lower limits of drug detection with routine method

Drug	Concentration in 30 ml. Aliquot of Urine (micrograms per milliliter)
Phenobarbital	1.0
Pentobarbital, secobarbital	1.0
Glutethimide	10.0 (1.0 with diphenylcarbazone-mercuric sulfate sequence)
Diphenylhydantoin	0.5 (1.0 with diphenylcarbazone-mercuric sulfate sequence)
Methadone	0.5
Morphine	0.5
Quinine	0.25
Cocaine	1.0
Amphetamine	0.5

In general, the sensitivity of the method is such as to give a positive result if the subject has taken a sufficient dose of a narcotic, barbiturate, or amphetamine to produce a pharmacologic effect within twenty-four hours prior to the urine sample. Thus with repeated checking at intervals of one week or less, testing soon reveals patients who have relapsed to daily addictive use of one or more of these drugs.

False positives

Diphenylhydantoin is extracted at pH 2.2 with barbiturates, and with the silver acetate spray it gives a chalky white spot, indistinguishable from that of a barbiturate. However, the R_f (approximately 0.64) is sufficiently different from those of phenobarbital (0.40), amobarbital (0.68), and secobarbital (0.72) to permit recognition if the possibility is kept in mind and diphenylhydantoin is included in the reference solution.

When the pH 9.3 extract is fractionated with solvent system I, methadone, methadone metabolite (a pyrroline derivative),[3] cocaine, diazepam (Valium), dimenhydrinate (Dramamine), diphenoxylate (Lomotil), propoxyphene (Darvon), chlorpromazine (Thorazine), amitriptyline (Elavil), pentazocine (Talwin), diphenhydramine (Benadryl), and imipramine (Tofranil) move near the solvent front in an unresolved mixture. This mixture is resolved by solvent system II, and with suitable reference standards most of these components can be identified (Table II).

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*EM Reagents Division, Brinkmann Instruments, Inc., Westbury, New York 11590.

A potentially serious interference is a false positive finding for morphine caused by oxymetazoline which, as shown by Ota and Goldstein,[4] has the same R_f as morphine in solvent system I and, like morphine, gives a positive silver reduction spot in the confirmatory test. Its presence might be suspected by an experienced analyst, since the color of its spot with iodoplatinate is purple rather than the slate blue of morphine. A definitive separation, however, is obtained with solvent system II in which the R_f of morphine is 0.18 and that of oxymetazoline 0.04.

Storage on paper

One substantial advantage of the ion-exchange paper technic is that it permits storage of thousands of unanalyzed urine samples in a simple filing cabinet with the option of analyzing the stored papers at any time up to several years later. For a large treatment program this can mean a considerable economy. In our methadone maintenance program a urine sample is taken from every patient with each dispensing of medication, but only a sample of the papers are analyzed. If in any given case further data are needed, previous papers from this patient are usually available for analysis.

Morphine, barbiturates, and amphetamine can be detected for at least four years, the longest period so far tested.

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HEXAMETHYLMELAMINE IN INOPERABLE BRONCHOGENIC CARCINOMA

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Thirty-nine patients with inoperable bronchogenic carcinoma were treated with hexamethylmelamine. The overall response rate was 15 per cent. The response of oat-cell carcinoma was 30 per cent, and 2 cases were recorded of complete regression of the oat-cell lesions. Side effects encountered in the therapy were gastrointestinal symptoms, which can be severe enough to warrant discontinuation of therapy, and a mild, reversible hematoxicity. No neurotoxic effects were observed.

Hexamethylmelamine* is one of the substituted melamines derived from cyanuric chloride. It was originally investigated for possible use in synthetic resin and synthetic fibers.[1] Its chemical structure resembles that of the anticancer drug, triethylene melamine. Hexamethylmelamine was reported to be effective clinically against a variety of tumors, particularly carcinoma of the lung and ovary.[2-6]

In this report, the effects of hexamethylmelamine on patients with inoperable bronchogenic carcinoma observed at the Roswell Park Memorial Institute is presented.

Materials and methods

The following criteria were used in the selection of patients to be treated with hexamethylmelamine:

1. Histologically or cytologically confirmed inoperable bronchogenic carcinoma.
2. Patient to be ambulatory or semiambulatory at the onset of the study.
3. White blood cell count of 5,000 per cubic millimeter or higher, and platelets of 100,000 per cubic millimeter or higher.
4. No radiation or chemotherapy for at least four weeks.

In most cases, the total dosage of hexamethylmelamine was 12 mg. per kilogram daily for twenty-one days, administered by mouth in equal doses three times a day, one-and-a-half to two hours after meals (4 patients received doses of 6 mg. per kilogram for forty-two days). Prochlorperazine (Compazine) or chlorpromazine (Thorazine) was usually prescribed in addition to hexamethylmelamine. The course of hexamethylmelamine treatment was repeated at two- to three-month intervals.

All patients were periodically examined. Chest x-ray, liver scan, blood counts, and chemistries were obtained at regular intervals.

Thirty-nine patients were treated with one or more courses of hexamethylmelamine. Three additional patients received hexamethylmelamine, but the medication was discontinued owing to severe gastrointestinal symptoms.

Results

Side-effects. The most frequent side-effects of hexamethylmelamine were gastrointestinal symptoms such as anorexia, nausea, and vomiting, observed in 25 cases (59.5 per cent). Symptoms were slight in 8 patients and mild in 9. Severe gastrointestinal symptoms were observed in 8 cases, 3 of which were taken off the medication and 2 were put on reduced dosages.

Hematotoxicity of hexamethylmelamine was rather slight. A moderate degree of leukopenia (leukocyte count between 5,000 and 3,000 per cubic millimeter) was observed in 12 patients. One patient, given hexamethylmelamine in doses of 6 mg. per kilogram for forty-two days, developed leukopenia of less than 3,000 leukocytes per cubic millimeter. Slight thrombocytopenia (platelet count between 150,000 and 100,000 per cubic millimeter) was observed in 2 patients. These hematologic changes were of a transient nature, and blood counts returned to normal after discontinuation of hexamethylmelamine.

Antitumor effects. Antitumor effects of more than a 50 per cent regression of measurable lesion were observed in 6 patients (15 per cent). Two of these cases demonstrated total tumor regression.

Squamous cell carcinoma. (Table I). Hexamethylmelamine was generally ineffective against squamous cell type bronchogenic carcinoma. In only 1 case out of 9, a very transient, less than 50 per cent, regression of the lung lesion was observed.

Adenocarcinoma. (Table II). In only 1 case out of 7, a transient, less than 50 per cent regression of the lesion was observed.

Anaplastic type and mixed type. (Table III). In 1 case out of 10, there was more than 50 per cent

*NSC 13875, supplied by Cancer Therapy Evaluation Branch, National Cancer Institute, Bethesda, Maryland.

TABLE I. Effect of hexamethylmelamine on bronchogenic carcinoma, squamous-cell type

Histologic Differentiation	Cases	Response	No Effect
Well	2	. . .	2
Moderate	3	1*	2
Poor	4	. . .	4
TOTALS	9	1	8

* Less than 50 per cent regression, very transient.

TABLE II. Effect of hexamethylmelamine on bronchogenic carcinoma, adenocarcinoma

Histologic Differentiation	Cases	Response	No Effect
Moderate	1	. . .	1
Poor	6	1*	5
TOTALS	7	1	6

* Less than 50 per cent regression very transient.

TABLE III. Effect of hexamethylmelamine on bronchogenic carcinoma, anaplastic and mixed type

Histology	Cases	Responded more than 50 per cent	Responded less than 50 per cent	No Effect
Anaplastic	8	1	2	5
Mixed	2	. . .	1	1
TOTALS	10	1	3	6

TABLE IV. Effect of hexamethylmelamine on bronchogenic carcinoma, oat-cell carcinoma

Administration Schedule	100 per cent	Responded more than 50 per cent	Responded less than 50 per cent	No Effect	Total
12 mg. per kilogram for 21 days	2	2	2	3	9
6 mg. per kilogram for 42 days	. . .	. . .	. . .	3	3
TOTALS	2	2	2	6	12*

* One case with nonmeasurable lesion surviving fifteen months excluded.

regression of the lesion. In 3 other patients, a slight, transient, antitumor effect, less than 50 per cent regression, was observed.

Oat-cell carcinoma. (Table IV). In the group of 13 patients with oat-cell carcinoma, the antitumor effect of hexamethylmelamine was quite different. In 2 patients, there was complete disappearance of the lung lesion, although in 1 case the effect was transient (Cases 1 and 2). Another patient was given hexamethylmelamine following a course of radiation therapy, and was alive without evidence of disease sixteen months after the onset of hexamethylmelamine therapy. Thirty per cent of patients with oat-cell carcinoma demonstrated responsiveness (more than 50 per cent regression) to hexamethylmelamine.

Case reports

Case 1. A fifty-eight-year-old man started having productive cough, dyspnea, and right chest pain in December, 1969. A right thoracotomy in February, 1970, revealed a bronchogenic carcinoma, oat-cell type, inoperable because of involvement of the mediastinum. He was referred to the Roswell Park Memorial Institute in March, 1970.

Hexamethylmelamine treatment, 12 mg. per

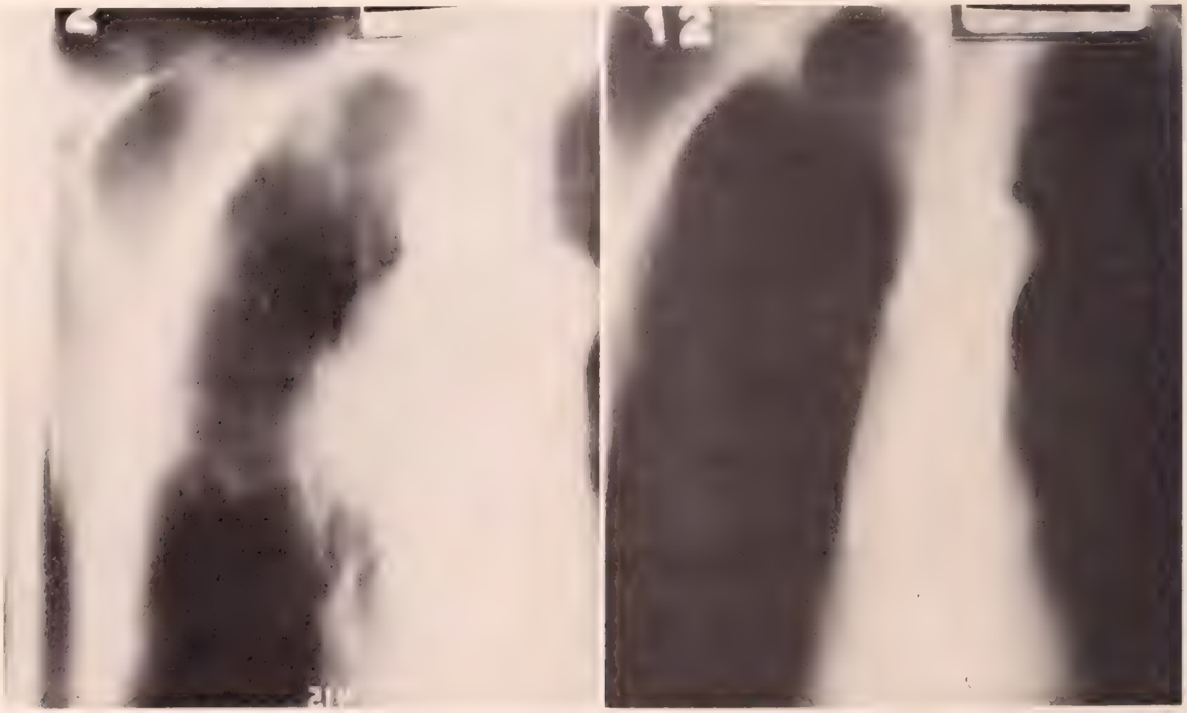

FIGURE 1. Case 1. Laminogram. Left: before hexamethylmelamine therapy. Right: after first course of hexamethylmelamine.

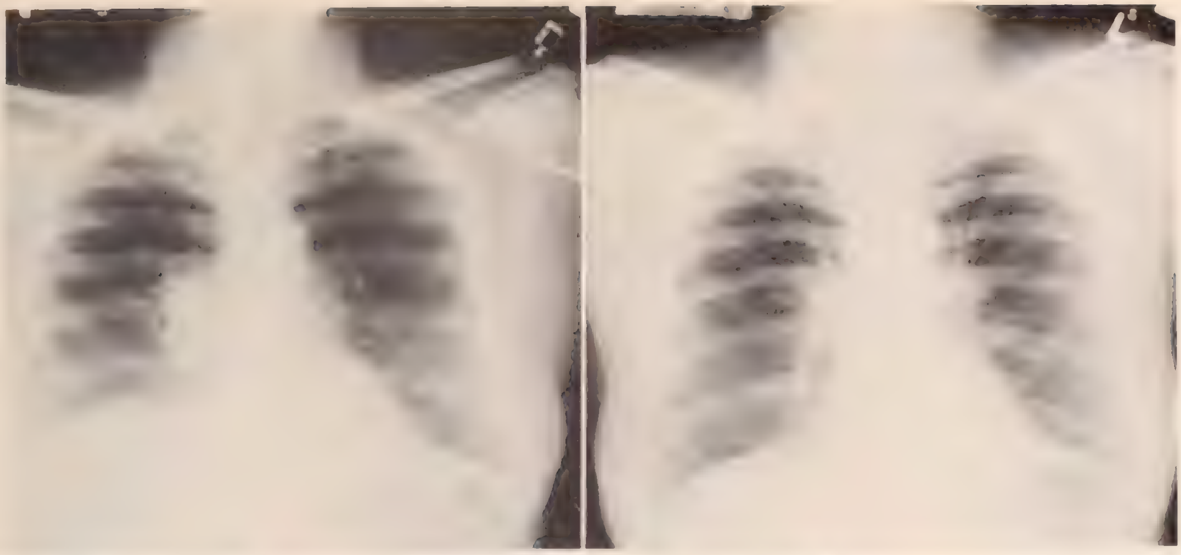

FIGURE 2. Case 2. Left: before hexamethylmelamine therapy. Right: after first course of hexamethylmelamine

kilogram for twenty-one days, was begun on March 30, 1970. The medication was tolerated without side-effects. Two weeks after onset of the treatment, the right lung lesion completely disappeared (Fig. 1). As of March, 1971, he has had 4 courses of hexamethylmelamine, and is alive without evidence of tumor.

Case 2. A fifty-four-year-old woman was investigated in July, 1969, for abdominal pain, and was found to have a right lung lesion. She was admitted to the Roswell Park Memorial Institute in August, 1969. Sputum cytology revealed tumor cells, and the liver scan was positive for space-occupying lesions. A laparotomy performed on August 25, 1969, revealed approximately 60 per cent of the liver to be involved by the tumor, which was oat-cell carcinoma.

Hexamethylmelamine therapy, 12 mg. per kilogram for twenty-one days, was started on August 29, 1969, and the medication was tolerated without side effects. On completion of the course, the right lung lesion completely disappeared (Fig. 2).

The liver was not palpable and the liver chemistries were within normal limits. She did well until December, 1969, when chest x-ray examination revealed recurrence of the right lung lesion. The second course of hexamethylmelamine therapy was given, and the right lung lesion again disappeared. The third course of hexamethylmelamine was given in April, 1970, but the lung lesion was again noted in June, 1970. At this time the patient was given hexamethylmelamine, 6 mg. per kilogram for forty-two days, but no effect was observed. She expired on June 30, 1970, ten months after onset of the treatment.

Case 3. A forty-three-year-old man presented himself to the Roswell Park Memorial Institute on October 6, 1969, with superior vena cava syndrome of three weeks' duration. A diagnosis of inoperable bronchogenic carcinoma, oat-cell type, was made from a right neck node biopsy. He received a course of radiation therapy, 3,000 r to the neck and the mediastinum.

On December 5, 1969, hexamethylmelamine, 12 mg. per kilogram for twenty-one days, was started. As of March, 1971, fifteen months after the first administration of hexamethylmelamine, he had had 4 courses of hexamethylmelamine treatment and there was no evidence of tumor (Fig. 3).

Comment

Phase I and phase II studies of hexamethylmelamine have reported it to produce promising antitumor effects against carcinoma of the lung and ovary in human beings.[2-6] De la Garza, Carr, and Bisel[2] tested hexamethylmelamine against bronchogenic carcinoma and reported a response rate of 18 per cent. In one patient with oat-cell carcinoma, regression of the tumor was complete. In the author's series, as presented in the preceding case reports, complete regression of the lung lesion was observed in 2 cases of oat-cell carcinoma. One additional patient with carcinoma of the same histologic type has shown no evidence of tumor recurrence fifteen months after hexamethylmelamine therapy following a course of radiation. The average survival time for oat-cell carcinoma is reported to be about three months.[7] Hexamethylmelamine is reported to be effective against squamous cell-type carcinoma as well. However in the author's series hexamethylmelamine was effective only with oat-cell type. In a second stage of the study, a group of oat-cell carcinoma patients are being treated with hexamethylmelamine.

The results of this study confirmed previous findings that gastrointestinal symptoms are the most frequently observed side effects of hexa-

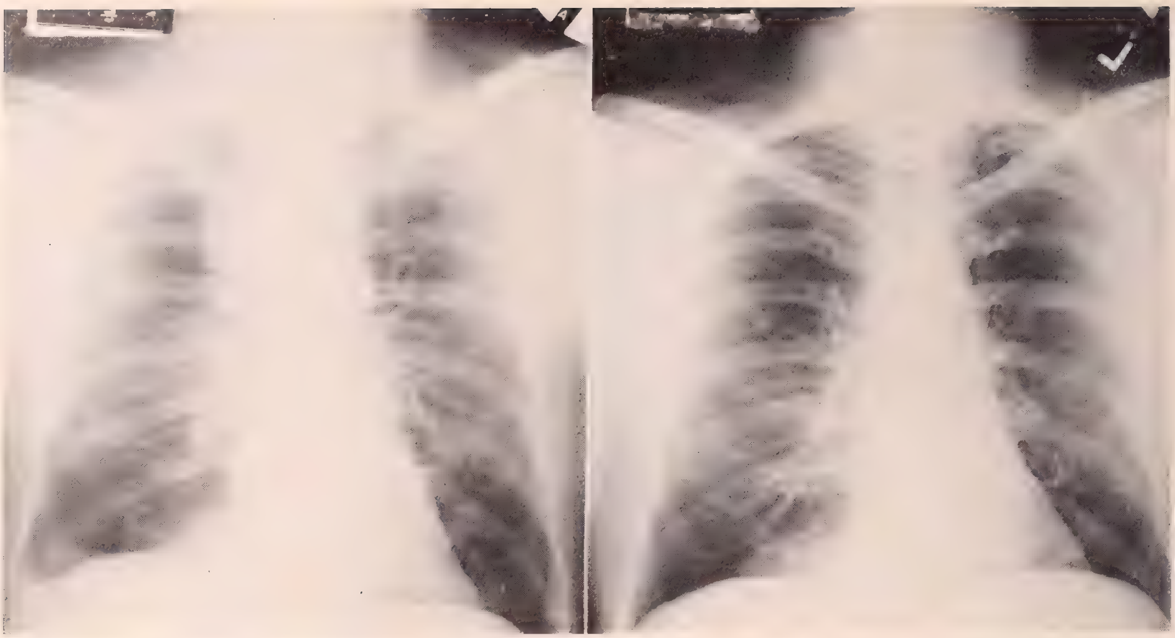

FIGURE 3. Case 3. Left: On admission. Right: One year later, after course of radiation therapy and 4 courses of hexamethylmelamine.

methylmelamine. To prevent these side effects, prochlorperazine or chlorpromazine was routinely prescribed. These side-effects were considerably decreased if the patient was instructed to take hexamethylmelamine one-and-a-half to two hours after meals.

The hematotoxicity of hexamethylmelamine was generally minimal, and in all cases reversible.

Neurotoxic symptoms of various kinds produced by hexamethylmelamine have been reported by previous authors. The manifestations are: peripheral neuropathies[3,6,7]; central nervous system symptoms including depression; hallucinations; and psychoses.[3,5,6,8] Although the incidence of neurotoxic manifestations ranged from 1 to 11 per cent in previous studies, no such symptoms were observed in the present study. It appears that neurotoxic symptoms are more frequently noted when hexamethylmelamine is given in higher dosages than the recommended 12 mg. per kilogram for twenty-one days.

Summary

Thirty-nine patients with inoperable bronchogenic carcinoma were treated with hexamethylmelamine.

Although the over all response rate was 15 per cent, in cases of oat-cell carcinoma it was 30 per cent. Complete regression of the lesions was observed in 2 cases of oat-cell carcinoma. Further clinical testing of hexamethylmelamine, against bronchogenic carcinoma of this particular histologic type is in progress.

The most frequent side effects of hexamethylmelamine were gastrointestinal symptoms, which resulted in discontinuation of the medication in 3 cases. Hematotoxicity of hexamethylmelamine was generally mild and reversible. No neurotoxic effects of hexamethylmelamine were observed in this series.

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INTERNAL MAMMARY ARTERY IMPLANTATION*

Experience in community hospital

The experience of a community hospital in the utilization of the Vineberg procedure of internal mammary artery implantation is critically evaluated. Surgical mortality of the 47 patients was 6.4 per cent. One year after the surgery, 82 per cent showed a disappearance or an improvement of angina pectoris, and at the time of the last follow-up, 57 per cent still showed improvement. Selective internal mammary arteriography one year after the surgery demonstrated that 79 per cent of all implants were patent and 54 per cent communicated with preexisting coronary artery vessels. Those patients with good angiographic results showed sustained clinical improvement, while those with poorly functioning implants did not show sustained improvement.

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The concept of myocardial revascularization by the implantation of an internal mammary artery into a tunnel produced in cardiac muscle was first introduced by Vineberg in 1946.[1] This technic was subsequently applied to patients with symptomatic coronary artery disease, resulting in apparent improvement in angina pectoris and in work capacity.[2]

With the development of selective cine coronary arteriography by Sones in 1959, precise preoperative and postoperative anatomic evaluation of the coronary circulation became available.[3] Selective internal mammary arteriography proved that myocardial implants remain open in the majority of patients and that they often communicate with the pre-existing coronary system.[4] Improved metabolism of lactate in areas of successfully revascularized myocardium was demonstrated in 1966.[5] Since that time, the Vineberg procedure has been utilized in a large number of patients in an attempt to relieve symptoms of ischemic heart disease.

In 1967, Favaloro developed the technic of direct myocardial revascularization by employing direct aorta to coronary artery saphenous vein grafts.[6] Although this procedure has now largely supplanted internal mammary artery implantation in many clinics, not all patients with coronary artery disease are suitable candidates for this direct surgical approach.[7,8]

In some patients the diffuse nature of the atherosclerotic process, often involving the distal as well as the proximal aspect of the coronary artery, disqualifies them for total myocardial revascularization by utilizing vein graft technics alone. In these cases, benefit may be obtained from double internal mammary artery implantation or from a combination of vein graft plus mammary implant. Although much more remains to be learned regarding the benefits of surgical revascularization of the myocardium, evidence which has accumulated to date indicates that the Vineberg procedure is of value in selected patients with atherosclerotic heart disease. It is the purpose of this report to review the seven-year experience of a community hospital with this procedure.

Methods

Between 1964 and 1970, 52 patients who had been studied by selective coronary arteriography at the Msgr. Toomey Cardiovascular Laboratory and Research Department underwent single or double internal mammary artery implantation at St. Joseph's Hospital, 375-bed community hospital in Syracuse, New York. Five of these patients had resection of a left ventricular aneurysm in addition to single internal mammary artery implantation. At the time of revascularization surgery, all patients were thought to have angina pectoris preoperatively.

Thirty-five of the 52 patients who underwent internal mammary artery implantation were re-

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*Supported in part by a research grant from the ICI America Inc., Wilmington, Delaware 19899.

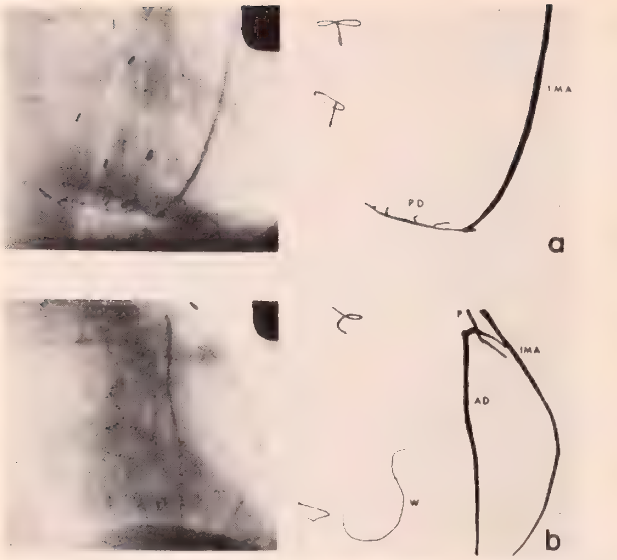

FIGURE 1. Retrograde filling of major coronary arteries from internal mammary implant. (a) Patient 1. Right anterior oblique view. Site of injection: Left internal mammary artery. Filling of posterior descending (PD) from implanted internal mammary artery (IMA). (b) Patient 2. Anterior posterior view. Filling of anterior descending (AD) after injection into left internal mammary artery. A pacing wire (W) used at the time of surgery is seen. A pericardial branch (P) arose from the internal mammary artery.

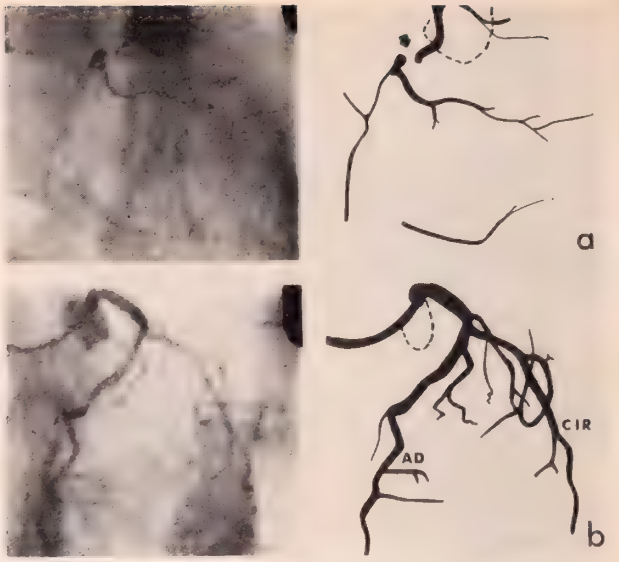

FIGURE 2. Preoperative arteriogram in patient 1. (a) Right coronary artery occluded in its initial aspect. Parts of distal right coronary artery fill from collateral flow, right anterior oblique view. (b) Left coronary artery normal, left anterior oblique view.

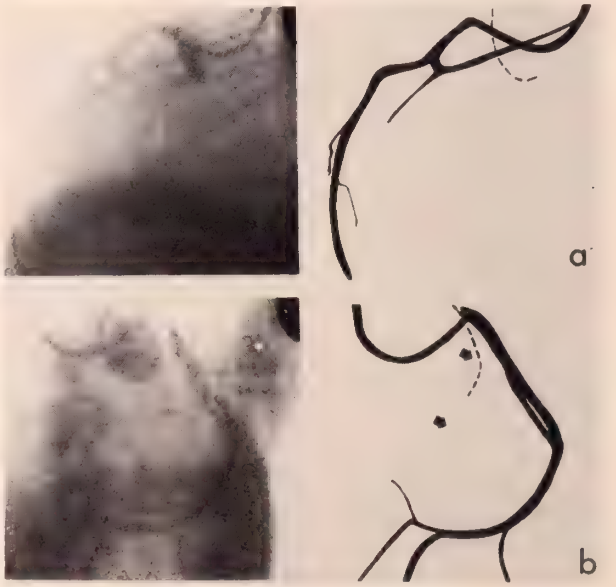

FIGURE 3. Preoperative arteriogram in patient 2, left anterior oblique view. (a) Right coronary artery normal. (b) Left anterior descending occluded at its origin. Arrows depict its usual course.

evaluated at the cardiovascular laboratory five months to three-and-a-half years (average 1.04 years) after revascularization surgery. All but 2 patients were re-evaluated eight months or longer after surgery. Re-evaluation consisted of complete history, physical examination, standard 12-lead electrocardiogram, and selective internal mammary arteriography. Many of the patients also had repeat coronary arteriography using the Sones technic,[3] catheterization of the left side of the heart, and left ventriculography. Injections of contrast agent into the coronary arteries are routinely made before and after administration of chewable or sublingual isosorbide dinitrate.*

Internal mammary arteries were selectively catheterized with an 8 F Sones variflex coronary catheter having a flexible tip. Five to 6 cc. of contrast agent were injected manually. Care was taken so that the catheter was not wedged in the orifice of the artery. Catheter-induced spasm occurred in one vessel. Otherwise, there were no complications from this procedure.

Internal mammary arteriograms were evaluated for patency of the artery into the myocardium and for the presence or absence of collateral formation with the pre-existing coronary artery network. An excellent angiographic result was considered to be present if the internal mammary artery was patent and if retrograde filling of a major coronary artery or large branch of a major coronary artery could be demonstrated (Figs. 1 to 3). A less favorable result was considered to be present if collateral vessels could be seen around the intramyocardial portion of the implant without filling of a large pre-existing vessel. In some of these latter patients, contrast agent could be seen flowing into the coronary sinus even though a major coronary vessel had not been opacified.

Eight of the initial 52 patients died prior to restudy, and 9 have not been restudied by internal mammary arteriography. All surviving patients

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*Supplied as Sorbitrate 5 mg. sublingual or Sorbitrate 5 mg. chewable by ICI America Inc., Wilmington, Delaware.

TABLE I. Clinical status of patients following internal mammary artery implantation

Time After Surgery	Condition	Number	Per Cent
One year	Angina pectoris improved or gone	36	82
One year	Angina pectoris same or worse	8	18
Last follow-up*	Angina pectoris improved or gone	25	57
Last follow-up*	Angina pectoris same or worse	16	36
Last follow-up*	Dead	3	7

* Average 2.8 years, total 125 patient years.

have been followed yearly by questionnaire or by personal examination. The length of follow-up of the 44 surviving patients has been nine months to seven years (average 2.8 years) or one-hundred-twenty-five patient years. No patients have been lost to follow-up.

At the time of revascularization surgery, 15 of the 52 patients had hemodynamically significant involvement (75 per cent or greater occlusion) of all three major coronary arteries, 24 had involvement of two arteries, and 13 had single-vessel disease.

Results

Of the initial 47 patients who underwent internal mammary artery implantation alone, there were 3 surgical deaths (6.4 per cent). One of 5 patients who had an aneurysmectomy performed in addition to single internal mammary artery implantation died prior to discharge from the hospital. Four additional patients died of myocardial infarction or of congestive heart failure in the first year following surgery and prior to restudy by arteriography. Six of these 8 patients who died in the first year following surgery had moderate to marked dilation of the left ventricle at the time of the preoperative study; 1 patient had a normal left ventricle, and a ventriculogram had not been performed on the remaining patient.

At approximately one year following surgery, there were 44 surviving patients. Eighty-two per cent noted disappearance or improvement of angina pectoris. In 18 per cent, the frequency of angina pectoris was the same or had increased (Table I). At the last follow-up of these 44 patients (average duration of follow-up, 2.8 years), 7 per cent had died, 36 per cent were the same or worse, and 57 per cent were improved or had no angina at all. The cause of death in the 3 patients who died was acute myocardial infarction.

Thirty-five of the 52 patients who underwent single or double internal mammary artery implantation were restudied by selective internal mammary arteriography. The 35 patients had a total of 59 vessels implanted. Three of the 59 internal mammary artery implants could not be adequately evaluated angiographically for technical reasons or because the orifice of the vessel could not be selectively catheterized. Seventy-nine per cent of all vessels were patent and 54 per cent communicated with the pre-existing coronary artery network to some degree (Table II). The majority of occluded vessels were implanted early in the series, at which time a number of right internal mammary arteries were placed into the right ventricle, a procedure which has since been abandoned. Only 14 per cent of vessels which were implanted between 1968 and 1970 were occluded, and 60 per cent communicated with the pre-existing coronary artery network.

Thirty-two of the 35 patients had at least one patent internal mammary artery and 3 had no patent internal mammary artery. Therefore, 91 per cent of patients who were restudied had at least one patent internal mammary artery. Thirty-seven per cent had at least one internal mammary artery implant which was patent and which communicated with a major coronary artery (excellent angiographic result). Better results were seen in the patients who were operated on more recently (Table III).

The 35 patients who were restudied by arteriography were divided into four groups depending on the angiographic result. Group 1 patients had at least one internal mammary artery which communicated with a major coronary artery or large branch of a major coronary artery. Group 2 patients had at least one internal mammary artery which was patent with local revascularization. Group 3 patients had at least one patent internal mammary artery but with no apparent revascularization. Group 4 patients had no patent internal mammary artery. One patient could not be

TABLE II. Angiographic results of internal mammary artery opacification in 35 patients who underwent internal mammay artery implantation at St. Joseph's Hospital five months to three-and-a-half years (average 1.04 years) prior to restudy

	Year Internal Mammary Artery Implanted*		
Angiographic Classification of Implant	1964–1967	1968–1970	1964–1970 (Total Series)
Implant occluded	7 (33)	5 (14)	12 (21.4)
Implant patent but no collateral vessels	5 (24)	9 (26)	14 (25)
Implant patent with local revascularization	4 (19)	9 (26)	13 (23.2)
Implant patent with filling of a major coronary artery or large branch	5 (24)	12 (34)	17 (30.4)
Total number of internal mammary artery implants	21	35	56
Total number of patent implants	14 (67)	30 (85)	44 (79)

* Per cents in parentheses.

TABLE III. Summary of angiographic results in 35 patients at time of restudy (approximately one year following surgery)

Date of Surgery	Number of Patients	Number of Patients with Patent Internal Mammary Artery*	Number of Patients with Excellent Angiographic Result*
1964–1967	15	13 (87)	4 (29)
1968–1970	20	19 (95)	9 (45)
1964–1970	35	32 (91)	13 (37)

* Per cents in parentheses.

TABLE IV. Results of internal mammary artery implantation in 34 patients restudied by arteriography

	Group*			
	1	2	3	4
Total number of patients	13	9	9	3
Patient years followed	35	24	27	11
Improved at one year	12	7	8	0
Improved at last follow-up	10	7	4	0
Angiographic worsening of coronary artery disease	3/12	3/8	1/7	0/2
Dead	1	0	2	0
Working	10	5	4	1
Pre-existing collateral vessels	12	7	4	2

* See text for explanation.

grouped because of lack of adequate visualization of both of his implants, although both were seen to be patent.

Of the 13 patients in group 1, 12 had improvement in angina pectoris at the end of one year and 10 continued to be improved at the time of the last follow-up (Table IV). One was dead and 10 were working full time when last seen. Collateral vessels were present on the preoperative arteriogram in 12 of the 13. Worsening of coronary artery disease was noted in 3 of the 12 who had repeat coronary arteriography in addition to internal mammary artery visualization (Fig. 4).

Less than half of the patients in group 3 had sustained improvement and none of the 3 patients in group 4 noted improvement. Patients in group 1 and 2 had considerably more collateral formation on the initial coronary arteriogram than the patients in groups 3 and 4. Of interest is the fact that on retrospective angiographic analysis only 2 of the 13 patients in group 1 would now be considered as reasonable candidates for a saphenous vein bypass graft.

The 22 patients in groups 1 and 2 have been followed for fifty-nine patient years or for an average of 2.7 years per patient. One patient has died of a myocardial infarction and 2 patients have had nonfatal infarctions for an incidence of 1.7 per cent deaths per year and 3.4 per cent myocardial infarctions per year. The 12 patients in groups 3 and 4 have had 5.3 per cent deaths per year of follow-up and 8.8 per cent myocardial infarctions per year.

Comment

Evaluation of surgical therapy for coronary artery disease in human subjects is made difficult by the complexity of the basic disease process. Improvements in angina pectoris can occur spontaneously or from sham operations.[9] It is difficult to measure the rate of blood flow in implanted internal mammary arteries in the intact patient. Myocardial metabolism before and after surgery can be determined but is subject to differing interpretations. Well-controlled studies comparing medical and surgical therapy are not available and may not be for many years.

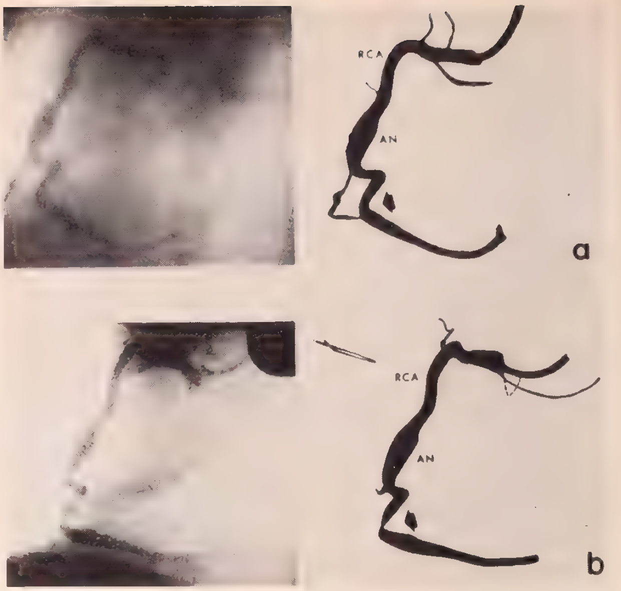

FIGURE 4. Worsening of coronary artery disease in patient who had symptomatic improvement following bilateral internal mammary artery implantation. (a) Left anterior oblique view. Right coronary artery (RCA) in April, 1966. Minimal narrowing of vessel after long area of aneurysmal dilatation. (b) Right coronary artery in April, 1967, 90 per cent area of obstruction (arrow) now present.

Despite these limitations, an increasing amount of knowledge concerning myocardial revascularization is accumulating. There is sound morphologic and physiologic evidence that the operation does revascularize a portion of the human heart.

Currently, the standard means of objectively evaluating patients after internal mammary artery implantation is by selective opacification of the implanted vessel. This procedure is usually performed eight to twelve months after the initial surgery since it takes approximately this long for significant collateral channels to develop.

In this study, 79 per cent of all internal mammary artery implants were found to be patent. Fifty-four per cent communicated with vessels of the pre-existing coronary artery network. Eighty-five per cent of arteries implanted between 1968 and 1970 were patent and 60 per cent communicated with the coronary artery system. The higher percentage of patent implants which was found in the latter part of the series reflects the increasing experience of the surgical team and better patient selection. In other reported series, 56 to 95 per cent of internal mammary arteries which have been implanted into ischemic myocardium remain patent.[4,10-13] Approximately 50 per cent show some degree of retrograde filling of the coronary system,[4,13,14] but in one report this figure was as low as 30 per cent.[10] Best results are found in patients who have collateral circulation demonstrated on preoperative arteriograms. Coronary obstruction of less than 75 per cent is generally not hemodynamically significant and is therefore associated with a poor implant patency rate.

Ideal patients for revascularization are those with at least 90 per cent occlusion of a coronary vessel, and in whom evidence of collateral circulation to the distal portion of the obstructed vessel is present.[15]

Several different methods have been utilized to determine implant blood flow volume in human subjects. Kay and Suzuki[12] measured volume flow by using a cine angiographic technic. In 3 patients studied five months after bilateral Vineberg operations, computed flows ranged from 11 to 59 ml. per minute per vessel with a total flow per patient of 48 to 104 ml. per minute.

Sullivan *et al.*[16] studied the amount of flow in implanted vessels by selectively injecting krypton-85 tagged saline into the orifice of the internal mammary artery. Tracer activity was detected by coronary sinus sampling and/or by precordial scanning. In subjects with patent implants, flow ranged from 64 to 102 ml. per 100 Gm. left ventricular muscle per minute with good agreement between precordial and coronary sinus clearance rates.

Left ventricular and selective internal mammary artery injections of Kr^{85} yield similar myocardial flow patterns. This finding indicates that the myocardial Kr^{85} is cleared by the same coronary vasculature whether it reaches the heart via the internal mammary artery or via the coronary system. Arteriovenous shunting of blood from the implant directly to the venous system is therefore unlikely.[5]

Gorlin and Taylor[14] have found that myocardial lactate metabolism improves after revascularization surgery. Normal myocardium extracts lactate. Twenty of 27 patients with angina pectoris and angiographically proved coronary artery disease were found to have myocardial production of lactate. One year after Vineberg procedure, 16 of the 20 had reverted to myocardial lactate extraction. The long period of time between preoperative and postoperative study makes interpretation of these data difficult. It would seem, however, that the revascularization procedure had improved perfusion of ischemic areas of myocardium so that they could shift from anaerobic to aerobic metabolism. It is also possible that some of the ischemic areas became infarcted and could no longer produce lactate.

In summary, data obtained from the study of internal mammary artery implants in ischemic human myocardium show that the majority of implants remain patent and that they carry significant amounts of blood to the myocardial capillary area. Perfusion of myocardium, rather than arteriovenous shunting of blood, appears to occur. Improved myocardial metabolism as determined by lactate studies is suggested.

Following revascularization surgery, 75 to 78 per cent of surviving patients have improvement in anginal pain.[11,14] This improvement often occurs three to eight months after operation when collateral anastomoses are developing and when the psychologic effects of major surgery are disappearing.[5]

In the present study, 82 per cent of patients noted improvement or disappearance of angina pectoris one year following surgery. This figure decreased to 57 per cent at the time of last follow-up (average duration of follow-up 2.8 years). Patients who had at least one patent internal mammary artery which communicated with the preexisting coronary network almost invariably had improvement in angina pectoris. Those with no patent internal mammary artery generally had no sustained improvement or worsening of pain. These findings suggest that if the patient has at least one well-functioning internal mammary artery implant it is highly likely that he will have improvement in anginal pain.

In other reported series, the majority of patients who describe relief of angina pectoris have been found to have patent implants. Those with no subjective improvement usually have a closed implant.[5,11] It is therefore well established that a successful Vineberg operation can produce symptomatic improvement in patients who have angina pectoris secondary to occlusive coronary artery disease.

It is not yet known whether the incidence of subsequent myocardial infarction is reduced, or whether life expectancy is improved, by the Vineberg operation. Several investigators report that the incidence of myocardial infarction may be reduced by this procedure. Gorlin and Taylor[14] found only 4 myocardial infarctions in 46 survivors of Vineberg operations who were observed for at least twenty-four months. Nine of 49 medically treated patients with angiographically proved coronary artery disease had infarctions over a similar period of time. These data suggest a reduction of approximately 50 per cent in the rate of infarction after surgery.[14] Unfortunately, the medically treated control group had more persons with congestive heart failure than the surgical group. This probably means that some of the controls had more advanced disease than the patients selected for surgery. Diethrich *et al.*[17] evaluated patients with angiographically comparable coronary artery disease who had been treated medically or surgically. The overall incidence of myocardial infarction was greater in the nonoperated (44 per cent) than in the operated (30 per cent) series. Again, however, the control series may have contained some patients with basically more severe disease.

At the end of a similar observation period Diethrich and his coworkers[17] found a greater percentage of operated patients alive than medically treated patients. Both groups had equal degrees of coronary artery disease as determined by cine coronary arteriograms. The survival was 70 per cent for the operated group and 58 per cent for the nonoperated group. The average period of follow-up was two years.

In the series of patients studied by Gorlin and Taylor,[18] life table analysis shows a significant difference in survival rate in favor of the surgically treated group at six and twelve months. The improved life expectancy thereafter (92 per cent versus 86 per cent) is still statistically insignificant. Further follow-up of this series will be of considerable interest.

In the present study we have found that patients with functioning internal mammary artery implants have had 3.4 per cent myocardial infarctions per year of follow-up compared with 8.8 per cent myocardial infarctions per year of follow-up for patients without a functioning implant. Fewer deaths have occurred in the patients with functioning implants, although the total number of deaths in the entire series which has been followed after internal mammary arteriography is small.

We currently believe that saphenous vein aorta to coronary artery bypass graft is the procedure of choice for patients with coronary artery disease who require myocardial revascularization. If this procedure is not technically feasible, the patient may benefit from a single or double internal mammary artery implantation, especially if collateral vessels can be demonstrated on the pre-operative coronary arteriogram. A combination of bypass graft and internal mammary artery implantation may be indicated in some patients if the myocardium cannot be totally revascularized by a bypass procedure. We have recently restudied 2 patients who had this type of combined approach performed. In both cases the bypass graft had occluded, but the internal mammary artery implant remained patent and produced retrograde filling of a major coronary artery.

Summary

The seven years of experience of a community hospital with the Vineberg procedure is reviewed. The surgical mortality rate in 47 patients was 6.4 per cent. One year following surgery, 82 per cent had disappearance or improvement of angina pectoris. At the time of last follow-up (average duration of follow-up, 2.8 years) 57 per cent were improved. Selective internal mammary arteriography one year following surgery demonstrated that 79 per cent of all implants were patent and that 54 per cent communicated with the pre-existing coronary artery vessels. Sustained clinical improvement occurred in the patients with good angiographic results while those with poorly functioning implants did not have sustained improvement. Patients with functioning implants had 1.7 per cent deaths per year of follow-up and 3.4 per cent myocardial infarctions per year. Patients with occluded or nonfunctioning implants had 5.3 per cent deaths per year and 8.8 per cent myocardial infarctions per year.

Internal mammary artery implantation alone or in combination with saphenous vein bypass graft may be of value in patients whose myocardium cannot be completely revascularized by existing vein graft technics.

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ERYTHROPOIETIN LEVELS IN PATIENTS WITH WILMS' TUMOR

Follow-up evaluation

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The present report evaluates the follow-up or screening value of erythropoietin (ESF) determinations postoperatively in patients with Wilms' tumor. The study revealed no ESF elevations in urine or plasma specimens in the absence of metastatic disease; in metastatic active disease elevations were always seen; and in apparent clinical cure of metastatic disease there were persistent ESF elevations in both urine and plasma specimens, but these ultimately fell to normal. No detectable influence was observed in patients receiving radiation or chemotherapy, and variations in the ESF assay were not related to interruption of treatment.

Elevated ESF (erythropoietin) levels have been previously described in patients with Wilms' tumor.[1-4] This clinical finding has been similarly compared to the elevations in ESF activity noted in plasma and urine specimens obtained from patients with renal cell carcinoma, hydronephrosis, renal cyst, and renal adenoma.[5] The source of the ESF is normally considered to be the kidney.[5]

Elevation of ESF was seen in 37 patients with Wilms' tumors in various clinical stages and without overt polycythemia.[2-4] ESF elevations were found in 11 of 12 cases prenephrectomy, and all but 1 decreased to normal levels in the immediate postoperative period.[3] More than 80 per cent of plasma specimens assayed from patients with metastases were found to contain elevated ESF levels.[1] Urine and plasma were readily assayed, although plasma consistently had much greater ESF activity.[1] ESF levels correlated well with the response to radiation or chemotherapy.[1]

The purpose of the present report is to evaluate the follow-up or screening value of ESF determinations postoperatively in patients with Wilms' tumor.

Materials and methods

This series includes 24 children and young adults with histologically diagnosed Wilms' tumors who were followed until death or minimally twenty-four months post nephrectomy.

No patient was severely anemic (hematocrit less than 20) or uremic (blood urea nitrogen more than 50 mg. per 100 ml.), and none exhibited features of polycythemia, bone-marrow insufficiency, enlargement of the spleen, or any specific clinically detectable blood dyscrasia. No patient had been recently exposed to any known toxic chemical. Routinely, 10 to 20 ml. of heparinized blood was obtained from these patients on readmission to the hospital or in the outpatient clinic. The blood was centrifuged, and the plasma was stored at minus 20°C. until the plethoric assay animals were prepared for ESF determinations. The animals were rendered plethoric (hematocrit greater than 60) by exposure to hypoxia and then serially injected with the test plasma for three days. In four days the animals were injected intravenously with 0.2 ml. saline containing 0.5 microcurie Fe^{59} (radioactive iron), and in five days the animals were sacrificed for a twenty-four hour uptake of Fe^{59}. Saline or normal plasma-injected animals served as controls. In some instances extracts of urine as well as plasma were assayed. The urine was obtained in a sterile container over a twenty-four-hour-collection period from selected patients. For urine and plasma samples the ESF values are expressed as per cent twenty-four-hour Fe^{59} uptake or as the ratio of activity, namely,

$$\frac{\text{per cent twenty-four-hour } Fe^{59} \text{ uptake (test plasma, urine)}}{\text{per cent twenty-four-hour } Fe^{59} \text{ uptake (saline injected control)}}$$

TABLE I. Group I: 15 patients with Wilms' tumor after nephrectomy with no known metastatic disease

Months After Nephrectomy	Ratio of Urine ESF Activity (>1.5)	Ratio of Plasma ESF Activity (>1.5)
3 to 6	0/0	0/7
7 to 12	0/3	1/4* (6.24)
13 to 18	0/2	0/4
19 to 24	0/3	0/3
24 plus	0/2	0/7
TOTAL	0/10	1/25

* A single assay ratio of 6.24 in plasma was observed. This converted both to normal without metastatic activity. A 1.5 ratio was considered the upper limit of normal for this study.

TABLE II. Group II: 4 patients with Wilms' tumor after nephrectomy with clinically active metastatic disease

Months After Nephrectomy	Ratio of Urine ESF Activity (>1.5)*	Ratio of Plasma ESF Activity (>1.5)*
3 to 6	(2.65) 1/1	(3.17) 1/1
7 to 12	(4.69) 2/2 (3.80)	(2.70) 1/1
13 to 18	(3.00) 1/1	(1.65) 1/1
19 to 24	(1.71) 1/1	(1.69) 1/1
24 plus	(1.55) 1/1	(12.78) 2/2 (2.00)
TOTAL	6/6	6/6

* Figures in parentheses represent individual ratios of ESF plasma or urine activity. Upper limit of normal for this study was 1.5.

TABLE III. Group III: 6 patients with Wilms' tumor after nephrectomy with clinically inactive (cured) metastatic disease

Months After Nephrectomy	Ratio of Urine ESF Activity (>1.5)*	Ratio of Plasma ESF Activity (>1.5)*
3 to 6	0/2	0/2
7 to 12	2/6 (12.93) (3.76)	1/4 (35.98)
13 to 18	1/5 (2.65)	1/8 (3.27)
19 to 24	0/8	0/8
24 plus	0/4	0/5
TOTAL	3/25	2/27

* Figures in parentheses represent individual ratios of ESF activity in plasma and urine. Upper limit of normal for this study was 1.5.

The ratio of activity is useful when comparing numerous samples assayed over different time periods.

Specimens obtained from normal healthy volunteers, ranging in age from one to eight years, had ESF values averaging 0.6 per cent on twenty-four-hour Fe^{59} uptake.[1] Saline-injected controls average 0.35 plus or minus 0.05 per cent twenty-four-hour Fe^{59} during this period of assessment. Ratios of normal activity for two years in our laboratories have never exceeded 1.0 plus or minus 0.30, that is, 1.3 represents greater than 3 standard deviations. Each specimen had an average of 3 to 5 assays performed.

The clinical material from two centers, Children's Hospital of Buffalo and Roswell Park Memorial Institute, was divided into three groups as follows:

> Group I: No known metastases after nephrectomy, but under chemotherapy and radiotherapy for specific periods.
>
> Group II: Known clinically active metastatic disease after nephrectomy on radiation therapy and chemotherapy, for intervals.
>
> Group III: Inactive metastatic disease (cured), after nephrectomy, on radiation therapy and chemotherapy, for intervals.

A ratio of 1.5 of ESF activity between plasma or urine and control was established from previous data as normal to facilitate comparison between various patients.

Results

Table I illustrates the results obtained by plasma and urine ESF assay in 15 patients in whom clinical metastatic disease did not develop at any point thus far in the postnephrectomy follow-up period. No patient had a urinary ESF elevation. In one plasma specimen of 25 samples (4 per cent) a significant ESF elevation occurred. This patient reverted to normal and subsequent metastatic disease did not develop.

Some patients were receiving radiation therapy or chemotherapy at the time the ESF samples were assayed. No detectable influence was observed. Variations in the ESF assay were not related to interruption of treatment.

Table II illustrates the results obtained in 4 patients post nephrectomy with clinically active metastatic disease. All 12 specimens (6 urine, 6 plasma) assayed had substantial ESF activity. These specimens were obtained from three to greater than twenty-four months post nephrectomy during which time treatment including chemotherapy and radiation therapy was given. The assays were performed without knowledge of the clinical status of the patient.

Table III summarizes the ESF assay results in urine and plasma specimens obtained from 6 patients with Wilms' tumor judged to have inactive metastatic disease post nephrectomy. As shown in Table III, there were 3 elevations in urine ESF and 2 in plasma ESF levels, all within eighteen months post nephrectomy at a time metastatic lesions (lung in every instance) were judged to be inactive or clinically cured. Subsequently, these elevations in the particular patients fell to normal levels. The correlation or lag time between clinical absence of disease and persistence of paradoxic elevation in urine or plasma ESF ranged from six to ten months as could best be clinically determined.

Comment

These results obtained by the serial measurement of urine and plasma erythropoietin (ESF) levels in patients with Wilms' tumor after nephrectomy have provided additional important information to that previously available.[1-4] First, in this group of 25 patients (Tables I to III) it is clear that in general where no active or metastatic disease was subsequently seen, no elevations in plasma or urine ESF were seen (Group I, Table I). The one unexplained ESF plasma elevation in Group I (4 per cent of total) remains undetermined. Various postulates are possible, but none are proved, that is, undetected metastatic disease cured by intermittent chemotherapy and radiotherapy. This group mainly indicates the limit of the test, evidently 96 per cent for plasma and 100 per cent for urine.

Group II patients with active metastatic disease further validate the screening potential of the ESF assays in urine and plasma specimens (Table II). There was absolute correlation in the 4 patients and 12 samples assayed during the various postoperative intervals. These results which demonstrate substantial elevations in ESF activity in plasma or urine specimens also suggest that the known hematodepressive effects of specific chemotherapy or radiation therapy do not artifactually inhibit Wilms' tumor-associated ESF elevations.

Further questions are raised, however, on inspection of the 6 patients who were judged to have been clinically cured of their once active metastatic disease (Table III). There was a total of 5 elevations (19.4 per cent) in plasma (7.4 per cent) or urine (12 per cent) ESF activity in these patients between seven to eighteen months after apparent cure of clinical metastatic disease. All patients ultimately remained free of their metastatic disease to date. The interval between persistent ESF elevations and no evident metastatic disease ranged from six to ten months in this study. To date we have had no instance of ESF elevation in plasma or urine preceding unheralded metastatic disease. These persistent ESF elevations, urine or plasma, suggest two possibilities (Tables I and III). The first possibility is that undetected disease was present and ultimately was destroyed. The second possibility is that despite the destruction of metastatic disease, the tumor-associated stimulus for ESF production or release persisted. This latter possibility appears unlikely, in that sustained ESF elevations of nontumor origin are usually associated with other clinically manifest stigma of erythroid stimulation, such as polycythemia.[1,3] There were none in this clinical series.

These results in this current series have led us to reaffirm our previous observations and to extend the position on ESF assay from urine or plasma specimens in patients with Wilms' tumor as follows:[1-3] Increased ESF activity in plasma or urine can be anticipated in the primary tumor and should rapidly abate within days following surgery.[1] The clinical confidence in the test in the absence of apparent disease exceeds 96 per cent. Persistent elevations are associated with clinically manifest metastatic disease. When metastatic disease has been successfully treated, sustained ESF elevations in plasma or urine can be expected to fall but with some delay, averaging as long as ten months. The reasons for this are not yet totally resolved.

Summary

ESF (erythropoietin) assay of plasma or urine specimens in 25 patients following primary treatment for Wilms' tumor was performed. All patients were observed until death or for a minimum of twenty-four months after nephrectomy. In the absence of metastatic disease, ESF elevations were not seen in urine or plasma specimens (more than 96 per cent accuracy). In metastatic active disease ESF elevations in plasma or urine were always seen (100 per cent). In apparent clinical cure of metastatic disease there were 19.4 per cent persistent elevations in urine (12 per cent) and plasma specimens (7.4 per cent) three to ten months beyond. All ultimately fell to normal. No patient had polycythemia. Erythropoietin assay thus appears to be a valuable tool in the clinical correlation and follow-up evaluation of patients with Wilms' tumor.

Acknowledgments. A Bulba, E. Dywinski, J. Jividen, and Mrs. W. Trudel gave valuable technical assistance.

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EXTERNAL TRACTION FOR DEPRESSED FACIAL FRACTURES

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Various technics and devices have been described for reduction and maintenance of depressed fractures of the facial bones. These include plaster head caps and a number of head frames and devices.[1-4] The fact that there are so many devices is an indication that each has its drawbacks. The plaster cast tends to slip and is very uncomfortable. The head frames, by improper use, have been a factor in the cause of meningitis by perforating the inner table. The other devices are costly and hence not readily available in all community hospitals.

Most depressed fractures of the facial bones can be reduced and their reduction maintained if necessary by various wiring technics, especially if there is operative intervention within twenty-four to forty-eight hours. On the other hand, associated intercranial, abdominal, and thoracic injuries may preclude early facial operations of any magnitude.

Although they are reducible, some of these delayed fractures cannot be maintained in position without external traction. Among them are midfacial fractures, such as LaForte II and III, with the dishpan deformity; and depressed malar fractures with comminution of the usual stabilizing bony framework. It is in these patients that a simple technic has been employed on two occasions utilizing equipment which is usually available in all operating rooms. Two tibial bolts are secured into each zygomatic process of the frontal bone as the site for external traction. With the first patient, the tibial bolts were bent toward each other in the midline; with the second patient an 8-hole Lane plate was secured across the tibial bolts (Fig. 1). This latter method proved better and will be described in detail (Fig. 2).

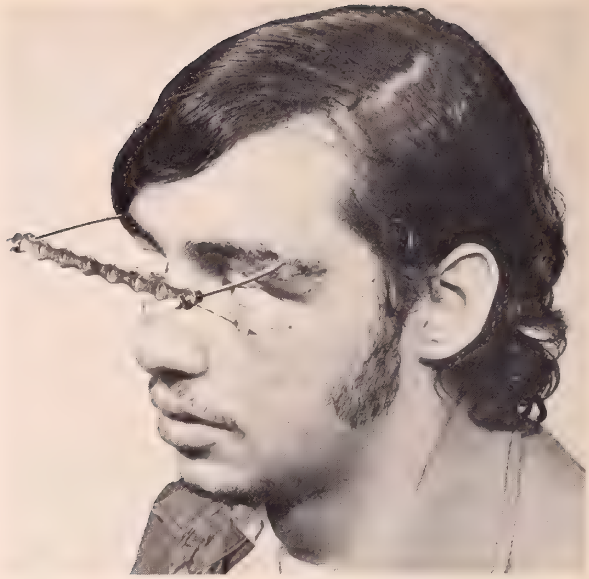

FIGURE 1. Depressed fracture of zygoma with comminution of infraorbital rim. External traction forward and anteriorly achieved by tibial bolts and connecting Lane plate. Stainless steel wire connected to the infraorbital rim and Lane plate. (Photograph courtesy of the Department of Medical Illustration, Veterans Administration Hospital, Buffalo, New York.)

Technic

Small incisions are made at the lateral edge of both brows over the stable portion of the zygomatic processes of the frontal bone.

A drill hole is made approximately 3 mm. deep in each zygomatic process of the frontal bone with a drill, one size smaller than the diameter of the tibial bolts.

Tibial bolts with three nuts are then screwed tightly into the drill holes. One nut is used as a lock nut to secure the tibial bolt to the bone. The head of the tibial bolt is cut off.

An 8-hole Lane plate is then slipped over the ends of the tibial bolts with one nut above and one nut below the plate. Both tibial bolts are bent slightly to the midline to accommodate the plate. The two nuts are then tightened on each bolt, securing the plate in position. The ends of the bolts are guarded with sections of plastic or rubber tubing.

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The Lane plate now serves as the point of external traction to which wires or rubber bands may be secured.

In the case of a depressed malar bone, 1-0 wire is attached to the depressed fragment and the wire is brought out through the skin and secured to the Lane plate. Again, other wiring may be necessary to correct medial and/or lateral displacement (Fig. 2, A and B)

With a depressed midface fracture a Kirschner wire may be passed through the nasal bones or the frontal process of the maxillary bones and bent in triangular fashion to form a site for traction. The Kirschner wire is then connected with 1-0 wire or by heavy rubber bands to the Lane plate. The usual supporting wires from the maxillary

Occasionally there is a need for external forward traction in depressed fractures of the facial bones. This is particularly evident in delayed reductions of the so called "dishpan" deformity, as well as depressed comminuted fractures of the maxilla and malar bones, which do not respond to the usual wiring technics. A technic utilizing tibial bolts placed in the zygomatic process of the frontal bones, is presented. These bolts are then bridged with a Lane plate which forms the purchase for the outward traction wires. The equipment used can be found in any operating room and the technic does not require any special devices.

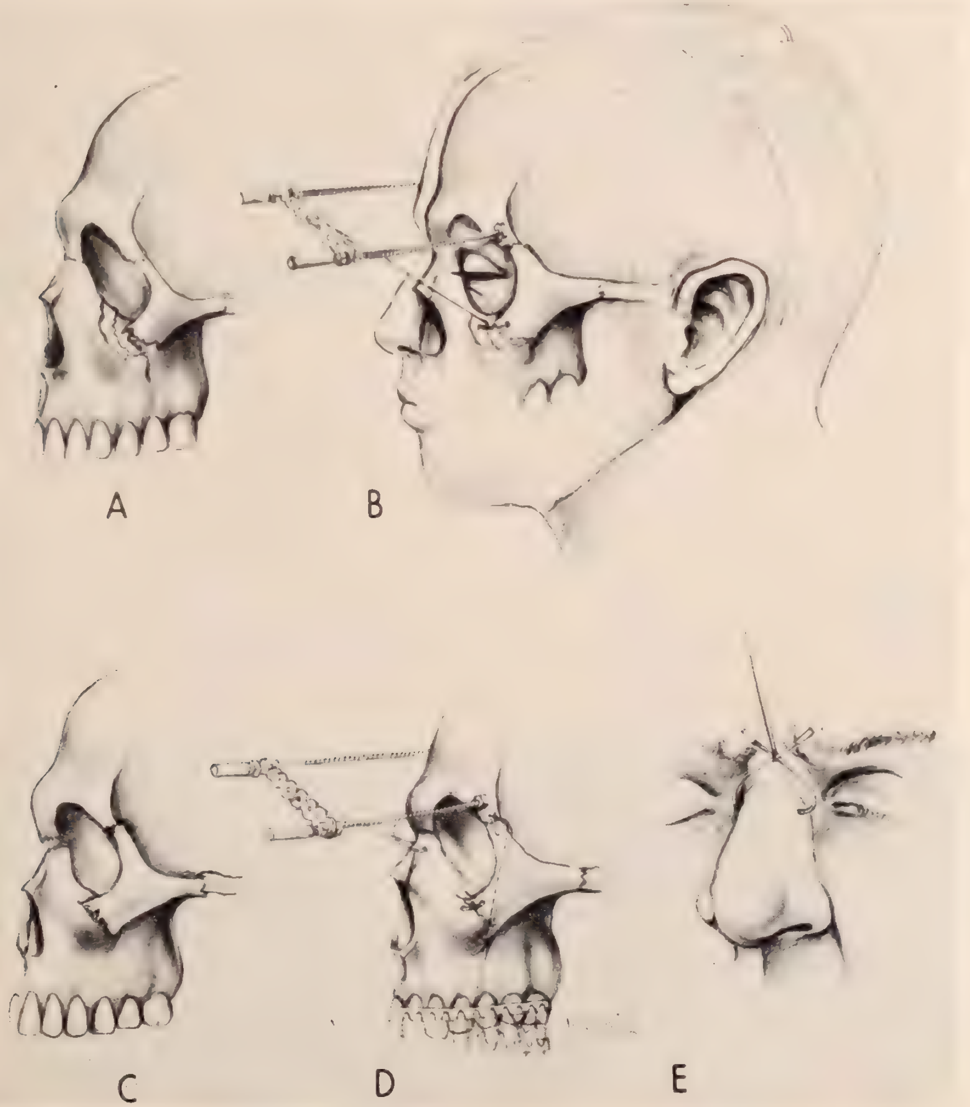

FIGURE 2. (A) and (B) Fracture and method of reduction of patient in Figure 1. (C), (D), and (E) depict depressed floating midface fracture complicated by a fractured zygoma. Reduction is achieved by tibial bolts and a Lane plate with a Kirschner wire through the frontal process of the maxilla. Suspensionary wires to an arch bar and wires across the other fracture sites complete the reduction and fixation. [(C), (D), and (E) from Loré, J. M., Atlas of Head and Neck Surgery, 2nd Edition, to be published by W. B. Saunders Co., Philadelphia.]

arch bar to the lateral rim of the orbit are utilized for fixation superiorly. Incidentally, these suspending wires may have a tendency to pull the fractured bone posteriorly. Hence, there is more necessity for outward and anterior traction (Fig. 2, C, D, and E). Traction is discontinued when fixation is secure, usually within three weeks.

Case report

A nineteen-year-old white male was admitted to the Buffalo Veterans Administration Hospital twelve hours after he was mauled by several assailants. In addition to his tender, swollen face, he complained of a frontal headache and pain over the left eye. There was no history of loss of consciousness, dizziness, or vomiting. Vision was normal. On examination the patient was fully conscious and alert. There was considerable swelling over the left side of the face with ecchymosis around the left orbit. The left eye had subconjunctival hemorrhage, but vision was normal. There was moderate swelling and tenderness over the left angle of the jaw, with moderate trismus. Breathing was normal.

X-ray films of the skull and facial bones revealed the presence of a depressed fracture of the left malar bone with separation of the left frontomaxillary suture line. The fracture went through the floor of the left orbit. The left antrum was cloudy. There was a nondisplaced fracture of the left mandible.

On January 30, 1970, the patient was brought to surgery where an open reduction and internal fixation of the fractured malar bone was performed. However, despite adequate apposition of the fractured edges, the medial fragment continued to slide back into its depressed position. To bring this forward, some form of external traction had to be applied anteriorly. To accomplish this, two tibial bolts were secured into the upper outer portion of each zygomatic process of the frontal bone. The free ends of each bolt were then connected with a Lane plate. From this Lane plate, external traction was applied to the left maxilla through a wire. Intermaxillary wiring was also carried out to immobilize the mandible. Tracheostomy was performed to insure a good airway. Anatomic and cosmetic results from this modality of treatment were excellent.

Summary

External traction support for depressed fractures of the facial bones may be used when maintenance of reduction may be a problem. This technic employs two tibial bolts and a Lane plate fastened to the zygomatic processes of the frontal bone.

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Correlation Conferences in Radiology and Pathology

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ASPERGILLOMA OF SINUS

Case history

Ira Rothfeld, M.D.: A fifty-year-old black male had nasal obstruction, green nasal discharge, and pain in his right upper teeth for several months. He was also under treatment for gout and hypertension. His nasal septum was deviated to the right. There was pain on pressure over the right nostril. Anticongestants and antihistamines did not control his symptoms, and subsequently he was given tetracyclines.

Two days after admission to the hospital the right antrum was irrigated and a biopsy obtained from the meatus and sinus. The material flushed from the antrum was purulent and foul smelling. Cultures revealed Proteus and Staphylococcus albus and was negative for coagulase. The biopsy was interpreted as subacute and chronic inflammation. Five days later, because symptoms had not improved following the drainage procedure and tetracycline therapy, the right maxillary antrum was entered by a Caldwell-Luc approach. Several firm brown masses were found and removed, and thick, pale greenish tissue covered the medial wall and floor of the antrum. This was stripped away. The initial impression was that the masses were foreign bodies.

The patient was discharged on tetracycline, and antral irrigations were repeated one week later. Within two weeks he was asymptomatic, and roentgenograms showed the sinus to be cleared. He has had no further symptoms and was last seen fourteen months after operation with no evidence of sinusitis.

Radiographic discussion

Gail Eliot, M.D.: Conventional views of the paranasal sinuses demonstrate opacification of the entire right maxillary sinus (Fig. 1). No air fluid level is present. The left maxillary, ethmoidal, frontal, and sphenoid sinuses are normally aerated. Polytomography of the right maxillary sinus demonstrates bone destruction of the medial wall and opacification of the sinus (Fig. 2).

The radiologic differential diagnosis includes chronic sinusitis with osteomyelitis, malignant epithelial tumor of the antrum with bone invasion, and fungal infection of aspergillosis or mucormycosis with bone destruction.

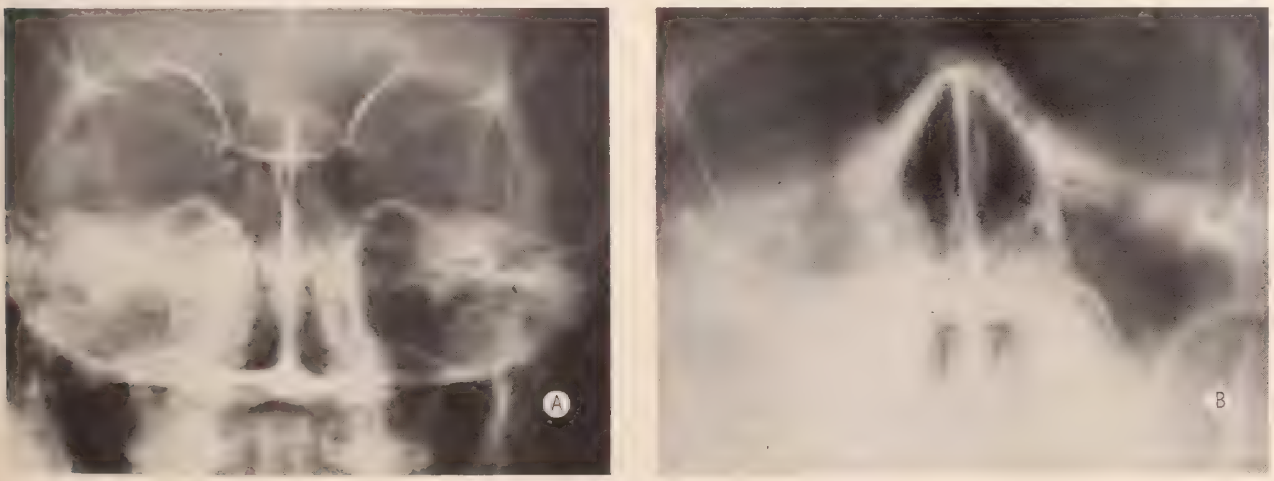

FIGURE 1. (A and B) Conventional views of paranasal sinuses showing opacification of right maxillary antrum.

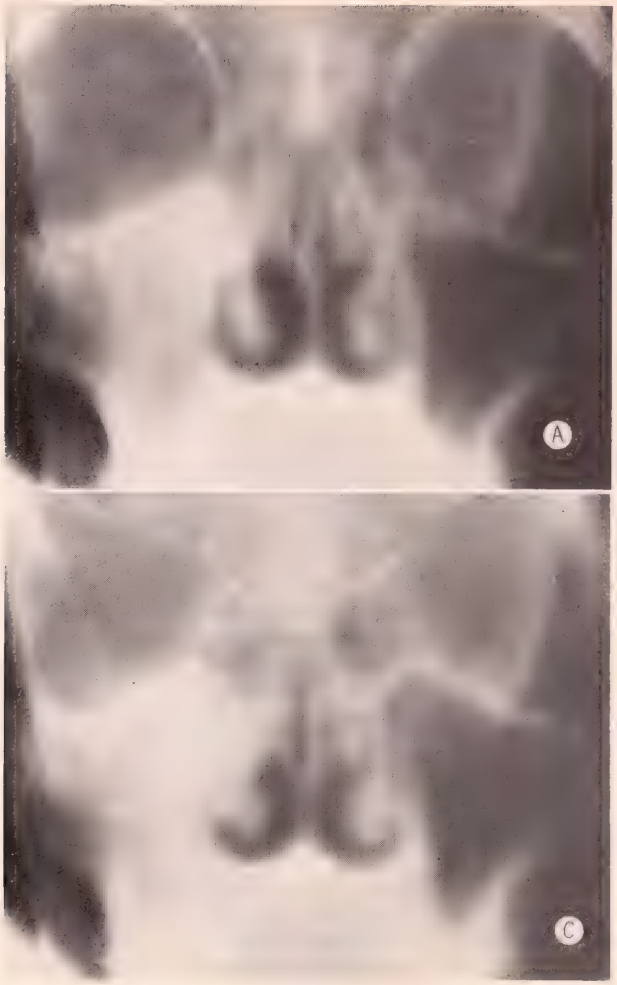
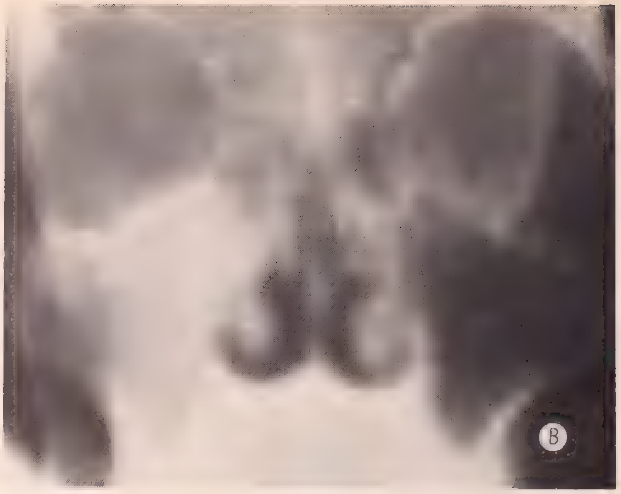

FIGURE 2. (A, B, and C) Tomography shows bone destruction of medial wall of right maxillary sinus.

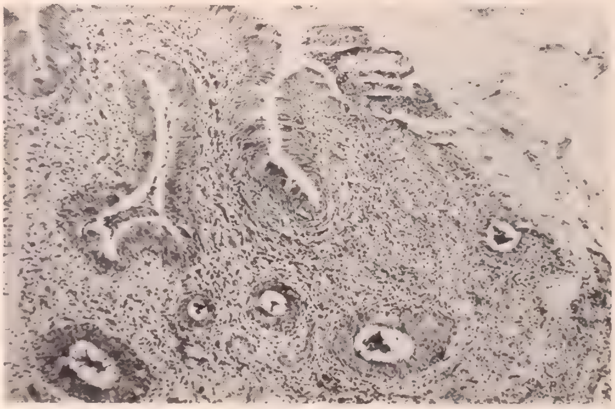

FIGURE 3. Antral mucosa. Nonspecific inflammatory changes present. No fungi were found in tissue. There is surface erosion seen on right.

Pathologic discussion

Charles F. Begg, M.D.: Fragments of antral mucosa and underlying bone were received in formalin. No specific diagnosis was made on the first specimen, and additional material was submitted six days later. In each instance the interpretation was that there was a nonspecific chronic inflammatory process present in the antral mucosa with resorption of underlying bone (Fig 3). "Nondescript debris" was seen in both specimens. Special stains for fungi were done, but results were not interpreted as positive, and it was believed that this material was a foreign substance, perhaps cotton or gauze packing.

Fortunately for diagnostic accuracy, another patient presented himself with a similar radiologic and clinical picture one month later. His specimen had the same nonspecific mucosal changes and "nondescript debris," but special stains were more effective and revealed a tangled mass of mycelia (Fig. 4). This caused us to review specimens from the first patient, and we belatedly identified the "debris" as a fungus ball. Identification of this fungus is tentative since it rests on morphologic study alone, no culture having been made. It is most likely an Aspergillus. Mucor, which closely resembles it, is far more aggressive and has a propensity for invading tissue and vessels.

Comment

Dr. Eliot: Aspergillus infection of the maxillary antrum has been reported in the literature since 1891.[1] Two cases of aspergillosis invading the orbit were reported in 1927.[2] Subsequently many case reports have appeared in the literature including a review of the literature prepared by Savetsky and Waltner.[3]

The usual infective agent in man is Aspergillus fumigatus. The source of infection is airborne spores of Aspergilli mixed with dust which enter the respiratory system. Aspergilli are found on decaying food, fruit, grain, and plants.

A disturbance of the normal physiology of the upper airway is required for the successful colonization of the antrum by Aspergillus. Such a disturbance may be caused by altered host anatomy, such as obstruction of the antrum by polyps or chronic sinusitis; altered host systemic resistance associated with metabolic disturbances,

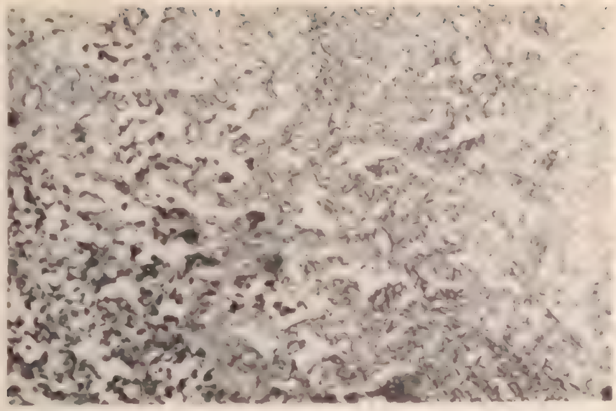

FIGURE 4 Fungus ball composed of tangled mycelia with fragmented inflammatory cells in left of photograph

such as diabetes mellitus or cancer; and pharmacologic alteration of the host by systemic steroids or cancer chemotherapy.

Clinically and radiographically the suspicion of aspergillosis should be entertained in all cases of prolonged maxillary sinusitis. Altered host anatomy is universally present, and antibiotics are frequently administered. Occasionally the patient may report a discharge of pieces of white membrane or tough green gelatinous secretions.[4] Radiographically the changes are similar to changes of bacterial sinusitis with mucosal thickening and clouding of normal air-containing spaces. Usually only one sinus is involved.[5] Bone destruction may occur. When the latter is present, tumor must be excluded by biopsy. Bone destruction and invasion by Aspergillus occurred in only 6 of 25 cases occurring in all paranasal sinuses and orbits reviewed by Hora.[4] These included only 2 cases occurring in the maxillary antrum with bone destruction. The remaining 19 cases demonstrated no bone destruction.

Dr. Begg: We have occasionally found Aspergillus fungus balls in lung cavities caused by bronchiectasis, tuberculosis, bacterial infection, and infarcts. They are easily identified by gross examination and the organisms recovered in culture. We have not previously seen them in sinuses and have reviewed all our sinus curettings from the past five years to assure ourselves that they have not been overlooked. They are not easily identified grossly in curetted specimens because they are broken into small fragments. They are not recovered in the routine cultures done on sinus contents because these are subjected only to methods for bacteria not for fungi.

Aspergilli, although widely distributed in nature, rarely cause disease. Moist cavities which are inflamed and at least partially obstructed provide a favorable locus for saprophytic growth and the formation of fungus balls, which if they have any deleterious effect to the patients, have it as the result of their being foreign masses producing mechanical damage.[6]

There are, however, other reports of Aspergilli in lungs and bronchi producing systemic effects[7] involving either hypersensitivity reactions with little evident tissue damage or local lytic and destructive effects as the result of either an exotoxin or products of degenerating fungi.[8] An editorial points out that there is an increased frequency of the hypersensitivity type of reaction.[9] While none of these systemic effects have been reported in cases of Aspergillus fungus balls in the sinuses, the possibility of such a response should be considered.

Dr. Rothfeld: Aspergillosis in otolaryngology is most commonly found associated with external ear canal infections in which the Aspergillus is a secondary invader rather than the primary causative organism. Aspergillus is not commonly associated with sinus infections, and cultures are not routinely made for fungus organisms.

In this case the unusual findings were: (1) The infection was confined to a single sinus, and this is unusual in sinusitis; (2) the infection did not respond to antibiotic therapy and antral washings; and (3) there was bone destruction of the medial antral wall.

The diagnosis on admission was a tumor within the right antrum especially because of the presence of bone destruction which in retrospect was probably caused by the mechanical irritation produced by the fungus ball with its stimulation of increased vascularity and erosion.

It was of interest to note that the patient's infection resolved completely without the use of specific antifungal therapeutic agents once proper drainage had been provided.

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Case Reports

HYPEROSMOLAR DIABETIC STATE WITH SICKLE THALASSEMIA

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Hyperosmolar diabetic state is a syndrome of uncertain etiology. However, some light may be shed on its pathogenesis by its occurrence in association with an unusual hemoglobinopathy. It is in this hope that the following case is reported.

Case report

The patient, a fifty-six-year-old Negro woman, was admitted to Bellevue Hospital for the first time in March, 1957, because of vague chest and skeletal pains and the suspicion of coronary heart disease. However, her cardiac evaluation findings were normal, including serial electrocardiographic examinations and the Master's test, and remained so throughout her clinical course. Anemia was noted as an incidental finding and was ascribed to iron deficiency.

She was well until August, 1959, when she was readmitted with the recurrence of skeletal pains. This time, her anemia was more fully evaluated. The hemoglobin was 9 Gm. per 100 ml.; red blood cell count, 3.8 times 10^6 per cubic millimeter; hematocrit, 30; white blood count, 18,000 per cubic millimeter initially, 7,700 on repeat examination; reticulocyte count, 14 per cent on admission, 3 per cent at the time of discharge; bilirubin, 0.8 mg. per 100 ml. total and 0.3 mg. per 100 ml. direct; serum iron, 80 micrograms per 100 ml.; and Coombs test results, direct and indirect, negative. The sickle-cell preparation reaction, when performed routinely, was negative; but following the occlusion of the circulation to the finger with a rubber band for two minutes, the test revealed about 70 per cent sickling of the red blood cells. A hemoglobin electrophoresis was performed showing hemoglobin S-F, and the diagnosis of sickle thalassemia was made. A family history obtained at that time showed the patient's maternal grandfather to have come from Africa to the British West Indies, where the patient was born. Of her five siblings, two girls and one boy died in their teens of cause unknown. The patient's twenty-two-year-old daughter and thirteen-year-old son enjoyed good health then, and continue to do so to date, twelve years later.

The patient was admitted to Bellevue Hospital for the third time on February 3, 1969, with a two-week history of gradual change in mental status. She first began to complain of somnolence, vague abdominal pains, and thirst. She had polyuria and polydipsia. Three to four days before admission, she was noted to have slurred speech. She became more and more antagonistic, withdrawn, and finally, completely unresponsive.

On physical examination, she was deeply lethargic and moderately dehydrated. Her blood pressure was 100/70 mm. Hg; heart rate, 110 per minute; respiratory rate, 24 per minute; and rectal temperature, 101.4 F. She was noted to have fine facial features. Sclerae were clear. Her chest and heart were normal. The examination of the abdomen revealed involuntary guarding and tenderness of the right upper and lower quadrants. There were no localizing neurologic signs.

The emergency laboratory examination showed the following: hematocrit, 32; white blood cell count, 18,400 per cubic millimeter, with 70 per cent neutrophils, 10 per cent immature forms, 12 per cent lymphocytes, and 8 per cent monocytes; blood urea nitrogen was 59 mg., creatinine 2.1 mg., glucose 1,110 mg. per 100 ml; serum sodium 166, chloride 118, potassium 4.7, and carbon dioxide 23 mEq. per liter. The urine had a pH of 5, albumin of 1 plus reaction, but no demonstrable glucose or acetone. Similarly, the serum gave a negative reaction for acetone. The following osmolality values were obtained at the time of admission: serum, 432 mOsm. per liter; cerebrospinal fluid, 425 mOsm. per liter with a glucose concentration of 501 mg. per 100 ml.; and urine, 477 mOsm. per liter, with a urinary sodium concentration of less than 10, chloride of 4, and potassium of 15 mEq. per liter, and urea of 190 mg. per 100 ml. Arterial blood gas analysis on admission showed a pH of 7.42, carbon dioxide pressure of 36 and an oxygen pressure of 60 mm. Hg, with an oxygen saturation of 92 per cent. On the basis of these data, the diagnosis of hyperosmolar, nonketoacidotic diabetic state was made in a patient without previous history of diabetes.

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The patient was given 200 units of regular insulin intravenously statim. During the following twelve hours, she received 5 L. of one-half normal saline and 5 L. of 5 per cent dextrose-in-water via infusion, with 120 mEq. of potassium chloride added. An additional 40 units of regular insulin were given subcutaneously. At the end of the twelve-hour period, the patient was alert and fully responsive. At the same time the following repeat chemistries were obtained: blood urea nitrogen 27, creatinine 1.5, and glucose 360 mg. per 100 ml; and sodium 152, chloride 120, potassium 5.8, and carbon dioxide 18 mEq. per liter. From this point on, the patient made an uneventful recovery. Her insulin requirement diminished rapidly from an initial 60 units of regular insulin daily to 1 Gm. of tolbutamide at the time of her discharge four weeks later.

Additional studies were performed to elucidate her present illness and to further document her anemia. A urinary concentration test, after the subcutaneous injection of five units of commercially available vasopressin, showed a maximum concentration of 433 mOsm. per liter at two hours, with a minimum concentration of 72 mOsm. per liter at five hours. Growth hormone level, performed on serum obtained on admission, showed a concentration of 8 nanograms per milliliter (normal, female: less than 30 nanograms per milliliter).* Pertinent hematologic data are shown in Table I, including those of the patient's thirty-one-year-old daughter and twenty-two-year-old son.

At the end of a year-and-a-half follow-up period, the patient continued to do well on tolbutamide therapy alone, with good control of her diabetes.

Comment

The hyperosmolar (nonketotic) diabetic state can no longer be considered a rare occurrence. It is characterized by extreme hyperglycemia, severe dehydration, and an altered state of consciousness. The principles of the accepted mode of therapy are those followed in this case.[1,2] The pathogenesis of the syndrome, however, remains uncertain.

Hyperglycemia appears to play the primary role, but the source and degree of hyperglycemia await explanation. Di Benedetto, Crocco, and Soscia[1] suggest an exogenous source, but this is seldom demonstrable. On the other hand, increased endocrine activity, adrenergic or otherwise, has not been ruled out and needs further investigation.

The absence of ketoacidosis and the severe degree of dehydration are more amenable to explanation. In 1941, Mirsky,[3] using insulin-deprivation experiments, demonstrated that diabetic patients can be classified into two groups. One group, on withdrawal of insulin, develops ketoacidosis precipitously in a matter of twelve to twenty-four hours, while another group does the same insidiously over a period of several weeks. What is more, in the latter group the feeding of a high-carbohydrate diet, with resultant hyperglycemia, prevents the development of ketonemia. Not so in the first group. The maturity-onset diabetic patient, in whom the syndrome under discussion is seen, clearly belongs to the second group. Furthermore, he has normal or increased circulating levels of insulin, amply sufficient to prevent fat mobilization, although apparently insufficient to promote glucose transport.[4,5] It is also of interest that some of the patients in the hyperosmolar diabetic state may not require insulin at all during their acute management, and it is known that the majority, once out of danger, will be adequately controlled with oral hypoglycemic agents, or by diet alone.[6]

TABLE I. Hematologic findings

Clinical Data	Patient	Daughter	Son
Hematocrit	32.5	39	42
Hemoglobin (Gm per 100 ml.)	10.4	12.4	. . .
Red blood cell count (per cubic millimeter)	3.47×10^6	4.70×10^6	. . .
Mean corpuscular volume (cubic micrograms)	94	83	. . .
Mean corpuscular hemoglobin (micromicrograms)	30	26.5	. . .
Mean corpuscular hemoglobin concentration (per cent)	32	32	. . .
Hemoglobin (cellulose acetate)	S, some A	S, A	A
Hemoglobin (acid agar)	S, some A and F	S, A	. . .
Hemoglobin F (per cent of total)	3.5	. . .	1.4
Hemoglobin A_2 (per cent of total)	3.0	2.8	4.2

The severe state of dehydration is simply ascribed to osmotic diuresis by previous observers.[7] But the degree of hemoconcentration seen in these patients, notably our own, warrants further explanation. Up until now, no attention was paid to the role of the kidney in the pathogenesis of this syndrome, but the relatively high incidence of pyelonephritis among the patients afflicted and the association of the syndrome with the use of diuretics and with sickle-cell anemia, as in our own case, draw attention to the kidney as a possible contributing factor in the severe dehydration.

The impairment of renal concentrating ability in patients with sickle-cell anemia, and to a lesser but still significant degree, in those with sickle thalassemia and sickle-cell trait, is well documented.[8] The ease with which these patients become dehydrated is notorious. The maximum urinary osmolality is always less than 600, and usually less than 450 mOsm. per kilogram, as illustrated by our patient.[9] Despite the hypertonic dehydration, the urine osmolarity remains low. The same observation has been made by other investigators in patients in hyperosmolar diabetic state who did not have known urinary concentrating impairments.[1] Dehydration may partially account for this impairment of concentrating ability.

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A tendency toward hypotonic urine, low sodium and chloride clearances, and less than expected glucose excretion in diabetic coma and severe dehydration was already noted in the 1930s and presumptively ascribed to reversible kidney damage.[10] We suspect that some, perhaps the majority, of the patients in hyperosmolar diabetic state will show an underlying and irreversible tubular damage in excess of that expected from dehydration alone and that this may be a significant factor contributing to the marked hemoconcentration complicated by deep lethargy or coma. Impairment of urinary concentrating ability, therefore, should be systematically investigated in patients showing this syndrome, once they have recovered.

The human growth hormone level, as determined in our patient, was low. In normal subjects hyperglycemia is almost always associated with decline in plasma human growth hormone levels, in contrast to patients with classical diabetic ketoacidosis. In one study, 3 out of 5 cases of diabetic ketoacidosis showed elevated human growth hormone levels. Intracellular hypoglycemia was hypothesized as the stimulus for human growth hormone secretion, which occurs when circulating insulin is absent.[11] The low human growth hormone level thus constitutes an indirect evidence against the total absence of serum insulin in our patient.

Finally, the diagnosis of sickle thalassemia was made in our patient on the basis of hemoglobin electrophoretic studies and family study. The patient's hemoglobin was found to be composed of a predominance of hemoglobin S along with increased levels of hemoglobin F and A_2. Her daughter's hemoglobin revealed a pattern characteristic of sickle-cell trait, while that of her son showed the pattern of thalassemia minor.[12]

Summary

A case of hyperosmolar diabetic state is presented occurring in a patient with previously diagnosed sickle thalassemia. The pathogenesis of the syndrome is discussed with speculation as to the role of the impaired renal concentrating ability found in the patient under discussion and in others with the same syndrome.

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THROMBOCYTOPENIA ASSOCIATED WITH RUBELLA VACCINATION

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Thrombocytopenia has been reported in association with congenital and acquired rubella.[1,2] To our knowledge, thrombocytopenia has not been previously reported in association with rubella vaccine; the purpose of the present communication is to report such a case.

Case report

The patient, a twenty-six-year-old Caucasian female, was in perfect health prior to the present illness. There was no history of drug ingestion. She had no previous history of rubella, and she was advised to have rubella vaccine. On April 21, 1970, she received live rubella vaccine (Meruvac). She had no symptoms until May 1, 1970, when she suddenly developed petechiae and on the following day consulted her physician. Physical examination gave negative findings except for petechiae and purpura. Laboratory studies revealed an hemoglobin of 15 Gm. per 100 ml., hematocrit of 43, white blood cell count of 12,000 per cubic millimeter with 67 per cent polymorphonuclear leukocytes, 30 per cent lymphocytes, 2 per cent monocytes, and 1 per cent eosinophils. Red blood cell morphology was normal in smear. Platelets were markedly diminished. The platelet count was 15,000 per cubic millimeter. Bone marrow examination revealed that megakaryocytes were present in normal numbers, and the morphology of the marrow was normal. The partial thromboplastin time, prothrombin time, and blood urea nitrogen were normal. Preparation results for lupus erythematosus cells were normal. The patient was started on triamcinolone (Aristocort) in a daily dose of 32 mg. Her platelet count rose to 105,000 per cubic millimeter on May 25, 1970, and to 178,000 per cubic millimeter on June 15, 1970. The triamcinolone dosage was tapered to 24 mg. per day for 2 weeks, and then to 16 mg. per day. Platelet count on July 17, 1970, was 165,000 per cubic millimeter. The triamcinolone dose was tapered by 2 mg. per week and discontinued on August 28, 1970, at which time the patient's platelet count was 220,000.

Comment

Thrombocytopenia is a recognized occurrence in association with natural rubella infection.[1,2] The incidence of this complication is estimated to be 1 in 3,000 cases.[3] Side-effects reported with rubella vaccination have included allergic manifestations, fever, adenopathy, rash, and arthralgias[4,5]; but to date, it does not appear that thrombocytopenia has been reported in association with rubella vaccination.

The pathogenesis of thrombocytopenia associated with viral infections is unsettled. Baldini[6] pointed out that most workers feel that there is increased platelet destruction and reviewed several possible mechanisms. Virus could attach to platelets and lead to an increased rate of their destruction, or the abnormality could be mediated by an antibody. This antibody could be antiviral and directed against either (1) a virus-platelet complex, or (2) an antigen similar to a viral antigen on the platelet.

The patient reported herein developed thrombocytopenia within ten days of rubella vaccination. The association certainly has been fortuitous; however, the occurrence seems worthy of note. Post-rubella thrombocytopenia is usually self-limited and responsive to the standard therapy for thrombocytopenia; but several deaths from hemorrhage have been reported.[2] Thus, the physician prescribing rubella vaccination should be aware that thrombocytopenia is a complication and be prepared to take diagnostic and therapeutic steps should it arise.

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WHAT TO DO UNTIL THE AMBULANCE COMES

Phase I of community emergency care program

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An emergency medical care system is, by necessity, complex and complicated. Continuity of care directed by a single, well-trained professional is often not available to the person with an acute medical emergency to the same extent as it is to the same person with a nonemergency medical problem.

An emergency care system requires first aid, communication, transportation, and medical facilities.[1] It is highly dependent on personnel, equipment, and the coordination of both. For practical purposes, emergency medical care can be divided into four consecutive stages, each including different physical facilities or geographic locations, and different personnel with different training and having different levels of technical competence.

Stages of treatment

Stage I is the scene of the emergency. Usually, this is at home, at work, on the highway or transit system, or at a place of recreation. Wherever the emergency occurs, even at work, it is unlikely that skilled medical or nursing help is immediately available. What help there is comes from family, neighbors, fellow workers, or strangers, who frequently have had no first aid training and whose ideas of what to do are based on folklore and misconception. The level of excitement is high and the urge to do something is strong. Frequently, whatever is done is detrimental to the patient. Whether he dies, recovers, or remains permanently disabled may depend on the first aid given at the site of the emergency.[2] Many patients have suffered prolonged disability and excessive agony because of improper handling at the scene of the emergency by well-meaning bystanders.

Stage II is the transportation of the patient from the scene of the emergency to a medical care facility, usually a hospital emergency department. If transportation is by ambulance, a trained emergency technician assumes responsibility for the patient. These technicians vary in training and occupational background from locality to locality. They may be policemen, firemen, hospital personnel, or may come from a variety of other occupational backgrounds. Presumably, they have been trained in advanced first aid. The need for training of such emergency personnel has been stressed.[3] The emergency transport system also brings to the scene carefully selected first aid and resuscitation equipment. The main job of the transport system remains, however, to bring the patient safely to a medical facility. As in Stage I, improper management of the patient by the emergency technician is harmful and dangerous. Hopefully, with his better training, the technician should function in the best interests of the patient.

Stage III is the medical facility, usually an emergency department of a hospital where definitive medical care is provided. Here the patient has available the full gamut of clinical services including physicians, nurses, and technicians. A proper emergency department is backed up by laboratory and x-ray facilities, a blood bank, intensive and cardiac care units, and a readily available battery of specialty consultants.

Stage IV occurs within the hospital, where the patient may be kept for prolonged follow-up treatment if his condition is such that he cannot safely go home following emergency department care.

An effective communication system should connect and coordinate these four stages of emergency care. It should start at the scene of the emergency and remain effective until the patient is medically discharged. It should include not only an ambulance dispatch center which sends the nearest ambulance to the scene of the emergency, but also the maintenance of communications between the ambulance and the hospital. Thus hospital personnel are alerted to be ready to receive the very serious emergency. The emergency physician in the hospital is also available to advise the ambulance crew in transit on the management of special problems. Within the hospital, additional communication networks exist between the emergency facility and the rest of the hospital.

Once a patient enters an emergency facility, his care becomes the responsibility of the emergency department physician. This physician takes over the responsibility for the patient until he is either discharged or admitted into the hospital itself. In such a case, responsibility for the patient's care may be transferred to another physician or may remain in the hands of the physician who initially saw the case in the emergency department. This depends on the organization of the hospital's staff and emergency department.

Personnel training

Good emergency care requires adequate training of all personnel involved at each stage of the emergency care system, including Stage I. The responsibility for training programs in Stages II through IV are clearly defined. The training responsibility for Stages III and IV clearly belongs to the hospital and its staff. Stage II training responsibility varies with the organization and sponsorship of the transport system. Frequently, it is carried out by hospital staff or emergency department personnel. In other communities, it has been the responsibility of health departments, the Red Cross, schools, and police or fire departments.

There is no standard pattern for Stage I training. The question of who is responsible for training the community itself has not been clearly answered. Health departments, medical societies, voluntary agencies, and civil defense agencies have attempted this from time to time. For the most part, training at the community level for Stage I emergency care, despite its critical importance, has been inadequate and ineffective. At best, such training has been unrelated to the other stages of the emergency care system.

Stage I training program

The Division of Community Health Services at the Beekman-Downtown Hospital has attempted recently to cope with the problem of Stage I training. The hospital operates four ambulances which cover lower Manhattan in New York City. The problem was first identified by complaints from businesses in the Wall Street area over occasional delays in ambulance arrivals and by reports of ambulance personnel of the mismanagement of patients by bystanders before the ambulance arrived. A study of the ambulance service indicated that, although 85 per cent of calls were completed within seven minutes of their receipt, in the remaining 15 per cent there were significant delays usually due to traffic congestion or to calls coming in when all four ambulances were already out on other calls.

No system can be designed which will assure the instant arrival of an ambulance for every emergency. It is possible, however, to train laymen to take charge of an emergency and provide adequate first aid in most cases. In the average urban emergency, the initial management of the case is by untrained, but motivated laymen, stimulated by bad advice from excited bystanders. Under strong peer pressure to do something, and not knowing what to do, they often do the wrong thing or fail to do the right thing. Too often, it is the patient who suffers from these errors of commission and omission.

We felt that if various businesses would provide personnel, it would be possible to develop a group of laymen distributed throughout the hospital's ambulance service area who were knowledgeable in the principles of first aid, and who could competently take charge of any emergency, in the street, office, subway station, or home, until the ambulance arrived.

Representatives of the business firms in the area were contacted. Most responded favorably. Each company was asked to give preference to employes who had a background as military medical corpsmen. It was also suggested that preference be given to personnel who appeared to be stable and likely to remain with the company. No tuition was charged for the course, but each participant attended during his paid working hours.

Each course starts with an introductory lecture which explains the ambulance dispatch system, and discusses certain problems unique to the ambulance district. These include such topics as the need to call both the central ambulance dispatch number (911) and the security director or superintendent of the office building. This is essential so that the revolving doors can be unlatched and the elevators held for the ambulance personnel. If there is more than one entrance to a building, the ambulance must know which entrance to use. Similarly, ambulance personnel must be told in advance the room and floor number where the emergency may be found. The need for giving precise information at the time the ambulance is called is stressed. Simple first aid equipment which an office should have is displayed. The class is advised not to buy or stock any oxygen. This has consistently surprised the class. The fact that there is sufficient oxygen in air to meet emergency requirements must be repeatedly stressed.

The next eight sessions are based on the care of the various types of emergency cases most often seen in the emergency department. These include injuries to the extremities, head, and spine; hemorrhage, nose-bleed, bruises and abrasions; respiratory tract blockage; epilepsy, convulsions, paralysis and loss of consciousness; the psychotic disturbances and suicide; and drugs and alcohol. Two sessions are devoted to cardiopulmonary resuscitation. The last session is left open for a question and answer period, which invariably turns out to be very productive and adds perspective to the course.

All teaching is done by physicians on the active staff of the hospital who were selected because of their ability to communicate in the language of laymen.

Time limitations have forced us to choose between stressing the principles or the practice of first aid. Our decision favored teaching principles. For the most part, one could practice first aid technics at home. We felt that a person who understands the principles of emergency care will have more confidence and do a better job than one whose training stressed technics but not understanding. The feed-back we have received from graduates of the course indicates that those who have subsequently been involved in an emergency have acted appropriately.

As of September, 1971, we have completed five courses and have trained approximately 300 people. In two of these courses we scheduled five two-hour sessions rather than twelve one-hour sessions and this technic has worked well. We continue to get requests for new courses and have a waiting list for the next one. The responses of both the participants and their employers has indicated that the program has been of benefit to both the student and his sponsoring firm. It appears that the course is generating enough interest in the community to assure its continuation for the forseeable future.

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Necrology

Eugene Bernstein, M.D., of The Bronx, died on December 27, 1971, at the age of seventy-four. Dr. Bernstein graduated in 1921 from University and Bellevue Hospital Medical College. He was a consulting physician at Lincoln Hospital. Dr. Bernstein was a Fellow of the American College of Cardiology and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leo Frederick Bleyer, M.D., of Monticello, died on March 28, 1971, at the age of seventy-eight. Dr. Bleyer received his medical degree from the University of Innsbruck in 1919. He was an attending pathologist at Monticello Hospital. Dr. Bleyer was a Diplomate of the American Board of Pathology (Pathologic Anatomy and Clinical Pathology) and a member of the American Society of Clinical Pathologists, the Pan American Medical Association, the Sullivan County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Foster Burden, M.D., of Oswego, died on December 7, 1971, at the age of seventy-five. Dr. Burden graduated in 1920 from Syracuse University College of Medicine. He was an honorary emeritus surgeon at Oswego Hospital. Dr. Burden was a Fellow of the American College of Surgeons and a member of the Oswego County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Goodman Carlton, M.D., of Mount Morris, died on November 23, 1971, at the age of seventy. Dr. Carlton graduated in 1928 from Albany Medical College. He was a member of the Livingston County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Cemil Coskun, M.D., of Smithtown, died on January 1 at the age of forty-seven. Dr. Coskun received his medical degree from the University of Istanbul in 1952. He was a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Salvatore Alfred Dispenza, M.D., of Albion, died in August, 1971, at the age of fifty-five. Dr. Dispenza graduated in 1941 from the University of Buffalo School of Medicine. He was a member of the medical staff at the Arnold Gregory Memorial Hospital. Dr. Dispenza was a member of the Orleans County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Emanuel Gahan, M.D., of New York City, died on December 31, 1971, at the age of sixty-eight. Dr. Gahan received his medical degree from the University of Paris in 1929. He was a Diplomate of the American Board of Dermatology, Inc., and a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Manfred Hess, M.D., of New York City, died on December 24, 1971, at the age of sixty-five. Dr. Hess received his medical degree from the University of Milan in 1934. He was a senior clinical assistant attending physician at The Mount Sinai Hospital. Dr. Hess was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard I. Kilstein, M.D., of New York City, died on December 16, 1971, at the age of sixty-five. Dr. Kilstein graduated in 1934 from George Washington University School of Medicine. He was chief of gastroenterology at Trafalgar Hospital. Dr. Kilstein was a Fellow of the American College of Gastroenterology and a member of the New York Academy of Gastroenterology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick Henry Lutze, M.D., of New Rochelle, died on December 27, 1971, at the age of seventy-one. Dr. Lutze graduated in 1925 from New York Homeopathic Medical College and Flower Hospital. He was an attending radiologist at New Rochelle Hospital Medical Center. Dr. Lutze was a Diplomate of the American Board of Radiology and a member of the American Roentgen Ray Society, the Radiological Society of North America, Inc., the New York Roentgen Society, the Westchester Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Steven Anthony Mazar, M.D., of Binghamton, died on January 1 at the age of sixty-five. Dr. Mazar graduated in 1934 from the University of Pennsylvania School of Medicine. He was an attending physician at Binghamton General and Our Lady of Lourdes Memorial Hospitals. Dr. Mazar was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, a Fellow of the American College of Chest Physicians, and a member of the Binghamton Academy of Medicine, the Broome County

Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick H. McKee, M.D., of New York City, died on November 25, 1971, at the age of seventy. Dr. McKee graduated in 1926 from Harvard University Medical School. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

B. Franklin Morgan, M.D., of Buffalo, died on November 18, 1971, at the age of eighty. Dr. Morgan graduated in 1914 from Jefferson Medical College of Philadelphia. He was a Fellow of the American College of Obstetricians and Gynecologists and a member of the American Academy of General Practice, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alfred Frank Rizzolo, M.D., of Dover Plains, died on May 25, 1971, at the age of sixty-four. Dr. Rizzolo received his medical degree from the University of Paris in 1936. He was an attending psychiatrist at Harlem Valley State Hospital (Wingdale). Dr. Rizzolo was a member of the American Psychiatric Association, the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herbert Rosenfeld, M.D., of New York City, died on December 25, 1971, at the age of seventy-one. Dr. Rosenfeld received his medical degree from the University of Berlin in 1924. He was an associate attending dermatologist (off service) at The Mount Sinai Hospital. Dr. Rosenfeld was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Howard Francis Shattuck, M.D., of New York City, died on January 6 at the age of eighty-four. Dr. Shattuck graduated in 1913 from Columbia University College of Physicians and Surgeons. He was a consulting physician at Roosevelt Hospital where he had served president of the medical board from 1947 to 1948. From 1936 to 1952 he was a clinical professor of medicine at Columbia University College of Physicians and Surgeons. Dr. Shattuck was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Gastro-Enterological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ammiel Smallen, M.D., of The Bronx, died on January 4 at the age of forty-nine. Dr. Smallen graduated in 1945 from New York University College of Medicine. He was an associate attending physician in cardiovascular disease at Morrisania City Hospital, an adjunct physician in neoplastic disease at Montefiore Hospital and Medical Center, and an assistant attending physician at Misericordia Hospital. Dr. Smallen was a Diplomate of the American Board of Internal Medicine and a member of the American Geriatrics Society, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph M. Spielberg, M.D., of Brooklyn, died on November 24, 1971, at the age of seventy-six. Dr. Spielberg graduated in 1927 from New York Homeopathic Medical College and Flower Hospital. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Anthony John Stalonas, M.D., of Brooklyn, died on December 19, 1971, at the age of fifty-nine. Dr. Stalonas graduated in 1937 from New York Medical College. He was an assistant attending pediatrician at Kings County Hospital Center. Dr. Stalonas was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Thomas Morton Watkins, M.D., of Potsdam, died on September 2, 1971, at the age of sixty-eight. Dr. Watkins graduated in 1929 from Syracuse University College of Medicine. He was a consulting surgeon at St. Lawrence State Hospital (Ogdensburg), North County Hospital (Edward J. Noble Hospitals, Alexandria Bay, Canton, and Gouveneur) and Massena Memorial Hospital, and chief of the medical staff and chief of surgery at Potsdam Hospital. Dr. Watkins was a Fellow of the American College of Surgeons and a member of the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Month in Washington

The Price Commission restricted increases in a physician's fees to 2.5 per cent a year when justified by increases in his costs but granted the right of appeal to the Internal Revenue Service for a further increase for those physicians with greater increases in their costs of conducting a practice.

The official regulations went into effect December 29, a day before they were published in the *Federal Register*. The commission earlier had announced guidelines on which the regulations were based.

The regulations require that a physician maintain a schedule of fees and increases with a sign in his office that such a schedule is available for inspection. But he does not have to post them in his office.

After issuance of the regulations, AMA officials continued meetings with Federal officials in efforts to effect modifications of provisions considered unfair to physicians. The meetings started before issuance of the guidelines.

One meeting was with Donald Rumsfeld, director of the President's Cost of Living Council, a few days before the regulations were issued. Max H. Parrott, M.D., chairman of the AMA Board of Trustees and head of its delegation, voiced strong exceptions to some of the price control provisions which would deny treatment equal to that given other providers of professional services.

The Price Commission has ruled that "a noninstitutional provider of health care services may charge a price in excess of the base price only to reflect allowable costs in effect on November 14, 1971, and allowable cost increases incurred after November 14 reduced to reflect productivity gains, and only to the extent that such increased price shall not result in an increase in such provider's profit margin as a percentage of revenues, before income tax, over that prevailing in the base period, providing, however, that the provider's aggregate price increases shall not exceed 2.5 per cent per year."

The AMA has pointed out that the Price Commission's 2.5 per cent limitation on the increase of physicians' fees was discriminatory inasmuch as other providers of services could reflect actual increases in cost by a "pass through" of such costs, a procedure denied physicians under the proposed regulations.

The AMA also pointed out that while the Price Commission urged increased physician productivity, the proposed regulations might well decrease productivity.

The physician cannot generally work longer hours than he is presently working, the AMA position paper said. He can expand his office space, purchase new testing and diagnostic aids, and employ more staff.

But held to a 2.5 per cent fee increase—in the face of higher costs—he is apt to do none of these things.

The AMA paper also took exception to the proposed requirement for the posting . . . or having available . . . a fee schedule. It is simply not practical for a physician to arrive at a schedule of prices for each and every one of the numerous services he renders, the AMA said, pointing out that it was its understanding that the Committee on Health Services Industry, an advisory body to the Price Commission, recognized this fact and had recommended that posting be limited to institutional providers.

The AMA also pointed out that the proposed guidelines do not provide for a procedure under which physicians whose fees are below the norms in their communities may adjust their fees. Physicians usually maintain their fees for several years and then increase them by 10 or 20 per cent to counter inflation, rather than impose annual increments of 25 or 50 cents, the AMA said, insisting that the proposed regulations should contain reasonable criteria for handling unusual situations such as these.

At the suggestion of Mr. Rumsfeld, the AMA has taken its case directly to C. Jackson Grayson, Jr., chairman of the Price Commission, and additional meetings have been scheduled. A report on the AMA's position has been forwarded to all state medical societies.

* * *

President Nixon signed into law a sharply stepped-up program to combat cancer.

In signing the legislation before several hundred leaders in the field at a White House ceremony, Nixon expressed "hope that in the years ahead we will look back on this as the most significant action taken during this administration."

The new law, which authorizes expenditure of $1.6 billion in the next three years, gives the National Cancer Institute partial autonomy and puts it to a large extent under the supervision of the White House, although it remains in the National Institutes of Health.

Its chief will be appointed by the president, its activities monitored for the president by a special three-man advisory board, and its budget submitted directly to the White House.

Nixon predicted the new organizational setup "will enable us to mobilize far more effectively both our human and our financial resources in the fight against this dread disease."

The revamped organizational structure is a compromise between proposals to establish a separate, wholly independent cancer authority under the White House and to leave the National Cancer Institute in the National Institutes of Health but with a greatly expanded program.

The main thrusts of the new cancer research program are being developed by a committee of 280 nongovernment scientific consultants and will be completed by March.

The prime goal will be to find drugs that are effective against "slow growing" malignant tumors that effect such organs as the lung, breast, colon, and bladder and account for 85 per cent of the 650,000 new cancer cases a year.

Prepared by the Washington, D.C., Office of the American Medical Association.

The Cancer Institute plans to organize "task forces" to launch a coordinated attack against specific forms of cancer, including lung, bladder, prostate, and large intestine. This approach is credited with achieving substantial success in treating childhood leukemia.

The President also signed into law a $673.6 million bill financing continuance of the Federal government's programs to aid medical, dental, nursing, and allied health schools. It was about $150 million more than the administration requested, but $200 million below the figure approved by the Senate. Medical and dental schools were allotted $460.4 million, compared with the administration's request for $366 million. Nurses received $145 million.

Rep. Paul Rogers, (Democrat, Florida), head of the House Health Subcommittee and other lawmakers confidently predicted more money would be forthcoming when congress returns next year.

* * *

An American Medical Association spokesman said a solution to the medical malpractice problem must be found "which will provide equitable protection for the patient and the physician and which will not contribute unreasonably to the cost of medical care."

Arthur J. Mannix, Jr., M.D., of New Rochelle, outlined the AMA's position at a hearing of the government's special commission of medical practice. C. A. Hoffman, M.D., AMA president-elect and chairman of the AMA Professional Liability Committee, is a member of the Commission.

"The physician should be permitted to treat his patient in an atmosphere of mutual trust and confidence, without continual threat of malpractice charges," Dr. Mannix said.

Some means must be found which will provide equitable protection for the patient and the physician and which will not contribute unreasonably to the cost of medical care. The physician should be permitted to treat his patient in an atmosphere of mutual trust and confidence, without continual threat of malpractice charges.

New systems, perhaps one based on scheduled benefits, or a system of limited and well-defined "no fault" coverage may be the answer. We recognize that many questions will have to be considered when any major change is contemplated. Will the patient population, for example, be willing to yield its rights to adversary litigation as they know it now? In the interests of reduced medical care costs, would they accept, as another example, scheduled compensation perhaps limiting recovery to economic losses? In any event, any viable solution will have to be based on acceptance by the public.

> We believe that additional experimentation with a variety of means may lead to a more satisfactory resolution of the problems facing us. The physicians of this country would welcome measures alleviating the many problems present today in the practice of medicine as it relates to malpractice liability. . . . The American Medical Association offers to this Commission its assistance as solutions are sought to this complex problem.

Dr. Mannix outlined the AMA's activities in the field which culminated in the negotiation of a contract with CNA as insurance carrier and Marsh and McLennan as national administrator for the establishment of sponsored malpractice insurance in states which do not have them.

* * *

The American Medical Association opposed further government restrictions on barbiturates.

Henry Brill, M.D., a member of the AMA's Committee on Alcohol and Drug Dependence, pointed out to the Senate Juvenile Delinquency Subcommittee that barbiturates and other sedative drugs already are subject to tight controls under a Federal law—penalties for illicit sale, restrictions on refilling of prescriptions, and mandatory registration by physicians who prescribe or dispense them.

"To add to the present restrictions on barbiturates to reduce medical overuse would be a disservice to patients who need them," Dr. Brill said. "Not only would it be more difficult to prescribe and administer such drugs in the treatment of numerous illnesses and disease, it would inevitably raise the costs of hospital care in direct proportion to the additional record keeping and reporting that would be required of these institutions, where so great a proportion of sedatives are used in therapy.

> On the other hand, we vigorously support efforts to control street traffic and diversion of drugs. We also subscribe to and support the intensification of education and persuasive techniques to help assure the proper utilization of these drugs in medicine. We would urge medical schools to incorporate comprehensive material on drug abuse and drug dependence in their curriculums, stressing the importance of an accurate assessment of the abuse and dependence potential of patients when psychoactive drugs are medically indicated. Continuing education efforts should stem largely from drug utilization committees in hospitals where both the medical staff and house officers, together with nursing personnel, can benefit from an ongoing evaluation of prescribing practices.

The Federal government reported at the end of 1971 that outbreaks in influenza were hop-scotching across the country in a fashion typical of the 1969 epidemic that struck an estimated 30 million Americans.

The National Center of Disease Control, a part of the Department of Health, Education, and Welfare with headquarters in Atlanta, Georgia, said some of the influenza has been identified as the Hong Kong variety and some as "influenza-like." School absenteeism ranging as high as 30 per cent was reported by communities hardest hit by the bug.

The influenza struck swiftly and spread rapidly. Practically no outbreaks were reported by state health departments in a telephone survey conducted by the Center on November 17 and 18. But another telephone survey conducted December 21 revealed outbreaks in New England, the middle Atlantic states, midwest, south, and the far west. The Hong Kong influenza "has been documented in Connecticut, Kansas, Michigan, New Jersey, and Utah," the Center said.

"Increased influenza-like disease has been reported from Colorado, Idaho, Indiana, Louisiana, Maine, Massachusetts, Montana, New Mexico, Oregon, South Dakota, and Wyoming, " the center said.

The disease was reported to have caused mild symptoms in its victims.

The World Health Organization said that influenza epidemics, much of it caused by the Hong Kong virus, have broken out in both eastern and western Europe.

* * *

Thirty-seven states and the District of Columbia were given until February 1 by the Department of Health, Education, and Welfare to improve what was termed "substantial deficiencies" in their standards for nursing homes.

"Unless such improvements are validated by the February 1 target date, HEW intends to initiate a . . . procedure that could ultimately result in withholding all Federal Medicaid funds from any or every one of the 38 states," HEW Secretary Elliot L. Richardson said.

He referred to such standards as fire, sanitation, safety, and medical services that are substandard in 37 states and the District of Columbia.

Richardson told the White House Conference on Aging that the deficiencies were found in a survey undertaken at President Nixon's request and completed November 15. He said the following 38 states had been notified of the results of the survey: Arkansas, California, Connecticut, District of Columbia, Delaware, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Montana, Nevada, North Carolina, North Dakota, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Vermont, Washington, Wisconsin, West Virginia, and Wyoming.

* * *

The Justice Department proposed production quotas to cut by 40 per cent the amount of amphetamine and methamphetamine manufactured by drug companies in the United States in 1972.

Attorney General John N. Mitchell said the Bureau of Narcotics and Dangerous Drugs proposed to limit production of amphetamine 5,870 kilograms and methamphetamine to 2,782 kilograms—an approximate 40 per cent cut from 1971 production and a 70 per cent cut from what was requested by drug companies.

Mitchell said 9,356 kilograms of amphetamine and 4,926 kilograms of methamphetamine will be produced this year. The drugs are used to treat narcolepsy, a form of sleeping sickness, and hyperkinesis, a form of hyperactivity found in children. They also have been used widely for treatment of overweight, although such use is questionable.

The Bureau has estimated that large amounts of the legally produced drugs have been diverted into the illicit drug traffic.

The 40 per cent production cut was recommended by the Department of Health, Education, and Welfare. The proposed quota is the first time the government has used this authority under the 1970 Drug Abuse Prevention and Control Act. Manufacturers had thirty days to contest the action before it took effect.

Legal use of amphetamines could be curtailed as the result of a current Food and Drug Administration evaluation study of their effectiveness as a weight-reducing drug. The study will take two to six months, but the FDA already has ordered the amphetamine manufacturers to submit additional proof of effectiveness because of critical conclusions by the National Academy of Sciences.

Recurrent hernias

R. W. Postlethwaite, M.D., reports in the May, 1971, issue of *Surgery* that of 300 recurrent inguinal hernias repaired over a fifteen-year period, 176 were indirect; 106 were direct; 11 were femoral, and 7 were of other types. The preponderance of indirect recurrences emphasizes the necessity for high dissection and ligation of the sac and for a snug fascial reconstruction of the internal ring. Of the direct recurrences, those of most interest were localized defects in Hesselbach's triangle. Typically these openings were one centimeter, more or less, and were located near the symphysis in 47 of the 59 patients. The defect was usually in the transversalis fascia, but not infrequently one margin was the inguinal ligament. The sac was always several centimeters long, usually narrow and attached to, but not part of, the cord. Sac size was proportionately much larger than might be anticipated from the size of the fascial opening. These small openings probably relate most directly to suturing. Sutures spaced too widely could result in such defects, as could a single suture breaking or untying. A strong suture tied too tightly might easily cut through fascia and result in a typical defect. Care in selection, placement, and tying of the sutures is, therefore, obviously important.

The prompt recurrence of any hernia, particularly femoral, suggests the probability that the hernia was missed.

Books Received

*The following books were received during the month of December, 1971.**

The Retinal Circulation. By George N. Wise, M.D., Colin T. Dollery, M.B., and Paul Henkind, M.D. Quarto of 574 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $35.

CRC Manual of Nuclear Medicine Procedures. By William H. Beierwaltes, M.D., John W. Keyes, Jr., M.D., and James E. Carey, M.S. Quarto of 140 pages, illustrated. Cleveland, Ohio, CRC Press, 1971. Paper, $19.90.

Growth Control in Cell Cultures. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Julie Knight. Octavo of 275 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $11.75.

Vocabulary of Medicine and related Sciences. English-French. By W. J. Gladstone. Quarto of 298 pages. Paris, France, Masson & Cie. (American distributor, Eliot Books, Inc., Long Island City, N.Y.), 1970. Paper, $10.50.

The Clinical Apprentice. A Handbook of Bedside Methods. By John M. Naish, M.D., and Alan E. A. Read, M.D., with a Chapter by John Apley, M.D. Fourth edition. Duodecimo of 244 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $7.25.

Social Aspects of Clinical Medicine. By Jessie Garrad, B.A., B.Sc., and Professor Sir Max Rosenheim, M.A., M.D. Octavo of 174 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1970. Paper, $6.50.

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*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

Magnetic flowmeter

A Columbia University engineer has invented an electronic device that will both lighten the work load of hospital nurses and permit precise control of the rate of fluid dripped into a patient's veins. The device, a magnetically activated flowmeter, was developed by Dr. Jordan L. Spencer, a chemical engineering professor at Columbia's School of Engineering and Applied Science.

The current procedure in almost all hospitals is for nurses to use their wrist watches, as often as every 30 minutes, to visually time the drip rate of each bottle of intravenous fluid being administered to a patient. Any variation in the rate can be critical, particularly if the patient is an infant or if medication is added to the fluid.

The electronic flowmeter is designed to increase the control and accuracy of such procedures, and to free nurses for other critical needs of the patient. The key element of Dr. Spencer's invention is a tiny metal ball, resting in a small measuring tube. The tube is set in a magnetic device, linked to an electronic counter. As the intravenous fluid goes through this measuring chamber, the ball is carried forward by the fluid's flow until it is pulled back into its former position by the magnets. The back-and-forth motion of the ball in the fluid is measured electronically, giving a precise measurement of the flow. The flow can be regulated to a desired amount of loosening or tightening a clamp on the fluid supply tube. To check the flow, a nurse need only read the measurement being recorded on the electronic counter.

The small measuring chambers are inexpensive and disposable. In a more complex version of the invention, Dr. Spencer plans to add a control mechanism within the electronic unit which will automatically adjust the flow to maintain it at the desired rate and signal a nurse when a fresh bottle of fluid is needed.

TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

The following chart was adapted by the Suffolk County Medical Society from one prepared by the Suffolk County District Attorney's Office

Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana ("Pot," "Grass")	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines ("Pep Pills," "Ups")	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates ("Goof Balls," "Downs")	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

MEDICAL SOCIETY OF THE STATE OF NEW YORK
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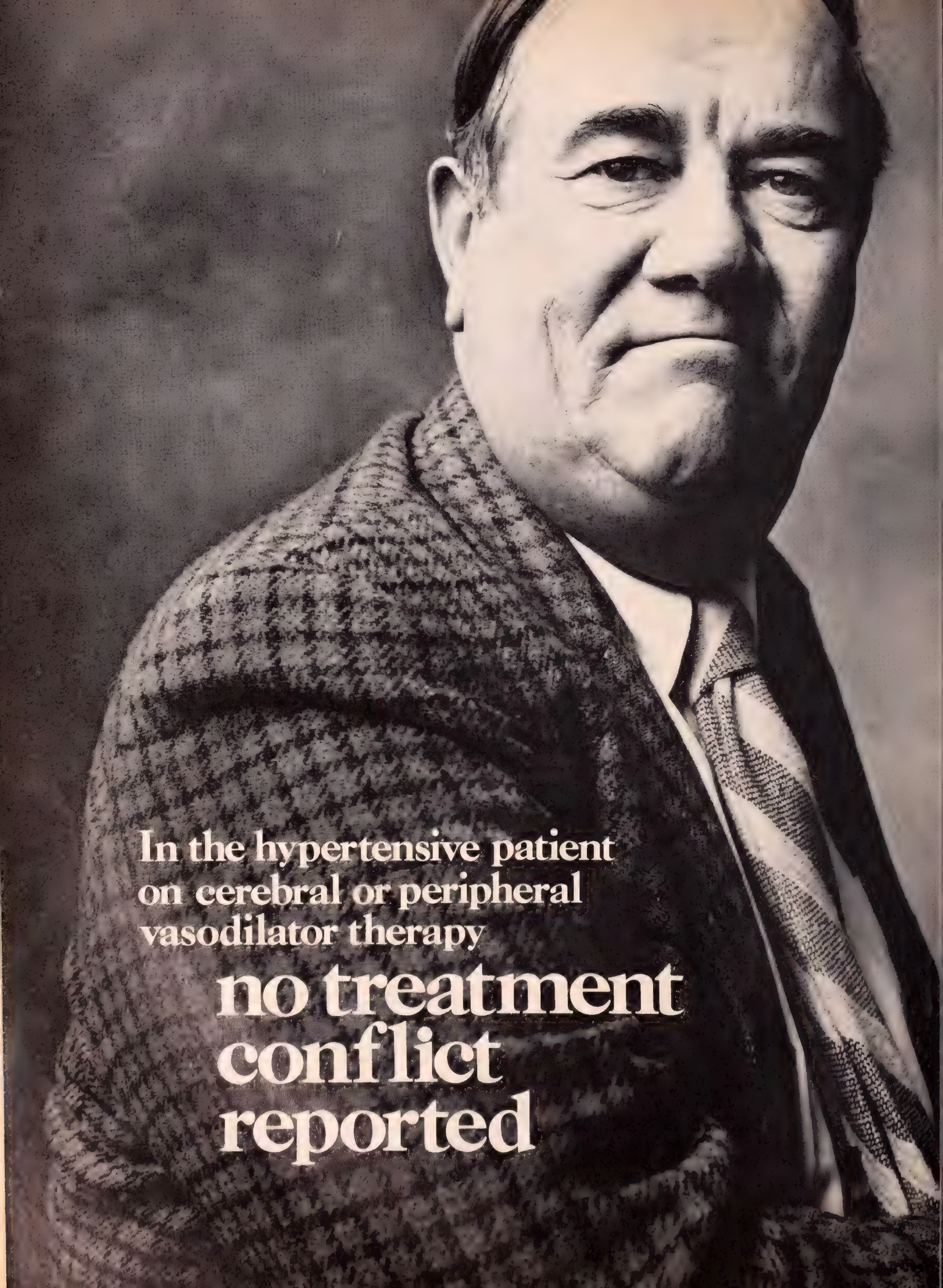
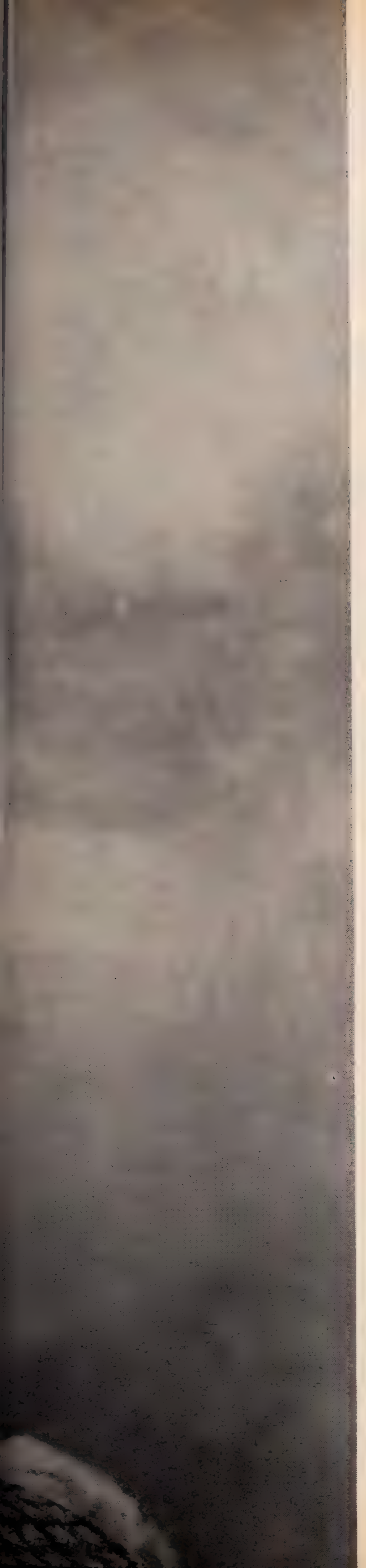

In the hypertensive patient
on cerebral or peripheral
vasodilator therapy
no treatment
conflict
reported



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In fact, there are no known contraindications in recommended oral doses other than it should not be given in the presence of frank arterial bleeding or immediately postpartum.

Although not all clinicians agree on the value of vasodilators in vascular disease, several investigators[1-4] *have reported favorably on the effects of isoxsuprine. Effects have been demonstrated both by objective measurement*[2,4] *and observation of clinical improvement.*[1,3] **Composition:** VASODĪLAN tablets, isoxsuprine HCl, 10 mg. and 20 mg. VASODĪLAN syrup, isoxsuprine HCl, 10 mg. per 5 ml. teaspoonful. **Indications:** *In cerebral vascular disorders,* for relief of symptoms due to vascular insufficiency associated with various conditions such as arteriosclerosis and hypertension. *In peripheral vascular disorders,* for relief of symptoms such as intermittent claudication, coldness, numbness, pain and cramping of the extremities—in the management of arteriosclerosis obliterans, diabetic vascular diseases, thromboangiitis obliterans (Buerger's disease), Raynaud's disease, postphlebitic conditions, acroparesthesia, frostbite syndrome and ulcers of the extremities (arteriosclerotic, diabetic, thrombotic). **Dosage and Administration:** In peripheral and cerebral vascular disorders—10 to 20 mg. three or four times daily. **Contraindications and Cautions:** There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding. **Adverse Reactions:** On rare occasions, oral administration of the drug has been associated in time with the occurrence of severe rash. When rash appears, the drug should be discontinued. Occasional overdosage effects such as transient palpitation or dizziness are usually controlled by reducing the dose. **Supplied:** *Tablets,* 10 mg.—bottles of 100 and 1000, and Unit Dose; 20 mg.—bottles of 100 and 500. *Syrup,* 10 mg. per 5 ml. teaspoonful—bottles of 1 pint. **References:** 1. Clarkson, I. S., and LePere, D. M.: Angiology *11*:190-192 (June) 1960. 2. Horton, G. E., and Johnson, P. C., Jr.: Angiology *15*:70-74 (Feb.) 1964. 3. Dhrymiotis, A. D., and Whittier, J. R.: Curr. Ther. Res. *4*:124-128 (April) 1962. 4. Whittier, J. R.: Angiology *15*:82-87 (Feb.) 1964.

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An orally active hypoglycemic agent principally indicated in relatively mild, adult, maturity-onset, non-ketotic diabetes; also, as a supplement to insulin therapy in selected diabetic patients, it may effect a stabilization of labile diabetes and reduce insulin requirements. Certain patients intolerant to chlorpropamide therapy at usual therapeutic doses have subsequently been successfully managed with Orinase (tolbutamide).

Use in mild asymptomatic diabetic patients with abnormal glucose tolerance tests not responding to diet therapy may result in improvement of the glucose tolerance test.

Use in conjunction with phenformin is indicated when optimal control is not obtained with Orinase or phenformin alone.

Contraindications: Orinase alone is not effective in juvenile or growth-onset diabetes nor in unstable brittle diabetes where insulin therapy is required.

Orinase should not be used: when diabetes is complicated by acidosis, ketosis, or coma, or when a history of repeated bouts of acidosis or coma is obtained; in the presence of other acute complications such as fever, severe trauma, or infections; and in patients with severe renal insufficiency. Insulin is indicated in these circumstances.

Pregnancy Warning: The safety and usefulness of Orinase during pregnancy has not been established either from the standpoint of the mother or the fetus. Animal studies have demonstrated feticidal and teratogenic effects of doses of 1,000-2,500 mg./kg./day, but application to human subjects unknown. Therefore, Orinase is not recommended for the pregnant diabetic, and when administering Orinase to women of childbearing age, these facts should be borne in mind.

Precautions: Diagnostic and therapeutic measures necessary for optimal control with insulin are also necessary with Orinase. The patient on Orinase must be fully instructed: about the nature of his disease; how to prevent and detect complications; how to control his condition; not to neglect dietary restrictions, develop a careless attitude or disregard instructions relative to body weight, exercise, personal hygiene, and avoidance of infection; how to recognize and counteract impending hypoglycemia; how and when to test for glycosuria and ketonuria; how to use insulin; and to report to the physician immediately if he does not feel as well as usual.

Caution, very close observation, and careful adjustment of dose are necessary when: insulin is withdrawn during the trial period in order to avoid ketosis, acidosis, and coma; thiazide diuretics are administered which may result in aggravation of diabetic state and increased tolbutamide requirement, temporary loss of control, or even secondary failure; treating patients with impaired hepatic and/or renal function and debilitated, malnourished, or semistarved patients in order to avoid severe hypoglycemia which may require corrective therapy over several days; and treating patients with severe trauma, infection, or surgical procedures where temporary return to insulin or addition of insulin may be necessary. Response to tolbutamide is diminished in patients receiving therapy with beta blocking agents.

As some diabetics are not suitable candidates, it is essential that the physician familiarize himself with the indications, limits of application, and selection of patients for therapy.

Patients must be under continuous medical supervision, and during the initial test period should communicate with the physi-

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You also know the importance of close monitoring of the patient. Although uncommon, severe hypoglycemia may occur if the dosage is not tailored to suit his requirements.

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0.5 g. tablets

(tolbutamide, Upjohn)

cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

Although usually not serious, gastrointestinal disturbances (nausea, epigastric fullness, and heartburn) and headache appear to be dose related and frequently disappear with reduction of dose or administration with meals. Allergic skin reactions (pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions) are transient, usually not serious, and frequently disappear with continued administration. Orinase should be discontinued if skin reactions persist. Recent reports indicate that long-term use of Orinase has no appreciable effect on body weight.

Orinase appears to be remarkably free from gross clinical toxicity: crystalluria or other renal abnormalities have not been observed; incidence of liver dysfunction is remarkably low and jaundice has been rare and cleared readily on discontinuation of drug (carcinoma of the pancreas or other biliary obstruction should be ruled out in persistent jaundice); leukopenia; agranulocytosis; thrombocytopenia; hemolytic anemia; aplastic anemia; pancytopenia; and hepatic porphyria and porphyria cutanea tarda have been reported.

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WHAT GOES ON in medicine

NEW YORK STATE **March 1–15, 1972**

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WHAT GOES ON IN MEDICINE

New Address:
Medical Society of the State of New York
420 Lakeville Road, Lake Success, N.Y. 11040
Telephone: 516-488-6100, ext. 241

The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
March 16–31	January 25
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May 16–31	March 25
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June 16–30	April 25
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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director
Donald C. Walker, M.D., Advisor
Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

NEW YORK CITY

March 1, 1972 / March 3, 1972
9:00 a.m.–4:00 p.m., Wednesday–Friday

Columbia University P & S
Columbia-Presbyterian Medical Center
630 West 168th Street

VASCULAR SURGERY

A. VOORHEES, F. McALLISTER, M.D.'s
and Guest Lecturers

FEE: $200

March 1, 1972 and March 8, 1972
11:00 a.m.–12:30 p.m., Wednesdays

Mental Retardation Institute
105 East 106th Street
Seventh Floor Auditorium

March 1
Some Aspects of Interdisciplinary Collaborations
MRS. BESS DANA
Mount Sinai School of Medicine

March 8
Psychotherapy with the Mentally Retarded
MANNY STERNLICHT, Ph.D.
Willowbrook State School, Staten Island

WEDNESDAY, MARCH 1

4:00–5:30 p.m.

Westchester Square Hospital
1625 St. Peters Avenue
Conference Room
Bronx

ULCERATIVE COLITIS—COMPLICATIONS AND TREATMENT

NEWTON SCHERL, M.D.
Misericordia-Fordham Hospital Affiliation

6:30 p.m.

The New York Academy of Medicine
Section on Anesthesiology and Resuscitation
2 East 103rd Street

MALIGNANT HYPERPYREXIA

BEVERLEY A. BRITT, M.D.
University of Toronto, Canada

March 2, 1972 / April 27, 1972

Beth Israel Medical Center
10 Nathan D. Perlman Place

8-Week Series

DRUG USE, ABUSE, DEPENDENCE, TREATMENT

For further information, please contact A. STAUFFER CURRY, Ph.D., Coordinator, Program of Continuing Education, Department of Psychiatry, the above address.

March 2, 1972 and March 9, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
Second Floor Conference Room
757 Bushwick Avenue
Brooklyn

March 2
Advances in Urology
LESTER KARLITZ, M.D.

March 9
Common Problems in Neurosurgery
EDWARD McGOVERN, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

March 2, 1972 / May 4, 1972
4:30–6:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

HYPNOSIS FOR THE PHYSICIAN AND DENTIST

ELLIOT N. WINEBURG, M.D.
Mount Sinai School of Medicine

FEE: $75

March 3, 1972 and March 10, 1972
8:00–9:30 a.m., Fridays

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

March 3
Gonorrhea in the Female
WILLIAM POMERANCE, M.D.

March 10
Fungal Infections
PHILIP J. KOZINN, M.D.

Speakers are from Downstate Medical Center

March 5, 1972 and March 12, 1972
9:00 a.m.–Noon, Sundays

The Boulevard Hospital
46-04 31st Avenue
Long Island City

Intensive Review for Community Physicians

March 5
Hematology
DOROTHY M. HOLDEN, M.D.

March 12
Medical Emergencies
EDMUND F. McNALLY, BERNARD WECHSLER and MARTIN PERLMUTTER, M.D.'s

Speakers are from Downstate Medical Center

March 6 / 10, 1972

Columbia University School of Public Health and Administrative Medicine
Philadelphia, Pennsylvania

DRUG ABUSE AND ADDICTION

FEE: $175

Write: Program of Continuing Education, 21 Audubon Avenue, New York, N.Y. 10032. Tel (212) 568-4334.

MONDAY, MARCH 6

8:30 p.m.

Rudolf Virchow Medical Society
2 East 103rd Street

1. **The Importance of a Skeletal Passport**
   OTTO C. KESTLER, M.D.
2. **The Pathogenesis of Graves Disease**
   SIDNEY WERNER, M.D.
   Columbia-Presbyterian Hospital

TUESDAY, MARCH 7

American College of Physicians
The Rockefeller University
Caspary Auditorium
York Avenue and 66th Street

Annual Regional Meeting

RECENT ADVANCES IN INFECTIOUS DISEASES

FEES: $5 Members
$7 Non-Members
$6 for Luncheon (Limited to 250)

Write: ELI FRIEDMAN, M.D., 450 Clarkson Avenue, Brooklyn, N.Y. 11203.

March 7, 1972 and March 14, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
Main Conference Room
101 Castleton Avenue
Staten Island

Continuing Postgraduate Education
Family Practice Section

March 7
Pulmonary Function Laboratory
RICHARD HOFFMAN, M.D.

March 14
Acute Glaucoma, Iritis, etc.
S. VOZEOLAS, M.D.

March 7, 1972 and March 14, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway—Conference Room
Brooklyn

Newer Concepts in Medicine

March 7
Liver Function Tests
M. PETTI, M.D.

March 14
Spleen Diseases
F. FELDMAN, M.D.

March 7, 1972 and March 14, 1972
9:00 a.m., Tuesdays

Division of Pulmonary Medicine
Long Island Jewish Medical Center/Queens Hospital
Center Affiliation
9th Floor Auditorium
Triboro Hospital
Parsons Blvd., and 82nd Street
Queens

March 7
Diagnosis and Management of Sub-Phrenic Abscess
ARTHUR AUFSES, M.D.
Long Island Jewish Medical Center

March 14
Some Unusual Surgical Diseases of the Sternum
N. AMER, M.D.

March 7, 1972 and March 14, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

March 7
Drug Overdosage Treatment with Dialysis
ROBERT MATALON, M.D.

March 14
Arthritis in Ulcerative Colitis
THOMAS KANTOR, M.D.

Speakers are from N.Y.U. Medical Center

March 7, 1972 and March 14, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building, 4th Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Program

March 7
Allergic Dermatoses
LAZLO BIRO, M.D., Downstate Medical Center

March 14
Venereal Disease in Childhood and Adolescence
VERNAL G. CAVE, M.D., Howard University
Washington, D.C.

TUESDAY, MARCH 7

2:00 p.m.

The Catholic Medical Center
Department of Surgery—Division of Ophthalmology
88-25 153rd Street
Jamaica

1. **Diagnosis and Treatment of Cyclo-Vertical Palsies**
   DONELSON MANELY, M.D., Temple University
2. **Ocular Motility Problems**

HERBERT BREINEN, M.D.
N.Y.U. College of Medicine

3. **Fresnal Prism Membrane in the Treatment of Strabismus**
SUSAN VERONNEAU, M.D.
Downstate Medical Center

Moderator: RICHARD TROUTMAN, M.D.

7:00 p.m.

The New York Academy of Medicine
Section on Dermatology and Syphilology
2 East 103rd Street

1. **Presentation of Cases**
Members 7:00–7:45 p.m.
Non-Members 7:45–8:30 p.m.
From the Departments of Dermatology of:
Metropolitan Hospital Center
EDWARD MANDEL, M.D.
Kings County Hospital
LAWRENCE FRANK, M.D.
Bronx Veterans Hospital
HARRY SHATIN, M.D.
2. **Executive Session**
3. **General Discussion of Cases**

8:00 p.m.

Jewish Memorial Hospital
Broadway and 196th Street

ANTIBIOTIC SYNERGY AND GRAM NEGATIVE SEPSIS

VINCENT T. ADRIOLE, M.D.
Yale University School of Medicine

March 7, 1972 / Five weekly sessions
8:30 p.m., Tuesdays

American Institute for Psychoanalysis
Karen Horney Clinic
329 East 62nd Street

ORIENTATION COURSE IN KAREN HORNEY'S HOLISTIC APPROACH TO THE THEORY AND PRACTICE OF PSYCHOANALYSIS

Apply: HARRY GERSHMAN, M.D., Dean, at the above address.

WEDNESDAY, MARCH 8

Noon

Downstate Medical Center
Fourth Floor, Pediatric Library
Room B4-462, State University Hospital
445 Lenox Road
Brooklyn

PROGESTERONE SYNTHESIS IN RABBIT OVARIES

ROSEMARIE THAU, M.D.

2:00 p.m.

The Catholic Medical Center
Department of Surgery—Division of Orthopedics
St. John's Hospital Auditorium
90-02 Queens Boulevard
Elmhurst

1. **The Scope of Hand Surgery**
ROBERT E. CARROLL, M.D.
Columbia-Presbyterian Medical Center
2. **Tumors of the Extremity**
ROBERT V. P. HUTTER, M.D.
New Jersey College of Medicine and Dentistry
3. **Tendon Injuries and Tendon Reconstruction of the Hand**
JAMES M. HUNTER, M.D.
Jefferson Medical College, Philadelphia

March 8, 1972 and March 15, 1972
4:00–5:00 p.m., Wednesdays

Flushing Hospital and Medical Center
First Floor Conference Room
Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lectures

March 8
Recent Advances in Amino Acid Disease in Children
JOSEPH DANCIS, M.D., N.Y.U. Medical Center

March 15
Pediatric Neurology
EDWARD HART, M.D., Columbia University P & S

WEDNESDAY, MARCH 8

8:30 p.m.

Bronx Pediatric Society
Montefiore Hospital
Rosenthal Auditorium
111 East 210th Street
Bronx

PRESENTATION BY

HOWARD A. PEARSON, M.D.
Yale University School of Medicine

March 8, 1972 and March 15, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF EMOTIONAL PROBLEMS IN OLDER PERSONS IN MEDICAL PRACTICE

BELLA S. VAN BARK, M.D.

THURSDAY, MARCH 9

2:00 p.m.

The Catholic Medical Center
Department of Surgery
Chellis Hall Auditorium
Mary Immaculate Hospital Division
88-02 153rd Street
Jamaica

1. **Kallikrein-Kinnin System and Shock**
RICHARD TALAMO, M.D.
Harvard Medical School

2. **Kallikreins in Human Shock**
SAFUH M. ATTAR, M.D.
University of Maryland, Baltimore

3. **Steroid in Shock—Use and Abuse**
JAMES W. WILSON, M.D.
Duke University Medical Center, Durham, N.C.

FRIDAY, MARCH 10

8:00 p.m.

Staten Island Family Service
25 Victory Boulevard
Staten Island

EXISTENTIAL PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
Institute of Human Relations

Contact Sid Herling, MSW, Dir., above address

8:30 p.m.

Society for the Scientific Study of Sex
Barbizon Plaza Hotel
106 Central Park South

EROS IN THE WHITE HOUSE: SEXUAL CONCERNS OF SOME AMERICAN PRESIDENTS

MILTON PLESUR, Ph.D., Prof. of History
State University of New York at Buffalo

March 13, 1972 / March 17, 1972

Columbia University School of Public Health and Administrative Medicine
21 Audubon Avenue, Room 305

PHYSICIANS IN INDUSTRY

FEE: $250 (Limited to 12)

Write or Call: Continuing Education, above address. Telephone: 212-568-4334

March 13, 1972 / March 15, 1972
9:00 a.m.–5:00 p.m., Monday–Wednesday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

LABORATORY METHODS IN BLOOD BANKS

RICHARD E. ROSENFIELD, M.D. and Members of the Hematology Staff

Mount Sinai School of Medicine

FEE: $100

March 13, 1972 / March 17, 1972
9:00 a.m.–5:00 p.m., Monday–Friday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

CLINICAL NEUROLOGY

MORRIS B. BENDER, M.D. and Staff
Mount Sinai School of Medicine

FEE: $100

MONDAY, MARCH 13

1:00 p.m.

Downstate Medical Center
Fourth Floor Lecture Hall
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

R. Janet Watson Hematology Lecture

HEMOGLOBIN INTERACTIONS IN ERYTHROCYTE SICKLING

ROBERT M. BOOKCHIN, M.D.
Albert Einstein College of Medicine

3:30 p.m.

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway—Auditorium
Elmhurst

CIRCULATORY SUPPORT IN CARDIOGENIC SHOCK

LESLIE A. KUHN, M.D.
Mount Sinai School of Medicine

8:30 p.m.

Beth Israel Medical Center
Dazian Pavilion—12th Floor Conference Room
10 Nathan D. Perlman Place

Medical-Surgical-Thoracic Conference

ALPHA-1 ANTITRYPSIN DEFICIENCY IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

GEORGE A. FALK, M.D.
Cornell University Medical College

March 14, 1972 / March 16, 1972

Columbia University School of Public Health and Administrative Medicine

GERIATRICS—TARGET 1980
(Part 3 of a 3 year program)

Note: Indepth analysis of geriatric problems in the United States. Restricted to members of National Geriatric Society and affiliated societies

Sponsored by: National Geriatrics Society, Johnson Foundation, Columbia University

Write Continuing Education, Columbia University
School of Public Health and Administrative Medicine
21 Audubon Avenue, New York, N.Y. 10032.

March 14, 1972 / May 16, 1972
4:30–6:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

DIFFERENTIAL DIAGNOSIS IN GASTROINTESTINAL RADIOLOGY

RICHARD H. MARSHAK and MANSHO T. KHILNANI, M.D.'s
Mount Sinai School of Medicine

FEE: $50

WEDNESDAY, MARCH 15

4:00 p.m.

The New York Academy of Medicine
Section on Otolaryngology with
Otolaryngology Section, College of Physicians
Philadelphia, Pennsylvania

1. **Carcinoma of Vocal Cords**
   JAMES R. LEONARD, M.D.
   Jefferson Medical College

   Discussor:
   DANIEL C. BAKER, JR., M.D.
   Columbia University P & S

2. **Neuro-Otologic Diagnosis in Vestibular Disorders**
   MAX LEE RONIS, M.E.
   Temple University

   Discussor:
   KENNETH BROOKLER, M.D.
   Mount Sinai Medical Center, New York

NEW YORK CITY FUTURE EVENTS

THURSDAY, MARCH 16

9:00 a.m.

New York Medical College
Metropolitan Hospital
97th Street at 2nd Avenue
Sixth Floor Auditorium

Chaiken Lecture in Gastroenterology

CHOLERA: A MODEL FOR DIARRHEAL DISEASE

THOMAS R. HENDRIX, M.D.
The Johns Hopkins University

8:00 p.m.

The Harvey Society
The Rockefeller University—Caspary Hall
York Avenue and 66th Street

T-RNA: DECODER OF GENETIC MESSAGES

PAUL BERG, Ph.D.
Stanford University, California

March 23 and 24, 1972

American Academy of Compensation Medicine
N.Y.U. Medical Center
32nd Street and First Avenue

MEDICAL AND SURGICAL ASPECTS OF WORKMEN'S COMPENSATION

ARTHUR I. BLIEDEN, M.D., Program Chairman
MARIO E. STELLA, M.D., Co-Chairman

Write for information: American Academy of Compensation Medicine, Box 180, Radio City Station, New York, N.Y. 10019.

March 25, 1972 / March 28, 1972

9:00 a.m.–5:00 p.m., Saturday–Tuesday

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

Continuing Education Course

OPHTHALMIC MICROSURGERY (for Ophthalmic Surgeons only)

RICHARD C. TROUTMAN, M.D.
GUNTER MACKENSEN, M.D., Freiburg, Germany
ENRIQUE S. MALBRAN, M.D., Buenos Aires, Argentina
and AUSTIN T. FINK, JOSEPH H. GOLDSTEIN,
GEORGE M. GOMBOS, MURRAY A. MELTZER,
DONALD E. WILLARD, M.D.'s

FEE: $500

To register, contact Mrs. Sylvia Baer, Div. of Ophthalmology, above address.

April 14, 1972 / April 16, 1972

Friday, Saturday and Sunday

Medical Society of the State of New York, New York State Department of Health, Institute of Forensic Medicine of New York University and City of New York
520 First Avenue

NINTH ANNUAL SYMPOSIUM ON FORENSIC SCIENCES FOR CORONERS AND MEDICAL EXAMINERS OF NEW YORK STATE

THURSDAY, MAY 18

New York Diabetes Association
104 East 40th Street

NINTH ANNUAL PRIZE ESSAY CONTEST IN THE FIELD OF DIABETES MELLITUS

Entries must be submitted before April 1, 1972. An original and four copies should be sent to Research Committee, Clinical Society, above address. Telephone OX 7-7760.

SUNDAY, APRIL 9

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
100th Street and Fifth Avenue

DIAGNOSIS AND TREATMENT IN ELDERLY PATIENTS

ALVIN I. GOLDFARB, M.D. and
Members of the Mount Sinai Faculty

FEE: $25

THURSDAY, MAY 4

5:00 p.m.

***The Parkinson's Disease Foundation**
Alumni Auditorium
Columbia University P & S
630 West 168th Street

CEREBRO-CEREBELLAR INTERACTION IN THE CONTROL OF MOVEMENT

SIR JOHN ECCLES, Nobel Laureate

*Third Annual James Parkinson Lecture

FRIDAY, MAY 19

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

PRACTICAL ASPECTS OF THE TREATMENT OF DIABETES AND ITS COMPLICATIONS

HENRY DOLGER, M.D. and the
Members of the Mount Sinai Faculty

FEE: $25

SATURDAY, MAY 20

New York Medical College
Department of Ophthalmology
Fifth Avenue at 106th Street

RESIDENTS' DAY

NO FEE (Pre-registration required)

Please contact Mrs. Ruth Green, Dept. of Ophthalmology, 1249 Fifth Avenue, N.Y., N.Y. 10029. Telephone 212-876-5500, ext. 117

BUFFALO AREA

March 9, 1972 and March 16, 1972
7:30–9:30 p.m.

Heart Association of Western New York and Continuing Medical Education State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

March 9
- **Auscultation—The Opening Snap**
  - **Atrial, Ventricular, and Aortic**
  - **Pressure Curve Relations**
  - **Cause of Opening Snap**
  - **Timing of Opening Snap**
    - **Method Without Phonocardiogram**
    - **Significance**
  - **Case Presentations**

March 16
- **Auscultation—The Opening Snap**
  - **How to Differentiate the A2—OS from**
    - **A2 P2**
    - **A2 S3**
    - **The Tricuspid Opening Snap**
  - **Case Presentations**

WHAT GOES ON will present workshops in chronological order throughout the course.

FRIDAY, MARCH 24

8:15 a.m. Registration

Department of Psychiatry, School of Medicine State University of New York at Buffalo
Statler Hilton Hotel
Embassy Room

CHILD DEVELOPMENT: On the Importance of Infancy

Morning Program

DOES THE NEONATE SHAPE HIS ENVIRONMENT?

T. BERRY BRAZELTON, M.D., Harvard Medical School

Afternoon Program

EMOTIONAL DEVELOPMENT IN THE FIRST TWO YEARS OF LIFE

HENRY RICCIUTI, M.D., Cornell University

Discussion will follow both programs
NORMAN SOLKOFF, M.D., Presiding

NASSAU COUNTY

March 1, 1972 / March 15, 1972
4:00 p.m., Wednesdays

Department of Radiology Nassau County Medical Center
Meadowbrook Hospital X-Ray Classroom
East Meadow

March 1
Bronchography
JOHN PESIRI, M.D.
Central General Hospital

March 8
Unusual Manifestations of Colonic Disease
WILLIAM SEAMAN, M.D.
Columbia University P & S

March 15
Arthrography of the Knee
SAMUEL GELBAND, M.D.
Brookhaven Memorial Hospital

March 2, 1972 and March 9, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

March 2
Current Attitudes in the Management of Acute Leukemia in Childhood
ALAN N. MORRISON, M.D.
Brooklyn Jewish Hospital

March 9
New Concepts in Hirschsprungs Disease
SCOTT J. BOLEY, M.D.
Montefiore Hospital and Medical Center

WEDNESDAY, MARCH 15

9:00 a.m.

Mercy Hospital
MacArthur Hall
Rockville Centre

DIAGNOSIS OF SOME COMMON DERMATOLOGIC CONDITIONS

RAUL FLEISCHMAJER, M.D.
Hahnemann Medical College and Hospital
Philadelphia, Pa.

ROCHESTER AREA FUTURE EVENTS

THURSDAY, MAY 25

The Rochester Ophthalmological Society
The University Club

17th Annual Albert C. Snell Memorial Lecture

DIAGNOSIS AND MANAGEMENT OF UVEITIS

MICHAEL J. HOGAN, M.D.
University of California

Note: There will be an afternoon clinical session at the University of Rochester Medical Center followed by an evening dinner prior to the Memorial Lecture. The Friday, May 26th session will include S. Arthur Boruchoff, M.D., George M. Howard, M.D. and David L. Knox as guest lecturers.

October 22, 1972 / October 25, 1972

Department of Radiology
The University of Rochester
School of Medicine and Dentistry
Flagship Rochester Hotel
Rochester

Symposium

DIAGNOSTIC RADIOLOGIC FACILITIES AND OPERATIONS (A Meeting on Planning, Organization, and Efficient Operation)

Chairman: HARRY W. FISCHER, M.D.

Write: Dante DiLella, Executive Secretary, Symposium, The University of Rochester School of Medicine and Dentistry, Rochester, N.Y. 14642: Telephone: 716-275-2611.

SUFFOLK COUNTY FUTURE EVENT

April 21 / April 23, 1972

American Association Medical Assistants
New York State Society
Kings Grant Motel
Plainview

13th ANNUAL CONVENTION

For advance registration, contact BEVERLY CAINE, 61 Ellensue Drive, Deer Park, N.Y. 11729 or MAE SHERIDAN, 8 Barbara Court, Greenlawn, N.Y. 11740.

EVENTS RECEIVED AFTER DEADLINE

FRIDAY, MARCH 3

Wyckoff Heights Hospital
374 Stockholm Street
Brooklyn

NEONATAL JAUNDICE

LAWRENCE GARTNER, M.D.
Albert Einstein College of Medicine

MONDAY, MARCH 6

8:00 p.m.

The New York Society for Clinical Ophthalmology
2 East 103rd Street

UVEITIS SYMPOSIUM

TUESDAY, MARCH 7

3:00–4:00 p.m.

Jewish Memorial Hospital
196th Street and Broadway
8th Floor Solarium

MEDIASTINOSCOPY IN DIAGNOSIS OF CHEST DISEASES

PAUL A. KIRSCHNER, M.D.
Mount Sinai School of Medicine

PHYSICIANS' PLACEMENT

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CONTACT: WALTER G. THORPE, Stanfordville, N.Y. 12581. Tel. (914) 868-1916.

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CONTACT: MR. DON CAIRNS, Exec. Sec., Suffolk County Medical Society, 850 Veterans Memorial Highway, Hauppauge, N.Y. 11787. Tel. (516) 265-6666.

SUFFOLK COUNTY, N.Y., needs qualified family physicians. Openings available in solo, group, or in association and/or partnership with established family physicians.

CONTACT: LEONARD WEITZMAN, M.D., Pres., Suffolk County Chapter of AAGP, 162 Wicks Road, Commack, N.Y. 11725. Tel. (516) 864-7012.

SYRACUSE, N.Y., Onondaga County, needs Internists and Pediatricians for Neighborhood Health Center.

CONTACT: ROBERT F. AUSTIN, M.D., 819 So. Salina Street, Syracuse, N.Y. 13202. Tel. (315) 476-7921.

WALTON, N.Y., Delaware County (Catskill Mountain area). Ob/Gyn Board/Cert., Board/Elig. and Family Practitioner with residency training.

CONTACT: THOMAS E. LAVELL, M.D., Delaware Valley Hospital, Walton, N.Y. 13856. Tel. (607) 856-4101.

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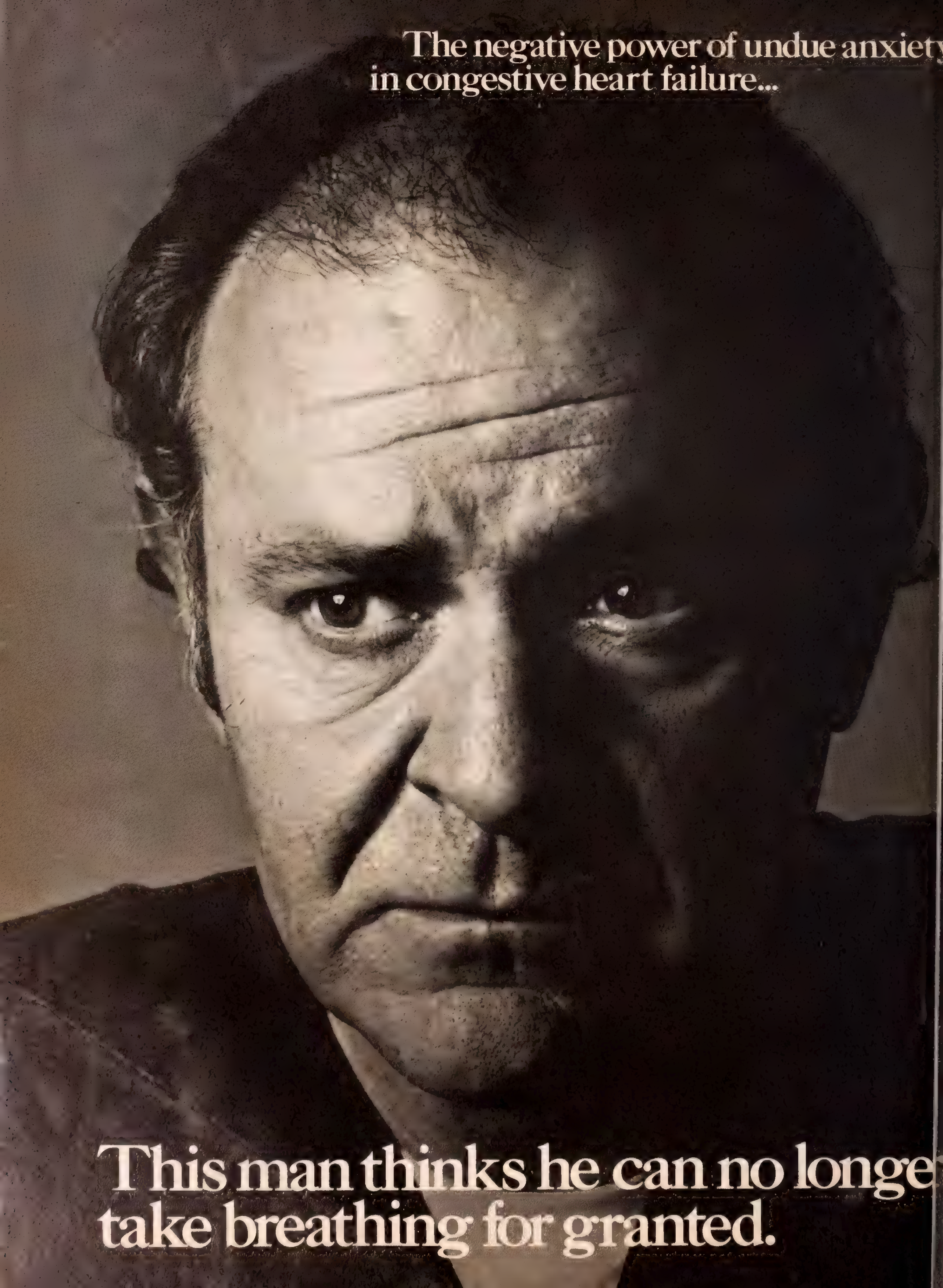
The negative power of undue anxiety
in congestive heart failure...
This man thinks he can no longe
take breathing for granted.

Typical of many patients with congestive heart failure, he also suffers from severe anxiety, a psychic factor that may influence the character and degree of his symptoms, such as dyspnea. His apprehension may also deprive him of the emotional calm so important in maintenance therapy.

Aid in rehabilitation

Specific medical and environmental measures are often enhanced by the antianxiety action of adjunctive Libritabs (chlordiazepoxide). Libritabs can also facilitate treatment of the tense convalescent patient until antianxiety therapy is no longer required. Whereas in geriatrics the *usual daily dosage* is 5 mg two to four times daily, the *initial dosage* in elderly and debilitated patients should be limited to 10 mg or less per day, adjusting as needed and tolerated.

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Libritabs is used concomitantly with certain specific medications of other classes of drugs, such as cardiac glycosides, diuretics, antihypertensives, vasodilators and oral anticoagulants, whenever excessive anxiety or emotional tension adversely affects the clinical condition or response to therapy. Although clinical studies have not established a cause and effect relationship, physicians should be aware that variable effects on blood coagulation have been reported very rarely in patients receiving oral anticoagulants and chlordiazepoxide HCl.

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Libritabs®

(chlordiazepoxide)

5-mg, 10-mg, 25-mg tablets

t.i.d./q.i.d.

up to 100 mg daily

for severe anxiety accompanying congestive heart failure

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

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New York State Journal of Medicine

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In the diabetic patient on cerebral or peripheral vasodilator therapy
no treatment conflict reported

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- no interference with diabetic control . . . does not alter carbohydrate metabolism.[1]
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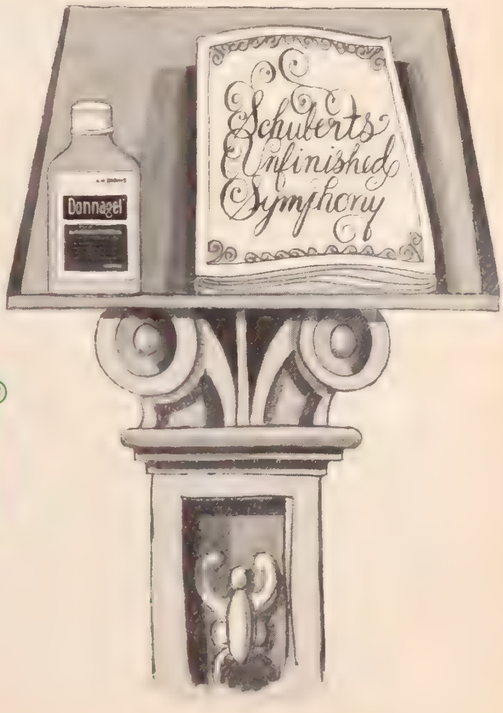

Medical News

Regional program for control of problems associated with biomedical equipment in hospitals

A cooperative, interhospital program for systematic control of technologic problems associated with the increasing use of biomedical equipment in hospitals has been instituted by Montefiore Hospital and Medical Center in the Bronx.

Directed by the Technical Services Section of the Bioengineering Department at Montefiore, the program offers assistance to hospitals throughout the Bronx and Westchester areas in dealing with instrument hazard, accident investigation, identification, and resolution of electrical interference, clinical computer applications, and other special problems. Training lectures or seminars are also arranged for medical, administrative, and maintenance personnel so that a hospital can develop its own capabilities.

The need for equipment control programs has been emphasized by the American Hospital Association and many other organizations, but setting up such a program is costly. While such an expense may be justified in medical centers with large equipment inventories, most hospitals find individual programs to be uneconomical. A solution to this dilemma is provided when one institution with an on-going program is able to assist other hospitals.

For the past year, the Montefiore program has provided such services to a limited number of nearby hospitals and is presently expanding its program to other institutions located within a 60-mile radius of the hospital. Further information regarding specific details of the program may be obtained by calling Mr. Bryan Parker, director of Montefiore's Bioengineering Department, at 212-920-4265.

Clinical center study of precocious puberty

The cooperation of physicians is requested in the referral of patients with precocious puberty to the National Institute of Child Health and Human Development's Reproduction Research Branch at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Patients will be considered for study and treatment regardless of age, sex, or duration of signs.

On completion of studies, patients will be returned to the care of the referring physician who will receive a summary of findings with recommendations for further therapy.

Physicians interested in having their patients considered for admission may write or telephone: Howard Kulin, M.D., or Griff T. Ross, M.D., Clinical Center, Room 10-B-09, National Institutes of Health, Bethesda, Maryland 20014, Telephone: 301-496-4686.

Material for inclusion in the medical news section must be received six weeks prior to publication date.

Reticulum cell sarcoma study

The cooperation of physicians is requested in the referral of patients with reticulum cell sarcoma for studies being conducted by the National Cancer Institute's Medicine Branch at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Patients having previously untreated reticulum cell sarcoma are needed to participate in clinical trials. However, patients with all stages of the disease are suitable for study. Those in the early stages of disease are being studied in collaboration with the Radiation Branch.

On completion of their studies, patients will be returned to the care of the referring physician who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone: Phillip Schein, M.D., Clinical Center, Room 4-B-13, National Institutes of Health, Bethesda, Maryland 20014, Phone: 301-496-2031; or Vincent T. DeVita, M.D., Clinical Center, Room 12-N-226, National Institutes of Health, Bethesda, Maryland 20014, Phone: 301-496-4916.

Oven cooking bags under study

Oven cooking bags used for roasting poultry and meat are under study as a potential burn hazard by the State Health Department's Burns Care Institute, Hollis S. Ingraham, M.D., State health commissioner, said recently.

The Burns Care Institute has received four reports of cooking bag explosions in New York State, Dr. Ingraham said, one of which resulted in a minor burn.

Peter Greenwald, M.D., director of the Burns Care Institute, has referred the reports to the manufacturer of the bags involved in each of the incidents.

Investigation of three cases by Burns Care Institute staff revealed that package instructions for use apparently had been followed. Instructions include limiting oven temperatures to 400° F., carefully sealing and trimming the bag, and piercing six or eight evenly spaced holes in the top of the bag with a sharp knife or cooking fork. Users are also cautioned to keep the bag from contact with oven walls or cooking racks. The fourth case is still under investigation.

In his letter, Dr. Greenwald said, "Our investigations were unable to determine any external condition (such as the bag touching inside oven surfaces, oven cleaner residue, etc.) that affected these episodes."

In two cases, the cooking bags burst and caught fire inside the oven after cooking for three hours at more than 300° F. In a third instance, the bag burst, releasing steam and hot cooking juices, while it was being removed from the oven. In that case, Dr. Greenwald suggested, ". . . the change in temperature from the oven to the outside might have promoted the explosion."

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Dr. Greenwald asked that anyone who has had a similar experience with cooking bags notify the Burns Care Institute, 84 Holland Ave., Albany, N.Y. 12208.

The children's kidney center

The Children's Kidney Center, an affiliate Facility of the Kidney Disease Institute has opened in the Hospital of the Albert Einstein College of Medicine.

It is the only Children's Center established by the Kidney Disease Institute of the State of New York through a $110,000 three-year grant to the Hospital of the Albert Einstein College of Medicine.

This Regional Children's Center is approved for the diagnosis and treatment of all kidney disorders and for dialysis and transplantation by the Kidney Disease Institute and the Children's Medical Rehabilitation Program of the State of New York, and the Bureau for Handicapped Children of the City of New York.

The Center was established to fulfill the goals of the Kidney Disease Institute as mandated by the State Legislature to improve the care of children with kidney disease through clinical and laboratory investigations; to establish an open referral Center for all children with the State.

It is headquartered within the Department of Pediatrics of the Hospital of the Albert Einstein College of Medicine and is under the direction of Ira Greifer, M.D., director of pediatrics.

Nassau-Suffolk Allergy Society

The Nassau-Suffolk Allergy Society was recently formed. The purpose of the Society is to have periodic meetings in order to bring the latest information pertaining to allergy and immunology to the physicians of the Long Island Area.

Physicians interested in joining the organization should contact: Sanford Goldzier II, M.D., Secretary, 1428 Sylvan Lane, East Meadow, New York 11554.

Twenty-fifth Gibson Lecture

"Progress in Blood Banking: Prologue, Perspective, and Prediction" is the title of the twenty-fifth Gibson lecture to be given on Thursday, April 6, 1972, Alumni Auditorium, 630 W. 168th Street, New York City 10032. Tibor J. Greenwalt, M.D., medical director, Blood Program, American National Red Cross, Washington, D.C., will deliver the speech at 4 p.m.

New Federal safety regulations for corrective eyeglasses

More than 7,000,000 New York State residents who wear corrective eyeglasses as well as millions more who wear sunglasses will be paying from $3.00 to $5.00 more per pair for single-vision lenses and $7.00 to $10 more per pair for bifocal lenses under new Federal safety regulations which became effective January 1, 1972.

Hollis S Ingraham, M.D., commissioner of the State Health Department, says the higher costs necessitated by Food and Drug Administration rules that all eyeware be manufactured of impact-resistant materials "is a bargain in terms of the injuries and blindness that will be prevented."

Dr. Ingraham said that at least 2,000 New York State school children are injured each year in accidents involving shattered eyeglass lenses and another 1,000 such injuries are recorded annually among adults in industry. He said thousands of other accidents are thought to go unreported.

Under the new Federal rules, glass and plastic lenses used in eyeglasses must be able to withstand the impact of a half-ounce steel ball dropped from a height of slightly over four feet. Opticians must perform the steel ball drop test before dispensing the glasses.

The only exceptions permitted will be when such materials cannot be ground to meet a patient's needs. Physicians and optometrists can specify ordinary heat-treated or laminated glass lenses, plastic lenses, or lenses made impact-resistant by other means. Whenever such materials cannot be used to fill a prescription, the physician or optometrist must give written orders for a change, together with written notification to the patient.

Dr. Ingraham said that State Medicaid policy on eyeglasses has always encouraged physicians and optometrists to use the slightly more expensive impact-resistant materials and noted that approximately 80 per cent of all eyeglasses purchased annually under the program have been made impact-resistant.

He said most physicians and optometrists have taken it on themselves in the past to encourage the use of impact-resistant materials, particularly for eyeglasses to be worn by children and adults in physically hazardous occupations.

Personalities

Appointed. Ladislav P. Hinterbuchner, M.D., as chief, Department of Neurology, Brooklyn-Cumberland Medical Center.

Elected. Arthur I. Blieden, M.D., associate clinical professor of orthopedic surgery, New York University School of Medicine, president, the American Academy of Compensation Medicine. . . . Philip D. Wilson, Jr., M.D., president, the American Academy of Orthopaedic Surgeons.

Retired. Joseph H. Kinnaman, M.D., retired from his third term as commissioner of health for Nassau County.

Speaker. Benjamin F. Rush, Jr., M.D., Johnson and Johnson Professor of Surgery and chairman, Department of Surgery, New Jersey College of Medicine and Dentistry, on April 11, at New York University School of Medicine, in observance of the ninetieth anniversary of the founding of the tumor service.

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Warnings: *Drug Dependence:* Physical and psychological dependence and abuse have occurred. Chronic intoxication, from prolonged use and usually greater than recommended doses, leads to ataxia, slurred speech, vertigo. Carefully supervise dose and amounts prescribed, and avoid prolonged use, especially in alcoholics and addiction-prone persons. Sudden withdrawal after prolonged and excessive use may precipitate recurrence of pre-existing symptoms (e.g., anxiety, anorexia, insomnia) or withdrawal reactions (e.g., vomiting, ataxia, tremors, muscle twitching, confusional states, hallucinosis; rarely convulsive seizures, more likely in persons with CNS damage or pre-existent or latent convulsive disorders). Therefore, reduce dosage gradually (1-2 weeks) or substitute a short-acting barbiturate, than gradually withdraw. *Potentially Hazardous Tasks:* Driving a motor vehicle or operating machinery. *Additive Effects:* Possible additive effects between meprobamate, alcohol, and other CNS depressants or psychotropic drugs. *Pregnancy and Lactation:* Safe use not established; weigh potential benefits against potential hazards in pregnancy, nursing mothers, or women of childbearing potential. Animal data at five times the maximum recommended human dose show reduction in litter size due to resorption. Meprobamate appears in umbilical cord blood at or near maternal plasma levels, and in breast milk at levels 2-4 times that of maternal plasma. *Children Under Six:* Drug not recommended.
Precautions: To avoid oversedation, use lowest effective dose, particularly in elderly and/or debilitated patients. Consider possibility of suicide attempts; dispense least amount of drug feasible at any one time. To avoid excess accumulation, use caution in patients with compromised liver or kidney function. Meprobamate may precipitate seizures in epileptics.
Adverse Reactions: *Central Nervous System:* Drowsiness, ataxia, dizziness, slurred speech, headache, vertigo, weakness, paresthesias, impairment of visual accommodation, euphoria, overstimulation, paradoxical excitement, fast EEG activity. *Gastrointestinal:* Nausea, vomiting, diarrhea. *Cardiovascular:* Palpitations, tachycardia, various forms of arrhythmia, transient ECG changes, syncope; also, hypotensive crises (including one fatal case). *Allergic or Idiosyncratic:* Usually after 1-4 doses. Milder reactions: itchy, urticarial, or erythematous maculopapular rash (generalized or confined to groin). Others: leukopenia, acute nonthrombocytopenic purpura, petechiae, ecchymoses, eosinophilia, peripheral edema, adenopathy, fever, fixed drug eruption with cross reaction to carisoprodol, and cross sensitivity between meprobamate/mebutamate and meprobamate/carbromal. More severe, rare hypersensitivity: hyperpyrexia, chills, angioneurotic edema, bronchospasm, oliguria, anuria, anaphylaxis, erythema multiforme, exfoliative dermatitis, stomatitis, proctitis, Stevens-Johnson syndrome; bullous dermatitis (one fatal case after meprobamate plus prednisolone). Stop drug, treat symptomatically (e.g., possible use of epinephrine, antihistamines, and in severe cases corticosteroids). *Hematologic:* Agranulocytosis and aplastic anemia (rarely fatal), but no causal relationship established. Rarely, thrombocytopenic purpura. *Other:* Exacerbation of porphyric symptoms.
Usual Adult Dosage: 1200 to 1600 mg daily, in three or four divided doses; doses above 2400 mg daily not recommended.
Overdosage: Suicidal attempts with meprobamate, alone or with alcohol or other CNS depressants or psychotropic drugs, have produced drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse, and death. Empty stomach, treat symptomatically; cautiously give respiratory assistance, CNS stimulants, pressor agents as needed. Meprobamate is metabolized in the liver and excreted by the kidney. Diuresis and dialysis have been used successfully. Carefully monitor urinary output; avoid overhydration; observe for possible relapse due to incomplete gastric emptying and delayed absorption. REV. 10/71

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Medical Meetings

Arthur M. Master lecture

Theodore Cooper, M.D., director, National Heart and Lung Institute, Bethesda, Maryland, will be the Arthur M. Master Lecturer on April 6, 1972. Dr. Cooper will discuss "Will Lowering Your Lipids Lengthen Your Life?" at the Mount Sinai School of Medicine, Guggenheim Hall, 5 East 98th Street, New York City 10029, at 8:30 p.m.

R. Janet Watson hematology lecture

Rody P. Cox, M.D., associate professor of medicine and pharmacology, New York University School of Medicine, will deliver the R. Janet Watson Hematology Lecture on Monday, April 10, 1972, at 1:00 p.m., fourth floor lecture hall, Basic Sciences Building, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, New York 11203. Dr. Cox will discuss "Studies on Cell to Cell Communication." This lecture is sponsored by the Hematology Section of the Department of Medicine.

Course in head and neck surgery

A course in "Head and Neck Surgery" by John Conley, M.D., chairman, and faculty, will be presented April 10 to 15, 1972, at Columbia University. The fee is $300. Registration is limited to twenty. For further information, write to: Melvin D. Yahr, M.D., assistant dean, Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York, New York 10032.

Postgraduate course

A postgraduate course on "Diseases of the Heart and Lungs in Infants and Children" will be given at Cornell University Medical College, Caspary Auditorium, York Avenue and 66th Street, New York City, April 17 to 20, 1972. Guest faculty are: Herbert L. Abrams, M.D., Cook Professor and chairman of radiology, Harvard Medical School; David H. Baker, M.D., professor of radiology, and Walter E. Berdon, M.D., associate professor of radiology, Columbia University; Larry P. Elliott, M.D., professor of radiology, University of Florida; Kent Ellis, M.D., professor of radiology, Columbia University, Leonard M. Freeman, M.D., assistant professor of radiology, and Harry Goldman, M.D., associate professor of radiology, Albert Einstein College of Medicine; Sydney S. Gellis, M.D., professor and chairman of pediatrics, Tufts University; Herman Grossman, M.D., associate professor of radiology and pediatrics, Duke University Medical School; John A. Kirkpatrick, M.D., professor of radiology, Temple University School of Medicine; and Edward B. Singleton, M.D., professor of radiology, Baylor University.

Registration is $175 and includes lunches; $100 for residents and fellows. Inquiries should be addressed to John A. Evans, M.D., Department of Radiology, Cornell University Medical College, 1300 York Avenue, New York, New York 10021.

Pediatric postgraduate symposium

The eleventh annual Pediatric Postgraduate Symposium will be held on April 16 and 17 at Maimonides Medical Center, Brooklyn, New York. The symposium is sponsored by Maimonides Medical Center, Coney Island Hospital (affiliate), Downstate Medical Center, American Academy of General Practice (Kings County Chapter), and the chairman is Armand H. Moss, M.D. The fee is $60 which includes luncheon, $15 for each half day session. Checks should be made payable to: Pediatric Postgraduate Symposium, and should be sent to Mrs. Shirley Lasky, Registrar, Department of Pediatric Services, Maimonides Medical Center, 4802 Tenth Avenue, Brooklyn, New York 11219.

New York Eye and Ear Infirmary clinical conference

The forty-fifth annual New York Eye and Ear Infirmary clinical conference will be held May 4 to 5 at the Biltmore Hotel, New York City. The program will include: complications in cataract surgery; complications in muscle surgery; complications in retinal detachment surgery; newer trends in eye plastic surgery; refraction problems; glaucoma—complications and management; and selected free papers by alumni and resident staff. The registration fee is $50 with luncheon included; $25 for residents.

For further information please write: Jane Stark, Conference Registrar, Alumni Association, New York Eye and Ear Infirmary, 310 East Fourteenth Street, New York, New York 10003.

Visiting scientist seminar

The Visiting Scientist Seminar, sponsored by the Metabolism—Endocrine Section, Department of Medicine, Downstate Medical Center, will be held on May 9, 1972, at 1:00 p.m. at the Continuing Education Conference Center, Basic Sciences Building, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, New York 11203. The speaker will be Roger H. Unger, M.D., professor of medicine, The University of Texas Southwestern Medical School, Dallas, Texas. Dr. Unger will speak on "Glucagon in Diabetes Mellitus and Other Catabolic Illness."

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Material for inclusion in the medical meetings sections must be received six weeks prior to publication date.

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Precaution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

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Complete literature available on request from Professional Services Dept. PML.

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Corneal surgery

A three day concentrated course in surgery of the cornea will be given under the direction of A. Benedict Rizzuti, M.D., and staff at the Brooklyn Eye and Ear Hospital on Wednesday, Thursday, and Friday, May 10th, 11th, and 12th, 1972.

Highlights of surgical keratoplasty technics will be demonstrated on patients. Special instrumentation, microscopic surgery, keratoprosthesis, and related ancillary subjects will be discussed.

Matriculants will perform corneal grafting procedures on animal eyes under supervision. Course is limited. Tuition $175.

Registration forms may be obtained from Mr. Vernon Dressler, Administrator, Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn, New York 11238.

IV neuroradiology postgraduate course

The Department of Radiology, Albert Einstein College of Medicine, The Bronx, New York, will sponsor its IV Neuroradiology Postgraduate course from May 15th to May 19th, 1972, inclusive. The course is designed for radiologists, neurosurgeons, and neurologists as a comprehensive review of present-day diagnostic neuroradiology. It will include specialized diagnostic procedures and film interpretation panels. For further information, please contact: Mannie M. Schechter, M.D., Program Director, Neuroradiology Postgraduate Course, Albert Einstein College of Medicine, The Bronx, New York 10461.

Four programs in continuing medical education

The Department of Pediatrics, State University of New York at Buffalo, has arranged for four programs in continuing medical education for academic 1971 to 1972. The first, program in pediatric cardiology was presented in May, 1971, and a refresher seminar in pediatrics was presented in June, 1971. The 1972 programs include a postgraduate education in pediatrics at The Children's Hospital of Buffalo combining tutorial instruction and the opportunity to become integrally involved in clinical services at the hospital for four to eight weeks. General practitioners and pediatricians accepted become immediately involved in evaluation and treatment of patients and will be able to concentrate on one of seven specialized areas: cardiology, endocrinology, general pediatrics, metabolic diseases, mental retardation, nephrology, and radiology. Each participant's program is individually planned to meet his interests and requirements.

Candidates are requested to apply early, specifying subspecialty in which they are interested. Special consideration is given candidates from rural areas. Please write Thomas Aceto, Jr., M.D., chairman of postgraduate education, at Children's Hospital, 219 Bryant Street, Buffalo, N.Y. 14222.

The concluding program will be on school health

A program on child health, behavior, and learning for school physicians, nurses, psychologists, social workers, and guidance counselors will be presented in August, 1972, by The Department of Pediatrics, School of Medicine, State University of New York at Buffalo. The four day program will review: (1) manifestations of disease identifiable by school health personnel, (2) advances in prophylaxis and therapy of these diseases, (3) the learning process, and (4) behavior.

There will be a fee of approximately $60 for the program.

For more information please contact Continuing Medical Education, State University of New York at Buffalo, 2211 Main Street, Buffalo, New York 14214.

Third international convocation on immunology

The third International Convocation on Immunology will be held in Buffalo, New York, from June 12 to 15, 1972. The sessions will concentrate on "Specific Structural Features of Antibodies and of Antigen Recognition Sites." The program has been organized by David Pressman, M.D., and Thomas B. Tomasi, Jr., M.D. Speakers from throughout the world have been invited to discuss aspects of the subject in depth. The meeting is sponsored by the Center for Immunology of the State University of New York and is open to all investigators interested in immunology. Inquiries should be directed to: Professor N. R. Rose, Director, The Center for Immunology, Room 203, Sherman Hall, State University of New York School of Medicine, Buffalo, New York 14214.

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Around-the-clock effect from a single daily dose.

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Free of central depressant action.

Lower doses of pargyline hydrochloride are made possible because of the methyclothiazide component.

Special Restrictions (see back of page):

Tyramine-containing foods (e.g. aged cheese) should be avoided. (For further listing of foods, see back of page.)

If alcohol is used, it should be used cautiously and in reduced amounts.

Patients should be warned against the concurrent use of non-prescription medications (particularly cold preparations and antihistamines), or prescription drugs without physician's consent.

Discontinue Eutron at least two weeks prior to elective surgery.

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Brief Summary
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INDICATIONS. EUTRON (pargyline hydrochloride and methyclothiazide) is indicated in the treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. *It is not recommended for use in patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone.*

Because of the potent diuretic properties of methyclothiazide, the combination is particularly suited for use when congestive heart failure or other conditions requiring diuretic therapy coexist with hypertension, or when edema attributable to antihypertensive therapy develops.

As discussed in regard to dosage and administration, it is desirable to establish the dosage requirements for EUTRON by the administration of Eutonyl and Enduron separately.

CONTRAINDICATIONS. 1. Pargyline therapy is contraindicated in patients with pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure.

2. Pargyline should not be administered to those with malignant hypertension, or to children under twelve years of age because significant clinical information concerning the use of the drug in these conditions is not available.

3. In general, the following drugs or agents are contraindicated in patients receiving pargyline hydrochloride:

a. Centrally acting sympathomimetic amines such as amphetamine and its derivatives (also found in anorectic preparations).

Peripherally acting sympathomimetic drugs such as ephedrine and its derivatives (also found in nasal decongestants, hay fever preparations and cold remedies).

b. Aged and natural cheese (e.g., Cheddar, Camembert, and Stilton), and other foods (e.g., pickled herring, Chianti wine, pods of broad beans, chicken livers, chocolate and yeast products), which require the action of bacteria or molds for their preparation or preservation, because of the presence of pressor substances such as tyramine. Banana peels are also contraindicated. Cream cheese, processed cheese, and cottage cheese can be allowed in the diet during EUTRON therapy, since their tyramine content is inconsequential.

In some patients receiving EUTRON, tyramine may precipitate an abrupt rise in blood pressure accompanied by some or all of the following: severe headache, chest pain, profuse sweating, palpitation, tachycardia or bradycardia, visual disturbances, stertorous breathing, coma, and intracranial bleeding (which could be fatal). A phenothiazine derivative or phentolamine may be administered parenterally for treatment of such an acute hypertensive reaction.

c. Parenteral administration of reserpine or guanethidine may cause hypertensive reactions from sudden release of catecholamines. Parenteral use of these drugs is contraindicated during, and for at least one week following, treatment with EUTRON.

d. Imipramine, amitriptyline, desipramine, nortriptyline, or their analogues should not be used with pargyline. The use of these drugs with monoamine oxidase inhibitors has been reported to cause vascular collapse and hyperthermia which may be fatal. A drug-free interval (about two weeks) should separate therapy with EUTRON and use of these agents.

e. Methyldopa or dopamine, which may cause hyperexcitability in patients receiving pargyline, should not be given.

f. Other monoamine oxidase inhibitors should not be added to a EUTRON regimen since they may augment the effects of pargyline.

4. Methyclothiazide is contraindicated in patients with a known sensitivity to methyclothiazide and/or other thiazide diuretics. It should not be used in patients with severe renal disease (except nephrosis) or complete renal shutdown. Thiazide diuretics should not be used in the presence of severe liver disease and/or impending hepatic coma. Hepatic coma has been reported as a consequence of hypokalemia in patients receiving thiazide diuretics.

WARNINGS

A. PATIENTS

1. PATIENTS SHOULD BE WARNED AGAINST THE USE OF ANY OVER-THE-COUNTER PREPARATIONS, PARTICULARLY "COLD PREPARATIONS" AND ANTIHISTAMINES OR PRESCRIPTION DRUGS WITHOUT THE KNOWLEDGE AND CONSENT OF THE PHYSICIAN.
2. PATIENTS SHOULD BE CAUTIONED ON THE USE OF CHEESE (SEE CONTRAINDICATIONS) AND ALCOHOLIC BEVERAGES IN ANY FORM.
3. PATIENTS SHOULD BE WARNED ABOUT THE LIKELIHOOD OF THE OCCURRENCE OF ORTHOSTATIC HYPOTENSION.
4. PATIENTS SHOULD BE INSTRUCTED TO REPORT PROMPTLY THE OCCURRENCE OF SEVERE HEADACHE OR OTHER UNUSUAL SYMPTOMS.
5. PATIENTS WITH ANGINA PECTORIS OR CORONARY ARTERY DISEASE SHOULD BE ESPECIALLY WARNED NOT TO INCREASE THEIR PHYSICAL ACTIVITIES IN RESPONSE TO A DIMINUTION IN ANGINAL SYMPTOMS OR AN INCREASE IN WELL-BEING OCCURRING DURING TREATMENT WITH EUTRON.

B. PHYSICIANS

1. WHEN INDICATED THE FOLLOWING SHOULD BE CAUTIOUSLY PRESCRIBED IN REDUCED DOSAGES:
   a. ANTIHISTAMINES
   b. HYPNOTICS, SEDATIVES OR TRANQUILIZERS
   c. NARCOTICS (MEPERIDINE SHOULD NOT BE USED)
2. DISCONTINUE EUTRON AT LEAST TWO WEEKS PRIOR TO ELECTIVE SURGERY.
3. IN EMERGENCY SURGERY THE DOSE OF NARCOTICS OR OTHER PREMEDICATIONS SHOULD BE REDUCED TO 1/4 TO 1/5 THE USUAL AMOUNT. CLINICAL EXPERIENCE HAS SHOWN THAT RESPONSE TO ALL ANESTHETIC AGENTS CAN BE EXAGGERATED IN PATIENTS RECEIVING EUTRON. THEREFORE THE DOSE OF THE ANESTHETIC SHOULD BE CAREFULLY ADJUSTED.
4. PARGYLINE HYDROCHLORIDE MAY INDUCE HYPOGLYCEMIA.
5. CARE SHOULD BE EXERCISED IN USING EUTRON IN PATIENTS WITH ADVANCED RENAL FAILURE.

The possibility of sensitivity reactions to methyclothiazide or pargyline should be considered in patients with a history of allergy or bronchial asthma

There have been several reports published and unpublished, concerning nonspecific small bowel lesions consisting of stenosis with or without ulceration, associated with the administration of enteric-coated thiazides with potassium salts. These lesions may occur with enteric-coated potassium tablets alone or when they are used with nonenteric-coated thiazides, or certain other oral diuretics.

These small bowel lesions have caused obstruction, hemorrhage and perforation. Surgery was frequently required and deaths have occurred.

Available information tends to implicate enteric-coated potassium salts although lesions of this type also occur spontaneously. Therefore, coated potassium-containing formulations should be administered only when adequate dietary supplementation is not practical, and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported for sulfonamide derivatives, including thiazides.

EUTRON does not contain added potassium.

USE IN PREGNANCY

Pargyline Hydrochloride. Safe use of pargyline during pregnancy or lactation has not yet been established. Before prescribing pargyline in pregnancy, in lactation, or in women of childbearing age, the potential benefits of the drug should be weighed against its possible hazard to mother and child.

Methyclothiazide. Thiazides should be used with caution in pregnant women and nursing mothers since they cross the placental barrier and appear in cord blood and in breast milk. The use of thiazides may result in fetal or neonatal jaundice, bone marrow depression and thrombocytopenia, altered carbohydrate metabolism in newborn infants of mothers showing decreased glucose tolerance, and possible other adverse reactions which have occurred in the adult. When the drug is used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus.

PRECAUTIONS

Pargyline Hydrochloride. The therapeutic response to a variety of drugs may be changed, or exaggerated, in patients receiving a monoamine oxidase inhibitor such as pargyline hydrochloride. Caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers and narcotics (meperidine should not be used), should be used cautiously and at reduced dosage in patients who are taking pargyline.

Pargyline has not been shown to damage the kidney or liver. However, laboratory studies including complete blood counts, urinalyses, and liver function tests should be performed periodically. The drug should be used with caution in the presence of liver disease. All patients with impaired circulation to vital organs from any cause including those with angina pectoris, coronary artery disease, and cerebral arteriosclerosis should be closely observed for symptoms of orthostatic hypotension. If hypotension develops in these patients, EUTRON dosage should be reduced or therapy discontinued since severe and/or prolonged hypotension may precipitate cerebral or coronary vessel thromboses.

The hypotensive effect of pargyline may be augmented by febrile illnesses. It may be advisable to withdraw the drug during such diseases.

Since pargyline is excreted primarily in the urine, patients with impaired renal function may experience cumulative drug effects. Such patients should also be watched for elevations of blood urea nitrogen and other evidence of progressive renal failure. If such alterations should persist and progress, the drug should be discontinued.

An increased response to central depressants may be manifested by acute hypotension and increased sedative effect. Pargyline also may augment the hypotensive effects of anesthetic agents and surgery. For this reason, the drug should be discontinued from at least two weeks prior to surgery.

In the event of emergency surgery smaller than usual doses (1/4 to 1/5) of narcotics, analgesics, sedatives, and other premedications should be used. If severe hypotension should occur, this can be controlled by small doses of a vasopressor agent such as levarterenol.

Pargyline therapy should not be used in individuals with hyperactive or hyperexcitable personalities, as some of these patients show an undesirable increase in motor activity with restlessness, confusion, agitation and disorientation. Clinical studies have shown that pargyline may unmask severe psychotic symptoms such as hallucinations or paranoid delusions in some patients with pre-existing serious emotional problems. This can usually be controlled by judicious administration of chlorpromazine intramuscularly, or other phenothiazines, the patient remaining supine for one hour after administration.

Pargyline should be used with caution in patients with Parkinsonism, as it may increase symptoms. In addition, great care is required if pargyline is administered in conjunction with anti-parkinsonian agents.

In experience to date, pargyline has not been associated with eye changes or optic atrophy as reported with the use of some hydrazine monoamine oxidase inhibitors. However, patients receiving this drug for prolonged periods should be examined for any changes in color perception, visual fields, fundi, and visual acuity.

Clinical reports state that certain individuals receiving pargyline for a prolonged period of time are refractory to the nerve-blocking effects of local anesthetics, e.g., lidocaine.

Methyclothiazide. Thiazide therapy should be used with caution in patients with severely impaired renal function because of the possibility of cumulative effects. Caution is also necessary in patients with severely impaired hepatic function or progressive liver disease.

Thiazide drugs may reduce response to levarterenol. Accordingly, the dosage of vasopressor agents may need to be modified in surgical patients who have been receiving thiazide therapy.

Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effect of the drug may be enhanced in the sympathectomized patient.

All patients should be observed for clinical signs of fluid or electrolyte imbalance, including hyponatremia ("low-salt" syndrome). These include thirst, dryness of the mouth, lethargy and drowsiness.

Hypokalemia may occur during therapy with methyclothiazide. In such cases supplemental potassium may be indicated. Potassium depletion can be hazardous in patients taking digitalis. Myocardial sensitivity to digitalis is increased in the presence of reduced serum potassium and signs of digitalis intoxication may be produced by formerly tolerated doses of digitalis. Hypochloremic alkalosis may occur following intensive or prolonged thiazide therapy. Replacement of chloride may be indicated in such cases.

Thiazides may decrease serum P.B.I. levels without signs of thyroid disturbance.

ADVERSE REACTIONS. Generally side effects should not be severe or serious when the recommended dosages are used, and necessary precautions are observed. If side effects are severe or persist in spite of symptomatic treatment, the dosage should be reduced or the drug withdrawn. See also Warnings and Precautions.

Pargyline Hydrochloride. The most frequently occurring side effects are those associated with orthostatic hypotension (dizziness, weakness, palpitation, or fainting). These usually respond to a reduction of dosage. Patients should be warned against rising to a standing position too quickly, especially when getting out of bed. Severe and persistent orthostatic hypotension should be avoided by reduction in dosage and/or discontinuation of therapy.

Mild constipation, fluid retention with or without edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition nightmares, impotence and delayed ejaculation, rash and purpura, have also been encountered. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Gain in weight may be due either to edema or increased appetite. Drug fever is extremely rare. In some patients reduction of blood sugar has been noted. Although the significance of this has not been elucidated, the possibility of hypoglycemic effects should be borne in mind. Congestive heart failure has been reported in patients with reduced cardiac reserve.

Methyclothiazide. Side effects that may accompany thiazide therapy include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesias, weakness, skin rash, photosensitivity. Jaundice and pancreatitis also have been reported.

Blood dyscrasias, including thrombocytopenia with purpura, agranulocytosis and aplastic anemia, have been reported with thiazide drugs.

Thiazides have been reported, on rare occasions, to have elevated serum calcium to hypercalcemic levels. The serum calcium levels have returned to normal when the medication has been stopped. This phenomenon may be related to the ability of the thiazide diuretics to lower the amount of calcium excreted in the urine.

Elevations of blood urea nitrogen, serum uric acid, and blood sugar have occurred with the use of thiazide drugs. Symptomatic gout may be induced.

Although not established as an adverse effect of methyclothiazide, it has been reported that thiazide diuretics may produce a cutaneous vasculitis in elderly patients.

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Books Received

*The following books were received during the month of January, 1972.**

Lasers in Medicine. By Leon Goldman, M.D., and R. James Rockwell, Jr. Octavo of 385 pages, illustrated. New York, Gordon and Breach, Science Publishers, Inc., 1971. Cloth, $35.

Progress in Neurology and Psychiatry. An Annual Review. Volume XXVI. Edited by E. A. Spiegel, M.D. Quarto of 597 pages. New York, Grune & Stratton, Inc., 1971. Cloth, $29.75.

Acute Cholecystitis. By Clarence J. Schein, M.D. Quarto of 324 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $17.50.

An Aid to Clinical Surgery. By Peter R. Scott, M.B.B.S. Quarto of 324 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1971. Cloth, $14.50.

Emergency Care. Surgical and Medical. Seventh edition. By Warren H. Cole, M.D., and Charles B. Puestow, M.D., with 28 Contributing Authors. Octavo of 438 pages, illustrated. New York, Appleton-Century-Crofts, 1972. Cloth, $12.

The Child. A Textbook for the Paediatric Team. By John Rendle-Short, M.A., M.D. Octavo of 191 pages. Baltimore, Maryland, The Williams & Wilkins Co., 1971. Paperback, $9.25.

Basic Practical Surgery. By C. Barrie Williams, M.D. Duodecimo of 180 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1971. Paperback, $8.00.

The Essentials of Neuroanatomy. Second edition. By G.A.G. Mitchell, O.B.E., T.D., M.B. Quarto of 110 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1971. Paperback, $5.25.

Tropical Diseases. Fourth edition. By Frederick J. Wright, M.A., M.D.Cantab., and James P. Baird, M.D. Quarto of 165 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1971. Paperback, $5.00.

continued on page 551

* Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

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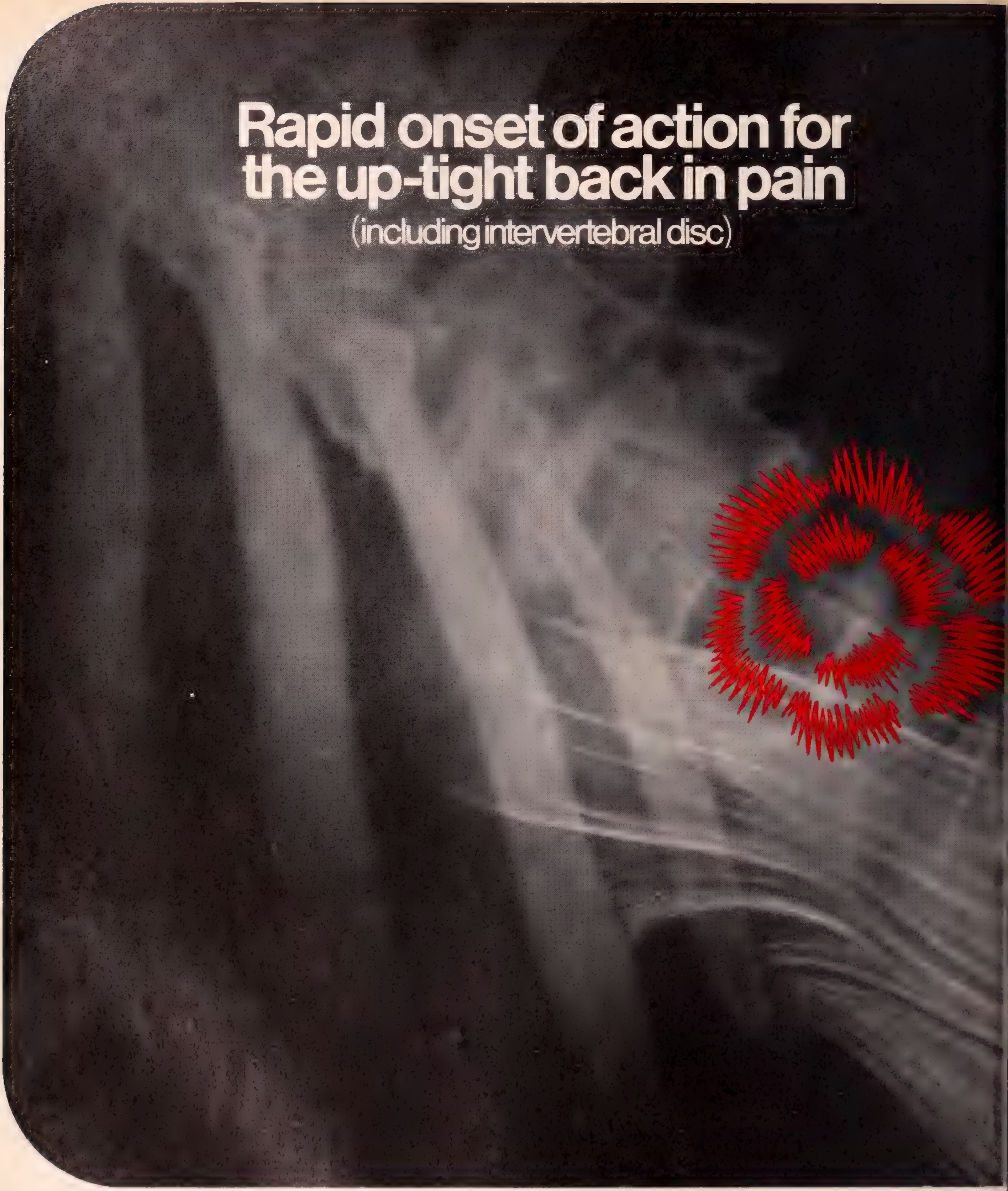
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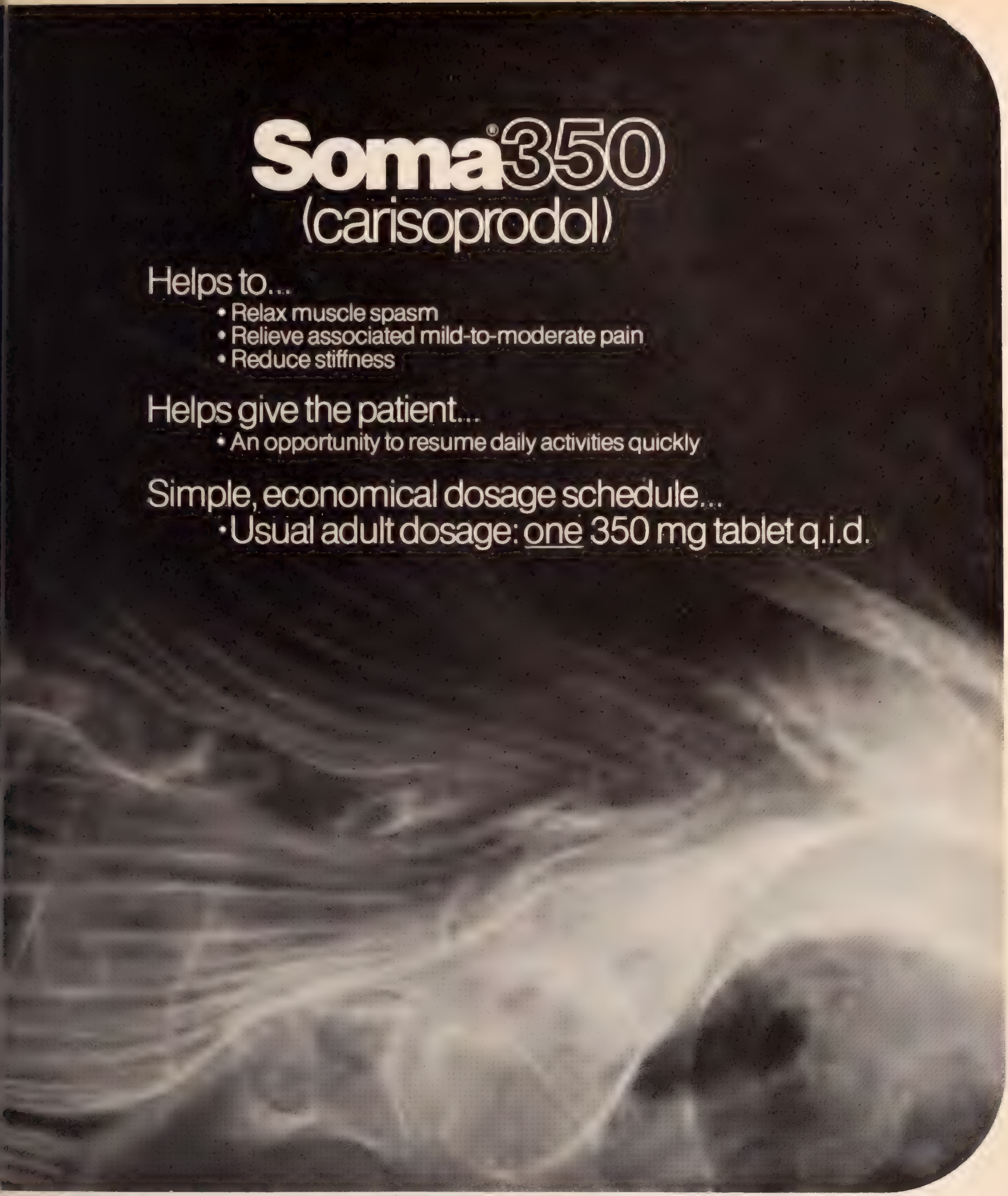

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Abstracts

Tiedemann, R. N., McDivitt, R. M., and Thorbjarnarson, B.: Carcinoid tumor of the rectum, ***New York State J. Med.*** **72:** 559 (March 1) 1972.

Twenty-two cases of rectal carcinoid tumor are reviewed. Only 1 patient had symptoms directly related to the tumor, and most of the tumors were discovered by routine protoscopy. They were submucosal, and none of the patients had more than one nodule discovered. There was little association with other gastrointestinal conditions. Microscopically, most of the tumors were trabecular. Two of the tumors metastasized, and these were larger than the others and produced gross mucosal ulceration. Microscopically, the metastatic tumors appeared more solidly cellular in a noncribriform arrangement with less stroma and more extensive lymphatic permeation. The patients with large tumors died with widespread metastasis. The other patients were treated with various surgical procedures and none of them developed symptoms of recurrence.

Wong, T. C., Palav, A. B., Kim, B. J., and Tricomi, V.: Changes in serum and urinary electrolytes; Following intraamniotic injection of hypertonic saline, ***New York State J. Med.*** **72:** 564 (Mar. 1) 1972.

Following enactment of the new abortion law in New York State, the first 100 cases of abortion performed at the Brooklyn-Cumberland Medical Center were reviewed. It was found that intraamniotic hypertonic saline injection was a safe and effective means of aborting mid-trimester pregnancy. There were only a few, relatively minor complications, including one case of intravascular injection. Electrolyte concentrations in serum and urine were studied, and serum concentrations of the three major electrolytes (sodium, chloride, and potassium) were found to be relatively stable. Electrolyte concentrations in the urine, however, increase greatly following the saline injection. All of the sodium chloride injected into the body can be assumed to be excreted from the body within thirty-six hours, 50 per cent of it within twelve hours. It is uncertain whether the excess potassium in the urine is maternal or fetal in origin.

Orentreich, N.: Hair transplantation, ***New York State J. Med.*** **72:** 578 (Mar. 1) 1972.

Hair-scalp punch autografting has been a safe and effective method in the treatment of alopecia for the past seventeen years. Homograft tolerance studies using this surgical technic along with intralesional steroids and interrupted exposure have been reviewed.

Abstracts in Interlingua

Tiedemann, R. N., McDivitt, R. M., e Thorbjarnarson, B.: Tumores carcinoide del rectum, ***New York State J. Med.*** **72:** 559 (1 de Martio) 1972.

Vintiduo (22) casos de tumores carcinoide del rectum es revistate. Solmente un patiente habeva symptomas relationate con le tumor, e le major parte del tumores esseva discoperite per rutinari proctoscopia. Iste tumores esseva submucose. In necun patiente esseva trovate plus de un nodulo. Pauc association con altere conditiones gastrointestinal esseva trovate. Microscopicmente, le major parte del tumores esseva del typo trabeculari. Duo del tumores metastate, e iste metastases esseva plus grande que le tumor primari, e produceva extensive ulceration del mucosa. Microscopicmente, le tumores metastatic appareva plus solidmente cellulari, con un arrangiamento non cribiforme e con minus stroma e plus extensive permeation lymphatic. Le patientes con grandes tumores moriva con metastases amplemente propagate. Le altere patientes esseva tractate con varie procedimentos chirurgic, e necun de illos presentava symptomas de recurrentia.

Wong, T. C., Palav, A. B., Kim, B. J., e Tricomi, V.: Variationes del electrolytes del sero e urina depost le injection intraamniotic de solution saline hypertonic, ***New York State J. Med.*** **72:** 564 (1 de Martio) 1972.

Depost le promulgation del nove lege del aborto in le Stato de Nove York, le prime 100 casos de aborto facite in le Centro Medic Brooklyn-Cumberland es revistate. Esseva trovate que le injection intraamniotic de solution saline hypertonic esseva un medio secur e effective de provocar un aborto in le secundo tertio del gestation. Le complicationes esseva relativemente minor e pauc frequente; habeva un caso de injection intravascular. Le concentration electrolytic del sero e urina esseva studiate; esseva trovate que le concentrationes seric del tres electrolytes principal (sodium, chlorido, e potassium) esseva relativemente stabile. Esseva trovate, nonobstante, que le concentration electrolytic del urina esseva grandemente augmentate depost le injection del solution saline hypertonic. Es presumite que omne chlorido sodic injectate in le corpo es excretate in 36 horas; le 50 pro cento, in 12 horas. Es dubitabile si le excesso de potassium in le urina es de origine maternal o fetal.

Orentreich, N.: Transplantation de pilo, ***New York State J. Med.*** **72:** 578 (1 de Martio) 1972.

Le autograffos ab perforation ("punch") del pilo (capillo) del scalp ha essite un methodo therapeutic secur e effective del alopecia durante le 17 annos passate. Es revistate le studios del tolerantia del homograffos in que iste technica chirurgic ha essite usate conjunctemente con injectiones intralesional de steroides e exposition interrumpite.

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Notes on Medical Virology. Third edition. By Morag C. Timbury, M.D., Ph.D. Duodecimo of 134 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1971. Paperback, $5.00.

The Medical Clinics of North America. Volume 56 Number 1, January 1972. Symposium on Hemorrhagic Disorders. Guest Editor: Ennio C. Rossi, M.D. Octavo, illustrated. Philadelphia, W. B. Saunders Company, 1972. Published bi-monthly (six numbers a year). Cloth, $21. per year.

Modern Treatment. Volume 8 Number 4, November 1971. Chronic Arthritis. Guest Editor: J. Claude Bennett, M.D. **Anorectal Diseases.** Guest Editor: Stuart T. Ross, M.D. Octavo, illustrated. New York, Harper & Row, Publishers, 1971. Published quarterly (four numbers a year). Cloth, $20. per year.

Tracheostomy complications

While there has been a growing interest in tracheostomy as a potential lifesaving procedure, this interest has been paralleled by an increasing of the high incidence of complications, both operative and postoperative, some of them serious. In a recent article by Stowe, Kenan, and Hudson (*Am. Surgeon* **36:** 34, 1970), a retrospective study of 256 tracheostomies performed over a period of twenty-one months, illustrates this problem.

Twenty-four per cent of the patients displayed one or more complications, for a complication rate of 38 per cent. Although total survival was 63 per cent, this reflected the seriousness of the disease rather than the hazard of tracheostomy. Deaths related to tracheostomy resulted in a mortality rate of 2.7 per cent. The authors feel that the complication rate and the mortality rate are disturbing. Operative complications are decreased when tracheostomy is carried out in the operating room with an endotracheal tube in place. Insertion of an endotracheal tube often converts an emergency situation into an elective one. Postoperative complications can be reduced by better postoperative management, including humidification, use of aerosols, cleansing of inner cannula, and use of sterile technic in endotracheal suction.

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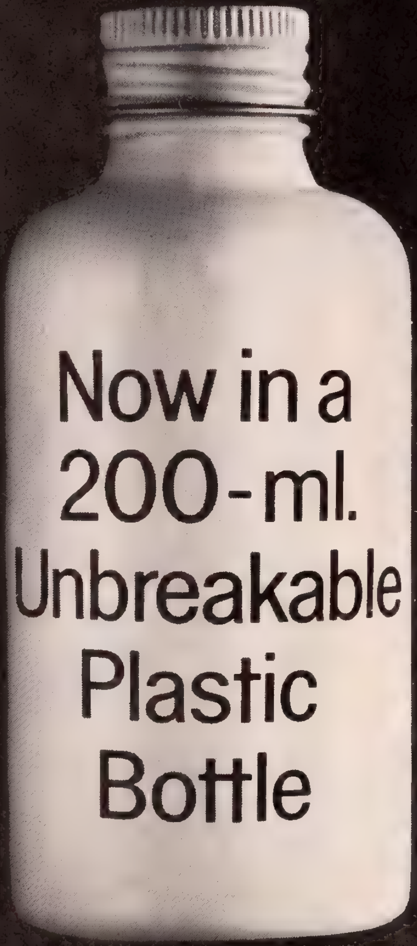
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Editorials

Journal awards

On Sunday, February 13, 1972, at the opening session of the House of Delegates 166th Annual Convention at the Americana hotel in New York City three awards were made on behalf of the ***Journal*** by the President of the Medical Society of the State of New York, George Himler, M.D.

The eleventh annual Redway Medal and Award for excellence in medical writing was given to Susan T. Carver, M.D. (Fig. 1); the Citations for Distinguished Service to the ***Journal*** to Lloyd T. Barnes, M.D. (Fig. 2),* and to Alfred P. Ingegno, M.D. (Fig. 3).

FIGURE 1. Susan T. Carver, M.D., accepting the Redway medal from William Hammond, M.D.

The Redway Medal and Award read:

> The eleventh annual Redway Award for excellence in medical writing goes to Susan T. Carver, M.D., for her article on the "Ecology of Coronary Heart Disease" which was published in the May 15, 1971, issue of the ***Journal.***
>
> This study of the internal and external influences bearing on coronary heart disease summarizes existing knowledge of the subject to date.
>
> Weighing all the evidence carefully the author concluded that the pathophysiologic processes which determine subsequent risk are

FIGURE 2. Miss Wyndolyn M. Barnes with George Himler, M.D., president of the Medical Society of the State of New York.

FIGURE 3. Alfred P. Ingegno, M.D., with Dr. Himler, after receiving the ***Journal's*** Citation for Distinguished Service.

*Dr. Barnes was out of town and the Citation was accepted by Miss Wyndolyn M. Barnes, Dr. Barnes daughter, a second-year medical student at the University of Pennsylvania School of Medicine.

established early in life and that future investigations of the genesis and prevention of coronary heart disease should be centered more in the periods of childhood and adolescence.

This excellently written, informative example of medical writing is eminently worthy of high acclaim.

The ***Journal's*** Distinguished Service Awards Citations made to Lloyd T. Barnes, M.D., and Alfred P. Ingegno, M.D., read as follows:

Lloyd T. Barnes, M.D., has a long and enviable record of service to the ***Journal.***

Coming on the Associate Editorial Board to replace the late Peter Marshall Murray, M.D., Dr. Barnes quickly became a highly valued member.

His advice and guidance in regard to manuscripts in internal medicine has been immensely important.

This Award measures our high regard and deep appreciation for all that Dr. Barnes is doing for the ***Journal.***

Alfred P. Ingegno, M.D., has served the ***Journal*** faithfully, first as a member and later chairman of the old Publications Committee and latterly as an Associate Editor for gastroenterology.

His counsels in all matters have been of material help in placing the ***Journal*** in its forward position among its peers.

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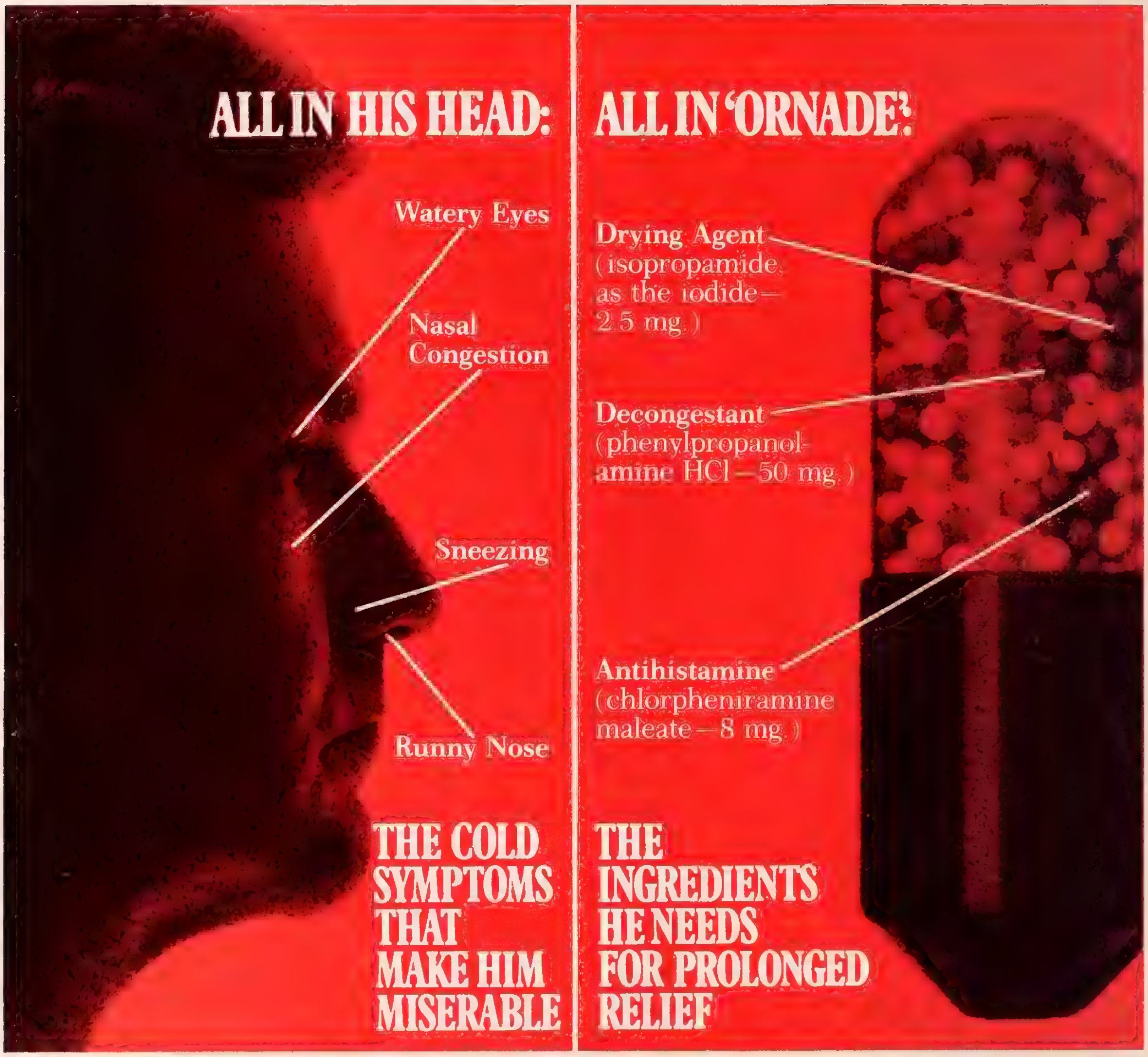
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UNCOMMON RELIEF FOR COLD SYMPTOMS

CARCINOID TUMOR OF RECTUM

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New York City
ROBERT M. McDIVITT, M.D.
New York City
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Twenty-two cases of rectal carcinoid tumor are reviewed. Only 1 patient had symptoms directly related to the tumor, and most of the tumors were discovered by routine protoscopy. They were submucosal, and none of the patients had more than one nodule discovered. There was little association with other gastrointestinal conditions. Microscopically, most of the tumors were trabecular. Two of the tumors metastasized, and these were larger than the others and produced gross mucosal ulceration. Microscopically, the metastatic tumors appeared more solidly cellular in a noncribriform arrangement with less stroma and more extensive lymphatic permeation. The patients with large tumors died with widespread metastasis. The other patients were treated with various surgical procedures and none of them developed symptoms of recurrence.

Almost all rectal carcinoid tumors are discovered incidentally during proctoscopy since they are usually asymptomatic. Ten to 15 per cent of these tumors behave in malignant fashion, metastasize, and can cause death of a patient. A knowledge of their gross appearance and an understanding of the biologic activity of the tumor is essential in determining the best approach to treatment.

Twenty-two cases of rectal carcinoid tumor seen at The New York Hospital-Cornell Medical Center in the last sixteen years are reviewed in this report. The results of treatment are compared with other reported series. The sites of metastasis of 50 malignant tumors are tabulated. Suggestions for management of these tumors based on size and microscopic appearance are offered.

Incidence

The incidence of rectal carcinoid is cited as 0.14 per cent of all rectal tumors and 0.7 per cent of all malignant rectal tumors.[1,2] About 7 per cent of carcinoid tumors arise in the rectum or rectosigmoid areas but this varies from 3.1 per cent in MacDonald's[3] series to 39 per cent in Jackman's[4] series of 112 patients from the proctology section of the Mayo Clinic.

Clinical material

Twenty-two cases of rectal carcinoid tumor from the records of The New York Hospital-Cornell Medical Center in the past sixteen years comprise the material of this report. The ages of the 22 patients ranged from twenty-seven to seventy-eight years. There were 13 female patients with a mean age of fifty-two years, and 9 male patients with a mean age of fifty-nine years.

Symptoms and signs

Only 1 of the patients had symptoms directly related to the tumor. This was a 5 cm. tumor lying low in the rectum and causing rectal bleeding, tenesmus, and decreased diameter of the stool. Nine patients had nonspecific gastrointestinal symptoms of constipation, "spastic colon," or complained of hemorrhoids or fissure in ano. The remaining patients had no gastrointestinal symptoms, and their tumors were discovered on routine proctoscopic examination. None of the patients in this series had symptoms of carcinoid syndrome.

Most of the tumors were described as submucosal in location, which is characteristic for carcinoid tumors. Color ranged from greyish white to yellowish orange. The two largest tumors were ulcerated. None of these patients had more than one nodule discovered, although there are reports in the literature of multiple rectal carcinoids.

Fourteen of the tumors were less than 1 cm. in size, 6 measured between 1 and 2 cm., and 2 were greater than 2 cm. in largest dimension. Four of the tumors were palpated on rectal examination. More than half were discovered in the middle third of the rectum, 4 were found in the lower third, and 4 in the upper third. The carcinoids appeared to be randomly distributed around the circumference of the rectal wall.

Method of discovery

Eighteen of the 22 cases were discovered by proctoscopy. One rectal nodule was discovered by a patient with prolapsing rectum, 2 were present at necropsy, and 1 was contained in the surgical specimen from an abdominal-perineal resection for melanocarcinoma of the anus.

Associated gastrointestinal conditions

Pearson and Fitzgerald reported a 31 per cent[5] and Peskin and Orloff[6] a 53 per cent association of rectal carcinoid with other malignant tumors of the bowel. This series does not support their findings since only 2 of these patients harbored an additional malignant tumor. One was associated with melanocarcinoma of the anus, the other with carcinoma of the pancreas. An additional case had villous adenoma, and 6 other patients had benign adenomatous polyps associated with their rectal carcinoid. In this series only 1 patient had peptic ulcer disease.

Pathology

The size of the 20 carcinoid tumors controlled by local surgery varied from 0.4 to 2 cm., the average being 0.8 cm. In all the overlying mucosa appeared grossly intact, 19 having presented symptoms of a circumscribed intramural nodule, 1 a 0.5-cm pedunculated polyp on a small stalk. Thirteen tumors appeared to involve only the submucosa and superficial muscularis; 7 were found microscopically to involve the lamina propria as well. Thirteen tumors appeared microscopically to extend to one or more of the margins of surgical resection, yet none recurred locally.

Microscopically, these tumors were predominantly trabecular in arrangement, having few areas of the more solid cribriform growth pattern seen frequently in carcinoids occuring in other locations (Fig. 1A). Tumor-cell nuclei varied little in size or shape, were usually spherical and quite evenly basophilic, and cytoplasmic margins were frequently indistinct. About one-third of the tumors were positive for argentaffin. The intervening stroma was usually quite dense and collagenous, much more so than ordinarily seen with carcinoid tumors occuring at other locations.

The 2 rectal carcinoids that metastasized were larger than the others, measuring 2.7 and 5 cm., and extensively involved submucosa, muscularis, and mucosa, producing gross mucosal ulceration. Both were of similar histology, which was distinct from that of the other 20. They were more solidly cellular, bulky, focally hemorrhagic, and necrotic. As seen in Figure 1B, the trabecular pattern of the smaller, less-aggressive rectal carcinoids is not present here; instead a more solidly cellular noncribriform sheet-like arrangement with less intervening stroma and extensive lymphatic permeation is apparent. The individual cellular morphology, however, was indistinguishable from that of the others. We speculate whether one might be able to differentiate metastasizing from less aggressive rectal carcinoids histologically in view of the differences already described, but unfortunately our experience is too small to permit any worthwhile opinion.

Treatment and results

Both patients with carcinoid tumor measuring greater than 2 cm. in diameter died with widespread metastases. One of these patients underwent palliative abdominal perineal resection of the rectum and anus but died of carcinomatosis four months following the operation. The other patient expired from pulmonary edema one month after discovery of his large carcinoid tumor which had spread to liver and lymph nodes. He had not yet received treatment for the carcinoid.

Six patients had tumors measuring between 1 and 2 cm. One of these patients had low anterior resection and had no signs of recurrence on five-year follow-up. Four patients had wide local excision, with no evidence of disease up to eight years later. One patient underwent excisional biopsy with no evidence of disease when lost to follow-up after two years.

Tumors measuring less than 1 cm. in diameter numbered 14. Nine of these patients had excisonal biopsy only, and 2 more had wide local excision as a second precedure. One patient was treated by segmental resection of the bowel. One carcinoid was discovered at autopsy; death occurred from unrelated disease. Finally, one rectal carcinoid was contained in the surgical specimen from an abdominal perineal resection for other malignant disease.

None of the patients in this last group developed evidence of recurrence. Six patients died of causes unrelated. Two were lost to follow-up. The remaining 6 patients were followed up to seven years with no evidence of disease. Standard follow-up usually included proctoscopy and barium enema every six to twelve months.

Comment

Carcinoid tumors are believed to be derived from the Kulchitsky cells of the crypts of Lie-

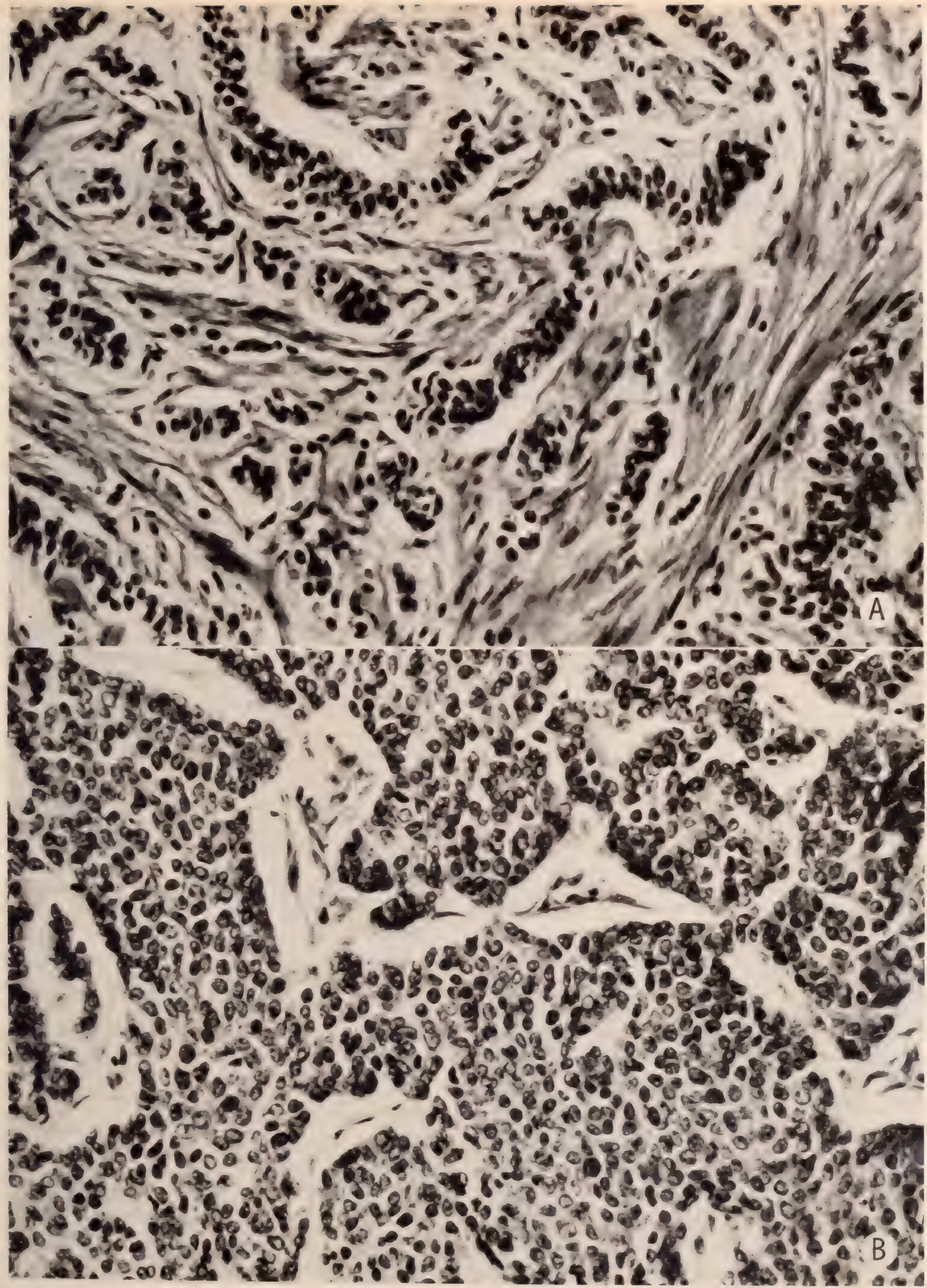

FIGURE 1. Rectal carcinoid tumors. (A) Benign. Predominant growth pattern is trabecular, strands of tumor cells several cells thick penetrating intervening dense stroma in serpentine fashion. (B) Malignant. Predominant growth pattern more solid and sheet-like. (Hematoxylin and Eosin Stain, × 400)

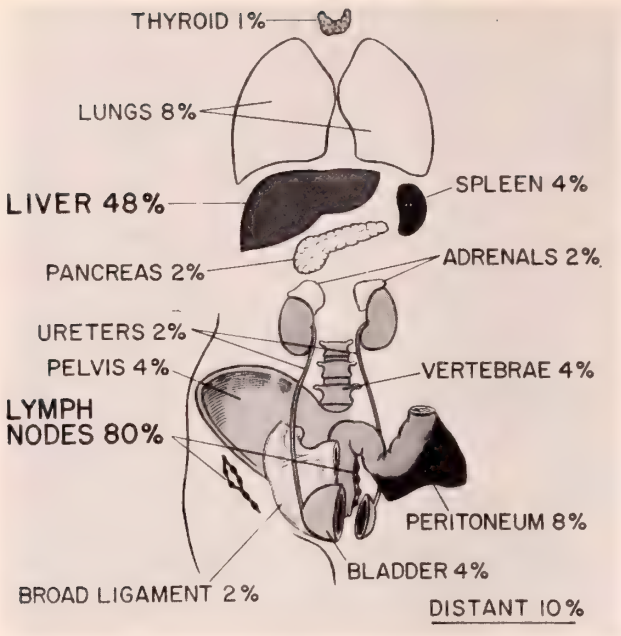

FIGURE 2. Metastatic patterns of 50 rectal carcinoid tumors.

berkühn. These cells contain characteristic basophilic granules which show an affinity for silver stains, hence the term argentaffinoma.[7] This argentaffin reaction is infrequently seen in rectal carcinoids.[8]

The ability to produce the carcinoid syndrome also appears to be most unusual with carcinoids of the rectum or colon—even in the presence of metastasis.[9]

When compared to small-bowel carcinoids, those of the rectum occur more often as single growths and metastasize with less frequency. When there is metastasis it occurs mainly in lymph nodes and liver, but may be found at almost any site (Fig. 2).

Many authors have noted that metastasis is related to size of the lesion. Table I lists the relative frequency of metastasis of 312 carcinoids reported in the literature when grouped according to size and degree of malignancy.[5,8,10,11] Microscopic appearance may also aid in choice of treatment. Quan, Bader, and Berg[1] noted that tumors with large, more anaplastic nuclei metastasized more frequently than those with the ribbon-like festooning that Stout[12] observed as characteristic of most rectal carcinoids. Our experience tends to support Quan's observation, and the difference in microscopic appearance is depicted in Figures 1 and 2.

The treatment, then, is generally determined by the size of the tumor.[14] As seen from Table I, 80 per cent of carcinoids greater than 2 cm. have demonstrated metastasis.

TABLE I. Size of carcinoid tumors. Malignant tumors include those with demonstrated metastasis. Benign tumors may have shown local, microscopic invasion.

Diameter	Benign	Malignant (Per Cent)
<1 cm.	244	4 (1.6)
1 to 2 cm.	77	8 (9.4)
>2 cm.	8	39 (83)

Radical surgery is recommended for tumors of this size according to standards developed for adenocarcinoma.

Tumors 1 to 2 cm. in greatest dimension have about 10 per cent chance of metastasis. Wide local excision seems adequate, but if microscopic studies reveal invasion into or through the muscular layers of the bowel wall, further treatment is recommended as previously mentioned by Caldarola *et al.*[14] from the Mayo Clinic and as emphasized by Peskin and Orloff.[6]

Complete excisional biopsy of carcinoids under 1 cm. in diameter appears safe and adequate treatment. It is reasonable to recommend that margins of resection be free of tumor on microscopic examination. Fulguration of the biopsy bed can be a useful adjunct if the tumor approaches the resection margins on microscopic study.

Follow-up by periodic proctoscopy every six to twelve months will reveal early recurrence and is strongly urged since treatment of these tumors in the early stages is simple and effective.

Summary

Twenty-two cases of rectal carcinoid tumors are reviewed. Most were discovered on routine proctoscopy. The tumors larger than 2 cm. in diameter behaved in malignant fashion and caused death of the patients.

Results are compared with other reported series and suggestions for treatment based on size of the tumor are outlined. Microscopic features of the biopsied specimen may be helpful in choice of treatment.

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Reducing x-ray exposures

A Lockheed Missiles & Space Co. scientist reported development of a new x-ray intensifying screen which could reduce medical x-ray exposures by as much as 20 times. Details of the new screens, developed by Lockheed under sponsorship of the Atomic Energy Commission, were discussed in a paper presented by R. A. Buchanan to the Institute of Electrical and Electronics Engineers' Nuclear Science Symposium meeting in San Francisco.

The U.S. Department of Health, Education, and Welfare points out that diagnostic medical x-ray examinations represent the largest single source of exposure to radiation in this country. The new screens could reduce significantly the U.S. x-ray per capita exposure, which at present is one of the highest in the world. This reduction can be obtained without losing any of the beneficial results of medical x-ray diagnoses.

The new screens absorb more x-rays and produce more light, reducing exposure time and the x-ray dosage. The screens are made by coating a plastic sheet with an x-ray phosphor compounded of one of the rare-earth elements.

Present x-ray film is most sensitive to blue light. Although the new Lockheed phosphor emits much more green than blue light, it enables x-ray exposures to be cut almost in half using the blue-sensitive film. When green sensitive x-ray film of equivalent photographic speed becomes readily available the total effectiveness of the phosphor—enabling only 1/20th of the present x-ray exposure times—will be realized. The new x-ray intensifying screen would also lead to longer x-ray generator life and could be a valuable aid to new radiographic procedures, under which detection speed and x-ray tube power are limiting factors.

Lockheed is presently conducting discussions with other companies with a view to making the development available for medical use.

CHANGES IN SERUM AND URINARY ELECTROLYTES

Following intra-amniotic injection of hypertonic saline

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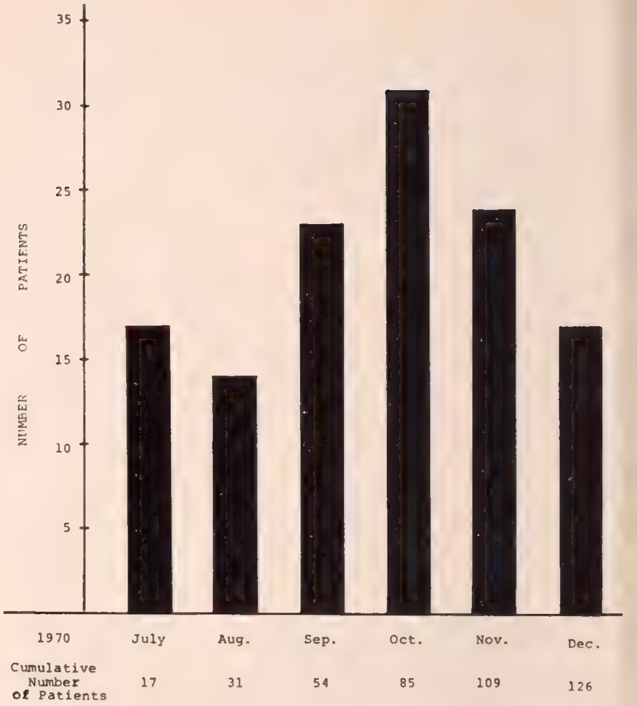

FIGURE 1. Number of patients whose pregnancies were interrupted by intra-amniotic injection of hypertonic saline solution.

During the last decade, both in Europe and in North America, intra-amniotic injection of hypertonic saline solution has become accepted as a simple, effective, and relatively safe method for the termination of pregnancy in patients with therapeutic and missed abortion, or with fetal death in utero.[1-9]

Aburel[10] first described the instillation of 33 per cent sodium chloride solution into the amniotic sac as a safe and reliable method of terminating pregnancy in 1934, and as far as can be ascertained, it first appeared in print in 1939.[11] Other hypertonic solutions used for intra-amniotic injection include formaldehyde,[12] magnesium sulfate,[13] and 50 per cent glucose.[14-16] After World War II, the injection of hypertonic solution was used extensively in Japan for aborting midtrimester pregnancy. However, due to the high incidence of complications including 13 maternal deaths in a series of 6,611 cases, this method has apparently been abandoned in that country.[13,17,18] On the other hand, the use of hypertonic saline solution has increased gradually and gained popularity in Europe and in the United States, owing mainly to its simplicity, efficacy, and the relatively low incidence of complications.[19] However, hypertonic glucose has not gained much acceptance because of the high risk of infection.[6,15,20,21]

Since the passage of the abortion law in the State of New York on July 1, 1970, permitting interruption of pregnancy up to the twenty-fourth week, the demand for intra-amniotic saline injection has increased greatly. The purpose of this report is two-fold: to describe clinical observations made on the first 100 patients whose pregnancies were terminated with 20 per cent sodium chloride solution at the Brooklyn-Cumberland Medical Center, and to report the changes observed in serum and urinary electrolyte concentrations following the saline injection.

Materials and methods

During the first six-month period ending December 31, 1970, there was a total of 126 patients whose pregnancies were interrupted by transabdominal intra-amniotic injection of hypertonic saline solution at the Brooklyn-Cumberland Medical Center (Fig. 1).

Standard management of the patient at the present time is as follows: All patients requesting abortion are seen in a special clinic created for this purpose. Those who are found to be between the twelfth and twenty-fourth weeks of gestation are examined by another physician for the consideration of hypertonic saline injection. A special effort is made to elicit any history of pertinent medical conditions such as cardiovascular disease, hypertension, renal disease, hemolytic disease, and uterine leiomyoma. After the patient has been evaluated, she is admitted to the hospital sometime during the nineteenth or twentieth week of gestation, in the afternoon prior to the day of saline injection. The routine laboratory tests include complete blood count, urinalysis, blood type and Rh, serology for syphilis, and Papanicolaou smear. No special preparation other than routine lower abdominal preparation for amniocentesis is necessary.

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Technic. Our technic of transabdominal intra-amniotic hypertonic saline injection is basically similar to that described by Alpern, Charles, and Friedman.[7] The patient is instructed to empty her bladder. She is then placed on the examining table in a supine position with a pillow under her head. The lower abdominal wall is painted twice with Betadine solution, then draped with sterile towels and a spinal tap sheet. The puncture site on the lower abdominal wall, in the midline about 5 cm. below the uterine fundus, is infiltrated with a local anesthetic. A sterile tray especially prepared for this procedure contains two 20-gauge spinal needles, one 3½ inches long and one 8 inches long. The amniotic cavity is entered and the free flow of clear amniotic fluid is secured. The needle is connected to a tubing which has been attached to a three-way stopcock of a disposable exchange transfusion set.* Also attached to this three-way stopcock are two separate tubings and a 20 ml. syringe. The valve of the stopcock allows the syringe to communicate by way of tubings to (1) the needle in the amniotic cavity, and (2) the infusion bottle containing 270 ml. of 20 per cent sodium chloride especially prepared by our own pharmacy for this purpose, or (3) the waste container for the withdrawn amniotic fluid. Efforts are made to withdraw 200 ml. of amniotic fluid in 20 ml. increments and to infuse 200 ml. of 20 per cent saline solution in the same increments. The precautionary measure of periodic injection and reaspiration to check the needle position helps insure against inadvertent intravascular administration of the hypertonic solution. At the completion of the injection, the needle is withdrawn from the amniotic cavity and the patient is returned to her bed in a wheelchair. She is instructed to remain in bed for the next four hours, during which time the vital signs are checked frequently.

Following enactment of the new abortion law in New York State, the first 100 cases of abortion performed at the Brooklyn-Cumberland Medical Center were reviewed. It was found that intra-amniotic hypertonic saline injection was a safe and effective means of aborting mid-trimester pregnancy. There were only a few, relatively minor complications, including one case of intravascular injection. Electrolyte concentrations in serum and urine were studied, and serum concentrations of the three major electrolytes (sodium, chloride, and potassium) were found to be relatively stable. Electrolyte concentrations in the urine, however, increase greatly following the saline injection. All of the sodium chloride injected into the body can be assumed to be excreted from the body within thirty-six hours, 50 per cent of it within twelve hours. It is uncertain whether the excess potassium in the urine is maternal or fetal in origin.

TABLE I: Age and parity of 100 patients receiving intra-amniotic hypertonic saline injection

Condition	Mean (Years)	Range (Years)	Number of Patients
Age	22	13–36	100
Parity	..	0–6	100
Nullipara	..	...	40
Para 0-0-0-0	..	...	38
Para 0-0-1-0	..	...	2
Multipara	..	...	60

Laboratory studies. The 67 patients included in the laboratory studies were divided into 3 groups.

Group A. Group A consisted of 32 patients. The electrolyte changes of their blood, urine, and amniotic fluid were studied during the four-hour period following the injection. (1) A total of 4 separate blood specimens—collected prior to the amniocentesis and ten minutes, one hour and four hours after the injection—were obtained from each individual for serum sodium, chloride, and potassium determinations. (2) Aliquots of urine specimens voided prior to amniocentesis and one and four hours after the saline injection were obtained for the study of sodium, chloride, and potassium concentrations in the urine. (3) Amniotic fluid, if not contaminated with blood, was collected for sodium, chloride, and potassium determinations prior to the injection and one, five, and ten minutes after the injection.

Group B. The 25 consecutive cases included in Group B were used for studies on electrolyte changes in serum and urine. Blood samples were obtained prior to saline injection and four, eight, and twenty-four hours after the injection. A Foley catheter was inserted into the bladder the evening of admission to facilitate the collection of urine. The specimen of the twelve-hour period from 7:00 P.M. to 7:00 A.M. served as control (pre-injection value). Following the saline injection the urine was collected at four-hour intervals during the first twelve hours, and at six-hour intervals thereafter, until thirty-six hours after the injection. The volume of each specimen was measured, and an aliquot was taken for the determina-

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TABLE II. Complications of intra-amniotic hypertonic saline injection in a series of 100 cases

Problem	Patient Number	Details	Treatment	Result
Failure at first attempt of amniocentesis	26	18th week	Second attempt, 1 week later	Failure, spontaneously aborted 3 days later
Failure at first attempt of amniocentesis	75	16th week	Second attempt, 4 weeks later	Successful
Pyrexia and possible amnionitis	24	101°F. on third postinjection day	Oxytocin infusion and antimicrobial	Aborted 5 hours later
Pyrexia and possible amnionitis	40	101°F. on second postinjection day, ruptured membranes	Oxytocin infusion and antimicrobial	Aborted $^{1}/_{2}$ hour later
Pyrexia and possible amnionitis	95	100.4°F. on fourth postinjection day	Antimicrobial	Aborted same morning
Delayed onset of labor	20	Six days, failed second amniocentesis	Oxytocin infusion	Aborted 5 hours later
Delayed onset of labor	54	Six days, ruptured membranes	Oxytocin infusion on 2 successive days	Aborted 2$^{1}/_{2}$ hours later
Delayed onset of labor	68	Six days, inadvertent intravascular injection	Oxytocin infusion	Aborted 12 hours later
Retained placenta	73	Twenty-eight hours	Curettage in O. R.	Uneventful
Retained placenta	78	Twenty-two hours	Curettage in O. R.	Uneventful
Retained placenta	95	Twelve hours	Curettage in O. R.	Uneventful
Readmission	49	Fourth postabortive day, retained secundines	Suction curettage and antimicrobial	Uneventful
Readmission	69	Fourth postabortive day, postabortal endometritis, 103°F.	Antimicrobial	Patient signed herself out 2 days later
Intravascular injection	68	Mild reactions	. . .	Uneventful

tion of sodium, chloride, and potassium concentrations.

Group C. To attest to the significance of the elevated value of serum potassium observed on eight-hour postinjection specimens in the previous group, 10 additional cases were studied for serum electrolyte changes. In these patients, blood samples were obtained before the injection and six, eight, and ten hours after the saline injection.

Results

Clinical observations. The results of the first 100 cases beginning July 1, 1970, are reviewed in this study. The age of the patients ranged from thirteen to thirty-six years with a mean of twenty-two years (Table I). Forty patients were nulliparous and 60 were multiparous.

In this series there were only 2 cases in whom amniocentesis at the first attempt was unsuccessful (Table II). In one of these (case 26) a second amniocentesis was attempted one week later with repeated failure. She subsequently aborted spontaneously. In the second case (case 75) intra-amniotic saline injection was done successfully four weeks later, and the patient aborted.

Data pertaining to the withdrawal of amniotic fluid and instillation of 20 per cent sodium chloride are given in Table III. The volume of amniotic fluid withdrawn ranged from 126 to 250 ml. with a mean of 194 ml. Efforts were made to withdraw 200 ml. of fluid, and this was accomplished in 78 cases. The amount of 20 per cent sodium chloride injected was 200 ml. in all cases except for one (case 68). Saline injection in this patient was discontinued after the administration of 120 ml., when the occurrence of intravascular injection was recognized.

TABLE III. Volume of amniotic fluid withdrawn, time required for the withdrawal, volume of 20 per cent NaCl injected and time required for the injection

Procedure	Mean	Range	Number of Patients
Withdrawal of amniotic fluid			
Volume (ml.)	194	126–250	99
Time (min.)	12	4–95	99
Injection of 20 per cent NaCl solution			
Volume (ml.)	199	120–200	99
Time (min.)	14	4–63	99

In all but 3 cases labor was successfully induced following injection of hypertonic saline, with spontaneous deliveries (Table II). Oxytocin infusion was not given prior to delivery of the fetus unless shortening of labor was desired because of development of infection. Intervals between the injection, the onset of labor, and the delivery of the fetus are shown in Table IV. In three cases (Cases 20, 54, and 68), labor had not started, by the sixth day following saline injection. Pelvic examinations showed the cervices to be effaced and favorable for induction. Oxytocin infusions were started, and all aborted successfully. Weights of fetuses ranged from 113 to 836 Gm. with a mean of 349 Gm. (Table IV). According to Table V, the corresponding lengths of gestation for these fetal weights are sixteen to twenty-six weeks, with a mean of twenty weeks.

TABLE IV. Time intervals between saline injection, onset of labor and delivery, and weight of fetus

Variable	Mean	Range	Number of Patients
Interval between injection and onset of labor	28 hours, 6 minutes	5 hours, 35 minutes–80 hours, 55 minutes	96
Interval between onset of labor and delivery	7 hours, 58 minutes	1 hour, 00 minutes–45 hours, 15 minutes	96
Weight of fetus	349 Gm.	113–836 Gm.	99

TABLE V. Menstrual age of fetus according to fetal weight, crown rump length and foot length*

Menstrual Age (Weeks)	Weight (Gm.)	Crown Rump (mm.)	Foot Length (mm.)	Size of Chorion (Max. Diameter, in mm.)
1	...	...	...	...
2	...	...	...	...
3	...	...	...	0.45
4	...	...	...	3.5
5	...	5	...	15
6	...	10	...	30
7	...	16	...	45
8	1.1	23	...	50
9	2.7	31	4.5	55
10	4.6	40	5.8	60
11	8	50	7	65
12	15	60	9	75
13	26	75	12	85
14	45	88	14	95
15	73	100	17	100
16	108	115	22	...
17	150	130	25	...
18	195	140	28	...
19	250	152	32	...
20	315	163	35	...
21	385	175	36	...
22	470	185	39	...
23	530	195	42	...
24	630	208	45	...
25	725	218	49	...
26	835	228	52	...
27	930	239	54	...
28	1040	248	57	...
29	1180	258	58	...
30	1325	266	60	...
31	1490	276	62	...
32	1680	284	64	...
33	1880	294	66	...
34	2080	302	68	...
35	2270	312	70	...
36	2480	320	72	...
37	2690	330	74	...
38	2910	340	76	...
39	3150	350	78	...
40	3400	360	80	...

* From Table 1. Streeter, Contributions in Embryology, Vol. XI, Publ. 274, 1920. (Courtesy of J. P. A. Latour).

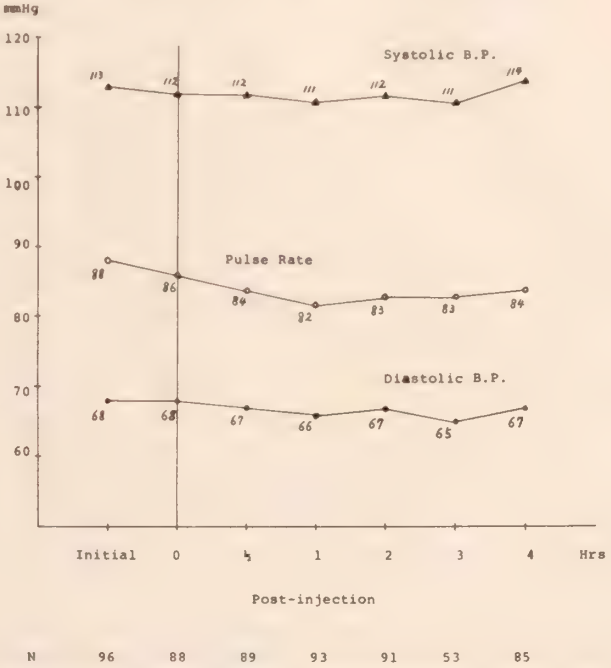

FIGURE 2. Mean values of blood pressure and pulse rate following intra-amniotic injection of hypertonic saline.

Blood pressures and pulse rates were taken during the four hours following saline injection. As shown in Figure 2, there were no changes in the mean values during this period.

As to complications following saline injection (Table II), 3 cases (Cases 24, 40, and 95) exhibited a temperature rise to above 100.4°F. However, none of these presented any significant degree of physical changes except for the presence of foul-smelling vaginal discharge. The diagnosis of amnionitis was entertained, and oxytocin infusion with antimicrobial treatment was initiated with good response. Curettage was required for retained placentas in 3 cases (Cases 73, 78, and 95). Two cases (Cases 49 and 69) were readmitted to the hosptial, both on the fourth postabortal day, because of retained secundines and endometritis.

There was one case (Case 68) in which intravascular saline injection took place. This patient was eighteen years old, white, para 0-0-0-0 at the nineteenth week of gestation. History and physical findings were unremarkable except for a gravid uterus of approximately eighteen weeks gestational size. Amniocentesis was performed without difficulty, and 180 ml. of amniotic fluid were withdrawn within fifteen minutes. At this point it became difficult to withdraw additional fluid. After being assured that the tip of the needle remained in the amniotic cavity 20 per cent saline solution was cautiously injected. No untoward reactions were noted until approximately 80 ml. of saline had been injected, when the patient complained of temporal headache. Saline administration was continued at a slower rate with maximum cau-

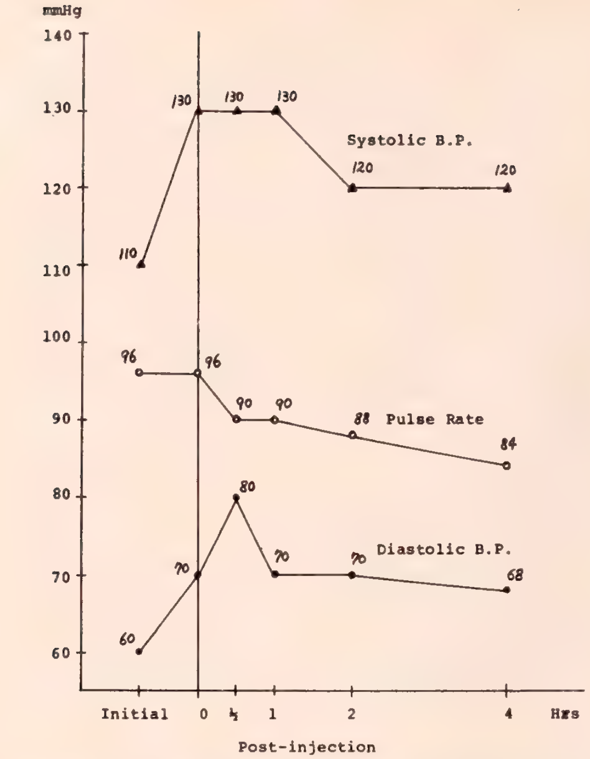

FIGURE 3. Changes of blood pressure and pulse rate following intravascular injection of hypertonic saline into a patient (Case 68).

tion. In addition to the temporal headache she then complained of low backache and lethargy. The urine draining from the Foley catheter appeared slightly pinkish. At this point it became evident that intravascular injection of saline had taken place, and the procedure was discontinued. By this time a total of 120 ml. of 20 per cent sodium chloride had been administered. The patient remained lethargic, complaining of nausea and chill. There was no cyanosis nor respiratory difficulties. The blood pressure was 130/70, and pulse rate was regular at 96 per minute. The patient was kept in bed and the vital signs were checked frequently (Fig. 3). Her general condition remained unchanged for the following two hours, after which she became alert. At this time the patient appeared well and offered no specific complaints. Total serum bilirubin and indirect bilirubin level, at the time when the intravascular injection was first suspected, were 0.5 and 0.3 mg. per 100 ml., respectively. When these were repeated two hours later, total bilirubin was 1.4 mg. per 100 ml. and indirect bilirubin was 0.7 mg. per 100 ml. There were no significant changes in hemoglobin and hematocrit between the pre- and postinjection values. The serum obtained for electrolyte studies was grossly hemolysed. The changes in electrolytes are presented in Figure 4. The patient excreted a large quantity of urine which, at the beginning, exhibited portwine appearance. An aliquot of urine specimen was cen-

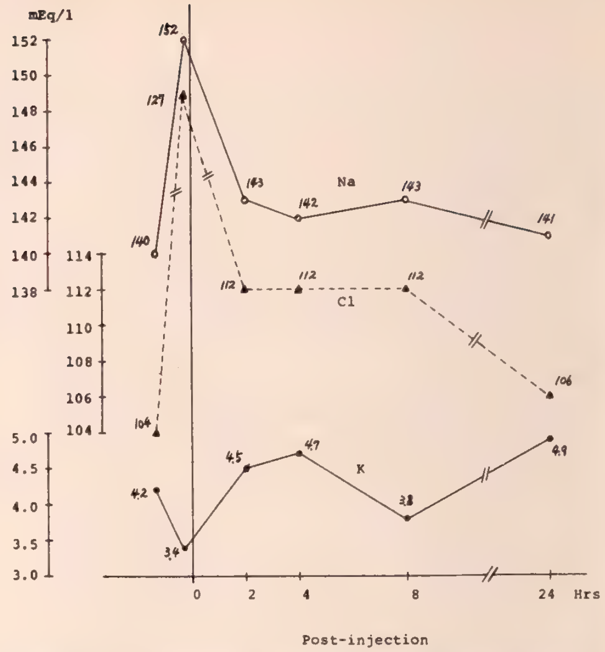

FIGURE 4. Changes of serum electrolytes following intravascular injection of hypertonic saline into a patient (Case 68).

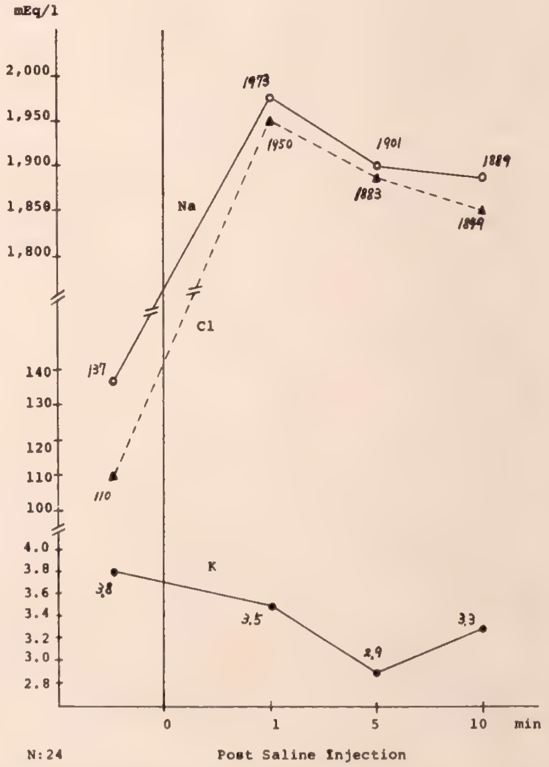

FIGURE 5. Mean values of electrolytes in amniotic fluid following intra-amniotic injection of hypertonic saline.

trifuged, and it yielded no sediment. Eight hours after the injection, the urine became clear. On the following day it became more concentrated and regained its normal appearance. Blood urea nitrogen was 5 mg. per 100 ml. on the following

TABLE VI. Serum electrolyte changes during first 4 hours after intra-amniotic hypertonic saline injection in Group A patients

Electrolyte (mEq./L.)	Time (Post-Saline Injection)	Number of Serums	Range	Mean ± S.D.
Sodium	Preinjection	31	121–150	138 ± 4.9
Sodium	10 minutes	21	131–154	140 ± 4.5
Sodium	1 hour	29	128–158	142 ± 4.8
Sodium	4 hours	31	131–155	141 ± 4.6
Chloride	Preinjection	31	96–116	105 ± 5.0
Chloride	10 minutes	21	90–118	107 ± 6.4
Chloride	1 hour	30	101–118	108 ± 4.8
Chloride	4 hours	31	100–120	109 ± 7.6
Potassium	Preinjection	31	2.7–5.0	3.8 ± 0.63
Potassium	10 minutes	21	3.2–4.8	3.8 ± 0.47
Potassium	1 hour	30	2.1–5.0	3.8 ± 0.58
Potassium	4 hours	31	2.9–5.3	3.9 ± 0.52

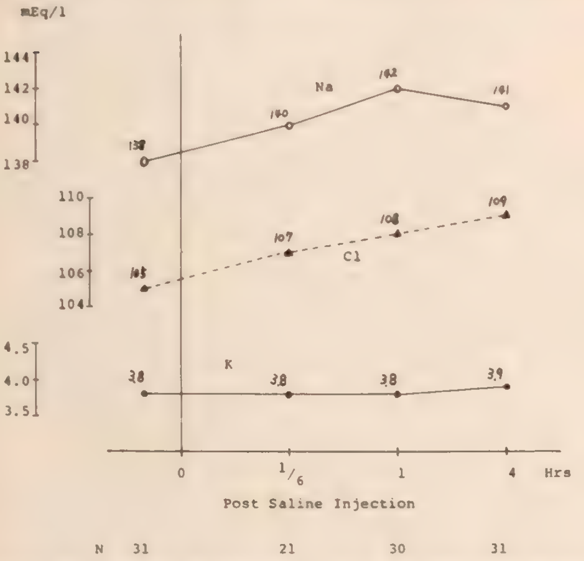

FIGURE 6. Mean values of serum electrolytes following intra-amniotic hypertonic saline injection in Group A patients.

day. The patient remained well thereafter, without any sign of onset of labor. On the sixth post-injection day pelvic examination was performed. The cervix was found to be closed but 40 per cent effaced. Oxytocin infusion was started and she aborted uneventfully twelve hours later.

Laboratory studies. *Amniotic fluid.* Sodium, chloride and potassium determinations were performed on the amniotic fluid of 24 subjects. Samples were obtained prior to injection and one, five, and ten minutes after the injection of 200 ml. of 20 per cent sodium chloride. The mean values are illustrated in Figure 5.

Serum. The data concerning the changes in serum electrolytes within the first four hours following saline injection (Group A), are presented in Table VI and Figure 6, while the data for twenty-four hours following injection (Group B) are shown in Table VII and Figure 7. The changes between six and ten hours following injection (Group C) are shown in Table VIII and Figure 8. The electrolyte changes associated with intravascular injection of saline in one patient (Case 68) are presented in Figure 4.

Urine. In Group A patients, urinary excretion of sodium, chloride, and potassium during the initial four hours following injection was studied in 20 patients. Mean values are presented in Figure 9. In Group B, these observations, including measurement of urinary output, were extended to thirty-six hours post injection. The results are shown in Figure 10. The changes of urinary volume and electrolyte excretions, when calculated in twelve-hour intervals, are illustrated by bar graphs in Figures 11 to 15. The urinary output

Table VII. Serum electrolyte changes within twenty-four hours after intra-amniotic hypertonic saline injection in Group B patients

Electrolyte (mEq./L.)	Time in hours (Post-Saline Injection)	Number of Serums	Range	Mean ± S.D.
Sodium	Preinjection	24	136–145	141 ± 2.8
Sodium	4	24	139–149	144 ± 3.0
Sodium	8	24	136–149	142 ± 4.1
Sodium	24	24	137–147	141 ± 3.6
Chloride	Preinjection	24	101–112	106 ± 3.0
Chloride	4	24	107–121	113 ± 4.6
Chloride	8	24	106–120	112 ± 4.5
Chloride	24	24	105–116	110 ± 3.4
Potassium	Preinjection	24	3.3–5.3	4.5 ± 0.48
Potassium	4	24	3.8–6.5	4.6 ± 0.59
Potassium	8	24	3.9–7.7	5.2 ± 1.25
Potassium	24	24	3.8–5.7	4.7 ± 0.49

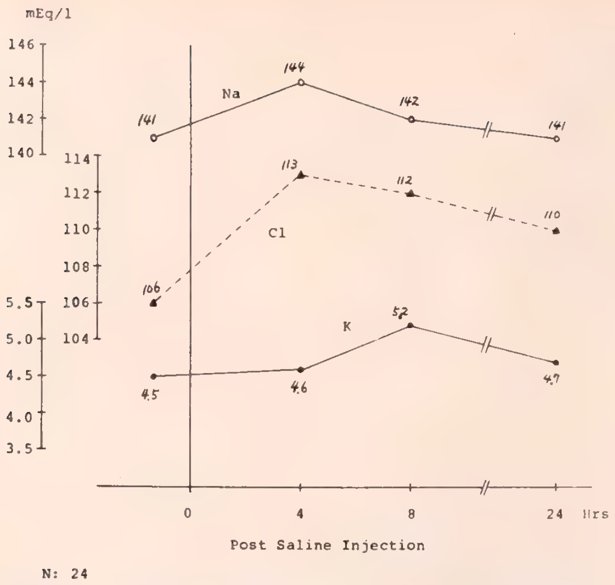

FIGURE 7. Mean values of serum electrolytes following intra-amniotic hypertonic saline injection in Group B patients.

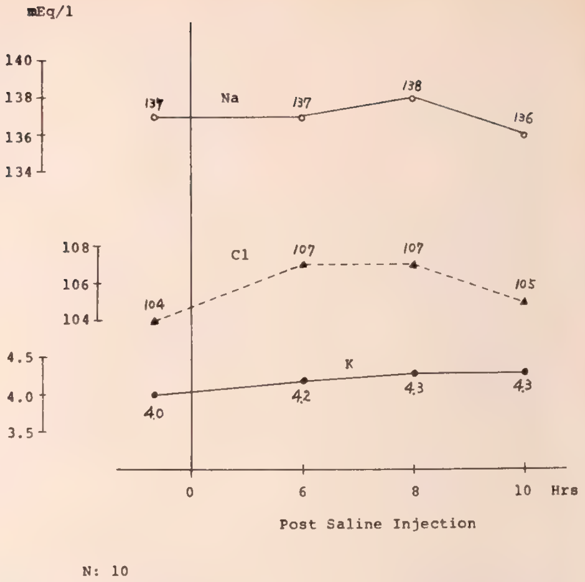

FIGURE 8. Mean values of serum electrolytes following intra-amniotic hypertonic saline injection in Group C patients.

TABLE VIII. Serum electrolyte changes between six and ten hours following intra-amniotic hypertonic saline injection in Group C patients

Electrolyte (mEq./L.)	Time in hours (Post-Saline Injection)	Number of Serums	Range	Mean ± S.D.
Sodium	Preinjection	10	129–140	137 ± 3.1
Sodium	6	10	131–140	137 ± 2.4
Sodium	8	10	134–140	138 ± 2.0
Sodium	10	10	132–141	136 ± 3.0
Chloride	Preinjection	10	99–108	104 ± 2.4
Chloride	6	10	105–110	107 ± 2.0
Chloride	8	10	104–110	107 ± 1.9
Chloride	10	10	101–110	105 ± 3.0
Potassium	Preinjection	10	3.7–4.3	4.0 ± 0.17
Potassium	6	10	3.3–4.8	4.2 ± 0.46
Potassium	8	10	3.7–4.8	4.3 ± 0.43
Potassium	10	10	3.6–5.4	4.3 ± 0.61

and electrolyte excretions in the patient with intravascular injection (Case 68) are presented in Figures 16 and 17.

Comment

Our experience with hypertonic saline injection for the termination of midtrimester pregnancy has been quite satisfactory. All patients thus treated have aborted without serious complications.

As a consequence of the administration of a large amount of sodium chloride (40 Gm.), a marked change in balancing electrolytes in the body is anticipated. Therefore, any patient with hypertension or impaired renal function is a poor candidate for this procedure. It has been reported that during the first six hours following intra-amniotic saline injection, blood volume may increase or decrease by as much as 40 per cent.[22,23] Therefore, this procedure is not recommended for a person with cardiovascular disease.

Most physicians prefer withdrawing amniotic fluid before the injection of 20 per cent sodium chloride, while some inject 30 per cent saline solution without removing any amniotic fluid.[24] In our institution, an effort is made to remove 200 ml. of amniotic fluid, replacing it with 200 ml. of 20 per cent sodium chloride. At the nineteenth or twentieth week of gestation, it is easier to enter the amniotic cavity than it is an earlier stage. It is also easier to withdraw 200 ml. of amniotic fluid at this stage, since the volume of fluid averages between 200 and 400 ml. at the nineteenth and twentieth weeks of gestation, whereas it is only about 200 ml. at sixteen to eighteen weeks.[24-27]

We prefer a 20-gauge needle, in the belief that the smaller the puncture hole, the less chance there is of inadvertent intravascular administration or of extravasation of the saline solution into the peritoneal cavity.

We wait at least four days before considering a repeat saline injection or other type of induction. This is based on our own experience that in some

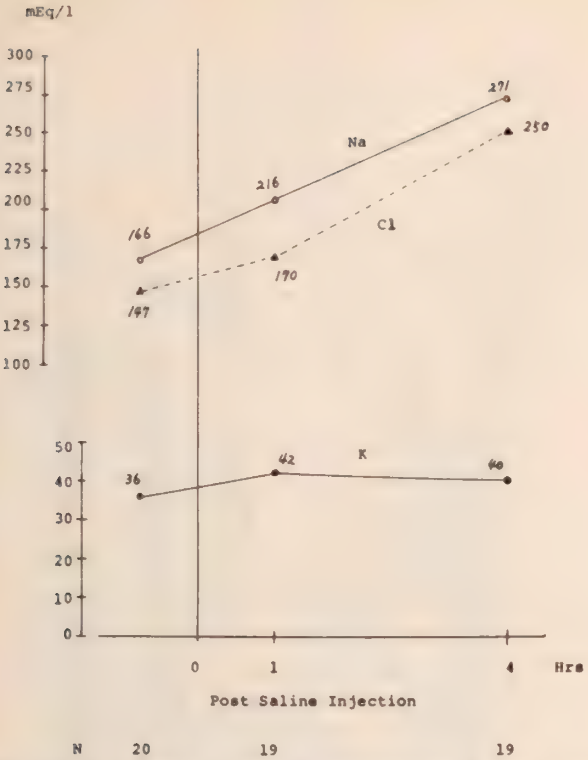

FIGURE 9. Mean values of electrolytes in urine following intra-amniotic hypertonic saline injection in Group A patients.

cases labor did not begin until as much as eighty hours after the saline injection. It is of interest to note that the mean interval of thirty-six hours, four minutes—from injection to delivery—in our series is similar to those reported by other investigators: thirty-six[1] and thirty-six and a half hours.[4]

Despite apparent abandonment of this method of inducing abortion in Japan[17] due to a high incidence of complications,[13] sporadic reports of maternal death,[28-30] or nonlethal serious complications,[31-33] we are in agreement with those who believe that this is a simple, safe, and highly effective method, provided rigid criteria, rules, and cautions are adhered to in selecting the patient and in performing the procedure.[6,7,9]

It has been demonstrated that the incidence of fetomaternal hemorrhage in induced abortion increases after the twelfth week of gestation,[34] thus creating the possibility of developing rhesus isoimmunization in rhesus-negative patients. To prevent rhesus-isoimmunization, in our institution, we administer anti-D gamma globulin (Rhogam) to all eligible rhesus-negative patients following completion of the abortion.

Although the mechanisms involved in the initiation of labor following the intra-amniotic saline injection remain unknown, three major theories have been advanced. The first theory concerns endocrine function of the placenta. Csapo[5] be-

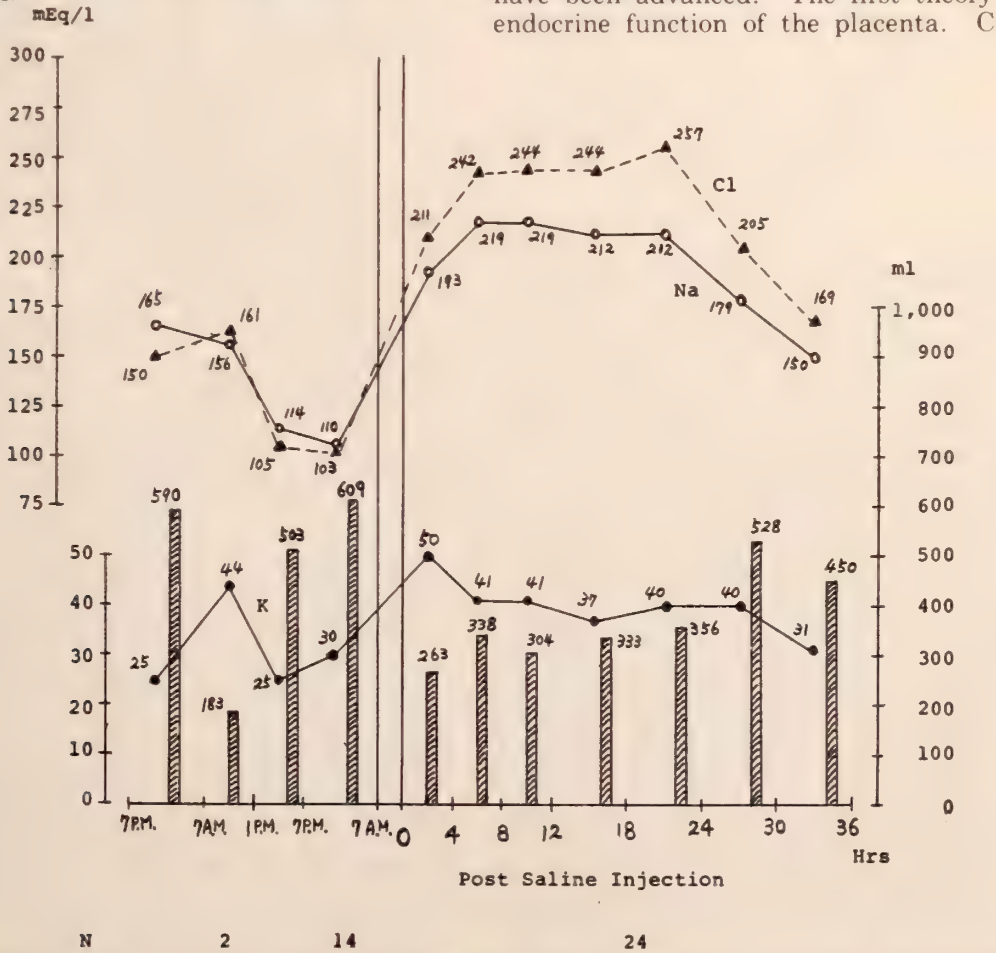

FIGURE 10. Mean values of urinary output and urinary electrolyte concentrations following intra-amniotic hypertonic saline injection in Group B patients.

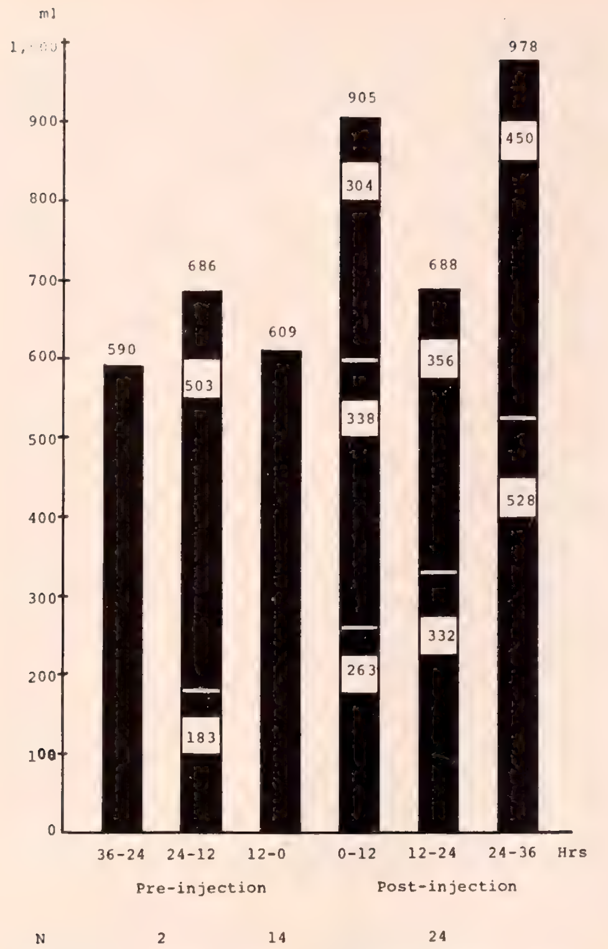

FIGURE 11. Mean values of urinary output following intra-amniotic hypertonic saline injection.

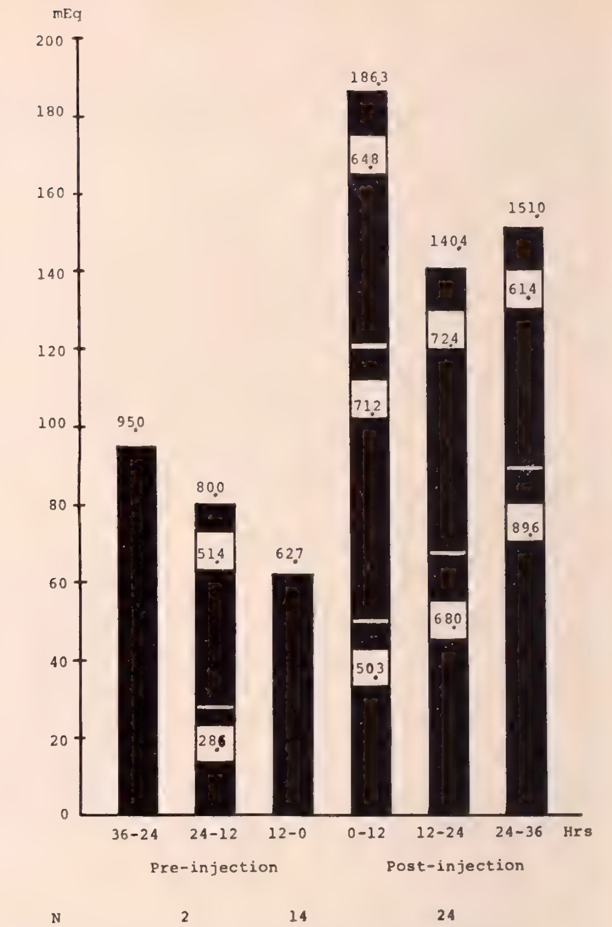

FIGURE 12. Mean values of sodium excretion in urine following intra-amniotic hypertonic saline injection.

lieves that a fall in progesterone production is a dominant factor in the onset of labor. When hypertonic saline is used to induce abortion, labor is due to a fall in progesterone production resulting from placental damage. Csapo *et al.*[35] have reported 33 per cent decrease in plasma progesterone concentration during the ten hours immediately following the injection. Osborn, Goplerud, and Yannone[36] were unable to demonstrate a significant decrease in plasma progesterone.

The second theory relates to the change in amniotic fluid volume. Owing to the osmotic effect of the hypertonic solution, water will move into the amniotic sac and sodium chloride will diffuse out. The volume of the amniotic fluid will increase and distend the uterus. By intra-amniotic injection of radioactive material, the volume increase of the amniotic fluid following hypertonic saline injection was calculated to be 200 to 300 ml.[3,4,22,37]

The third theory concerns a neuroendocrine mechanism working indirectly on the myometrium. Hendricks, Helfand, and Caldeyro-Barcia[38] reported there was some evidence that intravenous hypertonic saline will cause an increase in uterine motility. The sodium chloride leaving the amniotic cavity and entering the maternal circulation would be expected to cause a release of antidiuretic hormone and probably of oxytocin.

In our series the concentrations of sodium and potassium in the amniotic fluid during midtrimester pregnancy are 137 and 3.8 mEq. per liter, which are comparable to plasma levels (Fig. 5). However, the chloride concentration (110 mEq. per liter,) is higher than the plasma level. These observations confirm the findings of other investigators.[27] Mean values of sodium and chloride concentrations, one minute following the instillation of 200 ml. of 20 per cent saline are 1,973 and 1,950 mEq. per liter, respectively (Fig. 5). When an aliquot of amniotic fluid is mixed with an equal amount of 20 per cent saline and is submitted to determination of electrolyte concentrations, sodium and chloride concentrations of this mixture are both in the vicinity of 1,700 mEq. per liter. These values are approximately 2,200 mEq. per liter when the amount of amniotic fluid is half that of 20 per cent saline. It is assumed, therefore, that approximately 150 ml. of amniotic fluid were still left in utero after withdrawal of 200 ml., prior to the saline injection.

Serum electrolyte changes following hypertonic

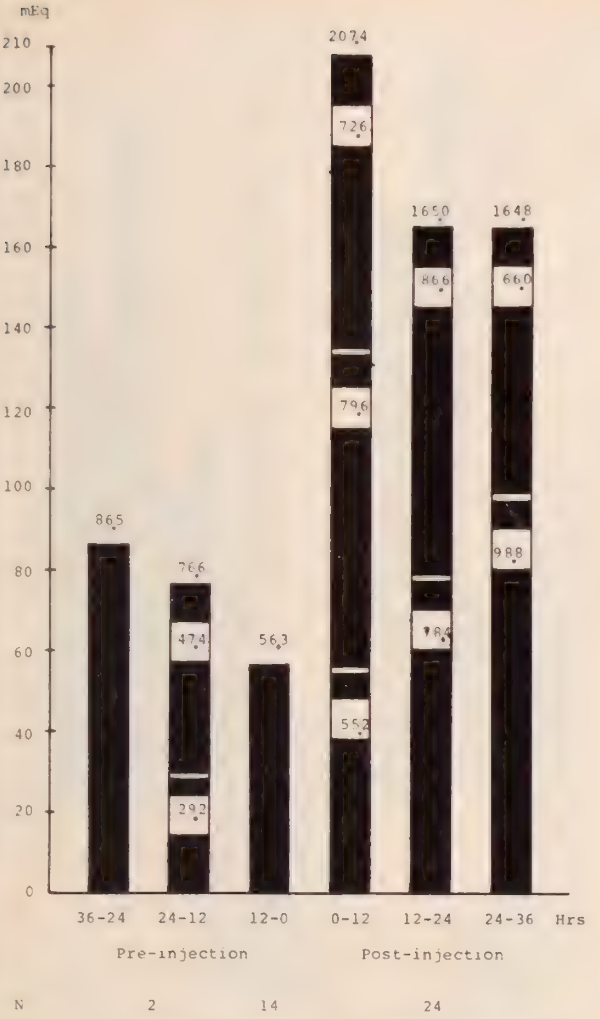

FIGURE 13. Mean values of chloride excretion in urine following intra-amniotic hypertonic saline injection.

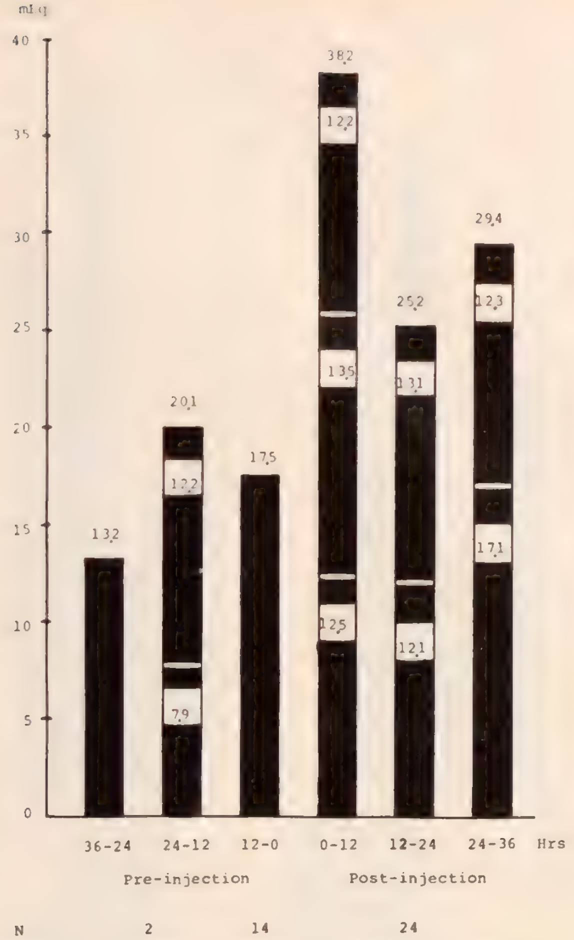

FIGURE 14. Mean values of potassium excretion in urine following intra-amniotic hypertonic saline injection.

saline injection have been studied by several investigators, and all reported no significant change between pre- and postinjection levels.[30,37,39,40] Our own data derived from 56 patients showed a slight increase in sodium and chloride concentrations during the first four hours with a return to their initial levels by twenty-four hours (Table VI and VII and Figs. 6 and 7).

It was noted, however, that the mean potassium value became elevated eight hours after the injection, to 5.2 plus or minus 1.25 mEq. per liter. We were very much concerned about this finding because of the potential danger of unrecognized hyperkalemia. When 24 samples of eight-hour potassium levels were analyzed, only 8 were in the range of 6 and 7.7 mEq. per liter. The remaining 16 exhibited no rise. Seven of these 8 elevated potassium values were obtained from specimens tested in the same afternoon. This suggests a possibility that the elevated values might be due to some technical error rather than a reflection of the true situation occurring in the blood. Because of its potential significance both in the management of such a patient and in promoting a better understanding of the mechanism of initiation of labor, it was decided to do studies at six, eight, and ten hours post injection in an additional 10 patients (Table VIII and Fig. 8). The results showed that all potassium values were in the range of 3.3 to 5.4 mEq. per liter. Hyperkalemia was not demonstrated in any of the additional cases studied.

The urinary electrolytes following saline injection have been studied in the past but only in a limited number of patients.[30,37,40] In 24 patients we have measured urinary volume and urinary electrolyte concentrations in specimens collected at four-hour intervals during the first twelve hours following injection, and thereafter at six-hour intervals until thirty-six hours after the saline injection.

It is well known that sodium chloride, when administered to the pregnant woman either intravenously[38] or intra-amniotically,[40] will induce antidiuresis. However, it is noted in the present study that there is an increase in urinary output, rather than a decrease, following the saline injection (Fig. 11). This probably is due to the fact

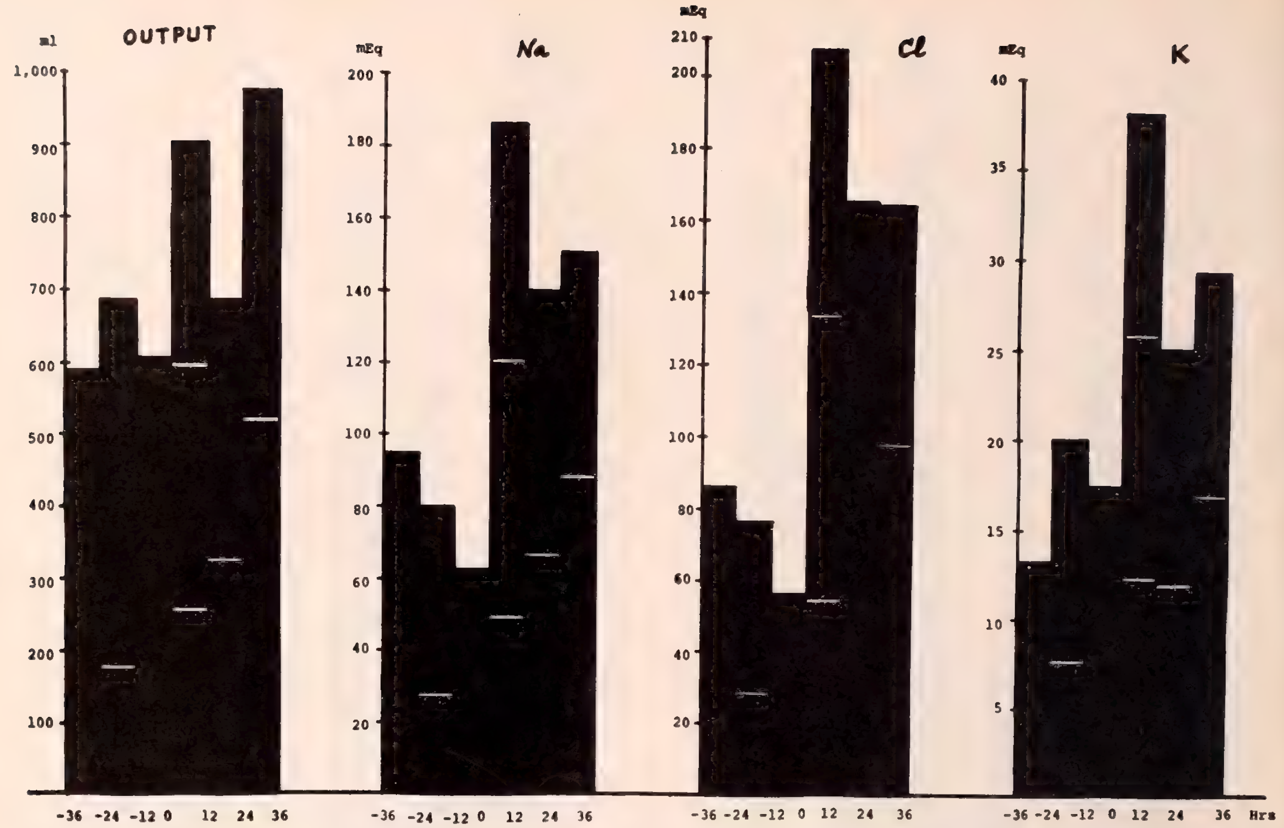

FIGURE 15. Mean values of urinary output and urinary electrolyte excretions following intra-amniotic hypertonic saline injection (Summation of Figs. 11 to 14).

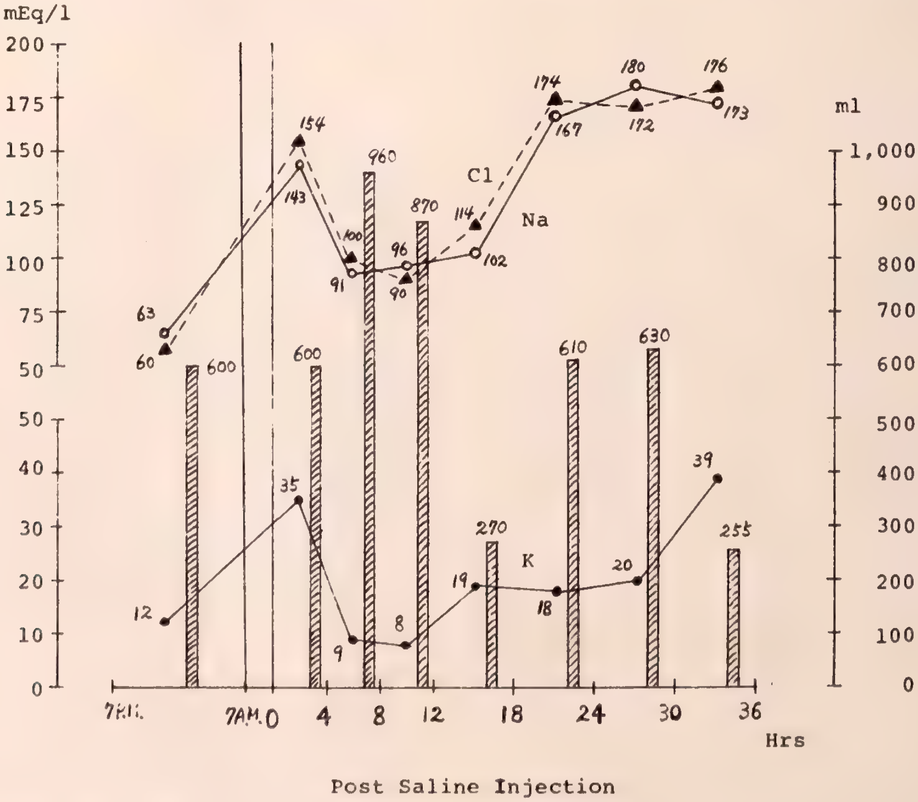

FIGURE 16. Urinary output and urinary electrolyte concentrations following intravascular injection of hypertonic saline into a patient (Case 68).

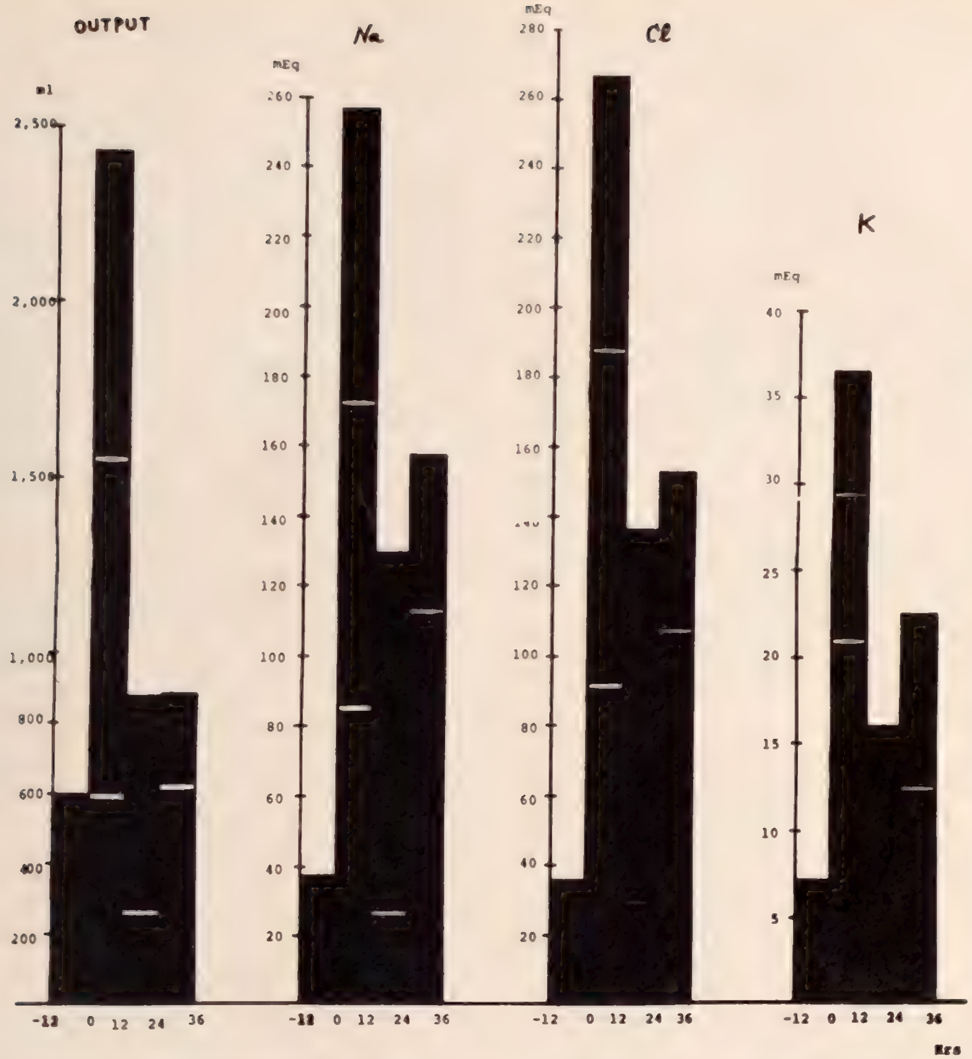

FIGURE 17. Urinary output and urinary electrolyte excretions following intravascular injection of hypertonic saline into a patient (Case 68).

that almost all patients experienced a moderate degree of thirst and consumed large quantities of water following saline injection. When the output in twelve-hour intervals are compared, it is noted that the output during the second twelve-hour period was relatively less than that of either the first or last. We attribute this to lower fluid intake while the patients were asleep.

In contrast to serum electrolytes, there is a sharp increase in urinary sodium and chloride concentration in the first four-hour urine specimen, to the extent that the concentration is almost double that of the pre-injection level (Figs. 9 and 10). The concentrations continue to rise and reach a plateau at approximately eight hours after the saline injection. They remain at this level until they fall at twenty-four after the injection. The potassium concentration also increases, but to a lesser degree. To achieve better understanding of the electrolyte excretion rate, the total amount of electrolyte excreted in each twelve-hour period was expressed by bar graphs (Figs. 12 to 15). Following the saline injection all three electrolytes were excreted from the urine in large quantities. It is of interest to note that while such large quantities of electrolytes were being eliminated from the body, serum electrolytes were maintained at normal levels.

Since both sodium and chloride concentrations in 20 per cent saline are 3,419 mEq. per liter,there are 684 mEq. of each electrolyte in 200 ml. of this solution. The mean volume of amniotic fluid withdrawn in 24 patients included in this study is 195 ml. When the amounts of sodium and chloride contained in the withdrawn amniotic fluid are subtracted, there is, in each patient, a net gain of 657 mEq. of sodium and 663 mEq. of chloride from the intra-amniotic injection of 200 ml. of 20 per cent saline. By calculating the amount of electrolyte excreted in each twelve-hour postinjection period in excess of the preinjection level (that is, 62.7 mEq. for sodium and 56.3 mEq. for chloride) it is noted that by thirty-six hours after the injection, or by the time of delivery, approximately 44 per cent of the sodium and 56 per cent of the chloride have been excreted. The patient undergoing saline injection must not have impaired renal function, so the kidneys can cope with this large load of sodium chloride. It is also interesting to observe that potassium excretion from the urine also increases greatly (approximately 40 mEq. in excess of normal levels). The question of whether the source of excess potassium excreted is maternal or fetal, or both, is unanswered at present time.

Our case where saline was inadvertently administered intravascularly parallels the one reported in recent literature.[41] Serum electrolyte studies demonstrated a maximum serum sodium value of 152 mEq. per liter and a corresponding chloride value of 127 mEq. per liter (Fig. 4). Two hours after the incident, the serum sodium had returned to the normal level, but the serum chloride remained slightly elevated. This slight elevation of serum chloride was still observed eight hours after the injection, but the chloride subsequently returned to the normal level by twenty-four hours. The urinary findings of this patient were very interesting in that during the first twelve-hour period there was a urinary output of approximately 2,400 ml. This represents four times the amount of urine excreted in the corresponding period prior to the saline injection (Figs. 16 and 17). As a result, a large amount of sodium and chloride was excreted in the urine. Since only 120 ml. of 20 per cent saline solution were injected after removal of 180 ml. of amniotic fluid, of which the sodium and chloride concentrations were 150 and 112 mEq. per liter respectively, it is calculated that in this patient there was a net gain of 383 mEq. of sodium and 390 mEq. of chloride. Therefore, it can be assumed that all of the sodium chloride injected was excreted from the body within thirty-six hours, 50 per cent of this in the first twelve hours. Because this patient had good kidney function, the excess sodium and chloride in the blood was removed rapidly from the system, and the patient recovered quickly despite signs and symptoms of hemolysis. Labor did not begin spontaneously; it was induced by oxytocin infusion, which was followed by complete abortion and an uneventful postabortal course.

Summary

Experience with intra-amniotic hypertonic saline injection as a means of aborting midtrimester pregnancy in 100 cases was reviewed and the method was found to be safe and effective.

The results include: (1) All patients aborted vaginally, (2) there was a mean injection–delivery interval of thirty-six hours, four minutes, and (3) some minor complications, including one case of intravascular injection occurred.

Electrolyte changes following saline injection were studied on serum and urine. Serum electrolytes were studied in 67 patients up to twenty-four hours after saline injection and were found to be relatively stable in all three constituents studied; that is, sodium, chloride, and potassium. Excretion of electrolytes in the urine was studied in 24 patients on four- and six-hour urine specimens for up to thirty-six hours following the saline injection. It has been calculated that approximately 44 per cent of the sodium and 56 per cent of the chloride injected into the amniotic cavity were excreted in the urine within thirty-six hours. There was also a large quantity of potassium (approximately 40 mEq. in excess of normal levels) being excreted in the urine during the same period.

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HAIR TRANSPLANTATION

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Seventeen years have elapsed since the inauguration of the treatment of alopecia by scalp-punch autografts. The autografting technic of transposing skin has also been employed to understand the relationship of particular anatomic sites to the pathogenesis of various disease entities including the various types of alopecias, vitiligo,[1-3] fixed-drug eruptions,[4-8] allergic eczematous dermatitis,[9] hyperhidrosis,[10] amyloidosis,[11] morphea,[3] scleroderma, and acrodermatitis chronica atrophicans.[3] The effects of autografts have been observed following plastic repair for lupus erythematosus.[12] Therapeutic autografts to the eyebrow, hand, scalp, and other areas have shown not only the hair growth desired on such grafts but also the development of unwanted hair.[13,14]

Multiple transpositions of skin-punch free grafts were performed to study site factors in the pathogenesis of the alopecias and other dermatologic disorders.[15] This latter study introduced the term "donor dominance," for skin autografts which maintained their integrity and characteristics after transplantation. The term "recipient dominance" was introduced for skin autografts that developed the characteristics of the recipient sites. In male pattern alopecia, androgenetic alopecia in women (diffuse and patterned), alopecia areata, and the cicatricial alopecias, donor dominance was observed. That is, the hair-bearing grafts inserted in bald areas grew hair. The technic was then applied therapeutically for the treatment of suitable alopecia problems.[16-19]

Each individual hair follicle is genetically predisposed over a period of time to respond to androgenic influences that inhibit, stimulate, or do not affect its growth. Beard, axillary, pubic, chest, and extremity hair are stimulated by androgens. The hair on the front and top of the scalp in hereditarily predisposed individuals is lost under the influence of androgens. Male castrates do not experience this type of frontal hair loss. Androgenetic alopecia includes patterned and diffuse baldness in men and women. Hair on the sides and back of the scalp is usually unaffected or, infrequently, diffusely inhibited by androgens. The density and color of this hair may vary, and the cosmetic results of hair transplants are dependent on the proper choice of donor sites, size of punches used, and method of placement of hair-bearing skin in the recipient frontal and dome alopecic areas.

Selection of patients and planning the transplant surgery periods should be made after considering the following: the potential of the donor area to fill the requirements of the recipient bald sites, the expectations of the patient, the most satisfactory hair style, the number of grafts required, the cost of the procedure, the cosmetic incapacitation during the healing stages, the patient's wound healing, and the patient's general health. A complete blood count and blood sugar levels are determined before transplants are performed. Caution regarding keloid tendencies is particularly warranted in Negro patients. It is a good policy to give the patient a written outline of the principles and details of the procedure, the sequence of events to expect in the wound healing and hair growth, things to avoid, and untoward occurrences that may take place.

Technic

First, the donor and recipient sites are cleansed with 70 per cent alcohol. The hair in the donor area is clipped to a length of about 2 mm. above the scalp surface. It is preferable to clip a relatively narrow band running transversely across the scalp, so as to ensure that the donor area can be easily hidden by overlapping hair during the healing period. It is improper to shave the area, since visualization of the hair direction (angle inserted into the scalp) is very important for proper angulation of the punch for removing the skin plugs and for permitting proper placement in the recipient sites.

The donor and recipient areas are sprayed with ethyl chloride and then further anesthetized by the injection of a 2 per cent lidocaine hydrochloride solution. Occasionally 1:100,000 epinephrine in 2 per cent lidocaine hydrochloride is used for excessive bleeders. Metal dental syringes using disposable ampules containing a 2 per cent lidocaine hydrochloride solution are used because their hydraulic characteristics make it easy to inject the

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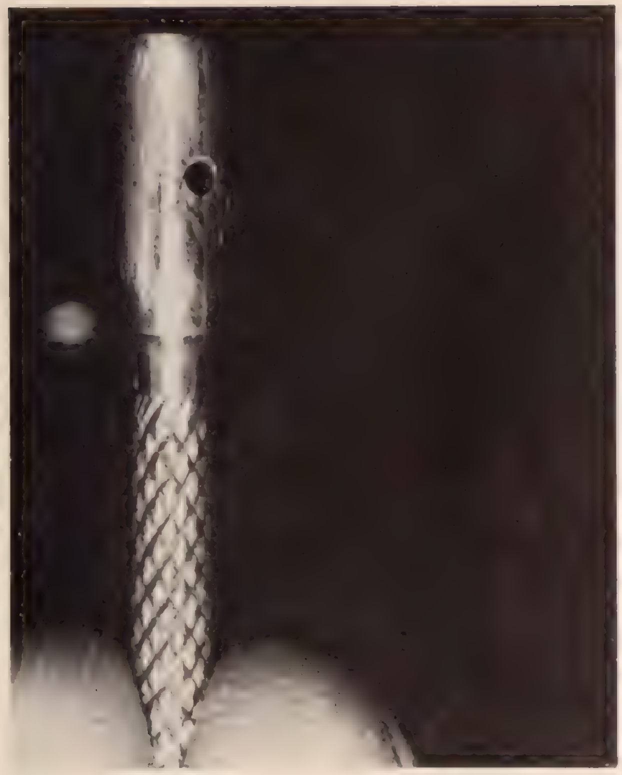

FIGURE 1 Four-mm. punch, knurled shaft, hole in cylinder for easy cleaning and to vent air during incision of scalp.

Hair-scalp punch autografting has been a safe and effective method in the treatment of alopecia for the past seventeen years. Homograft tolerance studies using this surgical technic along with intralesional steroids and interrupted exposure have been reviewed.

scalp tissues. Several ampules are used to produce the area of anesthesia required for the planned procedure.

Punches 2, 2.5, 3, 3.5, and 4 mm. in diameter have been designed for this technic. They differ from the classic skin-biopsy punch in these respects: The diameter of the shaft is relatively small, which permits efficient twirling of the punch for rapid cutting; the shaft is knurled to provide a good grip; the cutting head cylinder is relatively straight, in contrast to the truncated "arrowhead" design of some traditional skin punches; and a small hole is cut at the base of the cylinder to permit easy cleaning and to vent air during the incision of the scalp (Fig. 1).

The punch most commonly used for hair transplants is 4 mm. in diameter. The same size punch is used for recipient and donor sites. A 0.5- or 1-mm. larger punch is used occasionally to obtain the donor tissue. Small punches of scalp with hair are used to fill in between the 4-mm. grafts to create a more natural cosmetic effect. Grafts larger than 4 mm. do not heal as well, resulting in reduced hair density.

The bald site is punched using a twirling motion for increased cutting efficiency. The cut is first started at right angles to the scalp penetrating the skin 1 mm. The punch is then angled in the direction of the hair growth to prepare a site to receive the donor plug with its hairs growing at an angle. When working on the dome of the scalp, the punches are angled radially pointing to the center of the calyx, the usual pattern for hair growth of the dome of the scalp. On the frontal scalp the cuts are angled backward since most frontal hair growth is in a forward direction.

Degree of alopecia

The number of plugs cut during each treatment depends on the degree of alopecia, the amount of cosmetic incapacitation the patient is prepared to accept, the frequency at which the treatments are given, the time since the last procedure, and the maximum tolerance of the site for the number of grafts performed.

The advantage of the small full-thickness graft is its tendency to be vascularized in twenty-four to forty-eight hours. The first nourishment of the graft is plasma, and the smaller the graft, the more adequate the nourishment. The grafts must not be placed so close together that the vascular insufficiency that occurs in large grafts is produced. Punches are usually separated by the width of the punch diameter to permit an adequate blood supply. After healing, additional plugs can be placed between the previously placed grafts. When doing a single line of grafts (as at the hairline), it is feasible to place the grafts immediately next to each other. Later smaller plugs can be used in the scalloped front line to create a more natural-looking hairline.

Ten to 50 plugs are usually grafted each visit. A site should be allowed to heal for at least two weeks before additional grafting is performed in the same area. Other sites may be grafted the next day if care is taken not to disturb the previous grafts.

Recipient site skin plugs discarded

The skin punches removed from the recipient scalp site are discarded. A small tooth forceps is all that is usually needed to remove the grafts after they are cut. If there is a fibrotic anchoring band, a small surgical scissors is used to cut the band at its base to release the plug of skin.

Punching the number of plugs needed for the procedure at the donor site is performed at the angle of the hairs in the scalp. They can be cut much closer together than the circular incisions made in the recipient area, leaving enough hair to cover the defect created in the donor area.

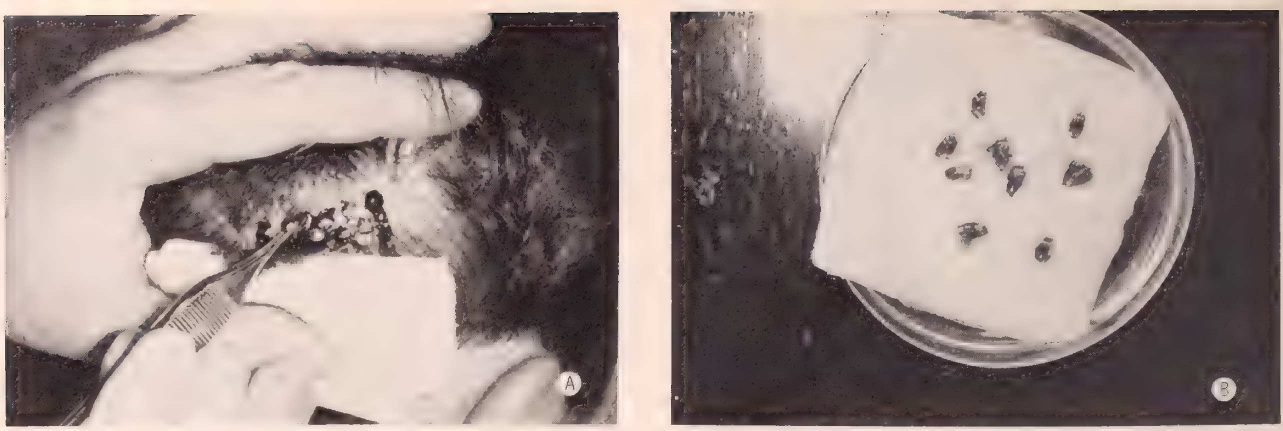

FIGURE 2. (A) Tooth forceps used for removal of donor plugs. (B) Grafts placed in Petri dish on gauze immersed in physiologic saline for cleansing.

The average 4-mm. plug of hair-bearing scalp will contain from 12 to 15 hairs. If the donor scalp hair is very sparse, this number may be less; it is rarely more. The color of the donor hair may be similar to or lighter or darker than the recipient site hair. The degree of graying may also vary.

The hair follicles should be cut parallel to the walls of the cylinder of the punch to prevent their being damaged. An examination of the plugs can easily demonstrate whether the punch is being used at the correct angle.

The donor plugs are removed with a small toothed forceps and are placed immediately in a Petri dish with a 3 by 3-inch square of sterile gauze immersed in sterile physiologic saline or Ringer's solution (Fig. 2). The grafts must not be permitted to dry at any time. The skin plugs slip out of the scalp in the donor area with much greater ease than they do in the recipient site. If undue force is required to remove the skin plugs, care must be taken to cut their bases with the points of a small surgical scissors well below the hair follicle level.

The donor and recipient areas, after removal of the skin plugs, are covered with wads of gauze, and these are held in place with an elastic cotton bandage. This encourages hemostasis while the donor grafts are prepared. Occasionally, if bleeding is excessive at the donor site, a 3-0 silk suture is placed, sometimes in a figure 8 configuration, for hemostasis. Sutures can be removed the next day. Rarely does the recipient site require suture hemostasis. Usually there is no bleeding ten or fifteen minutes after the plugs are removed. If bleeding starts on insertion of the donor plug, direct pressure is applied with gauze on the donor graft to produce hemostasis. Rarely is it required to suture a graft in its recipient site to stop bleeding. If this is done, the suture is removed the next day.

It is possible, in the presence of excessive bleeding, to suture the recipient bleeding site without the graft and to place the graft in this site the next day after removing the suture. The donor graft skin plug is wrapped in sterile gauze, wet with sterile physiologic saline, and placed in the refrigerator, not in the freezing compartment. Grafts will stay viable in this way up to three weeks, provided the gauze is kept moist with sterile physiologic saline.

Before the donor plugs are inserted into the recipient sites, they are cleansed gently of all spicules of loose hair while still immersed in saline. Excess fat and any attached galea aponeurotica are trimmed. Great care must be exercised not to damage the base of the hair follicles. If the dermal papilla of a hair follicle is removed, no hair will grow. The donor grafts are placed in a manner oriented to conform to the angle cut in the scalp and to produce uniform angulation of the donor hairs in the recipient sites (Fig. 3A).

Additional pressure may be required after placing the grafts for hemostasis. The fibrin clot that forms in minutes holds the plugs in place, and it is unnecessary to use adhesives to hold the grafts in their recipient sites. The treated areas are cleansed with peroxide and water. A thin layer of antibiotic ointment is spread over the implanted autografts. Saran wrap is then applied over the site and is secured with tape. The Saran wrap retains moisture for more rapid healing of the grafts and better epithelialization at their borders, thus minimizing scarring. This type of occlusive dressing also cuts down on the crusting on the surface of the grafts which has been quite thick with the previously employed gauze dressings. Still a further advantage is that the transparent Saran wrap enables final visualization of the placement of the grafts and possible sites of blood oozing before the application of a cover by pressure dressing. A pressure dressing may be applied for comfort and security, to prevent movement, and to reduce postoperative bleeding or edema. This type of dressing is usually advisable when the number of grafts transplanted per procedure exceeds 25 skin plugs.

Cosmetic aftermath

The hair at the donor area is then combed over the donor plug sites (Fig. 3B). Suturing these

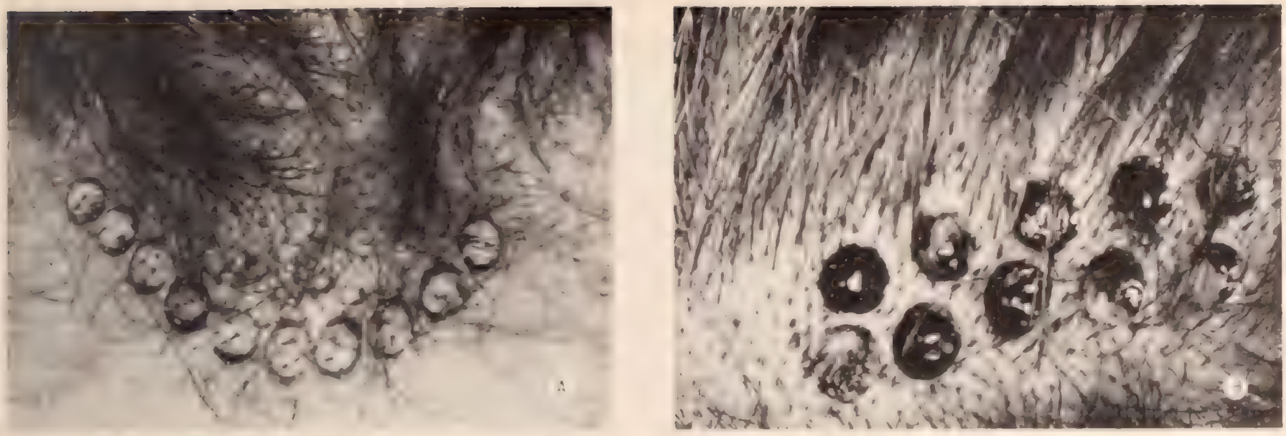

FIGURE 3 (A) Grafts in recipient sites. (B) Donor sites prior to combing hair over defect.

holes is unnecessary unless bleeding is excessive. They heal with a minimal cosmetic defect. The hair at the recipient site may be gently combed over the grafts, if there are fewer than 20, to hide their cosmetic effect. If a hair-piece prosthesis is worn, it may be carefully fitted in place over no dressing or a light dressing, taking care to make the wig attachments at untreated sites.

Postoperative care

The patient is advised to take no alcoholic beverages for the first twenty-four hours, to perform no strenuous physical activity for the first day and only limited physical activity for five days, and not to disturb the grafts for ten days. He should also exert great care while combing or brushing near the graft sites; he should avoid shampooing the scalp or showering on the head for five days and to shampoo gently after five days. He should not pick at the grafts, since the crusts will come off naturally with shampooing, bathing, or showering. If bleeding occurs, he is to apply pressure with gauze or a clean handkerchief directly to the site for fifteen minutes. If bleeding persists he should call the physician. The patient should expect mild discomfort, numbness, or altered sensations for weeks after the procedure. He should also be aware that the hairs in the donor grafts will appear to be growing the first month but that they are really falling out and not to expect hair growth for three months after the procedure is performed. There may be swelling from twenty-four to forty-eight hours after the procedure, which may possibly occur on the forehead also.

In thousands of procedures performed the complications encountered have been syncope during the procedure (1:100), infection (1:500), hypertrophic or keloidal healing (1:1,000), and venous aneurysm or arteriovenous shunt formation (1:5,000).

It is now more than seventeen years since we performed scalp-punch autografts on human beings for the first time. The hair in the donor grafts in recipient sites is still growing with the characteristics of the donor sites. In thousands of transplant procedures performed by us and by hundreds of other physicians, there has been no instance of donor hair-bearing grafts failing to continue the hair growth initially accomplished, if the donor site was in an area of the scalp that was still growing hair. Great care must be taken to select the donor area with an eye toward the future pattern of alopecia formation.

This punch-transplanting technic has been used

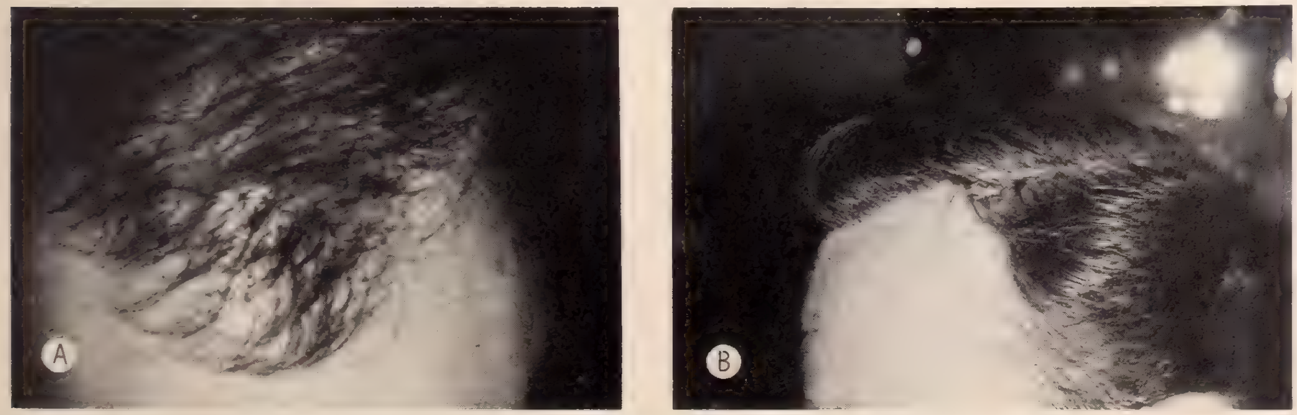

FIGURE 4. (A) Front of scalp showing multiple grafts one to four months after transplantation. (B) Two years later; frontal scalp grafting shows vigorous full growth of hair.

successfully for male pattern alopecia, androgenetic alopecia (diffuse and patterned hair loss in women), and cicatricial alopecia following pseudopelade, lupus erythematosus, folliculitis, lichen planopilaris, thermal and chemical burns, radiodermatitis, traumatic avulsion, and rhytidectomy (Fig. 4).

Preliminary homotransplantation trials

The technic of skin-punch autotransplantation, used to redistribute hair on the scalp, is very suitable for homograft studies. The growth of hair in the donor graft is irrefutable evidence of a successful take and maintained integrity of the tissues and dispels any argument that the skin transplanted has been replaced by the host's integument which is glabrous.

The approximately twenty-one-day period usually encountered in homograft skin rejection is considerably shorter than the ninety-day period required for hair growth in a skin graft with intact hair follicles. With an intralesional steroid, administered at the rate of 1 mg. triamcinolone acetonide per thirty days, the rejection phenomenon was suppressed, and the hair-growing potential was not inhibited. Reducing this dose produced inflammation and rejection. Increasing the dose produced atrophy and suppressed hair growth.

The knowledge gained by dermatologists on the intralesional administration of steroids, combined with the technic of scalp hair-punch grafting, enabled sustained growth of homotransplanted hair for the past year.[20] Further time for observations is required to determine just how long these hairs will continue to grow, if not lifelong.

Interrupted method in effort to maintain homografts

A method of interrupted exposure to tissue antigens has been employed in an effort to maintain homografts. The method is analogous to that of Macher and Chase[21,22] wherein brief exposure of guinea pigs to picryl chloride or dinitrochlorobenzene, followed by excision of the exposed sites, later occasioned a tolerogenic effect to these chemicals. On reexposure to the specific chemical in critical dosage, the animals were not sensitized.

Utilizing this principle, homografts from hair scalp have been transplanted to alopecic scalp for twenty-four hours, removed, and kept in Weymouth's medium at 10°C. for four days. The homografts were then replaced in the same recipient site. To date more than a year has passed without sloughing of the homografts. Hair shafts remain visible in the donor tissue as evidence of anatomic integrity of the homograft and, hence, a tolerogenic effect. However, the hairs have not grown out, indicating a lack of restoration to full functional capacity. The timing of initial exposure to tissue antigens and subsequent reimplantation of the homograft are now being modified in an attempt to maintain growing properties of homografts.

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Clinical Anesthesia Conference

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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RACEMIC EPINEPHRINE IN POSTINTUBATION LARYNGEAL EDEMA

Laryngeal or subglottic edema following endotracheal intubation in children is one of the most dreaded complications. Active treatment to reestablish an open airway must be carried out urgently to prevent fatal complications. The value of racemic epinephrine inhalation in the treatment of this problem is illustrated by the following case reports.

Case reports

Case 1. A twenty-nine-month-old boy weighing 10.5 Kg. was scheduled for repair of an auricular septal defect. Premedication consisted of pentobarbital 40 mg. and meperidine 20 mg. intramuscularly. The child arrived in the operating room one hour later well sedated. Anesthesia was induced and maintained with a mixture of nitrous oxide, oxygen, and halothane. Endotracheal intubation with a number 22 French-gauge Portex tube was atraumatic two minutes after the intravenous injection of succinylcholine 10 mg. During surgery small doses of d-tubocurarine were used to provide muscular relaxation. The patient was on cardiopulmonary bypass for twenty-five minutes. At the conclusion of surgery the child was awake, vital signs were stable, and the endotracheal tube which had been in place for two hundred seventy minutes, was removed.

Forty minutes later substernal retraction was noted. Cold mist inhalation and dexamethasone 4 mg. intravenously did not change signs of upper-airway obstruction. Two puffs of racemic epinephrine, 0.6 mg., were administered from the self-contained aerosol inhalation device with a metered valve, followed by a similar treatment five minutes later. Breathing became unobstructed, and the child remained free of respiratory obstruction thereafter.

Case 2. A four-year-old boy weighing 16 Kg. with tetralogy of Fallot was scheduled for correction of an intraventricular septal defect and the removal of a pulmonary band which was placed in early infancy. The child was mildly cyanosed. Premedication consisted of pentobarbital 50 mg., meperidine 25 mg., and scopolamine 0.15 mg. intramuscularly. The child arrived in the operating room well sedated. Anesthesia was induced and maintained with halothane and oxygen. A 24-gauge cuffed rubber endotracheal tube was introduced atraumatically after intramuscular succinylcholine 20 mg. had taken effect. During surgery small doses of d-tubocurarine were administered. Cardiopulmonary bypass lasted eighty-five minutes. The child remained intubated and was mechanically ventilated. After successful weaning from the ventilator the endotracheal tube was removed twenty-four hours after intubation. Cold mist inhalation was applied, and dexamethasone 4 mg. was injected intravenously in an attempt to avoid laryngeal edema.

In spite of these precautions, ninety minutes after extubation stridor and substernal retraction were noted. Two puffs of racemic epinephrine aerosol were administered at five-minute intervals, which after three treatments relieved the upper airway obstruction with no further problems of ventilation.

Comment

Subglottic edema and tracheitis are hazards of endotracheal intubation in children. The funnel shape of the infantile larynx with its narrowed lumen at the level of the cricoid cartilage creates difficulties in the selection of the proper size tube.

Presented and discussed at a conference held at the St. Vincent Hospital Medical Center, New York City, September 27, 1971. Clinical Anesthesia Conferences are held on the fourth Monday of each month.

Trauma in this area may result from too large tubes causing undue pressure or too small tubes causing rubbing action on the mucosa. The diameter of the small larynx may be seriously decreased and the airway compromised by amounts of edema which would be insignificant in an adult larynx. Even with the most flawless technic consisting of the atraumatic introduction of a sterile, proper sized tube in a relaxed larynx, this complication is unavoidable in a small percentage of cases.[1]

Measures to prevent and/or treat subglottic edema are high humidity with an oxygen-enriched inspired air; cooled croupette or tent; adequate intravenous fluid therapy; dexamethasone, 4 to 8 mg. intravenously[2]; diphenhydramine, 0.25 to 0.5 mg. per pound of body weight[2]; positive pressure ventilation with the addition of nebulized racemic epinephrine[1]; and reintubation, at times followed by tracheostomy.

Racemic epinephrine in contrast to epinephrine has minimal undesirable systemic effects, such as anxiety, tremor, pallor, restlessness, tachycardia, and hypertension. Caution should be exercised in administering this agent to patients with hyperthyroidism, hypertension, and diabetes. The use of a self-contained aerosol inhalation device with a metered valve avoids overdose, since each puff delivers 0.3 micronized racemic epinephrine hydrochloride in an inert hydrofluorocarbon propellant.[3]

Little or no cooperation is needed from the child, which makes this simple, safe therapeutic tool worth a trial.

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Number two hundred in a series of Clinical Anesthesia Conferences

CORRECTION

A notice appeared in the February 1, 1972, issue of the ***Journal*** of the death of Tobias M. Watson, M.D. We are informed that he is alive and well and living in California.

Electrocardiograms of the Month

Montefiore Hospital and Medical Center
The Bronx, New York

Editors
IRA L. RUBIN, M.D.
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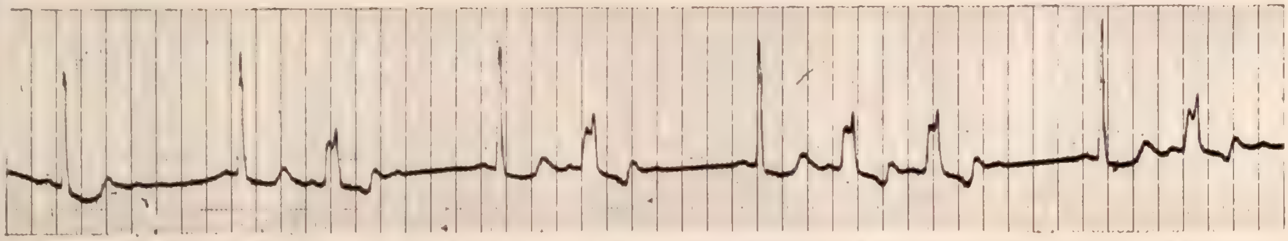
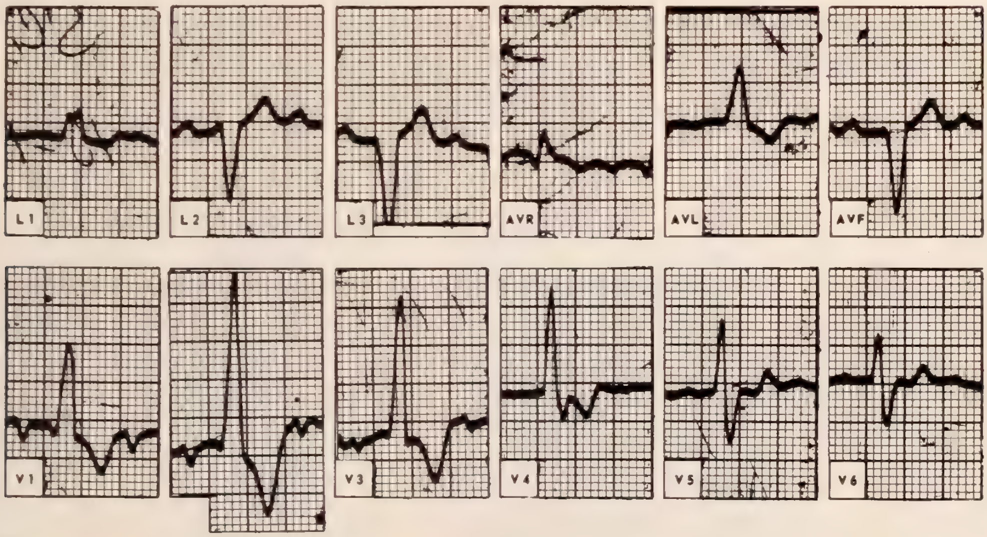


QUESTION 103. What is the rhythm? The patient is receiving digitalis and has chronic congestive heart failure.



QUESTION 104. What is the diagnosis in this eighty-two-year-old man who was admitted to the hospital having had a syncopal seizure?

ELUCIDATION

Question 103. The rhythm is regular sinus rhythm at a rate of 85 a minute. The second, fifth, eighth, twelfth, and fifteenth P waves are non-conducted. The third, fifth, seventh, eighth, and tenth QRS show a left bundle branch block pattern with a P-R interval identical to the normally conducted beats (numbers 1, 2, 4, 6, and 9). This is rate-related left bundle branch block in a patient with varying heart block. This is not the Wenckebach phenomenon since the P-R interval is constant. Heart block of this type may be secondary to digitalis toxicity or disease of the conduction system. Digitalis should be discontinued; and if the block persists, insertion of a permanent pacemaker should be considered.

Question 104. The rhythm is a regular sinus rhythm with a P-R interval of 0.21 seconds. The QRS duration is 0.14 seconds. In the limb leads, the QRS configuration is that of left bundle branch block, but in the precordial leads, there is a tall R wave in V_1 and a deep S wave in V_6 consistent with right bundle branch block. This represents bilateral bundle branch block. It is often a precursor of transient or permanent complete heart block. With these findings in a symptomatic patient a permanent pacemaker is usually indicated. Anteroseptal infarction is often present, particularly when there are Q waves in V_1 and V_2, as occurred in this case. However, in this patient, the Q waves are small and not diagnostic of infarction.

Ethylene oxide sterilization

Hemolysis in the plastic tubing of a heart-lung machine, tracheal inflammation and obstruction after use of endotracheal tubing, and topical reactions to gloves or face masks made from plastics sterilized with ethylene oxide have been reported since 1963. These reactions are due to residues in the plastic which disappear at varying rates when aerated. The speed of elution is dependent on a variety of factors, of which the nature of the materials themselves and the temperature are most important. Others are humidity and air flow. Rendell-Baker and Roberts (Hospitals, J. A. H. A. 44: 100 [Oct. 1] 1970) have recently recommended that aeration of ethylene oxide-sterilized rubber or plastics be performed at about 50°C. This will reduce the aeration time, even of polyvinyl chloride, to twelve to eighteen hours. It is important, however, to make sure that the air stream does not recontaminate the sterilized item; a properly designed aerator should be used, equipped with bacterial filters and a proper exhaust to the outside atmosphere. Other recommendations are (1) visible water droplets should be wiped from the equipment before sterilization, (2) gamma-irradiated polyvinyl chloride should not be sterilized by ethylene oxide, and (3) paper or 3-mil polyethylene wrapping is preferred.

Clinicopathologic Conference

MICHAEL S. BRUNO, M.D. and
WILLIAM B. OBER, M.D., Editors

Beekman-Downtown Hospital
New York City

September 1, 1971

Conducted by JOHN T. FLYNN, M.D., and
BASIL MOUMGIS, M.D.

Discussed by HENRY A. SAMPSON, M.D.

RECURRENT INTESTINAL OBSTRUCTION FOLLOWED BY CIRCULATORY COLLAPSE

Case history

Felipe Uy, M.D.: A sixty-two-year-old white female was admitted with progressive abdominal distention of two days' duration.

First admission (six months prior to final admission). Over a two-week period, colicky abdominal pain, progressive distention, vomiting, and inability to pass stool and flatus developed in this patient. She was admitted to another hospital for study but signed out after three days when temporarily improved. A recurrence of symptoms necessitated admission here.

During the preceding seventeen years, the patient had undergone hysterectomy for fibromyomas, plication of a perforated duodenal ulcer, subtotal gastrectomy for recurrent peptic ulcer, cholecystectomy, and abdominal laparotomy for intestinal obstruction.

On admission to the surgical service, the blood pressure was 160/80 mm. Hg, the pulse rate 88, and the respiratory rate 20 per minute; the temperature was 101°F. The abdomen was distended and tympanitic without local or generalized rigidity; the bowel sounds were hyperactive. A fecal impaction was present.

The urine specific gravity was 1.025; results of the routine urine tests and microscopic examination were negative. The white blood count was 12,000 per cubic millimeter, with 76 per cent polymorphonuclear forms. The electrocardio-

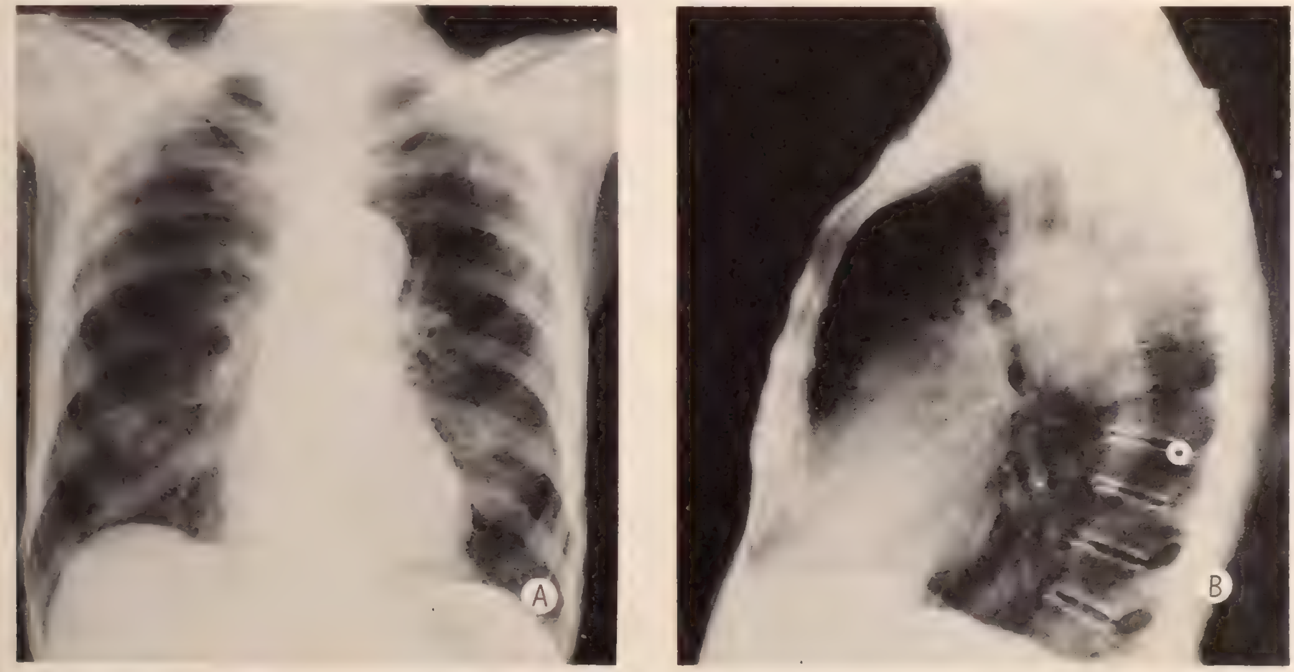


FIGURE 1. (A and B) Normal cardiac silhouette; dilated unfolded thoracic aorta with calcific atherosclerosis in transverse portion (first admission).

grams showed transient atrial fibrillation, later normal sinus rhythm with premature auricular contractions, with otherwise normal findings. Roentgenographic examinations revealed a normal cardiac silhouette; the thoracic aorta was slightly dilated and unfolded; exaggeration of the pulmonary markings suggested early congestive changes with an ill-defined increased density in the right lung (Fig. 1). The abdominal x-ray examination revealed multiple loops of distended small bowel, suggesting partial intestinal obstruction.

Laparotomy on the second hospital day revealed a volvulus of the small bowel, rotating about an adhesive band in the upper part of the abdomen; a gangrenous segment of ileum 2 to 3 feet in length was removed and an end-to-end anastomosis performed. Pathologic examination of the surgical specimen revealed only gangrene of the bowel wall with acute peritonitis. Postoperatively recurrent fecal impaction, infiltration of the right lower lung, and superficial breakdown of the surgical incision developed. Very gradually the abdominal incision healed, and the patient was discharged in good condition six weeks after admission, on digoxin 0.25 mg. daily.

Second admission (two weeks following discharge). Immediately following discharge the patient began to have swelling of both lower extremities resistant to diuretics; the quantity of urine gradually diminished, and the recently healed surgical scar again became swollen and a local discharge developed.

The physical examination on admission revealed a blood pressure of 140/60 mm. Hg, a pulse rate of 78, and a respiratory rate of 23 per minute; the temperature was 98°F. There was swelling of the eyelids and pitting edema of both hands and of both lower extremities. The cardiac rhythm was irregular with a rate of 78 per minute; no murmurs were audible. The operative area on the abdomen had partially opened with a seropurulent discharge; there was an erythematous bulging mass, moderately tender, in the right lower quadrant. The peripheral pulses were minimal in both lower extremities, partially obscured by edema.

The urinalysis revealed a specific gravity of 1.004, a 2 plus positive test result for albumin, and occasional red blood cells per high-power field. The hemoglobin was 8.6 Gm. per 100 ml., the white blood count 8,500. The thymol turbidity was 5.7 units (normal 0 to 2), the cephalin flocculation test result 3 plus, and the total serum protein 5.6 Gm. (albumin 2 Gm., globulin 3.6 Gm.) per 100 ml. Repeat urinalysis showed over 100 white blood cells and 25 to 30 red blood cells per high-power field (Foley catheter in place).

The electrocardiogram showed premature atrial contractions. The roentgenogram of the chest revealed no changes since the first admission.

The serum iron was 47 micrograms (normal 50 to 180 micrograms), and the serum iron-binding capacity 266 micrograms per 100 ml. (normal 250 to 440 micrograms). The serum vitamin B_{12} level was 63 micrograms (normal 100 to 900 micrograms).

The patient was thought to have evidence of a malabsorption syndrome and was treated with vitamin B_{12} supplement, oral and parenteral iron, and folic acid. In spite of these measures the reticulocyte count rose only to 3 per cent. During the two weeks in the hospital the patient's weight fell from 93 to 81 pounds, with decrease in edema. Intermittent diarrhea was observed but gradually subsided. The surgical wound healed slowly although not completely by the time of discharge on the seventeenth hospital day.

Final admission (three months after discharge). Two days prior to the final admission a sudden onset of severe pain in the thighs and lower legs with irregular jerking movements developed. When seen by her private physician, her temperature was 102°F.; the femoral pulses were strong, and the circulation appeared to be adequate. She refused hospitalization, and the extremity pain subsided; however, she was unable to pass flatus or stool, abdominal distention increased, and admission to the hospital became necessary.

Physical examination on admission revealed a blood pressure of 140/60 mm. Hg, a pulse rate of 80, and a respiratory rate of 20 per minute; the temperature was 99°F. The patient appeared poorly nourished and pale but not in acute distress. The heart sounds were vigorous with accentuation of the second pulmonic sound; the rhythm was normal sinus, with a Grade II/VI systolic murmur at the apex. The abdomen showed the surgical scars and a ventral hernia in the area of the most recent surgical incision; this area was reddened and superficially ulcerated with a seropurulent thin discharge. In the left upper quadrant there was marked pressure tenderness without rebound tenderness. The bowel sounds were active, and the abdomen was generally distended. The pelvic and rectal examinations did not show remarkable findings. There was no peripheral edema; the pulses in the lower extremities as well as in the neck were of moderate strength and equal in symmetrical locations.

The urinalysis revealed a specific gravity of 1.014, a trace of albumin, and 5 to 10 white blood cells and 6 to 12 red blood cells per high-power field. The hemoglobin was 9.8 Gm. per 100 ml. and the white blood count 12,800 with 85 per cent mature polymorphonuclear leukocytes. The blood urea nitrogen was 33 mg. per 100 ml., the carbon dioxide content 16 mEq., and the serum potassium 4.8 mEq. per liter. The serum sodium, chlorides, calcium, phosphorus, amylase, and alkaline phosphatase were within normal limits. The prothrombin time was 17 seconds (control

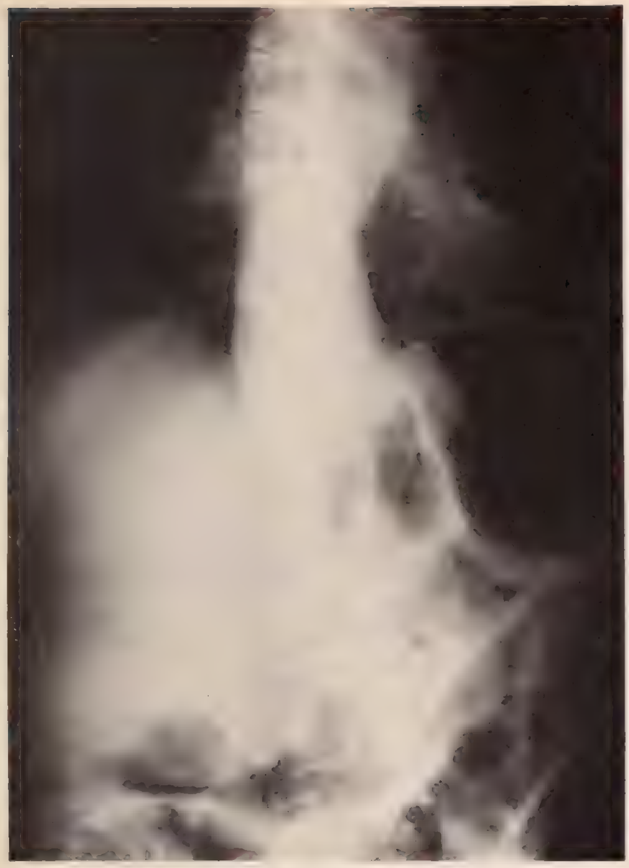


FIGURE 2 Gaseous distention of large bowel; tortuosity of lower thoracic aorta (final admission).

13 seconds). The cholesterol was 130 mg. per 100 ml. (normal 150 to 260 mg.). The serum protein was 5.4 Gm. per 100 ml. (albumin 2.6 Gm., globulin 2.8 Gm.). Three stools showed negative and trace-positive results in guaiac tests for occult blood. A repeat urinalysis showed a specific gravity of 1.020 with a 3 plus positive finding in the test for albumin; white blood cells and red blood cells were too numerous to count (Foley catheter in place).

The admission x-ray film of the chest revealed the heart size to be normal; the aorta was elongated in its descending portion and demonstrated considerable atherosclerosis. The large bowel appeared slightly distended; the small bowel pattern did not suggest mechanical obstruction (Fig. 2).

The initial electrocardiogram was within normal limits (Fig. 3).

Throughout the fourteen-day hospital course the temperature remained below 100°F. Despite nasogastric suction, severe abdominal pain and moderate distention persisted; sigmoidoscopy demonstrated large amounts of stool in the lower bowel and the free passage of air from the colon. Abdominal tenderness on the left side persisted; the femoral pulses remained moderately strong and equal bilaterally. The urine output was maintained at 1,000 to 1,200 cc. per day; the white blood count remained slightly elevated at 12,800. A repeat abdominal film again revealed no evidence of obstruction although there was considerable retained feces. Methylglucamine diatrizoate (Gastrografin) was introduced through the Cantor tube and passed readily to the ascending colon within thirty minutes and within twenty-four hours to the rectum, indicating no evidence of obstruction. Thereafter the patient began to pass stool and gas by rectum. By the fourth hospital day she was complaining of pain in the right side of the chest, and examination revealed a friction rub over the right lower side of the chest anterolaterally. An x-ray film of the chest at that time revealed a pleural effusion on the right with a small amount of fluid in the left costophrenic angle (Fig. 4). A right thoracentesis produced serosanguineous fluid with 4,000 red blood cells and 2,900 white blood cells per milliliter, with 42 per cent segmented forms, 55 per cent lymphocytes, and 3 per cent eosinophils; the protein content was 3.6 Gm. per 100 ml. Following thoracentesis x-ray evidence of hydropneumothorax was observed; a drainage tube was inserted, the lung expanded rapidly, the fluid continued to drain from the right side of the chest, and the patient became comfortable without shortness of breath. An electrocardiogram at this time revealed inversion of T waves in the precordial leads compatible with an anterolateral myocardial infarction or ischemia; however, within forty-eight hours this pattern reverted to its previous normal appearance (Fig. 5). At times the patient complained of pain in the left shoulder with swelling and discoloration of the left arm and of persistent pain in the left upper quadrant but did not appear to be in serious discomfort.

On the thirteenth hospital day she complained of persistent severe pain throughout the abdomen, worse in the epigastrium. Physical examination revealed the abdomen to be flat with diminished bowel sounds. At this time the electrocardiogram result was normal. By the following morning she was acutely dyspneic and complained of severe anterior chest pain; the blood pressure was unobtainable. The breath sounds were well transmitted to the left side of the chest but diminished on the right; occasional moist rales, however, were audible over the right lung. The cardiac rhythm was regular with a rapid rate; no murmurs or gallops were audible. The skin was clammy. Attempts to begin intravenous medication or to obtain blood samples were hindered by the severe sclerosis of veins. With the aid of metaraminol eventually administered through a leg vein, the blood pressure was recorded at 70/0 and later at 70/40 mm. Hg with a pulse rate of 110 per minute. Rales persisted at the right base; the abdominal examination remained unchanged. The blood pressure gradually fell to unobtainable levels; the patient lapsed into coma, and cardiac arrest

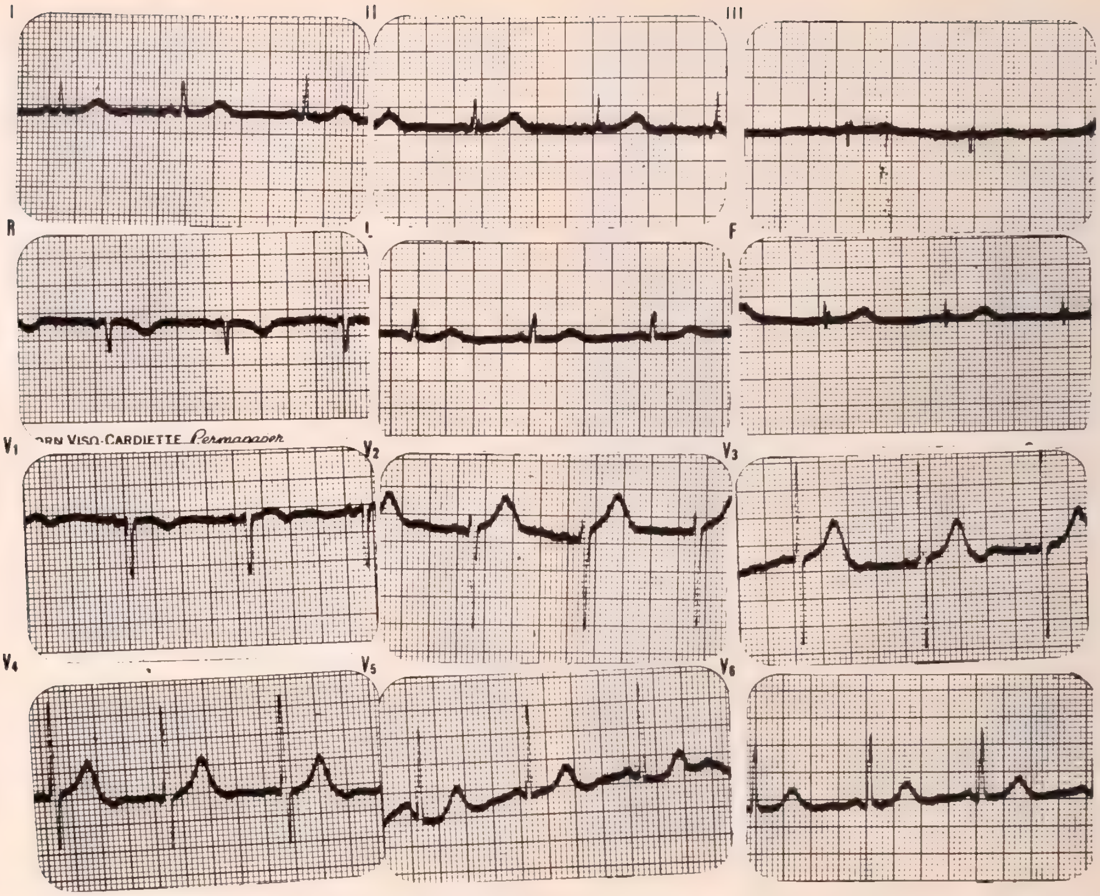

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FIGURE 3. Normal electrocardiogram at time of final admission.

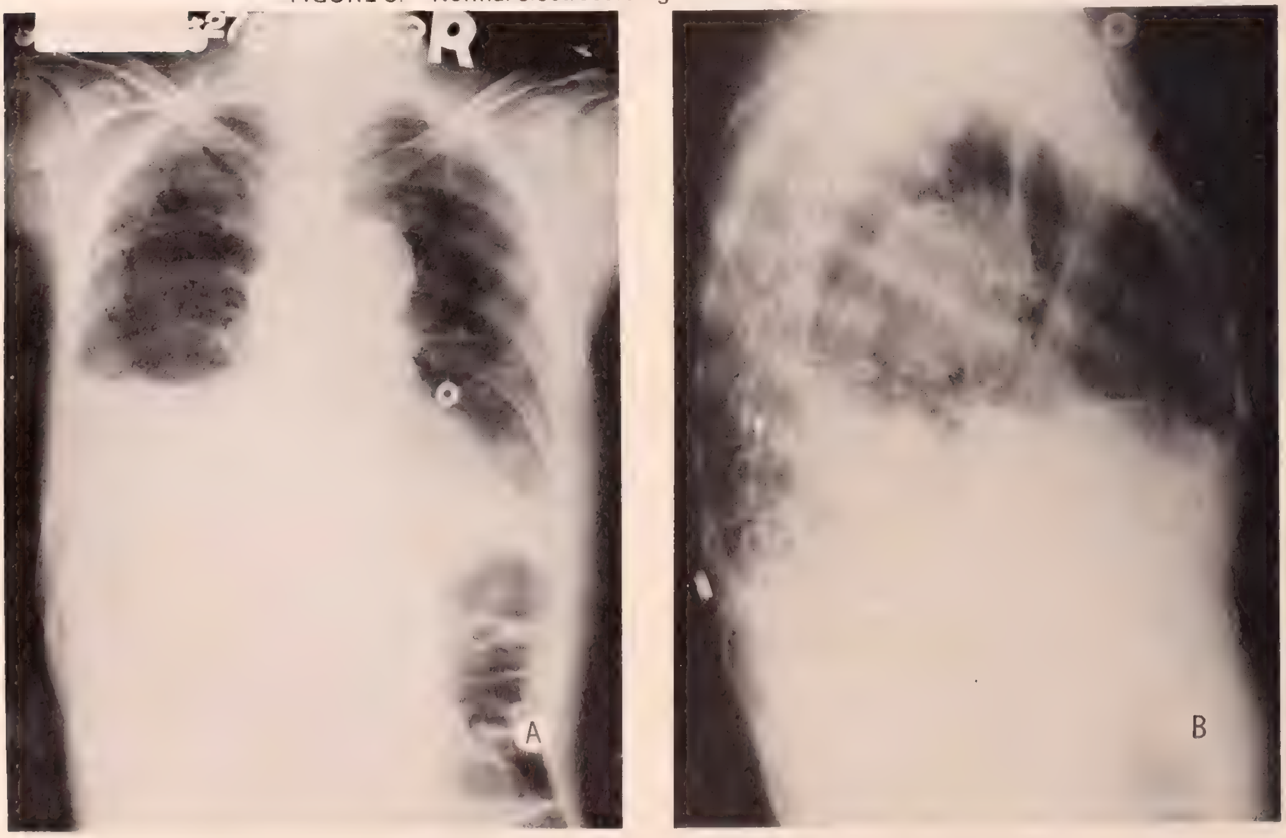

FIGURE 4. (A and B) Right pleural effusion, appearing during final admission.

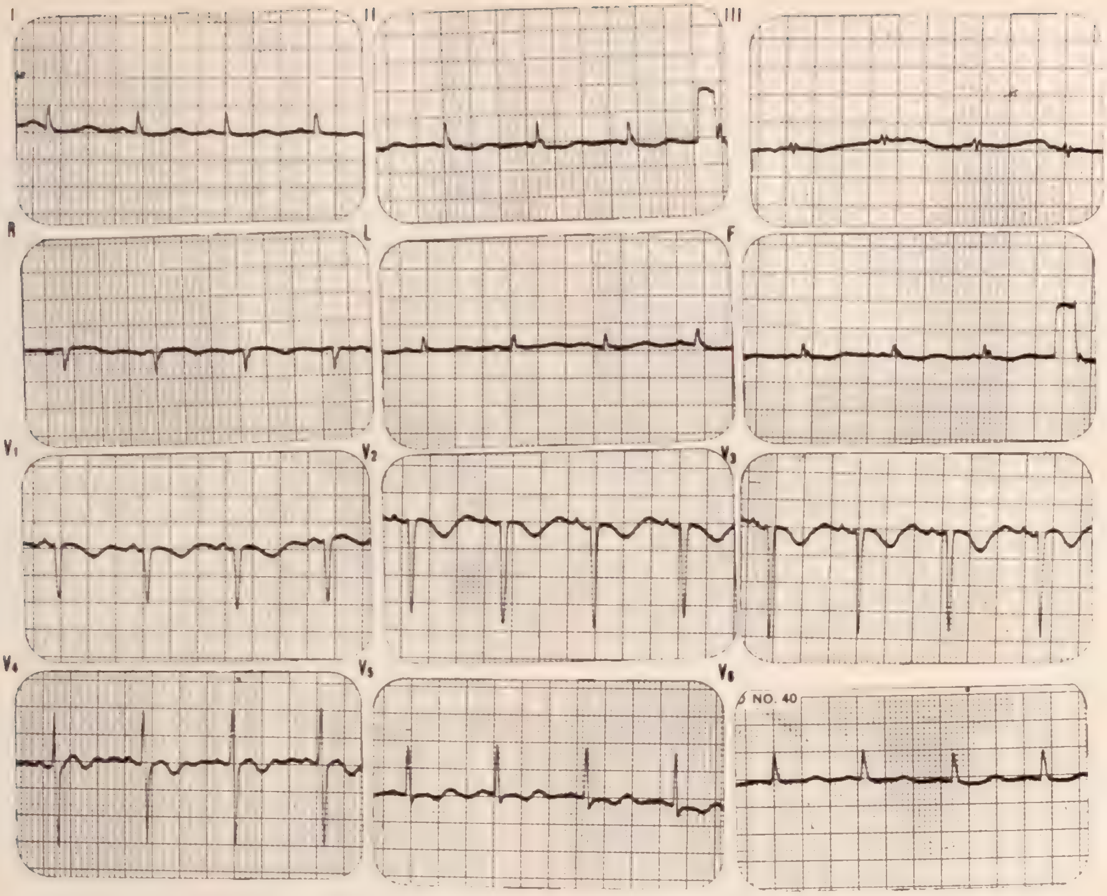

FIGURE 5. Transient T-wave inversions in precordial leads, four days before death.

occurred at noon on the fourteenth hospital day. Efforts at resuscitation were unsuccessful.

Discussion

Henry A. Sampson, M.D.: This sixty-two-year-old woman was admitted three times to this hospital over a period of six months; in all she had six major operations over a period of seventeen years, including her first admission here. Two hospitalizations were occasioned by symptoms of intestinal obstruction; on her first admission here 2 feet of gangrenous small bowel were removed. The postoperative course was stormy, with peritonitis, infection of the surgical wound, and an infiltration in the lower portion of the right lung. It is important to point out that at that time her cardiovascular status was sufficiently good to sustain her during a number of prolonged and strenuous medical experiences. Two weeks after initial discharge, she returned with swelling of the eyelids, hands, and lower extremities; her surgical wound was infected, and a red, bulging tender mass was felt in the right lower quadrant. This infected area was subsequently drained, although we have no report of bacteriologic cultures.

The urine contained albumin and red blood cells. Hypoalbuminemia was observed on several occasions at levels close to 2 Gm.; the liver function test findings included an elevated thymol turbidity and cephalin flocculation. She was treated for possible malabsorption syndrome and for nutritional deficiencies; her edema improved, and she was discharged on the seventeenth hospital day.

Three months later fever and severe pain developed in the thighs and lower legs, probably secondary to shaking chills, followed by abdominal pain and distention. She was readmitted to the hospital, at which time a cardiac systolic murmur was heard, the surgical wound was still infected, and there was marked tenderness in the left upper quadrant. The laboratory tests again showed a mild anemia, albuminuria, and hypoalbuminemia. The abdominal symptoms progressed, but she was treated conservatively, and her apparent intestinal obstruction was relieved. On the fourth hospital day she complained of pain in the right lower side of the chest, a friction rub developed, and pleural fluid was noted on x-ray film. Thoracentesis produced serosanguineous fluid, and a hydropneumothorax developed which was treated with closed thoracotomy.

On the ninth hospital day she experienced severe pain with swelling of the left arm and brawny discoloration of the skin in that area. An electrocardiogram showed inversion of T waves in the precordial leads compatible with an anterolateral infarct; however, forty-eight hours later the tracing returned to normal. On the fourteenth hospital day the very severe chest pain suddenly developed, progressed into shock, and the patient expired. Dr. Batillas, would you help us with the roentgenograms?

John Batillas, M.D.: At the time of the first two admissions, the cardiac silhouette was normal with slight left ventricle prominence (Fig. 1); atherosclerosis was present in the transverse portion of the aorta, together with mild pulmonary congestion bilaterally with plate atelectasis in the bases. The abdomen demonstrated distended loops of small intestine prior to the ileal resection.

On the third and final admission, the chest film showed the lung fields to be clear; the heart was not enlarged at this time. A supine study three days later demonstrated pulmonary congestion and edema with a small amount of fluid at the right base. A plain film of the abdomen demonstrated gas scattered throughout the small and large intestines, but the pattern was not that of a mechanical obstruction; a Cantor tube was coiled within a loop of bowel, presumably in the region of the gastroenterostomy.

Films following the introduction of methylglucamine diatrizoate (Gastrografin) through the intestinal tube on the third hospital day recorded the passage of radiopaque material into the right colon in approximately thirty minutes, and at twenty-four hours the entire colon is outlined. At that time a chest film demonstrated the pleural effusion at the right base (Fig. 4); the liver and heart are slightly enlarged. Following thoracentesis, the roentgenograms demonstrate the hydropneumothorax and later the reexpansion of the lung with closed thoracotomy. There is also a small amount of pleural fluid at the left base.

Dr. Sampson: Does the infiltration at the right base on the first admission appear related to the pleural effusion on the final admission?

Dr. Batillas: No. At the time of the first admission we have only slight plate atelectasis present, but at both bases.

Dr. Sampson: Is the spleen enlarged?

Dr. Batillas: I cannot identify the spleen, so I would say that it is not enlarged. There is no displacement of the splenic flexure of the colon, as outlined either with air or with methylglucamine diatrizoate.

Dr. Sampson: In summary, we are faced with the problem of an elderly lady who was afflicted with a series of abdominal illnesses, all of which required surgical intervention, culminating in a persistently infected and only partially healed laparotomy incision. In our effort to understand the cause of her death, we must attempt to decide whether all these prior events were relevant to her terminal illness, or whether she succumbed to an entirely new set of medical problems. If we assume for the moment that her last illness was related to all the earlier events, then we would have to think in terms of a complication of recurrent peptic ulcer or of intestinal obstruction.

A marginal ulcer at the gastrojejunal anastamosis might perforate into the peritoneal cavity, giving rise to the marked pressure tenderness in the left upper quadrant; conceivably the resulting peritonitis could cause bowel atony and progressive abdominal distention. The area of peritonitis might become walled off, especially in view of the many prior abdominal operations and intra-abdominal adhesions, so that the signs of peritonitis might not have become generalized. However, several considerations divert me from this notion. No marginal ulcer was evident on the methylglucamine diatrizoate study, nor was a localized mass such as an intraperitoneal abscess demonstrated to displace any portion of the stomach or bowel. Furthermore paralytic ileus was not present, since we are told that the bowel sounds were vigorous. In addition, the bloody pleural effusion could not be explained in this context.

Let us consider the possibility of recurrent intestinal obstruction during the last admission. When seen at home by her private physician, I believe she was experiencing a transient bacteremia initiated from the unhealed incision and accompanied by shaking chills with resulting pain in the lower extremities. This bacteremia was most probably transient because she was thereafter afebrile. I am strongly persuaded to believe that the immediate cause of her last admission was a recurrence of intestinal obstruction but that it was short-lived. Indeed it was in all probability due to a temporary fecal impaction, as suggested by the large masses of stool observed on the abdominal films. Abdominal tenderness can occur with fecal impactions, especially those of long standing. It would appear that the preparation for sigmoidoscopy assisted in the relief of the impaction; and the later methylglucamine diatrizoate study clearly showed that the entire gastrointestinal tract was patent and functioning properly. Thereafter, intestinal obstruction was never again in evidence, so I must deny it any significant role in the terminal picture.

Continuing with the premise of a complication of her earlier surgical conditions, I must dismiss promptly any likelihood of a granulomatous disease of the bowel which could retard healing of the abdominal wound and tended to promote fistula formation with persistent discharge. Again the methylglucamine diatrizoate study gives no hint of such a condition, and surely the resected portion of the bowel would have revealed its presence on pathologic study. Nor do I intend to emphasize the infected wound with drainage and steady loss of protein; for although her hypoalbuminemia could have led to the edema at the time of the second admission, her anasarca thereafter cleared completely and did not recur even months later at the time of the final admission. However, prolonged infection in an elderly person might easily be complicated by amyloidosis to which I will return later. For the moment, I would think of the abdominal wound as a site of entry of bacteria, presumably of an alpha or gamma streptococcus, which might in a debilitated person attach itself to a sclerotic aortic valve, and give rise to fever, a heart murmur, anemia, and ultimately to multiple peripheral emboli. The latter could cause splenic infarction and give rise to the tenderness in the left upper quadrant and to the pain in the left shoulder of which the patient complained. Renal infarction could account for her albuminuria and hematuria, although the latter might have resulted merely from the trauma of the Foley catheter. The right pleural friction rub and serosanguineous effusion could be the result of emboli from the pulmonic or tricuspid valves; but we must remember that the first hospital admission here included an episode of auricular fibrillation which may have recurred many times, although unobserved, and may have created a suitable environment for auricular thrombi.

Such clinical events, however, are so common that I cannot be persuaded that they could constitute sufficiently exotic material for a clinicopathologic conference. Could the last illness have been a combination of mesenteric emboli initially, with terminus secondary to a coronary embolus? If so, the mesenteric emboli caused only a transient motility problem for the gastrointestinal tract, and the coronary emboli failed to precipitate any permanent electrocardiographic changes, although transient alterations suggestive of coronary insufficiency were noted. I cannot be strongly impressed by these transient electrocardiographic changes, since they may occur in the presence of coronary artery disease when the patient is experiencing pain in any other part of the body, such as might have occurred with her closed-drainage thoracotomy. In addition, all the major branches of the aorta were noted to remain patent throughout, so all in all I cannot conclude that arterial embolism was a serious clinical feature here. Are we dealing with the sudden rupture of a mycotic aneurysm of the aorta developed either by seeding from the infected valves or by direct extension from an intra-abdominal abscess? Surely such involvement should have caused a febrile illness, which was not present during the entire last admission; the white blood count was normal or nearly so. Right or wrong, I will put aside the concept of bacterial endocarditis and its complications, although I would definitely favor pulmonary embolism from auricular or venous thrombi as the cause of the bloody pleural effusion, of the terminal dyspnea, and of the fatal state of circulatory shock.

Could an incidental and unrelated pancreatitis have caused the abdominal pain and distention, obstipation, tenderness in the left upper quadrant, and the bilateral pleural effusions? The answer quite clearly is yes, in spite of the initially normal serum amylase. Pancreatitis can occur in the ill and aging organism, without precipitation by alcoholic adventures; and we should not forget that this woman had had a cholecystectomy many years ago and might still have a stone or two lurking in the biliary tree, ready to be dislodged and to establish an acute blockage of the pancreatic duct. Then after an interval of two weeks, hemorrhagic changes and slow autolysis of the pancreas might lead to cyst formation and possibly to local rupture, with catastrophic peritonitis, shock, and death. But this presumably must remain only speculative, since I have no supporting evidence such as the onset of obstructive jaundice, sentinel loops of bowel on the abdominal x-ray films, nor displacement of the upper gastrointestinal tract on the methylglucamine diatrizoate study.

The painful tender hard swelling of the left arm must, in these days of polyethylene catheters, be attributed to the common occurrence of phlebitis at the site of such devices in the extremity veins.

My discussion to this point has produced much meditation but no clearcut conclusions. I have not entirely eliminated from consideration a long-term complication resulting from her much earlier surgical operations; however, I am more strongly tempted to believe that in accordance with the circumstances of many clinicopathologic conferences there may be an unusual or unexpected finding of long-standing character at post mortem. In that category of possibilities I would mention most prominently the likelihood of amyloidosis, in view of the long-standing infection of the recent surgical wound, the reported malabsorption syndrome, and the possibility of a mild nephrotic picture. Amyloidosis might be present here, even without any clinical manifestations; however, it would not contribute, to the best of my knowledge, to the final catastrophic events. The complications, if any, of amyloidosis are usually of low-grade and chronic nature such as renal disease, massive hepatosplenomegaly, enlargement of the tongue, cardiac enlargement, slowly progressive congestive heart failure, chronic diarrhea, skin infiltrations, and peripheral neuropathies. Amyloidosis may be instrumental in leading to rupture of the spleen as a catastrophic event, but this is most rare and in this case the spleen was not even palpable. So-called senile amyloidosis may be present in the myocardium without ever causing any detectable difficulty. The disease underlying the amyloidosis, of course, may give rise to an abrupt event, but in this case the only possible underlying cause appears to be the wound infection which had actually improved considerably rather than progressed.

In general my considerations appeared to have stripped away any serious connection between past and terminal events in this case, so at last I must offer what I can to explain the latter. Having observed that this woman weathered many physical crises and stresses without any evidence of anginal or of coronary disease, I seriously hesitate to blame her demise conveniently on a myocardial infarction. If indeed it did occur, it must have been accompanied by some unusual complication. For the moment I will bravely dismiss a terminal myocardial infarction in spite of the transiently abnormal cardiogram about one week before death. Certainly, myocardial infarction, as the experience of all of us will testify, can be extensive and fatal even in the presence of an entirely normal cardiogram throughout; but again that diagnosis would not by itself be used in this conference to test our clinical expertise.

I would prefer to consider at this point that the organs situated in the anterior portions of the chest and abdomen were not involved in the terminal events, with the possible exception of the lungs wherein we might find one or more pulmonary emboli. Let us turn our attention therefore to the anatomy of the posterior chest and abdomen, and here we are left with few causes of catastrophic termination of life. Rupture of a viscus or a cyst or an abscess would be the most likely choices—but which one? On the basis of the scanty information we could not possibly arrive at more than an educated or lucky guess at the right answer. Rupture of an aneurysm either of the aorta or of one of its major branches must be considered, but I would be hard pressed to localize such an event anatomically. If the aorta ruptured, I would have expected a more rapid demise, although a twenty-four-hour or longer survival is not impossible, especially with an initially small leak. An intercostal or lumbar artery might have ruptured, but this is a most rare event. I should not dismiss the likelihood of a dissecting aneurysm in this patient, even with no history of serious hypertension, but again this is only a guess. We were surprised at one of these conferences to find bacterial endaortitis and rupture at the site of a previously healed dissecting aneurysm.[1] Splenic artery aneurysms are rare, but they do tend to occur in women after middle age and they may rupture, with a sequence of events such as this patient experienced terminally. Perhaps we are dealing with the rupture of the so-called Rasmussen's aneurysm, that is, the bursting of a vessel which has been weakened by its close approximation to an abscess cavity or a cyst. The rare occasion of a renal artery rupture can result in retroperitoneal hemorrhage, with dissection of a hematoma into the chest. Also on rare occasions, leakage over many days from an atherosclerotic aorta can give rise to a slowly enlarging hematoma, which becomes surrounded by a fibrous capsule.

Such a pseudoaneurysm may eventually rupture into the retroperitoneal space or into the pleura with fatal consequences.

Our surgical colleagues have described to us instances of hemorrhage in and about one adrenal gland giving rise to massive retroperitoneal hematoma, without a clearcut cause.

Could we be dealing with rupture of a pseudocyst of the pancreas? It would appear most unlikely in view of the previous lack of displacement of the stomach or the duodenal loop by any such mass; but extension of local irritation from such a cyst into the lower part of the chest is quite common. Again I could postulate rupture of a vessel with hemorrhage into such a pseudocyst. If a previously well-loculated abscess was localized in the retroperitoneal area or possibly in the lesser omental sac, its presence might be well hidden from us; and it might suddenly become evident as its capsule became eroded and burst, spreading purulent material into the perirenal areas or into the lower portion of the chest, if it did not in addition erode an important nearby blood vessel by pressure and chemical irritation.

I can commit myself to almost any one of the aforementioned events, but I insist that its location must be retroperitoneal or posterior mediastinal, and that no amount of medical or surgical intervention would have been life-saving. In addition I am irresistibly drawn to the concept that this woman at autopsy will present not only one of the entities that I have listed but some other lesion which we will be perhaps much less likely to suspect. For this latter reason and based largely on the rules for conducting clinicopathologic conferences, I will repeat the idea of widespread amyloidosis, involving all of the medium-sized arteries, possibly the heart, certainly the mesenteric and intestinal arterioles, and possibly some of the solid organs to a degree. I am assuming that the long-standing infection of the surgical wound and possibly even much earlier repeated infections associated with her many prior operations laid the immunologic groundwork for such a condition; that in addition the damaged vessels themselves not only contributed to albuminuria and incomplete wound healing, but also were superimposed on the serious arteriosclerotic changes which she had also acquired during sixty-two years of life.

John T. Flynn, M.D.: Dr. Sampson, you failed to use your prerogative of asking for any evidence of amyloidosis in the resected specimen of ileum.

Dr. Sampson: I realize that, but I was assuming that our pathologists do not use routinely the special stains for amyloidosis, unless they have serious reason to suspect it. I did not think it likely that such stains were done in this case on the surgical specimen.

Charles M. Karpas, M.D.: We employ such special stains only when we observe architectural changes such as tissue infiltration or unusual thickening of the muscular wall of the arterioles.

I think Dr. Sampson's hypothesis of generalized amyloidosis, either primary or secondary, is quite attractive; but I think that certain laboratory findings might be misleading. For instance, the patient was losing protein through the kidneys, into the pleural fluid, and by way of the drainage from the abdominal abscess. These losses can reduce the total serum protein, and with inversion of the serum albumin-globulin ratio, one must be cautious in interpreting the results of liver function tests. This is especially true of the cephalin flocculation, which can be increased in the presence of a lowered serum albumin.

Dr. Flynn: Dr. Dolecki, you originally believed that this patient might have a malabsorption syndrome, but could defective vitamin K absorption occur when only a small portion of the bowel was resected?

Charlotte Dolecki, M.D.: During her first two admissions, this woman had had antibiotics over a considerable period of time, which alter the bacterial flora of the bowel and may therefore decrease the absorption of vitamin K. Second, she was having significant diarrhea to the extent of eight to ten bowel movements a day; diarrhea by itself can decrease the absorption of vitamin K. Resection of a segment of her terminal ileum would account in part for vitamin B_{12} deficiency. She had had a subtotal gastrectomy several years previously, which could have contributed to iron deficiency.

Seymour A. Fink, M.D.: Why did she not have a small-bowel study done on the second admission?

Dr. Dolecki: This woman was resistant to many of our suggestions involving diagnostic procedures.

Dr. Flynn: We gave Dr. Sampson a very difficult case because it illustrated a very unusual complication of a rather common disease, as Dr. Moumgis will show us.

Clinical diagnoses

1. Transient intestinal obstruction, ? due to recurrent volvulus; ? due to recurrent fecal impaction

2. Infected laparotomy wound following resection of gangrenous bowel

3. Arteriosclerotic heart disease; transient auricular fibrillation; ? acute myocardial infarction with terminal shock

Dr. Sampson's diagnoses

1. Infected surgical wound with transient bacteremia, and hypoproteinemia associated with protein loss

2. Amyloidosis

3. Transient intestinal obstruction due to fecal impaction

4. Arteriosclerotic heart disease; transient auricular fibrillation; ? auricular thrombi with pulmonary embolism; ? internal hemorrhage, retroperitoneal, cause not determined

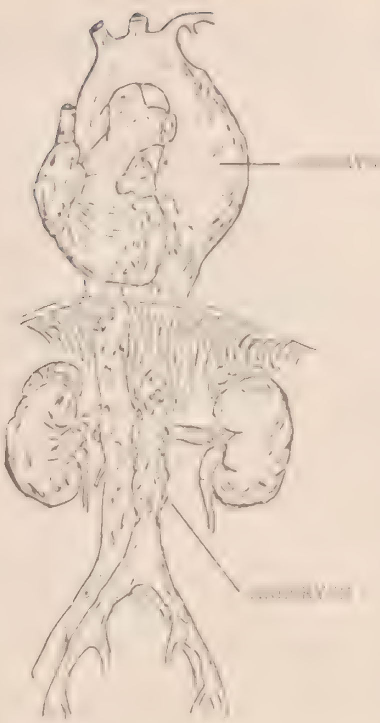

FIGURE 6. Aneurysms of aorta in thoracic and abdominal portions.

Pathologic discussion

Basil Moumgis, M.D.: The most significant findings involved the cardiovascular system, particularly the aorta. The heart was not enlarged. We found a moderate amount of coronary sclerosis but were unable to demonstrate any evidence of an infarction or fibrosis. The aorta contained numerous atheromatous plaques with considerable calcification and was obviously more sclerotic than any other vessels examined. Of prime importance was the presence of two distinct aneurysms: one in the descending portion of the thoracic aorta and the other located at and below the level of the origin of the renal arteries. The abdominal aneurysm extended down to, but did not include, the iliac bifurcation (Fig. 6). The most fascinating aspect of these pathologic dilatations was the unquestionable evidence that each aneurysm ruptured independently of the other. Areas of massive hemorrhage were demonstrated separately above and below the diaphragm. The skip area of the aorta which was also sclerotic was entirely intact. Furthermore the sites of the two distinct perforations were readily identified. In the thoracic aneurysm, the rent was located on the left posterior aspect and was enveloped by about 300 ml. of blood which extended into the left pleural cavity. Approximately 800 Gm. of blood clots by weight were removed from the posterior mediastinum. This massive hemorrhage had displaced the heart anteriorly and surrounded the esophagus. In addition, it had dissected into the wall of the esophagus producing an erosion. Also, we found a small amount of hemorrhage into the esophageal lumen which we interpreted as a terminal event.

The abdominal aneurysm had ruptured through its left posterior aspect. This second hemorrhage which consisted of 1,200 to 1,500 ml. of blood had extended into the retroperitoneal space, had enveloped the left kidney, and had dissected into the mesentery. Some mesenteric sections showed focal dissection of blood into the outer layers of the muscularis of the small intestine. The peritoneal cavity was completely free of blood.

The kidneys exhibited arteriosclerotic changes which were rather severe. A few small retention cysts were noted, but there was no evidence of any specific tubular and/or glomerular disease. There was no evidence of amyloidosis, nor could we find chronic pyelonephritis.

The lungs showed emphysema. The left lung was partially atelectatic due to the hemorrhage from the thoracic aneurysm, but we could not demonstrate any pneumonitis. The liver presented evidence of chronic passive congestion and was slightly enlarged. An incidental finding was the presence of a small follicular adenoma of the thyroid.

Hak Jo Kim, M.D.: Was there any evidence of a mesenteric thrombosis?

Dr. Moumgis: No. The only definitive change in that region was the dissection of the hemorrhage along the mesentery. Incidentally, we did not find any of the characteristic mucosal changes in the intestine that would suggest a malabsorption syndrome.

On reviewing the surgical specimen of the ileum, as previously stated, we interpreted the gangrenous changes as being most likely related to the volvulus. At autopsy the cholecystectomy and gastrectomy sites were not remarkable.

Dr. Kim: Is it possible that in the terminal stage, the efforts at cardiac resuscitation precipitated the rupture of the thoracic aneurysm?

Dr. Moumgis: It is possible but not probable. The intrathoracic hemorrhage extended for a considerable distance and gradually eroded into the wall of the esophagus. I do not think that an event of this magnitude could be the result of resuscitative efforts only, unless the patient had survived for several hours under continuous massage, which was not the case here. We could not demonstrate any other specific gastrointestinal lesion.

Dr. Karpas: I thought that Dr. Dolecki's explanations were satisfactory with regard to the malabsorption, and in that light one may find no specific morphologic changes.

Dr. Fink: We know clinically that it is often difficult to establish the presence of any mucosal changes when antibiotic therapy is associated with malabsorption. Malabsorption certainly occurs with neomycin[2]; yet the literature suggests that malabsorption secondary to antibiotics has been relatively uncommon.[3] Also because most of these patients improve, we do not often have tissue diagnoses.

Dr. Karpas: It is not uncommon to observe morphologic changes such as blunting of the villi of intestinal mucosa with no apparent clinical evidences of malabsorption. On the other hand, we have found cases with poor absorption in which no morphologic changes were evident.

Dr. Flynn: This patient's clinical history and autopsy findings testify to her remarkable endurance in the face of major illness. The exceptional rarity of double ruptures of separate aortic aneurysms must be due to a very simple statistical fact: the first aneurysm to rupture terminates the patient's life, the second aneurysm has no opportunity to manifest itself catastrophically; not so in this unusually durable woman.

I have puzzled over the sequence of clinical events in this case, and, like Dr. Sampson, I have not reached an entirely satisfactory conclusion. I find no fault with his reasoning in relation to the initial transient bacteremia, shaking chill, and fecal impaction with transient intestinal obstruction. Perhaps at autopsy we overlooked a small pulmonary infarct as the cause of the right serosanguineous pleural effusion. The final state of shock began with abdominal pain, suggesting that the abdominal aneurysm leaked first. Perhaps the resulting collections of blood led to sufficiently severe compression of the abdominal aorta that the intraluminal pressure in the thoracic aorta became elevated. Shortly thereafter as a result of the rise in pressure the thoracic aneurysm gave way.

However, this explanation still leaves me dissatisfied concerning the earlier presence of the serosanguineous right pleural effusion. Sometimes in the presence of aortic rupture, the patient may survive for many days or even weeks when there is only a small initial break in the aorta or aneurysm. In one series of 28 patients, 12 lived from ten to twenty-four hours after the sudden onset of acute symptoms; 9 remained alive from one to six days, and 2 lived for two weeks.[4] In another study there appeared to be two peaks in the mortality curve after rupture, the first at eight hours after the onset of symptoms and the second at two days.[5] It is always possible in the present case that the earlier right pleural effusion resulted from a slow leak from the thoracic aneurysm; the loss of blood initially might have been sufficiently small to be compatible with survival for a period of two weeks. The initial jerking movements of the legs might represent transient ischemia of the spinal cord during the earliest phase of such a leakage. We would still be left with the question as to why the pathologic findings suggest that both aneurysms ruptured at approximately the same time; and indeed the pathologic descriptions suggest immediately preterminal ruptures and hemorrhage rather than a remote one.

We appear, therefore, to be unable to set the entire clinical and pathologic events together in a clear fashion.

In a series of 172 cases, abdominal aortic atherosclerotic aneurysms were multiple in 31 instances; the combination of thoracic and abdominal aneurysms occurred in only 10 per cent of the cases.[4] There appeared to be no reports of separate but almost simultaneous rupture of such multiple aneurysms, although surely they must occur in rare instances.

Dr. Sampson: It would appear to be a typical feature of this resilient patient's physical constitution that a highly improbable combination of catastrophic disease conditions was needed to bring her life to a close.

Final diagnoses

1. Atherosclerotic aneurysms of the thoracic and abdominal aorta, with separate ruptures in both locations

2. Hemorrhage into the posterior mediastinum, left pleural cavity, wall of the esophagus, retroperitoneal space and mesentery, secondary to atherosclerotic aneurysms

3. Arterionephrosclerosis

4. Pulmonary emphysema

5. Follicular adenoma of the thyroid

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Monitoring apparatus

Since intensive care consists largely of intensive observation, the reliability of monitoring systems must be high. Evans and Clark have recently reported on the reliability of one such monitoring device, the *Monitron II* (Brit. M. J. 2: 734 [June 26] 1971). While pulse and temperature recordings approximated 90 per cent reliability, blood pressure readings did not. The nursing staff was carefully instructed in the use of the equipment, they appreciated the purpose of the trial, and they took professional pride in trying to keep the equipment working, but it was impossible to achieve more than 49 per cent reliability with the blood pressure module. This meant that for over half the time for which patients were monitored, no satisfactory blood pressure readings were available. Therefore, a new method of indirect bleed pressure reading is needed.

In the meantime, blood pressure may have to be monitored by an intra-arterial line in selected cases, but this is neither necessary nor justifiable in all patients admitted to intensive care.

INTERNAL DERANGEMENT OF KNEE ASSOCIATED WITH LARGE FAT PAD

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Internal derangements of the knee joint are most commonly caused by malfunctions of the menisci. In general, the signs and symptoms of knee dysfunction, that is, locking and buckling, are more easily attributed to a faulting medial meniscus. By enumerating the diagnoses and specimen counts in almost any hospital with an active orthopedic staff, the medial meniscus is found to be removed far more frequently than is the lateral meniscus. The mechanisms of injury, either to the medial meniscus or to its attachments, have been more abundantly described than have the circumstances surrounding injuries to the lateral meniscus. As a matter of fact, many surgeons feel that the lateral meniscus is a relatively invulnerable structure except in those cases in which it is inherently abnormal as a result of a congenital malformation, or when there is another nearby abnormality: patellar subluxation of congenital origin.

Last[1] has advanced the idea that the lateral meniscal mechanism can be injured by a hyperflexion stress on the knee. The stress causes injury to the attachment of the popliteus tendon to the meniscus. Last states that the popliteus muscle, through its tendon, controls the normal movement of the meniscus. This "controlled mobility" is the key to proper meniscal function. When properly controlled mobility is disturbed, the meniscus is liable to entrapment between the femoral and tibial condyles because the popliteus force can no longer pull it away.

Meniscal entrapment can occur from strong abnormal stresses acting on an anatomically normal knee or from minor stresses acting on a mechanically abnormal knee. We would like to present a case in which an abnormality within the joint led to lateral meniscal disease and malfunction. The abnormality was a hypertrophied fat pad, "Hoffa's disease." In 1933, Hipps[2] presented a similar case but did not discuss mechanism.

Case report

A sixty-four-year-old trainman was standing on a pile of coal. He turned suddenly; his right knee gave way and went into flexion. He had both a torsional and a flexion stress on the knee joint. The patient was unable to stand or walk, and was admitted to Peekskill Community Hospital. An arthrotomy was performed to remove the medial meniscus.

Postoperatively, the patient had repeated episodes of buckling and locking. Usually the locking could be reduced spontaneously or by self-manipulation; but in one episode the knee did not yield. He was readmitted to the hospital with an acutely locked knee.

Examination of the right knee revealed a fullness over the anterolateral joint space (lateral parapatellar fossa) that was tender to palpation. (Fig. 1). Range of motion of the knee joint was from 30 to 120 degrees. There was no gross instability of the knee. A moderate effusion was palpable. There was a 1-inch loss of quadriceps girth. The knee failed to unlock with traction, and an arthrotomy was elected.

Exploration of the lateral joint space was performed through a lateral transverse incision. On opening the joint capsule, a large mass of fatty tissue was found anterior to, and attached to, the lateral meniscus. The anterior portion of the internal edge of the meniscus had a beaded, irregular, dicolored appearance. The meniscus and fatty mass were removed (Fig. 2). The patient made an uneventful recovery.

Comment

Our interpretation of the sequence of factors that led to the disease in the lateral meniscus is as follows: An abnormal stress led to the medial meniscus injury. After the first arthrotomy there was failure to develop quadriceps adequacy. As pointed out by Smillie,[3] quadriceps weakness can be the cause for fat-pad hypertrophy.

In the case described it was noted at the time of surgery that the fat pad was intimately adherent

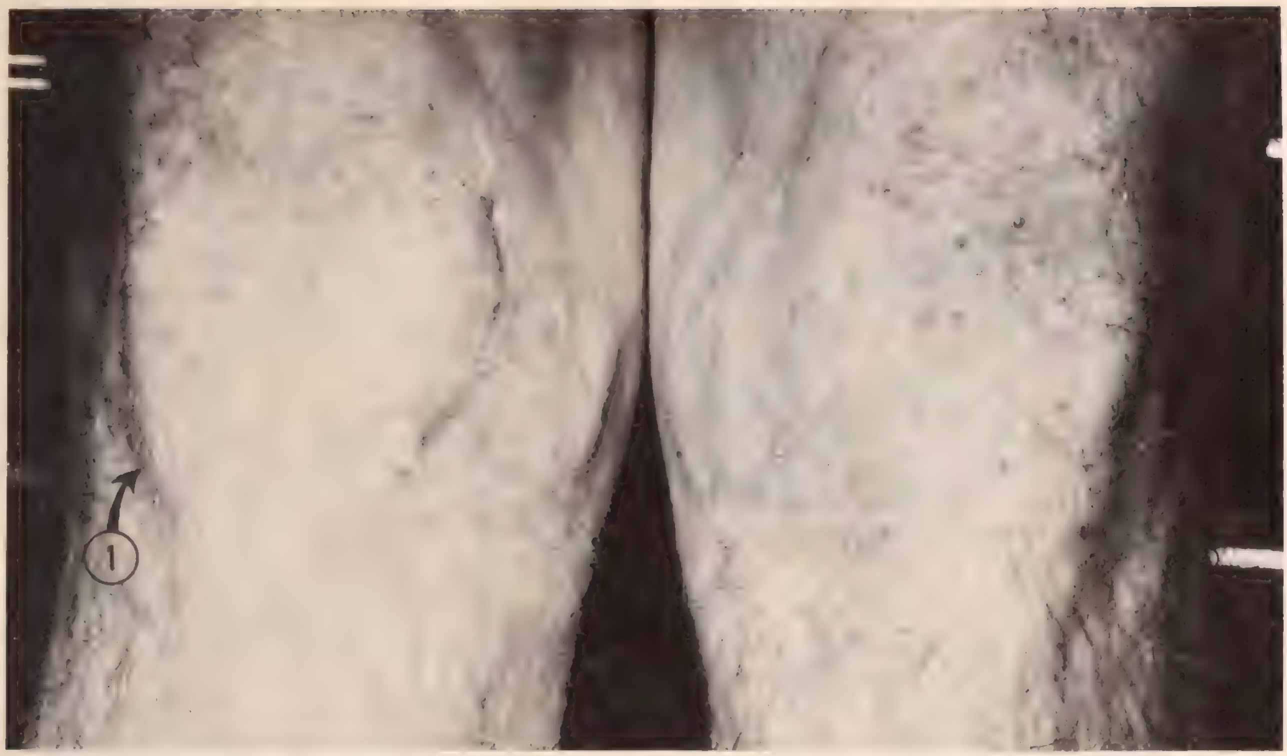

FIGURE 1. (1) is the bulge produced in the lateral parapatellar fossa by enlarged fat pad. Note healed medial meniscectomy scar.

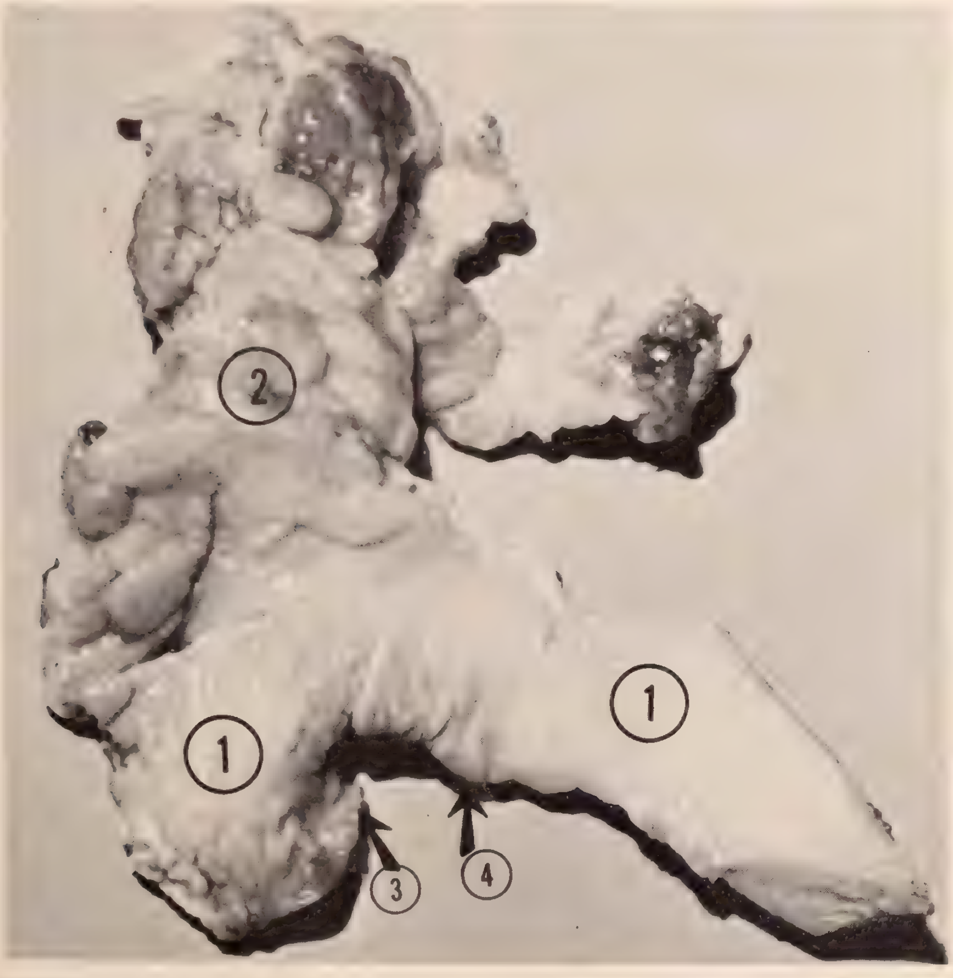

FIGURE 2. Photograph of lateral meniscus and attached fat pad. (1) lateral meniscus. (2) hypertrophied fat pad. (3) and (4) traumatized, formerly entrapped edges of meniscus.

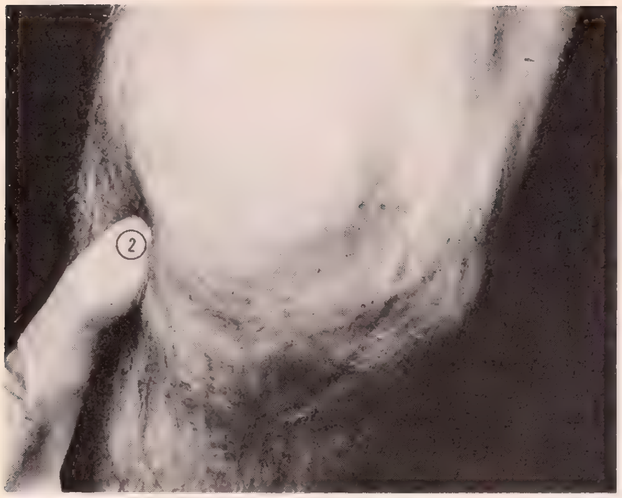

FIGURE 3. Tip of finger (2) pressed into tender region in lateral parapatellar fossa.

to the lateral meniscus. Its consistency was altered by exudate and internal fibrosis. Its bulk was interposed between the capsule and the cartilage, and thus seriously interfered with the mobility of the cartilage. In certain positions, the capsule tensed over the fat mass, which then pressed against the meniscus, so that the free edge of the meniscus was caught between the articular surfaces. The inner edge of the cartilage showed discoloration and old fibrotic, traumatic changes, testifying to repeated pinching by the condyle.

A word should be said here about this intra-articular structure, the fat pad. Most large joints have a mass of fat in close association with the joint. The function of the fat has not been clearly delineated, but it is believed to act as a protective packing substance. When the joint flexes and extends, its internal volume and, therefore, its internal pressure changes. The fat acts as an interposition substance to keep the capsule and synovia from being plastered up against the articular surfaces when intra-articular pressure falls below atmospheric pressure. The fat pad does not have structural characteristics similar to those of the menisci, which can act as wiping lubrication pads or load-distributing equalizers.

The diagnosis of the state of internal derangement of the knee is a relatively gross nonspecific diagnosis when pathognomonic findings are lacking. It is not always easy to be sure which of the two cartilages is causing trouble. The results of a careful history and physical examination do not lead unequivocally to the localization of the lesion. Smillie[3] has drawn attention to the fact that lesion side can be difficult to ascertain preoperatively. Since involvement of the medial meniscus is more frequent, there is a tendency to diagnose a lesion medially. Smillie's own statistics from a large series show a ratio of five medial meniscectomies to two lateral.

The interpretation of physical findings may not provide much aid in localizing the lesion, either. The rotation or grinding tests are not as specific for the joint side as is commonly accepted. Still another difficulty is caused by the fact that an entrapped lateral meniscus blocking the narrow part of the hinge may throw a good deal of stress on the medial aspect of the joint, both on the capsule and on the medial collateral ligament. This may produce deceptive tenderness medially which can overshadow the lateral signs. The major clue to the presence of a fat-pad abnormality is the fullness and tenderness in the parapatellar fossa. An impressive finding in this case in which an enlarged fat pad was present was the pain produced when the knee was actively extended while digital pressure was made on the lateral parapatellar fossa (Fig. 3). Not only did this maneuver cause pain, but there was difficulty in reaching full extension.

Although the particular sequence for derangement in this case may appear statistically small, part of this particular mechanism, the hypertrophied fat pad, can be a more frequent source of knee disability than is generally reported. For this reason we think that it is worthy of consideration in a differential diagnosis of a knee derangement.

Summary

A case has been presented in which internal derangement of the knee was caused by the pressure of an enlarged fat pad against a lateral meniscus. The mechanism of the production of this variety of internal derangement was discussed.

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LEYDIG CELL TUMORS OF TESTIS INCLUDING CRYPTORCHID TESTIS

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Interstitial cell tumors (ICT) are uncommon neoplasms accounting for 1 to 2 per cent of all tumors of the testis. They are characterized by a discrete circumscribed or encapsulated mass, composed of sheets of recognizable interstitial cells. This lesion should be distinguished from hyperplasia of these cells which may occur with primary or secondary failure of spermatogenesis as with Klinefelter's syndrome, the postpubertal cryptorchid state, senile atrophy, and post-traumatic or ischemic atrophy. They may be endocrinologically active in adults and are invariably so in children, in whom they tend to produce a virilizing effect. Gynecomastia, associated with a decrease in libido and potency, is often seen in adults.

Leydig cell tumors may be produced experimentally in certain strains of mice by a number of exogenous estrogens, and the incidence may be increased if the animals are cryptorchiectomized. Bilateral orchiectomy with intrasplenic testicular grafting results in an increase in interstitial cell-stimulating hormone secretion with Leydig cell tumor formation as well as hyperplasia, as a consequence of hepatic inactivation of the testicular hormones responsible for the usual negative feedback inhibition of pituitary gonadotrophins. Interstitial cell hyperplasia and tumors have also been induced in certain strains of rats by the parenteral administration of cadmium salts.

Although the prognosis is generally good, 10 per cent of Leydig cell tumors are malignant as determined by the presence of metastases. Late recurrences have been reported necessitating prolonged follow-up.[1-3] Five cases seen at Memorial Hospital are herein reported.

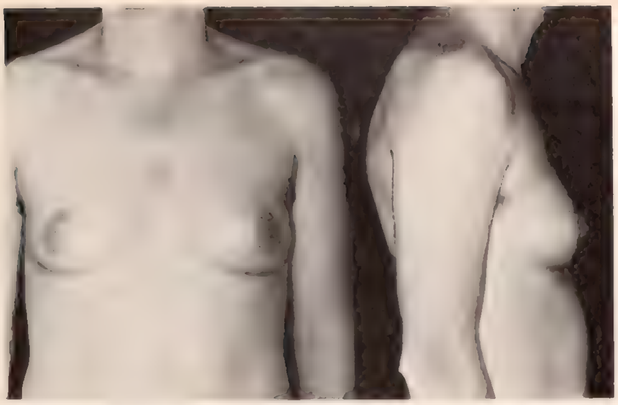

FIGURE 1. Case 1. Patient at time of presentation in 1963.

Case reports

Case 1. On January 25, 1963, a thirty-three-year-old father of two underwent bilateral simple mastectomies for pronounced gynecomastia which had been present since age seventeen to nineteen years and which had been associated with localized discomfort in the left breast for several months preoperatively (Fig. 1.). His past surgical history included a herniorrhaphy and orchidopexy for a cryptorchid right testis at age ten years following an unsuccessful attempt to induce descent with parenteral injections. Results of endocrinologic work-up prior to referral are said to have been negative, although results of hormonal assays were not available. Review of systems revealed no abnormality, and sexual function was normal. The pathologic diagnosis was gynecomastia (Fig. 2A). No comments were made on the scrotal contents.

He was subsequently asymptomatic, apart from hesitancy of micturition when emotionally upset, until April, 1969, when a urethral discharge developed which was treated with antibiotics by his local physician. On examination at that time, the right testis was thought to be abnormal, and he was again referred to Memorial Hospital where physical examination demonstrated a 2 cm. in diameter circumscribed, round, hard, nontender mass in the right testis. The right epididymis and cord were normal, as were the left scrotal contents. Results of a roentgenogram of the chest, blood count, and urinalysis were normal, and assays for urinary steroids were not obtained. On May 19, 1969, a right inguinal orchidectomy was carried out demonstrating a sharply defined tan-brown tumor, which, microscopically, was comprised of sheets of characteristic interstitial cells without the presence of Reinke crystalloids (Fig. 2B). The patient was discharged after an uneventful postoperative course and has remained well to date.

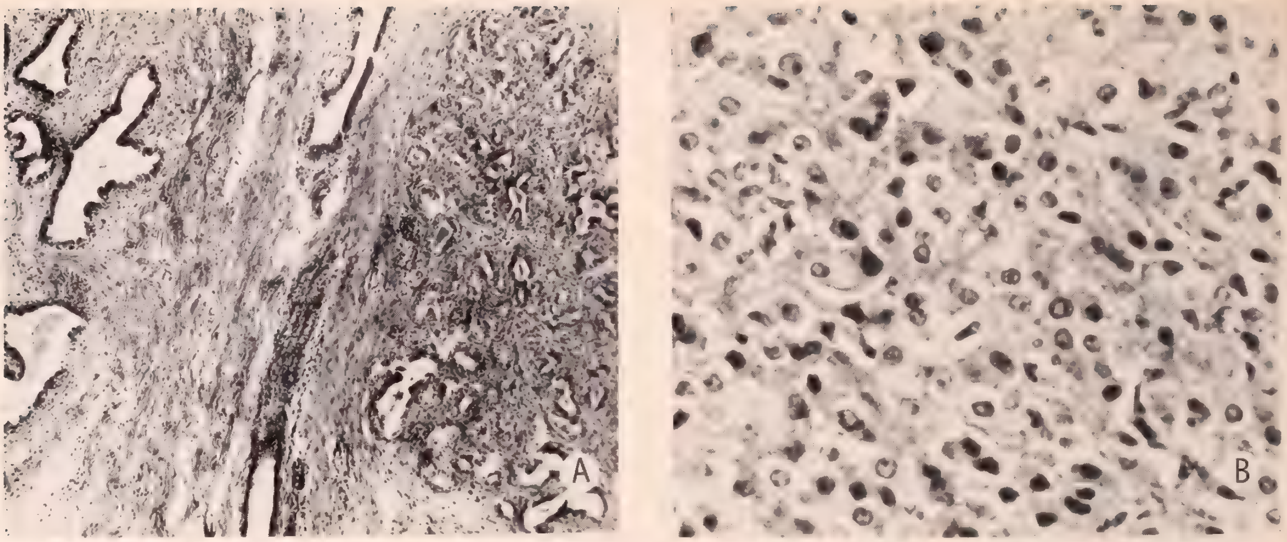

FIGURE 2. Case 1. (A) Typical area of gynecomastia with increased numbers of acini on right and luminal dilatation on left (hematoxylin and eosin stain). (B) Representative section of interstitial cell tumor showing sheet-like arrangement of vacuolated cells with nuclear hyperchromasia (hematoxylin and eosin stain × 325).

Case 2. A thirty-seven-year-old white male was admitted to Memorial Hospital on October 9, 1950, three months after first noting a painless right scrotal mass and two years following the onset of painful left unilateral gynecomastia which eventually subsided to persist as a moderate residual tenderness in the left breast. He also noted a distinct left areolar prominence associated with alcohol intake. Several "female hormone" tablets taken following the onset of gynecomastia had produced no obvious change. There was no history of weight loss, loss of libido, maldescent, trauma, varicocele, hydrocele, or previous scrotal or inguinal surgery. The patient recalled that the right testis had "always been somewhat larger than the left." Physical examination revealed a marked left gynecomastia and a 2 cm. in diameter area of diffuse thickening in the upper pole of the right testis separate from the epididymis. A diagnosis of choriocarcinoma was entertained and, following normal findings on an x-ray film of the chest, blood count, and urinalysis, a right inguinal orchiectomy was performed. Urinary steroid assays were not carried out. A homogeneous pearly-white tumor was noted to replace the normal testicular tissue on cut section, and microscopic examination revealed a typical Leydig cell tumor.

During the subsequent year the patient noted a marked increase in libido, although no change in the gynecomastia ensued. During the first ten postoperative years until he was lost to follow-up, the patient remained free of further related disease, although a peptic ulcer and recurrent rectal polyps developed during that period.

Case 3. A forty-eight-year-old white male, father of two, underwent a right scrotal orchiectomy in another hospital on September 14, 1962, eighteen months after first noting a right testicular mass. The related antecedent history was otherwise normal apart from the history of a hydrocele which was associated with the testicular lesion. The patient was referred to Memorial Hospital where the submitted histologic slides were interpreted as "malignant tumor . . . probably teratoma." Physical examination was unremarkable save for the fresh scrotal incision. Routine preoperative evaluation findings, including roentgenogram of the chest and intravenous pyelogram, were normal. The result of urine assay for chorionic gonadotropin was negative. Urine was positive for pituitary gonadotropin at 13 but negative at 52 mouse units per twenty-four hours. On October 12, 1962, an extended ipsilateral retroperitoneal lymph-node dissection was carried out. The lymph nodes were normal on pathologic examination. The postoperative course was uneventful.

The original tissue blocks were requested from the referring hospital because of the technically poor slides, and a review of further sections led to the diagnosis of Leydig cell tumor.

Case 4. A child was five and one-half months old when his pediatrician noted an enlarged liver on routine physical examination. He was premature (born at thirty-six weeks' gestation) but had had a normal development. Physical examination revealed no abnormality apart from hepatomegaly. No virilization was noted. Subsequent investigations included a percutaneous liver biopsy which demonstrated a hepatoma. The diagnosis was confirmed at open biopsy, and extensive right hepatic lobe tumor with portal vein involvement was observed. Radiation therapy was started giving 2,850 r over a twenty-five-day interval. In spite of an apparently favorable initial response his condition quickly deteriorated, and the child died.

Postmorten examination revealed foci of residual hepatoma in the liver amid marked focal postirradiation scarring and fibrosis, bilateral radiation nephritis, chronic passive pulmonary congestion, and an incidental interstitial cell tumor of the testis.

Case 5. The patient was fifty-nine-years old when referred to Memorial Hospital because of the demonstration of a coin lesion in his right lung on routine roentgenography of the chest, seven months following an episode of pneumonia of the right lung. Physical examination revealed mild emphysema and a liver palpable 3 cm. below the right costal margin. There was no gynecomastia, and the scrotal contents were normal. Following appropriate investigations an exploratory thoracotomy was performed. Biopsy showed carcinoma, and a right radical pneumonectomy was carried out. The pathologic specimen was diagnosed as epidermoid carcinoma, grade III, arising in the secondary bronchi of the upper lobe. Following a prolonged convalescence due to respiratory insufficiency, the patient was discharged only to be readmitted two weeks later with nausea, vomiting, and a productive cough. He expired suddenly following a brief downhill course in the hospital. Postmortem examination revealed intrapulmonary metastases from the bronchogenic carcinoma. A further incidental finding was that of a yellow well-circumscribed 4-mm. nodule in the left testis. Microscopic examination of this lesion demonstrated an interstitial cell tumor. Other findings included an acute rheumatic pancarditis and a cavernous angioma of the left island of Reil, penetrating into the left frontal lobe.

Pathology

The histogenesis of these neoplasms is unclear. However, they appear to originate from the definitive Leydig cells or from the fibroblastic cells of the gonadal stroma. They are the homologues of the virilizing ovarian neoplasms arising from the hilar cells or the interstitial cells of the ovaries. Grossly, the lesions are solitary and well circumscribed presenting a cut surface of yellow-brown color, owing to their high intracellular lipid content. Microscopically, they are characterized by markedly eosinophilic cells with indistinct outlines. Reinke crystalloids are inconstantly featured. Multinucleated giant cells are occasionally present. The mitotic figures are conspicuous but do not indicate malignant traits, since even frank metastatic deposits display a deceptively benign histologic appearance.

Comment

Gynecomastia has been noted in 10 to 15 per cent of patients having interstitial cell tumors, and the same incidence appears in the malignant variants and in the pediatric cases (Table I).[1–5]

TABLE I. Gynecomastia in patients with intersititial cell tumors

Author	Incidence Gynecomastia (Per Cent)	Series Selected
Dixon and Moore[1]	10	All cases
Melicow *et al.*[3]	15	All cases
Collins and Pugh[2]	6 of 14 (43)	All cases
Silverberg *et al.*[4]	2 of 11 (18)	Malignant cases
Johnstone[5]	5 of 39 (13)	ICT in children

TABLE II. Gynecomastia in patients with tumor of testis

Author	Incidence Gynecomastia (Per Cent)	Series Selected
Gilbert[6]	135 of 7,000 (2)	All testis tumors
As per Table I	10 (43)	ICT
Collins and Pugh[2]	4	Germinal testis tumors

Collins and Pugh[2] reported 6 of 14 cases with gynecomastia in their series.

Germinal testicular neoplasms make up 96.5 per cent of all testis tumors (Dixon and Moore),[1] and only 4 per cent of the cases are characterized by associated gynecomastia (Collins and Pugh)[2] (Table II).[6]

An important feature suggestive of the underlying diagnosis in tumor of the testis is the duration of gynecomastia. In the majority of instances the brief course of a germinal tumor of the testis is associated with a short history of gynecomastia, whereas with ICT the history may be long-standing, as demonstrated by 2 of our cases, namely, six years and two years.

The precise endocrine mechanism responsible for gynecomastia is uncertain and probably varied.[5] Quantitative determinations of 17-ketosteroids have been inconsistent, causing Rezek and Hardin[7] to conclude that they were of little clinical use for diagnosis, prognosis, or treatment of Leydig cell tumors. Silverberg *et al.*[4] found the most common pattern of endocrinologic abnormality in patients with interstitial cell tumors to be an elevation in estrogen and 17-ketosteroid titers coupled with decreased gonadotrophin excretion.

An interstitial cell tumor occurred in a corrected cryptorchid testis in our Case 1. Bader and Proctor[8] reported a case in which interstitial cell tumor was present in a bilaterally cryptorchid forty-year-old Bantu male. Blundon, Russi, and Bunts[9] stated that almost one third of cases with interstitial cell tumor occurred in association with atrophic testes, cryptorchidism, or decreased spermatogenesis. According to Bliviass,[10] and Collins and Pugh,[2] however, "there is no evidence from the literature that the cryptorchid is in any way prone to develop an interstitial cell tumor." This apparent contradiction may center around the difficulty in differentiating "hyperplasia" from "neoplasia." A further area of uncertainty is the role of the former as a precursor of the latter. It is clear that hyperplasia of Leydig cells may occur following primary or secondary failure of the seminiferous epithelium.

It is also known from animal experiments that induced interstitial cell hyperplasia may be associated with tumor formation.[2] In estrogen-treated mice Bliviass[10] raised the incidence of interstitial cell tumor from 32 per cent to the range of 72 to 82 per cent by rendering mice cryptorchid prior to estrogen administration.

The degree to which cryptorchidism was a predisposing factor in our case is unclear since the contralateral testis was scrotal in position, normal to palpation, and presumably functional since he had two children. (The late age at orchidopexy and the histologic presentation militate against the tumorous right testis as the source of these two pregnancies.)

Cases 4 and 5 are unusual in that although both tumors were histologically distinct they were clinically occult and were found only at autopsy. The possibility of an endocrine factor as the basis for these small tumors cannot be ruled out. Occult interstitial cell tumors have not been reported with any frequency. Nelson[11] studied 721 testes from 470 autopsies and found giant interstitial cells with 4 to 30 nuclei in 85 instances but found no occult tumors.

Summary

Five cases of interstitial cell tumor are presented, and significant related features including cryptorchism, gynecomastia, and an occult presentation are briefly discussed.

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BACKGROUND OF CLINICAL CARDIAC ELECTROSTIMULATION

V. Direct electrostimulation of heart without thoracotomy

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There are chiefly two approaches for direct cardiac excitation without thoracotomy, the percutaneous, whereby a needle or wire is passed across the chest wall into the substance of the heart, and the endovascular, in which a flexible conductive electrode is threaded through a vein or artery and made to lie against the endocardium of one of the chambers.

The placement of needles into the heart of animals to determine cardiac irritability is a very ancient experiment in physiology. However, one of the first scientists to perform it across an intact thorax was Leonardo da Vinci.[1,2] He thrust long needles through the chest of a hog to count cardiac pulsations. The same maneuver was done by Felice Fontana and other physiologists.[3]

In a clinical context, acupuncture, including that of the heart, has been practiced in Asia since the most remote times. Occidental medicine became acquainted with it in 1683, when Ten Rhyne[4] wrote a pamphlet on the subject in which he advocated its use for arthralgia. It received scant attention until 1821, when Churchill's[5] treatise on it appeared. The turning point was Sarlandière's[6] tract, after which both acupuncture and moxa established a firm foothold, especially in eastern Europe. Employed principally to relieve joint and muscle pain, acupuncture has also been hailed for the treatment of a wide variety of visceral ailments, among them cholera (Fig. 1).

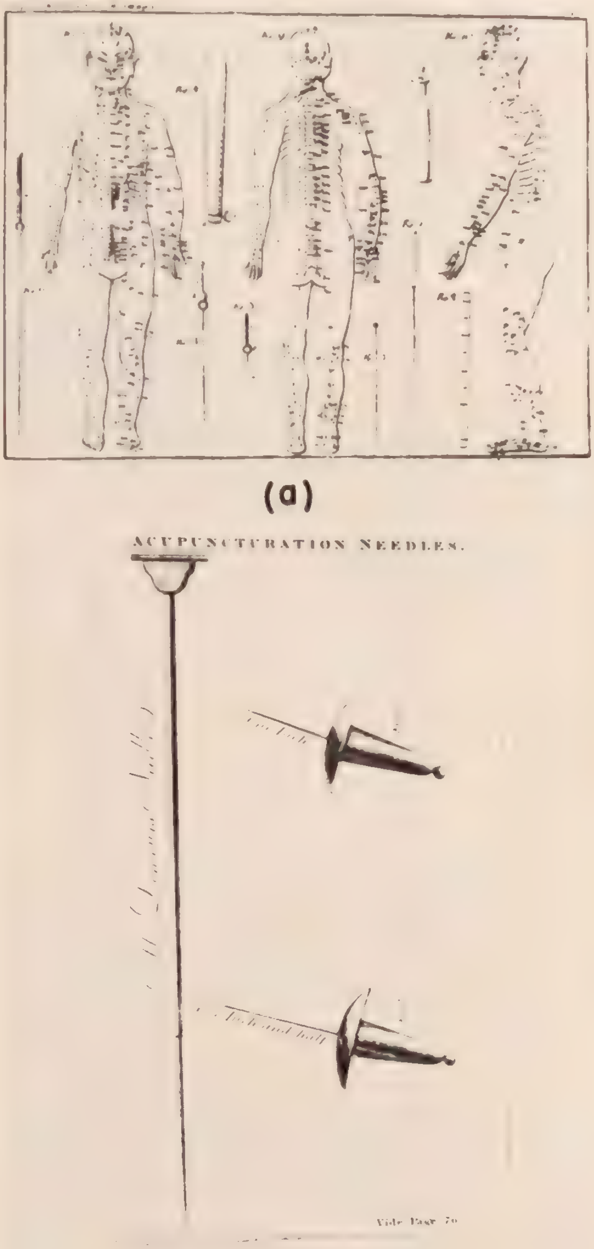
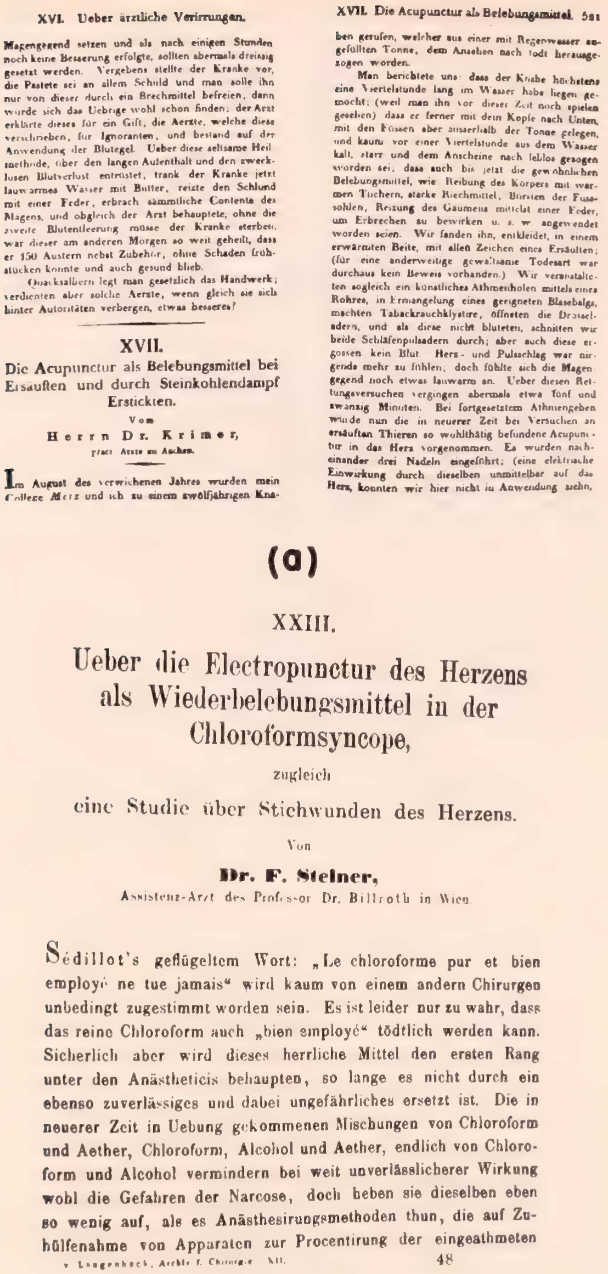


FIGURE 1. (a) Acupuncture. (b) Needles pictured here were used occasionally to treat chest pain. Soon, same needles were modified and adapted for electropuncturation.

Sarlandière[6] and others[7] stuck needles into the chest, as in treating anginal pain, but it is clear that the pleural and pericardial cavities were never entered. Various investigators deduced from ex-



XVI. Ueber ärztliche Verirrungen.

Magengegend setzen und als nach einigen Stunden noch keine Besserung erfolgte, sollten abermals dreissig gesetzt werden. Vergebens stellte der Kranke vor, die Pastete sei an allem Schuld und man solle ihn nur von dieser durch ein Brechmittel befreien, dann würde sich das Uebrige wohl schon finden; der Arzt erklärte dieses für ein Gift, die Aerzte, welche diese verschrieben, für Ignoranten, und bestand auf der Anwendung der Blutegel. Ueber diese seltsame Heilmethode, über den langen Aufenthalt und den zwecklosen Blutverlust entrüstet, trank der Kranke jetzt lauwarmes Wasser mit Butter, reizte den Schlund mit einer Feder, erbrach sämmtliche Contenta des Magens, und obgleich der Arzt behauptete, ohne die zweite Blutentleerung müsse der Kranke sterben, war dieser am anderen Morgen so weit geheilt, dass er 150 Austern nebst Zubehör, ohne Schaden frühstücken konnte und auch gesund blieb.

Quacksalbern legt man gesetzlich das Handwerk; verdienten aber solche Aerzte, wenn gleich sie sich hinter Autoritäten verbergen, etwas besseres?

XVII.

Die Acupunctur als Belebungsmittel bei Ersäuften und durch Steinkohlendampf Erstickten.

Vom

Herrn Dr. Krimer,

pract. Arzte zu Aachen.

Im August des verwichenen Jahres wurden mein College Metz und ich zu einem zwölfjährigen Knaben gerufen, welcher aus einer mit Regenwasser angefüllten Tonne, dem Ansehen nach todt herausgezogen worden.

XVII. Die Acupunctur als Belebungsmittel. 581

Man berichtete uns: dass der Knabe höchstens eine Viertelstunde lang im Wasser habe liegen gemocht; (weil man ihn vor dieser Zeit noch spielen gesehen) dass er ferner mit dem Kopfe nach Unten, mit den Füssen aber ausserhalb der Tonne gelegen, und kaum vor einer Viertelstunde aus dem Wasser kalt, starr und dem Anscheine nach leblos gezogen worden sei; dass auch bis jetzt die gewöhnlichen Belebungsmittel, wie: Reibung des Körpers mit warmen Tüchern, starke Riechmittel, Bürsten der Fusssohlen, Reizung des Gaumens mittelst einer Feder, um Erbrechen zu bewirken u. s. w. angewendet worden seien. Wir fanden ihn, entkleidet, in einem erwärmten Bette, mit allen Zeichen eines Ersäuften; (für eine anderweitige gewaltsame Todesart war durchaus kein Beweis vorhanden.) Wir veranstalteten sogleich ein künstliches Athmenholen mittels eines Rohres, in Ermangelung eines geeigneten Blasebalgs, machten Tabackrauchklystire, öffneten die Drosseladern, und als diese nicht bluteten, schnitten wir beide Schläfenpulsadern durch; aber auch diese ergossen kein Blut. Herz- und Pulsschlag war nirgends mehr zu fühlen; doch fühlte sich die Magengegend noch etwas lauwarm an. Ueber diesen Rettungsversuchen vergingen abermals etwa fünf und zwanzig Minuten. Bei fortgesetztem Athmengeben wurde nun die in neuerer Zeit bei Versuchen an ersäuften Thieren so wohlthätig befundene Acupunctur in das Herz vorgenommen. Es wurden nacheinander drei Nadeln eingeführt; (eine elektrische Einwirkung durch dieselben unmittelbar auf das Herz, konnten wir hier nicht in Anwendung setzen,

XXIII.

Ueber die Electropunctur des Herzens als Wiederbelebungsmittel in der Chloroformsyncope,

zugleich

eine Studie über Stichwunden des Herzens.

Von

Dr. F. Steiner,

Assistenz-Arzt des Professor Dr. Billroth in Wien.

Sédillot's geflügeltem Wort: „Le chloroforme pur et bien employé ne tue jamais“ wird kaum von einem andern Chirurgen unbedingt zugestimmt worden sein. Es ist leider nur zu wahr, dass das reine Chloroform auch „bien employé“ tödtlich werden kann. Sicherlich aber wird dieses herrliche Mittel den ersten Rang unter den Anästheticis behaupten, so lange es nicht durch ein ebenso zuverlässiges und dabei ungefährliches ersetzt ist. Die in neuerer Zeit in Uebung gekommenen Mischungen von Chloroform und Aether, Chloroform, Alcohol und Aether, endlich von Chloroform und Alcohol vermindern bei weit unverlässlicherer Wirkung wohl die Gefahren der Narcose, doch heben sie dieselben eben so wenig auf, als es Anästhesirungsmethoden thun, die auf Zuhülfenahme von Apparaten zur Procentirung der eingeathmeten

v. Langenbeck, Archiv f. Chirurgie XII. 48

FIGURE 2. Resuscitation by cardiac electropuncture. (a) Krimer's two attempts in 1828 failed. (b) Steiner did exhaustive experimental study in 1871 on clinical feasibility of cardiac electropuncture and gave concise instructions on optimal way to approach this structure by paying heed to anatomic landmarks.

periments on dogs that acupuncture of the heart and lungs, when done adroitly and with proper heed to anatomic landmarks, did not hurt these organs.[8] From a detailed analysis of the world medical literature on injuries of the heart and great vessels due to pins or needles, totaling 160 cases, I have found only a solitary instance of death consequent to cardiac acupuncture.[9,10] That case was reported in 1965.

Cardiac electropuncture in nineteenth century

To my knowledge, electrical stimulation of the human heart through a needle—cardiac electropuncture—was first attempted in 1828 by Krimer (Fig. 2).[11,12] His failures with 2 patients were obviously due to the method being applied tardily, well after cardiac standstill had become irretrievable.

Nothing more was written about electropuncture for cardiac resuscitation until thirty-five years later, when Althaus[13] demonstrated its feasibility before the Royal Medical and Chirurgical Society of London. Why he chose to include the prepuce in the circuitry was not explained:

> A large dog was made to inhale the mixture (alcohol 1 part, chloroform 2 parts, ether 3 parts) by means of a towel. He became insensible at 2 min. 15 sec. The heart stopped at 10 min. 55 sec. Galvanism (faradism) was applied, the one pole to the needle in the heart, the other to the mucous membrane of the prepuce, the current being slight in force and interrupted. At 11 min. voluntary efforts at respiration commenced. These movements of respiration continued regularly till 11 min. 50 sec., when they ceased. During this period no galvanism was applied. The needle did not indicate any movement of the heart. Galvanism was then again employed, and at 13 min. 50 sec. the animal again commenced to breathe, and some movement of the heart was observed. At 15 min. 30 sec. the respiration was regular, the heart beating 140 per minute. The galvanism was gradually discontinued. At 18 min. the animal was breathing regularly. At 20 min. the cornea became sensible, and the animal recovered. . . .
>
> Chloroform, of the strength 8 per cent, was given, by means of Mr. Clover's bag, to a rather small terrier dog. He became insensible at 1 min. 30 sec. At 3 min. 50 sec. the heart's action (indicated by the needle) had become irregular and intermitting. At 4 min. 40 sec. respiration ceased. At 5 min. 40 sec. galvanism was applied—the one pole being connected with the needle in the heart, the other with the prepuce. At this time the needle indicated regular, but feeble, pulsations. At 8 min. there was a slight effort at respiration, a pulse was felt in the femoral artery, and the heart evidently acted more strongly. The galvanism, however, was continued till 10 min., when the respiration was regular, but feeble, and the heart's action was strong. The animal recovered. In this case there was some little doubt whether effective galvanism was applied quite as soon as noted, as the apparatus had got out of order at the time.

In 1871 Steiner[14] wrote a lengthy account of research made in connection with accidents from anesthesia. He differentiated between asphyxia, in which respiratory assistance was to be exerted primarily, and cardiac syncope, in which salvage was attainable chiefly by overcoming myocardial depression. He reviewed clinical reports of heart wounds to determine which part of the organ would tolerate external injury best, and decided

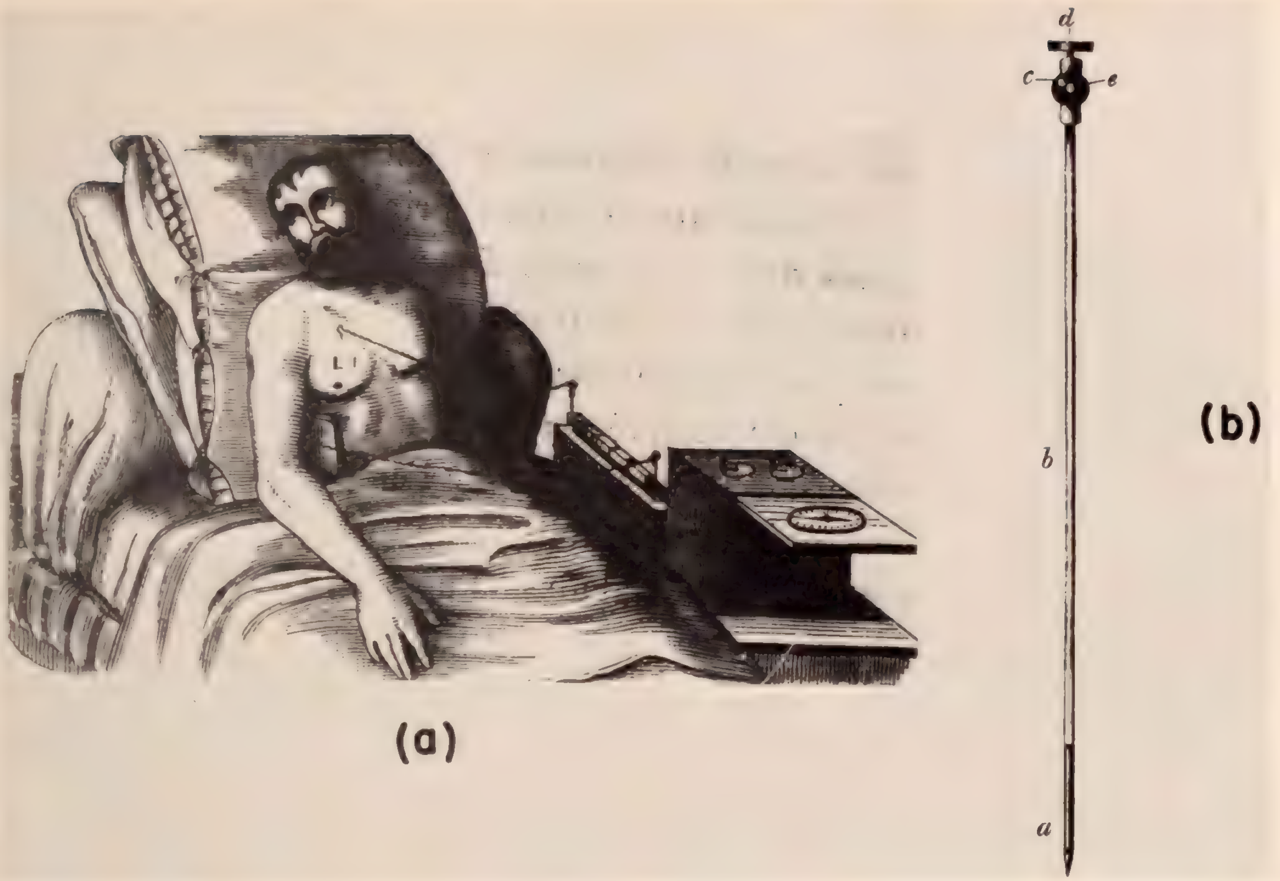


FIGURE 3. (a) Palliation of thoracic aortic aneurysms by electropuncture in midnineteenth century. (b) Needle used for that purpose, modifications of which were made in few instances in which electrocardioresuscitation was attempted.

that the apex of the left ventricle was safest. Steiner then sedulously conducted 55 experiments with cardiac electropuncture on "3 horses, 1 donkey, 10 dogs, 14 cats, and 6 rabbits." He showed that a faradic current applied within fifteen minutes of ventricular standstill could restore contractions in most instances.

The directions given for correct percutaneous insertion of the needle were very explicit. The positive pole of the generator was to be connected to it, and the negative pole to a moistened sponge conductor pressed against the epigastrium or the left lower region of the chest wall.

Only a single clinical case was mentioned briefly in attestation of the value of the method:

> An illustration of these investigations is furnished by a case of chloroformization which occurred during the year 1870 in Professor Billroth's clinic. A young woman in whom chloroform narcosis was attempted promptly developed progressive syncope. All resuscitative measures were unsuccessful, including galvanism directed to the heart. Finally a feeble current through an inserted needle proved effective. The excitability of the heart was soon reestablished. The skeletal muscles also contracted after nearly 3/4 hour of electrical stimulation.

Steiner's excellent article gathered dust for awhile. The qualms which physicians may have had about goading the heart with an electrified needle were not expressed openly in print. That omission is perplexing when one considers that in that same epoch thoracic aortic aneurysms were palliated by electropuncture, with apparently few misgivings and by using needles and electric appurtenances closely resembling those suggested for cardiac stimulation (Fig. 3).[15]

Just how often the procedure of cardiac electropuncture was actually tried in clinical practice is a mystery. But on December 13, 1873, an editorial in the *British Medical Journal* obliquely endorsed it, and even parroted some of Steiner's instructions regarding technic without, surprisingly, citing his name or paper. The reader's attention is directed in particular to the sentence relevant to periodic interruption of the current, since an approach resembling that one came into being sixty years later.

> In Asphyxia and Syncope from poisoning by chloroform, charcoal fumes, opium, from drowning, etc., faradisation of the phrenic nerves is a ready and excellent measure. Farado-puncture of the heart may be used when the just-named proceeding does not

> answer. In puncturing the heart, we must take care to hit the apex of the organ, which bears injuries very well; and this may be accomplished by introducing a needle into the middle of the fifth left intercostal space, about one and a half inches from the left edge of the sternum. By acting in this way, the left pleura, the coronary arteries, and the internal mammary are avoided. The puncture should be made perpendicularly, and should be one and a half inches deep; in fat persons rather deeper than that. All unnecessary manipulations of the needle, more especially on taking hold of it when the heart's action recommences, should be carefully avoided. This needle is connected with the positive pole of the faradic apparatus, and a moistened sponge-conductor connected with the negative pole is placed over the pit of the stomach, or over the left seventh intercostal space. The current should be weak, and only act for a second at a time, then be interrupted and used again in a similar manner. Faradisation of the phrenic nerves is performed at the neck, where those nerves are accessible to the electrodes on the anterior surfaces of the scalenus anticus muscles. Moistened sponge-conductors are forcibly pressed for a second or two to the points named, when an artificial respiration is produced; the thorax is expanded, and the air rushes with force into the lungs. Expiration is then effected by pressing the abdominal parieties from below upwards. Faradism is then again applied to the phrenic nerves for a second or two, and again followed by mechanical expiration. It is also useful to faradise the motor nerves of those muscles which act in combination with the diaphragm, viz, the branches which proceed from the cervical plexus to the trapezius, levator scapulae, and serratus muscles.

There did exist, however, some contrariety of opinion about the safety of cardiac electropuncture. This probably arose because other investigators did not follow exactly the careful directives on how or where the needle was to be inserted into the myocardium, and also the manner in which the current was meant to be directed. For instance, on reading Vulpian's[16] disenchanted report on cardiac electropuncture, it is quite apparent that discrepant methodology was to blame for his dogs uniformly developing ventricular fibrillation. Anyway, the technic was relegated to oblivion before too long.

Endocardiac probing with catheter electrodes

The endovascular approach to cardiac electrostimulation is of more recent vintage. Chaveau,[17] who like Claude Bernard and Etiènne Marey did numerous cardiac catheterizations in animals, spent the major portion of his professional life in graphically documenting the kinetics of the heart. In 1899 he passed metal cylinders through the jugular or carotid vessels into the cavities of the heart for the purpose of recording the play of the valves. One series of experiments has especial bearing on our topic.

In several horses, Chauveau insinuated a slender hollow stem through the carotid artery into the outflow tract of the left ventricle. The catheter contained a delicate spring which closed an electric circuit when compressed by the aortic valves during diastole. This current actuated a small electromagnetic signal, an extra or self-induction current from the coils of this traveled through the blood in the ventricle, when the aortic valves opened and allowed the contact to be broken. This occurred at each pulsation of the heart. The currents used were so weak that they were barely sensed when the tip of the tongue was applied to the point where the contact was made and broken, and yet they were of sufficient intensity to cause great acceleration of the heart, with ensuing death of the animal. The fatal effect on the heart was prevented in further experiments by establishing a short circuit for the extra current at each make and break. Regrettably, Chauveau did not envision the potential clinical utility of his technic or apparatus.

Another ingenious cannulation method for direct stimulation of the heart without resort to thoracotomy was described in 1905 by Floresco.[18,19] He passed a vaselinized glass sound through the external jugular vein into the right ventricle. The tube was also equipped with a small side arm corresponding to the level of the atrium. Floresco insinuated copper or platinum wires, insulated from one another, through the tube and excited the endocardium by means of induction currents. Successful resumption of the heart beat in dogs poisoned with ether or asphyxiated was verified by kymographic tracings. The principal drawback which Floresco encountered was the accretion of blood clots on the bare tips of the wires. He never used this previsionary technic of endocavitary stimulation clinically (Fig. 4).

Aiming to unravel the genesis of dysrhythmias, Marmorstein[20] chose to compare the sensitivity of various parts of the heart. He strove for accurate topographic localization with currents that would correspond to individual excitation thresholds but not so strong as to stimulate the entire cardiac mass unselectively. The catheters which he used resembled Floresco's, except that the electrode tips were enclosed. Presumably this sufficed to offset clotting during the duration of the experiments since Marmorstein did not employ anticoagulants. Endocameral stimulation was accomplished by traversing the right external jugular vein or left common carotid artery. Induction shocks were delivered during early diastole.

Marmorstein found that the sensitivity of the endocardium to electrical stimuli was superior to that of the myocardium; that excitation of the ventricular septum on either side caused the heart to slow, and in the region of the tricuspid valve resulted in atrioventricular dissociation; and that stimulation at the level of the junction of the su-

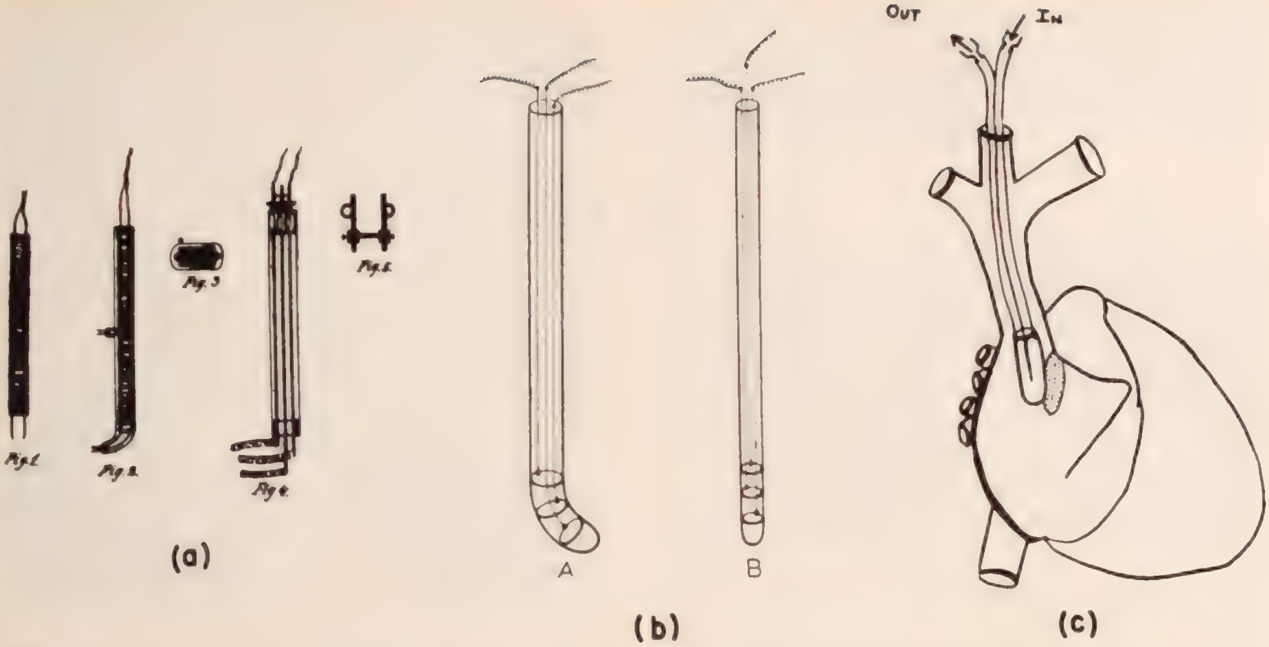


FIGURE 4. Endocameral stimulation of heart. (a) Glass cylinders used by Floresco to stimulate either right atrium or ventricle. (b) Enclosed glass sounds devised by Marmorstein for selective electrostimulation of sundry regions of endocardium. (c) "Intracardiac thermode" which Hellerstein and Liebow used in 1949 to stimulate sinoatrial node. They did not convey electric currents through this tube.[25]

perior vena cava with the right auricle made the heart beat swifter.

That the rate or cadence of the heart could be altered by manipulation of its different parts was well known long before the specific conduction pathways were localized microscopically. After the different stations of the conduction system were mapped, regional excitation of the cardiac architecture supplanted excitation of the entire heart as a research model. The investigations of Marmorstein, just mentioned, are exemplary. As would be expected, the identification of the sinoatrial node as the sovereign natural pacesetter made of this structure the key agency to be controlled or made subservient for installing an external source of energy to preside over the heart beat (Fig. 5).

Hyman artificial cardiac pacemaker

At the turn of the present century, several physiologists showed that thermal influences on the sinoatrial node provoked changes in rhythmicity of either excised or exposed in situ hearts.[21–24] However, it was not until 1949 that Hellerstein and Liebow[25,26] devised a reliable intracardiac "thermode." This was a double lumen catheter that was threaded intravenously until it lay adjacent to the sinoatrial node, and in which water of different temperatures was circulated. Warm perfusion accelerated the heart, whereas the opposite occurred with cold perfusion. The authors ended their report with the tantalizing but nebulous suggestion that "the intracardiac thermode used in the intact animal or man may prove valuable experimentally and therapeutically."

Of more pertinence, since it was done unequivocally with therapeutic intent, was research initiated some fifty years ago by Hyman[27–30] (Fig. 6). He contrived and used clinically an apparatus which he named "the artificial pacemaker." An actively practicing cardiologist still, Hyman[31] recounts the background of his investigations:

> The inspiration which led to the research and development of the artificial pacemaker and resuscitation of the stopped heart stemmed from my early association with Dr. Walter B. Cannon, Professor of Physiology at the Harvard Medical School, who in November 1911 opened for me a new door to scientific exploration. While I was a Freshman at Harvard College that year, Dr. Cannon became my faculty adviser, and he took me in hand when I made my first visit to the medical school and to his laboratories. On that occasion I saw the pioneer experimental work then being carried out on the isolated turtle heart. I saw the complicated apparatus employed to register the various activities of the cardiac mechanisms, and I became deeply impressed with the physiologic processes involved in the simple beating of the animal heart.
>
> I recall that in one experiment the turtle heart preparation had failed to work, and that considerable discussion—much of it above my understanding—was taking place among the research personnel. The heart had stopped beating for no apparent reason, and all attempts to restore its activity had been unsuccessful. In the accepted language of the laborato-

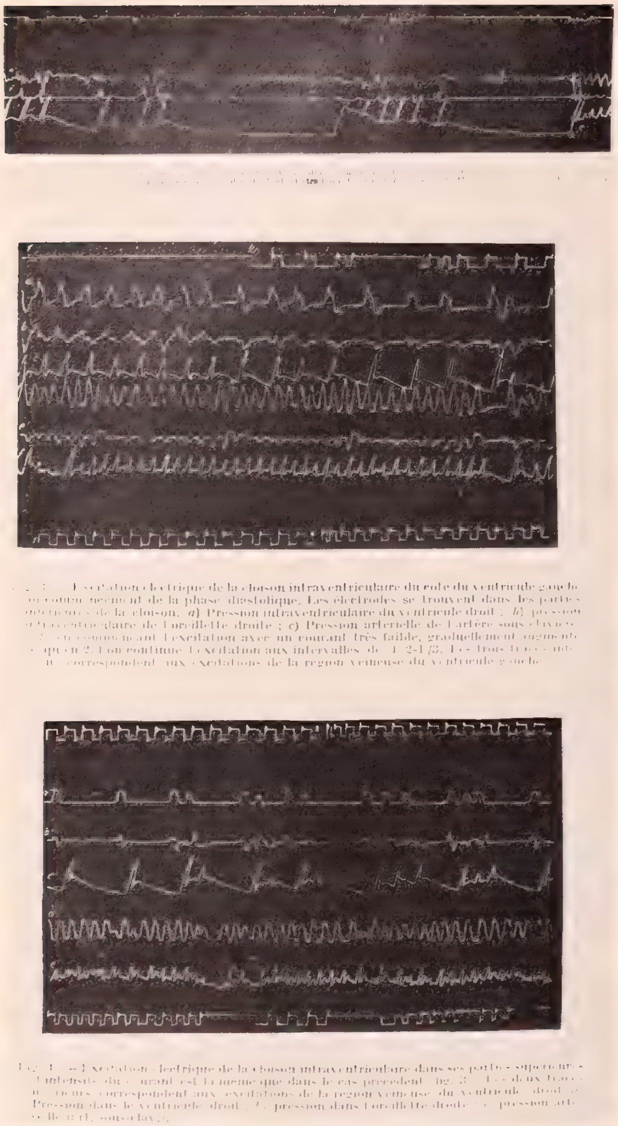


FIGURE 5. Tracings obtained by Marmorstein from excitation of endocardium at different levels with his rigid electrode probes.

To
Dr. David Schechter
with sincere regards
Albert S Hyman

FIGURE 6. Albert Hyman who devised machine for controlled repetitive electrostimulation which he named "artificial pacemaker." It was used in dozens of cases of cardiac standstill, including complete heart block.

ry, someone said, "A stopped heart is a dead heart!" As we turned to leave the room, I timidly asked Dr. Cannon, "That heart looked exactly like all the other hearts which were working. What happened, and why can it not be started again?" Dr. Cannon looked at me with a wistful smile, just one of the many components of an unusually expressive face which was beloved by all of his students and associates. "Young man", he said, "that is indeed a very important question. All that I can say at this moment is that I am glad that you asked it; and if the seeds of inquiry have been properly implanted by this incident, perhaps some day you may be able to produce the answers."

The seeds had, indeed, been thoroughly implanted, and throughout my academic days at Harvard College I had continued to think about the problem. At every conceivable opportunity I would visit the Physiology Laboratories at the medical school; and, in retrospect, I must have become a familiar figure, tolerated, perhaps, because of my continued bombardment of unanswerable questions concerning the mechanism of the heart beat.

During my student days at Harvard Medical School from 1914 to 1918 I had a greater opportunity to explore the unknown background of the cardiac mechanism. In this I was given the full support of Dr. Cannon, who made every possible avenue of approach to the problems involved available to me. During the summer of 1915, for example, he set up a special laboratory for certain experiments on the mammalian heart.

. . . It was my belief at the time (1918) that the chief cause of sudden death in persons who had a more or less normal cardiovascular system was due to some change in the functional capacity of the sinus node. . . .

It had long been known that in certain instances of sudden death, for example, on the operating room table, active massage of the heart or injections of cardio-stimulating drugs like adrenalin might restore automatic activity of the heart. This latter procedure I had performed on experimental animals many times, but the first opportunity to employ this method in a patient occurred within the first week of surgical internship at Boston City Hospital—on February 26, 1918. A 44 year old man was brought into the Emergency Room with a compound fracture of the right femur. He was in considerable shock. There was a feeble and rapid pulse of 124 on admission; but suddenly, while I was examining him, his heart stopped beating. Adrenalin was injected into the cardiac area, and artificial respiration was started. After an interval of about 90 seconds, the heart began to beat again, and a radial pulse could be counted. About four minutes later, a gross irregularity developed, followed by complete asystole. A second and a third injection of adrenalin produced no further response. At post-mortem examination it was found that the site of the injections was in the apical area of the right ventricle; the heart was otherwise normal.

The details of this first case are taken from an old notebook which I kept during my surgical internship and my subsequent residency years, from February 1918 to December 1924, when I began postgraduate work in Europe. During those six years of active hospital duty I collected 81 instances of intracardial injection for reactivation of the asystolic heart. In most of these adrenalin was used; but ether, alcohol, strophanthin, potassium chloride, magnesium sulfate, and a number of other substances were employed. Of the entire group, only 13 had been successful. . . .

On my return from Europe in 1926, and with the establishment of the Witkin Foundation, I was given the opportunity of continuing the investigation of cardiac resuscitation, and the next four years permitted the gradual development of a new theory concerning reactivation of cardiac asystole by intracardial injection methods. . . .

The thought occurred to me, about 1928, that three basic problems were involved in all intracardial injection procedures: (1) the precise point of the injected material, which point could be, (a) intrapericardial, (b) intramyocardial, and, (c) into the chambers of the heart; (2) the exact site of the injected material, (a) into the ventricles, (b) into the atria, or, (c) into the junctional area; and finally, and possibly the most important, (3) the reaction of the heart muscle to the needle thrust or puncture. It became necessary to return to the physiology laboratory to obtain answers to these problems.

It was soon found (1929) that the most important factor in all of the intracardial injection procedures was the actual puncture of the heart wall. As a result of the puncture wound an action current of injury, a familiar physiologic reaction phenomenon in injured muscle preparation, was developed. This action current was in most instances of much greater difference of electric potential than the intrinsic sinus nodal pacemaker stimulus; and in accordance with the Mueller law, which states that at any given instant of time the myocardium will respond to the stimulus of greater magnitude when more than one stimulus is operative, it soon became apparent that the rhythm of the heart would be dominated by any ectopic focus yielding a greater difference of electric potential than the normal sinus nodal pacemaker.

This postulate was subsequently proved by electrocardiographic records made during the intracardial injection procedure for cardiac resuscitation. The first beats after the injection always produced an electrocardiographic pattern resembling ventricular ectopic beats. In successful cases these ectopic beats were sufficient to restore a sufficient volume output of the left ventricle to flood the coronary system, which in turn led to the restoration of normal sinus nodal activity. In the unsuccessful cases, the ectopic focus generated by the puncture wound continued to dominate cardiac activity, with the development of rhythms resembling paroxysmal ventricular tachycardia. Such abnormal rhythms were generally followed by ventricular fibrillation, which is a physiologic and functional equivalent of ventricular asystole since no blood leaves the heart. . . .

If, instead of waiting for an uncontrolled ectopic stimulus to be generated from the needle injury, an artificial electric stimulus, more or less identical with the normal sinus pacemaker stimulus, could be delivered to the atrial area near the sinus node, the normal cardiac cycle might be maintained long enough to supply the coronary artery system with sufficient blood to reactivate the sinus node. In other words, the artificial pacemaker would take over the functions of the normal sinus pacemaker until such time as the latter could assume its normal activity.

When I presented this new and highly speculative concept to my staff and invited physiologist colleagues at a meeting, held at the Witkin Foundation Cardiac Laboratory at Beth David Hospital on March 12, 1929, it was accepted with a number of reservations. There was no proof, it was said, that the asystolic heart would respond to such an artificial stimulus, even though the course of the electric current followed over the normal pathways of the heart. It was more likely that such a stimulus would only produce a series of atrial ectopic beats which would be blocked at the atrioventricular node due to the hypoxic factors developing secondary to cardiac standstill.

It required about a year of repeated laboratory experiments to demonstrate that the artificial pacemaker current under certain well defined conditions, later to be described, would pass over the normal pathways, and that a normal cardiac cycle could be maintained by such a stimulus when it was introduced into the sinus nodal area of the asystolic heart. . . .

Finally, on April 6, 1930, I received Grant No. 30-2 from the Witkin Foundation to explore the possibility of developing a practical machine to be used as an artificial pacemaker in experimental animals. Reduced to its simplest blueprint form, such an apparatus would include: (1) a small source of electric current, i.e., a common flashlight battery; (2) an interrupter mechanism; (3) a timing device; (4) a method of regulating the duration of the injected current; and, (5) a suitable insulated needle to carry the current only to the right atrial area of the heart. The instrument would, of course, be easily portable, and small enough to fit into a doctor's bag.

The next 10 months were devoted to the assembly of such an apparatus. . . .

By March 1, 1932 the artificial pacemaker had been used about 43 times, with a successful outcome in 14 cases (Figs. 7 to 9).

In one of his articles Hyman[27] reviewed the literature on resuscitation by intracardiac injection and thoracic concussion. Inexplicably, he excluded cardiac massage and other technics, such as rhythmic traction on the tongue. Nevertheless his earnest plea for intracardiac injection was a provocative rejoinder to detractors of the method. Just nine months before an editorial in the *Journal of the American Medical Association* had roundly condemned the latter, stating in part,

Intracardiac injection is not a justifiable measure

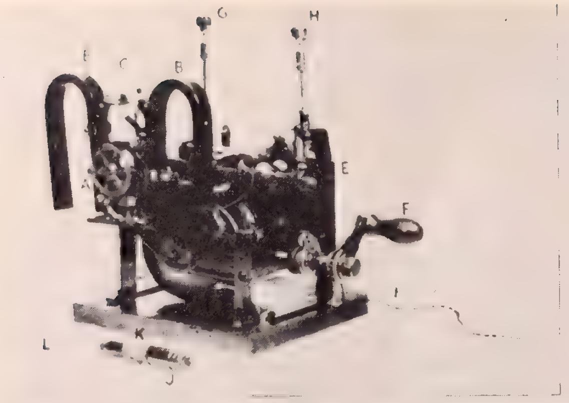


Fig. 1.—The artificial pacemaker seen from the front. In figures 1 to 4 the following important features are to be noted: *A*, magnetogenerator; *B'* and *B''*, suspension magnet pieces; *C*, neon lamps; *D*, spring motor; *E*, ballistic governor; *F*, handle; *G*, impulse control; *H*, speed control; *I*, flexible electric cord; *J*, insulated handle; *K*, handle switch, and *L*, electrode needle.

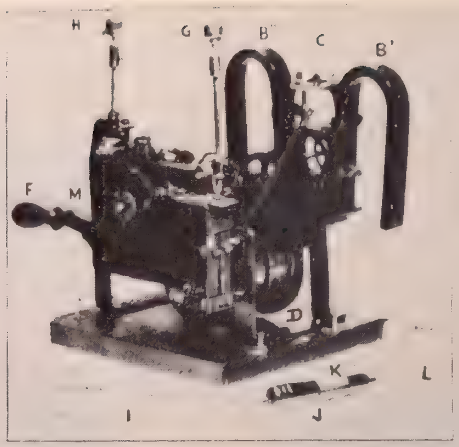


Fig. 2.—The artificial pacemaker seen from the back. The interrupter is shown at *M*.

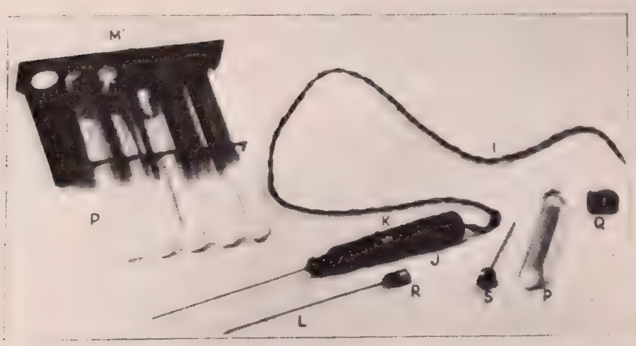


Fig. 3.—Photograph showing details of needle (*L*), its electric connections (*R*, *S*), handle (*J*) and switch (*K*). The special tube holder (*M'*) and tube (*P*) with stopper (*Q*) are also seen.

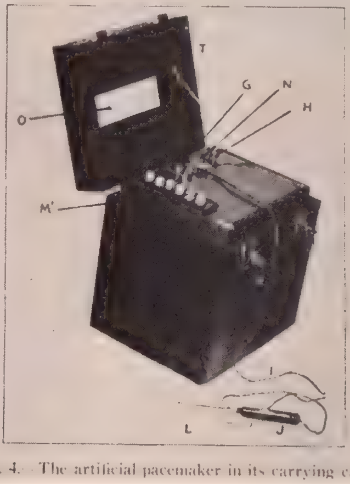


Fig. 4.—The artificial pacemaker in its carrying case.

FIGURE 7. Components of Hyman's artificial pacemaker. Regular-spaced, repeated stimuli were delivered through needle passed across intact chest wall into right atrium.[28]

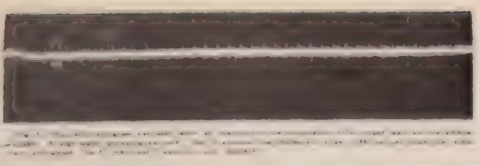
for resuscitation. As Henderson and Haggard have emphasized, the less the physician uses his apparatus for hypodermic injections on patients requiring resuscitation, the better. Reliance should be placed on the standard measures for resuscitation: artificial respiration by the prone pressure method, inhalation of oxygen and carbon dioxide, measures to keep the patient warm, continuance of the recumbent position, and absolute rest until resuscitation is complete. Reports of resuscitation by intracardiac injections belong with the miracles.[32]

Hyman's article describing the "artificial pacemaker" included data on animals but none about patients. Neither did subsequent ones. In 1933 a physician wrote to the *Journal of the American Medical Association* to inquire about the "heart tickler."[33] Period newspaper clippings in my possession attest to the customary alacrity with which the hounds of journalism pounce on any morsel of information that is lurid or out of the ordinary; of course, the pacemaker was accorded exaggerated praise for its capacity to route the Grim Reaper.

Hyman was beset with abusive correspondence, and even lawsuits, from irascible people who regarded his resuscitation endeavors as sacrilegious tampering with Divine Providence. To compound this trouble, he could not find any company willing to manufacture his apparatus. Eventually, a contract was signed with the Seimens & Halska firm of Berlin. World War II drew the curtain on that association; and the U.S. Navy Medical Department, to which Hyman had relinquished the patent rights, was preoccupied with other more pressing affairs in those days.

However, the artificial pacemaker continued to be used by a handful of physicians, principally in New York City. It even found its way to the treatment of Adams-Stokes disease, as I shall point out in a forthcoming article.

There is no denying that Hyman's apparatus was a very significant milestone in the evolution of cardiac electrostimulation technology. That it was not adopted sooner or more widely may have been caused by any number of reasons. The medical community was at fault in part; its over-



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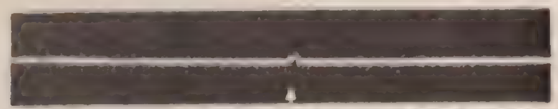

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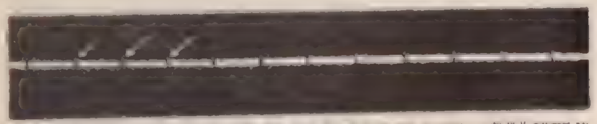

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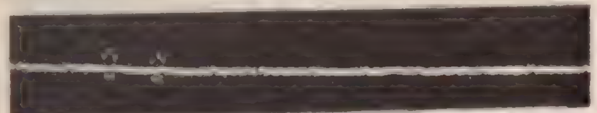

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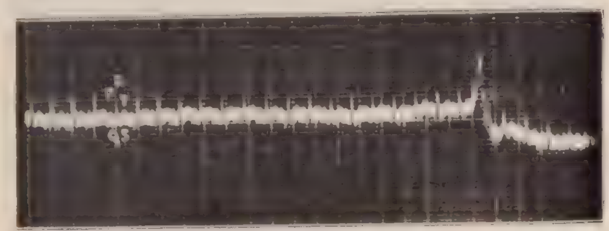

Fig. 9.—Return to normal sinus rhythm after forty seconds of restored cardiac activity; the rate is now slightly faster than that seen in figure 5 at the beginning of the experiment.

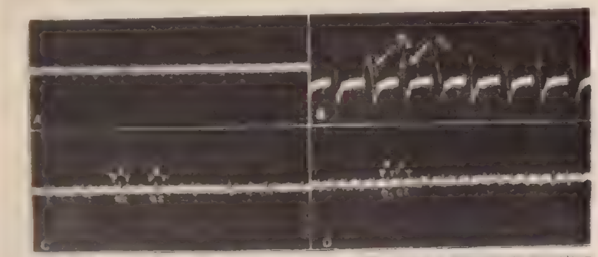

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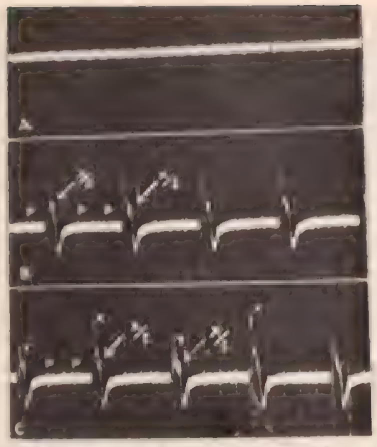
FIGURE 8. Restoration of sinus rhythm in asystolic guinea pig heart by atrial stimulation with Hyman's artificial pacemaker.[28]



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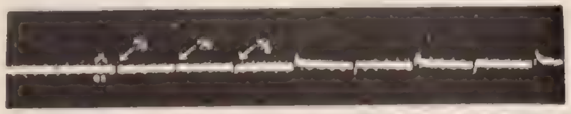

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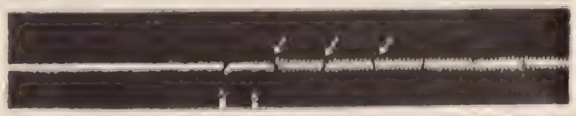

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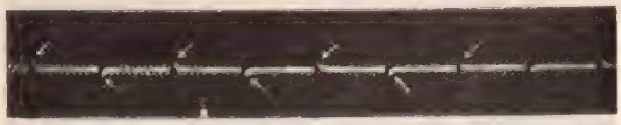


Fig. 14.—The same experiment four minutes later. At point C, the faradic stimulation of the auricles was stopped, but the pacemaker impulses were continued. Note the gradual disappearance of alternate ventricular lag.

FIGURE 9. Further graphic documentation of effects of Hyman's pacemaker after cardiac standstill. Aside from their more obvious interest, tracings in this and Figure 8 are especially noteworthy for being, in all likelihood, first published electrocardiograms of periodic electrostimulation of heart. Previous investigators had exhibited their data in sphygmographic form.[28]

whelming suspicion of "gadgetry" to which, one must admit, it was bombarded with great abandon during that era of rather slack government control over industry, rendered it sadly improvident. Also, it is quite likely that various physicians who had employed the method found it to be of evanescent or doubtful benefit, or had the dreary experience of producing intrapericardial hemorrhage from reckless jabbing at the atrium. If such adverse results were obtained, their perpetrators remained mute. Partly the inventor himself was to blame, because, either out of modesty or from being too upset by some of the public hostility against his brainchild, he did not publish the outcome of clinical trials. All that he had to say in this respect was,

> It is hoped that with the publication of this work the method will come into greater general use and that a large series of figures may be obtained in order to give a true estimation of the value of the procedure. The histories of cases are not recorded here, but such satisfactory results have been obtained that the feeling has been that while the artificial pacemaker finds its greatest value in the resuscitation of the normal asystolic heart which has been stopped by the many causes previously enumerated, it also finds a place in the attempt to reestablish cardiac activity in those who have succumbed to death by

FIGURE 10. (a) Wilfred Bigelow. (b) John Callaghan.

> other causes. The method is as yet too new to draw any hard and fast rules in regard to its uses, but its relative harmlessness in contrast to the favorable results to be anticipated recommends this type of resuscitation in all cases when the usual methods have proved futile. Even the saving of one life is sufficient to place the artificial pacemaker among those procedures now so eagerly seized when the emergency occurs.

At any event, certain facts warrant recapitulation to place the pacemaker in proper perspective with other devices that now bear the same name. First, in all instances that it was used, the goal was to stimulate repetitively the sinoatrial node, and this was accomplished by inserting a needle into the right atrium. Second, it was not Hyman's chief purpose that the instrument be used specifically to treat complete heart block, although that, too, came about. Third, the principal attractive and novel features of the instrument were its compact and light frame (7.2 Kg.), the incorporation of an interrupter switch for regulating constant impulse delivery at 30, 60, or 120 per minute, and the prevision of using a "bipolar" electrode needle. The latter item alone can be considered inchoate of present pacemaker electrode design, as was the rationale governing its use:

> Stimulation of the stopped heart by electrical methods has previously failed because most investigators have attempted to reactivate the heart by neurogenic excitation.
>
> When electric current has been applied directly to the heart, it has been done by placing the entire organ in the electric circuit; the result has been that the heart is unable to maintain its normal cycle. When strong currents have been used, the factors discovered in electrocution are seen to be present.
>
> In using a clinical needle through which is carried an electric impulse, and in having the two electrodes so close together that only a small pathway is concerned in the electric arc established by the heart muscle, an irritable point is produced.
>
> This irritable point becomes the focus from which an excitation wave may spread over the heart muscle, the excitation wave developing and spreading according to normal physiologic conditions. The impulse released from the pacemaker needle differs in no way from that produced by the prick of any injecting needle except that in the latter instance only one stimulus is developed, while in the former any number can be delivered to the heart muscle.

Endovenous electrostimulation of sinoatrial node

The advent of open-heart surgery gave considerable impetus to investigations aimed at the purposeful regulation of cardiac action. A watershed of innumerable technics that made intracardiac operations possible was the laboratory headed by Wilfred Bigelow, M.D. In 1950 Bigelow, Callaghan, and Hopps[34] made experiments which ushered in the contemporary era of cardiac pacing (Fig. 10). In their articles they related electrostimulation of the sinoatrial node with "single-point" and "two-point focal" electrodes guided pervenously or placed over the junction of the superior vena cava and right atrium.[34-37]

> The electrical impulse from the artificial pacemaker probably does nothing more than initiate normal sino-auricular node activity at controlled rates at a time when it is not normally functioning. . . .
>
> In this investigation the best results have been obtained with the stimulating pacemaker electrode in the superior vena cava against the deep surface of the sino-auricular node. One cannot overlook the ease of intravenous application compared to the thoracotomy approach. From the practical aspect, it is important to observe that intimate contact with the sino-auricular node is not essential for good control, since distances up to three quarters of an inch away from the nodal area were adequate.

Unfortunately for this team, they were deprived of the opportunity of using the apparatus on suitable patients, for in 1954 they said, with a tinge of pessimism,

> This device has been available in the operating room for three years, but it has not had as yet a satisfactory or successful clinical trial. Its value may prove to be limited to the standstill of hypothermia.

An account of the background of this work and other most interesting details are graciously furnished by Bigelow[38]:

> You may be aware that John Callaghan did the major part of the surgical research in the development of the electrical artificial pacemaker while he was my Research Fellow in the Banting Institute at the University of Toronto. This was many years ago. . . .
>
> The concept of the pacemaker came from the work that John Callaghan and I were doing on general hypothermia. This was in the early days of hypothermia as well, and in the years 1947–1950 we were most interested in studying the cause of cardiac arrest at body temperatures below 20° C. This problem was approached in a variety of ways with chemicals, controlling and varying the electrolytes and blood gases, ablating the automatic control of the heart, maintaining higher aortic pressures with balloons in the aorta, and many other studies. All of these failed to answer the fundamental question.
>
> In younger dogs, and occasionally in adult dogs, the terminal event was cardiac standstill instead of ventricular fibrillation. If this occurred with the chest open we found the heart could be stimulated to beat expulsively by a light jab with a probe. Each mechanical stimulus produced a complete ventricular contraction, and this could be carried on intermittently for some time. Without delving too deeply into the fundamental study of nerve conduction in hypothermia, we conjectured that the problem may be one of inhibition of nerve conduction due to low body temperature with the myocardium still capable of responding. Juvenelle of Paris provided some experimental results to suggest this. John Callaghan and I so impressed the National Research Council of Canada that they assigned one of their senior electronics engineers, Mr. Jack Hopps, as full-time and later part-time to this project, which was in essence, to develop an electrical artificial pacemaker with an electrical output that would stimulate cardiac contraction.
>
> The research took two forms. One was the use of a Grass stimulator with which were carefully tested a variety of voltages, amperages and the use of various types of stimulating impulses such as sine wave, square wave, etc. The other project was to design an intravenous pacemaker catheter that would allow insertion intravenously so that the animal could be cooled by immersion in cold water and not require a thoracotomy. Our articles described the eventual outcome.
>
> One interesting experimental problem appeared very early. It was found that we could not stop the heart of an animal unless we poisoned it or rendered it anoxic in order to test our device. Eventually we found that a turtle heart could be stopped for a minute or two by vagal stimulation, and this provided us with an experimental model to test the pacemaker for its ability to produce contractions and maintain output.
>
> I think that the contribution of John Callaghan and Jack Hopps to pacemakers is really threefold. They not only developed the first circuitry for an electrical stimulator, but they also proved that the beats produced by electrical stimulation were expulsive. They demonstrated one other very interesting phenomenon. In a dog at normal body temperature the artificial pacemaker could take over from the normal pacemaker, and within limits the heart rate could be either increased or decreased by adjusting the stimulator.
>
> I recall the fateful day in the basement laboratory of the Banting Institute when the completed apparatus was first tested. With all sorts of monitoring devices our historic dog was cooled by surface cooling, and with an intravenous bipolar pacemaker electrode in place, the tip in the region of the sinoatrial node. The dog was cooled and developed cardiac standstill at 18° body temperature. Immediately the pacemaker was turned on, and to our great joy expulsive cardiac beats appeared, and the dog continued to cool with circulation maintained. We thought at once that we had a technique of cooling to near freezing temperatures; but at 16° C., two degrees lower, cardiac action ceased, and it no longer responded to our pacemaker.
>
> We could not interest the medical men seriously in treating human heart block since the apparatus did look very cumbersome, although we did use if four or

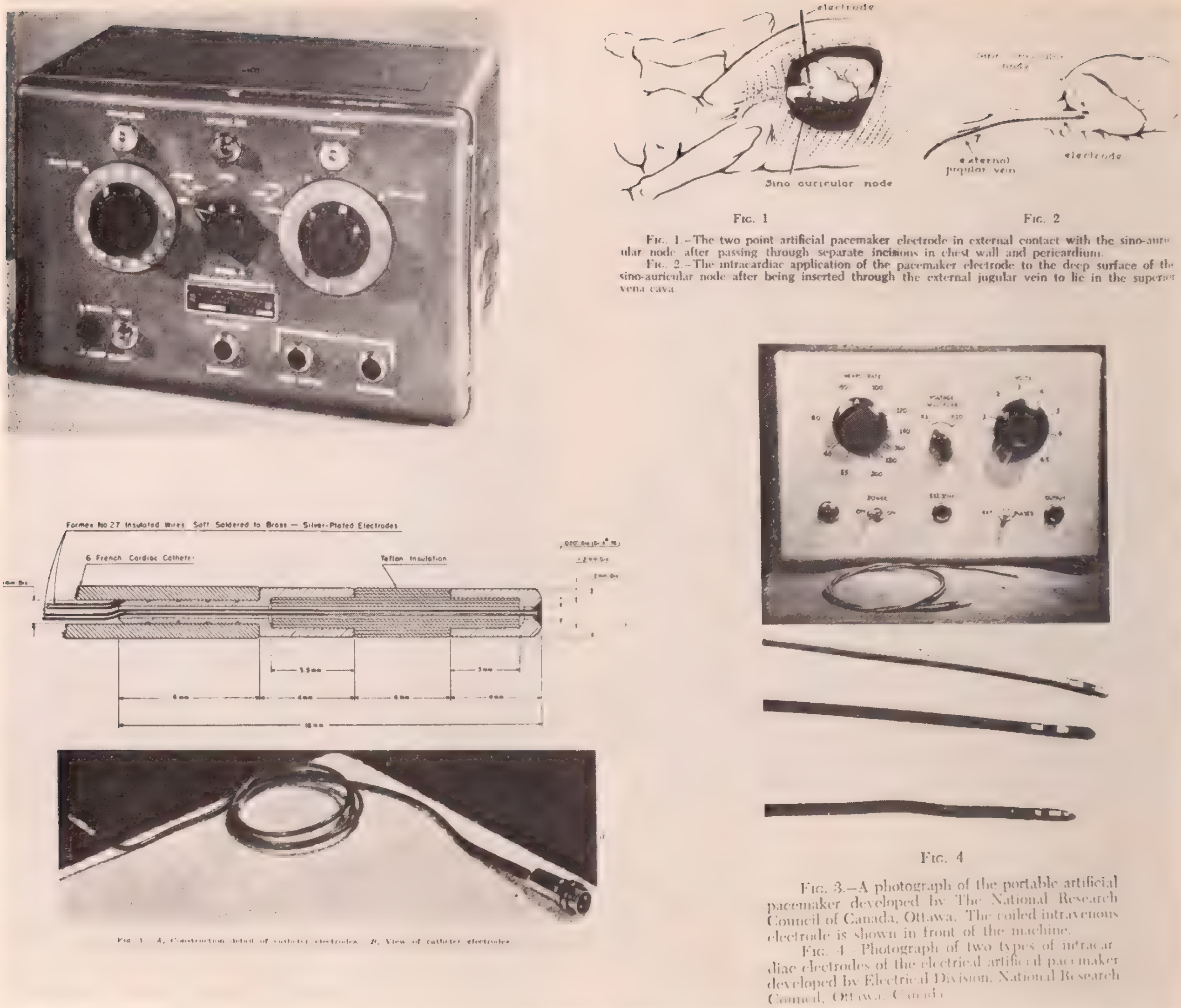

electrode
Sino auricular node
external jugular vein
electrode
Formex No 27 Insulated Wires Soft Soldered to Brass — Silver-Plated Electrodes
6 French Cardiac Catheter
Teflon Insulation
3.5 mm
3 mm
6 mm
4 mm
18 mm

Fig. 1 Fig. 2

Fig. 1.–The two point artificial pacemaker electrode in external contact with the sino-auricular node after passing through separate incisions in chest wall and pericardium.

Fig. 2.–The intracardiac application of the pacemaker electrode to the deep surface of the sino-auricular node after being inserted through the external jugular vein to lie in the superior vena cava.

Fig. 1. A, Construction detail of catheter electrodes. B, View of catheter electrodes.

Fig. 4

Fig. 3.–A photograph of the portable artificial pacemaker developed by The National Research Council of Canada, Ottawa. The coiled intravenous electrode is shown in front of the machine.

Fig. 4.–Photograph of two types of intracardiac electrodes of the electrical artificial pacemaker developed by Electrical Division, National Research Council, Ottawa, Canada.

FIGURE 11. Equipment and technics used by Callaghan, Bigelow, and Hopps to excite sinoatrial node. The "two-point focal electrodes" shown antedated by more than a decade bipolar catheters used clinically for endocardial stimulation in complete heart block.[35,36]

five times in rather unsuitable cases of cardiac arrest in the operating room as an emergency.

John Callaghan presented this work at the Basic Science Forum in 1951, and a few weeks after the meeting we received a letter from Dr. Paul Zoll who expressed an interest in the phenomenon and said that he would like to start similar studies. He requested our electrical circuit. This was supplied to him by Jack Hopps, who gave him all the details of the circuitry. Dr. Zoll's first application of this pacemaker to humans using our N.R.C. stimulator circuit is well known. His work provided the incentive for the clinical application of this principle.

The National Research Council of Canada were a little slow in thinking about a patent, and when they eventually got around to applying it was a bit late.

I have occasionally alluded to this work by John Callaghan and Jack Hopps as an example of the unexpected by-products of fundamental research.

. . . You can imagine the publicity that attended Callaghan's presentation at the American College of Surgeons. The news media immediately interpreted the electrical pacemaker as being an instrument that could start almost any heart that had stopped for any reason!

Another interesting sidelight on this contribution of John Callaghan's had to do with the conditions surrounding his appointment. He had to wait for a year before entering the postgraduate course in surgery, and so he elected to take a job at the mouth of the Mackenzie River in the Arctic looking after Eskimos and Indians. It was an adventuresome and interesting life, and when he finally received a letter from the Professor of Surgery, Professor Janes, indicating that he had been accepted for his surgical training and that his first year would be spent in the experimental laboratory working on a cardiovascular project under Dr. Bigelow, his enthusiasm disappeared. Leaving this life to enter training in surgery was an acceptable decision, but to leave it in order to work in some laboratory on animals was almost more than he could face. Because of this discouraging prospect he was so long in replying to Professor Jane's letter that he nearly lost his appointment al-

PLATE I.

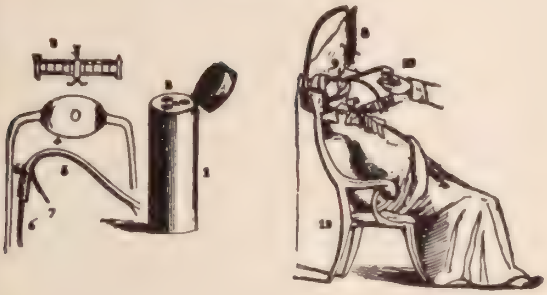
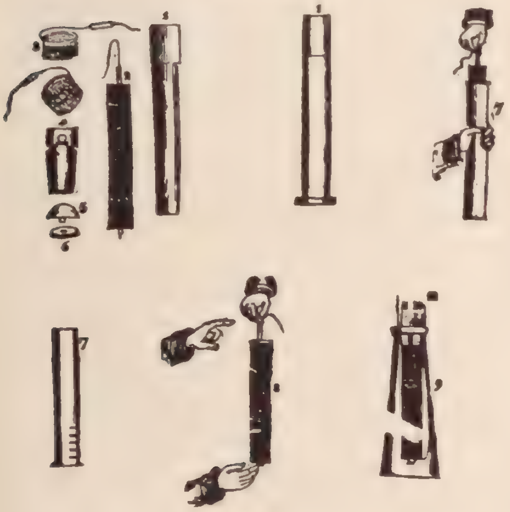


PLATE II.



•.• This Apparatus is sold at the Medical Hall, 171. Piccadilly.

EXPLANATION OF PLATE I.

Fig. 1. Chest of Apparatus for restoring cases of Suspended Animation.
2. Three large Cavities, one for the reception of a Galvanic Pile composed of one hundred plates, with its glass tube, &c. Another for inclosing two half piles, to be employed as appendages in cases of sudden recovery, or to form one pile for supplying the place of the exhausted one, as it is necessary to change them every half hour in cases of slow recovery; which is never to be despaired of until after four hours' ineffectual application. The remaining cavity is for the bottles of nitric acid, æther and Brandy. The small hole in the case is for receiving the flexible metallic tube for the stomach. The remaining spaces will contain the other instruments. The box-bellows is to be placed inside the cover. The length of the chest does not exceed fifteen, and the diameter scarcely four inches.
3. Box-bellows fully extended.
4. Coated plate, with part of the elastic appendages for closing the mouth. It has a hole for the reception of the tubes for the larynx and stomach.
5. Regulator for fixing the tube in the stomach, closing the gullet, and for directing and fixing the tube for the larynx.
6. Part of the tube going to the stomach.
7. Termination of the tube for the larynx.
8. The chief pile fixed to the hook attached to the re-animation-chair. Should the patient be laid on a table, the pile must be supported by an assistant.
9. The forceps closing the nostrils.
10. The spirit-lamp heating the globe of æther adjusted with the neck, to the end of the gullet-tube.
11. Box-bellows attached to the end of the larynx-tube.
12. Re-animation-chair. The back and front are movable, so as to adapt it to patients of different ages. After the operation, it may be converted into a convenient bed.

EXPLANATION OF PLATE II.

Fig. 1. Portable Galvanic Pile enclosed in its tube, for any medical case in which the application of Galvanism may be deemed advisable.
2. A pile of one hundred plates, each plate one inch and an eighth in diameter and one-sixteenth in thickness, with cloths of three quarters of an inch diameter. The needle has been introduced into the little glass tube.
3. Wires, with the movable glass tube near the end.
4. Stopper bottle for the acid. The cover serves for a measure. The bottle is surrounded by blotting paper, the pile by emery paper, and cotton is placed in the upper part of the cover of the tin tube.
5. The rubber.
6. A piece of yellow wax.
7. The pile plunged into the bath, in which it is to be moved up and down.
8. Mode of trying the strength of the pile.
9. The pile enclosed in a glass vessel.
10. The needle, with the remaining silken-twist passed through a piece of cork and attached to a glass supporter.
11. The lowest of the coated wires attached to the positive pole
12. The highest ditto attached to the negative pole.

The height of the wires attached to different parts of the pile denotes their strength.

FIGURE 12. In 1820 and 1824 editions of his book, Reece depicted paraphernalia and position most apt for restoring persons from suspended animation. Plate I shows partitioned satchel with individual compartments for bellows, constituents of galvanic pile, laryngeal cannula, gastric tube, forceps for pinching nose, and bottles of nitric acid, ether, and brandy. Also indicated is how these implements were to be applied to best advantage. Plate II shows kit and assembly of electrical battery.

together. He entered the laboratory with something less than burning enthusiasm, but immediately became involved and within one year developed the electrical artificial pacemaker and contributed a great deal toward studies of intracardiac exposure under hypothermia (Fig. 11).

Supplementing this pithy narrative, Callaghan[39] says,

> You may be interested to know that I did five patients at that time under Dr. Bigelow's supervision in the Surgical Recovery Room of the Private Patients Pavilion at the Toronto General Hospital. These were severely ill patients with decreased cardiac action. We were unable to take over by the venous route complete cardiac action, but we attempted to drive the impulse from the region of the sino-atrial node. Had we pushed our catheter (which in those days, you will remember, was not of the type we are using today) into the ventricle, we conceivably could have succeeded in capturing cardiac action. But unfortunately we were just two inches too high at this period. Had we pushed on into the ventricle, I am sure it would have preceded our concept of intravenous pacing by ten years.
>
> I can only say that Dr. Bigelow and I were both rather disappointed in the early days with the lack of reference to our work by some of the workers in the field who, with the development of the mercury cell battery, got onto implantable pacemaker action without really quoting the early experimental work. The fact that we were using smoked drums (. . . in the studies that Dr. Bigelow and I engaged in at the Banting Institute in 1949. . .) identifies it as early work, because cathode ray scopes were only just becoming available to basic researchers in surgical sciences at that time.

Transesophageal and transbronchial cardiac stimulation

To conclude this section brief consideration will be given to a method of cardiac electrostimulation without thoracotomy, involving electrode contact

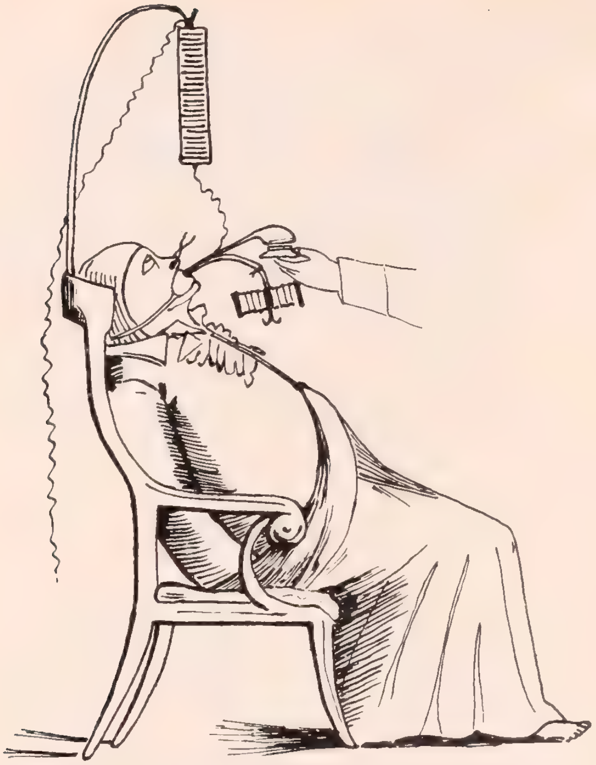


FIGURE 13. Sketch magnifying figure of patient in Plate I of Reece's book. Patient is extended on "reanimation chair," his nostrils closed with forceps, and cotton tampons in ears. Air is pushed by bellows into silver cannula in larynx. Another inflexible metallic tube is inserted into gullet and one wire of galvanic battery is fastened to it, while the other is "successively made to touch different parts of external surface of body."

with neither the myocardium or endocardium and yet in very close proximity to the heart. Stimulation across the esophageal wall, the technic in question, was practiced in one version as early as 1824 by Reece[40,41]:

> Having attached the galvanic pile to the top of the chair, one of the wires is to be applied to the tube passing down the gullet, whilst the other is to be successively made to touch different parts of the external surface of the body, particularly about the regions of the heart, the diaphragm and the stomach during the inflation of the lungs; then of the neck, describing the course of the par vagum or eighth pair of nerves (the old nomenclature) along the course of the spine, etc. . . . (Figs. 12 and 13).

In 1951 Zoll[42,43] tried the transesophageal route for electrostimulation of the heart but abandoned it as unreliable and impractical.

In 1956 Shafiroff and Linder[44] passed esophageal electrodes in 16 volunteers and 10 anesthetized patients to stimulate the region of the sinoatrial node:

> The active or stimulating electrode was constructed from a medium-sized stomach tube to which were affixed 5 coiled ring electrodes each about 1 cm. in diameter and equidistant from each other by ½ cm. These rings were connected to fine insulated wires which traversed the interior of the rubber tube and were attached to a base plate which in turn was connected to the stimulator. By means of the distributor at the base plate the current could be directed through one or more of the ring electrodes for the closest possible approximation to the sinoatrial node. The technique for placement of the esophageal electrode was that used for ordinary gastric intubation. An inactive or dispersive electrode was not applied to the chest wall.

Withal, control of rhythm was obtained. To do this, however, the voltage had to be between 20 and 50: and above 60 volts, chest pain and diaphragmatic flutter became intolerable. The authors therefore asserted that

> until a spark-proof electrode is developed, the procedure, as presented here, must be restricted to patients under spinal or intravenous anesthesia.

A more optimistic assessment of the transesophageal method for cardiac stimulation was made in recent years.[45-49] However, the consensus appears to be that it has few, if any, genuine merits compared with other technics.

In a related context, the transbronchial approach to the heart has not received significant notice in either investigational or clinical domains for electrostimulation, although that route has been well explored in cardiac catheterization work. Likewise, six years ago a group at the Karolinska Hospital described using mediastinoscopy for passing a "detector" electrode cable into connective tissue adjacent to the atrium, then capturing and amplifying the P-wave signal for atrial-triggered pacemaking.[50] This clever method has not, to my knowledge, been tested outside Stockholm. A variant of it has been the insertion subxiphoid, from caudad to cephalad, of a mediastinoscope through which an electrode wire is directed into the right ventricular myocardium.[51] No report is available yet of the application of this technic to human subjects.

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CORPORA NON AGUNT NISI FIXATA

Maxim behind all of Ehrlich's great discoveries

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That substances do not react unless they become fixed to each other or "Corpora non agunt nisi fixata," was the guiding beacon of Ehrlich's entire research life.[1] If we use as an example a parasite for one of the substances, the motto immediately becomes applicable to the problems facing Ehrlich. If, in addition, we designate the point of fixation on the parasite as a receptor, it becomes further clarified in terms of modern pharmacologic language.

Ehrlich was led to this profound observation by reading the publication on lead poisoning by the pathologist Heubel, who stated that those organs which are most affected in lead poisoning are the ones which absorb most lead out of solution.[2] Thus the pharmacologic action was probably based on some specific chemical affinity. The motto appears logical and, even though extremely simplistic, it was nevertheless the means by which Ehrlich solved some of nature's most complicated secrets. Every one of his discoveries that I will describe can be seen as a corollary of "Corpora non agunt nisi fixata."

Professional career

Ehrlich's professional career can be divided into three phases of almost equal duration: 1877 to 1891 when he worked chiefly on the chemistry of dyestuffs, making important contributions to hematology, bacteriology, neurohistology, biochemistry, and pharmacology[3]; 1891 to 1903 when, following von Behring's discovery of the antitoxins of diphtheria and tetanus, he explored the field of immune reactions, laying the groundwork for what has developed into the modern discipline of immunology; and 1903 to the time of his death in 1915 when he developed the first modern approach to chemotherapy, the famous antisyphilitic organic arsenical compounds. Of course, in both his publications and lectures there is some chronologic overlap, but when that occurred the research work had been carried out during an earlier period (Fig. 1).

Paul Ehrlich was born in 1854 in Strehlin, Upper Silesia, educated in the local schools and Breslau University, and after the continental fashion of those times, attended various medical schools, but received his M.D. degree from the University of Leipzig in 1878. Even before his graduation Ehrlich[4] wrote a profound paper entitled "Contribution to the Theory and Practice of Histological Staining" in which he came to the conclusion that dyeing can be regarded as a combination of fibers with dye. Prior to this, as a student he had discovered the mast cell, which he distinguished from the plasma cell of Waldeyer, by a prophetic statement that the granules contained a substance which could not yet be identified and that the nucleus had a slight affinity for the aniline dyes. The granules in the protoplasm, however, were distinctly anilinophilic, and he concluded that they combine with most aniline dyes to form metachromatic double compounds. He also found that the red blood cell could be stained by eosin; he believed that this was because the eosin combined in some way with hemoglobin.[4]

In 1885 Ehrlich[5] published a thesis, *The Requirement of the Organism for Oxygen,* that was required for his appointment as a university teacher (privatdocent). In it he described a series of remarkable experiments to measure the comparative avidities for oxygen of the living cells of different organs. The dyes, alizarin blue and indophenol blue, have colored oxidized forms and colorless reduced forms. By injecting intravenously the colorless reduced form into the living organism, he achieved the first demonstration of vital staining. These experiments antedate by many decades modern ideas of the oxidation-reduction potential of tissues and introduced for the first time the concept that oxidation and reduction could be brought about by the withdrawal and introduction of hydrogen atoms, respectively. This idea was truly revolutionary and contradicted the view expounded by Pflüger, the reigning physiologist of the time, who taught that oxygen combined directly with the substance that was oxidized in the cell. In this monograph, Ehrlich first described his chemical model of a cell: It consisted of a chemical nucleus of a special structure responsible for the specific function of the cell, and attached to this were several side chains responsible for the vital activity in general, such as the site for oxidation and reduction. This was the first mention of side chains, which he later elab

CHEMOTHERAPY

DYES
Methylene blue
Benzidin dyes
(trypan red)
Triphenyl methan dyes
(tryparosan)

ARSENICALS
Formula of ATOXYL
Arsacetin
Arsenophenylglycin
Arsphenamine "606"
Neo-arsphenamine

ANTIMONIALS
Fastness:
to drugs
to serum
"therapeutic
sieve"

IMMUNOLOGY
Immunotherapy
Toxin and serum
standardization
Toxoids
Serum therapy
Abrin-ricin studies
Active and passive immunity
Anaphylaxis
Receptors
Haptophore and toxophore groups
Amboceptor-complement

CANCER RESEARCH
Organization of large-scale
experimentation
Non-transplantability between
species
Increase of tumor virulence by
selective transplantation
Transplantable tumors of varying
virulence
Sarcoma from carcinoma
Tumor immunity
Athreptic immunity
Virus etiology of fowl pox

BIOCHEMISTRY AND PATHOLOGY
DRY SMEAR METHODS
Blood cell counts
Blood Staining
Methylene blue for bacteria
Acid-fast stain for tubercle bacilli
CLINICAL METHODS
Iodine for glycogen
Diazo reaction
Benzaldehyde for urobilinogen
VITAL STAINS
Methylene blue for nervous tissue
Neutral red for granula
Janus green for mitochondria

HEMATOLOGY
DIFFERENTIATION OF WHITE BLOOD CELLS
Eosinophils, basophils, neutrophils,
monocytes, lymphocytes
DUALISTIC THEORY OF LEUKEMIA
Lymphatic, myeloid
STUDIES ON RED BLOOD CELLS
Paroxysmal hemoglobinuria
Aplastic anemia
Normoblasts, megaloblasts
MAST CELLS

Dye-analytical studies
Oxygen requirements of tissues

CORPORA NON AGUNT NISI FIXATA

FIGURE 1. Paul Ehrlich's vast research. Modified from "The Tree of Paul Ehrlich's Work." Panel used in the historical exhibit at the meeting of the American Academy of Dermatology and Syphilology in Chicago, December, 1954, through the courtesy of Hermann Pinkus, M.D. The original photograph of the chart also appeared in Arch. Dermat. **72**: 13 (1955). Mr. Robert W. Mayo, Executive Managing Editor, also allowed its use.

orated into the famous side-chain theory.

Ehrlich worked in von Frerich's laboratory from 1878 to 1885 until von Frerich's untimely death. From 1885 until 1887 Ehrlich recuperated in Egypt from an attack of pulmonary tuberculosis, and returning to Berlin he set up his own small laboratory. The famous Robert Koch invited him to join his institute in 1890, where for a time Ehrlich worked with Emil von Behring who in 1892 discovered the antitoxins. The specific immune substances of von Behring were highly theoretic until Ehrlich set out to transform them into practical useful remedies. In 1896 he became the director of the Institut für Serumforschung at Steglitz; the work of this laboratory was transferred under his direction to the Institut für experimentelle Therapie at Frankfort-am-Main in 1899.

With von Behring's discovery that animals given injections of diphtheria and tetanus toxins develop bodies in their sera that could specifically protect other animals against the toxins of these diseases, two prospects were opened up: (1) the possibility of curing patients with these diseases, and (2) the protection of normal individuals against these diseases. However, the successful practical application of these hopes did not follow, because proper standards and standardization were needed.[6] This Ehrlich proposed to correct. In chemical reactions the chemicals involved react with one another in equivalent quantities, but with products produced in vivo the reactions were more difficult to quantitate.

Investigation on toxins

Standardization of a unit of toxin was difficult because while the levels of antitoxin remained the same, the strength of the toxins decreased with time. Although the combining power of the toxin remained the same, its toxicity decreased. Ehrlich theorized that this would be true if the toxin molecules contained two groups, a haptophore or combining group which remains the same, and a toxophore group which becomes enfeebled. The toxin whose toxophore group has been destroyed is called a "toxoid."

He developed his theory as follows: Cells in certain organs have side chains or toxophile groups whose normal function is in cellular metabolism, but they also have the capacity to anchor this or that toxin. These side chains can also be called receptors; and once the toxin is fixed or anchored, they can no longer perform their normal function and are ejected into the blood stream. These side chains or receptors are regenerated in large quantities, since the organism tends to overreact, and these bodies are again discarded into the blood stream where they become molecules of antitoxin. Ehrlich[7] considered these receptors to be preformed, able to to react only to those toxins which corresponded to the receptors as a key to a lock. This point is the chief defect in the side-chain theory, because it would presume an infinite number of preformed receptors, a notion which would certainly be improbable. For instance, with regard to Ehrlich's own work with the poisonous proteins, ricin, abrin, and robin (toxin of Robinea pseudoacacia), surely the body could not be expected to have preformed receptors for these substances, since they could come into contact with the body only through the will of the investigator. Antibodies cannot be formed with alkaloids, antipyretics, and antiseptics, since these substances do not enter into the composition of the protoplasm and do not therefore encounter suitable receptors.[8]

Tetanus toxin unites with certain chemical groups (receptors) in the protoplasm of the cell, and this union is the cause of the disease; thus Wassermann proved that the union of tetanus toxin with cerebral tissue caused the disease tetanus.[8] The haptophore group of tetanus toxin is fixed to the nervous tissue at any temperature, but the toxophore group becomes active only at certain temperatures. For example, if tetanus toxin is given to frogs that are kept cold, tetanus does not develop; but the disease will develop if frogs are incubated.[9] The action of the haptophore group is immediate, while the toxophore group acts slowly, as evidenced by the fact that the incubation period of diphtheria could last for weeks because of its slow action.[8]

Ehrlich believed that the indifferent results obtained with the antisera first used in England and Denmark were due to weak sera. This was probably because the standard preparations used for the determination of the potency of the sera must have weakened. It was necessary therefore to work out an accurate procedure to determine both the potency of the antitoxin and the relations governing the neutralization of toxin and antitoxin. For this work, he suggested the use of desiccated antidiphtheritic serum, diphtheria toxins preserved with toluene, and that the desiccated sera be redissolved as required.[7]

By Ehrlich's definition, one unit lethal dose of diphtheria toxin was the quantity which would kill every guinea pig, weighing approximately 250 Gm., in four days. If increasing doses of toxin were added to a single immunity unit of serum, two threshold values could be defined: Lo represents the quantity of toxin practically completely neutralized by antitoxin; L+ is the quantity of toxin in which, in spite of antibody, enough excess toxin is still present to cause the death of a guinea pig in four days. This excess of toxin therefore corresponds to a unit lethal dose, hence the equation:

$$D = L+ \ - Lo$$

The strengths of toxins show enormous variations. The interaction of toxin and antibody is more rapid in concentrated than in dilute solutions; also heat accelerates the reaction while cold retards it. These criteria are found in chemistry when double salts are formed, and perhaps neutralization of toxin by antitoxin may also be a double-salt formation. The threshold values, Lo and L+, show striking variations in different lots because the strength of the toxin diminishes with time. If a toxin is combined with carbon disulfide, it can be completely detoxified; yet this modified toxin combines with antibody in vitro and in vivo and is designated a "toxoid."[7]

Ehrlich stated that the properties of the antitoxin produced against robin is exactly comparable to antiricin (antitoxin against ricin), so that the toxin of robin can be considered as a naturally occurring toxoid of ricin. He also noted that the serum of animals immunized against snake venom will also neutralize scorpion venom. He equated this effect as: scorpion venom:snake venom = toxoid:toxin.[7] Since I have not seen or read of these interesting phenomena before, I cannot comment on them, but it indicates to me that Ehrlich's writings should be reread closely even though written almost seventy years ago.

Since the formula D = L+ − Lo must represent one lethal dose of toxin if the toxin is pure, and since this is not true, toxoid must be present. Ehrlich indicated that three types of toxoids are present in toxin broths: (1) protoxoid, which has a greater affinity for antibody than toxin; (2) syntoxoid, which has the same affinity for antibody as toxin, and (3) epitoxoid, which has less affinity for antibody than toxin. Epitoxoids lack acutely toxic and necrotizing properties but occasionally are able to cause disturbances in the nervous systems of animals.[7]

In addressing the question of how antitoxins act, Ehrlich stated that with the vegetable poisons, ricin and abrin, toxins and antitoxins react with each other in a chemical fashion, that is, by combining with each other. If so, could toxin and antitoxin mixtures again develop toxic reactions? In a mixture, certain derivatives of the toxins are present in a free state such as toxoids or toxones; the latter may be toxic to one animal but not to another. Toxones have less affinity for antitoxin than either toxins or toxoids; they do not kill animals directly; and in the case of diphtheria toxone, paralysis is produced slowly.[9]

It cannot come as a surprise to the reader that Ehrlich was the originator of a new vocabulary; he needed new words for his new scientific discoveries. He also liked to call his friends by latinized or Greek names: Neisser was Alberte Magne, Weigert was Carolus, and Wassermann was called Aquaticus. Ehrlich knew the importance of a name to dramatize a concept.

> Now we have the thing. It was a hard labor. Now we have to look for a good name for it.[2]

Work with arsenicals

After the turn of the century Laveran and Mesnil discovered that the trypansomes responsible for human infections could infect rats and mice by innoculation, and in 1903 Ehrlich and Shiga found that trypan red, a benzopurpurine dye cured trypanosomiasis in mice.[10] Later atoxyl (p-amino phenyl arsenic acid) and fuchsin were also found to be curative. Soon Ehrlich found that a resistant strain of trypanosomes resulted from a subcurative dose of an arsenical. The relapsed strain was resistant to antibodies evoked by the original strain. Ehrlich considered this as evidence of the immunologically evoked disappearance of a receptor with formation of a new receptor; in other words, a mutation occurred. Drug-resistant trypanosomes showed a stability of the acquired property and a strict specificity to the action of the drug and to the rest of the same series of chemicals. Trypanosomes made resistant serially to atoxyl, fuchsin, and trypan red were useful in screening and finding new drugs for treatment.[11]

In 1909 Dr. Hata, who had come to work with Ehrlich and had attained great proficiency in producing syphilis in rabbits, tried chemical 606 and found it to be very efficacious for induced syphilis in rabbits. Thereupon Ehrlich sent this chemical which was later called arsphenamine (named Salvarsan because it was expected to lead tq the salvation of mankind) to various clinics for human testing.[12] Much of the later years of Ehrlich's life was taken up with answering questions and defending the value of arsphenamine in treating human syphilis. True, there were some accidents that attended the use of the medication. Abscesses resulted from the initially used intramuscular route in some instances when unsterile water was used as a diluent; but many of the criticisms were pure envy. Ehrlich bemoaned the fact that the 4 deaths reported following the use of arsphenamine occurred in moribund patients. He pointed out that every medication and all forms of surgery had risks. Surgery could not advance if only nonrisk operations were performed.[13]

Theory of receptors

Ehrlich, the man who introduced the concept of chemoreceptors into pharmacology, was both highly practical and highly theoretic, and he himself saw no conflict in this seeming disparity in the discipline in which he worked. All of his remarkable discoveries were based on his theoretic maxim, "Corpora non agunt nisi fixata," and this fixation meant the involvement of receptors in the cells, tissues, and parasites.

Ehrlich distinguished three types of receptors: (1) those which the cells cannot shed, that is, the receptors involved in nutrition of the cell; (2) those which are normally ejected into the blood stream (antibodies); and (3) those which are normally retained by the cell, but which may be shed as a result of overstimulation.

As mentioned previously, trypanosomes could be destroyed by three drug classes: arsenicals, fuchsin, and trypan red. Ehrlich showed that the trypanosomes could be made resistant to a whole drug class by excessive stimulation by a member of a class of the drug. He attributed the acquired resistances to the loss of appropriate receptors somewhat as follows: If a strain of trypanosomes could be rendered resistant to all three classes of trypanocidal drugs, and if they were later destroyed by a fourth drug, it follows that they must have developed a fourth type of receptor, perhaps through mutation.[11] Drug-resistant trypanosomes could be used in a "therapeutic sieve" by which drugs acting on one kind of receptor could be separated from drugs acting on another type of receptor, probably allowing for a classification of drugs on this basis. Ehrlich's ideas on this score are remarkably similar to those held today by many advanced pharmacologists.

Ehrlich[11] showed how to isolate receptors especially those that were shed (antibodies) and compared this to the "removal of a few wheels from the machine" in contrast to the lack of shedding of cell-fixed antibodies which required the "smashing of the machine in order to study the fragments."

Pharmacologists today believe that measuring the "affinity constants" for the receptors provides the means of classifying receptors as well as drugs, for example: Muscarinic acetyl choline receptors can be defined quantitatively in terms of their affinities for atropine in tissues such as frog heart, chick amnion, and mammalian intestine. Drugs can be classified with the aid of antagonists according to the receptors on which they act.[14] It is believed today that a hormone's function from a physiologic standpoint is to modulate or orient the function of certain tissues, namely, the receptors or target tissues. The hormone molecules are thought to interact with the "molecular receptors" which are located on the outside surface of the cytoplasmic membranes. It is possible, according to present beliefs, that some hormone receptors interact directly with adenyl cyclase, an enzyme which can modify the level of functional activity of the cell. The nature of the response is determined exclusively by the receptor tissues, and this idea is used to explain why the effects of a given hormone can vary so greatly from one receptor tissue to another.[15]

All of these complicated classifications are based on Ehrlich's concept: "Corpora non agunt nisi fixata."

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TUBERCULOSIS CONTROL IN THE INNER CITY

Model for community health programs*

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In America's inner cities, tuberculosis is still with us. This is exemplified by incidence rates as high as 160 per 100,000 in New York City slum areas, as contrasted with a national rate of 24.2 per 100,000.[1] Tuberculosis is with us in a still larger sense: finding and taking care of patients with this disease may be the model for improved approaches to certain community health problems other than tuberculosis. This is because tuberculosis is a disease for which there traditionally has been a public responsibility in prevention, case-finding, treatment, and rehabilitation.

Modern concepts of tuberculosis control in the inner city have been recently summarized in the report of the New York Tuberculosis and Health Association's Task Force on Tuberculosis.[2]† That report recommended: (1) emphasizing ambulatory outpatient and home care, with the use of funds released from excessive reliance on hospitalization; (2) concentrating the search for new cases within high-risk groups; (3) finding new ways to gain community participation; (4) strengthening the back-up role of medical schools and their training programs; and (5) decentralizing and strengthening the administrative apparatus.

These recommendations are examined in relation to the major community health problems in East Harlem, one of New York City's inner city districts, as seen from the vantage point of a district health officer during 1968 to 1969. Recommendation (5), to which the task force assigned the highest priority, merits a preliminary note.

Decentralization: is it feasible?

Decentralization in New York City presumably would facilitate flexibility, and therefore, further shifts from inpatient to outpatient care. The task force projected a reduction of 100 beds per year for the next five years as a means of providing increments of 3.5 million dollars annually for clinics, home care, and case-finding.[3]

In New York City, between 1957 and 1967, the number of tuberculosis patients under treatment in hospitals fell from 4,000 to 1,000, with the number under clinic care rising from 1,800 to 12,000. However, 1,427 beds were still in use for inpatient care.[4] The task force noted this fact and advised that the fastest way to remove the excess beds would be through decentralization and budgetary flexibility. A point worth raising is that this budgetary flexibility would accomplish little without the assurance that funds withdrawn from inpatient care would go to outpatient care.

The task force's recommendation for decentralization recalls suggestions going back fifty years—to decentralize and introduce a community base into all the operations of the Department of Health in the City of New York.[5] These suggestions were meant to hold for all facets of community health. Episodes, such as the paralysis of the health department's district staffs in coping with the local level problems following the December, 1947, blizzard, have been cited as examples of the consequences of too much centralization. However, in New York City, attempts have yet to be made to determine whether the local initiatives, strengthened by decentralization, will result in better health services.**

Tuberculosis control: a model for community health?

The task force's approach to tuberculosis control suggests ways in which other major community health problems could be approached, especially in the slums of our big cities. The problems which have to be solved by a tuberculosis program are frequently the problems to be solved in other health programs: an excess of expenditures on inpatient care; the persistence of nonproductive methods of case-finding, such as mass x-ray screening; the poor outreach into the community; the poor liaisons; and the administrative rigidities.

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*This article is based on an address to the annual meeting of the New York Tuberculosis and Health Association, March 25, 1969, at which time the author was Health Officer of the East Harlem District. The opinions expressed herein are the author's and are not to be considered as an expression of policy by the City of New York Department of Health.

†Free copies are available from the New York Tuberculosis and Health Association.

**In New York City, budgetary decentralization has yet to be introduced into health department programs. A new Public Benefit Corporation was planning to absorb most of the service functions of the Department of Health. The author's opinion is that decisions made at echelons higher than a local health district are required if decentralization is to be achieved.

In public school projects in tuberculosis control, New York City health officers have become accustomed to settling for skin and BCG test consent rates rarely exceeding 50 per cent.[6] Correspondingly, during the 1968 influenza outbreak, no more than an estimated 15 per cent of the eligible old-age population in East Harlem could be reached for inoculation with the Hong Kong A2 vaccine, despite massive publicity and ample supplies.[7] The patients most in need of the vaccine, people confined to their homes, were not reached. The problems resembled those encountered in tuberculosis control: insufficient numbers of home-care nursing personnel, nonavailability of "high-risk" registers based on hospital clinic populations, and cumbersome interagency communications between hosptials and public health facilities.

But, tuberculosis control always went beyond improvements in personal health services. Declining annual mortality rates for tuberculosis commenced long before the introduction of specific veterinary, case-finding, and chemotherapy measures.[8] Currently, incidence trends in East Harlem, a decline from 150 to 64.5 per 100,000 in the last ten years,[9] may be reflecting, in part, the persisting influence of earlier nonspecific improvements in nutrition and housing. On the other hand, the virtual disappearance of scrofula and gastrointestinal tuberculosis highlights the potential role of specific nonmedical measures in solving certain community health problems.

For many health problems, effective measures may have little to do with physicians, patients, and clinics, but much to do with specific kinds of socioenvironmental change. Unfortunately, however, too many proposals for comprehensive health services have confined themselves to emphasizing improvements in medical care per se, the physician-patient ratio or the number of hospital beds in a community.[10] Refreshingly, such ratios were not emphasized in the task force report.

These comments are pertinent to another health problem which inner-city health officers have become increasingly concerned with: lead poisoning. Lead poisoning in children now is a priority concern in New York City. Evidence from other cities suggests that in ghetto areas, at least 5 to 10 per cent of preschool-age children may be experiencing damaging exposures with resultant effects, possibly permanent, on neurologic and other organ systems.[11] These rates, if applied to East Harlem, suggest that 600 to 1,200 of the district's estimated preschool-age tenement children could be experiencing possibly hazardous exposures. Although behavioral and sociocultural factors can be implicated, the crucial risk factor is environmental—peeling leaded paint on the walls of old tenements. The leaded chips and window putty are eaten by children.

Environmental change, more than improved medical care or health education, is the key to control. In this country at present, because better documentation of both prevalence and the consequences of asymptomatic exposure is required, we have yet to invest in the building technology and preventive maintenance personnel required to eliminate the hazard from slum environments. Slowness to take action recalls the inertia and political resistance which had to be overcome to achieve compulsory pasteurization in New York City.

Change required the brilliance, drive, and perseverance of Nathan Straus, whose campaigns publicized the peril to infants from milk contaminated with Mycobacterium bovis.[12]

East Harlem's 200,000 people live with all the problems of an urban slum. It is a young community, with a median age of about twenty years. The household income is $3,800 to $4,000, 33.1 per cent of its working-age males are either under- or unemployed, and 19.7 per cent of the population is on welfare. Narcotics dominate the lives of large, but uncounted, numbers of its young.* Violent crimes are reported to occur at a rate seven times that reported in middle-class areas in Queens—578 versus 84 episodes respectively for one recent thirty-day period.[13] Crimes of property, perhaps not surprisingly, are reported as occurring with equal frequency.

Leaded paint peeling off the walls of tenements with defective plumbing is merely one aspect of the almost total collapse of indoor tenement maintenance and environmental sanitation services. Salmonellosis typhimurium, which has been hypothesized as a reflection of poor indoor sanitation, is reported more frequently from East Harlem than from any other district in the city.[14] Asthma, the second most frequent emergency room diagnosis in one of the two big hospitals in the district, is a major health burden. From hospital outpatient data alone, the district hepatitis incidence rate, believed to reflect needle use by drug users, is estimated to be in the range of 400 to 500 per 100,000 per year—approximately 18 times the reported nation-wide rate of 25 per 100,000 (the latter is itself an under-reported figure).[15] A rough profile of the district's health status is given by the time-honored indicators: infant mortality, 26.2 per 1,000 live births per year; tuberculosis incidence, 43.1 per 100,000 per year; reported cases of venereal disease, 1,006 per 100,000.

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*Preceding data is based on information supplied by the Department of Health, City of New York; and the Department of Community Medicine, Mount Sinai School of Medicine.

Yet, surprisingly, East Harlem is not lacking in health resources. From local outpatient data, East Harlem's health service network already produces better than the national average of 4.7 patient visits per person per year.[16] It is doubtful that the district's health problems would be solved if more physicians, more nurses, or more hospital beds were simply added to East Harlem's health service system.

If the story of tuberculosis control is a model for other health programs, then what is proposed is an "activist" hypothesis suggested by the role of ecological and environmental change in reducing the incidence of tuberculosis. In places like East Harlem, ongoing processes in the day-to-day world need to be programmed to serve specific health outcomes. In East Harlem, for example, an hypothesis now being explored is that one important component of a good community health program is a project to train superintendents in environmental sanitation, fire prevention, rodent control, and boiler repair, for the purpose of having such men function as environmental extension agents. Lead poisoning, rat bites, asthma, accidents, burns, and wintertime suffering are some of the problems which could possibly be controlled better by a strengthened program in tenement preventive maintenance. The premise is that personal health services would accomplish little without measures to arrest the cycle of decay and devastation in housing maintenance services. In other words, the health problems we attempt to solve should be the problems we encounter.

This approach is presented as an alternative to the current interest in meeting slum community health needs through the construction and staffing of neighborhood ambulatory care centers. Despite an emphasis on being "out in" the community, and personalized, complete, and continuous care, the services offered by these centers may be of little value unless linked to measures to eliminate the hazards to health and safety of the "indoor" slum tenement environment.

It is unfortunate that many public health workers have allowed the term "comprehensive health services" to become restricted to personal health services. Because of this restriction, the term has come to have an unfavorable connotation for many slum residents, especially the younger ones.[17] Consequently, it will be all the more difficult to obtain the "community participation in health planning" recommended by the task force. Such participation will not be forthcoming unless our health services are designed to solve other problems concurrently, especially tenement housing maintenance and jobs. In slums, the true ranking of priorities cannot be in terms of neat categories such as "housing" versus "health," or "jobs" versus "nutrition." Rather, the question is more likely to be whether the boiler will be repaired tonight, and not next week or next month, so that the children will not get sick and miss school, thereby keeping their mother from earning the paycheck with which she pays the rent, which her landlord needs to pay the boiler repairman.

Keys to delivery: outreach and high-risk groups

The second task force recommendation emphasized outreach and the concentration on high-risk groups. Building new hospitals and care units may do less for health per dollar spent than strengthening the network of arrangements, efforts, liaisons, and connections for reaching into tenement buildings, schools, churches, special employe groups, bars and social clubs, playgrounds, and the crowd which hangs out at the nearest abandoned care. For tuberculosis control in this country, high-risk groups are emphasized because little is gained from community-wide screening outside the high-risk groups. The task force report cited the low yield of cases, even in slum areas, from mass x-ray screening (3 to 4 per 10,000, with the exception of one campaign).[18]

In tuberculosis control, a stage has been reached such that case-finding efforts have to be maximized by reaching out for preselected high-risk cohorts. Outside of the tuberculosis program, there is a need to apply this principle in the planning of multiphasic screening programs which serve as adjuncts to comprehensive health care programs.

Outreach, in tuberculosis control, means doing such things as going into the school or day-care center to do Tine testing or visiting the home of a patient on ambulatory care. But outreach means that someone has to go out and look. To pay for that someone, often something has to be given up. Tuberculosis wards can be closed and the number of person-days drastically reduced, if more home visits can be made. A day in the hospital costs approximately $97; a home visit costs $17. But more home visits cannot be made unless monies are released by phasing out tuberculosis beds and those monies are consigned to home care.

For tuberculosis, these principles are well established. For many other nonacute conditions, the economics of home care and outpatient care remain untested. Even as the hospital bed-squeeze worsens, Blue Cross reports that the per-diem costs of home care rarely exceed $35, as against a cost of $100 per diem for inpatients.[19] Yet East Harlem, with a total of 2,620 hospital beds, has no more than approximately 16 nurses in a home nursing program caring for fewer than 50 patients at any one time.[20]

The point is that we should stay away from programs which require capital construction or excessive reliance on new capital facilities.[21] In an inflationary era, to ignore this principle is to court disaster. Large amounts of money can be spent before even a single patient has been reached—a lesson which health planners in many developing countries have been learning.[22] All too frequently, a "demonstration project" or worse, a shortage of funds for hiring service staff, is the outcome. Everything is provided for a token few. Often, comprehensive health care means treating those already reached rather than reaching those who need to be treated.

In East Harlem, disenchantment with capital construction led to cancellation of a single 2.3 million dollar ambulatory care unit, which would have provided "total" care for 15,000 people. Instead, minor, low-cost structural revisions in East Harlem's several child health stations will be made so that, with changes to a nurse-clinician staffing arrangement, these stations can become maternal and child health care units. Such units would take care of well-baby care, physician's office types of problems, and eventually, family planning. The capital expenses in these programs would be minor, no more than several thousand dollars. The goal is to provide 80 to 85 per cent of the care needed for mothers and preschool children in East Harlem at annual operating expenses considerably less than the capital investment in the building projected for "total" care for 7 to 10 per cent of the mothers and children.

Must it be the family?

Comprehensive health care has usually been equated with "family-centered" medicine. On the other hand, workers in tuberculosis control have long been accustomed to flexible definitions of the primary or basic social unit for their patients: the church choir, the classroom, the battleship, the Chinese restaurant men who work at night, the diabetic clinic, the inhabitants of skid row, and the inmates of an institution.

In places like East Harlem, there are many people for whom the conventional family is not the basic social unit at critical times in their lives. This holds especially for down-and-outers and up-and-comers. Unfortunately, census takers and demographers have yet to formalize methods for identifying and counting such people. In East Harlem, apart from the 100 to 200 homeless derelicts known to the local police precincts, we are unable to estimate the numbers of nonfamily-based people. Drug users and addicts, for example, often belong to self-contained social systems, and have little or infrequent contact with their families. Local experience with teenage hepatitis patients suggests that it is sometimes easier to reach one drug user through another than through his father, if he has one, or his mother. Similarly, tightly knit social units will be formed by teenagers, young adults, and mothers who have pulled themselves up from backgrounds of squalor and personal decay. Examples are day-care centers, Phoenix houses, street academies, and job-training centers.

A health officer in slum districts such as East Harlem is often approached by many such groups for advice on health maintenance programs for their members, but there is a tendency to hold back because programs for such groups would not be family centered. A more appropriate response would be to realize that we are dealing with the East Harlem equivalent of an occupational medicine program. The so-called family-centered approach to such groups may be irrelevant. The parallel with tuberculosis control is that we are dealing with microcommunities in the epidemiologic sense of the term: people who share common experiences.

Strategies for social and behavioral changes in the ghetto may become increasingly dependent on creating new environments for the infant, the preschool child, the adolescent, the teenager, and the unwed mother. These new environments would be in the community but outside the household. Narcotic rehabilitation centers with their own dormitories, each operating under strict house rules, are examples. Certain community groups now want to establish all-day-care programs for infants starting at two months of age. In each situation, the idea is to break all the vicious social and behavioral cycles associated with poverty, wrecked families, and the squalor of tenement life. These new social units should be recognized as new types of communities with special health problems. We have to train and assign medical extension agents to work with such groups. Perhaps training such agents will be one of the future horizons for public health nurses.

Tuberculosis clinics and asthma

Most of the task force's recommendations concerning tuberculosis are self-evident. One can question one reference to "phasing out" our tuberculosis outpatient clinics in the district health centers, as was suggested in the first recommendation. Perhaps these clinics should begin evolving into asthma control units instead. Asthma is an especially troublesome health problem in East Harlem. Unfortunately, precise prevalence data are not available, but patients and their families express frustration over the disability produced by asthma. The current management of asthma patients is limited to bailing out patients in acute bronchospasm in the emergency room. Little or nothing is done before or after the acute episodes. A tuberculosis control-type program, with an emphasis on epidemiologic investigation and care of the patient in his home environment, may contain clues concerning the risk factors and improve the care of the patient. The public health approach to tuberculosis control may be the model for a more enlightened clinical approach to the patient with asthma.

Summary

Several working hypotheses for community health are suggested by past experience in tuberculosis control and the recommendations of the task force.

Increases in personal health services probably will not solve the health problems of people living in urban slums unless there are concurrent improvements in certain kinds of environmental services.

Heavily capitalized ambulatory care centers may not result in improved "delivery" of health services.

When there is an equivocal community response to pleas for "participation in health planning," the explanation may be that, for people in low-income areas, urgent problems may not be reflected in the conventional goals of health planners.

We have yet to recognize those situations in which the family may not be the patient's basic or most important social unit from the point of view of health care strategy.

Tuberculosis clinics, rather than being allowed to wither away, might well be the place to start looking into "ghetto asthma" and other nonspecific respiratory diseases.

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DESIGN OF A MOBILE EMERGENCY UNIT

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Justification for a unit to replace or supplement the commonly used ambulance is readily available in a multiplicity of articles published in several medical journals and other periodicals.[1-6] Available data and our experience in New York City have shown that (1) the quality of emergency medical care, in many areas of the United States is extremely poor,[1] and (2) most ambulances are staffed with untrained attendants.[1,2] It has been estimated that 10 to 20 per cent of those who die in accidents could be saved by proper treatment administered at the site.[6] In addition, The American Heart Association's Committee on Cardio-Pulmonary Legislation concludes that an educated public and trained ambulance attendants could prevent almost one third of cardiac deaths that occur before the victims reach a hospital. The Ambulance Association of America estimates that 25,000 persons are permanently injured or disabled annually by untrained ambulance attendants and rescue workers. The National Highway Safety Bureau, U.S. Department of Transportation, reports that many needless deaths occur in accidents because very few areas have adequate emergency services, and because most areas have inadequate planning of emergency logistics, communications, and transportation facilities.

The accident is the leading cause of death among persons between the ages of one and thirty-seven and the fourth leading cause of death at all ages.[1,4] The American College of Surgeons, through its assistant director for trauma activities, Oscar P. Hampton, Jr., M.D.[3] reported that in 1968, trauma caused more than 100,000 deaths and 10 million temporary disabilities, at a cost of approximately 18 billion dollars. Trauma patients used more hospital days than all cardiac or obstetric cases and four times those used by cancer patients. The total of 22 million hospital days is equivalent to 120 hospitals of 500 beds each that were occupied by this type of case. It has been estimated that a mere 10 per cent reduction would save 2 million hospital days and free physicians for approximately 8,000 work days at an over-all saving of $1.6 billion per year.

Deaths and disability can be reduced by better use of already proved emergency treatment procedures.[2] Members of the National Research Council report that one third of accident fatalities in the United States occur at the site of the accident. They were amazed that the public and the medical profession condone the use of poorly equipped ambulances and untrained attendants. In the United States, 50 per cent of ambulances services are furnished by undertakers. Only a few services require first aid training for attendants; 29 per cent use station wagons; and most ambulances do not carry splints.[1,6]

Frey[5] of Michigan studied 159 autopsy protocols on people killed in accidents. He found 28, or 18 per cent, of the victims might have been salvaged if proper equipment had been available and efficient emergency care had been rendered by trained ambulance personnel.

With the background information as outlined, it becomes apparent that new methods must be devised to improve the delivery of emergency care.[6]

Description of the unit

The use of mobile units is increasing in popularity. Mobile health clinics have been used by the United States government to serve Indian reservations. There are units for the transportation and treatment of drug victims, premature infants, and intensive-care treatment. None are equipped as completely as the mobile emergency unit herein described (Fig. 1). It includes cardiac resuscitation equipment, suture material, monitors, antibiotics, narcotics, bandages, splints, oxygen, syringes, needles, and all equipment usually found in the modern emergency department. In addition, the vehicle is heated, air conditioned, protected by water bumpers, and contains a two-way radio communication system that provides contact with the police and with hospitals best prepared to handle the sick and injured being transported. The unit is staffed by a crew of four, which includes a physician, a nurse, a technician, and a driver trained to act as an aide at the site of a disaster.

In urban communities, several of these units may be stationed at selected areas relatively devoid of hospital emergency room facilities. Their mobility would enable them to go to the patient and render treatment, either at the site or en route to the facility selected, according to need. They

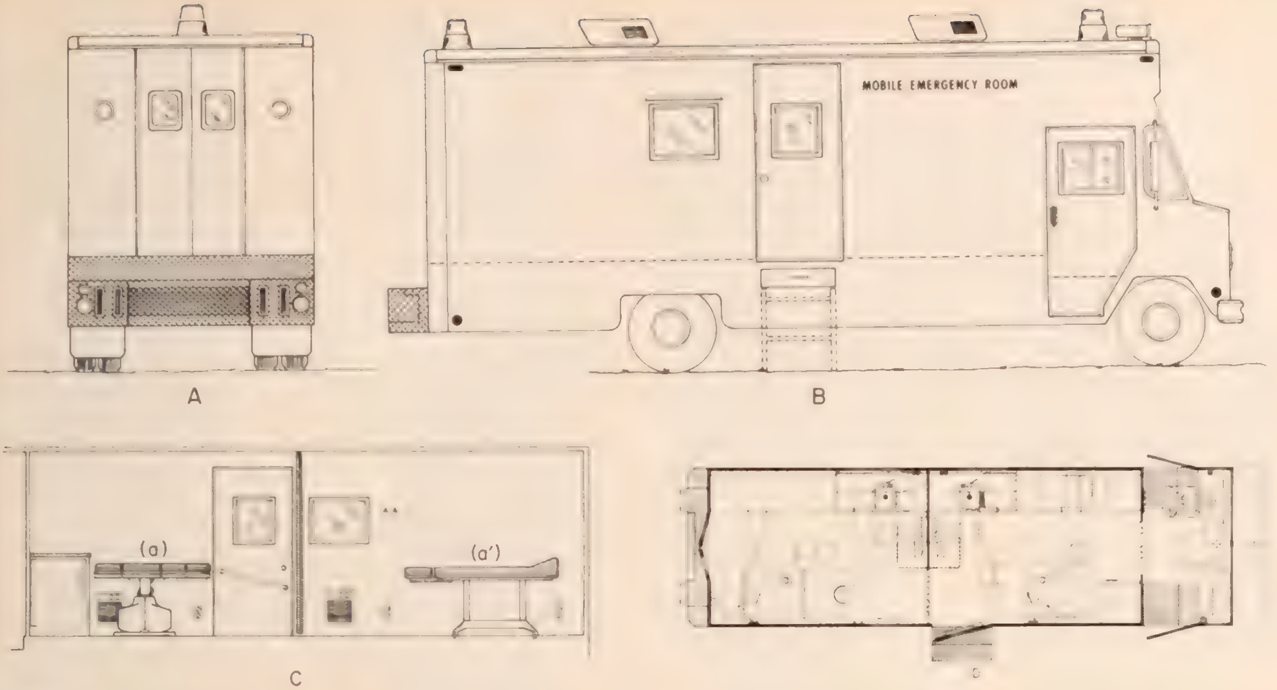

FIGURE 1. Mobile emergency room. (A) Exterior, rear view. (B) Exterior, side view. (C) Interior, side view. (D) Interior, top view, entire van.

would supply medical care rapidly and efficiently. In cities that have satellite clinics, or neighborhood health stations, this mobile unit could be used to supplement them. In rural areas the units may be the only medical facilities available.

Figure 1 illustrates the emergency medical unit. The length of the van is 30 feet. The van is designed to be maneuvered through city streets. The treatment area is 8 by 7 by 21 feet, and can accommodate six people lying down and four standing. Two treatment tables are fixed (Fig. 1C,D—tables marked a and a[1]) and equipped with safety straps on each side. A harness fastened to the ceiling secures personnel and permits treatment while the vehicle is in motion. The seats can be converted into four stretchers. A complete list of the equipment, medications, and supplies carried by the mobile emergency unit is given in the Appendix.

The staffing pattern is designed to supply twenty-four hour service, seven days a week. The unit and its crew can handle ambulatory, sick, or injured people as well as treat fractures, burns, and cardiac emergencies of all kinds.

The two-way communication system enables those in the van to contact the nearest medical facility and alert the staff to the type of patient being transported and what treatment is being given. Preparation for receipt and continued care of the patient should prevent fatal interruptions in the delivery of emergency medical service.

In August, 1971, the initial unit was placed in operation in Brooklyn under the joint sponsorship of the Kings County Medical Center and the City of New York. It is hoped that several of these vehicles will be placed throughout the city in areas of greatest need in the future. The sites will be chosen according to the distance between the region and a major medical facility. Using several of these vehicles throughout a given area will shorten response time and supply the people in each region with easy access to medical care both day and night, seven days a week.

Conclusion

In the Borough of Brooklyn, in the City of New York, a mobile emergency unit began operation in August, 1971. The vehicle is equipped, staffed, and supplied so as to render service rapidly and efficiently to patients suffering from all traumatic, surgical, and medical emergencies including: multiple injuries and lacerations, fractures, burns, shock, cardiac arrhythmia, myocardial infarction, and cardiogenic shock. The unit functions as an arm of the emergency department of our major medical facilities and its purpose is to fill the needs of the sick and injured on a twenty-four-hour basis.

It is hoped that similar units will soon be in operation to improve the delivery of high-quality medical care to all people, particularly those in disadvantaged areas of our cities and isolated rural regions. The values of these units for use in major disasters such as those caused by fires, bombs, aircraft, and automobiles is obvious.

Acknowledgment. The authors express their thanks to Mr.

John D. McMullen, Deputy Director, Emergency Medical Service. Without his technical assistance the design of the unit would not have been possible.

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6. The crisis in emergency care Part I, M. World News **25:** 32 (1970).

Appendix

Equipment

EKG monitor and recorder
Defibrillator
Pacemaker
Cardiac compressor
Radio equipment
Bag mask resuscitator and oxygen
Volume respirator
Suction unit with accessories
Examining and operating tables and special stretchers, 2 each
Surgical lamps
Thermometers, disposable
Nebulizers
Portable infant warmer (Isolette)
Instrument sterilizer
Sphygmomanometer
Ophthalmoscope, otoscope
Stethoscope
Laryngoscope
Mouth-to-mouth resuscitation airways
Oropharyngeal airways
Back boards (short and long)
Pleural drainage set
Bronchodilator
Intravenous stand and tubing
Rails (Modura), for mounting equipment
Water supply and heater
Generator
Clocks: standard; elapsed time
Extension cords, 100 feet long
Miscellaneous: flashlights, fire extinguisher, floodlights, reflectors, flares, gas masks
Percussion hammer
Tourniquets
Measuring tape
Tongue depressors
Scissors (bandage)
Prescription pads
Splints (leg and arm)
Urinalysis kit for sugar and acetone
French catheters
Specimen bottles
Sterile needles for phlebotomy and thoracentesis
Hemostats, forceps, splinter forceps, scalpel, suture suction needle
Delivery kits
Blankets

Medications

- Antiseptics
  - Hexachlorophene (liquid soap 3 per cent) (Phisohex)
  - Providone (Betadine) iodine antiseptic solution
  - Povidone iodine scrub
  - Benzalkonium (Zephiran) chloride with antirust 1:750
  - Benzalkonium chloride tincture spray 1:750
- Burn Items
  - Nitrofurazone (Furacin) impregnated gauze pads 3 × 9 inches
  - Nitrofurazone impregnated gauze roll bandage 4 inches × 5 yards
  - Mafenide hydrochloride (Sulfamylon) cream
- Steroids
  - Hydrocortisone sodium succinate, 100 mg. (Solu Cortef)
  - Methyl prednisolone sodium succinate, 40 mg. (Solu Medrol)
- Alkalizing agents
  - Sodium bicarbonate, 3.75 Gm. per 50-ml. vial
- Anticoagulants
  - Heparin, 1,000 and 5,000 units per vial
  - Warfarin (Coumadin) 75 mg.
- Heparin antagonists
  - Protamine sulfate 50-mg. vial
- Anticonvulsants
  - Diphenylhydantoin (Dilantin) 250-mg. vial
- Drugs for treating cardiovascular emergencies
  - Digoxin 250 micrograms per 2 ml. (Lanoxin)
  - Deslanoside 200 micrograms per 2 cc. (Cedilanid-D)
  - Procainamide 100 mg. per cubic centimeter (Pronestyl)
- Local anesthetics
  - Procaine (Novacaine), 2 per cent, 30 ml. vial
  - Lidocaine, 1 or 2 per cent
- Hemostatics
  - Oxidized cellulose, 3 × 3 inches pads, gauze type
  - Gelutin powder (Gelfoam) size 100 pads
- Barbiturates
  - Phenobarbital, 130-mg. ampules
- Hypotensive agents
  - Phentolamine, 5 mg. (Regitine)
  - Reserpine, 2.5 mg. (Serpasil)
- Diabetic coma treatment
  - Insulin (regular)
- Respiratory and cerebral stimulants
  - Caffeine sodium benzoate, 250 mg. per milliliter
  - Nikethamide, 250 mg. per cubic centimeter (Coramine)
- Sympathomimetics
  - Isoproternol, 1 mg. per 5 ml.
  - Levarternol, 2 mg. per cubic centimeter
- Antibiotics
  - Tetracycline, 100 mg. intramuscular
  - Tetracycline, 500 mg. intravenous
  - Penicillin G potassium, 5 million units
  - Penicillin G sodium, 5 million units
  - Cephalothin, 1 Gm. (Keflin)
  - Chloramphenicol, 1 Gm., vials
- Analgesics and narcotic
  - Meperidine, 50 mg. per cubic centimeter
  - Morphine sulfate
  - Codeine

  - Propranolol, 1 mg. per cubic centimeter (Inderal)
- Diuretics
  - Furosemide, 20 mg. per milliliter ampule (Lasix)
  - Mannitol, 25 per cent

Supplies

- Aeroplast spray
- Airway (3 sizes)
- Alcohol swabs
- Applicators
- Armboard, disposable 9 × 18 inches
- Armboard covers
- Bandage elastic 2, 4, and 6 inches
- Dressing cision, 1 × 8
- Razors and shave prep kits
- Resusi-tube, adult, child, infant
- Solution administration set
- Suction catheters
- Normal saline, 500 cc.
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- Bandage roller 1, 2, 3, and 4 inches
- Bandaid, spot and triangle
- Basin, emesis and round
- Bucket
- Butterfly closure, small, medium, and large
- Combines 5 × 9
- Disposable needles, all sizes
- Gauze vaseline xeroform 1 × 8 and 5 × 9
- Dressing vaseline, 1 × 36, 3 × 18, and ½ × 72
- Distilled water 500 ml.
- Ringers lactate 500 ml.
- Tracheotomy tray, adult and child
- Cutdown tray, adult and child
- Cardiac arrest items, adult and child
- Syringe without needle, all sizes
- Needle, nondisposable, all sizes
- Dermicel, ½, 1, 2, and 3 inches
- Dressing 4 × 3 and 2 × 2
- Evacuator, stomach
- Exam gloves
- Eye pads
- Tetanus immune globulin (human)
- Glucose in water

Gynecomastia

The etiology and pathogenesis of cystic breast disease of 203 military-age males has recently been investigated by Cordiano, Ninfo, Gagni, and Ottolenghi (Int. Surg. 55: 131 [February] 1971). Estrogen disturbance was probably the etiologic basis in most of the cases. This disturbance may be transitory. Other possible factors are physical and psychic trauma. On the basis of the data, three factors should be emphasized: (1) Bilateral gynecomastia was sometimes combined with quantitative alterations in the excretion of several hormones. (2) Urine excretion of estrogens and androgens was frequently normal. (3) There was an almost constant relationship between the inoculation of polyvaccines in the homolateral mammary region and the starting point of the breast lesion. This series showed no association between testicular tumor and gynecomastia, and there was no association with prostatic disease. Sixteen patients had pulmonary lesions, and 23 showed slight liver deficiencies.

Pathohistology was characteristic of a cystic fibroadenosis with abnormal presence of connective epithelial tissue. Diagnosis of true gynecomastia must be supported by radiologic evidence and differentiated from pseudogynecomastia, or abnormal adipose tissue deposited in the mammary region. Gynecomastia is a surgical lesion, and glandectomy is the only useful and permanent therapy. Surgical technics for extirpation are simple: (1) glandectomy after periareolar incision; (2) glandectomy after submammary incision; and (3) radical mastectomy to be performed only if cancer is suspected or if there is a mammary tumor. Most previous observations of gynecomastia are from patients in the fifth or sixth decades of life, so this series may prove useful in the study of both the clinical and pathogenetic aspects of the disease.

Necrology

Hugh Worthington Ashmore, M.D., of Hauppauge, died on January 20 at the age of forty-one. Dr. Ashmore graduated in 1956 from Jefferson Medical College of Philadelphia. He was a consulting pathologist at Central Islip State and Pilgrim State Hospitals and deputy chief medical examiner for Suffolk County. Dr. Ashmore was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Bolt, M.D., of New York City, retired, died on December 3, 1971, at the age of seventy-eight. Dr. Bolt graduated in 1921 from McGill University Faculty of Medicine. He was a member of the Association of Life Insurance Medical Directors of America, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

J. Clarke Burke, M.D., of Troy, died on August 6, 1971, at the age of fifty-five. Dr. Burke graduated in 1941 from Albany Medical College. He was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Rensselaer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur P. C. Clark, M.D., of Medina, died on October 11, 1971, at the age of sixty-two. Dr. Clark graduated in 1934 from Queens University Faculty of Medicine (Ontario). He was chief of medicine at Medina Memorial Hospital. Dr. Clark was a member of the Orleans County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Elizabeth Day, M.D., of Rochester, died on December 28, 1971, at the age of fifty-three. Dr. Day graduated in 1955 from the University of Rochester School of Medicine and Dentistry. She was an assistant attending pediatrician at Strong Memorial Hospital. Dr. Day was a Diplomate of the American Board of Pediatrics and a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herbert Dickstein, M.D., of Staten Island, died on May 22, 1971, at the age of forty. Dr. Dickstein received his medical degree from the University of Lausanne in 1960. He was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gaspare Di Lorenzo, M.D., of Brooklyn, died on January 2 at the age of sixty-seven. Dr. Di Lorenzo graduated in 1931 from George Washington University School of Medicine. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Henry Shankland Dunning, M.D., of New York City, died on January 25 at the age of sixty-six. Dr. Dunning graduated in 1930 from Cornell University Medical College. He was an attending neurologist at The New York Hospital, a consulting neurologist at New York Hospital (Westchester Division), and a retired clinical professor of neurology at Cornell University Medical College. Dr. Dunning was a Diplomate of the American Board of Psychiatry and Neurology and a member of the American Academy of Neurology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Emil Froeschels, M.D., of New York City, died on January 18 at the age of eighty-seven. Dr. Froeschels received his medical degree from the University of Vienna in 1909. He was the founder and honorary life president of the International Association of Logopedics and Phoniatrics, the first director of the Alfred Adler Institute of New York, and a past president of the New York Society for Speech and Voice Therapy. Dr. Froeschels was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Darwin Hecht, M.D., of Brooklyn, died on January 2 at the age of eighty-two. Dr. Hecht graduated in 1917 from George Washington University School of Medicine. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Abraham Louis Henkin, M.D., of Miami, Florida, formerly of Brooklyn, died on December 11, 1971. Dr. Henkin graduated in 1912 from University and Bellevue Hospital Medical College.

Bruce Lynn Kendall, M.D., of Brookville, died on January 21 at the age of sixty. Dr. Kendall graduated in 1938 from Indiana University School of Medicine. He was an assistant attending psychiatrist at North Shore Hospital (Manhasset). Dr. Kendall was a Diplomate of the American Board of Psychiatry and Neurology and a member of the American Psychiatric Association, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Saly Leibowitz, M.D., of Brooklyn, died on January 8 at the age of eighty-seven. Dr. Leibowitz received his medical degree from the University of Berlin. He was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Oscar L. Levin, M.D., of New York City, died on October 16, 1971, at the age of eighty-three. Dr. Levin graduated in 1911 from Columbia University College of Physicians and Surgeons. He was a consulting dermatologist at Beth Israel Hospital. Dr. Levin was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology, the Society for Investigative Dermatology, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raymond Thomas McFarlin, M.D., of Poughkeepsie, died on July 25, 1971, at the age of fifty-nine. Dr. McFarlin graduated in 1939 from New York Medical College. He was an attending general practitioner and an affiliate orthopedic surgeon at St. Francis Hospital. Dr. McFarlin was a member of the American Academy of General Practice, the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel John Miller, M.D., of Pelham Manor, died on January 8 at the age of seventy-five. Dr. Miller graduated in 1924 from the University of Tennessee College of Medicine. He was a member of the New York Cardiological Society.

Kermit Edward Osserman, M.D., of New York City, died on January 22 at the age of sixty-four. Dr. Osserman graduated in 1933 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was a consulting physician at Knickerbocker Hospital and City Hospital Center at Elmhurst and an attending physician at The Mount Sinai Hospital and clinical professor of medicine at its School of Medicine. For more than twenty years he had directed the myasthenia gravis clinic and research center at The Mount Sinai Hospital. Dr. Osserman was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Academy of Neurology, the Clinical Society, New York Diabetes Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Christine Pegg, M.D., of Port Washington, died on January 16 at the age of fifty. Dr. Pegg graduated in 1951 from the University of Toronto Faculty of Medicine. She was a pediatrician on the medical staff at North Shore Hospital (Manhasset). Dr. Pegg was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max S. Rabinowitz, M.D., of Brooklyn, died on January 22 at the age of seventy-three. Dr. Rabinowitz graduated in 1922 from Long Island College Hospital. He was an attending orthopedic surgeon at Long Island College Hospital and a consulting orthopedic surgeon at Jewish Hospital of Brooklyn and Maimonides Hospital of Brooklyn. A former associate professor of clinical orthopedics at Downstate Medical Center, Dr. Rabinowitz was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the American Rheumatism Association, the New York Academy of Medicine, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Abe Irving Rock, M.D., of Buffalo, died on August 19, 1971, at the age of seventy. Dr. Rock graduated in 1931 from the University of Buffalo School of Medicine. He was an associate attending physician at Buffalo General Hospital. Dr. Rock was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph John Russo, M.D., of Albany, died on January 23 at the age of sixty-six. Dr. Russo graduated in 1929 from Albany Medical College. He was an attending dermatologist at St. Peter's Hospital, Memorial Hospital, Memorial Hospital Outpatient Department, and the Veterans Administration Hospital, and an attending dermatologist at Albany Medical Center Hospital. Dr. Russo was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology, the New York Academy of Medicine, the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Elden Sawhill, M.D., of Sarasota, Florida, formerly of New York City, died on September 8, 1971, at the age of eighty-one. Dr. Sawhill graduated in 1918 from University and Bellevue Hospital Medical College. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lisette Kotler Soudakoff, M.D., retired, of New Hyde Park, died on January 20 at the age of eighty-two. Dr. Soudakoff received her medical degree from the University of Nancy in 1913. She was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans L. Steiner, M.D., of Lindenhurst, died on January 24 at the age of seventy-one. Dr. Steiner received his medical degree from the University of Heidelberg in 1926. He was an attending physician on the medical staff at Lakeside Hospital (Copiague). Dr. Steiner was a member of the American Academy of General Practice, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Thomas Totero, M.D., of New York City, died on November 15, 1971, at the age of seventy-six. Dr. Totero graduated in 1920 from New York Homeopathic Medical College and Flower Hospital. He was a member of the American Psychiatric Association, the Pan American Medical Association, the Westchester Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Erich Wiesen, M.D., of Bethpage, died on January 14 at the age of seventy-four. Dr. Wiesen received his medical degree from the University of Munich in 1922. He was an attending physician in general practice at Mid-Island Hospital. Dr. Wiesen was a member of the Academy of General Practice, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sidney Bernard Wilensky, M.D., of New York City, died on December 28, 1971, at the age of seventy-five. Dr. Wilensky graduated in 1920 from Long Island College Hospital. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James F. B. Zweighaft, M.D., of Tappan, died on December 15, 1971, at the age of seventy-three. Dr. Zweighaft graduated in 1927 from Columbia University College of Physicians and Surgeons. He was a Fellow of the American College of Anesthesiologists and a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Westchester Academy of Medicine, the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Histoplasmosis

Histoplasmosis should be considered as a possibility in nearly every case of chronic pulmonary disease, in many cases of acute pulmonary disease, and in a substantial number of persons with generalized systemic disease. Saliba has recently described (*J. Kentucky M. A.* 68: 39 [Jan.] 1970) the various types of histoplasmosis. They are as follows.

Acute pulmonary. (1) Primary infection is an influenza-like illness that may resemble primary tuberculous infection or sarcoidosis. The hilar glands may be enlarged or scattered pulmonary foci may be found on the chest x-ray. (2) Pneumonitis presents as a more acute variety of primary infection, and will present with pneumonic areas on the chest x-ray. A high suspicion index and the appropriate laboratory studies are necessary for a specific diagnosis. Pneumonitis can be confused with bacterial or viral pneumonia, and a pneumonitis that persists for more than a few days or one that is resistant to ordinary antibiotics should be suspected. (3) Disseminated or miliary histoplasmosis occurs in patients whose resistance fails to confine the fungal infection to the lungs, and the infection becomes disseminated in the blood stream. These patients are usually critically ill, and their clinical pictures may be indistinguishable from miliary tuberculosis, characterized by fever and hepatosplenomegaly. Untreated, the infection may be rapidly progressive and fatal, but prompt treatment can produce a dramatic response.

Chronic pulmonary. (1) Cavitary histoplasmosis is the most frequently encountered chronic type, and is indistinguishable from pulmonary tuberculosis, and perhaps also from fungal or other chronic pulmonary diseases. The pulmonary disease can be extensive, and cavitation can be single or multiple, unilateral or bilateral. Unidentified and untreated, it is usually slowly progressive with exacerbations and remissions over the years. The continuing destruction of pulmonary parenchyma results in increasing disability and, in many cases, death. (2) Calcification may occur in various organs, and in the lungs it presents either as scattered calcification or as calcification of the mulberry type in the hilar and mediastinal region. It can compress the trachea or esophagus, or obstruct the superior vena cava. (3) Histoplasmoma presents as a coin lesion on the x-ray or occasionally as a larger density which might represent an inspissated cavity or a caseonecrotic granuloma.

Associated diseases. Two or more types of fungi could coexist as histoplasmosis and blastomycosis or aspergillosis. Histoplasmosis has also been found in the presence of carcinoma, leukemia, and other malignancies. Chronic tuberculosis and chronic histoplasmosis may be found together in an active form, in a certain percentage of patients. In some patients, one may precede or follow the other after months or years. The shedding of histoplasmosis organisms in progressive tuberculosis, or the shedding of mucobacteria in active histoplasmosis has been reported, and in either case, the shedding organisms may simply represent a previous infection rather than a concurrent disease process.

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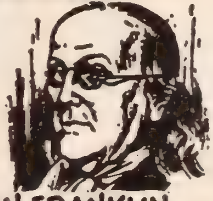

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MD—Director Psychiatry
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INTERNIST FOR MEDICAL GROUP, SUBURB NEW YORK CITY. INITIAL contract leading to partnership. Starting salary $30,000 with the possibility of additional income. Include complete curriculum vitae in reply. Dept. 185, c/o NYSJM.

TWO ORTHOPEDISTS TO ACT AS A TEAM, FOR MEDICAL GROUP IN New York area. Initial contract $32,000 leading to partnership. Geographic full time but fee-for-service permitted. Dept. 186, c/o NYSJM.

ANESTHESIOLOGIST, BOARD CERTIFIED OR ELIGIBLE, TO JOIN CONgenial group in 300 bed, voluntary hospital. Salary negotiable. Early partnership if mutually agreeable. Contact: Fred T. Wolkoff, M.D., Director, Dept. of Anesthesiology, Lutheran Medical Center, 4520 4th Avenue, Brooklyn, N.Y. HY 2-3200.

GENERAL SURGEON, BOARDS OR SO QUALIFIED TO ASSOCIATE with a 4 man, well established, multispeciality surgical group, Suffolk Co., Long Island; excellent starting salary; rapid advancement to complete corporate equality; liberal time off; near New York City. Excellent boating, fishing, ocean and bay beaches, hunting, skiing, etc. Prefer subspeciality qualification. If pediatric surgeon, must be willing to do some general surgery. Call immediately (516) 475-1013.

URGENTLY NEEDED: GENERAL PRACTITIONER, LONG LAKE, N.Y., central Adirondacks, resort area. Excellent central school. Ambulance service. Office available. Attractive, guaranteed annual salary as Town Health Officer, plus income from private practice. Near modern hospital. Write: Medical Procurement Committee, Box 83, Long Lake, N.Y. 12847.

RADIOLOGIST: THIRD FULL TIME RADIOLOGIST IS NEEDED FOR A 200 bed general hospital in a Long Island suburban community. Special experience in either arteriography or neuroradiology would be helpful. Send curriculum vitae to: M. Alpert, M.D., Franklin General Hospital, Valley Stream, N.Y. 11580.

PHYSICIANS WANTED—CONT'D

FAMILY PRACTICE PARTNER WANTED: YOUNG TRAINED FAMI
physician interested in joining a 1971 Rochester family medicine resider
graduate who has been in solo practice for 6 months. Practice located in
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Long Island near North Shore. Must have good residency qualificati
Dept. 196, c/o NYSJM.

WANTED IMMEDIATELY, WELL TRAINED, PREFERABLY CERTIF
gynecologist between ages 35 and 50. Association first year with guarant
income, full partnership thereafter if mutually agreeable. Located in sr
Central New York town with a new hospital, fine living conditions, recreati
areas, schools, churches, etc. Call or write 1-315-363-2820; 447 North M
St., Oneida, N. Y. 13421.

PHYSICIAN: PROVIDE MEDICAL EVALUATIONS AND TREATMENT
part of Geriatric Mental Health Program at Cumberland Hospital. Con
with program staff. Part time (20 hours). New York State license requi
Fringe benefits. For further information, write or call Arik Brissenden, M
121 DeKalb Ave., Brooklyn, N.Y. (212) 270-4467.

GERNERAL PRACTICE OR INTERNIST: GREAT OPPORTUNITY
ambitious man, preferably under 45, interested in general medicine,
favors establishment of indpendence over salaried job as associate of a
Board eligible internist and general practitioner ready to phase out in
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bedrooms in same location at great financial advantage. Reply: P. W
M.D., 51-07 69 St., Woodside, N.Y. 11377, or call (212) NE 9-4973.

LOCUM TENENS WANTED: JUNE-SEPTEMBER 1972. NEW YOR
cense, general practitioner for group practice, summer resort area. Con
Edwin C. Rowe, M.D., 94 Pantigo Road, East Hampton, N.Y. 11937.

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New York State Office of Vocational Rehabilitation has opening for full
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Write: Personnel Office, Room 1600, Office of Vocational Rehabilitatio
Washington Ave., Albany, N.Y. 12210.

YSICIANS WANTED—CONT

ERGENCY ROOM PHYSICIAN TO COMPLETE FOUR-MAN GROUP;)0-bed, full service hospital. Solid backup in all specialties and most sub-)ecialties from active staff. Central Connecticut community midway etween Hartford and New Haven. Must be eligible for Connecticut censure. Attractive salary, excellent benefits. Resume to Chief of Staff, /orld War II Memorial Hospital, Meriden, Conn. 06450.

ACTICES WANTED

ESTHESIOLOGIST. BOARD CERTIFIED. LICENSED IN NEW YORK tate, seeks practice. Available for coverage. Dept 142, c/o NYSJM.

LD AND GENERAL PSYCHIATRIST, NEW YORK STATE QUALIFIED, oard eligible. Extensive experience in individual and group therapy with ildren, adolescents, and adults; marriage counselling. Community ap- oach, schools, etc. Interested in joining non psychiatric medical group, eferably pediatricians, general practitioners, internists. Dept. 195, c/o YSJM.

TIFIED OBSTETRICIAN AND GYNECOLOGIST SEEKS PRIVATE actice opportunity (solo, association of group) in suburban New York City d New Jersey area. Will do family planning, neighborhood health center re, etc., full or part time. Dept. 197, c/o NYSJM.

FICE SPACE WANTED

DIOLOGIST WISHES TO OBTAIN USE OF MANHATTAN RADIOogist's office to continue private practice. Straight rental or percentage. ept. 194, c/o NYSJM.

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NERAL PRACTICE: OPPORTUNITY TO WORK IN BEAUTIFUL VA- ation (Finger Lakes) area. New hospital fully accredited with a three-man roup or solo. Medical office facility adjacent to hospital. Easy drive to yracuse and Rochester medical centers. Contact: John J. McDonald, dministrator, Schuyler Hospital, Montour Falls, N.Y. 14865.

TIVE FAMILY PRACTICE AVAILABLE. 9 ROOM HOME; 2 BATHS, 3 ireplaces. Attached, fully furnished 7 room office, X-ray, central air condi- ioning. On ¾ acre plot, beautiful shrubs, busy avenue. Located in the hub f Nassau County, N.Y. Would like to leave June 1, 1972. Will work with ccupant 1-2 months. Will take mortgage. Dept. 198, c/o NYSJM.

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MEDICAL OFFICE FOR RENT AT 73RD ST. OFF ROOSEVELT AVENUE, Jackson Heights, N.Y. Private street entrance; completely furnished and paneled; central air conditioned; large waiting room, consultation room, two examining rooms, X-ray room, two bathrooms. Call (212) 532-0078.

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NEW ROCHELLE, N.Y.: FOUR ROOM MEDICAL OR DENTAL OFFICE, professional building, central location; reasonable rent; inspection invited; available now. S. Stern, M.D., 650 Main St., New Rochelle, N.Y. 10801. (914) NE 6-6711.

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WHAT GOES ON in medicine

NEW YORK STATE **March 16–31, 1972**

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Compiled by the
Division of Scientific Activities
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Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

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NEW YORK CITY AREA

THURSDAY, MARCH 16
9:00 a.m.

New York Medical College
Metropolitan Hospital
97th Street at 2nd Avenue
6th Floor Auditorium

Chaiken Lecture in Gastroenterology

CHOLERA: A MODEL FOR DIARRHEAL DISEASE

THOMAS R. HENDRIX, M.D.
The Johns Hopkins University School of Medicine

March 16 and 23, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
2nd Floor Conference Room
757 Bushwick Avenue
Brooklyn

March 16
Clinical Pathological Conference
Known—Samuel Rosof, M.D.
Unknown—Zalma Rechnic, M.D.

March 23
Mortality Conference
SOL GLOTZER, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

THURSDAY, MARCH 16
8:00 p.m.

The Harvey Society
The Rockefeller Institute
Caspary Hall
York Avenue and 66th Street

T-RNA: DECODER OF GENETIC MESSAGES

PAUL BERG, Ph.D.
Stanford University, California

FRIDAY, MARCH 17
8:00–9:00 a.m.

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

Pediatrics, Gynecology, Surgery and Medicine for the Family Physician

WORK UP AND THERAPY OF THE PURPURIC PATIENT

NORTON RITZ, M.D.
Downstate Medical Center

SUBSCRIPTION

Subscriptions to "WHAT GOES ON" are being offered at less than cost. The $3.00 one-year subscription rate guarantees you 22 issues mailed first class in advance of the *New York State Journal of Medicine*.

March 19 and 26, 1972
9:00 a.m.–Noon, Sundays

The Boulevard Hospital
46-04 31st Avenue
Long Island City

Intensive Review for Community Physicians

March 19
Neurology
ARTHUR J. LAPOVSKY, M.D.
Downstate Medical Center

March 26
Review Session for those preparing for the Board examination in Family Practice
GEORGE POLLACK, M.D.
N.Y.U. School of Medicine

Sponsor: Queens County Academy of Medicine

March 20 and 27, 1972
3:30 p.m., Mondays

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway—Auditorium
Elmhurst

March 20
Abnormal Cell Growth in Lymphomatous Diseases
ARNOLD RUBIN, M.D.

March 27
Recent Advances in Rheumatic Diseases
HARRY SPIERA, M.D.

Lecturers are from Mount Sinai School of Medicine

March 21 and 28, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

Newer Concepts in Medicine

March 21
X-Ray Peptic Ulcer
H. FRIEDMAN, M.D.

March 28
Review Highlights of Previous Lectures
G. POLLACK, M.D.

March 21 and 28, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Continuing Postgraduate Education
Family Practice Section

March 21
Dizziness and Vertigo
MICHAEL SCHUMAN, M.D.

March 28
Primary Hypertension—Treatment of
D. FOURNARAKIS, M.D.

March 21 and 28, 1972
9:00 a.m., Tuesdays

Long Island Jewish Medical Center
Queens Hospital Center Affiliation
9th Floor Auditorium
Triboro Hospital
Parsons Blvd. and 82nd
Queens

Division of Pulmonary Medicine

March 21
Hatari Brush Biopsy in Peripheral Lung Cancer—A Study of 20 Cases
F. LAMBERTA, M.D.

March 28
The Frequency and Severity of Ventilatory Failure as a Late Sequellae of Thoracoplasty
R. CHITKARA, M.D.

March 21 and 28, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building, 4th Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Program

March 21
The Natural History of Cardiac Shunts
NORMAN GOOTMAN, M.D.
Downstate Medical Center

March 28 at 11:00 a.m.
Clinical Pathological Conference at Coney Island Hospital Room 2 W1
KURT GERSTMANN, M.D.
Downstate Medical Center

TUESDAY, MARCH 21

3:00–4:00 p.m.

Jewish Memorial Hospital
196th Street and Broadway
8th Floor Solarium

RECENT ADVANCES IN MEDICAL GENETICS

RICHARD A. RIFKIND, M.D.
Columbia-Presbyterian Medical Center

WEDNESDAY, MARCH 22

11:00 a.m.

Jewish Memorial Hospital
196th Street and Broadway

CONTRIBUTIONS OF MODERN NEUROBIOLOGY TO PEDIATRIC NEUROLOGY

JOSEPH H. FRENCH, M.D.
Montefiore Hospital and Medical Center

NOTE: THE NEW ADDRESS OF "WHAT GOES ON" IS: 420 LAKEVILLE ROAD, LAKE SUCCESS, N.Y. 11040. Please send all copy to the Editor at the new address.

Noon

Downstate Medical Center
4th Floor Pediatric Library
450 Clarkson Avenue
Brooklyn

STUDY OF PRIMARY DRUG RESISTANCE IN CHILDREN TO SECOND LINE ANTI T.B. DRUGS

MORRIS STEINER, M.D.

8:30 p.m.

Association for the Advancement of Psychoanalysis
Carnegie International Center
345 East 46th Street

20th ANNUAL KAREN HORNEY LECTURE

ROBERT JAY LIFTON, M.D.
Yale University School of Medicine

March 23 and 24, 1972
9:00 a.m.–4:30 p.m., Thursday and Friday

American Academy of Compensation Medicine
N.Y.U. Medical Center
Alumni Hall
32nd Street and 1st Avenue

Symposium

MEDICAL AND SURGICAL ASPECTS OF WORKMEN'S COMPENSATION

ARTHUR I. BLIEDEN, M.D., Program Chairman
MARIO E. STELLA, M.D., Co-Chairman

Write: American Academy of Compensation Medicine, Box 180, Radio City Station, New York, N.Y. 10019.

FRIDAY, MARCH 24

8:45 a.m.–4:45 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
100th Street and Fifth Avenue

COMMUNICATION DISORDERS

ASHER BAR, Ph.D.
and Guest Lecturers
Mount Sinai School of Medicine

FEE: $10

March 25 / 28, 1972
9:00 a.m.–5:00 p.m.

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

OPHTHALMIC MICROSURGERY
RICHARD C. TROUTMAN, M.D.

GUNTER MACKENSEN, Freiburg, Germany
ENRIQUE S. MALBRAN, Buenos Aires, Argentina
with AUSTIN I. FINK, JOSEPH H. GOLDSTEIN,
GEORGE M. GOMBOS, MURRAY MELTZER, and
DONALD E. WILLARD, M.D.'s

FEE: $500 (Course limited to 22 Practicing Ophthalmologists)

To register, contact Mrs. Sylvia Baer, Division of Ophthalmology, above address.

March 27 / 31, 1972
9:00 a.m.–2:30 p.m., Monday / Friday

Columbia University P & S
St. Luke's Hospital Center
Amsterdam Avenue and 114th Street

RECENT ADVANCES IN GENERAL SURGERY

H. F. FITZPATRICK, M.D.
and Staff of St. Luke's Hospital Center

FEE: $150 (Residents, $75)

MONDAY, MARCH 27

1:00 p.m.

Downstate Medical Center
Fourth Floor Lecture Hall
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

R. Janet Watson Hematology Lecture

ANTIPLATELET ANTIBODY IN IDIOPATHIC THROMBOCYTOPENIA PURPURA

GREGORY W. SISKIND, Assoc. Prof. of Medicine
The New York Hospital-Cornell Medical Center

TUESDAY, MARCH 28

8:00 a.m.

Beth Israel Medical Center
10 Nathan D. Perlman Place

Immunology Conference

IMMUNE ASPECTS OF LUPUS ERYTHEMATOSUS

HARRY SPIERA, M.D.
Chief, Rheumatology Clinic

9:00 a.m.

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

CALCIUM METABOLISM IN CHRONIC RENAL INSUFFICIENCY

MARDOQUEO I. SALOMON, M.D.
Flower and Fifth Avenue Hospitals

8:30 p.m.

The New York Psychoanalytic Institute
2 East 103rd Street

FREUD ANNIVERSARY LECTURE

MARIANNE KRIS, M.D.

March 29 and April 5, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF THE PROBLEM PATIENT IN MEDICAL PRACTICE

JOHN M. METH, M.D., MELVIN M. MALEN, M.D.

THURSDAY, MARCH 30

2:00 p.m.

Catholic Medical Center
Department of Surgery
Chellis Hall Auditorium at
Mary Immaculate Hospital Division
88-02 153rd Street
Jamaica

Visiting Professor Program

1. **Endocrines and Shock**
   RICHARD EGDAHL, M.D.
   Boston University School of Medicine
2. **Vasoactive Drugs in the Treatment of Shock**
   ARTHUR E. BAUE, M.D.
   Washington University School of Medicine
3. **Cyclic AMP and the Release of Vasoactive Materials**
   ROBERT ORANGE, M.D.
   Hospital for Sick Children, Toronto, Ontario

FUTURE EVENTS

SUNDAY, APRIL 9

9:00 a.m. / 5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

DIAGNOSIS AND TREATMENT IN ELDERLY PATIENTS

ALVIN I. GOLDFARB, M.D.
and Members of the Mount Sinai Faculty

FEE: $25

April 10 / 12, 1972

American Academy of Orthopaedic Surgeons Committee on Injuries
Park Sheraton Hotel
Seventh Avenue and 56th Street

Three-Day Postgraduate Course on

ORTHOPAEDIC SURGERY OF THE NECK

For information and application forms, please contact J. WILLIAM FIELDING, M.D., 105 East 65th Street, New York, N.Y. 10021 or the American Academy of Orthopaedic Surgeons, 430 North Michigan Avenue, Chicago, Illinois 60611.

April 17, 1972 / April 20, 1972

Cornell University Medical College
Caspary Auditorium
York Avenue and 66th Street

Postgraduate Course

DISEASES OF THE HEART AND LUNGS IN INFANTS AND CHILDREN

Guest Faculty:
HERBERT L. ABRAMS, M.D., Harvard Medical School
DAVID H. BAKER, M.D., Columbia University
WALTER E. BERDON, M.D., Columbia University
LARRY P. ELLIOTT, M.D., University of Florida
KENT ELLIS, M.D., Columbia University

LEONARD M. FREEMAN, M.D., Einstein Medical College
SYDNEY S. GELLIS, M.D., Tufts University
HAROLD GOLDMAN, M.D., Einstein Medical College
HERMAN GROSSMAN, M.D., Duke University Medical School
JOHN A. KIRKPATRICK, M.D., Temple University School of Medicine
EDWARD B. SINGLETON, M.D., Baylor University

FEE: $175 (includes lunches)
$100 for Residents and Fellows

Write: JOHN A. EVANS, M.D., Department of Radiology, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.

THURSDAY, APRIL 20

The City of New York Department of Health
Bureau for Handicapped Children
2 East 103rd Street

AN ALL DAY WORKSHOP ON CLEFT PALATE REHABILITATION

(The Morning Program will consist of reports from the various cleft palate centers in New York City and close with a special talk by RICHARD STARK, M.D., Director, Cleft Palate Clinic, St. Luke's Hospital Center. Following lunch, workshops are scheduled in each specialized area of cleft palate rehabilitation.

April 26 / 28, 1972

Brooklyn Eye and Ear Hospital
29 Greene Avenue
Brooklyn

3-Day Intensive Course in

OPHTHALMIC PLASTIC SURGERY

Conducted by
MARTIN BODIAN, M.D.

Invited Guest Speakers Include:
A. HARRIS, M. OBEAR, A. B. RIZZUTI, M.D.'s
and MR. H. GOUGELMAN (ocularist)

FEE: $125

Please contact MR. VERNON DRESSLER, Adm., above address.

June 1 / 3, 1972

American Cancer Society and the National Cancer Institute
National Cancer Institute
Waldorf-Astoria Hotel
Park Avenue and 50th Street

NATIONAL CONFERENCE ON CANCER CHEMOTHERAPY

For information, please write: SIDNEY L. ARJE, M.D., Coordinator, c/o American Cancer Society, 219 East 42nd Street, N.Y., N.Y. 10017.

June 19 / 30, 1972

Massachusetts Institute of Technology
Cambridge, Massachusetts

Two-week Summer Course in

DESIGN AND ANALYSIS OF EXPERIMENTS IN THE PHYSICAL, MEDICAL, AND INDUSTRIAL SCIENCES

Conducted by Professors
HAROLD FREEMAN and PAUL BERGER

Write: Director of the Summer Session, Room E19-356, M.I.T., Cambridge, Mass. 02139.

BUFFALO AREA

March 16 and 23, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

March 16
- **Auscultation—The Opening Snap**
  - **How to Differentiate the A2-OS From**
    - **A2 P2**
    - **A2 S3**
    - **The Tricuspid Opening Snap**
  - **Case Presentations**

March 23
- **Auscultation—The S3**
  - **Nomenclature, Mechanism, Quality, Timing, Effect of Respiration and Loudness**
- **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

FRIDAY, MARCH 24

8:15 a.m. Registration

Department of Psychiatry, School of Medicine
State University of New York at Buffalo
Statler Hilton Hotel
Embassy Room

CHILD DEVELOPMENT: On the Importance of Infancy

Morning Program

DOES THE NEONATE SHAPE HIS ENVIRONMENT?

T. BERRY BRAZELTON, M.D., Harvard Medical School

Afternoon Program

EMOTIONAL DEVELOPMENT IN THE FIRST TWO YEARS OF LIFE

HENRY RICCIUTI, M.D., Cornell University

Discussion will follow both programs
NORMAN SOLKOFF, M.D., Presiding

The Children's Hospital of Buffalo
219 Bryant Street

POSTGRADUATE EDUCATION IN PEDIATRICS

In 1972 The Children's Hospital of Buffalo offers a program of postgraduate education in Pediatrics, combining tutorial instruction and the opportunity to become integrally involved in clinical services at the hospital for 4–8 weeks. General Practitioners and Pediatricians accepted become immediately involved in evaluation and treatment of patients and will be able to concentrate on one of seven specialized areas: cardiology, endocrinology, general pediatrics, metabolic diseases, mental retardation, nephrology and radiology. Each participant's program is individually planned to meet his interests and requirements. Candidates are requested to apply early, specifying sub-specialty in which they are interested. Special consideration is given candidates from rural areas. Please write Dr. Thomas Aceto, Jr., chairman of postgraduate education, at the above address.

PRECEPTORSHIPS

GENERAL

Preceptorship type experience is available in a wide variety of medical fields arranged on request on an individual basis.

Those interested should write to Continuing Medical Education indicating their field of interest, time available for study, preferred dates and phone number. A faculty member who can provide the desired instruction will then contact the applicant directly.

Preceptorship in Clinical Cardiology

This fall a special preceptorship is offered in cardiology, with emphasis on the cardiac patient, electrocardiography, and the management of patients with heart disease, including acute coronary care.

The program will be directed by Dr. Jules Constant at the Buffalo General Hospital. The fee will be $10 per day or $200 a month. The schedule will be arranged in consultation with the applicant and only one physician will be accepted at a time.

For information on preceptorships, write Continuing Medical Education, 2211 Main Street, Buffalo, New York 14214.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

State University of New York at Buffalo
2211 Main Street
Buffalo, N.Y. 14214
Tel (716) 831-5526

SCHEDULE FOR WINTER–SPRING, 1972

March 9
Kidney Disease, Diagnosis and Treatment: The Role of Kidney Biopsy

March 24
Child Development: On the Importance of Infancy

April 7 and 8
Thirty-Fifth Annual U.B. Alumni Spring Clinical Days

April 13 and 14
Highlights of Current Problems of Clinical Anesthesia and Intensive Care

May 4 and 5
Surgical Aspects of Gastroenterology

May 17
Pediatric Cardiology

May 19
Community Psychiatry in the General Hospital

June 5 / 9
Refresher Seminar in Pediatrics

August
School Health

NASSAU COUNTY

March 16 and 23, 1972
11:30 a.m. / 12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

March 16
Human Parasitic Infections on Long Island
MR. FRED MILLER
Chief, Parasitology Section

March 23
Current Thoughts on the Surgical Management of Congenital Heart Disease
PAUL EBERT, M.D.
New York Hospital

WEDNESDAY, MARCH 22

10:30 a.m.—Noon

Division of Obstetrics-Gynecology
North Shore Hospital
Auditorium
Manhasset

A COTHERAPY APPROACH

PHILIP SARREL, M.D., Yale University School of Medicine
MRS. LORNA J. SARREL, M.S.W., Yale University

WEDNESDAY, MARCH 29

4:00 p.m.

Department of Radiology
Nassau County Medical Center
Meadowbrook Hospital X-Ray Classroom
East Meadow

PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY

H. EPSTEIN, M.D.

ROCHESTER AREA FUTURE EVENT

THURSDAY, MAY 25

The Rochester Ophthalmological Society
The University Club

17th Annual Albert C. Snell Memorial Lecture

DIAGNOSIS AND MANAGEMENT OF UVEITIS

MICHAEL J. HOGAN, M.D.
University of California

Note: There will be an afternoon clinical session at the University of Rochester Medical Center followed by an evening dinner prior to the Memorial Lecture. The Friday, May 26th session will include S. Arthur Boruchoff, M.D., George M. Howard, M.D. and David L. Knox as guest lecturers.

UTICA AREA

THURSDAY, MARCH 16

2:00–9:00 p.m.

The Central New York Academy of Medicine
Auditorium
210 Clinton Road (Route 12 B)
New Hartford

14th Annual Postgraduate Teaching Day

SYMPOSIUM ON DIABETES

1. **Endocrine Aspects of the Pancreas**
   RONALD ARKY, M.D.
   Mount Auburn Hospital in Cambridge, Mass.
2. **Pregnancy and Diabetes**
   PRISCILLA WHITE, M.D.
   Joslin Clinic
3. **The Unconscious Diabetic**
   DAVID H. P. STREETEN, M.D.
   Upstate Medical Center at Syracuse
4. **Diabetes Mellitus, Before and After Insulin**
   ALEXANDER MARBLE, M.D.
   Joslin Clinic
5. **Panel Discussion on The Criteria for Diagnosis and Methods of Treatment of Adult Onset Diabetes in 1972**

PHYSICIANS' PLACEMENT

ALBION, N.Y., Orleans County, needs three G.P.'s.

CONTACT: EDWARD A. BARRETT, M.D., 28 Meadowbrook Drive, Albion, NY, 14411. Tel. (716) 589-7117.

ALFRED, N.Y., Allegany County. G.P. Opportunity to serve growing community with two rapidly expanding colleges.

CONTACT: ALEX SPYRALATOS, Alfred Business Association, Inc., 16 N. Main Street, Alfred, N.Y. 14802. Tel. (607) 587-8286.

BINGHAMTON, N.Y., Broome County. G.P.'s, Dermatologists, Internists, and Ophthalmologists.

CONTACT: MR. CHARLES E. ROBBINS, Broome County Medical Society, 4500 Old Vestal Road, Box 987, Binghamton, N.Y. 13902. Tel. (607) 729-9261.

BROADALBIN, N.Y., Fulton County. G.P.

CONTACT: MR. ROBERT H. LESLIE, Chairman, Citizens' Committee to Obtain a Doctor, R.D. #1, Broadalbin, N.Y. 14025.

BROCTON, N.Y., Chautauqua County. G.P.

CONTACT: MR. ALFRED F. SUNDAY, 24 Park Street, Brocton, N.Y. 14716.

BOONVILLE, N.Y., Oneida County. G.P. wanted for Medical Center.

CONTACT: MR. JAMES MERCER, Sunset Drive, Boonville, N.Y. 13309. Tel. (315) 942-4691.

BUFFALO, N.Y., Erie County. One Anesthesiologist to join six-man corporate anesthesia group, including nurse anesthetists.

CONTACT: NIALL P. MacALLISTER, M.D., Deaconess Hospital, Buffalo, N.Y. 14208. Tel. (716) 886-4400.

CALLICOON, N.Y., Sullivan County. G.P., Internist, Pediatrician.

CONTACT: MR. HOWARD STEWART, Grover M. Hermann Hospital, Callicoon, N.Y. 12723. Tel. (914) 887-5490.

CARTHAGE, N.Y., Jefferson County, needs Orthopedic Surgeon, General Surgeon, Internist, Ophthalmologist, Pediatrician, Family or General Practitioner; also specialist in Obstetrics/Gynecology.

CONTACT: MR. CLARK A. JOHNSON, 277 State Street, Carthage, N.Y. 13619. Tel. (315) 493-3590.

CATO, N.Y., Cayuga County. G.P.

CONTACT: FLORENCE WILKES, Secty., Northern Cayuga Health Services, Cato, N.Y. 13033. Tel. (315) 626-6401.

NORTH TONAWANDA, N.Y., Niagara County. Radiologist to join Radiologist in 230 bed hospital.

CONTACT: K. F. BERGMANN, M.D., 445 Tremont Street, N. Tonawanda, N.Y. 14120.

WHITEHALL, N.Y., Washington County. G.P.

CONTACT: MR. FRANK MARTUCCI, Town Supervisor, 6 Mountain Street, Whitehall, N.Y. 12887. Tel. (518) 499-0228.

WHITESBORO, N.Y., Oneida County (Suburb of Utica). G.P.

CONTACT: STEPHEN J. WALKER, M.D., 7 Westmoreland Street, Whitesboro, N.Y. 13492. Tel. (315) 736-1815.

WOODBOURNE, N.Y., Sullivan County. G.P.

CONTACT: MR. BERNARD LIPSKY, C of C, Woodbourne, N.Y. 12788. Tel. (914) 434-7652.

WOODHULL, N.Y., Steuben County. G.P.

CONTACT: JEFFREY SMITH, JR., P.O. Box 68, Woodhull, N.Y. 14898. Tel. (607) 458-5151.

EVENTS RECEIVED AFTER DEADLINE

THURSDAY, MARCH 16

8:30 p.m.

Association for the Advancement of Psychotherapy
Carnegie International Center
345 East 46th Street

12th Eilhard Von Domarus
Memorial Conference

THE CHANGING IMAGE OF MASCULINITY IN OUR CURRENT SOCIETY

Panel Members
STANLEY LESSE, M.D., Chairman
Editor-in-Chief, American Journal of Psychotherapy
KURT A. ADLER, M.D.
Alfred Adler Institute for Individual Psychology
GERARD CHRZANOWSKI, M.D.
New York Medical College
ALFRED H. RIFKIN, M.D.
New York Medical College
ALEXANDRA SYMONDS, M.D.
N.Y.U. School of Medicine
MARTIN SYMONDS, M.D.
American Institute of Psychoanalysis

BUFFALO AREA

THURSDAY, MARCH 9

9:30 a.m.–4:30 p.m.

The Kidney Foundation of Western New York, and Continuing Medical Education, State University of New York at Buffalo
Sisters of Charity Hospital
Palmer Hall

KIDNEY DISEASE DIAGNOSIS AND TREATMENT: THE ROLE OF KIDNEY BIOPSY

To register, please contact Continuing Medical Education, Main Street Division, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

NASSAU COUNTY

WEDNESDAY, MARCH 8

8:00–10:00 a.m.

Mercy Hospital
MacArthur Hall
Rockville Centre

Combined Medical-Surgical Conference

1. **Controversial Aspects in Treatment of Breast Cancer**
2. **Endocrine and Ablative Therapy of Advanced Breast Cancer**

Speaker: CHARLES ROGERS, M.D.

March 8 / March 29, 1972
8:00 p.m., Wednesdays

North Shore Hospital
300 Community Drive
Manhasset, Long Island

A Course in Continuing Education

MEDICAL MALPRACTICE—A REVIEW OF SOME CURRENT PROBLEMS

Under the direction of
H. RICHARD BERESFORD, M.D., J.D.

March 8
- **Principles of Liability**
  - **Negligence—standards of care, the problem of causation**
  - **Res ipsa loquitor**
  - **Failure to obtain informed consent**
  - **Physicians' defenses**

March 15
- **Diagnostic Errors**
  - **Failure to examine or observe**
  - **Failure to explore differential diagnosis**
  - **Failure to consult**
  - **The risky diagnostic test**

March 22
- **Treatment Errors I**
  - **Medical (including adverse drug reactions)**
  - **Surgical (including transplantation)**

March 29
- **Treatment Errors II**
  - **Psychiatric treatment (including psychotherapy)**
- **Alternatives to Current System**
  - **Screening panels, arbitration, "no fault" insurance, special legislation, better peer review**

WHAT GOES ON IN MEDICINE

New Address:
Medical Society of the State of New York
420 Lakeville Road, Lake Success, N.Y. 11040
Telephone: 516-488-6100, ext. 241
The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
April 1–15	February 10
April 16–30	February 25
May 1–15	March 10
May 16–31	March 25
June 1–15	April 10
June 16–30	April 25
July 1–31	May 10
August 1–31	June 10
September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25
November 1–15	September 10
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25

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Warnings: *Drug Dependence:* Physical and psychological dependence and abuse have occurred. Chronic intoxication, from prolonged use and usually greater than recommended doses, leads to ataxia, slurred speech, vertigo. Carefully supervise dose and amounts prescribed, and avoid prolonged use, especially in alcoholics and addiction-prone persons. Sudden withdrawal after prolonged and excessive use may precipitate recurrence of pre-existing symptoms (e.g., anxiety, anorexia, insomnia) or withdrawal reactions (e.g., vomiting, ataxia, tremors, muscle twitching, confusional states, hallucinosis; rarely convulsive seizures, more likely in persons with CNS damage or pre-existent or latent convulsive disorders). Therefore, reduce dosage gradually (1-2 weeks) or substitute a short-acting barbiturate, than gradually withdraw. *Potentially Hazardous Tasks:* Driving a motor vehicle or operating machinery. *Additive Effects:* Possible additive effects between meprobamate, alcohol, and other CNS depressants or psychotropic drugs. *Pregnancy and Lactation:* Safe use not established; weigh potential benefits against potential hazards in pregnancy, nursing mothers, or women of childbearing potential. Animal data at five times the maximum recommended human dose show reduction in litter size due to resorption. Meprobamate appears in umbilical cord blood at or near maternal plasma levels, and in breast milk at levels 2-4 times that of maternal plasma. *Children Under Six:* Drug not recommended.
Precautions: To avoid oversedation, use lowest effective dose, particularly in elderly and/or debilitated patients. Consider possibility of suicide attempts; dispense least amount of drug feasible at any one time. To avoid excess accumulation, use caution in patients with compromised liver or kidney function. Meprobamate may precipitate seizures in epileptics.
Adverse Reactions: *Central Nervous System:* Drowsiness, ataxia, dizziness, slurred speech, headache, vertigo, weakness, paresthesias, impairment of visual accommodation, euphoria, overstimulation, paradoxical excitement, fast EEG activity. *Gastrointestinal:* Nausea, vomiting, diarrhea. *Cardiovascular:* Palpitations, tachycardia, various forms of arrhythmia, transient ECG changes, syncope; also, hypotensive crises (including one fatal case). *Allergic or Idiosyncratic:* Usually after 1-4 doses. Milder reactions: itchy, urticarial, or erythematous maculopapular rash (generalized or confined to groin). Others: leukopenia, acute nonthrombocytopenic purpura, petechiae, ecchymoses, eosinophilia, peripheral edema, adenopathy, fever, fixed drug eruption with cross reaction to carisoprodol, and cross sensitivity between meprobamate/mebutamate and meprobamate/carbromal. More severe, rare hypersensitivity: hyperpyrexia, chills, angioneurotic edema, bronchospasm, oliguria, anuria, anaphylaxis, erythema multiforme, exfoliative dermatitis, stomatitis, proctitis, Stevens-Johnson syndrome; bullous dermatitis (one fatal case after meprobamate plus prednisolone). Stop drug, treat symptomatically (e.g., possible use of epinephrine, antihistamines, and in severe cases corticosteroids). *Hematologic:* Agranulocytosis and aplastic anemia (rarely fatal), but no causal relationship established. Rarely, thrombocytopenic purpura. *Other:* Exacerbation of porphyric symptoms.
Usual Adult Dosage: 1200 to 1600 mg daily, in three or four divided doses; doses above 2400 mg daily not recommended.
Overdosage: Suicidal attempts with meprobamate, alone or with alcohol or other CNS depressants or psychotropic drugs, have produced drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse, and death. Empty stomach, treat symptomatically; cautiously give respiratory assistance, CNS stimulants, pressor agents as needed. Meprobamate is metabolized in the liver and excreted by the kidney. Diuresis and dialysis have been used successfully. Carefully monitor urinary output; avoid overhydration; observe for possible relapse due to incomplete gastric emptying and delayed absorption. REV. 10/71

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Use in conjunction with phenformin is indicated when optimal control is not obtained with Orinase or phenformin alone.

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Orinase should not be used: when diabetes is complicated by acidosis, ketosis, or coma, or when a history of repeated bouts of acidosis or coma is obtained; in the presence of other acute complications such as fever, severe trauma, or infections; and in patients with severe renal insufficiency. Insulin is indicated in these circumstances.

Pregnancy Warning: The safety and usefulness of Orinase during pregnancy has not been established either from the standpoint of the mother or the fetus. Animal studies have demonstrated feticidal and teratogenic effects of doses of 1,000-2,500 mg./kg./day, but application to human subjects unknown. Therefore, Orinase is not recommended for the pregnant diabetic, and when administering Orinase to women of childbearing age, these facts should be borne in mind.

Precautions: Diagnostic and therapeutic measures necessary for optimal control with insulin are also necessary with Orinase. The patient on Orinase must be fully instructed: about the nature of his disease; how to prevent and detect complications; how to control his condition; not to neglect dietary restrictions, develop a careless attitude or disregard instructions relative to body weight, exercise, personal hygiene, and avoidance of infection; how to recognize and counteract impending hypoglycemia; how and when to test for glycosuria and ketonuria; how to use insulin; and to report to the physician immediately if he does not feel as well as usual.

Caution, very close observation, and careful adjustment o dose are necessary when: insulin is withdrawn during the tria period in order to avoid ketosis, acidosis, and coma; thiazide diuretics are administered which may result in aggravation o diabetic state and increased tolbutamide requirement, temporary loss of control, or even secondary failure; treating patient with impaired hepatic and/or renal function and debilitated, malnourished, or semistarved patients in order to avoid severe hypoglycemia which may require corrective therapy over severa days; and treating patients with severe trauma, infection, or surgical procedures where temporary return to insulin or additio of insulin may be necessary. Response to tolbutamide is diminished in patients receiving therapy with beta blocking agents

As some diabetics are not suitable candidates, it is essentia that the physician familiarize himself with the indications, limit of application, and selection of patients for therapy.

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cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

Although usually not serious, gastrointestinal disturbances (nausea, epigastric fullness, and heartburn) and headache appear to be dose related and frequently disappear with reduction of dose or administration with meals. Allergic skin reactions (pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions) are transient, usually not serious, and frequently disappear with continued administration. Orinase should be discontinued if skin reactions persist. Recent reports indicate that long-term use of Orinase has no appreciable effect on body weight.

Orinase appears to be remarkably free from gross clinical toxicity: crystalluria or other renal abnormalities have not been observed; incidence of liver dysfunction is remarkably low and jaundice has been rare and cleared readily on discontinuation of drug (carcinoma of the pancreas or other biliary obstruction should be ruled out in persistent jaundice); leukopenia; agranulocytosis; thrombocytopenia; hemolytic anemia; aplastic anemia; pancytopenia; and hepatic porphyria and porphyria cutanea tarda have been reported.

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New York State Journal of Medicine

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Contraindications: Concurrently with MAO inhibitors, in patients hypersensitive to this drug; in emotionally unstable patients susceptible to drug abuse

Warning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease. Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks.

Adverse Reactions: Rarely severe enough to require discontinuation of therapy, unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathomimetic agents, it may occasionally cause *CNS effects* such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic cardiovascular *effects* reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. *Allergic phenomena* reported include such conditions as rash, urticaria, ecchymosis, and erythema. *Gastrointestinal effects* such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria

Convenience of two dosage forms: TEPANIL Ten-tab tablets: One 75 mg. tablet daily, swallowed whole, in midmorning (10 a.m.); TEPANIL: One 25 mg. tablet three times daily, one hour before meals. If desired, an additional tablet may be given in midevening to overcome night hunger. Use in children under 12 years of age is not recommended.

1-3325 (2876)

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Painful night leg cramps...

unwelcome bedfellow for any patient – including those with arthritis, diabetes or PVD

- ☐ Prevents painful night leg cramps
- ☐ Permits restful sleep
- ☐ Provides simple convenient dosage – usually just one tablet at bedtime

Prescribing Information – Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** Quinamm is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

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Trademark: Quinamm

Quinamm

(quinine sulfate 260 mg., aminophylline 195 mg.)

Specific therapy for night leg cramps.

Month in Washington

President Nixon said his Administration will expand its programs to improve the nation's emergency medical services and to combat diseases of the heart, blood vessels, and lungs.

In the detailed version of his two State of the Union messages to Congress, the President said the "staggering" U.S. death toll from accidents, more than 115,000 last year, "could be greatly reduced by upgrading our emergency medical services." He said it could be done without new scientific breakthroughs if present knowledge were applied more effectively.

"To help in this effort," he said, "I am directing the Department of Health, Education, and Welfare to develop new ways of organizing emergency medical services and of providing care to accident victims. By improving communication, transportation, and the training of emergency personnel, we can save many thousands of lives which would otherwise be lost due to accidents and sudden illnesses.

> One of the significant joint accomplishments of the Congress and this administration has been a vigorous new program to protect against job-related accidents and illnesses. Our occupational health and safety program will be further strengthened in the year ahead—as will our ongoing efforts to promote air traffic safety, boating safety, and safety on the highways.
>
> In the last three years, the motor vehicle death rate has fallen by 13 per cent, but we still lose some 50,000 lives on our highways each year—more than we have lost in combat in the entire Vietnam war.
>
> Fully one half of these deaths were directly linked to alcohol. This appalling reality is a blight on our entire nation—and only the active concern of the entire nation can remove it. The Federal government will continue to help all it can, through its efforts to promote highway safety and automobile safety, and through stronger programs to help the problem drinker.

Nixon promised increased attention to the diseases of the heart, blood vessels, and lungs "which presently account for more than half of all the deaths" in the nation.

"I will shortly assign a panel of distinguished experts to help us determine why heart disease is so prevalent and so menacing and what we can do about it," he said. "I will also recommend an expanded budget for the National Heart and Lung Institute."

He also called on Congress to act on his proposals for national health insurance, health maintenance organizations, and elimination of the monthly fee now charged under Part B of Medicare.

The President said he later will propose legislation "to reform and rationalize" the delivery of social services, including health services.

"We need a new approach to the delivery of social services—one which is built around people and not around programs," he said. "We need an approach which treats a person as a whole and which treats the family as a unit. We need to break through rigid categorical walls, to open up narrow bureaucratic compartments, to consolidate and coordinate related programs in a comprehensive approach to related problems."

In his fiscal 1973 budget, Nixon estimated Federal spending on HEW health programs at $18.1 billion, an increase of $1.1 billion over the current fiscal year which ends next June 30 (Table I).

The fiscal 1973 budget calls for a $49-million increase, to $435 million, for delivery of health services programs, health maintenance organizations, regional medical programs, and health planning agencies.

Expenditures for Medicare and Medicaid were estimated to increase by $492 million. The Federal share of Medicaid was estimated at $3.4 billion, or 55 per cent, of the total cost. Outlays for Medicare were estimated at $10.4 billion in fiscal 1973.

Other spending estimates included: Food and Drug Administration—$179.5 million, an increase of $69.7 million; and National Institutes of Health (mostly for biomedical research)—$1.57 billion, an increase of $139 million, of which $430 million goes to the Cancer Institute.

The President's Council of Economic Advisers, in its annual report to Congress, cautioned that money alone does not hold the solution to the nation's health problems. New criteria for evaluating medical care should be developed, the council said.

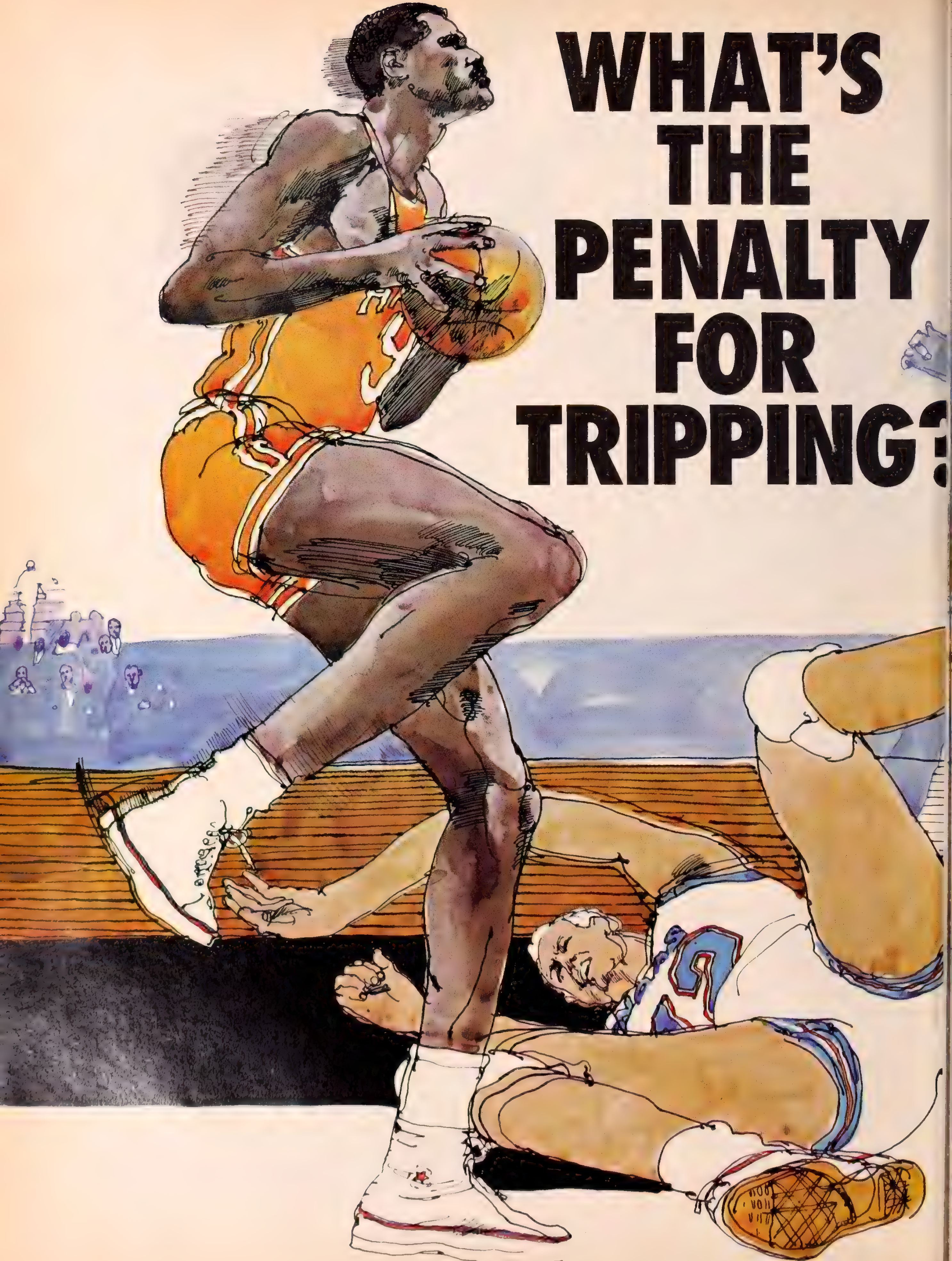
The council said that the nation's medical care expenditures totaled $75 billion, $358 per person, in the fiscal year 1971, an annual growth rate of 4.3 per cent per capita since 1966.

> Although improvement in the health of the population was clearly the ultimate goal of these expenditures, it is also true that the relation between good health and medical expenditures is less than direct. First, our medical dollars may not always be used effectively. Ideally, the preferences of consumers and capabilities of suppliers freely interact in the market to determine the price and amount of the commodity consumed; and this interaction leads to the use of resources that best contributes to the material wellbeing of people. In the case of medical care, however, distortions in this process occur because, on the demand side, consumers are not always able to judge the service, and, on the supply side, competition is often limited by restrictions on entry into medical practice and hospital services. Although these restrictions may have been intended to protect consumers, as a side effect they may also impede the efficient utilization of resources. In addition, the dominant position of nonprofit organizations in the

continued on page 662

Prepared by the Washington, D.C., Office of the American Medical Association.

WHAT'S THE PENALTY FOR TRIPPING?



CHAMPS
25
Ken Dallison

A personal foul against the tripper, and possibly weeks of painful skeletal muscle spasm for the victim.

For the skeletal muscle spasm of leg strains, Valium® (diazepam) can be a valuable adjunct. A dose of 2-10 mg, three or four times a day, goes to work to help break up the cycle of spasm/pain/spasm. The resultant relief of skeletal muscle spasm may permit greater mobilization of the affected muscles and may help the patient resume usual activities sooner than otherwise possible.

Sudden trauma to and unusual stress on sartorius muscle may cause strain of muscle and tearing of some of the fibers. The resultant muscle spasm can make leg motion painful.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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VALIUM® (diazepam)

adjunct in skeletal muscle spasm

2-mg, 5-mg, 10-mg tablets

continued from page 659

TABLE I. Breakdown of actual and estimated health costs for fiscal years 1971 to 1973 (millions of dollars)

	Year		
	Actual Cost	Estimated Costs	
Categories	1971	1972	1973
Development of health resources			
Budget authority	(2,293)	(2,965)	(2,851)
Outlays	(2,201)	(2,446)	(2,787)
Financing medical services			
Budget authority	(12,657)	(15,633)	(20,115)
Outlays	(11,946)	(14,214)	(14,733)
Prevention and control			
Budget authority	(360)	(571)	(737)
Outlays	(319)	(382)	(619)
Offsetting receipts			
Budget authority	– (3)	– (18)	– (22)
Outlays	– (3)	– (18)	– (22)
Totals			
Budget authority	(15,307)	(19,151)	(23,681)
Outlays	(14,463)	(17,024)	(18,117)

market providing hospital services raises other questions about whether incentives to minimize costs are as great in medicine as in other parts of the economy.

Yet even great improvements in the market for medical care would not solve all health problems. Another important problem arises because good health is related to many factors in addition to medical care. Some of these factors are subject to an individuals control: diet, exercise, smoking, and consumption of alcohol. Other conditions, such as the amount of pollution in the air and water, depend rather on the actions of society as a whole. In addition, there are more elusive influences, like the tension generated by attitudes toward work and other circumstances of modern life. The importance of life styles and environment to health has become much more apparent in recent years.

To start to answer the general question of how we can best "produce" health, we must find a way of measuring changes in the level of health. What must be measured is the actual output-health-not simply such inputs as amounts of medicine consumed, days spent in hospitals, or the hours in consultation with doctors. While no comprehensive measures of the national health have been developed, and each existing measure has its limitations, such indicators as mortality rates and disability days have been widely used to trace changes over time and to compare localities. The relationships observed between these measures of health and other variables have revealed a number of paradoxes. . . .

Since medical care is likely to remain a major instrument for improving the nation's health, and since it is a focal point for public policy, there is a clear need for developing tests for the effectiveness of medical care. At present, we do not have the data required to make such tests, and thus we can evaluate only imperfectly the efficacy of alternative medical care policies.

* * *

continued on page 666

Keeping quality up

and cost down

For over 85 years The Upjohn Company has been noted for the quality of its products.

Although methods of manufacturing have advanced far beyond the imagination of the founders of Upjohn, one thing hasn't changed. And that is the rigid quality controls Upjohn imposes upon itself to continue to bring you the highest quality products.

To lower costs while maintaining quality is the cornerstone of the Upjohn philosophy that guides the manufacture of such low-priced products as:

erythromycin	**E-Mycin®**
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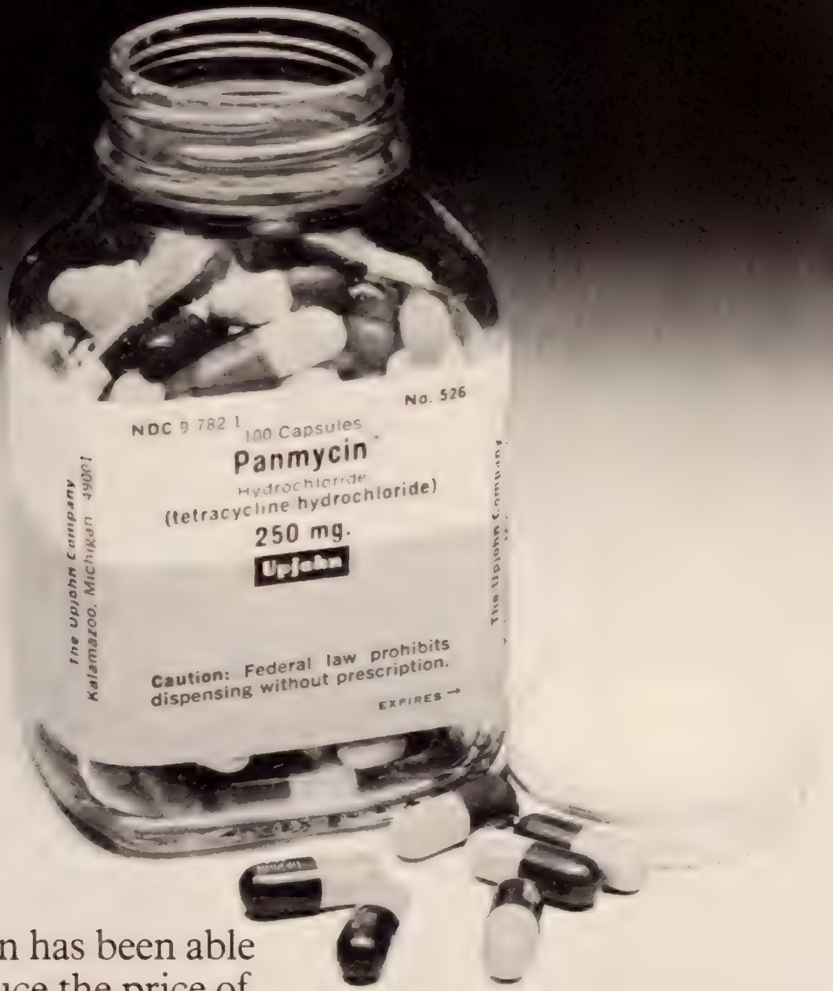
Upjohn's low-priced tetracycline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250 mg.
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Upjohn has been able to reduce the price of tetracycline without reducing the quality you expect from an Upjohn product.

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Available as 250 mg capsules and
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When irritable colon feels like this

...in the presence of spasm or hypermotility, gas distension and discomfort, **KINESED**® provides more complete relief:

- ☐ belladonna alkaloids—for the hyperactive bowel
- ☐ simethicone—for accompanying distension and pain due to gas
- ☐ phenobarbital—for associated anxiety and tension

Composition: Each chewable, fruit-flavored, scored tablet contains: 16 mg. phenobarbital (warning: may be habit-forming); 0.1 mg. hyoscyamine sulfate; 0.02 mg. atropine sulfate; 0.007 mg. scopolamine hydrobromide; 40 mg. simethicone.

Contraindications: Hypersensitivity to barbiturates or belladonna alkaloids, glaucoma, advanced renal or hepatic disease.

Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.

Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.

Dosage: Adults: One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms. Children 2 to 12 years: One half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.

STUART PHARMACEUTICALS | Pasadena, California 91109 | Division of ATLAS CHEMICAL INDUSTRIES, INC.

(from the Greek **kinetikos**,
to move,
and the Latin **sedatus**,
to calm)

KINESED®
antispasmodic/sedative/antiflatulent

Spring peeper (tree frog, *Hyla crucifer*):
this small amphibian can expand
its throat membrane with air until it is
twice the size of its head.

continued from page 662

The Federal government announced the first assignments of Federal physicians and other health workers to provide direct patient care in rural and big city areas with critical health manpower shortages.

Teams with a total of 68 medical workers, including physicians, dentists, and nurses, will be assigned to 18 communities in 13 states to work with such patient groups as Indians, migrant workers, welfare families, and minorities.

The first team, a husband-wife, physician-nurse duo, was assigned to a 14-bed hospital in rural Jackman, Maine, in September. The second team went to work in Immokalee, Florida, in November. March 1 is the target date for assigning the other 16 teams, a spokesman for the National Health Service Corps said.

The Corps was created December 31, 1970, when President Nixon signed the Emergency Health Personnel Act, which calls for government health workers to provide direct health services to residents of city slums and remote rural areas designated as having critical health manpower shortages.

The lag in starting the project had sparked charges by some Congressional Democrats that the Administration was delaying it. The Administration had replied that recruitment was difficult.

David A. Kindig, M.D., recruitment chief for the Corps, admitted that the major incentive for physicians to join had been the military draft. All 28 physicians among the 68 initial medical workers were recruited from the Public Health Service, Commissioned Corps, and "many of them are still fulfilling their military obligations," he said.

The teams also include 10 dentists, 18 nurses, and 12 other professional workers, including pharmacists, dental hygienists, health educators, and laboratory technicians, Kindig said. Recruitment of some team members, such as nurses, may be done at the local level, he said.

* * *

The Nixon Administration said that it hopes to transfer 8 U.S. Public Health Service hospitals and 30 government clinics to local control by June 30, 1973.

Health, Education, and Welfare Secretary Elliot L. Richardson said President Nixon's budget for the fiscal year beginning next July 1 "assumes that these facilities will be converted to community use by June 30, 1973."

The hospitals, with a combined total of 2,484 beds, are in Baltimore, Maryland; New Orleans, Louisiana; Staten Island, New York; San Francisco, California; Seattle, Washington; Norfolk, Virginia; Boston, Massachusetts; and Galveston, Texas.

"We cannot yet predict what effect the current reviews of Public Health Service hospitals and clinics will have on those now employed in those installations"; Richardson said in a statement. "No change in employment as a result of these reviews will occur this fiscal year (ending next June 30)."

Richardson's announcement said an administration decision has been made to eliminate 8,087 HEW jobs between now and next June as part of a government plan to reduce Federal employment.

* * *

President Nixon signed an executive order establishing the Office of Drug Abuse Law Enforcement which will marshal a wide range of government resources "in a concentrated assault on the street level heroin pusher."

Miles J. Ambrose, who had been Customs Commissioner, was appointed to head the new office.

"I am convinced that the only effective way to fight this menace is by attacking it on many fronts—through a balanced, comprehensive strategy," Nixon said in a statement.

He said the Administration has worked for three years to eliminate dangerous drugs at their source, cutting off their international flow.

"Today our balanced comprehensive attack on drug abuse moves forward in yet another critical area as we institute a major new program to drive drug traffickers and drug pushers off the streets of America," he said.

Nixon praised Ambrose, a lawyer and former New York enforcement official, as a man "who knows how to take care of this problem of law enforcement."

Nixon said the office would work through 9 regional offices and use special grand juries to gather information about drug traffickers. He said this intelligence will be pooled for use by Federal, state, and local law enforcement agencies.

The latest FBI uniform crime statistics available show that 451,000 persons were arrested in 1970 for narcotic drug law offenses, up 44 per cent from 1969 but accounting for only 4.8 per cent of arrests for all offenses in 1970.

In 1970, the FBI noted that 53 per cent of all persons arrested on drug-related charges were under twenty-one years of age.

Rifampin and pulmonary tuberculosis

The relative antituberculous effectiveness of rifampin in combination with each of three other drugs was studied in 220 patients with positive sputum never before given drug therapy for tuberculosis, by Nitti, Catena, and their associates recently (Am. Rev. Resp. Dis. 103: 329 [March] 1971). Rifampin plus isoniazid emerged as a combination superior to the other combinations of rifampin plus streptomycin and rifampin plus ethembutol with a control group receiving isoniazid and streptomycin. The difference between rifampin plus isoniazid and rifampin plus ethambutol was not, however, significant. Results with rifampin plus streptomycin did not differ from those with isoniazid plus streptomycin (currently considered the best available two-drug regimen). Eleven patients treated with rifampin combinations and 5 treated with isoniazid showed alterations of hepatic function during treatment, but in 10 of the former and all of the latter the abnormalities were not accompanied by clinical signs. The safety aspects of rifampin appear to be good; no specific side effects were observed. Accumulated data appear to place rifampin among the major antituberculous drugs in a position very close to isoniazid.

when an unnerving experience compounds the pain

the compound analgesic that calms instead of caffeinates

In addition to pain, this patient has experienced anxiety, fear, embarrassment, anger, and frustration. It's very likely that these psychic factors actually accentuated his perception of pain. Surely the last thing he needs is an analgesic containing caffeine. A much more logical choice is Phenaphen with Codeine. It provides a quarter grain of phenobarbital to take the nervous "edge" off, so the rest of the formula can control the pain more effectively. It's no accident that the Phenaphen formulations contain a sedative rather than a stimulant. Don't you agree, Doctor, that psychic overlay is an important factor in most of the accident cases you see?

A. H. Robins Company, Richmond, Va. **A·H·ROBINS**

Phenaphen® with Codeine

Phenaphen with Codeine Nos. 2, 3, or 4 contains: Phenobarbital (¼ gr.), 16.2 mg. (warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; Hyoscyamine sulfate, 0.031 mg.; Codeine phosphate, ¼ gr. (No. 2), ½ gr. (No. 3) or 1 gr. (No. 4) (warning: may be habit forming).

Indications: Provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. *Contraindications:* Hypersensitivity to any of the components. *Precautions:* As with all phenacetin-containing products, excessive or prolonged use should be avoided. *Side effects:* Side effects are uncommon, although nausea, constipation and drowsiness may occur. *Dosage:* Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule everv 3 to 4 hours as needed. For further details see product literature.

ⒸIII Phenaphen with Codeine is now classified in Schedule III, Controlled Substances Act of 1970. Available on prescription and may be refilled 5 times within 6 months, unless restricted by state law.

Snifter working again

For upper respiratory allergies and infections including the common cold, Dimetapp Extentabs® effectively relieve the stuffiness, drip and congestion all night and all day long on just one Extentab every 12 hours. For most patients drowsiness or overstimulation is unlikely.

A·H·ROBINS

A. H. Robins Company
Richmond, Va. 23220

prescribing information appears on next page

Dimetapp Extentabs®

Dimetane® (brompheniramine maleate), 12 mg., phenylephrine HCl, 15 mg., phenylpropanolamine HCl, 15 mg

Dimetapp Extentabs®

INDICATIONS: Dimetapp Extentabs are indicated for symptomatic relief of allergic manifestations of upper respiratory illnesses, such as the common cold, seasonal allergies, sinusitis, rhinitis, conjunctivitis and otitis. In these cases it quickly reduces inflammatory edema, nasal congestion and excessive upper respiratory secretions, thereby affording relief from nasal stuffiness and postnasal drip.
CONTRAINDICATIONS: Hypersensitivity to antihistamines of the same chemical class. Dimetapp Extentabs are contraindicated during pregnancy and in children under 12 years of age. Because of its drying and thickening effect on the lower respiratory secretions, Dimetapp is not recommended in the treatment of bronchial asthma. Also, Dimetapp Extentabs are contraindicated in concurrent MAO inhibitor therapy.
WARNINGS: *Use in children:* In infants and children particularly, antihistamines in overdosage may produce convulsions and death.
PRECAUTIONS: Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness such as driving an automobile, operating machinery, etc. Patients receiving antihistamines should be warned against possible additive effects with CNS depressants such as alcohol, hypnotics, sedatives, tranquilizers, etc.
ADVERSE REACTIONS: Adverse reactions to Dimetapp Extentabs may include hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis and thrombocytopenia; drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, hypotension/hypertension, headache, faintness, dizziness, tinnitus, incoordination, visual disturbances, mydriasis, CNS-depressant and (less often) stimulant effect, anorexia, nausea, vomiting, diarrhea, constipation, and epigastric distress.
HOW SUPPLIED: Light blue Extentabs in bottles of 100 and 500.

Abstracts

Lauria, J. I.: Intraoperative management of fluid deficits, ***New York State J. Med.*** **72:** 691 (Mar. 15) 1972.

The current controversy in the area of fluid management is unwarranted. Instead of adhering dogmatically to a particular regimen of fluid administration, whether it is liberal or conservative, the physician should key his fluid management program to the individual patient, his disease, and his surgeon. State of hydration, blood volume, preoperative red cell mass, and an assessment of renal, pulmonary, and cardiac function and the demands put on these systems by the surgical program should be taken into consideration when formulating the fluid management program. The patient should be closely monitored so necessary changes in the fluid management program can be made.

Kulka, E. W., Lehfeldt, H., and Getmanov-von der Mosel, V.: Adverse experience with stainless steel spring intrauterine device, ***New York State J. Med.*** **72:** 694 (Mar. 15) 1972.

Of 123 stainless steel springs (Majzlin) inserted, 31 had to be removed for medical reasons, a higher removal rate than for most other devices. Removals were often difficult, necessitating hospitalization in several cases. Endometrial biopsies showed a high incidence of endometritis. There was 1 perforation, making a total of 3 in 2,587 insertions reported. This contradicts the statements in circulars and advertisements claiming a minimum of side effects, easy removal, and no perforations.

Hypertension and hemodynamic responses

In a recent study of hemodynamic responses, such as intra-arterial pressure, cardiac output, heart rate, stroke index, and total peripheral resistance, to static muscular contraction consisting of hand grip; Hoel, Lorentsen, and Lund-Larsen (Acta Med. Scandinav. 188: 491 [Dec.] 1970) found that in the 15 hypertensive patients studied, the response pattern was similar to that in normotensive subjects. The pattern was characterized by marked increase in systolic, diastolic, and mean arterial pressure; moderate increase in heart rate and cardiac output, and no change in central venous pressure, stroke volume, or total peripheral resistance. Mean arterial blood pressure was found to be higher in this series of hypertensives than it is in normotensive subjects during static muscular contraction, and higher than it is in hypertensive subjects when the exercise is dynamic rather than static.

Book Notes

Anatomy for Surgeons: Volume 2. The Thorax, Abdomen, and Pelvis. Second edition. By W. Henry Hollinshead, Ph.D. Quarto of 912 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $37.50.

This second edition attempts to present, as did the first edition, anatomic facts and concepts concerning the thorax, abdomen, and pelvis that are of particular interest to the surgeon. It is not intended to detail the complete descriptive anatomy of these parts, but is designed to serve both as a ready reference of basic anatomy and as a review of numerous anatomic details that are not readily available without wide reading both within and outside his own special field.

Textbook of Obstetrics and Gynecology. Second edition. By 54 Authors. Edited by David N. Danforth, Ph.D., M.D. Quarto of 1,219 pages, illustrated. New York, N.Y., Harper & Row, Publishers, 1971. Cloth, $35.

The purpose of this textbook, as in the previous edition, is to provide in a single volume a comprehensive and authoritative synthesis of the current knowledge of obstetrics and gynecology. It is intended primarily to answer the needs of the undergraduate medical student, although it should be of value to the resident and practitioner both for reference and review.

Beck's Obstetrical Practice. Ninth edition. By E. Stewart Taylor, M.D. Quarto of 665 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.75.

This text provides the student, the resident in training, and the obstetric clinician with essential information for obstetric practice, and at the same time it provides the theory necessary for an understanding of modern obstetrics. The bibliography of each chapter has been brought up to date so that the reader has ready reference to the significant publications in obstetrics and related fields of medicine.

Bailey's Textbook of Histology. Sixteenth edition. By Wilfred M. Copenhaver, Ph.D., Richard P. Bunge, M.D., and Mary Bartlett Bunge, Ph.D. Quarto of 745 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.50.

Although this textbook has been rewritten a number of times since the first six editions were written by Professor Bailey, the present edition continues to adhere to his philosophy of placing stress on fundamentals. At the same time, it holds to the view that each topic should be discussed in sufficient detail to make the subject understandable.

Surface and Radiological Anatomy. For Students and General Practitioners. Fifth edition. By W. J. Hamilton, M.D., G. Simon, M.D., and S. G. Ian Hamilton, M.A. Quarto of 397 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $17.

This book has been written for at least three different categories of readers: medical students, trainee radiographers, and trainee radiologists. In the present edition, many of the original radiographs have been replaced by new ones and a number of new illustrations have been added. Also, the text has been extensively revised and rearranged.

The Principles and Practice of Medicine. A Textbook for Students and Doctors. Tenth edition. Edited by Sir Stanley Davidson, B.A., M.D., and John Macleod, M.B., Ch.B. Octavo of 1,198 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $16.

This new edition differs from its predecessors in several ways: The number of contributors has been increased from 20 to 29; each section has been carefully revised and brought up to date; considerable additions have been made, including a new chapter on the immunologic aspects of disease. Finally, the order of presentation of the material has been altered so that the book now opens with chapters dealing with fundamental factors in disease.

Outline of Orthopaedics. Seventh edition. By John Crawford Adams, M.D. Octavo of 476 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $11.75.

For this new edition, the text has again been drastically revised. Many of the illustrations have been improved and a number of new ones have been added. The bibliography has also been extended and brought up to date.

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A short abstract of the proposed presentation should accompany the letter.

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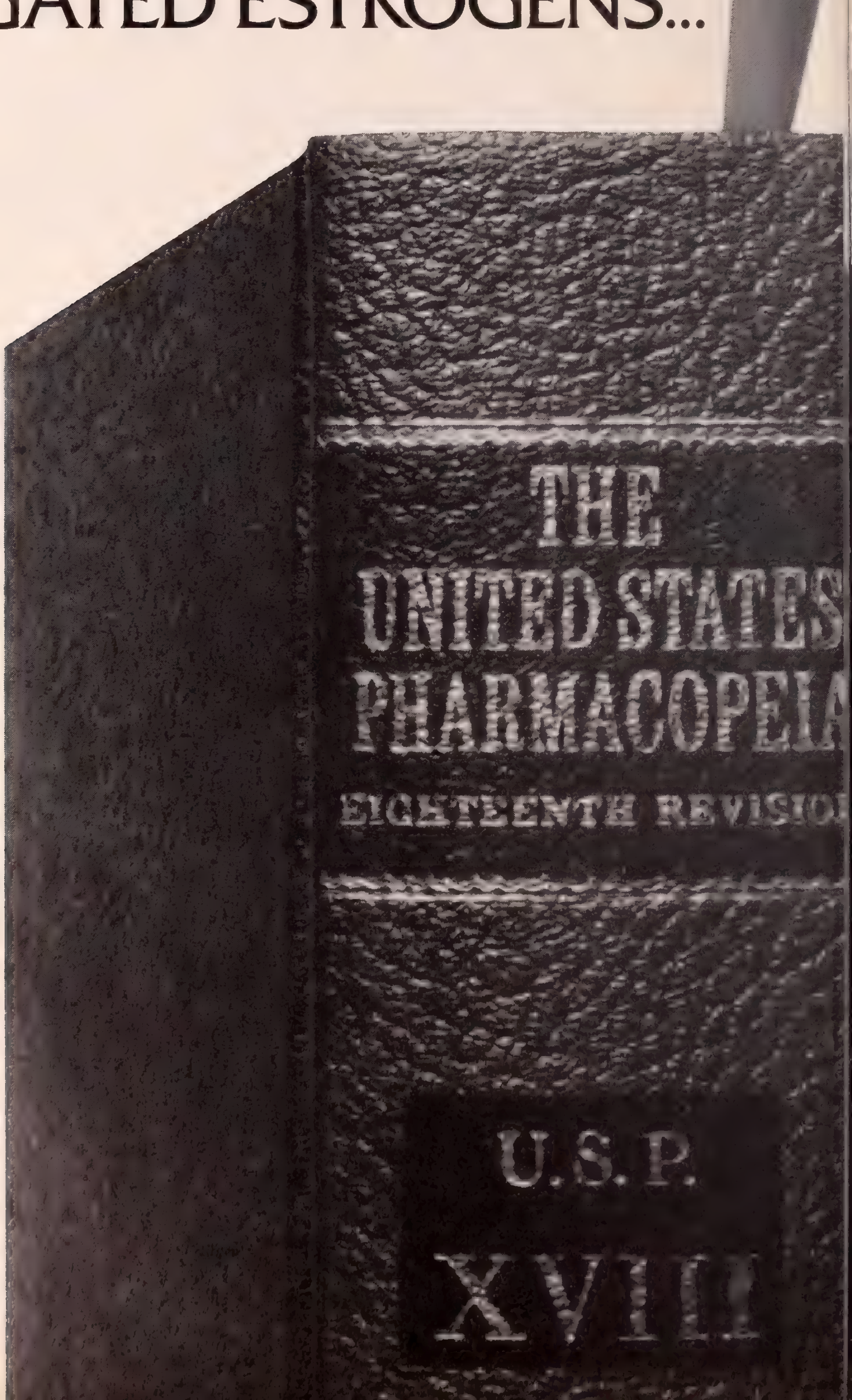
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Abstracts in Interlingua

Lauria, J. I.: Tractamento intraoperative del deficit liquide, ***New York State J. Med.*** **72:** 691 (15 de Martio) 1972.

Le actual controversia in le campo del maneamento de liquido non es justificate. In vice de adherer dogmaticmente a un systema particular pro administrar liquidos, sia liberal o conservative, le medico debe diriger su tractamento liquide secundo le patiente mesmo, su morbo e su chirurgo. Le stato de hydratation, le volumen sanguine, le hematocrito preoperatori e le evalutation del functionn renal, pulmonari e cardiac, e le demandas imposite a iste systemas per le tractamento chirurgic, debe tener se presente quando prepara se le therapia liquide. Le patiente debe esser observate proximemente pro facer le cambios necessari in le therapia con liquidos.

Kulka, E. W., Lehfeldt, H., e Getmanov-von der Mosel, V.: Experientia adverse con le spiral de aciero inoxidabile dispositive intrauterin, ***New York State J. Med.*** **72:** 694 (15 de Martio) 1972.

De 123 spirales de aciero inoxidabile (Majzlin) insertate, 31 teneva que esser extrahite per rationes medic. Iste proportion es plus elevate que con altere dispositives intrauterin. Le extration del spiral frequentemente esseva difficile, e in varie casos le hospitalization esseva necessari. Le biopsias endometrial monstrava un elevate incidentia de endometritis. Habeva un caso de perforation uterin, facente un total de tres inter le 2587 insertiones reportate. Iste contradice le declarationes in circulares e annuncios que informa un minimum de effectos adverse, extraction facile e non perforationes uterin.

Arthritis and gold salts

The use of water-soluble gold salts in juvenile rheumatoid arthritis is safe, effective, and the preferred medical therapy after a fair trial of salicylates, it has recently been reported (Clin. Proc. Child. Hosp. 27: 159 [June] 1971). For a period of one year, 12 children with monarticular or pauciarticular disease not inactivated with aspirin, were treated with gold sodium thiomalate. Results were excellent in 10 of these children, and only one was a frank failure. No side effects were found. The benefits of gold therapy, although real, do not last for long after the patient no longer retains gold. The mechanism of action of the gold salts is not known at the present time.

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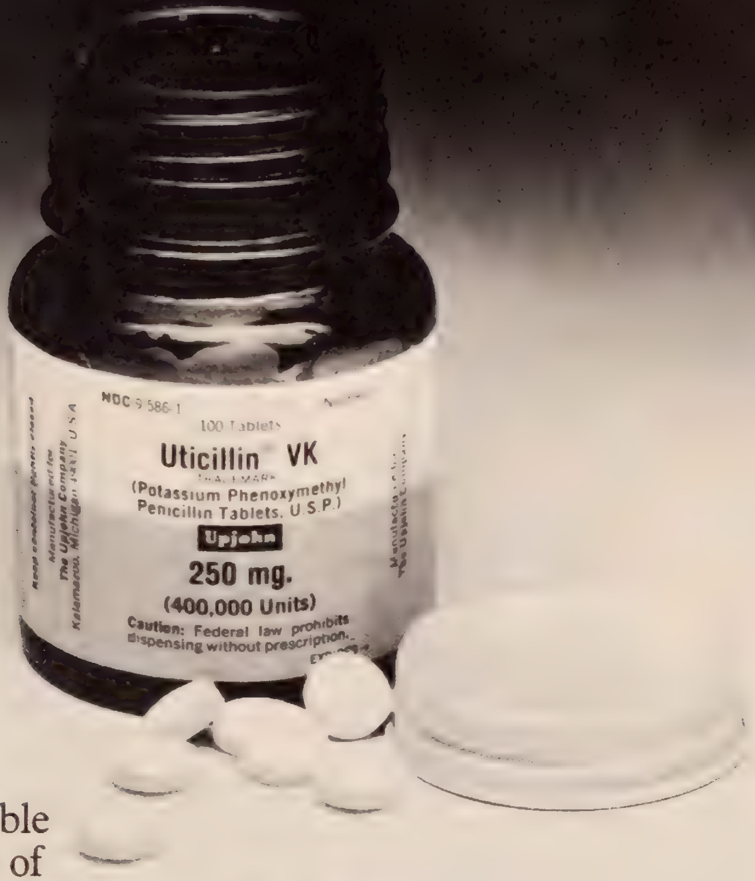
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TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

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Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana (“Pot,” “Grass”)	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines (“Pep Pills,” “Ups”)	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates (“Goof Balls,” “Downs”)	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

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Indications: Acute gonorrheal urethritis and proctitis in the male and acute gonorrheal cervicitis and proctitis in the female when due to susceptible strains of *N. gonorrhoeae*.

Contraindications: Contraindicated in patients previously found hypersensitive to Trobicin. Not indicated for the treatment of syphilis.

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Warnings: Antibiotics used to treat gonorrhea may mask or delay the symptoms of incubating syphilis. Patients should be carefully examined and monthly serological follow-up for at least 3 months should be instituted if the diagnosis of syphilis is suspected.

Safety for use in infants, children and pregnant women has not been established.

Precautions: The usual precautions should be observed with atopic individuals. Clinical effectiveness should be monitored to detect evidence of development of resistance of *N. gonorrhoeae*

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*Data compiled from reports of 14 investigators. **Diagnosis was confirmed by cultural identitication of *N. gonorrhoeae* on Thayer-Martin media in all patients. Criteria for cure: negative culture after at least 2 days post-treatment in males and at least 7 days post-treatment in females. Any positive culture obtained post-treatment was considered evidence of treatment failure even though the follow-up period might have been less than the periods cited above under "criteria for cure" except when the investigator determined that reinfection through additional sexual contacts was likely. Such cases were judged to be reinfections rather than relapses or failures. These cases were regarded as non-evaluatable and were not included. JA72 1848-6

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globin, hematocrit and creatinine clearance; elevation of alkaline phosphatase, BUN and SGPT. In single and multiple-dose studies in normal volunteers, a reduction in urine output was noted. Extensive renal function studies demonstrated no consistent changes indicative of renal toxicity.

Dosage and administration: Keep at 25°C and use within 24 hours after reconstitution with diluent.
Male—single 2 gram dose (5 ml) intramuscularly. Patients with gonorrheal proctitis and patients being re-treated after failure of previous antibiotic therapy should receive 4 grams (10 ml). In geographic areas where antibiotic resistance is known to be prevalent, initial treatment with 4 grams (10 ml) intramuscularly is preferred.
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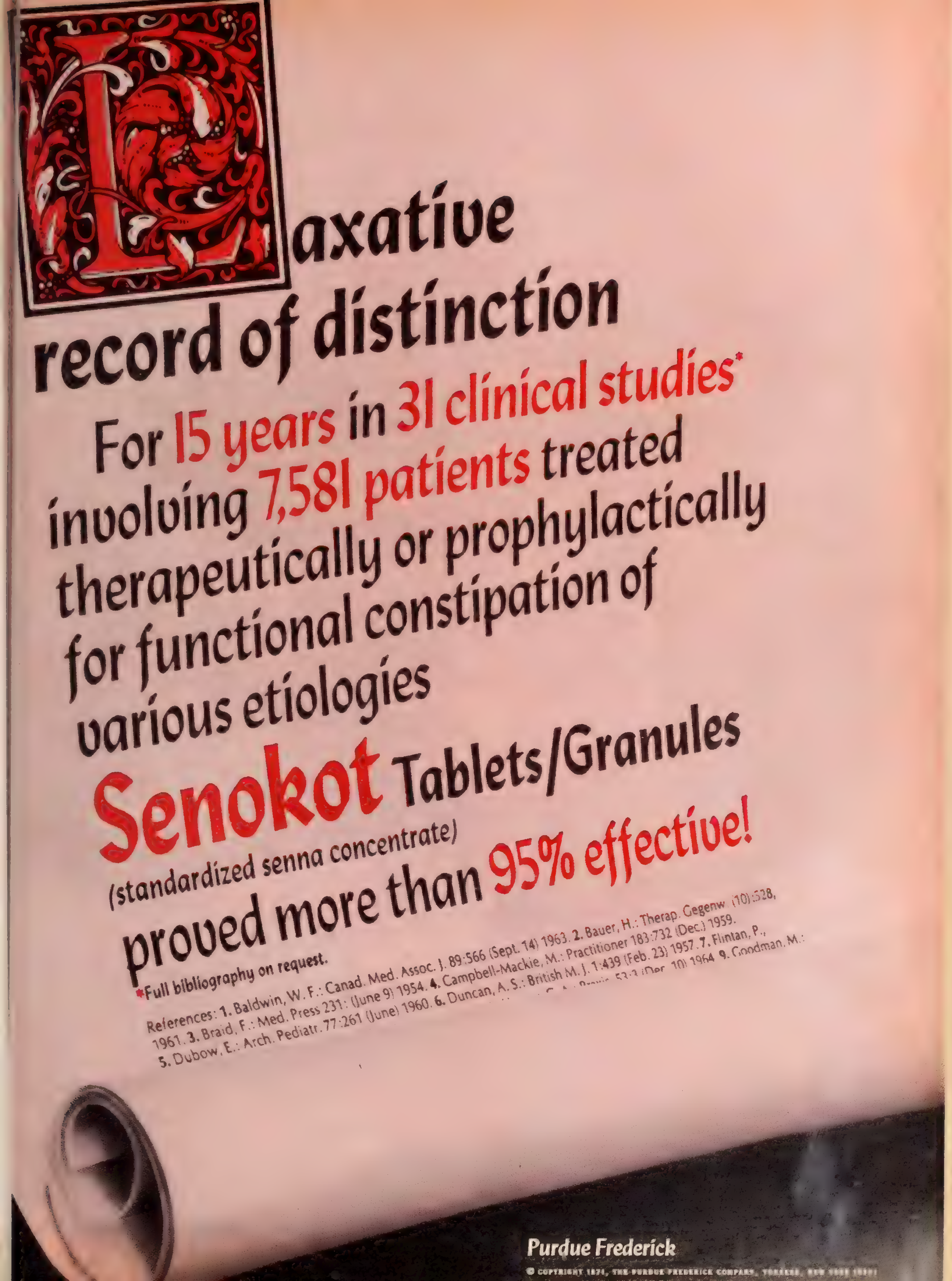

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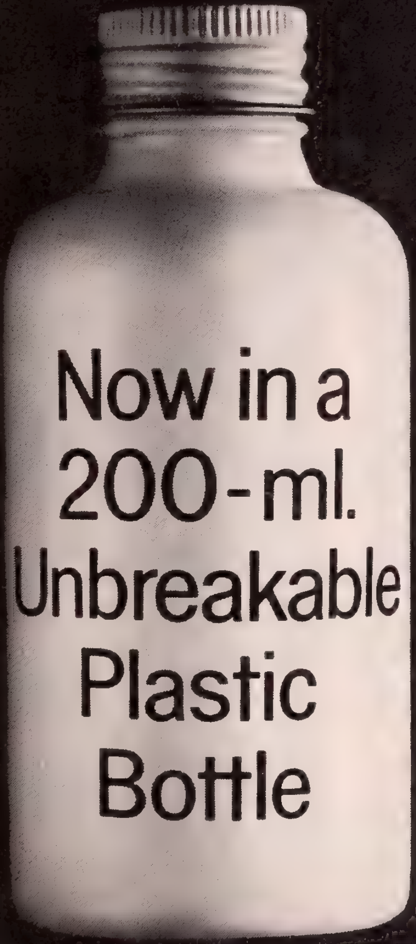

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Small electrical appliances draw little on power

A recent study by the Edison Electric Institute indicates that the total usage of all small appliances amounted to less than four per cent of all the kilowatt hours of energy consumed in the country in 1970. Furthermore small appliances accounted for only 10.72 per cent of the residential use of electricity. Residential consumers use less than a third of the available electric power.

Many small appliances perhaps originally thought to be gadgets are now generally regarded as essentials—such things as radios, electric clocks, electric blankets, toasters, coffee percolators—the list of these items runs to 55 in number.

Here is a list of major and minor appliances with their annual consumption of electric power and their percentage of use of the residential power pool (Table I).

In order to convert this table to cost, multiply

TABLE I. Major and minor appliances

Small Appliances	National Average Annual Kwhr	Per Cent of Total U.S. Residential Kwhr
Can openers	10	.06
Coffee makers	106	1.31
Irons	144	2.04
Toasters	39	.51
Vacuum cleaners	46	.59
Mixers	13	.15
Blenders	15	.07
Radios	86	1.21
All other small Appliances	. . .	4.78
TOTAL small appliances		10.72
Major Appliances	**National Average Annual Kwhr**	**Per Cent of Total U.S. Residential Kwhr**
Bed covering	147	.80
Dishwashers	363	1.02
Clothes washers	90	.92
Clothes dryers	993	3.39
Refrigerators	1,228	13.68
Television (black & white)	362	3.99
Television (color)	502	2.26

the kilowatt hours by 2.2 cents. This figure is arbitrary and arrived at by dividing your electric company's total residential electric revenues by the total kilowatt hours sold.

Thus the annual cost for the use of a can opener is 22 cents, $1.01 for a vacuum cleaner, $1.89 for a radio, $1.95 for a clothes washer. It costs $27.02 to operate a refrigerator for a whole year.

These figures show there is an economy in cost and also in the use of our total energy pool.

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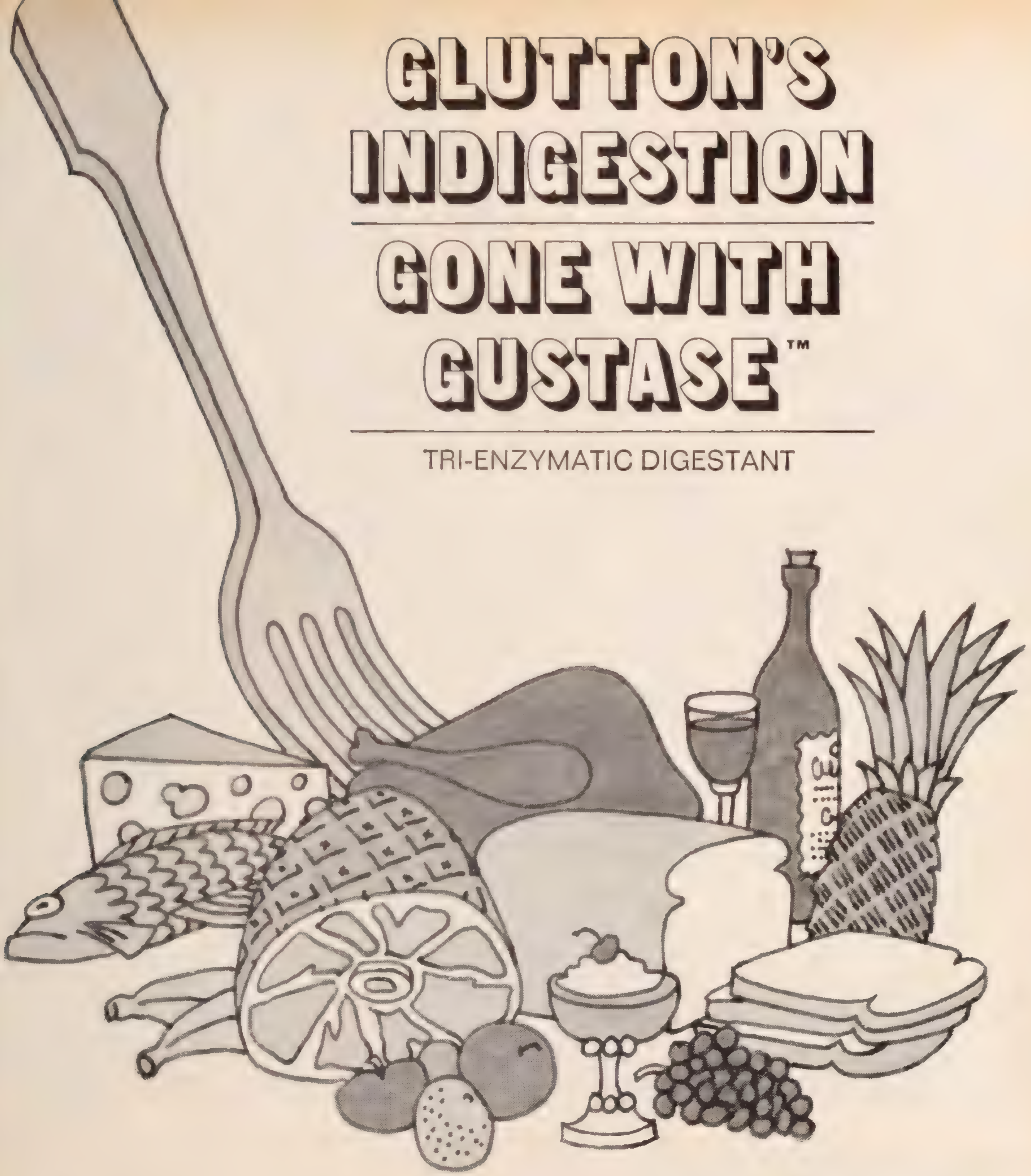

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Although not all clinicians agree on the value of vasodilators in vascular disease, several investigators[2-5] have reported favorably on the effect of isoxsuprine. Effects have been demonstrated both by objective measurement[3,5] and observation of clinical improvement.[2,4]
Indications: Cerebrovascular insufficiency, arteriosclerosis obliterans, diabetic vascular diseases, thromboangiitis obliterans (Buerger's disease Raynaud's disease, postphlebitic conditions, acroparesthesia, frostbite syndrome and ulcers of the extremities (arteriosclerotic, diabetic, throm botic). **Composition:** VASODĪLAN tablets, isoxsuprine HCl 10 mg. and 20 mg. **Dosage:** Oral—10 to 20 mg. t.i.d. or q.i.d. **Contraindications an Cautions:** There are no known contraindications to recommended oral dosage. Do not give immediately postpartum or in the presence c arterial bleeding. **Side Effects:** Occasional palpitation and dizziness can usually be controlled by dosage reduction. Complete details availabl in product brochure from Mead Johnson Laboratories. **References:** (1) Samuels, S. S., and Shaftel, H. E.: J. Indiana Med. Ass. *54*:1021-1023 (July) 1961. (2) Clarkson, I. S., and LePere, D. M.: Angiology *11*:190-192 (June) 1960. (3) Horton, G. E., and Johnson, P. C., Jr.: Angiology *15*:70-74 (Feb.) 1964. (4) Dhrymiotis, A. D., and Whittier, J. R.: Curr. Ther. Res. *4*:124-128 (April) 1962. (5) Whittier, J. R.: Angiology *15*:82-87 (Feb.) 1964.

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INTRAOPERATIVE MANAGEMENT OF FLUID DEFICITS*

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The current controversy in the area of fluid management is unwarranted. Instead of adhering dogmatically to a particular regimen of fluid administration, whether it is liberal or conservative, the physician should key his fluid management program to the individual patient, his disease, and his surgeon. State of hydration, blood volume, preoperative red cell mass, and an assessment of renal, pulmonary, and cardiac function and the demands put on these systems by the surgical program should be taken into consideration when formulating the fluid management program. The patient should be closely monitored so necessary changes in the fluid management program can be made.

The amount of conflicting evidence in the literature and the very strong, almost adamant, opposing positions taken by well-recognized clinicians and investigators has made the intraoperative management of fluid deficits a very confusing issue. There is a distinct polarization of attitude toward fluid therapy; surgeons, at least those who are most vocal, adopt the more conservative view of limited fluid administration, and anesthesiologists lean toward more liberal fluid replacement.

A basic cause for the present conflict on this subject has been brought about by the dogmatic prescription of fluid regimens with which the literature is replete. I choose not to repeat those recommendations, but to review for you some of the literature which has influenced our present thinking. Neither extreme of fluid management is entirely rational.

The present discussion began when Cannon, Fraser, and Hooper in 1918[1] described the beneficial effects of saline solution and bicarbonate in the treatment of shock after blood loss. As in many other areas of medicine, the use of salts and various amounts of fluid has undergone the phenomenon of both recurrent discovery and recurrent surges of enthusiasm in its application to clinical practice. In the thirties and forties, as technics improved for studying the metabolic changes in postsurgical patients, the use of saline solutions fell into disrepute, since it was noted that there was distinct postoperative retention of sodium and water. In 1959, the classic work of Moore[1a] taught us that the metabolic and hormonal responses to surgical stress profoundly altered the need for salt and water in the postoperative period.

As a result of these studies, it became customary to limit the amounts of salt and water administered in the operative and early postoperative periods. Patients seemed to do well with this regimen of fluid therapy, that is, limited administration of dextrose and water during surgery and very limited administration in the immediate postoperative period. In general, everybody seemed happy with this routine.

It occurred to Shires and other investigators in the early sixties that the operative and postoperative retention of salt and water, when administered in the relatively small amounts prescribed by Moore, might be a physiologic response to a deficit of salt and water incurred by the lowering of the extracellular fluid volume and the consequent outpouring of antidiuretic hormone and aldosterone. In 1961, Shires, Williams, and Brown[2] published an article which became both a milestone in the study of the fluid needs of the surgical patient and a subject for very considerable debate. Using multiple radioisotopes, Shires investigated the volumes of the extracellular fluid space, the plasma space, the red cell mass, and the relative distribution of fluid in these spaces, along with shifts which occurred with surgery and blood loss. Shires concluded from this investigation that there was a shift of fluid from the extracellular space. This shift amounted to as much as 28 per cent of the volume of that space in patients undergoing cholecystectomy. It was postulated at that time that this fluid shift occurred because of the accumulation of sodium and fluid in the traumatized tissues. There was earlier evidence for this, in the work of Rosenthal and Tabor[3] during World War II, when they showed that radioactive sodium accumulated in traumatized tissues.

The work of Shires encouraged many investigators to attempt to replace this extracellular fluid with a fluid closely resembling it. Thus was born the enthusiasm for lactated Ringer's solution. It was not really the birth of the use of lactated Ringer's solution, but more aptly the resurgence of enthusiasm for the use of a polyionic solution containing sodium. The work of Shires set a number of investigators to work, diligently investigating the capacity of the extracellular fluid compartment to accept large infusions of fluid and the ability of the kidneys to excrete this fluid under the conditions of anesthesia and surgery.[4]

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Presented at the 165th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Anesthesiology, February 14, 1971.

It was stated in a number of articles at this time that prodigious quantities of lactated Ringer's solution could be infused under the conditions of the study, and that the kidneys could excrete this fluid.[4,5] Blood pressure could be maintained more easily in the face of halothane administration, and, generally, the patients did well postoperatively. It was noted also that the incidence of hypotension in the early postoperative, as well as in the intraoperative, period was lower and that the previously feared retention of sodium and fluid was not a problem.

Misunderstandings

I believe that it was at this point that the greatest misunderstandings developed which account for the present polarization in thinking about the administration of fluids in the intraoperative period. During this period, an overenthusiasm for fluid administration supervened in some quarters. Despite the published results of a number of investigators which disclaimed any deleterious effects from the very liberal administration of lactated Ringer's solution, several investigators reported problems.[6,7] Pulmonary edema in the early postoperative period in healthy noncardiac patients, heretofore rather rare in the restricted fluid regimen prevalent prior to 1963, was observed. In his original work, Shires cautioned against the misinterpretation of his work and urged moderation so that the therapeutic pendulum would not swing too far in the direction of administering too much fluid and inundating patients indiscriminately.

In 1964, Terry and Trudnowski[4] described a fluid administration regimen which consisted of administering 2 L. of Ringer's lactate solution during the first hour of surgery and 1 L. per hour of surgery thereafter. This fluid administration regimen was described by the authors as part of their experimental protocol and was not meant to be a general prescription for fluid administration to surgical patients in general.[8] This point was not understood by all and a number of anesthesiologists were misled into the too liberal and indiscriminate administration of lactated Ringer's solution.

Stimulated by the rising incidence of complications attributable to the overinfusion of patients, Roth, Lax, and Maloney[6] embarked on a repetition of Shires' work, as did other investigators, and were not able to reproduce Shires' results. Further fuel was added to the fire when the entire matter of depletion of the extracellular fluid volume during elective surgery was seriously questioned.[9] Indeed, several investigators reported an increase in the extracellular fluid volume during surgery.[10] Details of the technical application of the radioisotope technic used by Shires for measuring fluid volumes were questioned, and the regimen of liberal fluid administration to all patients undergoing surgery was condemned. The question of more subtle changes in pulmonary function, namely in airway resistance, compliance, and gas exchange brought about by interstitial pulmonary edema, has also been raised.[11] The bad reputation that the regimen of liberal fluid administration during surgery acquired at this time was justified in many instances. It is unfortunate, however, that this period of disrepute served to de-emphasize the fact that there are many situations in which the liberal use of fluids of the proper type is indicated.

There is a large body of evidence, apart from the work of Shires, which indicates that there is accumulation of sodium in individual traumatized cells,[12] that there is loss of extracellular fluid volume as edema occurs at the sight of injury, and that the outpouring of antidiuretic hormone and aldosterone is a response to this altered extracellular fluid volume and not entirely a response to the trauma or anesthesia.[13] Although Shires' work on the extracellular fluid volume deficit in elective surgery has been disputed because of technical details in his determination, the question of why there is a higher equilibration time after surgery and trauma has not been answered.

We have a considerable volume of evidence now to indicate that the extracellular fluid volume does, in fact, decrease with trauma and that this decrease in the extracellular fluid volume can be replaced with polyionic solutions such as lactated Ringer's. We must also acknowledge at this point the considerable body of evidence indicating that this fluid—which is lost from one compartment of the body to another and is functionally separated from the circulation—is lost or nonfunctioning for a measurable period of time and then may return. The lack of appreciation of this fact has accounted for some of the problems noted.

Conclusions

A number of hard facts have come out of the investigation fostered by the clinical problems observed. There is little question that survival after massive transfusion is enhanced by the administration of fluids in excess of the amount of blood lost following retransfusion of the shed blood. It has been amply demonstrated that blood pressure is easier to maintain in patients during halothane or methoxyflurane (Penthrane) anesthesia if liberal quantities of fluid are administered. It has also been demonstrated that the anesthetic state and surgery are not inconsistent with good renal function in the intraoperative and early postoperative period. There is no question that fluid administration will lower blood viscosity and have a beneficial effect on perfusion. The beneficial effects of buffering agents in metabolic acidosis has not been disputed.

On the other side of the coin, it is apparent that even noncardiac, young individuals have a limit for the amount of crystalloid fluid that their cardiopulmonary system will tolerate, even in the presence of seemingly adequate renal function and normal venous pressure.

I would like to re-emphasize the fact that increasing evidence is being accumulated of more subtle effects of interstitial pulmonary edema on fluid overload and the effect of fluid overload on the blood gases in the absence of overt pulmonary edema. It seems that the enthusiasm to avoid some of the complications of anesthesia, namely hypotension, in the intraoperative and postoperative period, may have exposed a small segment of the surgical population to the undue risk of more serious complications of pulmonary edema and other more subtle pulmonary changes. In going back to the early reports investigating the very liberal administration of fluid, one finds many references to the need for caution and constant monitoring. As we approach an era of more thorough and more sophisticated patient evaluation, and become capable of measuring more precisely the effects of fluid administration with determinations such as osmolality, blood gases, and central venous pressure, the question of liberal versus restricted regimens of fluid administration may die a natural death.

Certainly by now, any recipe or rule of thumb or general prescription for the routine administration of large quantities of fluids to all elective surgical candidates should be a dead issue. The risk of overinfusion, small but real to the healthy elective surgical patient, outweighs the rather subtle, by comparison, problems with fluid restriction. Good preoperative evaluation and the recognition of those forms of traumatic injury edema in which large infusions of salt and fluid are useful and unquestioned, should take precedence over the indiscriminate large volume infusion to all patients. The preoperative state of hydration and electrolyte balance; the anticipated degree of trauma incident to surgery; the metabolic derangement anticipated by the nature of the surgical procedure and postoperative course; and the knowledge gained by observation of central venous pressure, of systemic blood pressure, and pulse contour should enable us at this point to handle patients on a minute-to-minute basis as far as their fluid needs are concerned, and should lead us away from any preconceived ideas or regimens which include either severe fluid restriction or over-liberal administration.

In my own practice it seems that the very critical patients, that is, those who have suffered massive trauma or who have undergone extensive surgery, present less of a problem since they are monitored so closely and their needs met accordingly.

I would like to think that current practice in the management of intraoperative fluid deficits revolves about a regimen keyed to the individual patient, his disease, and his surgeon. Depending on the extent of the problems anticipated, this regimen should include evaluation of the state of hydration, blood volume, and red cell mass preoperatively, along with assessment of renal, pulmonary, and cardiac function. An appreciation of the demands put on these systems by the nature of the surgery should assist in the interpretation of monitoring data. Such data might include urine volume, plasma and urine osmolality and electrolytes, central venous pressure, cardiac output, and blood gases.

With the preceding information in mind and appreciation of the variable interactions, the best interest of the patient will be served by administering to his needs without being influenced by a previously devised recipe.

8 Dan Tracy
Williamsville, New York 14221

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ADVERSE EXPERIENCE WITH STAINLESS STEEL SPRING INTRAUTERINE DEVICE*

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Continuing earlier studies of intrauterine devices (IUDs)[1] an investigation of the SSS (Majzlin stainless steel spring) was undertaken in December, 1967.[2,3] Because of the number of complications experienced with this device, some of them serious, insertions were stopped in December, 1969, although all patients were followed until the cutoff date for the study.

This study covers 123 women who had an SSS inserted in the three-year period beginning in December, 1967, 82 of whom were still wearing the device when the study ended in December, 1970. The 41 terminations were due to the following reasons:

Pregnancies		3
Expulsions		1*
Removals		37
Bleeding and pain	25	
Severe discharge	6	
Planning pregnancy	4	
Mentally disturbed patient	1	
Uncooperative patient	1	

*Habitual expeller.

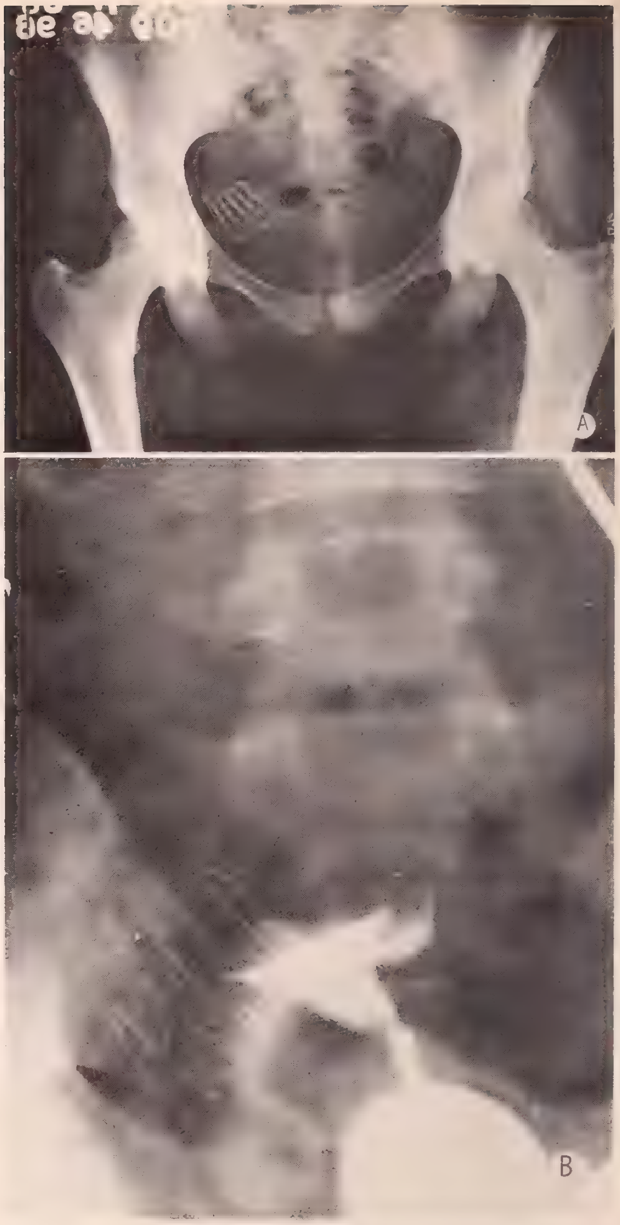

FIGURE 1. Perforation with SSS. (A) Flat plate of abdomen. (B) Hysterogram.

The observations in our small series correspond to the findings of the Cooperative Statistical Program[4] and of Sobrero and Pierotti[5] that higher removal rates are associated with the SSS than with most other intrauterine devices and that expulsion rates are lower.

Perforations

The one perforation with the SSS which occurred in our series was included with the 3 reported by Tietze,[4] among the total of 2,587 women with the SSS in the Cooperative Statistical Program. The case history of the perforation in our series was as follows:

Case 1. A patient, aged eighteen years, was para 1, gravida 1. She had a spontaneous delivery on October 9, 1968. An SSS was inserted December 3, 1968. Insertion was easy and painless. At control examination, one week later, no strings were visible. Beolocator indicated an empty uterine cavity. A flat plate showed the device apparently outside the uterus (Fig. 1A). Hysterogram, December 19, 1968, confirmed this (Fig. 1B). In spite of repeated admonitions, the patient failed to return until March, 1969, at which time an eight-week intrauterine pregnancy was found. The last menstrual period was December 28, 1968. Pregnancy was terminated for psychiatric indication, by dilatation and suction curettage. At the same time the device was removed by laparotomy. It was found in the omentum, bound down by adhesions. Recovery was uneventful.

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*This study was made under a grant-in-aid from the Population Council, Medical Division, Rockefeller University.

Because a perforation may be asymptomatic, as in this case, it is possible that many additional perforations may have occurred among the total of 20,000 insertions of the SSS reported by the manufacturer. Some perforations may not have been reported, and some may have been overlooked. Perforations with the SSS are a matter of grave concern because we consider it a closed device, as stated by Sobrero and Pierotti.[5]

Pregnancies

A total of 3 pregnancies occurred in our patients with SSS inserted. In addition to the 1 pregnancy associated with the perforation (Case 1), the 2 other pregnancies in our study presented the following case histories:

Case 2. A woman aged twenty-four, gravida 2, para 2, had an SSS inserted on January 3, 1968. She became pregnant about six months after the insertion; her last menstrual period was June 29, 1968. A roentgenogram in March, 1969, showed the device in situ. The device was removed after normal delivery on April 3, 1969, in Puerto Rico.

Case 3. This woman, aged twenty-two, gravida 1, para 1, had an SSS inserted on December 14, 1967. She became pregnant one month after the insertion, and on September 21, 1968, was delivered of a 5-pound 8-ounce baby. Unfortunately, no x-ray picture was taken before or after delivery. The device may have been retained in the uterus, as has been reported by Oppenheimer[6] in a similar observation for the Gräfenberg ring. Other possibilities are an unnoticed expulsion or perforation.

Of 123 stainless steel springs (Majzlin) inserted, 31 had to be removed for medical reasons, a higher removal rate than for most other devices. Removals were often difficult, necessitating hospitalization in several cases. Endometrial biopsies showed a high incidence of endometritis. There was 1 perforation, making a total of 3 in 2,587 insertions reported. This contradicts the statements in circulars and advertisements claiming a minimum of side effects, easy removal, and no perforations.

Endometrial biopsies

Fifteen endometrial biopsies were done, of which 13 were in women who complained of bleeding, pain, or severe discharge (Table I). No pathologic changes were observed in the 2 asymptomatic women and in 2 of the 13 symptomatic women. Endometritis was found in the 11 remaining women. These findings are in the same general direction as those recently reported by Ober, Sobrero, and Chabon[7] who found significant inflammatory changes in the endometrial biopsies of 8 out of 10 women following insertion of an SSS. They suggest that the relatively high incidence of endometritis found in their study may be due to damage caused by the various metallic components of the SSS. We should like to suggest as additional factors the possibility of mechanical traumatiza-

TABLE I. Endometrial histology in cases of removal for medical reasons

Clinical Signs	Biopsy Done Months After Insertion	Histopathologic Findings
Profuse bleeding	7	Chronic focal endometritis
Profuse discharge	15	Acute and chronic endometritis
Bleeding and discharge	14	Mild chronic endometritis
Purulent discharge	13	Severe acute endometritis
Bleeding	24	Proliferative endometrium with focal secretory activity
Moderate pain and discharge	11	Secretory endometrium
Bleeding	28	Chronic endometritis
Bleeding and pain	27	Chronic endometritis
Bleeding and pain	18	Acute and chronic endometritis
Bleeding and discharge	23	Chronic endometritis, focal granulomatous endometritis, possibly tuberculous
Bleeding and pain	9	Endometritis and squamous metaplasia
Bleeding, pain, and discharge	23	Acute and chronic endometritis with squamous metaplasia; actinomycosis
Pain and discharge	18	Severe acute and chronic endometritis

FIGURE 2. Appearance of SSS after difficult removal.

tion of the endometrium produced by the shape and the spring action of the device.

Two of our patients showed squamous metaplasia in addition to the endometritis; one of these also had actinomycosis. Although squamous metaplasia of the endometrium was found by Ober, Sobrero, and Chabon[7] in 4 specimens, 2 such cases occurred in our much smaller series.

Whether the occurrence of focal granulomatous endometrititis in another case should be interpreted as tuberculosis or as a foreign-body reaction remains a matter of conjecture.

Difficult removals

In numerous instances, that is, in 16 out of 37 removals, major difficulties were encountered. In 9 cases, the removal was so difficult that instrumentation was required (Case 4). Four women required hospitalization, and the removal after dilatation under anesthesia was accomplished with great difficulty (Case 5). For most women in whom the removal was technically not too difficult it was nevertheless extremely painful, probably due to traumatization of the cervical canal. One patient went into vasomotor shock for more than an hour.

Case 4. An SSS was inserted on February 25, 1969, in a twenty-six-year-old patient, gravida 4, para 4. The device was removed because of a purulent discharge and menometrorrhagia. This was possible only after dilatation up to Hegar number 8 dilator, using a double-hook remover (Fig. 2).

Case 5. In a patient aged twenty-four, gravida 3, para 3, an SSS was inserted on March 12, 1968. It was removed because of menometrorrhagia. Even after dilatation, the device could not be removed in the clinic, and the procedure was completed under anesthesia in a hospital.

A particularly difficult removal, not included in our series, was encountered by the senior author (E.W.K.) in his private practice. An SSS had been inserted in a twenty-five-year-old nullipara at another clinic. Removal became necessary because of bleeding and pain. An attempt in the office was unsuccessful. In the hospital, under general anesthesia, two nylon threads were knotted to the strings of the device and threaded through the insertion tube. It was hoped to gather the ends of the device into the inserter. This attempt failed. The cervix then was dilated up to Hegar number 10 and the cavity entered with a small placenta forceps. The device was finally removed with great difficulty. During the removal it broke into several segments (Fig. 3). Postoperative x-ray film showed that the entire device had been removed.

Our experience with major problems of removal are identical with those seen in other institutions. A letter from Robert A. Hatcher, M.D., of Emory University informs us that his department as well as those of the University of Minnesota and New York Hospital have discontinued the use of this device. Similarly, the Margaret Sanger Research Bureau has stopped using the SSS.

Conclusions

Problems encountered with the SSS in our investigation included 1 perforation, numerous removals for bleeding and pain, as well as a high percentage of difficult and very difficult removals requiring hospitalization.

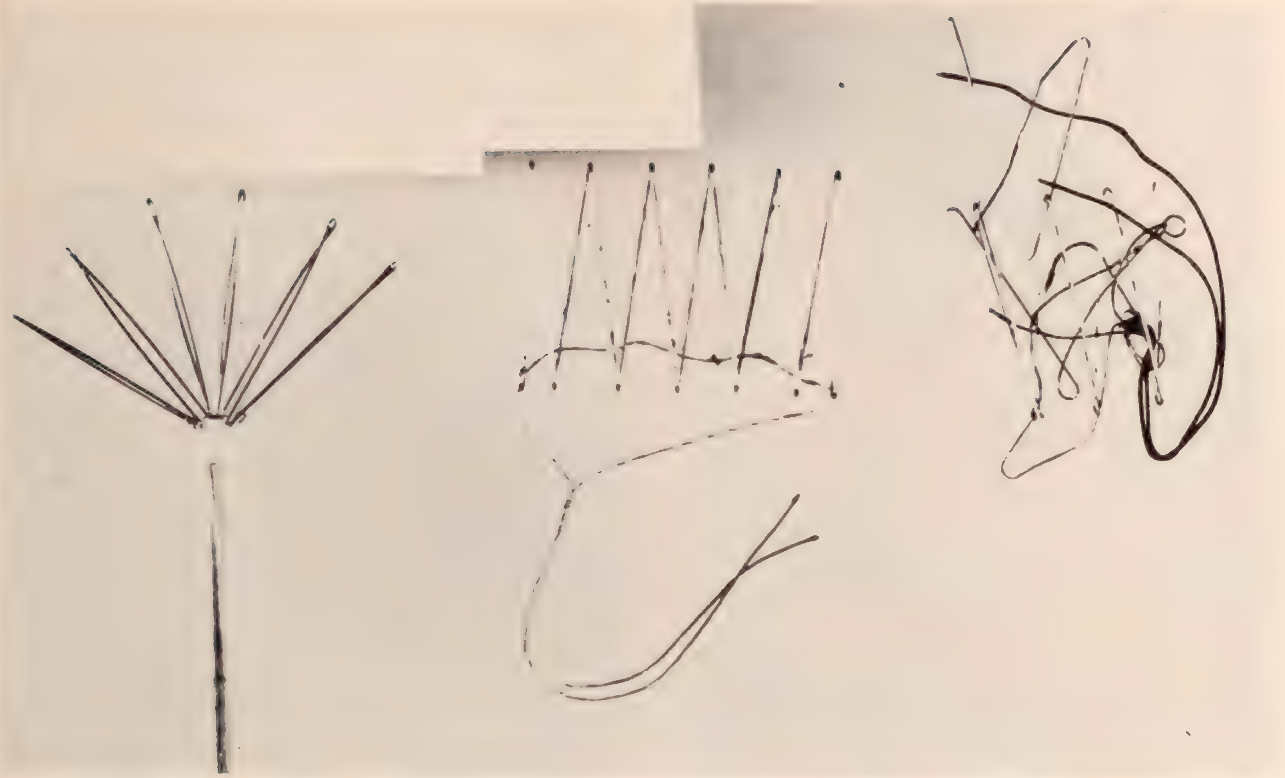

FIGURE 3. From left to right: SSS at moment of extrusion from inserter; SSS at full expansion; segments of SSS after removal.

The percentage of endometritis found in biopsy specimens of patients who had removal for bleeding and pain was much higher than that encountered with other devices. There were 3 pregnancies in our series.

The pregnancy rate was in line with that of other observers.[4] Sobrero and Pierotti[5] found a higher pregnancy rate for the SSS than for Lippes loops C and D.

Advertisements in various medical journals and in circulars describe the SSS as superior to other devices.[8,9]

It is claimed that no perforations have occurred and that removal of the device is easy. These statements are misleading. Certainly the SSS is not "a better alternative" as claimed in these advertisements.

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SYMPOSIUM

COMPUTERS AND COMMUNITY MEDICINE

INTRODUCTION

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During the 1960s we witnessed the introduction of data processing technology into medicine. This introduction may be epitomized as a mixture of exploitation, basic scientific studies, experimentation, prototype building, and sophisticated salesmanship. Dollars flowed freely then but no longer. The morning after is on us. If you clear away the remains of sales pamphlets, stock options, incompleted pilot studies, and file after file of computer programs, you will find a few projects that have survived the strain of cost justification.

Most of these survivors concern financial or administrative activities of our health industry. A few pertain to improved laboratory or other diagnostic procedures. Hardly any directly improve medical management. Of the few projects in our State that bear directly on health delivery, those addressing ambulatory care are still viable. Most of us believe that society needs and will encourage improved methods for care of clinic and private office patients. We shall be directed to handle efficiently the many, many patients and their accompanying data. It is appropriate to look for help from computer technology. Whether or not automation will in fact lighten this burdensome task remains to be seen.

We are fortunate to have as speakers some pioneers in the field of automation as applied to ambulatory medicine. They will tell us of their experiences and of their hopes for the future.

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HEALTH INFORMATION SYSTEM

One coordinator of health care for communities

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As a practicing pediatrician and director of the pediatric outpatient department of Bellevue Hospital in New York City, I am charged with getting medicine to a particular community. The community served by Bellevue is a heterogeneous population of considerable size scattered geographically from my base of operations, largely indigent and Spanish-speaking, and poorly educated. The people in this community secure medicine in a variety of ways imposed on them largely by economics and social arrangements.

We all recognize that the American prototype of medical care is a single physician who not only provides the basic health care but who is also the coordinator for more specialized services. However, this is not the pattern for the children in my community. Apart from the parent, there is no human coordinator. Different units of care are provided by numerous agencies, including municipal and voluntary hospitals, health department clinics, school health physicians, social agencies, and so forth. Bellevue Hospital is but one of the places the children in my community come to for some of their medical care.

I hope this establishes that I have a continuing awareness of the action end of what is popularly called the health care delivery system and that I sit in one of the company headquarters of "com-

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* *By invitation.*

munity medicine." Some years ago the opportunity presented itself in the form of a government grant for comprehensive health care for children and youth to improve the medicine given to those children who lived around Bellevue Hospital.

Coordination of medical care

The approach we took was to try to coordinate, by human or other means, those pieces of medical care into a package from which would emerge comprehensive health care, and the element in medical practice selected was the medical record.

As the director of a large group of pediatric clinics, my experience with conventional medical records made it appear essential to bring in some new technology to carry out the required tasks. Being naïve and logical it appeared that electronic digital computers might be just such a technology. My expertise in this area was zero in the beginning, and I might add is only a shade greater five years later, because it was established by me at the outset that physicians do doctoring, and computer people do things with computers. I was fortunate in having associates who agreed and willingly complied with this effort to avoid any confusion of roles that might get in the way of coordinating and integrating "community medicine."

One of the earliest and most important lessons which emerged for me was the matter of economics. First, we figure out what we want to do, then we put a price tag on each task. The cost is very closely related to the speed with which the task will get done, both the human elements (programming and system design) and the electronic elements. To put it another way, time is money. The required speed of completion of a transaction or task with a computer system drastically affects the cost of a transaction. This is true about both the production and the operation of the system. In short, the less time for the job to get done the more money you need. Long-term economic considerations played an early and continuing role in all deliberations.

Now, what does one want a record system to do and what is each task worth? And what compromises will have to be made for each?

Minimally a record system should have convenient methods for depositing and extracting information about the patient's medical history and treatment. Beyond this obvious requirement it is necessary to examine the health-care delivery system that the record-keeping mechanism would serve. There are emergency room, general and specialty appointment type clinics, school health rooms, child health stations, and so on. What would each need to carry out its assigned tasks?

First, is the patient in the emergency room known to the hospital? What is his record number? Can we get some recent information quickly so that immediate and appropriate care may be rendered. If additional tests or treatments are required, can we know the availability of specialized services. In other words, can we make an appointment at any time of the day or night?

Next, in our clinic, which is a prescheduled health-care situation, our big needs are to know in advance that the patient is coming and to have his medical record available for the physician. Can we schedule return appointments or secure other consultants' opinions conveniently? Can we avoid having the patient come too often by knowing what other appointments he already has? What other health care units in the community have served or are serving the patient, and what care is being given? Here one must distinguish carefully demographic information from medical information to maintain the confidentiality of medical records.

On an administrative and policy level, can our medical record system be used to better evaluate and compare the medical care rendered? Does this system allow clinical research to be performed on the patient's record? The development of a mechanism to accomplish these tasks within a reasonable economic framework would appear to me to be a substantial step toward improved community health care.

Free-narrative record

The most critical decision in the design of the record system had to do with the elementary unit. The unit chosen was substantially that which constitutes the unit of the conventional paper system. There is much discussion these days about a restructured record in that the object returned to the user is a rearrangement of the input material and that the rearrangement be done by a mechanical device. In our system no such rearrangement is made nor are there any plans for such.

By adhering to this accustomed history, examination, impression, and management as our basic arrangement, we have achieved a loosely structured record of patient visit or, as we call it, document format. In other words, the physician is still writing in narrative form just as he usually does, organizing his information under familiar headings. The document structure is what is called variable field length format and is associated with the name of Julius Korein, M.D. This structure has been well discussed in the medical literature. One of the advantages of this free-narrative record is its relative freedom from constraint on document content and therefore its ready acceptance by physicians.

These constraints are designed to make retrieval of all or part of each patient visit easier and to allow for analysis. For example, the temperature if recorded will always be found in the examination paragraph, and the fact of penicillin administration will always be located in the management paragraph and, therefore, can be found by the computer program.

To cope with the economics the document set is divided into two types, those which would make a substantial contribution to emergency care and all the rest. You will soon see that this division is not so clear. I remember a meeting some time ago in which the pediatric house staff was asked what previous health information about a patient would be helpful at the time of an emergency room visit. The immediate answer was "everything." When asked whether they would have time to look at all the information, they answered, "No, but we want it in case we need it." These considerations have led to a basic policy decision in the systems design, namely, to make available as much as possible but to deliver only what is specifically requested.

First, we deliver an inventory of available patient visits which includes date and type of visit, for example, at the allergy clinic. Roughly, the latest document of a given class falls into the emergency pile, for example, the last neurology clinic visit, the latest x-ray or electrocardiographic report, and so on. We have also gathered from all the documents the paragraphs labeled "impression" and provide them on request.

We have done the same thing with a paragraph in each patient visit called "Key Data." A physician uses that space to record anything he thinks would be important in an emergency setting, such as chronic medication, most recent blood lead level, and so forth.

Retrieval

If we have made reasonably correct medical decisions regarding what ought to be available immediately, having to wait as long as twenty-four hours now for the remainder of the document set to be retrieved should not pose a serious problem. Improved technology is expected to reduce this retrieval time lag steadily, within our economic framework.

The documents enter the system through a variety of mechanical devices, but all involve fingers and keys to be pressed. Over the years we have changed from a completely off-line capture, there was no other choice, to a predominantly on-line capture for all short documents. There is nothing special about this, only an improving technology and an improved ability to employ it.

The heart of any patient-connected health information system, as distinct from a statistics-oriented one, is an identification system, which as in the present instance, must permit the insertion of different hospitals' numbers for the same patient, or some other means for linking one patient to different health facilities. Since the chart number is the key, one must verify that the given one is correct, or discover it if it is unknown. Since this is the key to all the elements in the system, it came into operation first about nine months ago. We have invested considerable staff time in the upgrading of the information in these files, weeding out duplications, such as 1 patient with two numbers and 2 patients with one number, and so forth. An unanticipated result is the improvement of many of the conventional medical record folders in the Bellevue record room, since these errors were general and not restricted to the computer-stored identification file. As you can well imagine, a good computer-stored identification file allows for all kinds of goodies from addressing of recall letters for unkept appointments to the generating of statistics for administrative purposes. This latter point is hard to overestimate.

The problem of file security is much in the press these days and is a topic of continuing attention. Technics from physical security to encrypting are employed or under study, but these topics are of such general concern that I suspect all computer-based systems will make progress at about the same rate in this matter of file security.

From the user view the approach has been a highly simplistic one. I do not believe that the overused term "sophisticated" can be applied to any of it, except perhaps the electronic technology which I am told is not a unique contribution. I cannot speak personally about the things that go on inside the computer, but the programming staff informs me that the technics employed in the file structure and communications are also of a "simplistic" nature.

Such approaches have certain immediate advantages, such as getting new capabilities into use sooner. The great potential danger in such approaches is that they buy current progress at the expense of future chaos, that is, they cannot expand.

I am led to believe, however, that in the last analysis the computer hardware base determines whether a technic will or will not allow for expansion. Even during my limited experience, I have seen reliability factors greatly improve, the speed with which more services are added increase, and the costs of storage drop substantially.

To the listener today who thinks that what has been described here is a solution in search of a problem, let me assure him that the delivery of high-quality comprehensive medicine to a large community constitutes a sizable task which is just beginning to receive its share of attention. If the analysis of the needs of this community and even some of the basic medical decisions which have been made for this system prove to be sound, this may be a lasting health information system through which computers do serve community medicine.

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MULTIPHASIC HEALTH SCREENING AT AN URBAN HOSPITAL

Technologic considerations

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The Brookdale Hospital Center MHS (multiphasic health screening) program is a project with the primary objective of determining the feasibility of planning and operating a Kaiser-Permanente type model automated multiphasic screening unit in an "open" medical care system at a voluntary hospital in an urban environment with an adjacent poverty population.[1] The demonstration was 75 per cent supported by contract funds from the National Center for Health Services Research and Development.† The Brookdale Hospital program is directed by Leo Gitman, M.D.,[2] and functions as part of the Department of Community Health. After approximately nine months of planning, the clinic began processing patients in February, 1968, is currently processing 60 individuals daily, and 27,959 have been tested through December, 1970. Thus, the project has been successful in establishing and operating this type of MHS program. Among the questions still to be answered are: What difference does MHS make in the health of the population served? Is MHS cost-effective? What are the reactions of consumers and providers of health services to this system? What technological problems are encountered? The first question cannot be answered from this project and was not intended to be. The remaining questions are being studied along with others, and the studies are in various stages of data collection and/or analysis. I would like to describe a few technology problems in MHS but will first mention several important human factors in MHS from motivation of the population to follow-up.

Human factors

Motivation of target population. Most behavioral studies have concentrated on responses of individuals to illness and not to their behavior concerning prevention which MHS is oriented toward, or the studies have been limited to certain specific preventive health services such as polio immunization, tuberculosis case findings, dental checkups, and so on. In general, the literature reveals that low socioeconomic status is related to low utilization of health services, failure to seek preventive services, delay in seeking treatment for illness, and the use of folk remedies and self-medication. Not surprisingly, low socioeconomic status is also associated with higher morbidity and mortality rates. In addition to social and psychologic factors, human behavior in health and illness also depends on availability of the service in terms of proximity and convenience, and accessibility in terms of the financial and psychologic costs from using the service.

At the Brookdale Hospital MHS program utilization rates reveal that the population screened by "ethnic group" was 74.4 per cent white, 18.6 per cent black, and 6 per cent Puerto Rican. These are the same proportions as these "ethnic groups" in the population of the hospital district. However, one of the objectives at Brookdale MHS program was the 50 per cent of the tested populations to have been black or Puerto Rican rather than 25 per cent.

The screening process. There is a basic amount of communication involved in the total screening or testing system between staff and consumer (patient). The reaction of the consumer begins to develop prior to the actual visit and is influenced by the referral process of the system and the information level of the consumer. The admitting process, facilities, staff performance, and machine interface contribute to the total reaction of the individual to MHS. However, the private physician's reaction to and management of the information provided in the computer-generated report is obviously going to affect the patient's attitude significantly toward the entire process.

We have identified several man-machine interface problems in the current model of MHS. For example, the automatic self-recording audiometer

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was a completely foreign experience to many patients and resulted in many unsatisfactory audiograms. A return to a manual method solved the problem without sacrificing efficiency.

I would stress the requirement to customize the MHS service for the purposes of greater effectiveness and also to increase the likelihood for support, cooperation, and satisfaction of the consumers.

At the Brookdale Hospital, MHS project studies are being conducted in conjunction with Columbia University School of Public Health and Administrative Medicine, Division of Sociomedical Science, on consumer's reaction to MHS based on interview data obtained from a random sample of screenees at each step in the process from registration through the follow-up visit to physicians and includes a community survey in the poverty area.

Medical follow-up. Obviously, this system has limited benefit if the individual tested does not receive the necessary diagnostic and treatment services from a source of medical care. To accomplish this the individual must have the available, accessible, and acceptable source and be sufficiently motivated to present himself. The provider (physician) of care must have sufficient interest and information to perform the appropriate patient management services.

Professional acceptance of MHS depends on the nature of the contacts between the MHS program and the physicians, including how the program is presented to them initially, the tests selected, and the content and modes of communication. Even more important will be the physicians' perception of the usefulness and validity of MHS and their orientation to early disease detection and treatment. Of course, the cooperation of some physicians will depend on the extent to which MHS is viewed as a possible threat to the practice of medicine economically, and "how things are done in the office." The manifest attitudes of colleagues, professional societies, and consumers will also affect the individual physician's cooperation.

Certainly a highly responsive feedback system between the local medical community, individual physicians, hospitals, and the MHS program is a basic necessity. Preliminary data from the study of physicians' attitudes toward MHS at Brookdale indicate that the private physician's opinion toward MHS increased in favorability as the number of MHS reports received by the physicians increased. The number opposed remained fairly constant with increasing number of MHS reports. It is also interesting that about two thirds of the surveyed general practitioners are favorable to MHS compared with about one third of the internists.

Technology problems in MHS

Quality assurance. Of course, this is a subject all by itself, and only a few of the problems encountered and several preliminary attempts at solutions will be described. Obviously, the quality of performance by the MHS program will greatly influence the success or failure of the service not only because of the possible harmful effects from false-positive and/or false-negative test results on the individual's health but also because of the possible ammunition for criticism and reason for lack of cooperation this provides to the skeptics. A very basic constraint now limiting quality control in MHS is the lack of primary standards to be used in daily calibration of instrumentation, and this also applies to the clinical laboratory tests. There is no human standard that can be used periodically to calibrate the equipment, and attempts at generating artificial signals that mimic physiologic ones have not been successful for blood pressure devices, spirometers, and tonometers as examples of quantitative measuring devices. The qualitative tests that are based on human, eyeball-cerebral interpretation, such as x-ray films of the chest, cervical cytologic studies, and retinal photos, can be approached only by checking intra- and interobserver variability. To further complicate the process, the MHS programs, without examining physicians as part of the information loop, have no effective method of validating the screening tests, that is, monitor the false-positive and false-negative rates.

At this stage we have applied our efforts to internal procedures for quality of performance or quality assurance that involve first validating the test by comparison with standard methods, utilizing standard operating procedures and close supervision of staff, checking all reports prior to distribution, and rechecking all data that do not fit, plus secondary tests with manual methods on suspicious abnormal results. Definition of the calibration requirements of equipment was performed as feasible.

We have been investigating the usual statistical methods for quality control as utilized in manufacturing, that is, sampling the product. The development of a quality control cart that would simulate the patient by generating artificial signals to check instrumentation for drift on a periodic basis is being studied. The Center for Disease Control, Atlanta, Georgia, has provided assistance in beginning a study of accuracy and reproducibility of autoanalyzers used in the clinical laboratory procedures. Up to this point, however, quality control in MHS has received only lip service, and it appears to be something that everyone is in favor of but to which government and nongovernment agencies are unwilling to commit necessary financial resources. I suspect this attitude will prevail until the pocket book is affected or tragedy results.

Electronic data processing. *Planning.* In the planning stage of a multiphasic health screening program one of the most important considerations is the data processing requirement, and the decisions made at this time will determine, to a large extent, the success or failure of the true objective of the program, namely, to obtain from individuals in the target population economical, valid, preventive-oriented health information and to present this information to the individual's usual source of medical care. If the decision is made that a computer system is necessary for successful operation of the system, there are certain basic decisions that must be made at the outset.

In rather simplified form, these are the type of computer, the manufacturer, and ownership of the computer; other projects that will be using the computer; type of system required and/or projected; and output required.

The first decision has to do with the system hardware, that is, the physical computer. In a sales market as diversified as the computer sales market, one must select the manufacturer, the model, and the particular configuration of that model which will best satisfy the requirements of the multiphasic health screening program. The first criterion that must be satisfied is that of capability, namely, can this computer do the job that will be required of it, or, on the other hand, is the job required so trivial in relation to the size of this computer that this computer will be an exorbitant investment. A second criterion would be the manufacturer. Once it is decided that a particular manufacturer has a computer that meets the requirements, the other benefits of being a customer of that particular manufacturer must be considered. Some basic questions that should be answered in this area are:

I. What computer languages are available for this machine?
    A. Are these languages widely used?
    B. Is it easy to find people who do not need training in these languages?
    C. Are there high-level languages provided that are easier to write in and more easily understood?
    D. Have the languages provided been fully tested and debugged?

II. What software packages are available for this machine?
    A. Is there a medical package which will provide a complete working system, thus bypassing the need to hire systems and programming personnel?
    B. Is there a sort package?
    C. How sophisticated is the compiler and/or assembler? Do they provide the programmer with sufficient tools to debug his systems easily?

III. How reliable is this machine, and what is the quality of service that can be expected?
    A. How do other users of this machine feel about it?
    B. What is the average down time for the machine?
    C. Have there been data reliability problems with the machine?
    D. How long has this machine been tested by the manufacturer and in the real market?

A third criterion is that of ownership and control. There may be many alternatives in this area:

I. Will the program have its own dedicated computer system?

II. Will the program have its own system but rent time to other users?

III. Will the program use another system and thus be a renter?

IV. Who will set priorities and schedule machine time?

Which of these alternatives will be taken depends largely on what is already in existence in the environment in which the program will be located. If the program will be affiliated with and physically close to an institution that has existing facilities sufficient to serve the program's needs, the use of these facilities would be the most economical alternative. However, there may be problems in this area. Since the computer facility is not controlled by the MHS program, care must be taken that production schedules are set up and met and that sufficient time is allotted for development, that is, computer time for MHS systems and programming development. This kind of commitment should be written into a formal contract so that there is no chance for any misunderstanding; differences over priorities obviously affect prime time on the computer.

The second decision has to do with the usage of the computer. If the computer will be used for projects other than the MHS project, the mode of operation must be decided, that is, will the computer be dedicated, use time sharing, or use multiprogramming?

The third decision that must be considered is the type of system that is to be the final system. If a requirement is to produce results on the same day as the screening so that a physician may have these results when he speaks to the screenee at the conclusion of the testing procedures, the system should operate in an on-line real-time mode. To attempt initially to establish a working system of this type (on-line real-time) may not be in the best interest of the MHS program. However, a start-up system, which is batch processing or random input, may be used in the beginning. This can accomplish a few important things, namely, it is an easier system to get working, and, when working, it instills confidence in the people who are using it and prepares them for the struggles which may occur when installing the final system.

This initial starting-up system should have some basic characteristics: (1) The system structure should be modular. This means that it should be so constructed so that changes may be made without having to change the entire system. If, for example, the mode of input had to be changed, this could be done by changing only the input routines. (2) The routines used should be simple, that is, the input-output and storage routines should be as simple as possible even at the risk of sacrificing compactness of storage and input layouts. (3) The method of identification of screenees, if not predetermined by the affiliated institution's identification number, may be a cyclic identification number ranging from 1 to 999. This has been used successfully to make disk accessing simple and fast. In addition, this number in combination with a date allows for unique identification in a limited storage disk environment.

Documentation. Numerous biomedical applications of electronic data processing, especially those involving health services, seem to suffer from the lack of high-quality documentation based on uniform standards. The result is a multitude of individual standards and lack of a consistently high level of documentation. Standards should be used as guidelines for the creation of the physical records that explain and describe the operations of a system and make it capable of being understood, operated, and modified. And yet when one mentions standards and documentation to programmers they seem to blanch.

The documentation of the system design should include the system narrative and flow-charts, operational step narratives and flowcharts, source documents and data set (record), report layouts, and system test input-output. This should provide an overview of the system. Each computer program in the system should be documented with program flow charts, source and object programs, program listing, input operating instructions, and computer operating instructions.

The need for documentation standards was made clear to us on two occasions. The first occurred when attempts were made to obtain an overview of the entire system for planning and evaluation purposes, that is, external audit. The result was a subcontract with a management consulting firm to prepare a report that would be of assistance to us in future allocation of scarce electronic data processing resources. The second occurred when information retrieval and analysis were attempted. Because of its high priority, a decision was made to perform the retrieval and analysis by subcontract with a university-related firm with access to a 360/75 and biostatistical expertise. The historic tapes were sent along with the existing documentation, and serious difficulties quickly became apparent, which takes us to the next consideration, control.

Control. The control practices in many hospital installations are too informal and frequently rely on the individual initiative of the computer staff rather than on specified plans and standards. Control should be the exercise of constructive influence over the vital implementation efforts of the staff for purposes of ensuring that objectives will be met on schedule and will be consistent with established standards. To accomplish implementation it is obvious that the staff must periodically determine what tasks have been accomplished in comparison to what should have been, according to a plan, and how these tasks were performed compared to how they should have been with the standards as criteria.

Weekly meetings usually are not sufficient for control purposes, and charts, operator logs, control reports, and check-off lists are advisable. Internal program controls also should be utilized, for example, to maintain record totals for all tape transactions. Control measures should apply to computer operators as well as system analysts and programmers. In a service environment, this frequently requires a manager to monitor the daily data flow, including source documents and reports. The turnaround time becomes crucial in MHS, and data can be delayed at many points in the system. In addition, the updating of historic tapes must be monitored for quality and completeness. An activity that should be planned for and religiously implemented in MHS electronic data processing is quality control.

Independent evaluation or audit. Considering the costs and the poor appreciation of the product, it is not surprising that funding agencies and administrators squirm over EDP budgets. Periodic independent evaluation of implementation can be utilized to establish credibility with funders, but the evaluation or audit's real purpose should be to provide management information for planning and control.

The first audit is frequently a painful process; but if an evaluation program is developed and adhered to, many additional questions are not necessary, and the audit can be accomplished by review of reports, lists, and sampling of documentation and computer programs. The audit should result in a written report on the extent of compliance with the plan and standards of the system as well as recommendation for improvement. Obviously, an outside independent agency with data processing expertise should perform the audit, and it is not easy to identify such.

Probably the best sources for advice on consulting firms are other users. Of course, the dangers of consulting firms are well known, and estimates of task effort in man hours are frequently underestimated, or the firm's report is designed to please the decision makers rather than provide meaningful information.

The Brookdale electronic data processing system. The following is a description of the data processing system that supported the multiphasic health screening program at the Brookdale Hospital Center. It should be noted that this system was not completed in this form, but the more difficult tasks were accomplished, and the tasks which were left would have taken one man approximately three months to complete. The system in use for the three years of operation was based on batch processing of decks of punch cards, and as a result of numerous problems the random input system was undertaken. Existing hardware was utilized including IBM 1800 computer.

The following description is that of the random input system as it would be when completed. The system is divided into the following phases: input, edit and storage, printout, mailing label, historic update, and statistics.

The program RANO* 1 covers Phases 1 and 2. In Phase 1 mark sense cards that have been punched are read in and stored on a disk file. Each card has a card code, screenee identification number, and date of screening which uniquely identifies it. These identifying numbers are used in a sort so that the cards can be applied to the master file in order, thus cutting down on file accessing time. In Phase 2 of RANO 1 the cards are applied to the master files and another file is noted if the screenee record is complete and therefore ready to be printed.

The next phase, Phase 3, is handled by RANO 2. This program checks the completeness files, and based on the notations pulls records from the master file. Having pulled a screenee record from storage, RANO 2 prints a report and writes a tape record for mailing labels.

Phase 4 is handled by RANO 3. It reads the tape records and gets physicians' names and addresses from the M.D. file (on a separate disk) and prints mailing labels to facilitate the clerical procedures.

RANO 4 covers Phase 5 by clearing the screenee master files onto historic tape. This tape is fed into Phase 6, RANO 5, which develops statistical tables based on the total population screened.

Summary

The experience of a hospital-based multiphasic health screening program which has examined approximately 28,000 persons in an urban setting was reviewed. The focus of this report is on human factors and technologic problems, including general quality control, EDP planning, documentation, control procedures, and audit. It is obvious that the existing model of MHS is not optimal and requires considerable improvement in the technology, in addition to meeting the human factor requirements for consumer acceptance and physician cooperation.

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* A mnemonic.

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HEALTH DATA NETWORK FOR WESTERN NEW YORK AREA

Role of Erie County Medical Society in its establishment

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It is a fact that the collection of health data is basic to the practice of medicine. Even prior to the nineteenth century when modern medical investigation, utilizing the scientific method, had its beginning, physicians were collecting pertinent information about disease and health involving individual patients.

This vast collection of data, mostly in private physicians' records and then in medical scientific reports, soon expanded to hospital records, insurance records, and public health records. Thousands of tons of paper, on billions of pages, in many thousands of files, and on miles of microfilm fairly inundate our offices and libraries.

I must emphasize at this point that the great bulk of these data is the responsibility of the private clinician. His contact with private patients and his responsibility to them are the main sources of clinical medical data. Indeed, a large portion of the economy of this nation is dependent on the collection of medical data by private physicians. As witness, let me point to the insurance and pharmaceutical industries to mention only two.

It is apparent then that the private portion of

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medicine, as represented by the medical society, must take a leading role in the development of a system of data collection and control. I strongly emphasize control which can, in the face of its importance and vastness, efficiently utilize this vital information.

Health data network

In 1968 the Medical Society of the County of Erie formed a committee to explore the use of computers in collecting health data. The work of this committee resulted in the development of the Western New York Health Data Network.

This organization established under the aegis of the medical society was developed only after an in-depth examination of the feasibility of the use of computers in a health data system along with a serious examination of the right of privacy in medical computing. The latter consisted of a full-day symposium on the "Right of Privacy and Medical Computing" held in Buffalo, October 5, 1969. Among those taking part were physicians, lawyers, the dean of the State University of New York at Buffalo Law School, record librarians, computer experts, and representatives of several government agencies. It was believed that laws must be promulgated which would protect health information in computers. The rights of patients must be protected as they are now under our present system of protecting records. The rights of physicians must also be protected. Some fear that this total collection of health data could be used in malpractice suits and as a mechanical peer review device.

The county medical society, the Department of Preventive and Social Medicine at State University of New York at Buffalo, and the Western New York Hospital Association on February 28, 1970, cosponsored a symposium on the feasibility of our area-wide health information network. There were 28 contributors to the symposium representing nearly all facets of medical practice in western New York. This meeting resulted in the establishment of the Western New York Health Data Network Incorporated, supported by nearly every health agency in the area.

I must emphasize that it is the belief of most physicians that this organization must remain under the control of the private portion of medicine, since the private clinician will generate the bulk of the data collected in the system. The medical society, therefore, took a leading role in the development of this health data system.

Medical society participation

There are several other reasons for medical society participation: (1) To be successful any medical data collection system must have the full cooperation of private physicians, since it is they who will have the greatest input into the system. (2) Physicians must be educated as to the efficiency and value of a computer system. (3) Physicians must be assured that a given system can function with the utmost in protection of the patient-physician relationship. (4) Private physicians would naturally be suspicious of a total health data system controlled by a government agency. They would fear an Orwellian system was in the making and might not participate fully.

The reasons just mentioned make it also apparent that any organization of this size should be a voluntary, nonprofit one. The Western New York Health Data Network is voluntary and nonprofit.

Future outlook

This network is bold in its concept. It will eventually include the health data of 2.3 million people and involve some 2,300 physicians, over 30 hospitals, and many nursing homes. It will supply information to health insurance companies, the public health service, social welfare service, physicians, hospitals, nursing homes, medical schools, and other health agencies where data of this type may be useful.

I would like to emphasize that it will not be a "big brother." The data contained in the system will be protected just as health records are now protected and probably to a greater degree. Physicians must have confidence in the system. Therefore, laws are now being promulgated that will serve to protect the data in the network from getting into the wrong hands. We are prepared to protect information by safeguards built into the hardware and by trained privacy administrators who may very well be our record librarians who are presently doing this job and doing it well. It will not be too difficult to assign authority to those who are entitled to it and to restrict those who should not be privy to the collected data.

Earlier I mentioned that health insurance agencies should have access to at least part of the data collected. I cannot conceive of a system that does not have a fiscal component. Think of the saving in time and cost to hospitals, physicians, insurance companies, and, above all, our patients. If our critics wish to know what we are doing to improve the profession, I believe we can point to this system which should save billions of dollars and leave more time for physicians to take care of their patients, improve their methods of practice, and possibly give them more leisure time.

Let us examine what possible spin-off could result from this or similar health data networks. In addition to that previously mentioned, it is not difficult to see that cross indexing of input information would be of the utmost importance to medical research. Presently the data base for many research programs includes patients in the number of less than a 100 and rarely 2,000 or 3,000. In our system it would start with 2.3 million. The geneticist and epidemiologist would find this data base invaluable, and it could all be done in strict privacy, respecting the rights of both patient and physician.

This system will obviate the necessity of repeatedly filling out forms for record libraries, insurance companies, and public health offices, and may, if the physician wishes, even do the billing. It will have available a patient's health record on a twenty-four-hour basis for emergency use. It will reduce hospital utilization and repetition of laboratory tests. It may improve diagnosis and certainly will improve therapy.

It will not be a "big brother" unless we permit it. It will not be a peer review system because it is not a peer, but it will help in peer review.

The Medical Society of the County of Erie believes strongly that a health data system is badly needed, probably long overdue. We have committed ourselves through our various committees to its development along with the fine cooperation of the medical school and nearly all the health agencies in western New York. We are now working feverishly toward its development. Symposia on various aspects of the system have been and will be held, as well as an international meeting in June, 1971, to bring together the worlds' experts in the area of health data collecting and use.

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HEALTH DATA NETWORK FOR WESTERN NEW YORK AREA

Operation of network

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Computerization of all health data for a region with 2.3 million people is an ambitious undertaking. Although there is a great deal of valid, pertinent literature stressing the immense benefits of large-scale data automation, the specifics on how automation is to be achieved are conspicuously absent. Record linkage will undoubtedly introduce a new era in the history of medicine, but we have not yet explored how we can develop a healthy balance between man and machine to bring out the best of both.[1-4]

The Buffalo program has been officially in existence since February 28, 1970. The first year was devoted primarily to large-scale detailed planning, to define the overall goal as well as the individual subgoals within this monumental data system. This planning task forced us to examine critically our clinical habits and the general operational practices of the entire health industry. As we separated the essential from the traditional, it was heartwarming to see how many unnecessary burdens and restrictions gradually melted away in the critical light of reason.

This presentation must be restricted to a few points. Nevertheless, the subjects selected will hopefully indicate the overall philosophy and the general approach taken by the planners of the network.

General goal

This network will accept voluntarily submitted, well-defined, health-related data entered via terminals into the telecommunication system, for processing, storage, and user-controlled retrieval for authorized participants, and for explicit, valid purposes. In other words, the objective of the network is to utilize the potential of modern information technology, to handle well-characterized data, and to provide output for justified purposes. Participation is voluntary, since the network has no authority to force patients, physicians, or hospitals to participate. Further, the western New York network will accept only well-defined input, with predetermined format, content, and style. The architects of this data system formulate the criteria for acceptance as well as the operational rules. Most important, the data flow is heavily restricted with regard to the output. The policy for output is in line with the major conceptual objectives of the network: (1) to upgrade clinical decisions by data support, (2) to enhance the effectiveness of our health services, (3) to improve utilization of resources and facilities, and (4) to reduce operational costs.

Scope of network

The data system is intended to include all primary foci where health services are rendered and to absorb clinical data at their point of origin and at the time they are generated. As Figure 1 indicates schematically, the network will implant terminals into all hospitals of the region. This does not mean that the network will interfere with

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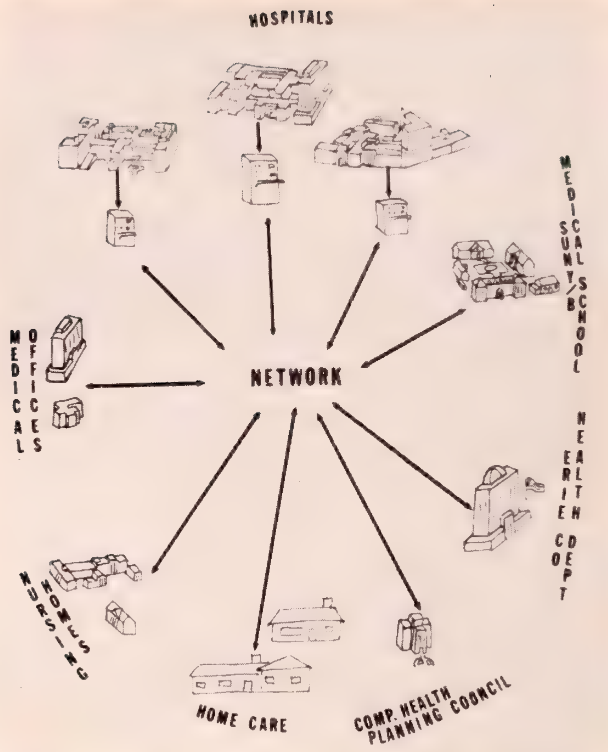

FIGURE 1. Conceptual design of western New York health data network. Area's hospitals represented by three symbolic buildings at top of design. Computer symbol in front of each building indicates possible in-house computers handling institutional functions and interface with network. Moving counterclockwise, medical offices represent some 2,500 terminals in physicians' offices, terminals in all region's nursing homes are indicated next; data input from visiting nurses and various other home care programs, health, and social agencies represented as home care; different type of input-output including all other recognized planning functions, such as regional medical program, community welfare council, Erie-Niagara planning board, and similar groups. Data needs of various educational institutions are indicated by medical school SUNY/B (State University of New York at Buffalo). In addition, this data path also includes dental school, pharmacy, various nursing schools of area, schools for allied health professions, and research or educational efforts with some clearly stated topic requiring real data in health industry.

intramural functions of currently operating in-house computers; rather, the objective of these in-house computers will become better defined once the network organizes the rest of the data within the health industry.

Terminals will be placed in every medical office. Plans are also under study to include the dentists in the network. Additional terminals will be placed in nursing homes and other health-related facilities. Various home-care programs, health agencies, and county, State, and Federal health departments will be connected with the network, as well as the various recognized planning groups, such as the Comprehensive Health Planning Council, Regional Medical Program, and Community Welfare Council, as legitimate data users. The various health-related educational institutions, such as the local medical school, dental school, and nursing schools, will take advantage of the vast body of retrievable clinical data for teaching and research purposes. In all, this plan calls for over 3,000 terminals. To keep the data flow under control, a monumental traffic plan is required.

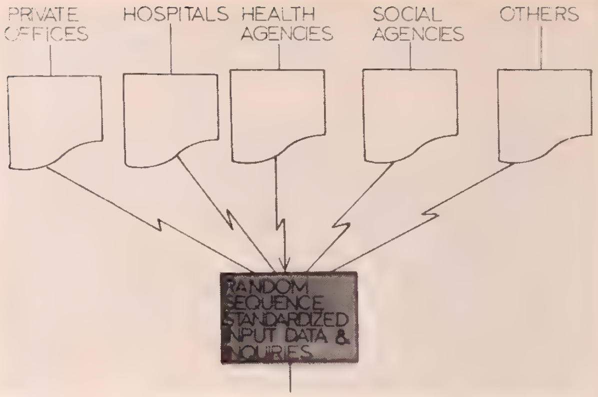

FIGURE 2. Conceptual design of data input. Structured data input (either on-line or as batch mode) takes place at physicians' offices, hospitals, nursing homes, various agencies, and other authorized users of network. Inquiries can also be entered in natural language via these terminals after proper identification and in accordance with data security measures.

Data input

The present clinical records maintained by hospitals for in-house purposes are, in general, incompatible with an automated system, and much education will be necessary until the quality of these records meets the minimal standards of a computerized data system.[5] The architects of the western New York network have concluded that the discharge summary will have to be developed into a purposeful document to contain the necessary data for the network.[6] The format, content, and style of such a standard discharge summary is described in detail elsewhere.[6]

Medical offices and outpatient clinics will record the clinical data along with socioeconomic information and fiscal data on prestructured questionnaires. Much planning effort has been spent on this aspect. The structured records must meet certain criteria. They must be acceptable to the clinician, easy to use, comprehensive enough to satisfy the network requirements, and be sufficiently flexible to allow high fidelity documentation. The planners believe the records should be completed jointly by the receptionist, the nurse, and the physician, each answering those questions intended for the respective member of the team. This approach required long detailed planning to enhance the information content and improve case documentation.

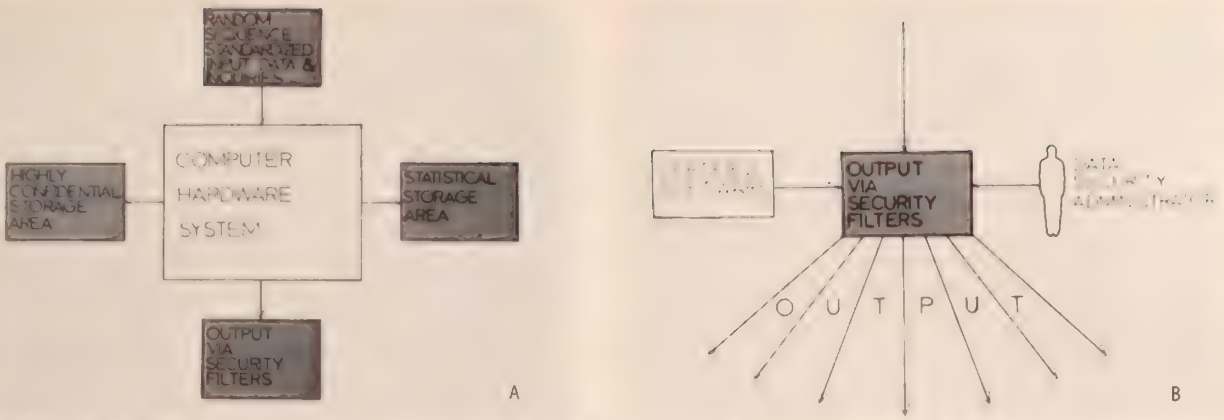
RANDOM SEQUENCE STANDARDIZED INPUT DATA & INQUIRIES
COMPUTER HARDWARE SYSTEM
HIGHLY CONFIDENTIAL STORAGE AREA
STATISTICAL STORAGE AREA
OUTPUT VIA SECURITY FILTERS
A
OUTPUT VIA SECURITY FILTERS
DATA SECURITY ADMINISTRATOR
O U T P U T
B

FIGURE 3. (A) Highly schematic representation of data input, storage, and output. Two districts separate storage areas on both sides of computer hardware indicate fundamental philosophy of data security system. (B) Philosophy of data output security. Only previously tested certified computer programs are used. Data security administrator, a specially trained medical record librarian, supervises output flow to assure compliance with established rigid security rules to further reinforce built-in measures to guard sensitive data by "security filters."

Data security measures will require the patient's consent to retrieve past records, along with the authorized health profession's positive identification to gain access to a patient's file.[6] To understand the system, let us now follow the flow of events. Figure 2 shows the input, the various types of prestructured records coming from medical offices, hospitals, health agencies, social agencies, and other authorized sources at a rate of over 100,000 records per day. This input also includes the inquiries requesting some output. The software to recognize and process this flow is formidable.

The fate of this input is shown in highly schematic form in Figure 3A. The input passes through the "input analyzer" software, is processed for dual storage, and the inquiries elicit the output. This diagram shows the nature of this dual storage; on the left is the highly confidential storage area accessible only when the patient consent "key" and the physician authorization "key" are presented simultaneously. On the right, there is another storage area aggregating data for statistical type of inquiries. Access to this area requires only a single authorization justifying the use of the system. This security measure protects patient privacy (Fig. 3B). The output must first satisfy the security filters before releasing the data, again a protective measure to prohibit unauthorized use of data.

Data processing

The highly sketchy presentation is expanded to show more details in Figure 4. The purpose of this diagram is to indicate our concern about the variability in the usage of medical terms. Our everyday medical communication is regrettably inaccurate. The exact meaning of the terms like "coronary thrombosis," "coma," or "liver function tests" depends on the training and speech habits of the physician. Each clinician is a separate data generator, making observations derived from clinical interview, physician examination, and interpretation of various diagnostic tests, and comparing them in the course of time to derive conclusions as to the trend of the disease manifestations. The clinician's choice of terms will

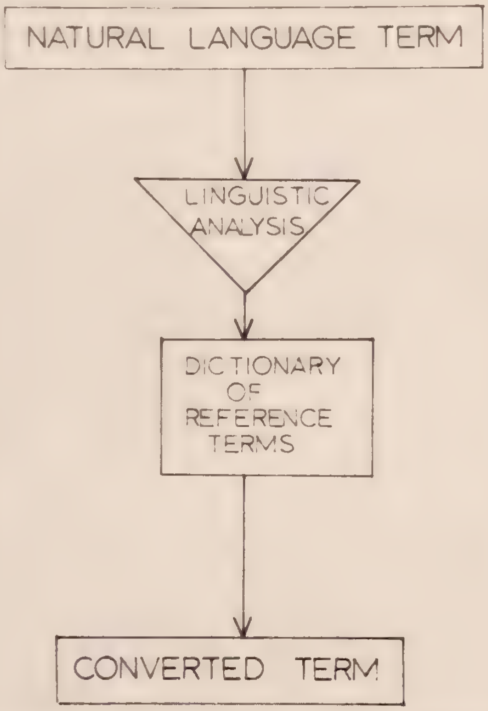

FIGURE 4. Conceptual model for hardening language of communication. Users of network may submit inquiries unrestricted in term usage, no natural language. Linguistic program identifies meaning of inquiry and selects corresponding preferred term from dictionary of reference terms resulting in "converted" term.

vary because of the lack of rigid standards for terms in medical communication. This is a major source of inaccuracy and the major reason for incompatibility between clinical medicine and an automated data system. To introduce rigid rules for physicians to record diagnostic terms or therapeutic procedures would be unrealistic. Such a regimenting would be resented, and the accuracy would still remain questionable. The alternate solution is to introduce certain measures for "hardening" the data within the computer. The clinician may use the term he believes most accurately corresponds to the idea he wants to express. This term is now in natural language. As Figure 4 indicates this term is exposed to a linguistic computer program to analyze the apparent meaning of the term. Then, a search takes place to find in the dictionary of reference terms the "most appropriate" standard term, which becomes now the uniform, converted term. This approach offers full freedom at the level of the data generator to use the term that expresses the "meaning" of the observation, since the hardening of the terms occurs within the computer, converting antonym, near synonyms, alternate entries, or even somewhat inaccurate terms into single standard terms. This design was inspired by the work of Arnold Pratt, M.D., at the National Institutes of Health who has in operation a model computer program which converts diagnostic terms into SNOP (systemized nomenclature of pathology) code, the coding system developed for pathologists. We tested this program and found the principle fully workable. Such a hardening of communication provides a firm basis for classification and further improvement of the submitted data by search for content information. The converted term creates a fixed point, and it opens new dimensions in human communication and machine-storage of human ideas.

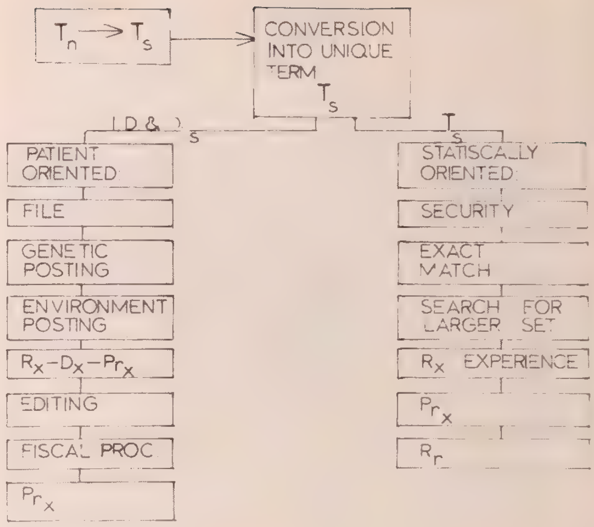

FIGURE 5. General outline of major data processing functions planned for network. T_n = natural language terms; T_s = standard terms; I.D. represents the header, full positive identification of patient. Note absence of I. D. on statistical files on right side; task of each processing step briefly stated in text.

What we consider the biggest obstacle to data automation in medicine has been overcome. I am delighted to inform you that this most difficult area of our planning received some powerful support recently when the A.M.A. called a special meeting to examine the problem of medical classification. There are currently several medical coding systems available. ICDA, the international code, is for statistical purposes and is unacceptable for clinical medicine.[6] Our need is a set of standard terms assigning a single, unique term for each recognized disease entity, syndrome, condition, or physiologic state. The rule, "one term for one entity," is a fundamental requirement. Unfortunately, ICDA is "lumping" for statistical purposes entirely different diseases. This may be expedient but is in conflict with the logic of medical computing. CMT (*Current Medical Terminology*) is an excellent reference dictionary but insufficient for computer purposes.[6] SNDO (*Standard Nomenclature*) is obsolete. It attempted to include a large-scale etiologic classification, highly desirable a few decades ago, but incompatible with current thinking in medicine. SNOP is grossly inadequate in scope. Many clinical diagnostic terms cannot be found in the present SNOP, and its codes for therapy and clinical course particularly are inadequate. SNOP, however, appears to have the potential for a reference language.

The A.M.A. decided to build a computer-compatible medical language with sufficient accuracy to represent a basic set of "reference terms." The task is large, and the input of all scientific groups will be essential to make this timely effort of the A.M.A. successful. We think this important step is the beginning of computer-assisted medicine, and the A.M.A. must be complimented for assuming leadership at this critical moment. This standardization of medical communication will also greatly affect medical education, scientific reporting, and all respects of biomedical sciences.

In our own program, the conversion of natural language terms into the standard terms will be according to the computer program of Dr. Pratt, using the evolving reference terms. These two elements together answer the big problem of how to create continuity in formation flow, back and forth, between the clinician and the machine-stored data. The recipient of the data must understand "the meaning" of the data as the recorder of the data meant it, and the semantic content must be preserved. We are hopeful that the roadblock is now out of the way.

Let us now follow the fate of the data in the computer, accepting clinical records on 2.3 million people. Figure 5 shows, in a very schematic form, the various major processing functions.

We can visualize a community health data bank as an organized past experience shared by the health industry. The file system to the left keeps the positive patient identification attached to the data in an inseparable way. This is to assure proper filing and processing. The chance of misfiling due to similarity of names or errors in spelling must be controlled. The chronologic sequence of records filed by the patient's identification represents a linked file. The first level of this linked file contains all input on the same person in its original form. This is, of course, a voluminous file with many data of short-range significance. After this linking step, the record is submitted to a "genetic software," that is, searching for potential genetic signals. For instance, if the patient is diagnosed as diabetic, epileptic, or having carcinoma of the breast, the genetic software recognizes the potential value of this term to the blood relatives of the patient. If any of the diagnostic terms or any of the problems listed are potential information for blood relatives, a "cross-indexing" process is automatically triggered resulting in a brief note such as: "father diagnosed as diabetic on September 1, 1971." Again, the need for rigid standardization of terms is quite apparent. The natural language terms must be first converted into fixed terms to attach this software of genetic cross referencing. We believe the patient's consent is also required for this cross referencing.

The next software function is an environmental posting. The need for this is postulated, but we have not studied the details of this function. Clinically, exposure to the same environment may reveal important epidemiologic correlations. The clinical diagnoses will be related to the census tract grid map in terms of the patient's present and past employment address. The effect of air pollution, exposure to toxic substances, climate, and so on will emerge from this type of data analysis. A subroutine called "adjoining filing" connects records of those living together as families and in the same geographic area. The environmental pressures may be approached by this type of data linkage.

The next software function is therapy-oriented, relating the therapeutic procedure, namely, drugs, physical therapy, or surgery, to the diagnoses and problems, to explicate the logic of therapeutic decisions, an important preparatory step for peer review functions (Fig. 5).

The next function is a data compression, to edit the initial data and condense the content of the record for the "long-range synopsis of past history" file. In most situations, this synopsis will be ample for the clinician to evaluate current problems in the context of past history.

The fiscal processing is another software function. Patient identification, physician's identification, location (office, hospital, or nursing home), and therapeutic procedure represent the basic data elements for fiscal processing. The insurance agency and the price of the service are the additional data completing the fiscal processing. This software function is conceived as a subroutine transferring the needed data onto another tape, to be sent daily to Medicare, Medicaid, Blue Shield-Blue Cross, and other appropriate health insurance groups as a transaction file for further processing and issuing of reimbursement. We have some calculations that this software function alone would save over 2 billion dollars of the taxpayer's money and about 0.5 billion dollars in medical office overhead and hospital billing. Automated fiscal processing will be a large but straightforward programming task, once the fixed terminology conversion eliminates the ambiguities of the communication for fiscal purposes.

The last software function identified is the forecasting function, stating the expected course, that is, revisit to the outpatient clinic or transfer to a nursing home from the hospital. This forecasting is a safety measure to detect problems like deterioration without medical support, broken appointments and deviations from the anticipated course of events.

The functions of the statistically oriented files are quite different. There, before accepting the data, all the identifications, namely, patient, physician, and institution, are separated in a definitive way. The combination of these data is virtually impossible, owing to a data security program. In this statistical storage, the general logic of filing is in terms of taxonomic similarities in contrast to the patient files described previously, which linked records with the same patient identification. Thus, the first software function in this segment of the data bank is the security program, not only placing a block between the data and any identification, but also recognizing any attempt to "track down" a case by requesting further information so that ultimately an individual person could be recognized. For instance, a series of requests like this: Give me from the list of all alcoholics, those who are officers of banks and live in census tract number 12 and have three children, and so forth. This is an obviously improper inquiry readily stopped by the data security software and reported to the data security administrator. In our plans, this person is a specially trained medical record librarian (Fig. 3B and 5). The intruder will be identified and proper legal action instituted, similar to trespassing.

The next software step is a search for matching data, beginning with "exact match." Then further taxonomic processes connect these data with a higher level of groups. For example, the abnormal immune-globulin findings are first filed under the exact clinical term but also cross-referenced under the entire group of immune system disorders.

A major purpose of shared experience is to enable the clinician to compare his own problem with similar cases in the memory storage. Once the criteria for a particular subset are submitted (for example, recurrent urinary tract infection on a white male, age range thirty-five to forty-five, with repeated culture of Escherichia coli over 100,000 per milliliter) the data bank can return the drugs used, the effectiveness-side effect data, the probability of side effect, the nature and severity of untoward effects, and the usual dosage. The next function, shown on Figure 4 is the storage of clinical courses, as a function of time, to assist prognostic inquiries. Finally, we recognize a fully flexible output, a combination of any data groups for research purposes. Here, after fully satisfactory identification of the user, the data combinations are unrestricted by the security measures.

Clinical output

The architectural task of a large health data system is monumental. The planning must be multidisciplinary to assure that the system will meet the demands of all the users, that it will be safe, that it will protect confidential data, and that the operation will be economical.[6] The schematic indication of the typical output for a practicing physician is shown in Figure 6. The clinician can focus on the present illness, since the network provides the perspective by presenting the synopsis of past health data, the patient's genetic background, and socioeconomic and environmental status. In addition, the clinician has access to the statistical files to obtain guidance in selecting the "best" therapy.

At present, 15 different committees work on standard clinical input records and study the criteria for retrieval. These committees represent unique competence in some area and are concerned both to exploit the vast capability of data automation and to devise the proper rules to minimize the risks of data computerization.

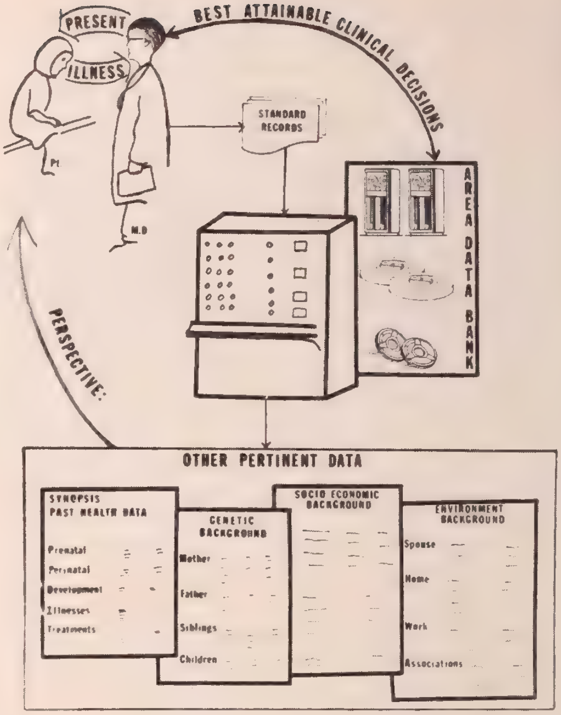

FIGURE 6. Projected capability of network. Perspective: before examination presentation of synopsis of past health data, summary of genetic, socioeconomic, and environmental backgrounds of patient. On completion of clinical examination, findings are recorded on prestructured forms; on entering these data statistical files offer diagnostic help, therapeutic experience sharing, and prognostic statistics as requested by authorized user clinician.

Plans for implementation

The architectural work will continue for many years. As we penetrate deeper, we find many unanswered questions in clinical medicine, problems in various social and ethical aspects of data automation, and legal ramifications requiring much in-depth study. Decisions at one point may have far-reaching consequences to another. How are the human rights of the patient, the physician, or the social worker protected? While our expert groups develop solutions and create many new problems, we intend to test all these ideas in a limited scale. The practical approach is initially limited to a data center keeping track of all discharges from hospitals and nursing homes, using a standardized, highly structured uniform discharge form.[6] This will create a rather large data bank in a rather short time, and all the evolving software listed in Figure 5 can be tested. Once this initial step is successful and the data center proves, to the community's satisfaction, the value of a data bank as well as the safety of computerized data as a second step, more and more medical offices will be linked to the network. The operation at this point will become self-supporting by charging the insurance agencies for the fiscal output. We are convinced that this network will provide the basic structure so badly needed in the health industry, to change the present incoordinated system into a coordinated operation, and to carry out our national commitment to health care, made politically in the 1960s, by systematization in the 1970s.

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Persistent hepatitis

Two types of chronic hepatitis have been described by histologic criteria: chronic aggressive hepatitis and chronic persistent hepatitis. Aggressive hepatitis is characterized by fibrosis and inflammation in the portal zones, extending into the lobules, with widespread piecemeal necrosis. Clinically it often corresponds to active chronic hepatitis; cirrhosis usually develops and prognosis is poor. In chronic persistent hepatitis, inflammatory infiltration is mainly portal, lobular structure is preserved, and fibrosis is slight to absent. In a recent study of 20 patients with chronic persistent hepatitis (Sherlock, S.: Lancet **1:** 53 [January 10] 1970), 13 had histories strongly indicative of acute viral hepatitis the year before. Development of the disease in 7 patients had been insidious. Fatigue was the most common symptom, and hepatomegaly was the most common physical sign; but there were no signs of chronic liver disease. After a year, the serum-bilirubin and total serum-bilirubin were usually normal, and aspartate-transaminase values were marginally increased. In 14 patients, hepatitis-associated antigen was absent from the serum. The patients were mostly followed a long time (mean period, almost six years). Twelve patients underwent liver biopsy, and serial specimens in these patients showed no progression to cirrhosis.

Correlation Conferences in Radiology and Pathology

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ACUTE RESPIRATORY DISEASE WITH LYMPHOMA

Case history

Allan Williams, M.D.*: This fifty-nine-year-old white male had a biopsy diagnosis of lymphosarcoma made six years prior to admission. At this time, he was treated for a period with chlorambucil (Leukeran) with good results. The patient did well until four months before admission when a productive cough, hepatosplenomegaly, and lymphadenopathy developed. He became febrile, and his white blood cell count rose to 35,000 with 95 per cent lymphocytes. Sputum cultures grew one of the Herellea species, and he was begun on tetracycline, vincristine, and prednisone. He gradually improved with reduction in the size of the liver, spleen, and lymph nodes. Sputum cultures became sterile, and tetracycline therapy was stopped. Vincristine was discontinued because toxic manifestations developed. Prednisone was gradually tapered from 60 mg. to 10 mg. per day.

Several days before admission, the patient again became febrile, and a productive cough developed. He was restarted on tetracycline without benefit and then admitted to the hospital for further therapy.

Physical examination on admission showed a temperature of 98.4°F. and a pulse of 100. Lymph nodes were palpable in the right side of the neck. A few basilar rales were heard at the lung bases. Pertinent laboratory data revealed a hematocrit of 41 and white blood cell count of 28,200 with 85 per cent lymphocytes. No atypical cells were seen.

In the twenty-four hours following admission, the patient's temperature rose to 105°F. and continued to spike to 105°F. daily. Sputum cultures grew predominantly Hemophilus influenzae and Candida albicans. The patient was begun on erythromycin and kanamycin, but his condition continued to deteriorate, and he was switched to cephalothin (Keflin) and gentamicin. A lung biopsy was performed on the sixth hospital day.

E. Robert Heitzman, M.D.†: Multiple chest films made over a six-day period are available for review. The original film shows the heart to be normal in size and configuration (Fig. 1A). There is no evidence of mediastinal adenopathy or of pleural fluid. There is a small lesion at the periphery of the right upper lobe, and there are a number of small poorly defined shadows scattered throughout the remainder of each lung. Although the shadows seen could be the result of one of several causes, it is most likely that they are inflammatory in origin. The films made in succeeding days show rapid progression of the pulmonary abnormalities to a diffuse bilateral process of rather extensive degree. The process is characterized by poorly defined patches of increased density, tending to be coalescent, and appearing somewhat perihilar in distribution (Fig. 1B). There are a few linear shadows superimposed on the more fluffy opacities. Although the process probably represents mixed involvement of the terminal air space and interstitium, I would consider the pattern to be predominantly alveolar in type. Certainly the process has evolved rapidly, and the clinical course also confirms that the process is acute. The differential diagnosis, then, is that of disease presenting radiographic symptoms of acute alveolar abnormality. The most likely causes would be pulmonary edema, pulmonary hemorrhage, or infection.

In this patient, the clinical course and physical findings do not suggest a diagnosis of pulmonary edema, and there appears to be no obvious cause. When considering less usual causes for pulmonary edema, one should always consider the possibility of a pulmonary reaction secondary to drug therapy.

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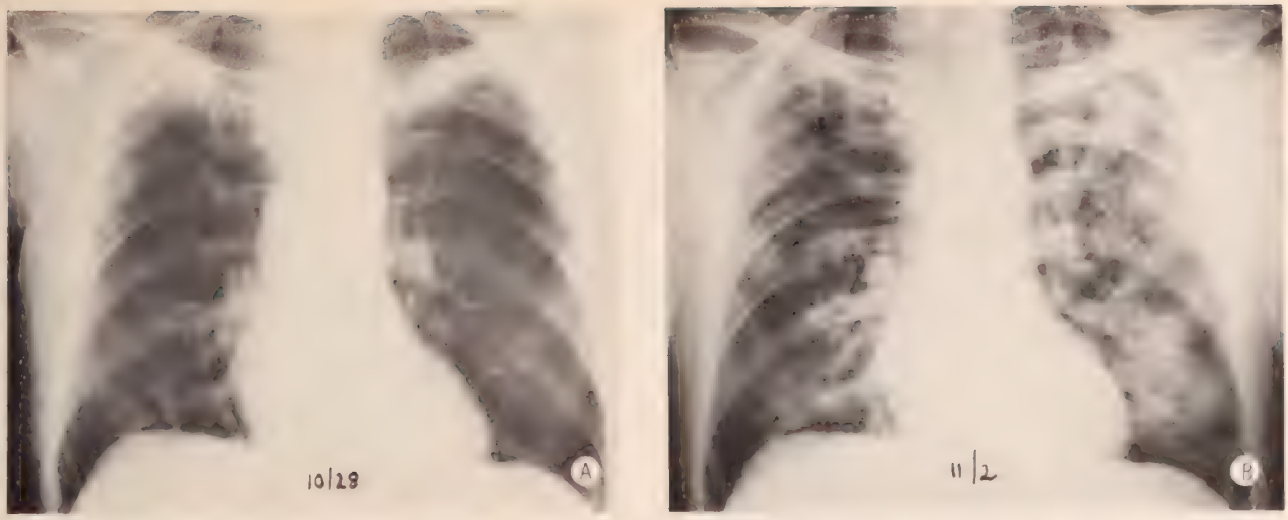

FIGURE 1. (A) Posteroanterior chest film made on admission shows few scattered densities and right apical infiltrate. (B) Posteroanterior chest film five days later shows bilateral, fluffy, confluent process with tendency toward perihilar distribution in left lung. Process represents acute alveolar disease.

This appears unlikely in this case, since the patient had received only prednisone in the recent past.

Pulmonary hemorrhage may present the radiographic picture seen in this case, and infrequently patients with lymphoma, particularly leukemia, may bleed into the lung. The normal hematocrit and absence of hemoptysis are strongly against this diagnosis in this man. The exclusion of other diagnoses, the high fever, and the rapid evolution of the pulmonary changes make infection an attractive possibility. Two broad categories of infection may be considered, that due to more common organisms such as staphylococcus or gram-negative bacilli and the less-common opportunistic organisms. The latter are well known to attack patients such as ours who have lymphoma and are on steroids. The rapid development of the process certainly suggests involvement by one or more common organisms. The failure of early response to tetracycline and then to erythromycin and kanamycin makes staphylococcal infection a less likely diagnosis than infection by a gram-negative organism, such as Pseudomonas aeruginosa. Furthermore, the patient had been infected by a gram-negative organism in the past.

Among the conditions produced by opportunistic organisms which must be considered are Pneumocystis carinii pneumonia, cytomegalic inclusion disease, and the fungal diseases such as aspergillosis, mucormycosis, and moniliasis. In general, these infections are more insidious in onset and have a much less rapid evolution of abnormalities found roentgenographically than is seen in the current case. For this reason I would consider gram-negative infection a more likely possibility than involvement by other opportunistic organisms.

While it is true that pulmonary lymphoma can occasionally present a disseminated alveolar pattern, the rapid progression of the process in this case appears to exclude neoplasm as the cause for the pulmonary findings.

Dr. Heitzman's diagnoses

Disseminated pulmonary infection, probably by a gram-negative organism

Rule out Pneumocystis carinii pneumonia, cytomegalic inclusion disease, and fungus infection

John P. Russell, M.D.[*]: Histologically, the lung biopsy specimen showed pronounced hyperplasia of alveolar lining cells with large nuclei and prominent nucleoli. The alveoli were filled with eosinophilic amorphous material, and there was a sparse focal interstitial lymphocytic infiltrate without plasma cells or neutrophils.

Gomori's methenamine silver stain revealed clusters of Pneumocystis carinii cysts within the alveoli but not interstitially. The cysts have a thin black capsule and are nearly round, slightly wrinkled, cup-shaped, or crescent-shaped. Some of the cysts contain a pair of structures resembling opposed commas or parentheses (Fig. 2).

The organism, presumed to be correctly classified as a parasite, consists of the previously described cyst with eight intracystic structures or "merozoites." These merozoites stain best with Giemsa stain, which does not stain the cyst. Each staining technic has its advocates for diagnostic purposes, but silver methenamine appears to be the most satisfactory in the majority of reports.

The specificity of the pathologic changes seen in this case which is typical of opportunistic pneumocystis pneumonia is open to question. Identical changes develop after busulfan therapy and in lungs of transplantation cases without

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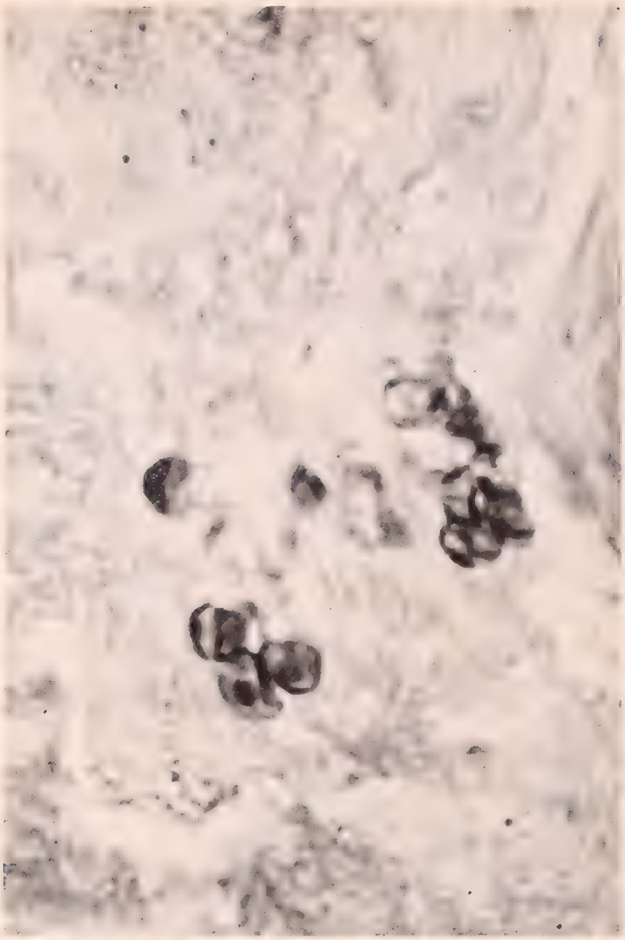

FIGURE 2. Pneumocystis carinii cysts in section. They are 4 to 5 micra in diameter, have thin, black capsule, and appear round, crescentic, or cup-shaped (Gomori methenamine silver stain).

Pneumocystis carinii infection. The alveolar proliferation may be in response to an undetected concomitant viral infection. For example, cytomegalovirus infection, which is more easily detected by routine pathologic examinations, has been frequently reported in association with Pneumocystis carinii.

Comment

Pneumonia due to Pneumocystis carinii was originally described in infants as an interstitial plasma-cell pneumonia.[1] It has subsequently been reported with increasing frequency in the adult.[2] The offending organism is generally considered to be a protozoa, but attempts to culture it have failed, and its nature is now the subject of considerable debate.[2] Exceptionally, this infection has attacked normal individuals, but more commonly the organism appears to have stricken debilitated patients, particularly those with altered immunity or those patients on steroids, cytotoxic agents, or antibiotics. The clinical setting also frequently predisposes to viral and fungal pulmonary infections which may coexist with Pneumocystis carinii. It has been notably a factor in transplant populations.[3] In these patients, the development of pneumocystis pneumonia appears to be related to unusually long-term prednisone therapy in doses of 40 mg. per day or greater. In this respect, the present case is quite typical.

Inability to culture the organism from sputum makes the establishment of the diagnosis difficult. Lung biopsy, either open or by percutaneous needle technic is the diagnostic method of choice.[2] Obviously, however, unless infection by Pneumocystis carinii is in the differential diagnosis, lung biopsy is not likely to be done. Establishment of the diagnosis is of importance since successful treatment with pentamidine isethionate has been reported.[4] Unfortunately, this patient died on the day after lung biopsy before specific therapy could be instituted. No autopsy was obtained.

The roentgen pattern produced in this case is also typical of Pneumocystis carinii infection reported in the literature. Diffuse alveolar infiltration appears to be the most common presentation seen on chest radiographs. According to Rifkind, Faris, and Hill,[5] the onset in their patients was insidious in some instances, but in other cases pulmonary changes occurred very rapidly and hence were confused with pulmonary edema.

Final diagnosis

Pneumocystis carinii pneumonia

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Topics in Orthopedics

CARL M. HARRIS, M.D., Editor

PERIPHERAL ENTRAPMENT NEUROPATHIES OF UPPER EXTREMITY

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The concern with cervical arthritis, the herniated cervical intervertebral disk, the whiplash-type injury, and the thoracic outlet syndromes as a source of pain in the upper extremity, may exclude consideration of a more distal origin of such pain. It is the purpose of this presentation to demonstrate some of the syndromes that arise from more distal areas where nerves are subject to trauma because of some anatomical configuration. The nerve irritation at these anatomical locations, called entrapment points, may result in neuropathy.

There are commonly recognized four median nerve, two ulnar nerve, and one radial nerve-entrapment syndromes. These are:

I. Median nerve syndromes
  A. Carpal-tunnel syndrome
  B. Pronator syndrome
  C. Humeral supracondylar spur syndrome
  D. Anterior interosseous nerve syndrome
II. Ulnar nerve syndromes
  A. Ulnar nerve at the elbow
  B. Ulnar nerve at the wrist
III. Posterior interosseous nerve syndrome

Each of these syndromes will be discussed from the viewpoint of anatomy, clinical presentation, etiology, and treatment.

In a differential diagnosis of these peripheral entrapment neuropathies, one must rule out all the disorders of the peripheral and central nervous system. In addition to the previously mentioned cervical and thoracic outlet etiologies of pain in the upper extremity, special care should be taken to rule out apical pulmonary tumors, spinal cord tumor, polyneuritis, syringomyelia, and multiple sclerosis.

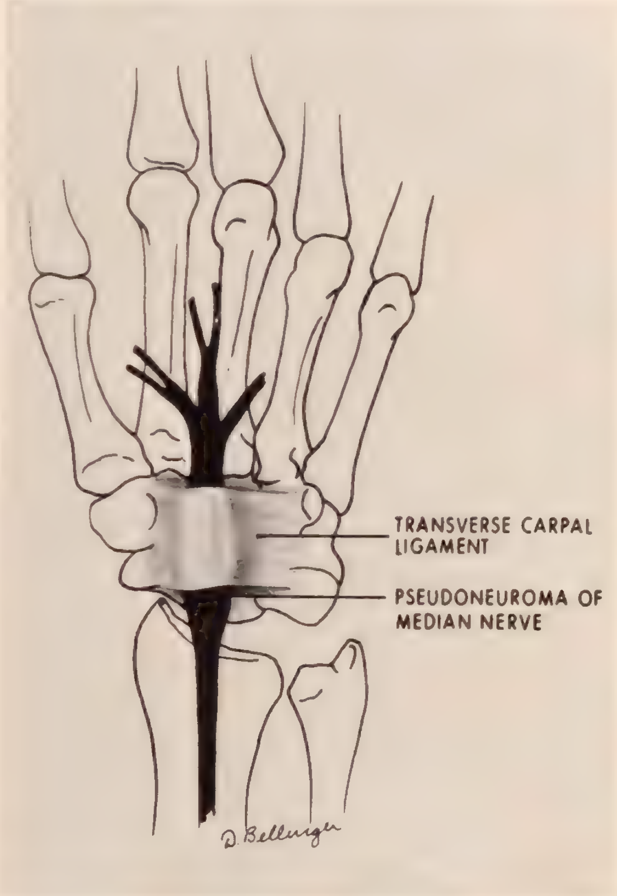

FIGURE 1. Compression of median nerve in carpal tunnel.

Median nerve syndromes[1-10]

The carpal-tunnel syndrome. The most well known of the peripheral entrapment syndromes of the upper extremity consists of compression of the median nerve at the wrist as it passes through the carpal tunnel which is formed on the dorsal, medial, and lateral sides by the carpal bones and on the volar surface by the deep transverse carpal ligament (Fig. 1).

Anatomy. Anatomical dissection of the carpal tunnel reveals that the canal has an hour-glass configuration with the narrow waist occurring at approximately 2.5 cm. distal to the entrance of the canal. In the region of the waist of the canal, the canal is bounded on three sides by the carpal bones and roofed by the rigid transverse carpal ligament (Fig. 2). Therefore, because of the rigid

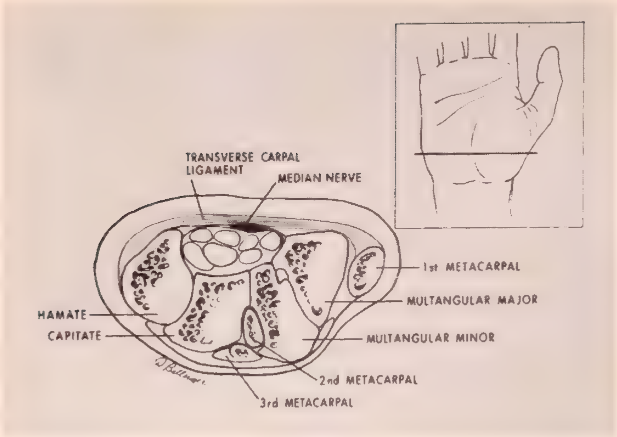

FIGURE 2. Narrow "waist" region of carpal tunnel.

walls of the carpal tunnel, particularly at its waist, there is very little room for expansion of any of the structures which pass through it.

Clinical presentation. The carpal-tunnel syndrome has a 2:1 predominance of females versus males; and the peak range for occurrence is in the forty to sixty-year-old age group. The usual history is that of progressive weakness and clumsiness in the hands, associated with pain, hypesthesia, and tingling in the distribution of the median nerve distal to the wrist joint. Symptoms are often bilateral and worse in the dominant hand. Strenuous use of the hands or a sustained grasp often aggravates the symptoms of numbness, pain, and tingling in the hands. Very often the patient is awakened at night by burning pain in the thumb, index, and long fingers which can be relieved by elevation, exercise, and vigorous shaking of the affected extremity.

The most constant clinical finding on physical examination is a sensory disturbance in the median nerve distribution distal to the wrist. Hypesthesia is the most common finding, although hyperesthesia occasionally occurs. Other significant clinical findings are thenar atrophy, Tinel's sign (tingling sensation in hand when the median nerve is percussed at the wrist), and a positive wrist flexion test result (volar flexion of wrist produces immediate aggravation of patient's symptoms or produces symptoms). The three most reliable clinical signs for accurate diagnosis are sensory findings limited to the median nerve, positive Tinel sign, and a positive wrist flexion test finding.

Etiology. The nontraumatic and traumatic etiologies of the carpal-tunnel syndrome are:

Nontraumatic conditions
  Tenosynovitis
  Gout
  Calcium deposits
  Ganglion
  Lipoma
  Amyloid disease
  Fibrous hypertrophy of nerve sheath
  Abberant artery in carpal tunnel
  Muscle belly of index sublimus contracting against nerve in tunnel

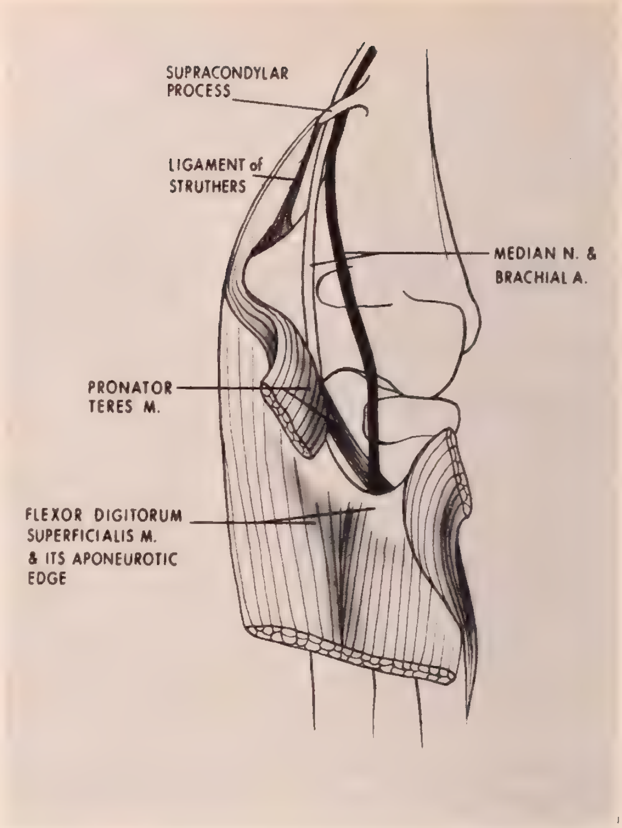

FIGURE 3. Anatomic relationships of humeral supracondylar spur and site of median nerve entrapment in pronator region.

  Acromegaly
  Myxedema
  Neuroma of median nerve
  Flexor digiti minimi brevis bridging over median nerve
Traumatic lesions
  Hematoma due to hemorrhage in palm
  Carpal dislocation (lunate)
  Recent fracture distal end of radius
  Immobilization of Colles fracture in Cotton-Loder position
  Excessive new bone formation in a healing distal radius fracture
  Deformities of the carpal bones due to recent or old fractures
  Gross traumatic arthritis of the wrist

Treatment. Adequate treatment of the carpal-tunnel syndrome may be achieved by steroid injection or operation. Steroid injection, followed by plaster splinting of the affected extremity, is a good diagnostic test for carpal-tunnel syndrome and in certain instances is curative. If no relief is obtained by steroid injection or if repetitive injections are necessary, then surgical splitting of the transverse carpal ligament is the treatment of choice. Surgical division of the deep transverse carpal ligament almost always relieves the patient's pain and symptoms of numbness in the hand. Thenar atrophy of fairly recent onset (six to twelve months) also responds quite readily to surgical division of the ligament, but the prognosis is very poor if the atrophy is of greater duration than two years.

The pronator syndrome. The pronator syndrome consists of entrapment of the median nerve in the proximal forearm at the point where it passes through the two heads of the pronator teres and then dips under the aponeurotic "sublimis bridge" of the flexor digitorum superficialis muscle (Fig. 3).

Clinical presentation. The sensory symptoms and findings in this syndrome are the same as in the carpal-tunnel syndrome since the median nerve in the forearm has the same skin sensory distribution as at the carpal tunnel. However, the motor examination will reveal that in addition to thenar muscle weakness and atrophy, there will be varying degrees of weakness of the long flexors of the first three digits and the short flexors of all the digits because of the innervation in the forearm by the median nerve of the radial portion of the flexor digitorum profundus muscle and the entire flexor digitorum superficialis muscle. Tenderness and firmness over the pronator teres muscle above the median nerve course in the forearm and tenderness in the proximal portion of the thenar eminence are two consistent reliable diagnostic signs.

Etiology. The pronator syndrome is caused by compression of the median nerve by: an hypertrophied pronator teres muscle, a tendonous ulnar head of the pronator teres muscle, and a dense aponeurotic edge of the flexor digitorum superficialis muscle. Repeated forceful rotation of the forearm is believed causal in certain situations.

Treatment. The treatment of choice is operative exploration and excision of constrictive bands or extrinsically arising compressive masses.

Humeral supracondylar spur syndrome. A distal humeral supracondylar spur and associated ligament is one of the least common causes of neural entrapment in the upper extremity. The anomalous process is estimated to occur in approximately 1 per cent of the human population.

Anatomy. When present, the supracondylar process projects from the anteromedial surface of the humerus about 2 inches (5 cm.) above the medial epicondyle (Fig. 3). The process varies in size and form; it may be a small nubbin, it may be cartilaginous in part, or it may be a decided bony hook. A well-developed supracondylar process is often connected to the medial epicondyle by a fibrous band, the ligament of Struthers, and the upper fibers of the pronator teres muscle typically arise from the process and the band. The median nerve and brachial artery usually pass behind the process and then forward between the fibrous band and the bone.

Clinical presentation. In spite of the just described relationships, most supracondylar processes are asymptomatic. The clinical features of a symptomatic humeral supracondylar spur are: median nerve motor and sensory disturbance compatible with proximal forearm compression, forearm claudication aggravated or produced by supination and extension, a palpable spur about 2 inches above the medial epicondyle, and disappearance of the radial or ulnar pulse on full extension and supination of the forearm.

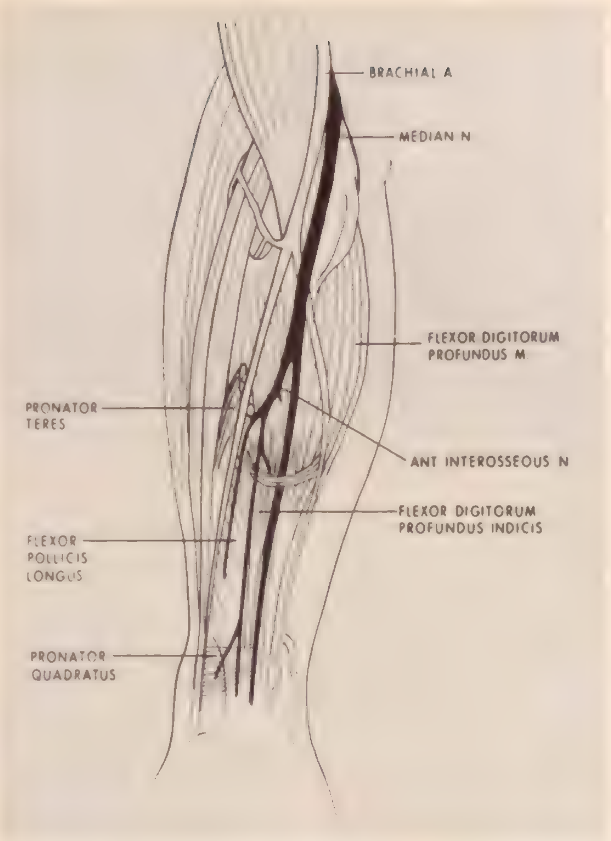

FIGURE 4. Course and relationships of the anterior interosseous nerve in forearm.

Treatment. In symptomatic cases, operative exploration and excision of the supracondylar process along with adjacent periosteum to prevent recurrence is indicated.

The anterior interosseous nerve syndrome. In contrast to the other three median nerve syndromes which have sensory and motor functional abnormality, the anterior interosseous nerve entrapment syndrome has purely motor manifestations.

Anatomy. Entrapment of the anterior interosseous nerve most often occurs in the proximal part of the forearm at or near its origin from the median nerve. The syndrome is characterized by loss of power followed by paralysis in the muscles it supplies. These muscles usually are the flexor pollicis longus, the flexor digitorum profundus to the index finger, and the pronator quadratus muscles (Fig. 4).

Clinical presentation. A presumptive diagnosis of the syndrome can be made from the attitude of the thumb and index finger during the pinch maneuver. When anterior interosseous nerve paralysis is present, there is thumb metacarpal phalangeal joint hyperflexion and interphalangeal

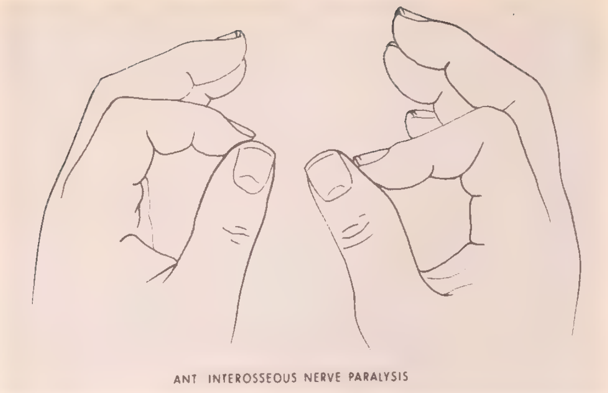

FIGURE 5. The pinch maneuver with anterior interosseous nerve paralysis.

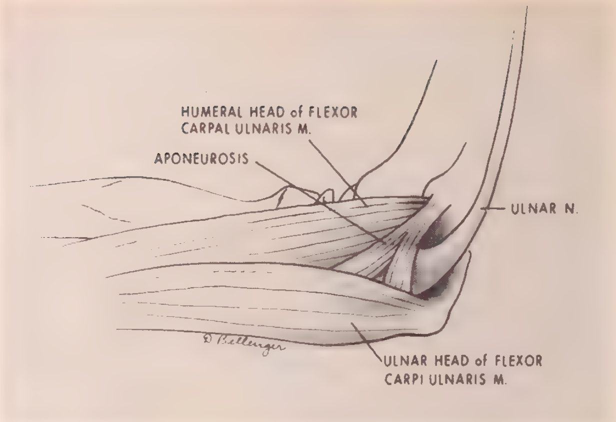
HUMERAL HEAD of FLEXOR CARPAL ULNARIS M.
APONEUROSIS
ULNAR N.
ULNAR HEAD of FLEXOR CARPI ULNARIS M.
D Bellinger

FIGURE 6. Course and relationships of ulnar nerve at elbow.

joint hyperextension along with index finger proximal interphalangeal hyperflexion and distal interphalangeal hyperextension during the pinch maneuver (Fig. 5). The paralysis of the pronator quadratus muscle can be readily demonstrated. First, the elbow must be flexed at a right angle to eliminate the rotary action of the pronator teres on the forearm. Then, in this position, if the anterior interosseous nerve is paralyzed, there will be weak resistance to forced supination of the hand; whereas if the nerve is normal and the pronator quadratus muscle functioning, resistance to supination will be normal when the elbow is flexed or extended.

The great variability of the innervation of the deep forearm and hand muscles is a well-established fact; and because of this, it is important to note that the clinical picture of the anterior interosseous nerve syndrome can be quite variable. In fact, the flexor pollicis longus muscle is the only muscle that is always innervated by the anterior interosseous nerve. One common variant clinical presentation of the anterior interosseous nerve syndrome occurs in the "all median hand" where the anterior interosseous nerve supplies all of the flexor digitorum profundus muscle. Therefore, weakness is present in all of the fingers, and/or paralysis is present in all of the fingers of the hand instead of just the index and the middle finger. When the ulnar nerve supplies all of the flexor digitorum profundus muscle, the anterior interosseous nerve syndrome consists only of loss of function of the flexor pollicis longus muscle and the pronator quadratus muscle. When a Martin Gruber communication occurs between the anterior interosseous nerve and the ulnar nerve, the communication carries ulnar motor fibers for the first, second, and third dorsal interossei muscles and the adductor pollicis muscle. Therefore, the anterior interosseous nerve entrapment syndrome is sometimes accompanied by paralysis of some of the intrinsic muscles of the hand.

Etiology. The various known causes of this syndrome are outlined as follows. (1) Compression by: tendinous origin of flexor digitorum superficialis to long finger, fibrous band, and deep head of pronator teres; (2) Thrombosis of collateral vessels of anterior interosseous artery which cross the nerve; (3) Extraperiosteal dissection in open reduction of fractures of middle one third of radius; and (4) Isolated neuritis.

Treatment. Treatment consists of operative exploration and release of the nerve. Muscle transfers are advised with irreparable damage to the nerve. The flexor superficialis tendon may often be substituted for a nonfunctioning flexor pollicis longus. Transfer of the flexor digitorum superficialis tendon of the middle or ring finger and the suturing of it to the distal portion of the flexor digitorum profundus tendon of the index finger also restores function to the index ray.

Ulnar nerve syndromes[11-18]

The anatomic course of the ulnar nerve renders it particularly vulnerable at the elbow and at the wrist. At both sites, the nerve or its terminal branches pass through narrow canals in which small space-occupying lesions may exert pressure.

Compression of ulnar nerve at elbow. *Anatomy.* As the ulnar nerve crosses the elbow, it passes from the extensor aspect of the arm into the flexor mass of the forearm, running between the two heads of origin of the flexor carpiulnaris muscle which are connected by an aponeurotic band overlying the nerve (Fig. 6). Thus, the ulnar nerve, at the elbow, is confined in an elliptofibro-osseous canal, bordered laterally by the elbow joint and its transverse ligament and medially by the flexor carpiulnaris aponeurosis. With flexion of the elbow from full extension to 135 degrees of flexion, this "cubital tunnel" decreases 40 per cent in volume because the aponeurosis becomes stretched.

Also, it is important to note that 16 per cent of the population has recurrent subluxation of the ulnar nerve at the elbow due to ligamentous laxity, either congenital or acquired. The recurrent

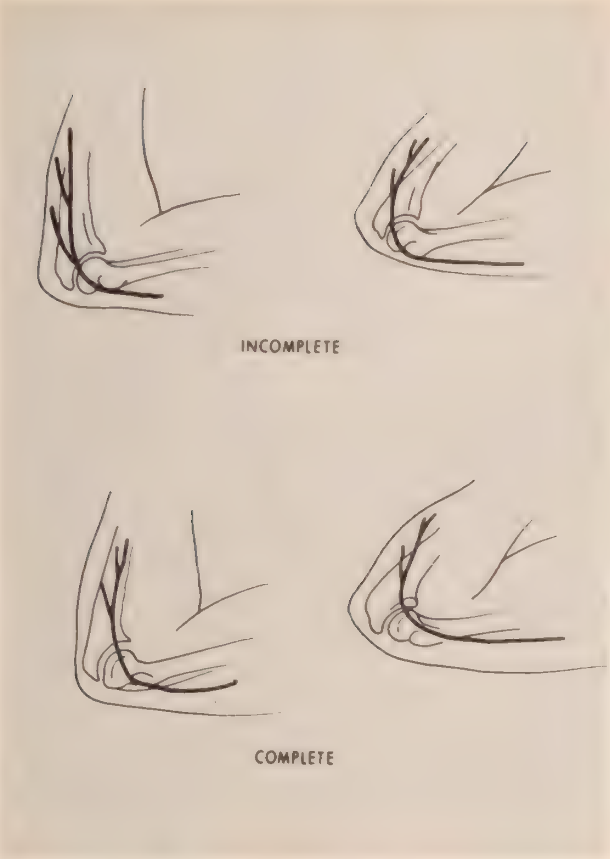

FIGURE 7. The two types of subluxation of ulnar nerve at elbow.

subluxation can be either incomplete or complete (Fig. 7). Clinical observation has shown that the incompletely subluxated ulnar nerve is frequently subject to direct trauma and subsequent scar formation with entrapment, while the completely subluxated ulnar nerve exhibits a high incidence of friction neuritis.

Clinical presentation. With striking uniformity, there is weakness and atrophy of the ulnar innervated portion of the flexor digitorum profundus muscle and of the flexor carpiulnaris muscle, along with ulnar distribution anesthesia and paresthesias. The ulnar nerve sensory disturbance rarely is as distressing or disabling, and lacks the painful nocturnal quality of that associated with median nerve compression. The exact distribution of the sensory changes in the forearm and hand is of great diagnostic significance, for ulnar dorsal cutaneous sensory branch involvement clearly establishes a proximal nerve lesion.

Etiology. The various causes of ulnar nerve entrapment at the elbow are: (1) compression by anatomical confines of the cubital tunnel: hypertrophied flexor carpiulnaris aponeurotic band, and osteoarthritis of elbow secondary to trauma; (2) previous fractures with resultant deformity: supracondylar fracture with increased valgus carrying angle and ununited fracture of medial epicondyle; (3) ganglia from joint capsule; (4) accessory muscle anconeus; and (5) recurrent subluxation of ulnar nerve, or friction neuritis.

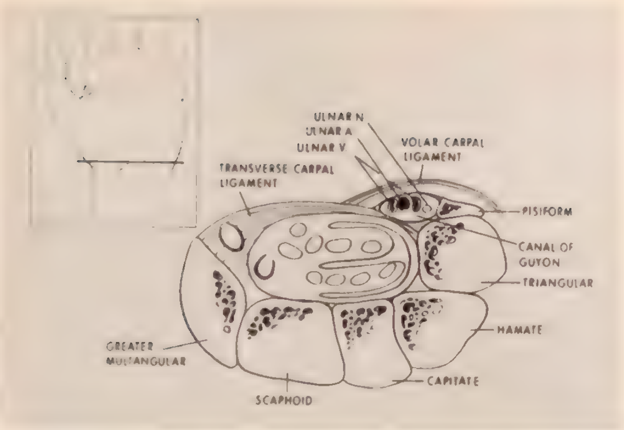

FIGURE 8. Borders of canal of Guyon.

Treatment. Treatment consists of surgical exploration and excision of pressure-producing bands, ganglia, or osseous protuberances. Anterior transplantation of the ulnar nerve is reserved for cases of chronic subluxation or severe osteoarthritic changes of the humerus with irregularity of the ulnar groove.

Ulnar nerve compression syndromes at wrist. *Anatomy.* The main ulnar nerve trunk and ulnar artery enter the hand by passing through a triangular space called the canal of Guyon. The canal borders are: medially, the flexor carpiulnaris tendon and the pisiform bone; anteriorly, the anterior (volar) carpal ligament; and posteriorly, the transverse carpal ligament (Fig. 8). Distal to the canal, under cover of the palmaris brevis muscle, the ulnar nerve divides into superficial (sensory) and deep (motor) branches. The superficial branch continues under the palmaris brevis muscle to supply it and give cutaneous innervation for the anterior aspect of the hand. The deep palmar branch of the ulnar nerve, which carries only motor fibers, passes posteriorly lateral to the pisiform bone through a tunnel bordered proximally and posteriorly by the pisohamate ligament and distal-anteriorly by the arched origin of the abductor, flexor, and opponens digiti minimi muscles, which arise from the pisiform, the tendon of the flexor carpiulnaris, and the hamate bone (Fig. 9).

Therefore, at the wrist the ulnar nerve passes through two narrow canals. Proximally, the entire nerve containing both motor and sensory branches passes through Guyon's canal. Distally, the deep palmar branch which contains only motor fibers, passes through a tunnel created by the origin of the pisohamate ligament posteriorly and the hypothenar muscles anteriorly.

Clinical presentation. There are three specific types of symptom complexes, or syndromes, which have their basis in the anatomic relationship of the

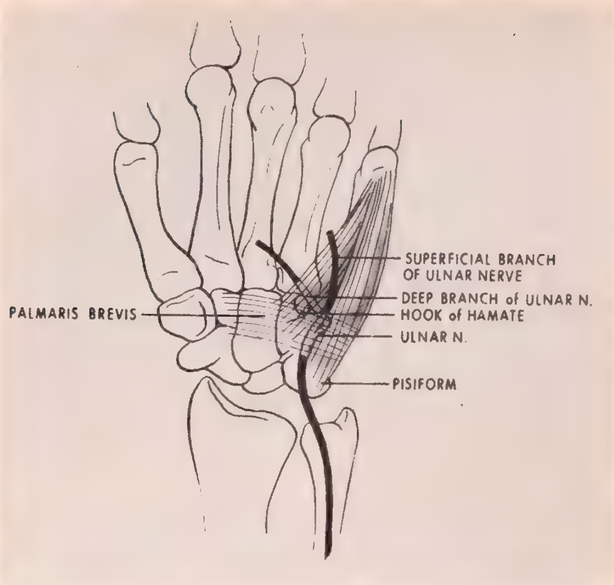

FIGURE 9. Anatomic relationships of ulnar nerve in wrist and hand.

TABLE I. Types of ulnar-nerve compression syndromes of wrist and hand

Sites and Symptoms	Type I	Type II	Type III
Site of involvement	Proximal to or in Canal of Guyon	In distal Canal of Guyon at hook of hamate or in pisohamate ligament-hypothenar muscle canal	In Canal of Guyon at hook of hamate or in palmaris brevis
Branch of nerve involved	Superficial and deep	Deep	Superficial
Signs and symptoms	Sensory and motor deficit	Motor deficit only	Sensory deficit only

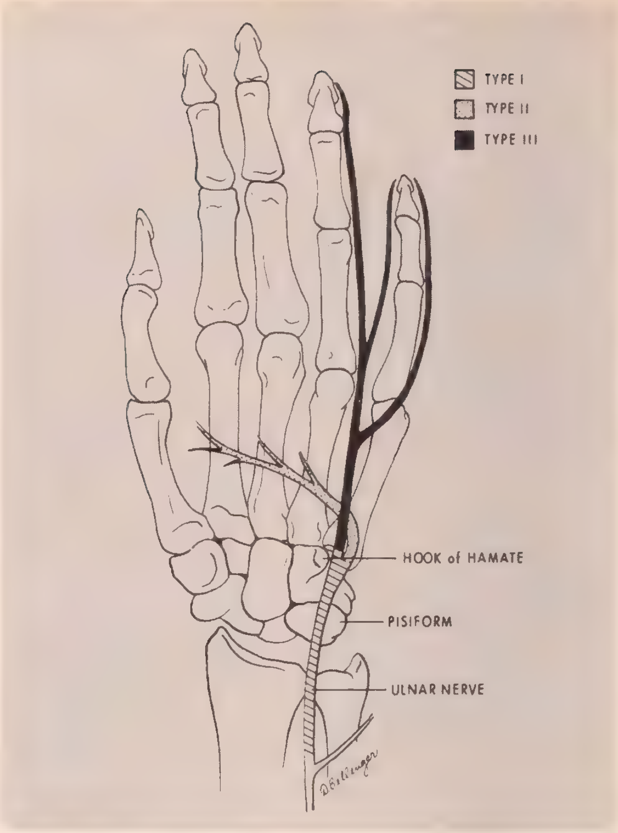

FIGURE 10. The three types of ulnar nerve compression in wrist and hand.

ulnar nerve at the wrist (Table I and Fig. 10). The bifurcation of the ulnar nerve in the deep distal part of the canal of Guyon separates sensory and motor functions in a constant vulnerable anatomic site. Compression of the ulnar nerve proximal to Guyon's canal or within the canal, produces a sensory deficit on the palmar surface of the hypothenar eminence and of the ulnar innervated little and ring fingers, along with motor weakness of ulnar innervated muscles in the hand (Type I). When compression occurs at or distal to the pisohamate ligament in the distal part of the canal, sensation is undisturbed but motor weakness of the muscles of the hand innervated by the deep branch of the ulnar nerve occurs (Type II). When compression occurs superficially in the distal portion of the canal proximally and superiorly to the deep branch origin, there are no motor symptoms, but a sensory deficit occurs on the volar surface of the hypothenar eminence and in the little and ring fingers (Type III).

Etiology. The various etiologies are:

Ganglion
Occupational neuritis
Laceration
Ulnar-artery disease (arteritis, thromboangiitis)
Scar-tissue contracture
Fracture of carpal bones
Fracture of metacarpal bones
Fracture of radius

Aberrant muscles
Tumor, neurilemoma
Anomalous relationship of nerve to carpal bones (pisiform, hamate)
Bursitis, pisiform
Osteoarthritis, carpus
Accessory ossicle
Dislocation of distal end of ulna
Lipoma
Dislocation of pisiform

Treatment. Treatment of choice is operative exploration and excision of restricting bands or extrinsically arising compressive masses.

Posterior interosseous nerve syndrome[19–23]

Anatomy. The radial nerve terminates several centimeters above the lateral condyle of the humerus, dividing into the posterior interosseous nerve and superficial radial nerve (lateral cutaneous nerve) of the forearm (Fig. 11). Before this division, branches of the radial nerve supply the brachialis, brachioradialis, and the extensor carpiradialis longus muscles. From its origin, the posterior interosseous nerve descends in a cleft between the brachialis and the brachioradialis muscles and passes under the extensor carpiradialis longus and brevis muscles, supplying the latter muscle.

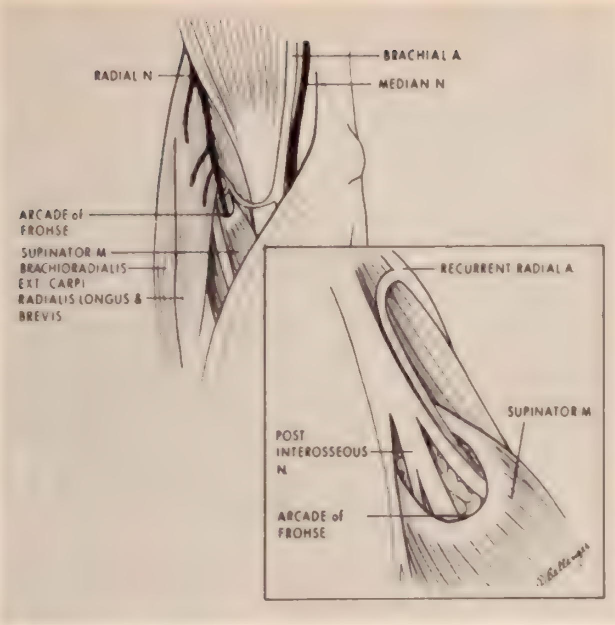

FIGURE 11. Anatomic relationships of radial nerve at elbow.

Then the nerve pierces the supinator muscle and curves around the radius in the substance of the muscle and, usually at its lower border, divides into two main branches: one to the medial extensor muscles and the other to the index and thumb extensor muscles.

The point at which the posterior interosseous nerve pierces the supinator muscle is the arcade of Frohse (Fig. 11). The arcade of Frohse arises in a semicircular manner from the tip of the lateral epicondyle of the humerus, arches downward 1 cm., then arches upward to the medial surface of the lateral epicondyle. There is considerable variation in the size and consistency of the arch. The arcade usually consists of muscle fibers and connective tissue; but in 30 per cent of adult arms, the arcade is fibrotendinous. When the arcade of Frohse is fibrotendinous, extremes of pronation and supination cause compression of the posterior interosseous nerve by the thickened and unyielding edges of the arch. Full pronation can also cause compression on the posterior interosseous nerve by a sharp tendinous edge of the extensor carpiradialis brevis muscle which occasionally is present.

Clinical presentation. Weakness of the forearm extensor muscles; wasting of the dorsal forearm muscles, except for the brachioradialis and the extensor carpiradialis longus; and diminution of active extension of the fingers at the metacarpal phalangeal joints are the prominent clinical symptoms and signs. Wrist drop is not present since the nerve supply to the extensor carpiradialis longus is intact, but on extension the wrist tends to drift into radial deviation because of extensor carpiulnaris paralysis. Occasionally there is point tenderness over the arcade of Frohse and a mass is palpable in the area.

Etiology. The etiologies are:

- Space-occupying lesions
  - Lipoma
  - Ganglion
- Compression by fibrous superior edge of supinator muscle (arcade of Frohse)
- Trauma
  - Supracondylar fracture of humerus (residual cubitus varus)
  - Posterolateral dislocation of head of radius
  - Acute and subacute hyperextension of elbow (nerve stretched and/or adherent)
  - Blunt over dorsal proximal radius (neuritis)
- Bicipital bursitis

Treatment. Treatment is surgical exploration and excision of constricting fibrous bands or excision of space-occupying lesions.

Conclusions

The anatomy, clinical presentation, etiology, and treatment of the median, ulnar, and radial nerve entrapment syndromes of the upper extremity have been discussed.

Anatomically, the nerves affected are predominantly "mixed" nerves, namely, they carry both skin sensory and motor impulses. The anterior interosseous, posterior interosseous, and deep palmar branch of the ulnar are the "motor" nerves predisposed to entrapments. Since there is considerable variation in the ultimate distribution of nerves (for example, the median and ulnar nerve variation in hand innervation) there can be considerable variety in the clinical symptoms and signs of a particular syndrome, especially the anterior interosseous nerve syndrome.

Clinically, in general, pain is the outstanding feature of peripheral nerve entrapment and weakness is noted secondarily. Rest pain is usually present and night pain is very common. In a mixed nerve, the pain pattern follows the skin innervation distribution. Paresthesias and hypesthesias commonly accompany the pain. In the motor nerve syndromes, the pain is poorly localized but always present.

Clinical examination often reveals muscular atrophy before weakness is experienced. Local tenderness over the entrapment point of a peripheral nerve is often present. Pressure over the entrapment point will cause exacerbation of the distal symptoms, and infiltration of the entrapment point with lidocaine or cortisone will often produce relief.

An acute severe traumatic incident at a potential entrapment area is one of the more common causes of these syndromes. In contrast, the summation of repeated small traumas brought about when certain motions cause encroachment on a nerve's passageway that normally offers little cross sectional latitude, for example, the posterior interosseous nerve and pronator syndromes, is another well-known cause. Space-encroaching lesions such as ganglia and inflammatory conditions are also frequent causes. Treatment of the various syndromes usually consists of surgical exploration and relief of entrapment. Local injection of the entrapment point with cortisone or lidocaine is a valuable diagnostic test and occasionally is curative.

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Case Reports

SCOPOLAMINE INTOXICATION FROM NONPRESCRIPTION SLEEPING PILL

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It has recently been observed that there is a marked increase in the incidence of overdose with sleep-producing pills and other drugs among teenagers. These drugs are being used increasingly, since they are inexpensive and readily available without prescription. In addition, they are widely advertised as being "safe" by the drug companies. These drugs are taken for "some action," "kicks," or for their psychedelic effects. As correctly pointed out by Beach *et al.*,[1] these drugs are probably safe if taken "according to the directions" for mild soporific effect but may, in the hands of those looking for "kicks," be taken in such dosage as to produce scopolamine poisoning.

In reviewing the past literature on scopolamine intoxication, we found that two preparations have been widely used in the past. Both are available without prescription. These are Asthmador and Sominex.

Asthmador contains two solanaceous herbs, Atropa belladonna and Datura stramonium, whose active principles are atropine and scopolamine. It is available as a powder; as a cigaret and pipe tobacco, which is ignited; and as a vapor which is inhaled for relief of asthma. The total alkaloids in Asthmador powder and cigarets are 0.23 to 0.31 per cent, and 0.26 to 0.35 per cent, respectively. This drug has been ingested in various forms by groups of teenagers.

Sominex is available as both tablets and capsules. Its pharmacologic ingredients are shown in Table I.

TABLE I. Pharmacologic ingredients of Sominex in tablet and capsule form

Ingredient	Tablet (mg.)	Capsule (mg.)
Scopolamine amineoxide hydrogen bromide	0.25	0.5
Methapyrilene hydrochloride	25	50
Salicylamide	200	200

The usual treatment of scopolamine intoxication consists of performing gastric lavage and inducing emesis, except in comatose patients. Saline cathartics may be of value. Sedatives for control of mania and convulsions should be cautiously administered and limited to those which generally produce a limited respiratory depression. Intubation or tracheotomy and artificial respiration may be necessary in patients with respiratory depression. Chlorpromazine terminates acute brain syndrome from LSD (lysergic acid diethylamide), but it may potentiate the anticholinergic effect of scopolamine intoxication and should be avoided.[2]

Case report

A seventeen-year-old high school student was brought in with the complaint that he could not coordinate his movements. On the morning of admission, his sister found him noisy in his room and noticed that his behavior was bizarre. The patient was agitated and was trying to find something. The sister also found three bottles empty of Sominex tablets in his room.

Physical examination revealed that the patient was grossly confused and disoriented. He had both visual and auditory hallucinations. The skin was flushed, hot, and dry. The pupils were fully dilated and of equal size; they showed no reaction to light. Vision was blurred. Oral mucosa were dry. Auscultation of the heart showed a sinus rhythm of 120 beats per minute. The deep tendon reflexes were hyperactive and symmetrical. There was some disturbance of gait and speech, but no signs of focal neurologic lesion.

Gastric lavage was done in the emergency room and the patient was given 2 mg. of neostigmine methylsulfate (Prostigmin) in twelve hours, by injection. Within thirty-six hours after admission, all signs and symptoms disappeared.

A consulting psychiatrist's opinion was that the patient had had an adolescent adjustment reaction with a suicidal attempt. On recovery, it was found that the patient had taken 118 tablets of Sominex containing a total of 29.5 mg. of scopolamine.

Comment

From time to time, the centrally acting anticholinergic agents are promoted as sedatives. The depressant effect of these agents appears at low concentrations, and the excitatory effects appear at high concentrations. This varies, however, and in some cases the excitatory effect is dominant even at low concentrations, while in other cases the drug produces depression throughout the range of sublethal dosage.[3]

The clinical manifestations are of acute brain syndrome and physical signs of atropinization. The usual manifestations are large, dilated, and fixed pupils; dryness of mouth; dry, hot, and flushed skin; urine retention; blurred vision; hyperpyrexia; and depression, which can occur with or without excitation and coma. Glaucoma may be induced in elderly patients with a narrow iridocorneal angle.

The estimated fatal dose of scopolamine for a child is as low as 10 mg., but recovery from the ingestion of 1,000 mg. has been reported in an adult male.[4]

Scopolamine intoxication must be differentiated from LSD psychosis and amphetamine addiction, which present similar clinical symptoms. However, scopolamine intoxication can be differentiated from the latter two conditions by the physical symptoms of warm, flushed skin; very dry mucous membranes; and markedly dilated pupils displaying no reaction to light. In doubtful cases, the methacholine test is of value. This test consists of the subcutaneous injection of 10 to 30 mg. of methacholine hydrochloride. The absence of the characteristic flush, and the development of lacrimation, sweating, and rhinorrhea following the injection are diagnostic of atropine-like poisoning.[2]

Stramonium poisoning is said to have made its first appearance in this country in 1676. In 1904, Peterson and Haines reported 23 cases of poisoning due to atropine alkaloids.[5] In 1939 Hughes and Clark[6] reviewed the literature and reported 2 cases of stramonium poisoning, following the ingestion of jimson weeds. In 1956 Monroe, Jacobson, and Ervin[7] described the action of a combination of scopolamine and chloralose in selected volunteers, and in neurologic and psychiatric inpatients. They found activation of the electroencephalograph pattern in the volunteers, and exacerbation of psychotic behavior in the psychiatric patients.

May and Voegel[8] described the first case of Sominex intoxication with transient psychosis in 1957. Beach *et al.*[1] reported 6 cases of Sominex poisoning in 1964. Bernstein and Leff[9] described 2 more cases of Sominex intoxication in 1967. There are several reports of poisoning from ingestion of stramonium-belladonna mixtures (Asthmador) in teenagers from 1966 to 1968.[10-14] We are reporting the tenth case of Sominex intoxication.

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PSEUDOMEIGS SYNDROME

Associated with metastatic cancer of ovary

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The original concept of Meigs syndrome was that of a benign ovarian tumor associated with ascites and hydrothorax. According to Meigs' concept, this ovarian tumor was a fibroma, but he later felt that all fibroma-like tumors should be included. The ascites and hydrothorax must disappear after removal of the tumor to satisfy the definition of a true Meigs syndrome. Pseudo-Meigs syndrome refers to a similar clinical triad except that the pelvic tumor is either a benign ovarian, but not a fibroma or fibroma-like tumor, or a malignant tumor of the ovary or uterus. Benign uterine tumors such as subserous fibroids have also been associated with a pseudo-Meigs syndrome. The malignant tumors may be either primary or metastatic but, like a true Meigs syndrome, the effusion must disappear after removal of the tumor.

In 1937, Meigs and Cass[1] first reported this clinical picture of ovarian tumor associated with hydrothorax and ascites. In the same years Rhodes and Terrell[2] made a further report on this syndrome and referred to it as Meigs syndrome. Meigs[3] feels that only ovarian tumors which are benign, solid, and fibroma-like should be included in this syndrome. This would include fibroma of the ovary, theca-cell tumors, granulosa cell (benign) tumors, and Brenner tumors. The present author, like Kimbrough[4] and Knuth and Walske[5] feels that all ovarian tumors associated with peritoneal and pleural effusions should be included, provided there is no evidence of metastatic disease in the nature of peritoneal and pleural implants causing the ascites or hydrothorax. There are many facets to this syndrome, and it does not appear reasonable to exclude certain cases just because they are either malignant ovarian tumors or not "fibroma-like." It should be sufficient that the effusions disappear permanently following the removal of the ovarian tumor. Another aspect is that all cases do not demonstrate an ascites. This was true in the present case and in those of Annest, Cleveland, and Baker[6] and McNulty and Muccino.[7]

The interesting and most important facet to this problem is, as Beresford and Aidin[8] stated, that many women with this clinical picture are mislabeled and diagnosed as having conjestive heart failure, cirrhosis of the liver, or worse still, metastatic carcinoma in a hopelessly inoperable state.

Case report

The patient was thirty-five years old when she was first admitted to Mercy Hospital on February 28, 1958, with a history of recurrent diffuse abdominal pain which had originally started four and a half months prior to admission. The pain was associated on occasion with mild nausea, constipation, and intermittent abdominal swelling.

Abdominal x-ray films on admission showed diffuse fecal collection throughout the abdomen. A chest x-ray film gave normal findings. A barium enema was unsatisfactory because the patient could not retain the barium. Because of an apparent intestinal obstruction, on March 3, 1958, surgery was performed. Laparotomy disclosed a neoplasm of annular nature in the transverse colon near the splenic flexure. A transverse loop colostomy was done at that time. The colostomy was opened forty-eight hours later and from then on the patient did well. A barium enema on March 21, 1958, showed a defect just proximal to the splenic flexure of the colon. She was discharged in satisfactory condition on March 22, 1958.

The patient was readmitted on April 12, 1958, and two days later laparotomy disclosed the annular lesion mentioned in the distal portion of the transverse colon. No gross metastatic disease was found. The uterus and adnexae appeared normal. The loop colostomy in the right upper quadrant was closed and dropped back into the abdomen. The neoplasm was isolated with umbilical tape on both sides, and the middle and left colic vessels were tied off close to their origins. The greater omentum was removed with the specimen and the right colon; the transverse and descending colons were mobilized and removed down to the sigmoid colon. The ileum was anastomosed to the colon in end-to-end fashion. The pathologic examination disclosed a 6 cm. annular carcinoma 40 cm. from the ileocecal valve, with narrowing of the lumen down to a width of 0.3 cm. The carcinoma extended into the wall and the surrounding serosal layer, but there was no involvement of the lymph nodes. The patient did well and was discharged on the ninth postoperative day.

The patient failed to return for follow-up. She was admitted to Mercy Hospital three years later,

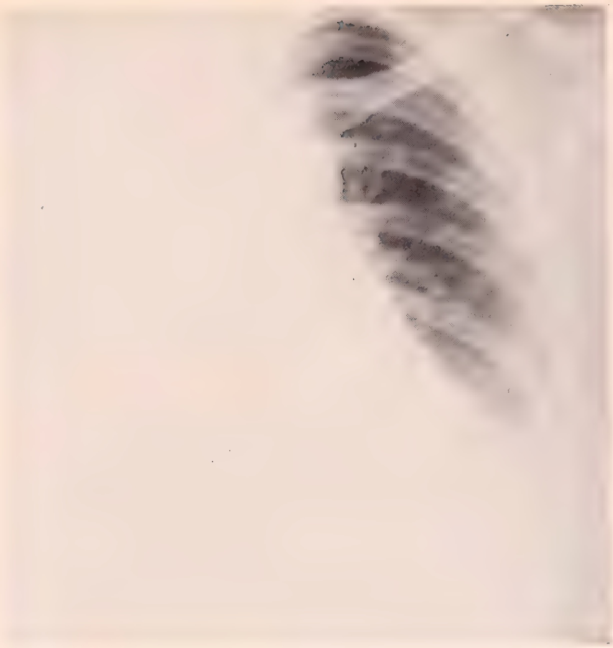

FIGURE 1. X-ray of chest soon after admission in 1961 for ovarian tumor and right hydrothorax.

on March 7, 1961, because of difficulty in breathing, cough, and slow progressive enlargment of the abdomen; all of these symptoms had been present for two months. On examination, the patient revealed a diffuse abdominal swelling which was somewhat more prominent on the right side, and marked hydrothorax of the right chest (Fig. 1). Thoracentesis of the right side of the chest soon after admission revealed some cloudy, yellow, serous fluid. Repeated taps and examination failed to reveal any definite evidence of cancer. The Papanicolaou smears were diagnosed as class III on repeated examination. The patient's condition was precarious because of marked respiratory difficulty. Because repeated taps failed to clear the right side of the chest of fluid, it was decided to do a closed thoracostomy. At the end of one week, 14,000 cc. of serous fluid had been removed from the chest, and x-ray films disclosed that the right side was clear of fluid. Surgery was elected, and on March 23, 1961, the abdomen was entered through a long, right paramedian incision. A large ovarian neoplasm on the right side measuring 15 by 20 cm. was found. There was no free fluid in the abdomen. The ovarian neoplasm had attached itself in part to the adjacent peritoneum. The left ovary appeared normal. The neoplasm plus the left ovary, the fallopian tubes, the uterus, and the cervix were removed. Her postoperative course was reasonably smooth, considering her precarious preoperative state. A chest film on March 3, 1961, gave normal findings which have remained since then (Fig. 2). One month after discharge she was treated with cobalt therapy with opposing ports over the lower quadrants of the abdomen and the true pelvis. A midline tumor dose of 4,500 r was delivered in four weeks.

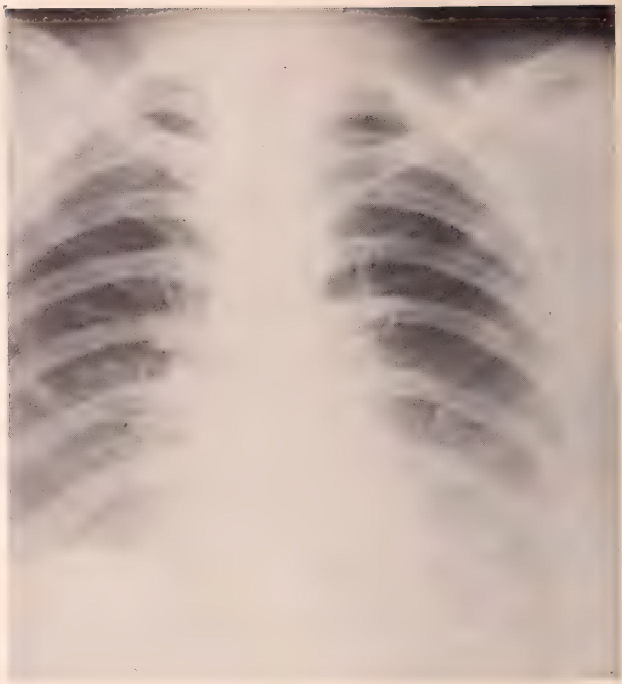

FIGURE 2. X-ray of chest eight days after removal of ovarian tumor.

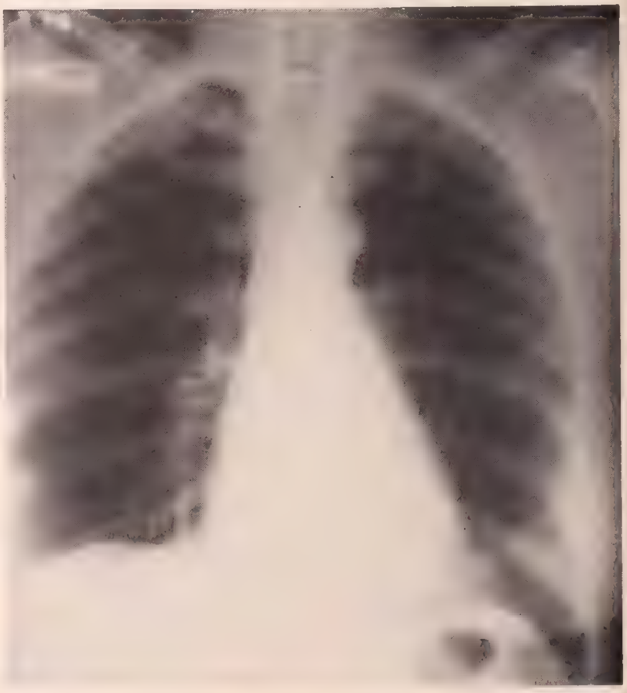

FIGURE 3. X-ray of chest in 1970 (normal).

The pathologic diagnosis on discharge was carcinoma of the right ovary. It was the opinion of the pathologist that this carcinoma was metastatic from the original colon lesion. The patient returned frequently thereafter for follow-up. In 1963 she developed a massive right lower quadrant incisional hernia. She was admitted to Mercy Hospital on March 3, 1963. X-ray findings of the chest were normal on this admission, as was a barium enema, except for evidence of resection.

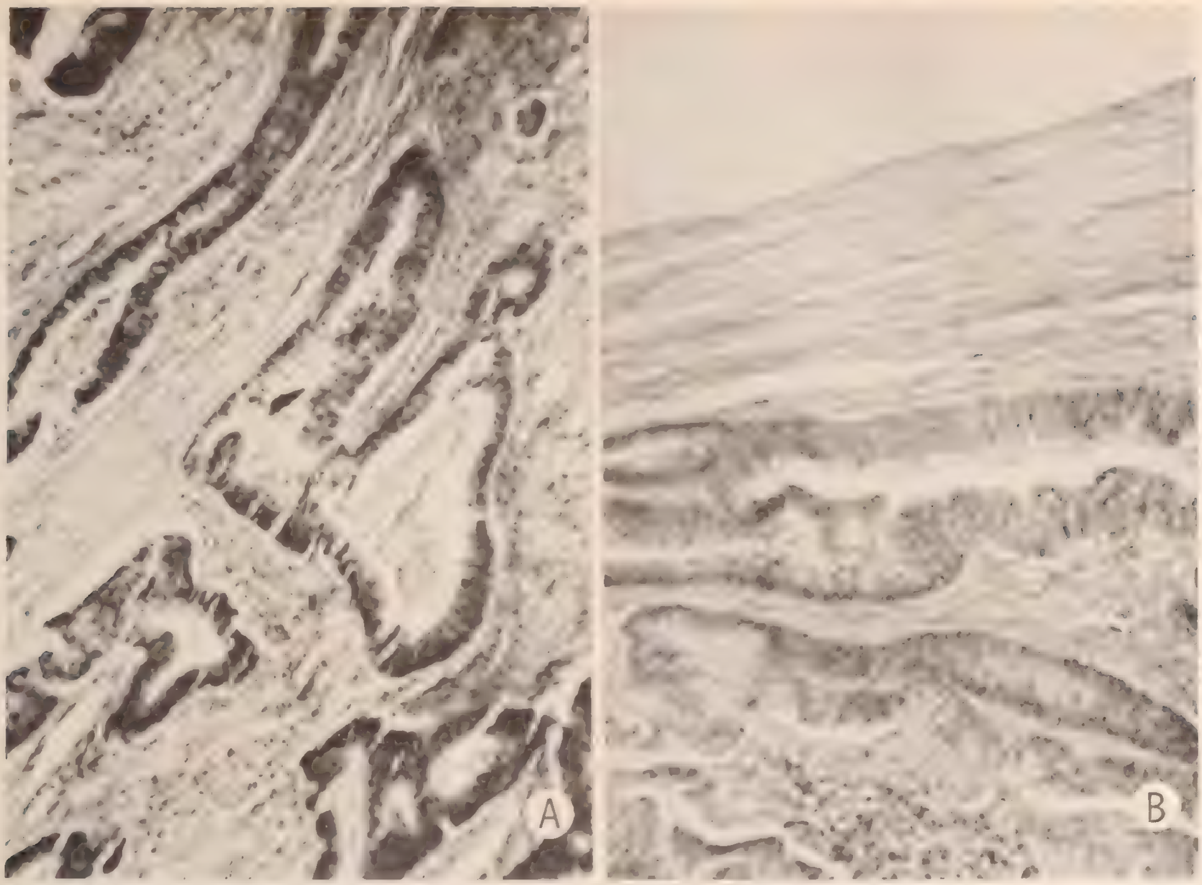

FIGURE 4. Photomicrographs of (A) Colon tumor (left) in 1958. (B) Ovarian tumor (right) in 1961. Note similar cellular detail. (Hemotoxylin and Eosin Stain × 430)

The hernia measured 15 cm. in length and was 6 cm. wide. Laparotomy was done on March 6, 1963, and no evidence of cancer was found. It was necessary to use a very large piece of Marlex cloth to effect a satisfactory repair of the hernia. The patient has done well since then and results of a sigmoidoscopy, chest film, and barium enema in 1970 were normal (Fig. 3).

Comment

It is quite evident that there are numerous pelvic lesions which can result in ascites and pleural effusions of a nonmalignant nature, and that these effusions disappear permanently if the pelvic tumefaction is removed. These pelvic conditions include ovarian fibromas, thecomas, granulosa cell, and Brenner tumors: the solid, benign, and fibroma-like tumors of the ovary which Meigs included in his syndrome. Actually, we know now that some granulosa cell tumors are malignant. In addition to the afore-mentioned tumors, a Meigs or pseudo-Meigs syndrome can be caused by ovarian cysts, carcinoma, metastatic carcinoma, and Fallopian or uterine tumors (benign and malignant). In 1954, Meigs[3] collected 124 cases of which 84 were true Meigs syndrome entities and 40 were so-called pseudo-Meigs syndrome. Of the latter, 26 were benign and 14 malignant.

Several authors have questioned the advisability of dividing these cases into Meigs and pseudoMeigs syndrome. This division is largely academic and does not alter the therapeutic aspects of the problem. Since removal of the pelvic tumor results in disappearance of the abdominal-pleural effusions in both Meigs and pseudoMeigs cases, it appears almost arbitrary to divide them. Since we are primarily concerned with treating the patient, it would seem more reasonable to include all such cases under one heading. Meigs had once considered this, but felt the various conditions should be separated because more cases fell into the catagory of a true Meigs syndrome. The present author agrees with other writers that a revision of classification of these cases is in order.

Meigs syndrome is usually associated with an ascites but there have been 2 previously recorded cases in addition to the present one which failed to show any abdominal fluid. All Meigs and pseudo-Meigs syndrome cases show fluid in the chest. This may occur on one or both sides but is usually on the right. The origin of the chest fluid is somewhat in doubt. The generally accepted theory is that the pelvic tumor elaborates a fluid which finds its way to the pleural space by way of transdiaphragmatic lymphatic transport, usually involving the right side. One interesting problem is that a very large and disabling hydrothorax can be associated with a minimal, if at all detectable, ascites. In the present case and in that of McNulty and Muccino[7] and Annest, Cleveland, and Baker,[6] there was no appreciable ascites. It is quite conceivable that no accumulation of fluid occurs in the abdomen because the transit time across the diaphragm is markedly increased for some reason.

Our case presented a pseudoMeigs syndrome associated with metastatic carcinoma of the ovary originating in a lesion of the transverse colon. The pathologic, microscopic picture in each instance was quite similar, and in the opinion of the pathologist the ovarian tumor arose from the colon carcinoma. Since the pathologic picture is quite similar, the ovarian carcinoma developed three years or less after the original lesion, and we know that colon carcinoma frequently metastasizes to the ovary; a strong argument can be made for this ovarian lesion originating in the colon carcinoma.

It is of interest at this point to clarify the distinction of this being a Krukenberg tumor, or what is termed ovarian metastasis from gastrointestinal cancer. The latter term appears appropriate for the case presented herein. Krukenberg tumor is almost always bilateral, not overly large, frequently retains the original shape of the ovary, and does not adhere to surrounding structures, having a smooth capsule. Microscopically, the Krukenberg tumor demonstrates both a richly cellular or myxomatous stroma, and characteristically shows large numbers of signet cells. In contradistinction, the so-called ovarian metastasis from gastrointestinal cancer is generally very much larger than the original growth, frequently unilateral, and microscopically appears much like the original tumor. This is demonstrated in Figure 4. From a clinical standpoint, if the gastrointestinal tumor and the ovarian metastasis are present as synchronous tumors, the large size of the latter may overshadow the primary stomach or colonic neoplasm. Therefore, it is imperative that a thorough abdominal exploration be made in the presence of ovarian tumor.

This case points up the fact that individuals with pleural effusion occurring after the onset of an abdominal cancer should not be written off as hopeless, but should be given energetic and aggressive therapy in an effort to salvave the patient.

Summary

A case of pseudoMeigs syndrome, caused by a metastatic ovarian carcinoma which originated in a transverse colon cancer, is presented. A plea is made for the energetic and aggressive treatment of all Meigs and all pseudoMeigs syndrome cases to salvage as many patients as possible, instead of writing off such individuals as hopeless cases with metastatic carcinoma. It is felt that all such cases should be grouped under one heading, namely Meigs syndrome, instead of arbitrarily dividing these lesions into Meigs and pseudoMeigs syndromes.

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URETEROCELE AND URETERAL DUPLICATION

Associated congenital malformations

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Ureterocele is a cystic dilatation of the lower end of the ureter with a variable degree of intrusion into the bladder, bladder neck, or urethra. The ureteral orifice may be proximal to the bladder neck, the so-called simple ureterocele, or it may be at or distal to the bladder neck, in which case it is termed an ectopic ureterocele.

Ureteroceles occur in 1 to 2 per cent of all patients subjected to cystoscopy with a higher incidence of 4 per cent in children evaluated for urinary tract infection.[1] Both types are commonly associated with ureteral duplication.

Gross[2] reported that 52 per cent of his cases of ureterocele in children had complete ipsilateral duplication of the ureter. In Ericsson's[3] series, all cases of ectopic ureterocele in children were associated with ipsilateral ureteral duplication, and 66 per cent of simple ureteroceles had similar duplication. With one exception, all cases of ectopic ureterocele described in the literature in adults were associated with ipsilateral ureteral duplication. Simple ureterocele in adults is less commonly associated with duplication, however the incidence is noted to be 30 per cent by Ericsson[3] and 38 per cent by Aas.[4]

Embryology

The mesonephric (Wolffian) duct first establishes contact with the cloaca at the fifth fetal week. After the division of the cloaca into a ventral bladder, urogenital sinus, and dorsal rectum, the mesonephric duct becomes incorporated into the ventral portion (Fig. 1A). The ureteric buds make their appearance on the dorsal wall on a loop at the caudal end of the mesonephric duct. Two ureteric buds may arise from the Wolffian duct, and a situation of complete ureteral duplication may ensue. The ureter which is developing from the most cranial bud drains the upper pelvic segment, and the ureter from the caudal bud drains the lower segment (Fig. 1B). With caudal growth of the mesonephric duct loop and cranial growth of the vesical wall, the ureter to the lower pelvic segment will be incorporated into the bladder first. The ureter to the upper segment will participate in the caudal growth and insert into the bladder distally and medially to the ureter to the lower segment (Fig. 1C and D). This distal orifice may be ectopic.

Case report

A twenty-year-old girl was admitted with dysuria, fever, chills, and left-flank pain. The urine contained many pus cells. Intravenous urography showed complete duplication of the left collecting system, with hydronephrosis and hydroureter of the upper segment (Fig. 2A). The distal ureter of the upper segment contained many small calculi. There was a large, lucent, filling defect in the left side of the bladder (Fig. 2B). A cystogram demonstrated reflux into the left lower pelvic segment (Fig. 2C). Cystoscopy confirmed the presence of a simple ureterocele associated with the ureter to the upper pelvic segment. The patient underwent ureteroureterostomy, with anastomosis of the ureter to the upper segment into the ureter to the lower segment, and removal of the distal ureter, calculi, and ureterocele. Follow-up intravenous urogram showed resolution of the hydronephrosis (Fig. 2D). Cystogram showed no reflux.

Comment

Diagnosis. The majority of patients with symptomatic ureteroceles and duplicated ureters come to the attention of the physician for the evaluation of a urinary tract infection. Symptoms are usually secondary to obstruction of the renal segment, ureterovesical reflux, and the presence of the ureterocele mass in the bladder. The vesical mass may cause irritation, urinary retention, and urinary incontinence. In the female, it may prolapse through the urethral meatus.

Our patient presented signs and symptoms of acute pyelonephritis. This may result from obstruction of one renal segment, reflux into another, or a combination of both. Pain with hematuria may be the presenting complaint, especially in those patients with stone formation.

Intravenous urogram will usually give the first indication that a ureterocele and ureteral duplication are present. The segment associated with the ureterocele may not be visualized, in which case

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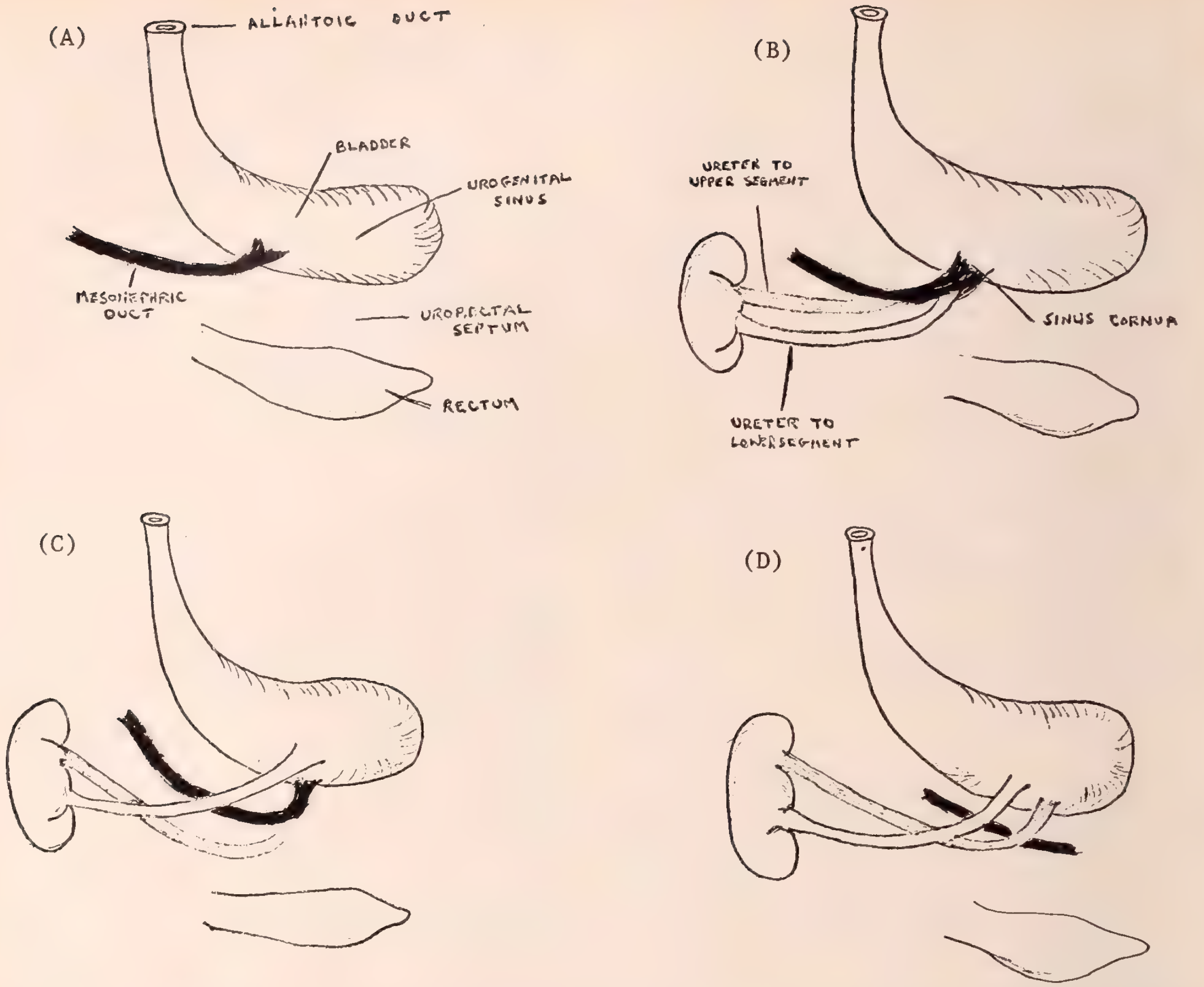

FIGURE 1. (A) Mesonephric duct incorporated into primitive bladder. (B) Two ureters arising from mesonephric duct. (C) Ureter to lower pelvic segment incorporated into bladder. Ureter to upper segment growing caudally with mesonephric duct. (D) Ureter to upper pelvic segment draining into bladder distal to ureter to lower segment.

the visualized portion of the pelvis suggests a contracted kidney which may be thought to represent a pyelonephritic or congenitally contracted kidney. The bladder often shows a filling defect. With this finding duplication with a nonvisualizing segment is suspected. When the segment associated with the ureterocele is visualized, it may be grossly dilated as seen on our patient.

The cystogram may demonstrate reflux into either ureter, although much more commonly it is into the lower pelvic segment.[5] The ureterocele most commonly involves the ureteral orifice from the upper pelvic segment.[6] Ectopic ureteroceles often appear as ellipsoid, asymmetrically located defects in the base of the bladder with the long axis pointing to the side from which the ureterocele arises.[4]

The diagnosis of ureterocele and duplicated ureters may be confirmed at the time of cystourethroscopy, although the anatomy may be confusing due to the presence of the cystic mass. If the ureterocele is small and collapsed, or everted due to vesical overdistention, it may appear as a diverticulum. Demonstration of a nonvisualizing segment may be achieved by retrograde pyelography.

Treatment. Small ureteroceles in association with duplicated ureters without complication require no treatment. Mild infection often can be effectively treated with antibiotics. When the infection cannot be controlled, or other complications are present, surgical intervention must be considered. The aims of the treatment are to (1) remove the ureterocele which may be causing vesical irritability or obstruction, (2) relieve renal and ureteral obstruction, (3) correct reflux, and (4) remove a portion or all of a kidney and ureter if there is irreversible damage.

In uncomplicated, small ureteroceles, transurethral or suprapubic unroofing may be adequate treatment.[7] Care must be exercised to not injure the orifice of the duplicated ureter, which may be

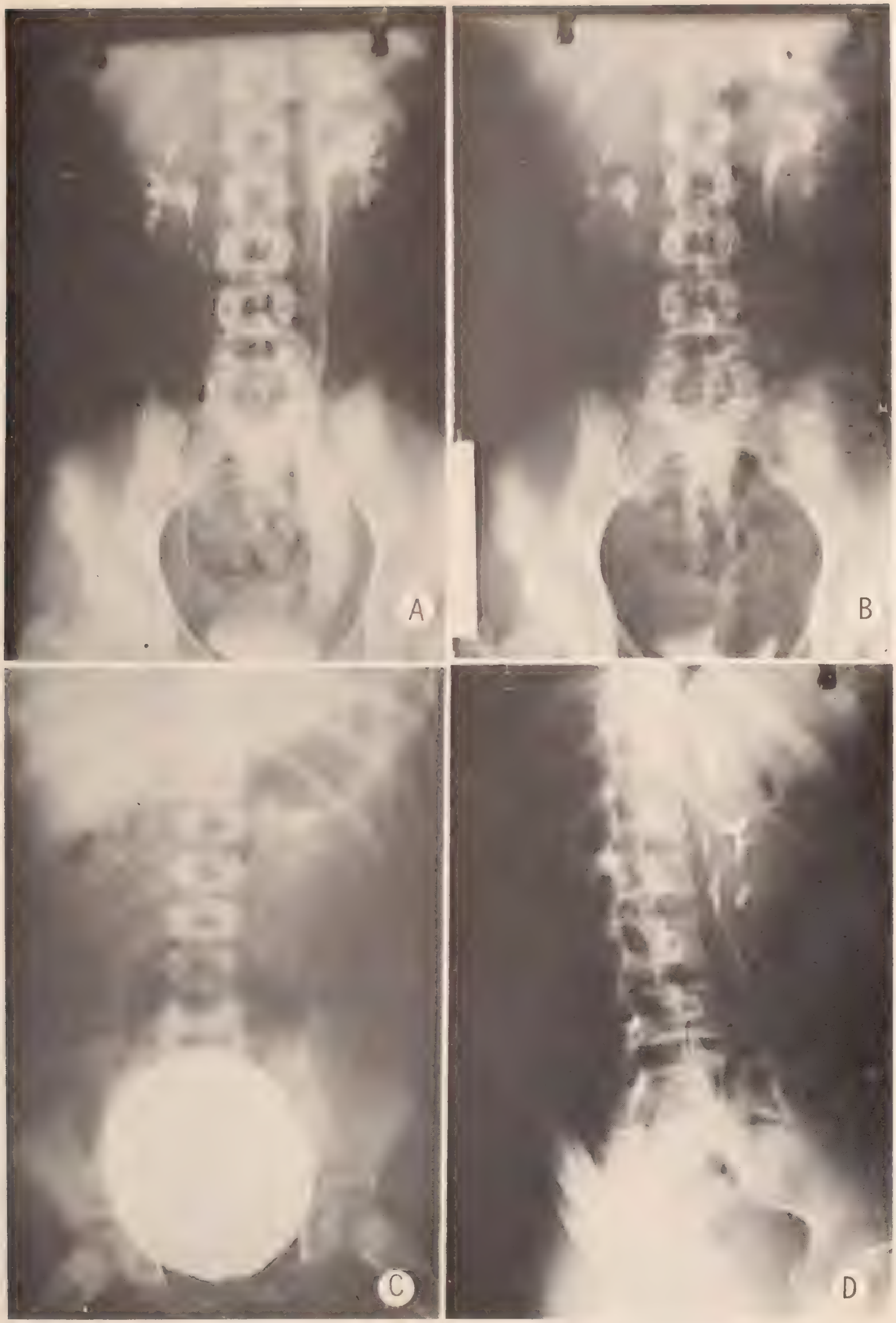

FIGURE 2. (A) Complete left ureteral duplication with hydronephrosis and hydroureter of upper pelvic segment. (B) Filling defect of ureterocele in bladder. (C) Reflux into left lower pelvic segment. (D) Postoperative urogram after ureteroureterostomy.

lying in the wall of the ureterocele although not in communication with it. Simple unroofing of a ureterocele frequently results in reflux, and for this reason ureteroneocystostomy in combination with excision of the ureterocele may be necessary.

The renal damage suffered during the course of the disease process is variable. It may be severe enough to require partial or total nephrectomy, but all effort should be expended to preserve existing renal parenchyma. As has been stated, it is common, especially in children, to have a nonvisualizing segment associated with an ectopic ureterocele. The first approach may be unroofing of the ureterocele with follow-up observation of the renal segment. If there is no evidence of functional improvement, and infection persists with progressive renal damage, then another approach must be considered.

Two alternatives may be pyelopyelostomy or ureteroureterostomy with excision of the ureterocele and distal ureter, with or without reimplantation of the remaining ureter. It is surgically significant that frequently the duplicated ureters share a common vascular system near the bladder and they may share a common wall. When one pelvic segment and ureter are normal and without reflux, the abnormal pelvis or ureter can be anastomosed to it. The distal abnormal segment and ureterocele will then be excised, although it may be necessary to leave a short cuff to preserve the vascularity. When the remaining ureter refluxes, it may require reimplantation. In our patient, this was not done, and subsequent examination revealed that the reflux no longer existed. This probably resulted from removal of the ureterocele and treatment of the bladder infection.

Summary

Ureteroceles occur in 1 to 2 per cent of all patients subjected to cystoscopy. A higher incidence of 4 per cent is found in children evaluated for urinary tract infection. The ureterocele may be simple or ectopic. Both types are frequently associated with complete, ipsilateral, ureteral duplication. Because of this frequent association, the conditions often must be considered and treated together.

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INTERMITTENT VERTEBRAL ARTERIOVENOUS FISTULA

Due to cervical stab wound

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Vertebral arteriovenous fistula is a rare entity because this artery is well protected by the cervical vertebrae. Trauma that involves this area often damages the nearby vital structures with immediate fatal outcome.[1] Sixty-seven cases of vertebral arteriovenous fistula were reviewed by Tsuji, Redington, and Kay in 1968.[2] In this series there were 7 cases which were related to cervical stab wounds. An eighth case of vertebral arteriovenous fistula caused by cervical stab wound was subsequently reported by Cloete, Nel, and Van Wyk.[3] Our purpose is to report the ninth case of vertebral arteriovenous fistula caused by cervical stab wound, with some unusual manifestations documented by angiographic studies. The fistula was successfully treated.

Case report

A thirty-six-year-old male veteran, a construction worker, was stabbed in the left side of the neck in 1953. He received treatment at a hospital emergency room. His wound was sutured, and he was discharged home.

Six months after the injury, he noted an intermittent blowing or whistle noise in his left ear. This noise could be abolished by turning his head to the left. It did not disturb his sleep, because he turned his head to the left while sleeping in the prone position. Otherwise, he was asymptomatic. On December 5, 1960, the patient was seen at the Erie County health department clinic in Buffalo, because he was concerned about pulmonary tuberculosis. A follow-up chest roentgenogram on April 29, 1963, showed an increase in cardiac size when compared with the initial film. Because of this, he was referred to the Buffalo Veterans Administration Hospital, ten years after the initial injury, for evaluation of his cardiomegaly.

Physical examination revealed a well-developed Negro male in no distress. His blood pressure was 150/80, pulse 80. There was a Grade III/VI continuous murmur heard in the left lateral portion of the neck, which radiated to the chest. The pulse rate slowed and the murmur disappeared when the patient's head was turned to the left. Compression of the left carotid failed to abolish the bruit or elicit Branhan's sign. There was a Grade II/VI apical systolic murmur. There were no signs of congestive heart failure. An electrocardiogram satisfied the voltage criteria for left ventricular

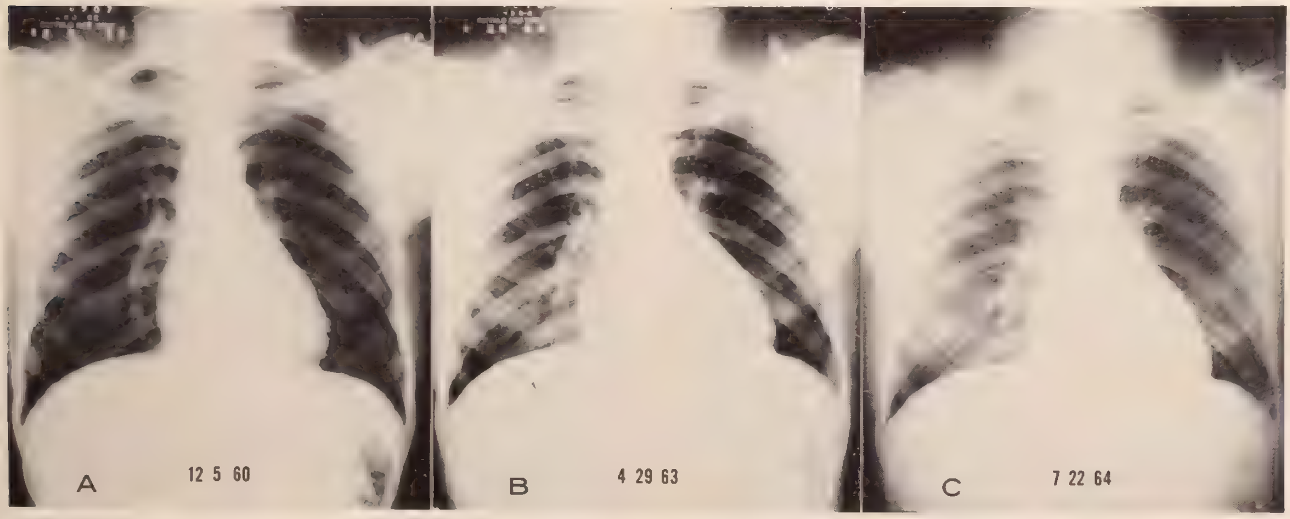

FIGURE 1. Chest roentgenograms. (A) Seven years after cervical stab wound. (B) Ten years after cervical stab wound. Note increase in cardiothoracic ratio. (C) One year after surgical ligation of vertebral artery. Note 2-cm. decrease in transverse cardiac diameter following surgery.

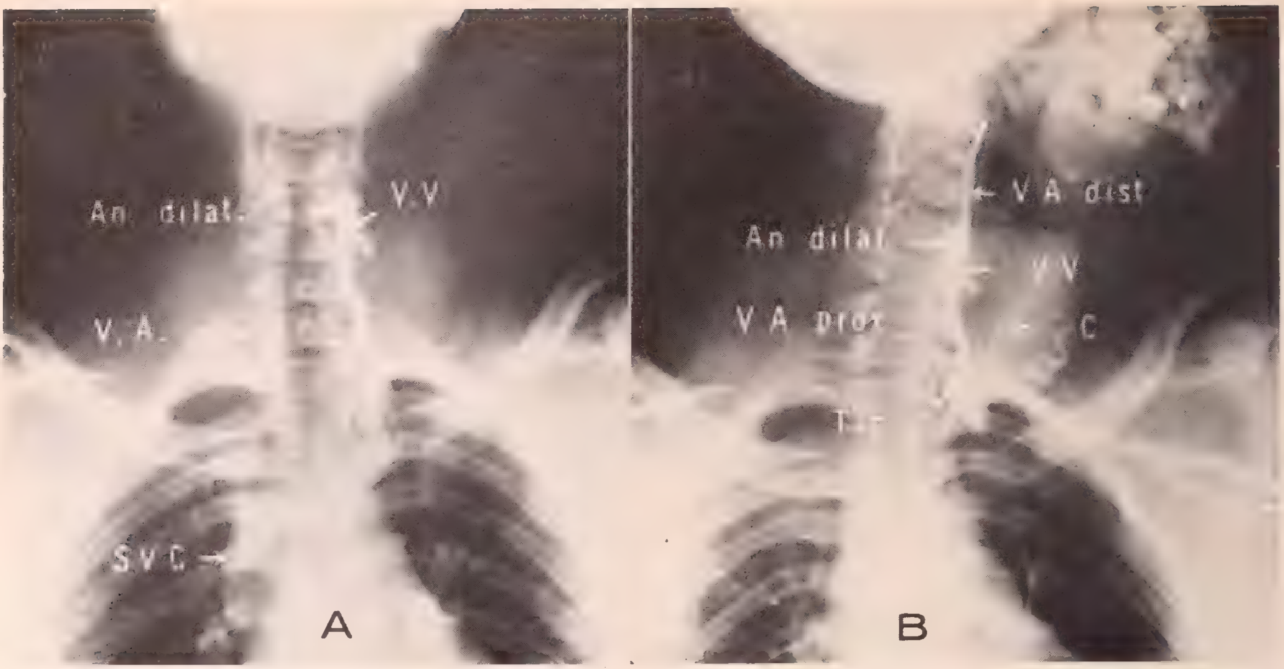

FIGURE 2. Left vertebral angiogram. (A) Patient's head in posterior anterior position. No visualization of vertebral artery distal to arteriovenous fistula. Left vertebral vein immediately opacified at level of fifth cervical vertebra. Aneurysmal dilatation noted in site of fistula. Superior vena cava opacified on later films. (B) Patient's head turned to left. Distal vertebral artery opacified, suggesting that fistula occluded by this maneuver. Only small segment of vertebral vein opacified. Key: An. dilat. = aneurysmal dilatation; C = collateral vessels; Tip = tip of catheter; VA dist. = distal vertebral artery; VA prox. = proximal vertebral artery; VV = vertebral vein; SVC = superior vena cava.

hypertrophy. The QRS axis was plus 30 degrees. Chest roentgenogram showed a cardiothoracic ratio of 13.5:30 (45 per cent) on December 5, 1960, and a ratio of 15.5:30 (52 per cent) on April 29, 1963 (Fig. 1A and B). Thus there was a 2-cm. increase in the transverse cardiac diameter during this twenty-nine-month interval. A diagnosis of left vertebral arteriovenous fistula was suspected, and the patient was scheduled for indirect left vertebral angiography via the left brachial artery on July 1, 1963. This study revealed an arteriovenous fistula which involved the left vertebral artery and vein at the level of the fifth cervical vertebra. When the patient's head was in the posterior anterior position the vertebral vein was opacified immediately. There was no visible opacification of the distal vertebral artery beyond the fistula (Fig. 2A). However, when the patient's head was turned to the left, the contrast material opacified the distal vertebral artery to the skull and only 1 cm. of the accompanying vertebral vein (Fig. 2B). Cardiac output by the Fick method was 10.9 L. per minute (Table I).

Because of the progressive cardiac enlargement and distressing auditory symptoms the patient was scheduled for surgery. The left vertebral artery was ligated proximally and distally to the fistula on July 18, 1963. The patient has been asymptomatic since surgery and is gainfully employed at the present time. The cardiac output fell from 10.9 L. per minute preoperatively to 5.7 L. per minute six months after surgery (Table I). The cardiothoracic ratio was 13.5:30 (45 per cent) one year postoperatively (Fig. 1C). An eight and one-half year follow-up examination on January 13, 1972, was completely normal except that a Grade I/VI apical systolic murmur was present. There was no murmur in the neck. Blood pressure was 140/90. The electrocardiogram was unchanged from the preoperative tracing.

Comment

The course of the vertebral artery is divided into three parts.[1] The first portion is about 3 cm. long. It arises from the subclavian artery and ascends to the transverse process of the sixth cervical vertebra. The second portion passes through the osteofibrous tunnel formed by the foramina of the transverse processes of the upper six cervical vertebrae and intervening spaces, and the third portion lies between the upper border of the atlas and the foramen magnum.

In this patient the fistula was found at the level of the fifth cervical vertebra indicating involvement of the second portion of the vertebral artery. This is the most frequent location of fistula in this vessel.[4]

Among 67 cases of vertebral arterio-venous fistula reviewed by Tsuji, Redington, and Kay[2] the

TABLE I. Clinical data of patient before and after ligature of left vertebral artery

Catheterization data	Preoperative June 5, 1963	Postoperative January 10, 1964
Aorta	146 77	. . .
Left ventricle	146 0–9	. . .
Pulmonary capillary wedge	(8)	(8)
Pulmonary artery	32 13	38 12
Right ventricle	36 0–5	38 0–7
Right atrium	5 0	7 2
Cardiac output (Liters per minute)	10.9	5.7
Cardiac index (Liters per minute per square meter)	5.5	2.8

causative factor was stated in 48. Most cases (44) were traumatic: metallic missile wound accounted for 26, stab wounds for 7, blunt trauma for 6, vertebral angiogram for 4, and glass fragment for 1. In the nontraumatic group, 4 cases were congenital in origin. One of the causes that can be prevented is that due to direct needle puncture vertebral angiogram. The indirect selective vertebral angiogram, using the catheter technic, would not cause this complication.

The development of cardiomegaly as a result of the increased cardiac output associated with arteriovenous fistula may vary from several months to several decades.[5] This depends on the magnitude of the blood flow through the shunt, which, in turn, is determined by the size of the fistula.[6] The distensibility of the rim or border of the fistula is dependent on the character of the healing process around the fistula site. Firm, rigid, and excessive scarring permits only a small volume of blood to be shunted in the fistula circuit, dilating the components of the short circuit only mildly. An elastic and distensible fistulous border permits progressive expansion of the fistulous opening with a progressive dilatation of all components of this circuit including the vein distal to the fistula, the vena cava, the right atrium, the right ventricle, the pulmonary vascular bed, the left atrium, the left ventricle, the aorta, and the artery proximal to the fistula. All degrees of gradation can occur. In this case it took about ten years before the enlarged heart became evident on the chest roentgenogram.

Pate, *et al.*[7] noted congestive heart failure in 14 out of 44 patients (32 per cent) who presented symptoms of arteriovenous fistulae. Two patients could not be followed because one died on the first postoperative day and the second was lost to follow-up. Only 4 patients out of the 12 (33 per cent) who were followed were cured of their heart disease by obliteration of the arteriovenous fistula. Three patients (25 per cent) died with heart failure within three years of surgery. Five patients (42 per cent) were alive three to five years postoperatively but continued to have cardiac disability in spite of digitalis therapy. The patients who obtained good results were younger at the time of injury, younger at the onset of failure, and younger at surgery than the patients who remained in congestive failure following surgery.

In our patient the high output state was relieved by abolition of the vertebral arteriovenous fistula. The resting cardiac output fell from 10.9 L. per minute to 5.7 L. per minute after surgery. There was no evidence of cardiac failure in the preoperative catheterization, since the left ventricular and right ventricular end-diastolic pressures were entirely normal.

Holman[8] demonstrated that blood flow in the distally involved artery is always retrograde toward the fistula. This phenomenon undoubtedly occurred in our case, since the distal vertebral artery was not opacified when the shunt was functioning. Reivich *et al.*[9] reported 2 patients with symptoms of cerebral ischemia produced by reverse of blood flow through the vertebral artery (subclavian steal syndrome), caused by occlusion of the subclavian artery proximal to the origin of the vertebral artery. One case of vertebral arteriovenous fistula reported by Tsuji, Redington, and Kay[2] had episodes of lightheadedness, dizziness, and blurring of vision which were noted only when the patient was upright or sitting, but never when recumbent. These symptoms were produced by the vertebral vein steal. In our case, the steal of blood by the vertebral vein was not significant enough to produce cerebral ischemia. Since the left vertebral artery did not carry blood to the brain when the fistula was functioning, we were assured of safety in performing ligation of the left vertebral artery in this patient. Unilateral ligation, or injury to a vertebral artery, is not always without danger, however. Tsuji, Redington, and Kay[2] reviewed 5 cases of brain necrosis with death which followed unilateral ligation of the vertebral artery.

Harris *et al.*[10] postulated that the apical systolic murmur in patients with high cardiac output states is probably related to vibration of a solid structure, such as a portion of myocardium or adjacent vascular tissues, and not due to turbulence of blood flow. In our patient the apical systolic murmur persisted, but it had decreased from Grade II/VI to Grade I/VI on his eight and one-half year follow-up.

An unusual manifestation in our case was the finding that the murmur in the neck could be abolished by turning the patient's head toward the left. Apparently, turning the head would put tension on the tissue surrounding the fistulous tract, causing almost complete obliteration of the shunt by this maneuver. The slowing of the heart rate by obliteration of the fistula has previously been described by Branhan.[11] This appears to be related to a baroreceptor response to the increase in systemic blood pressure after closure of the fistula.[8] It is of interest that our patient learned how to obliterate his fistula by turning his head to the left when he slept. The angiogram revealed that vertebral flow was normal when the patient's head was turned to the left (Fig. 2B).

Summary

A case of intermittent vertebral arteriovenous fistula secondary to cervical stab wound is reported with the unusual feature that the fistula produced a whistle noise when it was functioning, and that this noise disappeared when the fistula was closed off by turning the patient's head toward the left side. The intermittent nature of this fistula was demonstrated clearly by the angiographic studies. The fistula was treated successfully by ligation of the vertebral artery proximally and distally to the fistula. Cardiomegaly, which appeared ten years after the cervical stab wound, disappeared after surgery.

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SUBCAPSULAR HEMATOMA OF SPLEEN

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The increasing number of clinical reports in recent years concerning splenic rupture can be related to the rising incidence of high-speed automobile accidents, sports injuries, industrial accidents, and assaults associated with penetrating wounds, including stab and gunshot wounds. According to Calamel, Cleveland, and Waddell[1] "The ratio of admissions for splenic trauma to general surgical admissions in the nature, diagnosis, and management of splenic injury are, therefore, of increasing interest." The case described in this report had a delayed rupture of the spleen occurring more than two and a half months after an injury which the patient could not recall.

Case report

A fifty-year-old Puerto Rican male, was admitted to the Cumberland Division of the Brooklyn-Cumberland Medical Center because of a tender mass of two months' duration in the left upper quadrant of the abdomen. He recalled no history of trauma, but during the two-month period visited the emergency rooms of three Brooklyn medical centers because of intermittent dull left upper quadrant tenderness with no other complaints. Two days prior to admission he began to have frequent emesis of gastric contents without bile. No history of dizziness, fainting, or contributory injury was obtained. His past history was unremarkable except for a suprapubic prostatectomy performed elsewhere five months before admission.

On admission his blood pressure was 130/94 mm. Hg, his pulse rate 84 per minute, and his temperature 98.6° F. The abdomen contained a moderately tender, ill-defined, left upper quadrant mass which moved with respiration, and was about 12 by 10 cm. in size. There was no rebound tenderness or rigidity. The remainder of the abdomen was soft, not distended, and with normal active bowel sounds. Rectal examination was negative except for mild tenderness on pressure over the fold of Douglas. The hemoglobin was 8.7 Gm. per 100 ml. and the hematocrit was 27. The white blood cell count was 20,810 per cubic millimeter with no shift on differential count. The remainder of his blood count showed no other abnormalities.

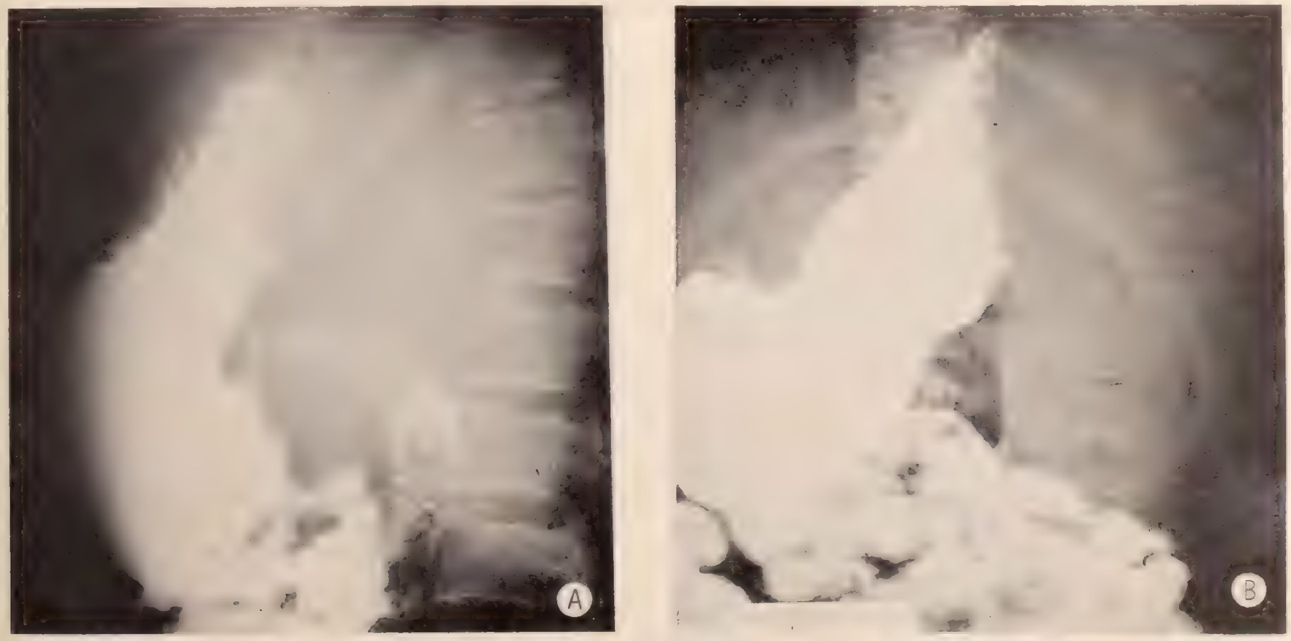

FIGURE 1. Roentgenograms gastrointestinal series. (A) Lateral view of stomach showing anterior displacement. (B) Anterior view of stomach showing displacement to right.

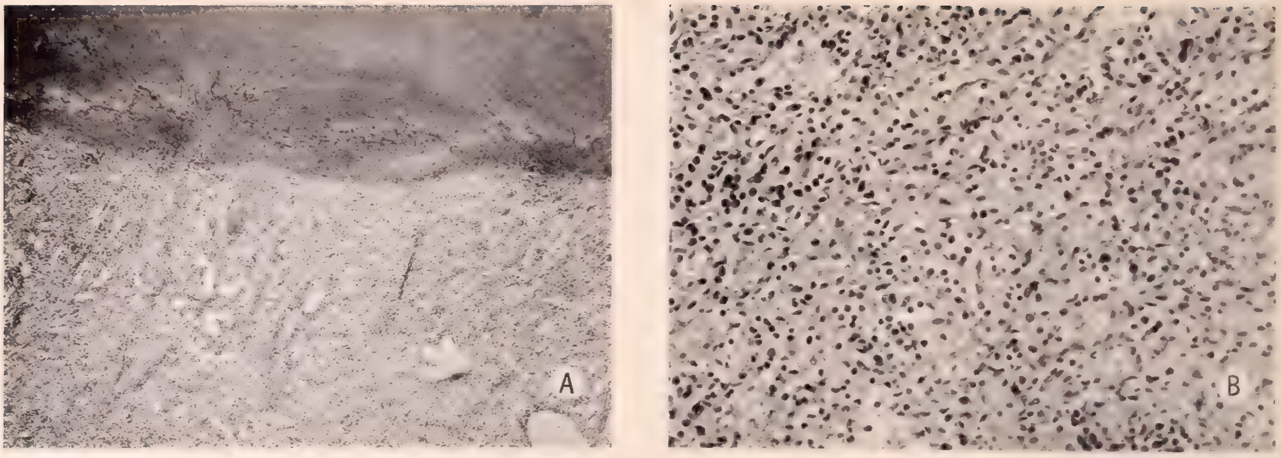

FIGURE 2. Photomicrographs. (A) Margin of laceration in spleen showing thick layer of clotted blood with evidences of early organization. (B) Spleen showing engorged sinuses and striking number of plasma cells.

The urine examination and blood chemistry findings, including serum amylase, were reported within normal limits. An upper gastrointestinal series showed indentation of the proximal half of the greater curvature of the stomach as well as an irregular mass occupying the splenic area and deviating the stomach toward the midline (Fig. 1).

With a diagnosis of splenic enlargement of unknown cause or pancreatic cyst, four days after admission an exploratory laparotomy was performed. No free blood or fluid was found in the peritoneal cavity. A large splenic mass, 25 by 20 cm., was found adherent to the left hemidiaphragm, greater curvature of the stomach, greater omentum, and the tail of the pancreas. There was an encapsulated hematoma in the pelvis containing about 150 cc. of old blood. During the dissection of the splenic mass, the latter ruptured and liberated about 1,500 cc. of blood having the same characteristics as the retrovesical hematoma. A splenectomy with partial omentectomy was performed. The postoperative course was uneventful.

Pathology. The spleen weighed 533 Gm. and measured 17 cm. along its greatest dimension. It presented an irregular rent over the mid-convex surface which was covered by a large amount of old clotted blood. Microscopic examination revealed a thick layer of clotted blood with evidences of early organization. The red pulp showed dilated and engorged sinuses (Fig. 2).

Comments

The number of delayed ruptures of the spleen reported in the literature has not been voluminous. Up to 1966 only 312 case reports have been collected by Sizer, Wayne, and Frederick.[2] The incidence of recognized delayed rupture, as compared with immediate rupture, varies in different reported series from 20 to 30 per cent. McIndoe[3] was the first to set an arbitrary time limit to the "latent period of Baudet" and defined delayed splenic rupture as any rupture of this organ manifesting itself forty-eight hours after the initial injury. In Sizer, Wayne, and Frederick's[2] collected series, 50 per cent of such cases showed symptoms within one week, 25 per cent in the second week, and only 10 per cent after one month. The longest recorded intervals have been two years, reported by Zabinski and Harkins,[4] and ten months, reported by Terry, Self, and Howard.[5]

Some case reports of spontaneous rupture of the normal spleen have appeared in the literature along with larger numbers of cases of spontaneous rupture associated with infectious mononucleosis, malaria, typhoid fever, leukemia, Gaucher's disease, and sarcoidosis. However, spontaneous rupture of the spleen occurring without antecedent trauma is such a rarity that several authors have disputed its existence. Gilbert, Goldzieher, and Cook[6] prefer to use the term "insidious rupture of the spleen," implying that a previous trauma almost always exists, although it may have been so trivial that it is forgotten by the patient.

It is usually difficult to arrive at a correct preoperative diagnosis, especially when the antecedent trauma has been trivial or obscured by alcoholism. In our case, this was compounded by the fact that there were no signs of internal hemorrhage, trauma, hematoma, or ecchymosis of the left lower chest and upper abdomen, or evidence of rib fracture which is present in 10 to 50 per cent of such patients.

The signs and symptoms shortly after splenic rupture are those of internal hemorrhage, shock, and peritoneal irritation. Kehr's sign (pain referred to the left shoulder due to diaphragmatic irritation by intraperitoneal blood) is present in from 20 to 40 per cent of cases. Abdominal pain, with or without rigidity or guarding, is more constant in an immediate rupture. Signs of abdominal distention and mass in the left upper quadrant of the abdomen are less frequent. X-ray examination is not always helpful, but finding an enlarged splenic shadow or indentation of the greater curvature of the stomach associated with a previous history of trauma is invaluable, especially in delayed ruptures. Selective abdominal angiography in those cases of delayed splenic rupture has been found to be of increasing merit lately. Splenic scan is still in the experimental stage and is meaningful only if an enlarged spleen can be demonstrated. Abdominal taps in the four quadrants are valuable if results are positive, but negative findings do not rule out the possibility of splenic rupture. A low hemoglobin and hematocrit may be of value only after a history of trauma. Only 27 out of 68 had hemoglobin below 11 Gm. per 100 ml. in the series of Donhauser and Locke.[7] An interesting phenomenon is the rise of the white blood count with splenic rupture. This is not specific, but it may be helpful in association with other symptoms.

The pathologic examination of the specimen in the reported case indicated an old 5-cm. tear in the spleen running from the convex side of the spleen to the hilum. The tear was sealed off by the neighboring omentum. Willox[8] defined a delayed primary rupture of the spleen as either a subcapsular hemorrhage or a renewed hemorrhage from a laceration after initial tamponade by the omentum or surrounding structures. In this patient, the splenic rupture was apparently sealed by omentum. However, progressive distention of the capsule by old clot and serum collection finally produced the large tender mass which brought the patient to the hospital.

Conclusions

While delayed rupture of the spleen represents only 30 per cent of the total reported splenic ruptures, it may present a diagnostic problem because the usual signs of hemorrhage may be lacking. Seventy-five per cent of reported delayed splenic ruptures occur before two weeks after initial injury, but surgeons must be aware that the latent period may extend up to two years.

A history of antecedent trauma may have been so insignificant that it is easily overlooked by the patient.

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Special Article

PREVENTION OF CERVIX CANCER DEATHS THROUGH HOSPITAL SCREENING

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More than 7,000 deaths from cancer of the cervix occur annually in the United States; 600 in New York State.[1,2] The Papanicolaou smear which detects cervical cancer in an early curable stage can prevent many of these unnecessary tragedies. However, the effectiveness of even the best screening procedure may be limited by an inability to reach large segments of the population at risk. Routine uterine cytology performed on all adult women admitted to hospitals would provide an excellent opportunity for screening large numbers of women at risk of developing cervix cancer.

The general objective of this study was to develop an estimate of the potential reduction in cervix cancer mortality rates which might result in New York State if all women twenty-five years of age or over received a routine "Pap" smear on hospital admission. More specifically, what percentage of women dying from cervix cancer are hospitalized prior to the initial diagnosis without receiving a Papanicolaou smear or cervical biopsy? Admissions occurring within a reasonable period prior to the diagnosis of invasive disease should provide a definite opportunity for detecting cervix cancer in the curable in situ stage.

Methods and materials

Hospital records of women who died from cancer of the uterine cervix in selected urban areas of New York State from 1967 through 1969 were studied. A standardized abstract form was used to collect selected demographic, clinical, and laboratory data on each woman. These hospital records were also carefully scrutinized to determine which women had been hospitalized prior to initial diagnosis without receiving a "Pap" smear or cervical biopsy during these admissions. When previous hospitalizations were thought to have occurred at other institutions, these records were also examined. Only hospitalizations occurring within five years of the initial diagnosis were considered as possible opportunities for detecting the in situ lesion. Stage of disease was determined from hospital records or registry reports.

TABLE I. Hospitalization within five years prior to initial diagnosis of women who died with cervix cancer from selected georgraphic areas, New York State, 1967–1969

Geographic Area	Number of Women Dying from Cervix Cancer	Women Hospitalized Within Five Years Prior to Initial Diagnosis Without "Pap" Smear or Cervical Biopsy Number	Per cent
All areas	427	51	11.9
Capital district	72	12	16.7
Western New York	153	16	10.5
Central New York	77	8	10.4
White Plains	125	15	12.0

Table II. History of hospitalization within five years prior to initial diagnosis of women who died from cervix cancer, by number of prior admissions without a "Pap" smear or cervical biopsy, in selected urban areas, New York State 1967–1969

Number of Hospitalizations Within Five Years Prior to Initial Diagnosis, Without "Pap" Smear or Cervical Biopsy	Number of Women Dying from Cervix Cancer Number	Per cent
One	32	62.7
Two	11	21.6
Three or more	8	15.7
TOTAL	51	100.0

Results

The hospital records of 427 women who died with cancer of the uterine cervix in 14 urban areas of New York State from 1967 to 1969 were reviewed. Fifty-one or 11.9 per cent of these women had been hospitalized within five years prior to initial diagnosis without receiving a Papanicolaou smear or cervical biopsy (Table I). Minor regional varia-

TABLE III. History of hospitalization within five years prior to initial diagnosis, of women who died with cervix cancer, by age at diagnosis, selected urban areas, New York State 1967–1969

Age at Diagnosis (Years)	Number of Women Dying From Cervix Cancer	Women Hospitalized Within Five Years Prior to Initial Diagnosis, Without "Pap" Smear or Cervical Biopsy	
		Number	Per cent
25–54	188	20	10.6
55 or older	239	31	13.0
TOTAL	427	51	11.9

tion can also be observed from the data presented. However, differences in the completeness of hospital records among the areas studied may be responsible for part of this variation. More than one third of those women with a history of prior admission had been hospitalized more than once, while approximately 16 per cent had three or more prior admissions (Table II).

Age differences were also present with a lower percentage of prior admissions (10.6 per cent) observed among women twenty-five to fifty-four years of age than in women fifty-five years of age or older (13.0 per cent) (Table III). The importance of this finding will be discussed at greater length later.

The per cent of women hospitalized prior to diagnosis without a "Pap" smear or cervical biopsy and the mean interval between the most recent prior hospitalization and the date of initial diagnosis also varied according to clinical stage at the time of diagnosis (Table IV). The large number of deaths where the initial clinical stage was unknown, may account for part of this variability. The average interval between the most recent prior hospitalization and the date of initial diagnosis was 2.07 years for all stages combined. The longest interval was reported for those cases originally diagnosed as clinical stage IV and the shortest interval for those diagnosed as clinical stage II.

Most important, the data indicate that approximately 75 deaths from cancer of the cervix might be prevented annually in New York State through routine screening of adult hospitalized women. This estimate has been derived by applying the percentage of women with previous hospitalization histories to the average annual number of cervix cancer deaths occurring in New York State from 1967 to 1969:

Cervix cancer deaths (634) × 11.9 per cent = 75 potentially preventable deaths per annum.

According to calculations based on New York State vital statistics, each of these women loses an average of nineteen years of life expectancy.

Although the figures represent estimates that could be accomplished only under ideal conditions, it is evident from the data that hospital screening can prevent a sizable number of the cervix cancer deaths occurring in this State.

Comment

This estimate of the number of cervix cancer deaths which can be prevented through routine hospital screening rests on reported calculations of the duration of the in situ stage. The selection of a five-year maximum duration has been based on a review of the literature, which suggests a much longer average duration approaching ten years. Because the natural history of cervix cancer is not entirely understood, data relating to the duration of the in situ lesion have been calculated by several indirect methods.

First, the duration of the in situ lesion has been estimated from the difference in the mean age of women with in situ and invasive disease. Results derived from cytologic screening in extended clinic and community-wide programs have all indicated an average duration approaching ten years (Table V). This is consistent with data in the New York State Cancer Registry.

Estimates concerning the average duration of the in situ lesion have also been derived from calcula-

TABLE IV. Interval between most recent previous hospitalization and date of initial diagnosis, women who died from cancer of the uterine cervix by stage at diagnosis selected urban areas, New York State, 1967–69

Stage at Diagnosis	Number of Women Dying from Cervix Cancer	Women Hospitalized Within Five Years Prior to Initial Diagnosis, Without "Pap" Smear or Cervical Biopsy		Mean Interval in Years Between Most Recent Previous Hospitalization and Date of Initial Diagnosis
		Number	Per cent	
0	10	1	10.0	...
I	84	10	11.9	2.40
II	96	6	6.3	1.62
III	101	12	11.9	1.86
IV	80	7	8.8	3.04
Unknown	56	15	26.8	1.64
TOTAL	427	51	11.9	2.07

TABLE V. Duration of the in situ lesion based on the difference in mean age of women with in situ and invasive cervix cancer

Author	Year of Report	Mean Age (years) In situ	Mean Age (years) Invasive	Duration (years)
Nieburgs *et al.*[3]	1957	39.0	47.8	8.8
Stern[4]	1958	43.3	57.6*	14.3
MacGregor and Baird[5]	1963	39.6	48.3	8.7
Bryans, Boyes, and Fidler[6]	1964	42.3	52.1	9.8
Ruch *et al.*[7]	1964	40.0	52.0	12.0
Garrett[8]	1964	41.6	53.0	11.4
Marshall[9]	1965	40.7	50.3	9.6
Burns *et al.*[10]	1968	40.3	51.6	11.3
Christopherson *et al.*[11]	1970	39.1	49.9	10.8

* Stages II–IV only.

tions involving incidence and prevalence data. Dunn and Martin,[12] by calculating the ratio of in situ incidence to prevalence, as reported from the San Diego Cytology Registry, have estimated the average duration of the in situ lesion to be 8.1 years. This procedure, when applied to data from British Columbia, provides an estimate of 12.6 years' duration.[13]

Kashgarian and Dunn[14] also calculated in situ incidence: prevalence ratios for data obtained from the community-wide screening program in Shelby County, Tennessee. These data indicate racial differences in the duration of the in situ lesion with an average duration of 10.7 years for whites and 8.5 years for Negroes. Age differences were also reported with the longest average duration of sixteen years observed among women twenty-five to thirty-five years of age, and the shortest duration of one year occurring about age sixty-five. The authors caution that the short duration calculated for older women may reflect this group's tendency to avoid screening in the absence of definite symptoms.

Finally, longitudinal observation of untreated patients with preinvasive changes of the cervical epithelium have also been used to estimate the duration of the in situ lesion. Lange[15] reported that 24 of 100 patients, defined as having "precancerosis," developed invasive cancer of the uterine cervix within five months to ten years. Peterson[16] in observing a similar series of patients which he described as having either "epithelial hyperplasia with nuclear abnormalities: noninvasive carcinoma," or "borderline cases with doubtful frank invasion," reported 25.9 per cent developed histologically proved cancers within five to sixty-seven months.

Clemmesen,[17] however, cautioned that these series comprised a mixture of cases, some of which would be described in the United States as "severe dysplasia." Possible removal of the cancer by biopsy would also affect the number of lesions progressing to invasive disease.

A Papanicolaou smear performed within five years prior to the diagnosis of invasive cervix cancer should provide an excellent opportunity for detecting the in situ lesion. Women who are hospitalized within five years of the initial diagnosis of cervix cancer and receive a Papanicolaou smear or cervical biopsy definitely represent a reservoir of potentially preventable deaths.

Cytologic screening performed within the hospital may also be valuable in providing for the early detection of those cases which have already progressed to invasive disease. Kaiser *et al.*[18] compared the proportion of invasive cases diagnosed as clinical stage I following five years of intense community-wide screening in Shelby County, Tennessee, with the proportion observed in the same community prior to the program. The authors report that during the initial five years of mass screening 57 per cent of the invasive cases were detected as clinical stage I, while only 34 per cent were detected as stage I during the two-and-a-half-year period immediately preceding the start of the survey. The percentage of invasive cases diagnosed as clinical stage I was 86 per cent and 57 per cent for the two periods respectively when the analysis was limited to asymptomatic cases only.

The State of New York Department of Health has, for many years, promoted the use of cervical cytology for hospital inpatients. In the early 1960s the department developed a training program for cytotechnicians in addition to hospital demonstration programs.[19] In an attempt to further increase the use of the "Pap" smear in 1967, the New York State Hospital Review and Planning Council approved a new amendment to the Hospital Code. This amendment, which received the full endorsement of the Medical Society of the State of New York, requires a uterine cytologic smear for women admitted to New York State hospitals. Coverage under the amended code is currently limited to women twenty-five through fifty-four years of age.

The provisions of the code also do not apply where the procedure is medically contraindicated or where it has been performed within three years prior to admission.

The Committee on Cancer of the Medical Society of the State of New York has suggested that additional changes be made in the existing code, including removal of the upper age limitation of fifty-four years and a reduction of the three-year interval to one year. These changes would, of course, provide broader coverage. Approximately 63 per cent of all deaths attributed to cervix cancer in New York State for the period 1967 to 1969 occurred in women fifty-five years of age or older and not currently covered by the existing code. Also, the data presented in Table III indicate that this older group of women tends to be hospitalized more frequently prior to the initial diagnosis of invasive disease.

Summary

The objective of the present study was to develop an estimate of the potential reduction in cervix cancer mortality rates which might result in New York State if adult women received a routine Papanicolaou smear on admission to a hospital.

Fifty-one, or 11.9 per cent of 427 women who died from cancer of the uterine cervix in 14 selected urban areas of New York State from 1967 through 1969 had been hospitalized within five years prior to initial diagnosis without receiving a "Pap" smear or cervical biopsy. By applying this percentage to the average annual number of cervix cancer deaths occurring in New York State from 1967 through 1969, it can be estimated that approximately 75 deaths attributed to cancer of the cervix might be prevented annually in New York through routine cytologic testing of all hospitalized women.

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DEDICATION OF HEADQUARTERS

Medical Society of the State of New York

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Chairman, Board of Trustees, Medical Society of the State of New York

All of us, I am sure, are delighted to be witness to the completion and to the dedication of this beautiful building, the home and headquarters of the Medical Society of the State of New York.

Many of you and many of our members are not familiar with what a group of nomads we, as a Medical Society, have been over the years. The dedication of this building, being held in this tent, probably has some significance in history. In early years in New York, we wandered to some extent in tribes, without a home of our own. Meetings of the Society were held in various places where space could be found. Some of our meetings were held in the State Capitol in Albany in conjunction with the State legislature. In fact the president of our Medical Society in those days gave an address and a report to the State legislature on the status of the "public health" in our State. History would appear to indicate that in the early 1800s, the legislature was in close contact with, and was continually seeking the advice of the Medical Society and the medical profession relevant to medical problems of the day.

Subsequently in the early 1900s, the Medical Society established its first headquarters at 64 Madison Avenue, New York City. Incidentally, as chairman of the Board of Trustees and with the responsibilities of the keeping of the funds, I am somewhat amused looking at this magnificant building and realizing that the rental for our first headquarters was $500.00 per year.

During the succeeding years and up to the present time we have occupied six different locations, all in New York City. The first location was at 64 Madison Avenue, then 17 West 43rd Street, and 2 East 103rd Street in the New York Academy of Medicine building. Subsequently, we were located at 292 Madison Avenue, 386 Fourth Avenue, and 750 Third Avenue. We have now moved to the first "home" of our own, 420 Lakeville Road, Lake Success.

There are, I am sure, many anecdotes about these various sites. The first perhaps and foremost is that the move from our original headquarters at 64 Madison Avenue was made because the rent was increased above $500.00 per year, and this was considered, according to the Council notes, too high and too excessive.

The minutes of the Council also refer to meetings of the Council at which "late arriving members had to stand because of a lack of sufficient chairs."

As early as 1927, however, reference was made to the possible "establishment of a permanent home," like our neighboring State of Pennsylvania. This was given in the annual report of the, then president, James E. Sadlier, M.D., of Poughkeepsie, New York. At about that time a fund was established which was entitled "The Wear, Tear, Loss, and Depreciation Fund." This probably was the beginning of what is now known as our building fund.

Because of the limited size and space in our early headquarters' offices, it was often necessary, to the delight of the staff, to give them part of the day off when the Council met so that the latter would have sufficient space and adequate chairs to hold their meeting. While this arrangement apparently met with the approval of the staff, it was not well received by some of the more frugal members of the Council and Board of Trustees, nor was it considered conducive to the peace of mind of the then secretary of the Society. Therefore, arrangements were made, with the approval of the House of Delegates, to hire an outside room for the Council meetings, so as not to interfere with the routine work of the society staff.

During this era the Bronx County Medical Society, by resolution in the House of Delegates, objected to the inaccessibility of the headquarters at the Academy of Medicine Building, requesting more centrally located offices. This request or suggestion was disapproved and, in essence, ignored by the Reference Committee and by the House of Delegates. This reminds me somewhat of the suggestion that was made in recent years for Albany as a more accessible location for our permanent headquarters.

The need for improved and larger quarters was continually referred to over a period of years. When I first became a member of the Council in 1957, one of the major items of discussion then was the need for additional space and improved headquarters. Walter Mott, M.D., was chairman of the committee given the task to find more suitable headquarters. I remember well Dr. Mott's report and the recommendations of his committee, pointing out that they had searched Manhattan, but rents were too high; and with sincere apology and assurance of the future, they were recommending 750 Third Avenue.

Dr. Mott stated that they were fearful of the then "Third Avenue" and apologized for the suggestion of the location of our headquarters in this part of the city. But he pointed out that the costs "West of Third Avenue" were unapproachable and that the Society could not afford the rents that were being requested in mid-Manhattan. He did assure the Council, however, that he had been advised and he personally believed that within a few years Third Avenue would be one of the leading "business avenues of Manhattan." This, of course, has become a true reality.

Still the members of our Medical Society continued as "restless renters," the Society being further stimulated to have its own home by the reports of some our past presidents. It was noted that in the annual report of Stanley Kenney, M.D., and Andrew Eggston, M.D., during their terms of office as president, reference was made as to the desirability and the possibility of our owning our own home. The real impetus however for our obtaining a home of our own came from a physician named Henry Fineberg, M.D. Not having been a tax-paying property owner up to that time, he did not know about the shoveling of snow in the winter and the mowing of the lawns in the summer, but he now has that chore to face up to.

After all these years with a trunkful of rent receipts and a lot of empty aspirin bottles, we are in our own home, a beautiful building, a delightful location, and with the stimulation, desire, and determination to continue forward in the protection of the public health and the providing of high quality medical care to the people of the State of New York.

We all realize that we as a profession are "damn ed by some," but "God forgive them, for they know not what they do." We know we are not perfect; we know there is much to do.

We know there is need for some changes in the delivery of medical care, just as there is need for changes in labor, business, government, industry, sales, advertising, and news reporting—yes, in all spheres of our life and economy. We further know that in spite of our critics and those who would change it all for something entirely new, our people have the finest overall medical care available anywhere in the world.

We know we have "some bad apples in the barrel." Name a profession, a business, or enterprise that does not. The Lord himself had twelve disciples and one was no good. That according to my calculations is 8 per cent, and as I look at all groups and organizations, including our own, that is about the correct percentage.

We know we need to make some changes to improve our ability to deliver high quality medical care to all the people; and with the cooperation of government and all other involved groups, we will and can make the necessary changes to meet the needs of modern America.

We will build on the sound and proved methods of the past and of the present, so as to provide for all the people of our State the best of medical care. We shall further, through our influence and cooperation with the medical societies of all the other states and with the American Medical Association, provide this same best care for all the people of these our United States.

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ROLE OF PHYSICIANS AND SURGEONS OF THE NEW YORK HOSPITAL IN ORGANIZED MEDICINE

New York City in the eighteenth and early nineteenth centuries

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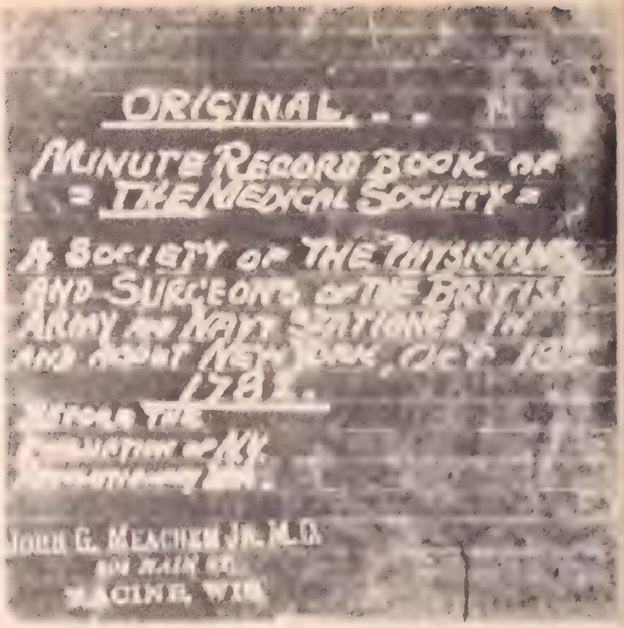

FIGURE 1. First medical society (1782–1783) in New York with records of meetings and names of physicians attending. Found by the author in the Meachem papers in the Wisconsin Historical Society, Madison, Wisconsin, in 1968.

The role of the physicians and surgeons of The New York Hospital in organized medicine in New York City in the eighteenth and early nineteenth centuries is an interesting commentary on their professional life. The records of this role are based on much previously unpublished material. One of the most interesting items of this material is a minute record book of "The Medical Society—1782-1783" (Fig. 1). This was a society of the physicians and surgeons of the British Army stationed in and about New York after hostilities had stopped and before the Treaty of Paris had been signed. This record book was owned by John G. Meachem, M.D., of Racine, Wisconsin, who gave it to the State Historical Society of Wisconsin in Madison, Wisconsin. This medical society had been mentioned in 1948 by Gertrude Annan* to whom I am indebted for the history of the earliest medical societies in New York City. This is the first medical society in New York City with a minute record book containing lists of members and invited guests with dates of attendance.

Early history

James Tillary, a Scottish surgeon in the British Army, was a founder member of this society. He attended regularly, presided on a few occasions, and was to become an active and beloved physician in New York after the Revolution. There was only one other British physician who remained in New York. This was William Young, who practiced on Staten Island and from whose descendants this minute record book came into the hands of Dr. Meachem in Wisconsin. Tillary will be mentioned later as an active member of organized medicine in New York City. His talent for diplomatic and appropriate professional conduct was noteworthy.

John Charlton, Richard Bayley, and Samuel Nicholl were New York Tory physicians who attended the Society as guests. Their names are recorded as well as the dates of their attendance.

Previous societies mentioned by Annan are the Weekly Society of Gentlemen, 1749, (Fig. 2) and the societies mentioned by Peter Middleton in his Medical Discourse of 1769 (Fig. 3). The first society was addressed by John Bard, father of Samuel Bard, whom he inspired to initiate The New York Hospital and who heads the list of the staff. None of these societies have records of membership or attendance.

After the Revolutionary War, and particularly the "Doctors' Riot" of 1788, a medical society was formed which was later noted in the *Medical Register of the City of New York for the Year 1862*, compiled by George Tucker. According to the register, meetings were held with considerable regularity. Officers were John Bard, president; John Charlton, vice-president, and James Tillary, secretary. Twenty-nine members of this society

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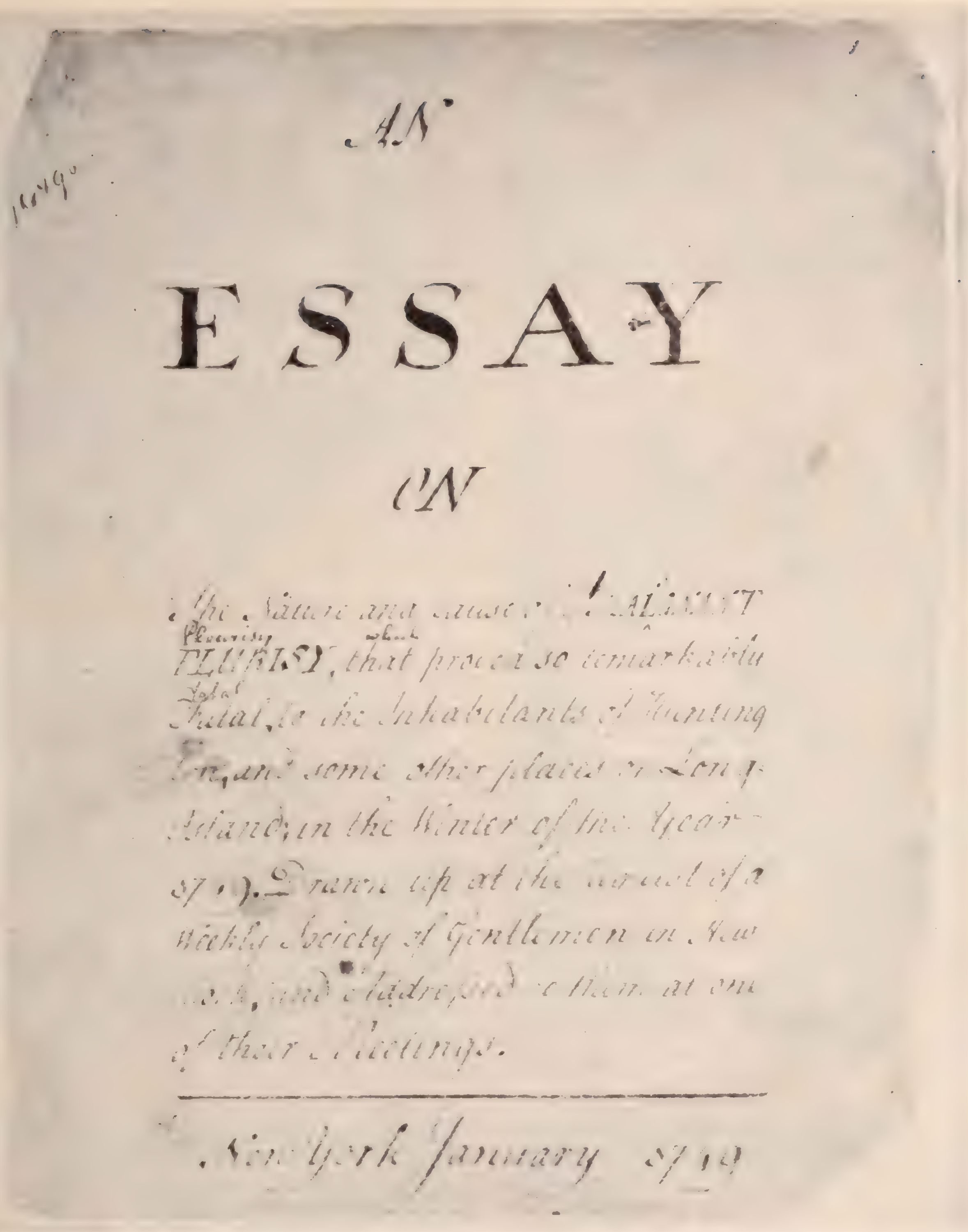
*Annan, G.: The Academy of Medicine of New York, 1825-1830, and its contemporary, The New York Medical Academy, Bull. Med. Library Assoc. 36: 117 (1948).



AN

ESSAY

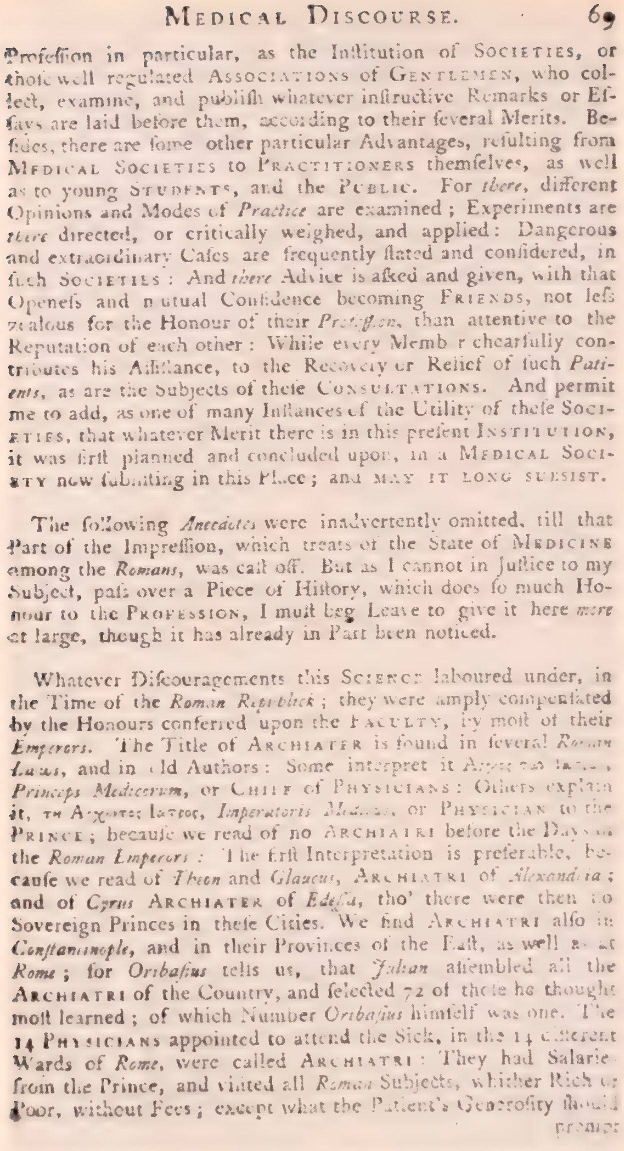
ON

The Nature and Cause of a MALIGNANT PLEURISY, that proved so remarkably Fatal, to the Inhabitants of Huntington, and some other places on Long Island, in the Winter of the Year 1749. Drawn up at the request of a weekly Society of Gentlemen in New York, and addressed to them at one of their Meetings.

New York January 1749

FIGURE 2. *Weekly Society of Gentlemen in New York.* Title page of manuscript essay by John Bard, M.D. (1749). Gertrude Annan did not believe that this society was purely a medical society, since it was not described as such by Bard, nor mentioned by Cadwallader Colten.

are listed in the New York Directory of 1793. Of these, only 13 were ever associated with The New York Hospital. No minutes of this society are extant until 1794, when it seems to have changed its name to the Medical Society of the State of New York. The minute records of this society are in manuscript in the Rare Book Room of the New York Academy of Medicine. They were reprinted by the Medical Society of the County of New York in 1878, when the society was referred to as the "So-called Medical Society of the State of New York" (Fig. 4).



MEDICAL DISCOURSE. 69

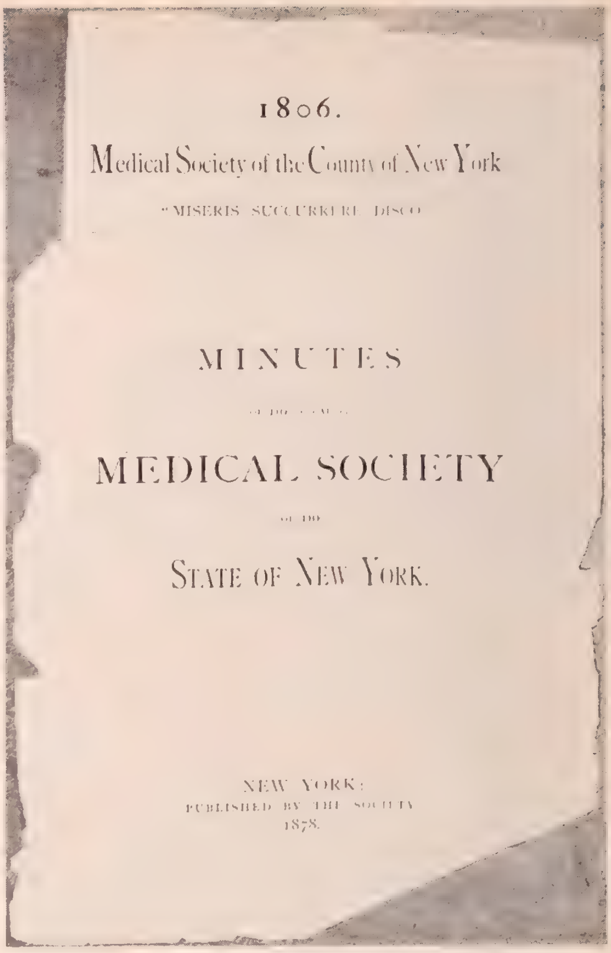
Profeſſion in particular, as the Inſtitution of SOCIETIES, or thoſe well regulated ASSOCIATIONS of GENTLEMEN, who collect, examine, and publiſh whatever inſtructive Remarks or Eſſays are laid before them, according to their ſeveral Merits. Beſides, there are ſome other particular Advantages, reſulting from MEDICAL SOCIETIES to PRACTITIONERS themſelves, as well as to young STUDENTS, and the PUBLIC. For *there*, different Opinions and Modes of *Practice* are examined; Experiments are *there* directed, or critically weighed, and applied: Dangerous and extraordinary Caſes are frequently ſtated and conſidered, in ſuch SOCIETIES: And *there* Advice is aſked and given, with that Openeſs and mutual Confidence becoming FRIENDS, not leſs zealous for the Honour of their *Profeſſion*, than attentive to the Reputation of each other: While every Member chearfully contributes his Aſſiſtance, to the Recovery or Relief of ſuch *Patients*, as are the Subjects of theſe CONSULTATIONS. And permit me to add, as one of many Inſtances of the Utility of theſe SOCIETIES, that whatever Merit there is in this preſent INSTITUTION, it was firſt planned and concluded upon, in a MEDICAL SOCIETY now ſubſiſting in this Place; and MAY IT LONG SUBSIST.

The following *Anecdotes* were inadvertently omitted, till that Part of the Impreſſion, which treats of the State of MEDICINE among the *Romans*, was caſt off. But as I cannot in Juſtice to my Subject, paſs over a Piece of Hiſtory, which does ſo much Honour to the PROFESSION, I muſt beg Leave to give it here *more* at large, though it has already in Part been noticed.

Whatever Diſcouragements this SCIENCE laboured under, in the Time of the *Roman Republick*; they were amply compenſated by the Honours conferred upon the FACULTY, by moſt of their *Emperors*. The Title of ARCHIATER is found in ſeveral *Roman Laws*, and in old Authors: Some interpret it [illegible], *Princeps Medicorum*, or CHIEF of PHYSICIANS: Others explain it, τῳ Ἄρχοντος Ἰατρὸς, *Imperatoris Medicus*, or PHYSICIAN to the PRINCE; becauſe we read of no ARCHIATRI before the Days of the *Roman Emperors*: The firſt Interpretation is preferable, becauſe we read of *Theon* and *Glaucus*, ARCHIATRI of *Alexandria*; and of *Cyrus* ARCHIATER of *Edeſſa*, tho' there were then no Sovereign Princes in theſe Cities. We find ARCHIATRI alſo in *Conſtantinople*, and in their Provinces of the Eaſt, as well as at *Rome*; for *Oribaſius* tells us, that *Julian* aſſembled all the ARCHIATRI of the Country, and ſelected 72 of theſe he thought moſt learned; of which Number *Oribaſius* himſelf was one. The 14 PHYSICIANS appointed to attend the Sick, in the 14 different Wards of *Rome*, were called ARCHIATRI: They had Salaries from the Prince, and viſited all *Roman* Subjects, whether Rich or Poor, without Fees; except what the Patient's Generoſity ſhould

prompt

FIGURE 3. First mention of an organized medical society in *A Medical Discourse or an Historical Inquiry into the Ancient and Present State of Medicine . . . 1769* by Peter Middleton, M.D. No records of such a society exists aside from this mention.



1806.

Medical Society of the County of New York

"MISERIS SUCCURRERE DISCO"

MINUTES

[illegible]

MEDICAL SOCIETY

OF THE

STATE OF NEW YORK.

NEW YORK:
PUBLISHED BY THE SOCIETY
1878.

FIGURE 4. The So-called Medical Society of the State of New York. The handwritten manuscript is in the Rare Book Room of the New York Academy of Medicine. It was printed by the Medical Society of the County of New York, in 1878. The record runs from 1794 to 1806, when it was voluntarily disbanded. The society actually was established in 1788 with John Bard as president from 1788 to 1793. The Medical register of the City of New York for the year 1862, compiled by George Tucker and printed by George Russell gives the list of officers. The New York City Directory of 1793 gives the list of members.

John Charlton was president of this society from 1794 to 1804. Samuel Bard was a censor in 1795, 1796, and 1797. Bard retired in 1798 to Hyde Park in Dutchess County. While he returned irregularly at the behest of David Hosack to preside at the medical school at Columbia, he never joined the present Medical Society of the County of New York, founded in 1806. The first president of the latter society, Nicholas Romayne, was Bard's arch opponent. Many other members of The New York Hospital were members and served in an official capacity in this society.

The Medical Society of the State of New York, 1794 to 1806, was voluntarily disbanded by its members when the Medical Society of the County of New York was established by act of the Legislature. The manuscript record books of the Medical Society of the County of New York are in repository in the New York Academy of Medicine. The Legislative Act of 1806 granted each county medical society the legal right to license applicants for the practice of medicine after presenting suitable evidence of appropriate training and submitting to an examination conducted by the censors elected by the society. Since the record of these examinations and applications for licensure constituted important legal facts, these records were bound and carefully recorded. In addition there were unbound papers, broadsides, and documents which have recently been found contained in a breadbox

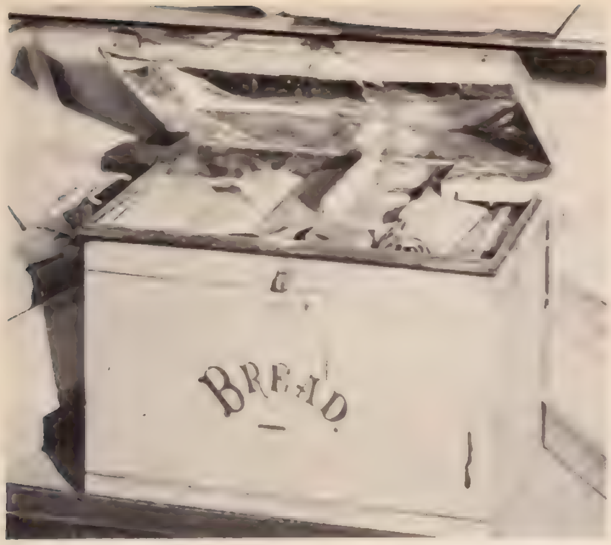
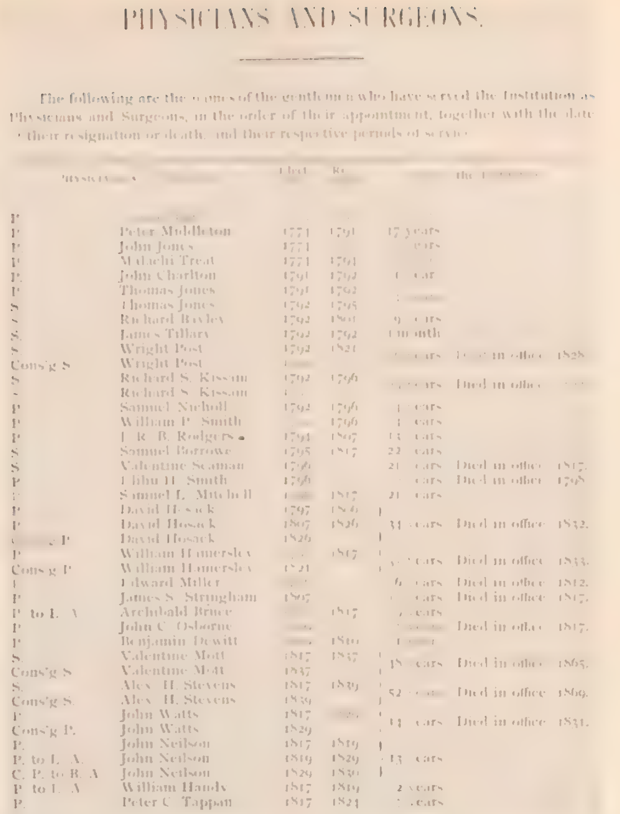


FIGURE 5. Breadbox containing unbound papers, broadsides, and documents, found in a closet of the Medical Society of the County of New York. Archives of the Medical Society of the County of New York, reprinted from *New York Medicine*, August, 1968.

in a closet of the society (Fig. 5). Another valuable archive is a set of four notebooks containing biographical material about the earliest members of the society. Much of the information in this report is contained in these notebooks. These have never been published although they have been invaluable archives for previous research over the years.*

Of the first eight presidents of the Medical Society of the County of New York (1806) six were members of The New York Hospital. Their years of presidency were: James Tillary, 1808 to 1812; William Moore, 1813; John R. B. Rodgers, 1814 to 1820; Gilbert Smith, 1822; and John Watts, 1823. Wright Post was a censor from 1806 to 1816, and vice president from 1813 to 1818. Richard Kissan was a censor in 1812. Samuel Borrowe was a censor in 1808. Valentine Gravan was treasurer in 1806, and censor in 1808 and 1811. David Hosack was president in 1824, and censor in 1806, 1807, and 1810. William Hamersley was vice president in 1819, and censor for many years. Edward Miller was elected first secretary in 1806, to be selected in 1807 for three terms. James Stringham was a censor for five terms. Archibald Bruce was secretary in 1806, and censor for three terms. John C. Osborne was a censor for one term in 1809. Benjamin DeWitt, Valentine Mott, and Alex Steven were members but not particularly active. John Nielson was a censor for eight terms. William Hardy's name could not be found as a member and



PHYSICIANS AND SURGEONS.

The following are the names of the gentlemen who have served the Institution as Physicians and Surgeons, in the order of their appointment, together with the date of their resignation or death, and their respective periods of service.

	Physicians	Elected	Re[illegible]	[illegible]	[illegible]	
P	[illegible]					
P	Peter Middleton	1771	1791	17 years		
P.	John Jones	1771		[illegible] years		
P	Malachi Treat	1771	1791	[illegible]		
P.	John Charlton	1791	1792	1 year		
P	Thomas Jones	1791	1792	[illegible]		
S	Thomas Jones	1792	1795			
S	Richard Bayley	1792	1801	9 years		
S.	James Tillary	1792	1792	1 month		
S.	Wright Post	1792	1821	[illegible] years	Died in office	1828
Cons'g S	Wright Post	[illegible]				
S	Richard S. Kissam	1792	1796	[illegible] years	Died in office	[illegible]
S	Richard S. Kissam	[illegible]				
P	Samuel Nicholl	1792	1796	4 years		
P	William P. Smith	[illegible]	1796	[illegible] years		
P	J. R. B. Rodgers	1794	1807	13 years		
S	Samuel Borrowe	1795	1817	22 years		
S	Valentine Seaman	1796		21 years	Died in office	1817.
P	Elihu H. Smith	1796		[illegible] years	Died in office	1798
P	Samuel L. Mitchell	[illegible]	1817	21 years		
P	David Hosack	1797	1806	34 years	Died in office	1832.
P	David Hosack	1807	1826			
Cons'g P	David Hosack	1826				
P	William Hamersley	[illegible]	1817	[illegible] years	Died in office	1833.
Cons'g P	William Hamersley	1821				
P	Edward Miller	[illegible]		6 years	Died in office	1812.
P	James S. Stringham	1807		[illegible] years	Died in office	1817.
P. to L. A	Archibald Bruce	[illegible]	1817	[illegible] years		
P	John C. Osborne	[illegible]		[illegible]	Died in office	1817.
P	Benjamin Dewitt	[illegible]	1810	[illegible]		
S.	Valentine Mott	1817	1837	48 years	Died in office	1865.
Cons'g S	Valentine Mott	1837				
S.	Alex. H. Stevens	1817	1839	52 years	Died in office	1869.
Cons'g S.	Alex. H. Stevens	1839				
P	John Watts	1817	[illegible]	14 years	Died in office	1831.
Cons'g P.	John Watts	1829				
P.	John Neilson	1817	1819	13 years		
P. to L. A.	John Neilson	1819	1829			
C. P. to B. A	John Neilson	1829	1830			
P. to L. A	William Handy	1817	1819	2 years		
P.	Peter C. Tappan	1817	1824	[illegible] years		

FIGURE 6. Early staff members of the New York Hospital. From the 1898 Annual Report of the Society of The New York Hospital (p. 86).

Peter Tappon was a member of the Medical Society of the County of New York in 1814 but never held an office.

Comment

The Committee on Archives of the Medical Society of the State of New York wishes to urge as much participation as possible in the broadly based archival effort now under way for the preservation and study of New York medical archives. One may expect that by 1976, the bicentennial of the signing of the Declaration of Independence, there will be much renewed interest in Americana. The Committee on Archives is endeavoring to organize the archival effort of New York State as a model for the rest of the country. Recently, the United Hospital Fund of New York has been extremely helpful and has combined with the Committee on Archives of the Medical Society of the State of New York, the Archive and History Committee of the Medical Society of the County of New York, Cornell University at Ithaca, and the medical archivists of New York. Four meetings on the "Preservation of Medical Archives" have been held, the last at the 166th annual convention.

44 East 67th Street
New York, New York 10021

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*These archives will soon be published in microfilm and made available.

Necrology

Sidney Monte Barth, M.D., died in January at the age of seventy-one. Dr. Barth graduated in 1927 from Eclectic Medical College, Cincinnati. He was an assistant attending neuropsychiatrist at Coney Island Hospital. Dr. Barth was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Gemma Mary Barzilai, M.D., of The Bronx, died on January 26 at the age of seventy-five. Dr. Barzilai received her medical degree from the University of Rome in 1922. She was a Diplomate of the American Board of Obstetrics and Gynecology.

Lewis Samuel Booth, M.D., of Fort Lauderdale, Florida, formerly of New York City, died on January 14 at the age of eighty-six. Dr. Booth graduated in 1911 from Yale University School of Medicine. He had been a consulting anesthesiologist at Roosevelt Hospital. Dr. Booth was a Diplomate of the American Board of Anesthesiology, a Fellow of the American College of Anesthesiologists, and a member of the American Society of Anesthesiologists, Inc., the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Thomas Aloysius Brady, M.D., of Tucson, Arizona, formerly of Saranac Inn, died on January 11 at the age of eighty-five. Dr. Brady graduated in 1916 from University and Bellevue Hospital Medical College. Retired, he was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Angelo James Caliendo, M.D., of Brooklyn, died on February 4 at the age of sixty-four. Dr. Caliendo graduated in 1932 from Long Island College of Medicine. He was an attending surgeon and chief of colon and rectal surgery at Lutheran Medical Center and an attending colon and rectal surgeon at Bay Ridge Hospital. Dr. Caliendo was a Diplomate of the American Board of Colon and Rectal Surgery, a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Proctologic Society, the Pan American Medical Association, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Carol Campbell Dickson, M.D., of New York City, died on January 19 at the age of fifty-nine. Dr. Dickson graduated in 1947 from New York University College of Medicine. She was an assistant attending pediatrician at St. Luke's Hospital Center. Dr. Dickson was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raphael Farber, M.D., of Rochester, died on December 27, 1971, at the age of seventy. Dr. Farber graduated in 1925 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was a Diplomate of the American Board of Otolaryngology and a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sol Fineman, M.D., of New York City, died on January 28 at the age of seventy-seven. Dr. Fineman graduated in 1918 from the University of Minnesota College of Medicine. He was an attending roentgenologist at Montefiore Hospital and Medical Center and an associate attending radiologist at Flower and Fifth Avenue Hospitals. Dr. Fineman was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Radiology, a Fellow of the American College of Gastroenterology, and a member of the American Roentgen Ray Society, the Radiological Society of North America, Inc., the New York Academy of Medicine, the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raymond Gettinger, M.D., of Flushing and Yonkers, died on February 12 at the age of sixty-five. Dr. Gettinger graduated in 1932 from Cornell University Medical College. He was an attending pathologist and director of laboratories at St. Joseph's Hospital (Yonkers). Dr. Gettinger was a Diplomate of the American Board of Pathology (Clinical Pathology and Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the American Society of Clinical Pathologists, the American Association of Pathologists and Bacteriologists, the International Academy of Pathology, the New York Academy of Medicine, the New York State Society of Pathologists, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Houston Amos Gross, M.D., of New York City, died on August 15, 1971, at the age of seventy-one. Dr. Gross graduated in 1926 from Vanderbilt University School of Medicine. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hannah Grace Hoffman, M.D., of New York City, died on January 31. Dr. Hoffman graduated in 1925 from Columbia University College of Physicians and Surgeons.

Henry H. Hun, M.D., of Albany, died on January 29 at the age of seventy-eight. Dr. Hun graduated in 1918 from Harvard Medical School. He was an attending surgeon at Albany Medical Center Hospital. Dr. Hun was a Diplomate of the American Board of Surgery and a member of the American Surgical Association, the American Association for Thoracic Surgery, the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Leopold Jordan, M.D., of Rochester, died on December 19, 1971, at the age of seventy-five. Dr. Jordan graduated in 1926 from Howard University College of Medicine. He was a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Joseph Kilcourse, M.D., of Long Island City, died on February 9 at the age of eighty. Dr. Kilcourse graduated in 1914 from New York Homeopathic Medical College and Flower Hospital. He was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Samuel Kulkin, M.D., of New York City, died on February 5 at the age of seventy-nine. Dr. Kulkin graduated in 1913 from Long Island College Hospital. He was a consulting ear, nose, and throat physician at Bronx-Lebanon Hospital Center. Dr. Kulkin was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Facial Plastic and Reconstructive Surgery, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Curtis Rogers Lacy, M.D., of Catskill, died in August, 1971, at the age of sixty-five. Dr. Lacy graduated in 1934 from McGill University Faculty of Medicine. He was an attending physician at Memorial Hospital of Greene County, Catskill. Dr. Lacy was a member of the Greene County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene L. Mayer, M.D., of New Hyde Park, died on January 25 at the age of seventy-five. Dr. Mayer received his medical degree from the University of Munich in 1923. He was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Francis Louis Morhard, M.D., of Lantana, Florida, formerly of New York City, died on December 28, 1971, at the age of seventy-six. Dr. Morhard graduated in 1919 from University and Bellevue Hospital Medical College. He was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Albert Mueller-Deham, M.D., of Santa Barbara, California, formerly of New York City, died on July 25, 1971, at the age of ninety. Dr. Mueller-Deham received his medical degree from the University of Vienna in 1904. He was a member of the American Geriatrics Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Faye Horace Palmer, M.D., of Snyder, died on December 26, 1971, at the age of eighty-four. Dr. Palmer graduated in 1912 from the University of Buffalo School of Medicine. Retired, he was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Muriel Raum, M.D., of New York City, died on February 2 at the age of fifty-six. Dr. Raum graduated in 1944 from George Washington University School of Medicine. She was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the American Society of Clinical Pathologists, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herman Reinstein, M.D., of Brooklyn, died on February 10 at the age of sixty. Dr. Reinstein graduated in 1937 from New York Medical College. He was director of medicine at Lutheran Hospital and an attending physician at Kings Highway Hospital. Dr. Reinstein was a Diplomate of the American Board of Internal Medicine and a member of the New York State Society of Internal Medicine, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Kurt Roberts, M.D., of New York City and The Bronx, died on July 23, 1971, at the age of sixty-one. Dr. Roberts received his medical degree from the University of Vienna in 1935. He was a clinical assistant surgeon and an assistant attending general practitioner at Jewish Memorial Hospital. Dr. Roberts was a member of the American Academy of General Practice, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Morris Scheer, M.D., of New York City, died on February 10 at the age of seventy-nine. Dr. Scheer graduated in 1915 from University and Bellevue Hospital Medical College. He was an adjunct consulting otolaryngologist at New York Polyclinic Hospital. Dr. Scheer was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the American Academy of Facial Plastic and Reconstructive Surgery, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Correction: In the February 1, 1972, issue of the ***Journal,*** page 419, it was inaccurately announced that **Malia John Gurnsey, M.D.,** of Endicott, had died. The correct name is: **John Gurnsey Malia, M.D.**

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SCIENTIFIC PROGRAM

SCIENTIFIC EXHIBITS

SCIENTIFIC MOTION PICTURES

TECHNICAL EXHIBITS

SUNDAY THROUGH THURSDAY

HOUSE OF DELEGATES

WEDNESDAY EVENING

PRESIDENT'S DINNER

Books Received

*The following books were received during the month of December, 1971.**

The Retinal Circulation. By George N. Wise, M.D., Colin T. Dollery, M.B., and Paul Henkind, M.D. Quarto of 574 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $35.

CRC Manual of Nuclear Medicine Procedures. By William H. Beierwaltes, M.D., John W. Keyes, Jr., M.D., and James E. Carey, M.S. Quarto of 140 pages, illustrated. Cleveland, Ohio, CRC Press, 1971. Paper, $19.90.

Growth Control in Cell Cultures. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Julie Knight. Octavo of 275 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $11.75.

Vocabulary of Medicine and related Sciences. English-French. By W. J. Gladstone. Quarto of 298 pages. Paris, France, Masson & Cie. (American distributor, Eliot Books, Inc., Long Island City, N.Y.), 1970. Paper, $10.50.

The Clinical Apprentice. A Handbook of Bedside Methods. By John M. Naish, M.D., and Alan E. A. Read, M.D., with a Chapter by John Apley, M.D. Fourth edition. Duodecimo of 244 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $7.25.

Social Aspects of Clinical Medicine. By Jessie Garrad, B.A., B.Sc., and Professor Sir Max Rosenheim, M.A., M.D. Octavo of 174 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1970. Paper, $6.50.

*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending for this purpose. Selection for review is made on the basis of merit and reader interest.

Motor performance and L-Dopa

An appropriate test of motor performance in Parkinson's disease would record the patient's rapidity of movement and ability to shift from one position to another. The need for a simple and quick test of motor ability in such patients has been accentuated by the increasing use of L-Dopa, which is not only expensive but may have disturbing side effects. Objective evaluation early in treatment might help to decide, on balance, whether continued therapy with the drug is indicated.

Abramsky, Lavy, and Carmon (J. Neurological Sc. 12: 105 [Jan.] 1971), have recently described use of a simple motor performance test involving the alternate pressing of two keys with the same hand. Clinical improvement in akinesia and bradykinesia could be correlated with marked improvement in the performance test in a series of 10 patients after three to four weeks of L-Dopa therapy. Test reliability was assessed in 10 controls who showed no significant change in performance after the same period of time. This is a simple test requiring no expensive apparatus. Clinical evaluation of motor performance in Parkinsonism is usually subjective; objective measurements have been applied infrequently because they are expensive and complicated.

Books Reviewed

The Modern Family Doctor and Changing Medical Practice. By John P. Geyman, M.D. Octavo of 297 pages, illustrated. New York, Appleton-Century-Crofts, 1971. Cloth, $8.50.

This is the story of the metamorphosis of the modern family doctor. It traces the political, professional, socioeconomic, and academic factors which molded the evolution of the practice of medicine under our American free-enterprise system, from the Flexner Report at the turn of the century, to the current crisis. Family practice, as "a new kind of specialty" is his solution, and its past, present, and projected future are developed in this well written volume. There are 22 chapters, each introduced with a pertinent (often humorous) couplet of quotations, and a complete bibliography of source references at its conclusion. In addition to the index, there are seven very informative appendices and innumerable explanatory charts and tables.

Every practicing physician will find this book interesting, if only to be reminded of where he has been, where he is, and where he may be going. Along with Dr. Felix Marti-Ibanez's book of essays ("To Be a Doctor," and so forth), this book should be available in every high school library, required reading for college premeds, and mandatory for all freshman medical students in order to balance the subliminal influence for specialization by the faculty. **Milton B. Spiegel, M.D.**

Practical Dermatology. By I. B. Sneddon, M.B., Ch.B., and R. E. Church, M.A., M.D. Octavo of 212 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $8.25.

This book, by consultant dermatologists at University of Sheffield, England, lives up to its title. It is a good rapid reference book for those who practice medicine, albeit the advice is dogmatic. The illustrations in black and white are lucid. Its format is very favorable. **Bernard Seligman, M.D.**

Anemia and toluidine blue

Erythrocyte glucose-6-phosphate deficiency is the most common cause of increased susceptibility to drug-induced hemolytic anemia. It has recently been noted (Arch. Surg. **101:** 527 [Oct] 1970) that because of the relatively high incidence of this genetic abnormality in Americans of oriental, Negro, and Mediterranean descent, the erythrocyte glucose-6-phosphate deficiency should be ruled out before toluidine blue is given. The consequence may be significant or even fatal anemia. Surgeons find toluidine blue useful in tissue identification during parathyroid and thyroid surgery because these tissues, together with pancreatic tissue, stain with the dye.

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And every birthday after that (and Christmas, too), you gave me another one of those *Bonds*, you called them. I thought you were pretty gooney.

At least, I never had to guess what I was going to get from good old reliable Aunt Sarah.

And what I got was good old reliable U.S. Savings Bonds.

What I didn't realize then was that you gave me a gift of security for the future. Thanks to you and those Bonds, I had extra funds for college. And they helped when I bought my first new car.

Next week, I'm giving my nephew, Harry, his first U.S. Savings Bond.

I know the kid is gonna think I'm some kind of nut. But, someday . . .

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Leonardo da Vinci 1452-1519

The Mona Lisa By Leonardo da Vinci, Louvre, Paris

LEONARDO DA VINCI, artist, engineer, anatomist, was also winewise. And so were smart Renaissance women like his smiling Mona Lisa (whose real name was reputed to be Lisa Gherardini).

Leonardo, born out of wedlock to a peasant girl named Catarina, was a child of the wine country. His natal village of Vinci, between Florence and Pisa, nestled in hills that grow robust Chianti wines.

In Florence he knew leaders of Renaissance medicine, saw them using wine in patient care—wine, the gentlest and foremost of therapeutic aids for 60 centuries!

Despite the skill of physician friends and the magic of wine, Leonardo found medicine terribly hampered by medieval dogma and superstition. It needed light.

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Art and science, united in the genius of Leonardo da Vinci and also Vesalius who followed him, reawakened world medicine, bringing closer the age of miracles in therapy and surgery which you, Doctor and Nurse, serve today. As we serve you.

Incidentally, Leonardo had fun with wine, which he called, lovingly, "the divine liquid of the grape." He invented a formula for changing white wine into red (he didn't say why). And beneath a diagram of his famous Flying Machine, he added a note: "This machine should be tried over a lake, and you should carry a long wineskin as a girdle so that in case you fall you will not be drowned."

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2 USES OF WINE IN MEDICAL PRACTICE, 64 pp.; contains references to the results of 30 years of scientific medical research in U.S. and abroad on wine in nutrition, convalescence, gastroenterology, various clinical conditions, covers Indications, Contraindications, Bibliography, wine in Hospital and Nursing Homes.

3 WINE COOKERY THE EASY WAY, 24 pp., 53 recipes for "gourmet meals in a hurry" with convenience foods; and CALIFORNIA WINE COOKERY AND DRINKS, 24 pp., 88 recipes, ideas, for home fun of good cooking, serving, and entertaining. Both booklets free.

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State, seeks practice. Dept. 200, c/o NYSJM.

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TOCK MARKET WISDOM: 50 RULES: HOW TO MAKE MONEY AND keep it. $3.50, Sophisticated Wall Streeter letter recommending mainly via theoretical portfolios of $3,000, $10,000, $30,000, $100,000 stocks, convertibles, warrants, commodities. $6/5 months (Bonus 50 rules) $2/1 month. P.O. Box 32253, Jamaica, N.Y. 11431.

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ODERN YOGA WORKSHOP FOR PHYSICIANS ONLY, UNDER THE supervision of a physician, to be held in the summer of 1972 on five consecutive Saturdays in Manhattan. Those seriously interested are requested to apply immediately. Dept. 206, c/o NYSJM.

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WHAT GOES ON in medicine

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Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

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NEW YORK CITY AREA

MONDAY, APRIL 3

7:00 p.m.

The New York Society for Clinical Ophthalmology
2 East 103rd Street

7:00–8:00 p.m.

INSTRUCTION HOUR: TREATMENT OF TEARING

SAMSON WEINGEIST, M.D.

8:00 p.m.

SYMPOSIUM: PLASTIC SURGERY

Moderator:
BYRON SMITH, M.D.

Panelists:
ROCKO M. FASANELLA, M.D., New Haven, Conn.
CHARLES E. ILIFF, M.D., Baltimore, Md.
VIRGINIA LUBKIN, M.D.
JOHN T. SIMONTON, M.D.

Note: Unless otherwise noted, speakers are from New York City.

8:30 p.m.

Rudolf Virchow Medical Society
2 East 103rd Street

1. **Early Recognition of Peripheral Vascular Insufficiency**
   HEINZ. I. LIPPMANN, M.D.
2. **Spurious Polycythemia—The Great Imitator**
   SHELLEY M. BROWN, M.D.
   Mount Sinai School of Medicine

April 4 and 11, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Continuing Education Program
Family Practice Section

April 4
Thyroid Function Tests
RICHARD HOFFMAN, M.D.

April 11
Venereal Disease, Testing and Treating
ROBERT WOLKWITZ, M.D.

April 4 and 11, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

NEWER CONCEPTS IN MEDICINE

April 4
Diabetes—Diagnosis and Physiology
M. KAHAN, M.D.

April 11
Diabetes—Therapy
M. KAHAN, M.D.

Moderator: GEORGE POLLACK, M.D.

April 4 and 11, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building—Fourth Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Conferences

April 4
Acquired Hemiplegia in Childhood
GAIL E. SOLOMON, M.D.
Cornell University Medical Center

April 11
Oral Pathology in Children
LEON EISENBUD, D.D.S.
State University of New York at Stonybrook

TUESDAY, APRIL 4

2:00 p.m.

The Catholic Medical Center
Department of Surgery, Division of Ophthalmology
Holy Family Hospital
Auditorium Building, Main Floor
167 Dean Street
Brooklyn

Visiting Professor Program

1. **Combined Treatment of Cataracts and Glaucoma**
   ANDREW de ROETH, M.D., Columbia University
2. **A New Surgical Therapy for Cataracts**
   CHARLES D. KELMAN, M.D.
   Manhattan Eye, Ear and Throat Hospital
3. **Complications in Cataract Surgery**
   JOHN McTIGUE, M.D.
   Washington Medical Center, Washington, D.C.

Moderator: JOHN J. VAN BUREN, M.D.

April 4 / May 25, 1972
5:00–6:00 p.m., Tuesdays & Thursdays

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THURSDAY, APRIL 4

7:00 p.m.

The Academy of Medicine
Section on Dermatology and Syphilology
2 East 103rd Street

Presentation of Cases

Members: 7:00–7:45 p.m.
Non-Members: 7:45–8:30 p.m.

From the Departments of Dermatology of:

a) Bellevue Hospital Center
b) University Hospital (Skin and Cancer Unit)
c) Manhattan V.A. Hospital
RUDOLF L. BAER, M.D.

General Discussion of Cases 8:30–9:45 p.m.

8:00 p.m.

Jewish Memorial Hospital
Broadway and 196th Street

OCULAR CHANGES IN SYSTEMIC DISEASE

DANIEL M. ALBERT, M.D.
Yale University School of Medicine

WEDNESDAY, APRIL 5

2:00 p.m.

The Catholic Medical Center
Department of Surgery—Division of Orthopedics
St. John's Hospital Auditorium
90-02 Queens Boulevard
Elmhurst

1. **Avascular Necrosis of the Femoral Head**
   MELVIN J. GLIMCHER, M.D.
   Children's Hospital Medical Center, Boston, Mass.
2. **Clinical Implications of Avascular Necrosis of Hip**
   JOHN GARTLAND, M.D.
   Jefferson Medical College, Philadelphia, Pa.

4:00–5:00 p.m.

Flushing Hospital and Medical Center
Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lecture

NEONATAL PULMONARY DISEASE

PETER AULD, M.D.
New York Hospital, Cornell

4:00–5:30 p.m.

Westchester Square Hospital
Conference Room
1625 St. Peters Avenue
Bronx

ADVANCES IN CORONARY CARE, CARDIAC ARREST AND RESUSCITATION

RICHARD J. KONES, M.D.
New York Medical College and
Flower Fifth Avenue Hospitals

CREDIT: AAGP

5:00 p.m.

New York Medical College
Department of Ophthalmology
Cohen Research Building—Room R-113
Fifth Avenue and 106th Street

EXTERNAL OCULAR PIGMENTATION

PAUL HENKIND, M.D.
Albert Einstein College of Medicine

April 6 / 8, 1972
9:00 a.m.–4:00 p.m., Thursday–Saturday

Columbia University P & S
St. Luke's Hospital Center
Amsterdam Avenue and 114th Street

CLINICAL NUTRITION AND METABOLISM

T. B. VAN ITALLIE, W. H. SEBRELL, JR., S. A. HASHIM, M.D.'s and Associates

FEE: $75

April 6 and 13, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
Second Floor Conference Room
757 Bushwick Avenue
Brooklyn

THYROID DISEASE AND DISORDERS OF CALCIUM METABOLISM (Part I and II)

JOSEPH LOMBARD, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

April 6 / 9, 1972

American Society of Group Psychotherapy and Psychodrama
Barbizon-Plaza Hotel
106 Central Park South

THIRTIETH ANNUAL MEETING

Write for further information: 39 East 20th Street, New York, N.Y. 10003.

April 7 and 14, 1972
8:00–9:30 a.m., Fridays

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue

April 7
Current Statistics of Breast Cancer
GEORGE A. DEGENSHEIN, M.D.

April 14
The Diagnosis of Cancer—How and When to Tell the Patient and Family
WILLIAM POMERANCE, M.D.

Speakers are from Downstate Medical Center

FRIDAY, APRIL 7

8:00 p.m.

Staten Island Family Service
25 Victory Boulevard
Staten Island

EMOTIONAL AND PHYSICAL INVOLVEMENT IN PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
Institute of Human Relations

Contact Sid Herling, MSW, Dir., above address.

SUNDAY, APRIL 9

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

DIAGNOSIS AND TREATMENT IN ELDERLY PATIENTS

ALVIN I. GOLDFARB, M.D. and Members
of Mount Sinai Faculty

FEE: $25

April 10 / 15, 1972
8:00 a.m.–5:00 p.m., Monday / Friday
8:00 a.m.–12:00, Saturday

Columbia University P & S
Columbia-Presbyterian Medical Center
630 West 168th Street

HEAD AND NECK SURGERY

J. CONLEY, M.D., and Associates

FEE: $300

April 10 / 12, 1972

American Academy of Orthopaedic Surgeons Committee on Injuries
Park Sheraton Hotel
Seventh Avenue and 56th Street

3-Day Postgraduate Course

ORTHOPAEDIC SURGERY OF THE NECK

J. WILLIAM FIELDING, M.D.
St. Luke's Hospital

Write: J. William Fielding, M.D., 105 East 65th Street, New York, N.Y. 10021 or the American Academy of Orthopaedic Surgeons, 430 North Michigan Avenue, Chicago, Ill. 60611.

MONDAY, APRIL 10

1:00 p.m.

Downstate Medical Center
Fourth Floor Lecture Hall
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

R. Janet Watson Hematology Lecture

STUDIES ON CELL TO CELL COMMUNICATION

RODY P. COX, M.D.
N.Y.U. School of Medicine

April 10 / 24, 1972
3:30 p.m., Mondays

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

April 10
Polyuria
RICHARD M. STEIN, M.D.

April 17
Myeloproliferative Disorders
HARRIET S. GILBERT, M.D.

April 24
Hypomagnesemic and Hypocalcemic Tetany
SOLOMON A. BERSON, M.D.

All Speakers are from Mount Sinai School of Medicine

MONDAY, APRIL 10

8:30 p.m.

Beth Israel Medical Center
12th Floor Conference Room, Dazian Pavilion
10 Nathan D. Perlman Place

PERCUTANEOUS TRANSTHORACIC LUNG BIOPSY

HARRY L. STEIN, M.D.
North Shore Hospital

TUESDAY, APRIL 11

4:00 p.m.

N.Y.U. School of Medicine
Alumni Hall
550 First Avenue

SURGICAL MANAGEMENT OF FAR-ADVANCED MALIGNANCIES

BENJAMIN F. RUSH, JR., M.D.
New Jersey College of Medicine

April 12 / 26, 1972
11:00 a.m.–12:30 p.m., Wednesdays

Mental Retardation Institute
105 East 106th Street
Seventh Floor Auditorium

Schedule of Guest Speakers

April 12
Title of Presentation to be Advised
HERBERT G. BIRCH, M.D.
Albert Einstein College of Medicine

April 19
The Hyperactive Child
HARRY BAKWIN, M.D.
N.Y.U. School of Medicine

April 26
Metabolic Disorders in Mental Retardation
SELMA E. SNYDERMAN, M.D.
N.Y.U. Medical Center

April 12 and 26, 1972
Noon, Wednesdays

Downstate Medical Center
4th Floor Pediatric Library, Room B4-462
State University Hospital
445 Lenox Road
Brooklyn

Research Pediatric Seminars

April 12
Short Stay Unit—An Alternative to Hospitalization
V. S. GURURAJ, M.D.

April 26
ACTH Control of Adrenal Steroidogenesis and RNA Synthesis
SALVADOR CASTELLS, M.D.

WEDNESDAY, APRIL 12

8:00 p.m.

Bronx Pediatric Society
Monteflore Hospital
Rosenthal Auditorium
111 East 210th Street
Bronx

RESIDENTS NIGHT

8:00 p.m.

New York Surgical Society
2 East 103rd Street

Case Report:

Lymphangiosarcoma Developing in Chronic Lymphadenomatous Lower Extremity
ROBERT J. BOOHER, M.D.

Papers:

1. **Clinical and Experimental Auxiliary Liver Transplantation**
JOSEPH G. FORTNER, MAN H. SHIU, M.D.'s, W. GORDON MONAHAN, Ph.D., ANTOINE KUNLIN, M.D., ANASTASIA RAISIS, B.S., JOHN S. LAUGHLIN, Ph.D., EDWARD J. BEATTIE, JR., M.D.
2. **Isolated Perfusion for Melanoma**
FREDERICK M. GOLOMB, M.D.
3. **Ileostomy "Shock"—Acute Non-Obstructive Ileostomy Dysfunction**
IRWIN M. GELERNT, ISADORE KREEL, ARTHUR H. AUFSES, Jr., M.D.'s

---

April 12 and 19, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF DEPRESSIONS IN MEDICAL PRACTICE

HENRY HOROWITZ, M.D.

April 13 and 14, 1972
9:00 a.m.–5:00 p.m., Thursday and Friday

Downstate Medical Center
Department of Radiology
Waldorf Astoria Hotel
Park Avenue and 50th Street

Postgraduate Course

THE RADIOLOGY OF HYPERTENSION

April 13
The Kidney

April 14
The Adrenal

To register, contact Programmed Seminars, Inc., Suite 806, 11 East 44th Street, New York, N.Y. 10017.

April 14, 1972 / April 16, 1972
Friday, Saturday and Sunday

Medical Society of the State of New York, New York State Department of Health, Institute of Forensic Medicine of New York University and City of New York
520 First Avenue

NINTH ANNUAL SYMPOSIUM ON FORENSIC SCIENCES FOR CORONERS AND MEDICAL EXAMINERS OF NEW YORK STATE

FUTURE EVENTS

April 16 and 17, 1972

Maimonides Medical Center and Coney Island Hospital affiliated with MMC in cooperation with Downstate Medical Center and the Kings County Chapter of AAGP
Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

11th ANNUAL PEDIATRIC POSTGRADUATE SYMPOSIUM

Registration will be Sunday at 8:00 a.m. in Room 2W1

April 18 and 25, 1972
12:00 Noon–3:00 p.m., Tuesdays

Maimonides Medical Center
Anesthesiology Department
4802 Tenth Avenue
Brooklyn

An Introduction to

BIRD RESPIRATORY THERAPY

1. **Bird Respirator**
Basic Construction, Application and Trouble Shooting
2. **Respiratory Intensive Care**
Management and Case Discussions

Faculty: PHILIP H. SECHZER, M.D., MARTIN S. BERNSTEIN, M.D., ELLEN KRASNOFF, ARIT, AAS, HERBERT M. SCHUB, M.D.

Advance registration required $10

FRIDAY, APRIL 21

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

PRESENT STATUS OF COMPUTER ECG AND VCG ANALYSIS

LEON PORDY, M.D., the Members
of Mount Sinai Faculty and
Guest Lecturers

FEE: $35

April 21 / 25, 1972
9:00 a.m.–5:00 p.m., Friday–Tuesday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

CELL PATHOLOGY AND SYSTEMIC NUCLEAR MALIGNANCY ASSOCIATED CHANGED (MAC) IN TISSUES AND SMEARS

HERBERT E. NIEBURGS, M.D. and Faculty

FEE: $200

May 1 / 3, 1972
9:00 a.m.–3:00 p.m.

Brooklyn Eye and Ear Hospital Glaucoma Center
29 Greene Avenue
Brooklyn

20th ANNUAL GLAUCOMA SEMINAR

Under the direction of
A. S. ROSENBERG, M.D.

FEE: $150 (limited to six Ophthalmologists)

For information, contact Mr. Vernon E. Dressler, Adm., above address.

WEDNESDAY, MAY 17
9:00 a.m.–1:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

REHABILITATION IN ARTHRITIS

LAWRENCE WISHAM, FRANCES DWORECKA,
BEATRICE KAPLAN, M.D.'s and the
Members of the Mount Sinai Faculty

NO FEE

May 17 / 19, 1972

Columbia University P & S
Department of Pharmacology
Alumni Auditorium
630 West 168th Street

THE USE OF PSYCHOTHERAPEUTIC DRUGS IN THE TREATMENT OF MENTAL ILLNESS

FEE: $150

Information and registration: LANCE L. SIMPSON, M.D., Dir., Psychpharmacology Training Program, above address.

BROOME COUNTY

March 23 / April 13, 1972
11:00 a.m., Thursdays

Upstate Medical Center
Charles S. Wilson Memorial Hospital
Johnson City

Basic Science Seminars

March 23
Desensitization—Its Indications and When to Perform It
RICHARD SHEEHAN, M.D.

March 30
Refractory Angina Pectoris—Management
ROBERT EICH, M.D.

April 6
His' Bundle Electrogram in Cardiac Arrhythmias and Conduction Disturbances
HAROLD SMULYAN, M.D.

April 13
Malabsorption Syndrome
ROBERT A. LEVINE, M.D.

CREDIT: AAGP

Medical Grand Rounds will be held at 10:00 a.m. preceding each of the above sessions. Watch for future sessions in "What Goes On".

BUFFALO AREA

April 6 and 13, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and
Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

April 6
- **Auscultation—The S3**
  - **The Physical Versus the Pathological S3**
    - **Due to Large Flows Into Dilated Ventricles**
    - **Due to Increased Filling Pressure, Dilation or Both**
  - **The S3 in Constriction and Tamponade**
  - **The Right Ventricular S3**
  - **The S3 Versus the Opening Snap**
  - **Case Presentations**

April 13
- **Auscultation—The S4**
  - **Nomenclature**
  - **Timing of Atrial Contraction**
  - **Mechanism of S4 Including Associated Etiologies**
  - **Differentiation From the S3**
  - **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

April 13 and 14, 1972
8:15 a.m. Registration, Thursday

School of Medicine, State University of Medicine at Buffalo
Treadway Inn
Niagara Falls

HIGHLIGHTS OF CURRENT PROBLEMS OF CLINICAL ANESTHESIA AND INTENSIVE CARE

Concept: The program will address itself to three major areas of interest: (1) problems with inhalation agents now in use and new additions to the family of inhalation agents; (2) alternatives to the use of inhalation anesthetics and (3) pulmonary edema as a factor in respiratory insufficiency. Noted lecturers and investigators in the respective areas will speak on these topics and will be available for questions and answers. A series of small group presentations and discussions on these problems will be featured.

PRECEPTORSHIPS

GENERAL

Preceptorship type experience is available in a wide variety of medical fields arranged on request on an individual basis.

Those interested should write to Continuing Medical Education indicating their field of interest, time available for study, preferred dates and phone number. A faculty member who can provide the desired instruction will then contact the applicant directly.

Preceptorship in Clinical Cardiology

This fall a special preceptorship is offered in cardiology, with emphasis on the cardiac patient, electrocardiography, and the management of patients with heart disease, including acute coronary care.

The program will be directed by Dr. Jules Constant at the Buffalo General Hospital. The fee will be $10 per day or $200 a month. The schedule will be arranged in consultation with the applicant and only one physician will be accepted at a time.

For information on preceptorships, write Continuing Medical Education, 2211 Main Street, Buffalo, New York 14214.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

The Children's Hospital of Buffalo
219 Bryant Street

POSTGRADUATE EDUCATION IN PEDIATRICS

In 1972 The Children's Hospital of Buffalo offers a program of postgraduate education in Pediatrics, combining tutorial instruction and the opportunity to become integrally involved in clinical services at the hospital for 4–8 weeks. General Practitioners and Pediatricians accepted become immediately involved in evaluation and treatment of patients and will be able to concentrate on one of seven specialized areas: cardiology, endocrinology, general pediatrics, metabolic diseases, mental retardation, nephrology and radiology. Each participant's program is individually planned to meet his interests and requirements. Candidates are requested to apply early, specifying sub-specialty in which they are interested. Special consideration is given candidates from rural areas. Please write Dr. Thomas Aceto, Jr., chairman of postgraduate education, at the above address.

BUFFALO FUTURE EVENT

May 4 and 5, 1972
8:15 a.m. Registration, Thursday

School of Medicine, State University of New York at Buffalo, Department of Surgery
The Parkway Ramada Inn
Niagara Falls

SURGICAL ASPECTS OF GASTROENTEROLOGY

FEE: $60

Apply: Continuing Medical Education, Main Street Division, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

NASSAU COUNTY

April 5 and 12, 1972
4:00 p.m., Wednesdays

Nassau County Medical Center
Department of Radiology
Meadowbrook Hospital
South Lounge, Nurses' Building
East Meadow

Guest Lecture Series

April 5
Development of Bone Endocrine Control
JOSEPH WHELAN, M.D.
Cornell Medical School

April 12
The Problem of the Flat Vertebra
BERNARD EPSTEIN, M.D.
Long Island Jewish Medical Center

April 6 and 13, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

April 6
Response to Lead in Man—Clinical and Subclinical
J. JULIAN CHISOLM, JR., M.D.
The Johns Hopkins Hospital, Baltimore, Md.

April 13
Streptococcal Infections: Current Dilemmas
MILTON MARKOWITZ, M.D.
University of Connecticut

TUESDAY, APRIL 11

11:00 a.m.

Doctors Hospital
Conference Room
320 West Merrick Road
Freeport

THE WIDENING SPECTRUM OF ENVIRONMENTAL LUNG DISEASE

IRVING J. SELIKOFF, M.D.
Environmental Sciences Laboratory
Mount Sinai School of Medicine

Sponsored by the Departments of Medicine and Pediatrics of South Nassau Communities and Doctors Hospitals.

ULSTER COUNTY

WEDNESDAY, APRIL 5

12:00 noon–5:00 p.m.

Benedictine Hospital
105 Mary's Avenue
Kingston

SYMPOSIUM IN RECENT ADVANCES IN THERAPY FOR CARDIOVASCULAR DISEASE

STUART BONDURANT, M.D., Albany, N.Y.
DAVID F. BROWN, M.D., Albany, N.Y.
ROBERT G. CARLSON, M.D., New York City
RUDOLPH FREEMONT, M.D., New York City
GORDON H. WILLIAMS, M.D., Boston, Mass.

WESTCHESTER COUNTY

TUESDAY, APRIL 4

2:00–5:00 p.m.

Grasslands Hospital
Conference Room C—Eastview Hall
Valhalla

CONFERENCE ON MUSCLE DISEASES

CARL PEARSON, M.D.
University of California at Los Angeles
LOUIS ROWLAND, M.D.
University of Pennsylvania
W. KING ENGEL, M.D.
National Institute of Neurological
Diseases and Stroke

FRIDAY, APRIL 7

4:00 p.m.

Grasslands Hospital
Conference Room E—Eastview Hall
Valhalla

MATERNAL AND NEONATAL ADDICTION

LOUIS J. SALERNO, M.D.
New York Medical College

EVENTS RECEIVED AFTER DEADLINE

April 4 and 11, 1972
9:00 a.m., Tuesdays

Queens Hospital Center/Long Island Jewish Hillside Medical Center Affiliation
9th Floor Auditorium
Triboro Hospital
Parsons Boulevard and 82nd Street
Queens

Division of Pulmonary Medicine

April 4
Renal Tuberculosis in the Era of Effective Drug Therapy
H. WECHSLER, M.D.
Albert Einstein College of Medicine

April 11
Pneumothorax as a Presenting Symptom of Primary Lung Cancer
F. KHAN, M.D.

April 4 and 11, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

April 4
Low Pressure Internal Hydrocephalus
JAY A. ROSENBLUM, M.D.

April 11
Conn's Syndrome
JEROME LOWENSTEIN, M.D.
N.Y.U. Medical Center

March 23 / December 7, 1972
9:00–11:00 p.m., Thursdays

Albert Einstein College of Medicine
The Forchheimer Building, 1st floor lecture hall
1300 Morris Park Avenue
Bronx

Continuing Education Program

March 23
Surgery
GERSHON EFRON, M.D.

April 13
Cardiology
MARTIN COHEN, M.D.

Write or call Mrs. Frieda Fagin, above address, (212) 430-2822

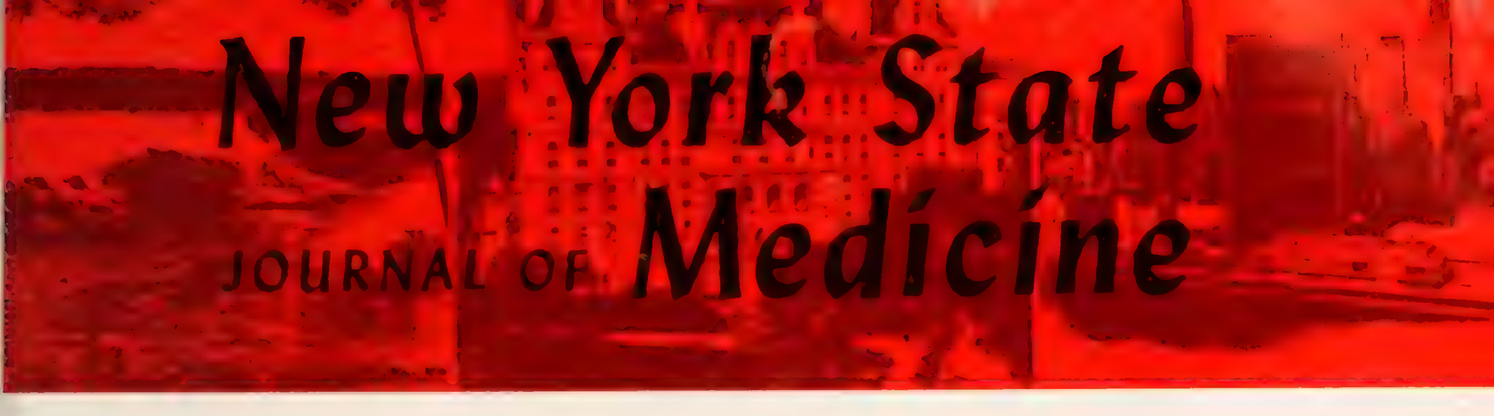
PHYSICIANS' PLACEMENT

NEW YORK CITY. Faculty Appointment Available for M.D. with N.Y.S. License. Full Time in Medicine (Metabolic Disorders)

CONTACT: R. CAMERINI, M.D. (212) 876-5500, ext. 547.

NEW YORK CITY. N.I.G. Traineeships Available for M.D., Ph.D., D.V.M., in Experimental and Clinical Research in Diabetes Mellitus Starting July 1, 1972. U.S. Citizen or Immigration Visa.

CONTACT: R. CAMERINI, M.D., (212) 876-5500, ext. 547.



New York State
JOURNAL OF Medicine

JANUARY 1, 1972

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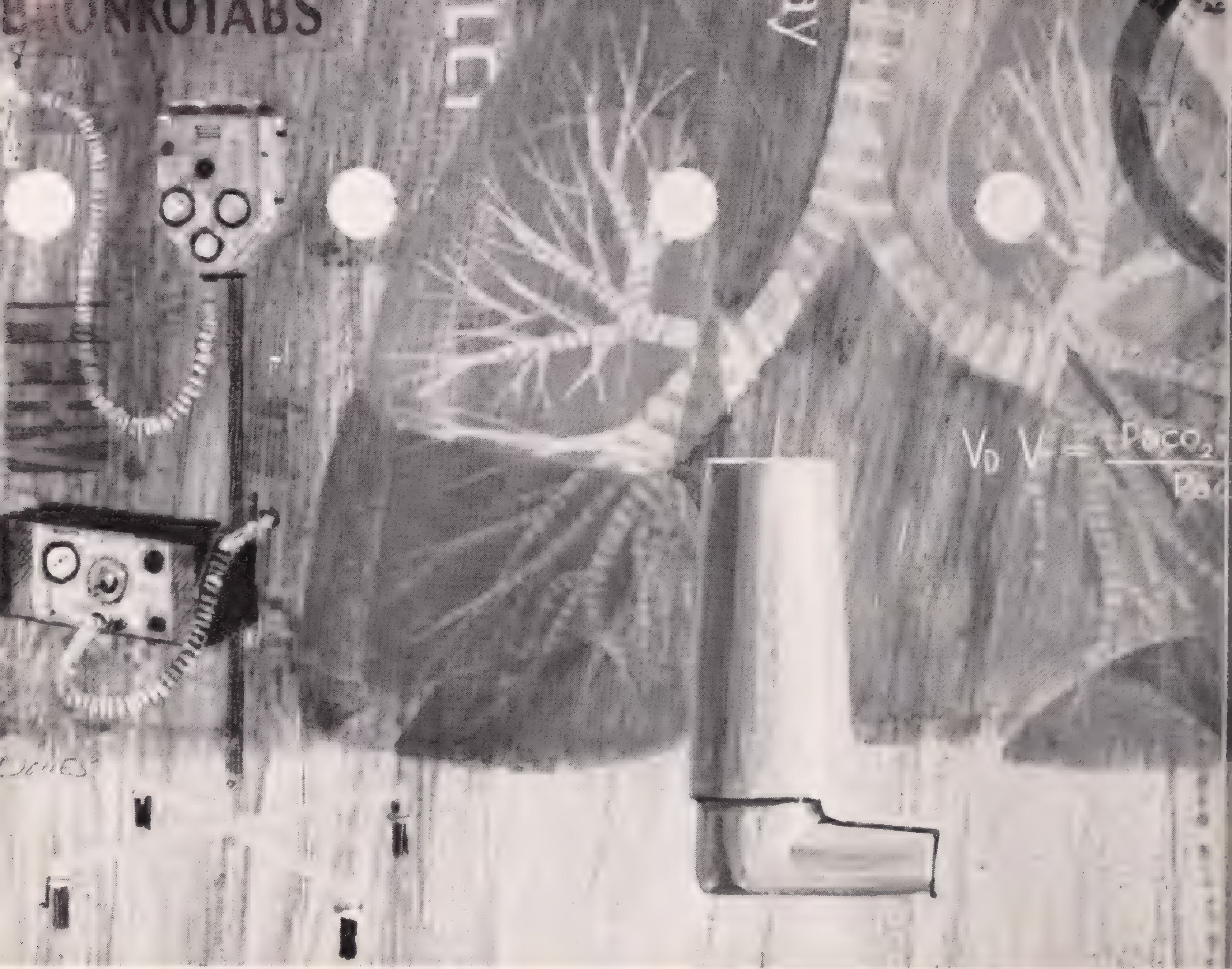
College of Physicians 12/15
19 S. 22nd St.
Phila, PA 19103

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA
JAN 17 1972

MDS

Set the example: have periodic health examinations!



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Bronkotabs reduces the work of breathing when used as part of the routine day-in, day-out management of emphysema. Its efficient bronchodilating, decongestant and expectorant actions help keep airways open and free of excess mucus. By improving pulmonary function, Bronkotabs helps restore alveolar ventilation and decrease the severity of symptoms. For the patient who has considerable difficulty during the night, Bronkotabs taken at bedtime often proves useful. Working together, Bronkotabs and Bronkometer can offer impressive benefits in a comprehensive rehabilitation program designed to reduce progressive deterioration of pulmonary function.

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BREON

Aunt Sarah, I love you.

Remember my 10th birthday, when you gave me that funny piece of green paper and everybody made such a fuss over it. (Except me.) Frankly, it was a pretty disappointing present for a kid. I couldn't eat it, couldn't play with it, couldn't wear it—and Mom took it away from me practically the minute I got it.

And every birthday after that (and Christmas, too), you gave me another one of those *Bonds*, you called them. I thought you were pretty gooney.

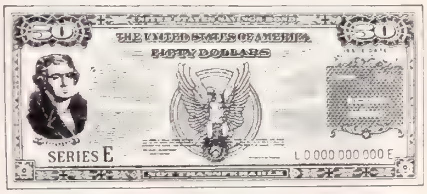
At least, I never had to guess what I was going to get from good old reliable Aunt Sarah.

And what I got was good old reliable U.S. Savings Bonds.

What I didn't realize then was that you gave me a gift of security for the future. Thanks to you and those Bonds, I had extra funds for college. And they helped when I bought my first new car.

Next week, I'm giving my nephew, Harry, his first U.S. Savings Bond.

I know the kid is gonna think I'm some kind of nut. But, someday . . .



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Surfak prevents constipation

- **naturally**
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  - . . . without adding sodium to the system
  - . . . without requiring unusual intake of water
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- **economically**—costs less per effective daily d

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*based on actual drug store survey of prescribed dosages

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New York State JOURNAL OF Medicine

MARCH 15, 1972

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MDS

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA
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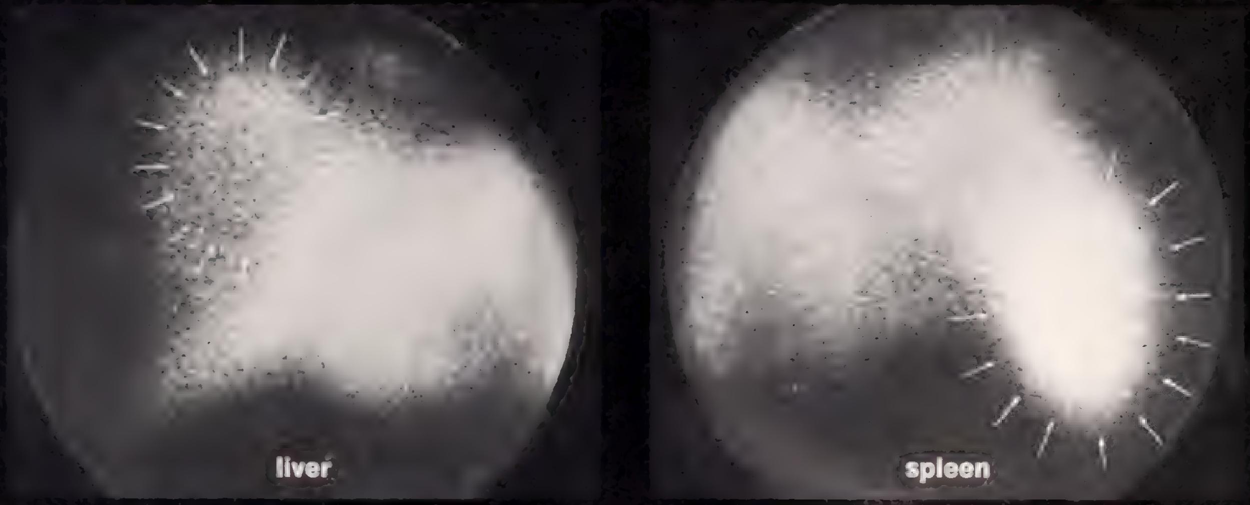
Set the example: have periodic health examinations!

Medi-scan Q & A

cirrhotic pseudotumor or metastatic carcinoma?*



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* A pseudotumor is revealed in this new scanning technique (scintiphotograph) of the liver and spleen. The clues are the irregular uptake of technetium-labeled sulfur colloid surrounding the mass and the large "hot" spleen.

moderate to severe anxiety

Mellaril®

(thioridazine)

TABLETS: 25 mg. thioridazine HCl, U.S.P.

Before prescribing or administering, see Sandoz literature for full product information. The following is a brief summary.

Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension since phenothiazines may induce a reversed epinephrine effect on occasion. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—ECG changes (see *Cardiovascular Effects* below). *Other*—A single case described as parotid swelling.

The following reactions have occurred with phenothiazines and should be considered: *Autonomic Reactions*—Miosis, obstipation, anorexia, paralytic ileus. *Cutaneous Reactions*—Erythema, exfoliative dermatitis, contact dermatitis. *Blood Dyscrasias*—Agranulocytosis, leukopenia, eosinophilia, thrombocytopenia, anemia, aplastic anemia, pancytopenia. *Allergic Reactions*—Fever, laryngeal edema, angioneurotic edema, asthma. *Hepatotoxicity*—Jaundice, biliary stasis. *Cardiovascular Effects*—Changes in terminal portion of electrocardiogram, including prolongation of Q-T interval, lowering and inversion of T-wave, and appearance of a wave tentatively identified as a bifid T or a U wave have been observed with phenothiazines, including Mellaril (thioridazine); these appear to be reversible and due to altered repolarization, not myocardial damage. While there is no evidence of a causal relationship between these changes and significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients showing characteristic electrocardiographic changes while taking the drug. While proposed, periodic electrocardiograms are not regarded as predictive. Hypotension, rarely resulting in cardiac arrest. *Extrapyramidal Symptoms*—Akathisia, agitation, motor restlessness, dystonic reactions, trismus, torticollis, opisthotonus, oculogyric crises, tremor, muscular rigidity, and akinesia, occasionally persisting for several months or years especially in elderly patients with brain damage. *Endocrine Disturbances*—Menstrual irregularities, altered libido, gynecomastia, weight gain, false positive pregnancy tests. *Urinary Disturbances*—Retention, incontinence. *Others*—Hyperpyrexia; behavioral effects suggestive of a paradoxical reaction, including excitement, bizarre dreams, aggravation of psychoses, and toxic confusional states; following long-term treatment, a peculiar skin-eye syndrome marked by progressive pigmentation of skin or conjunctiva and/or accompanied by discoloration of exposed sclera and cornea; stellate or irregular opacities of anterior lens and cornea.

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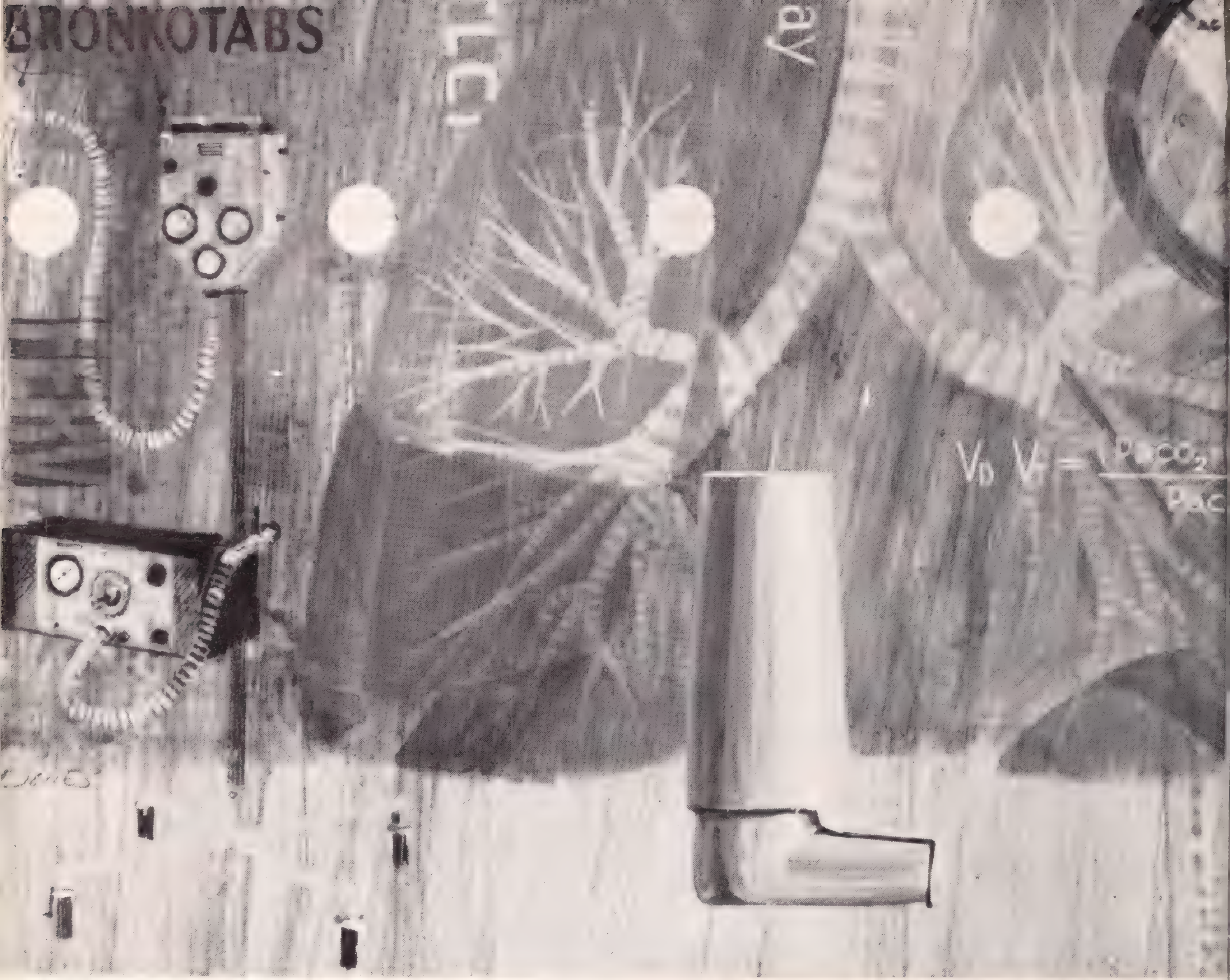

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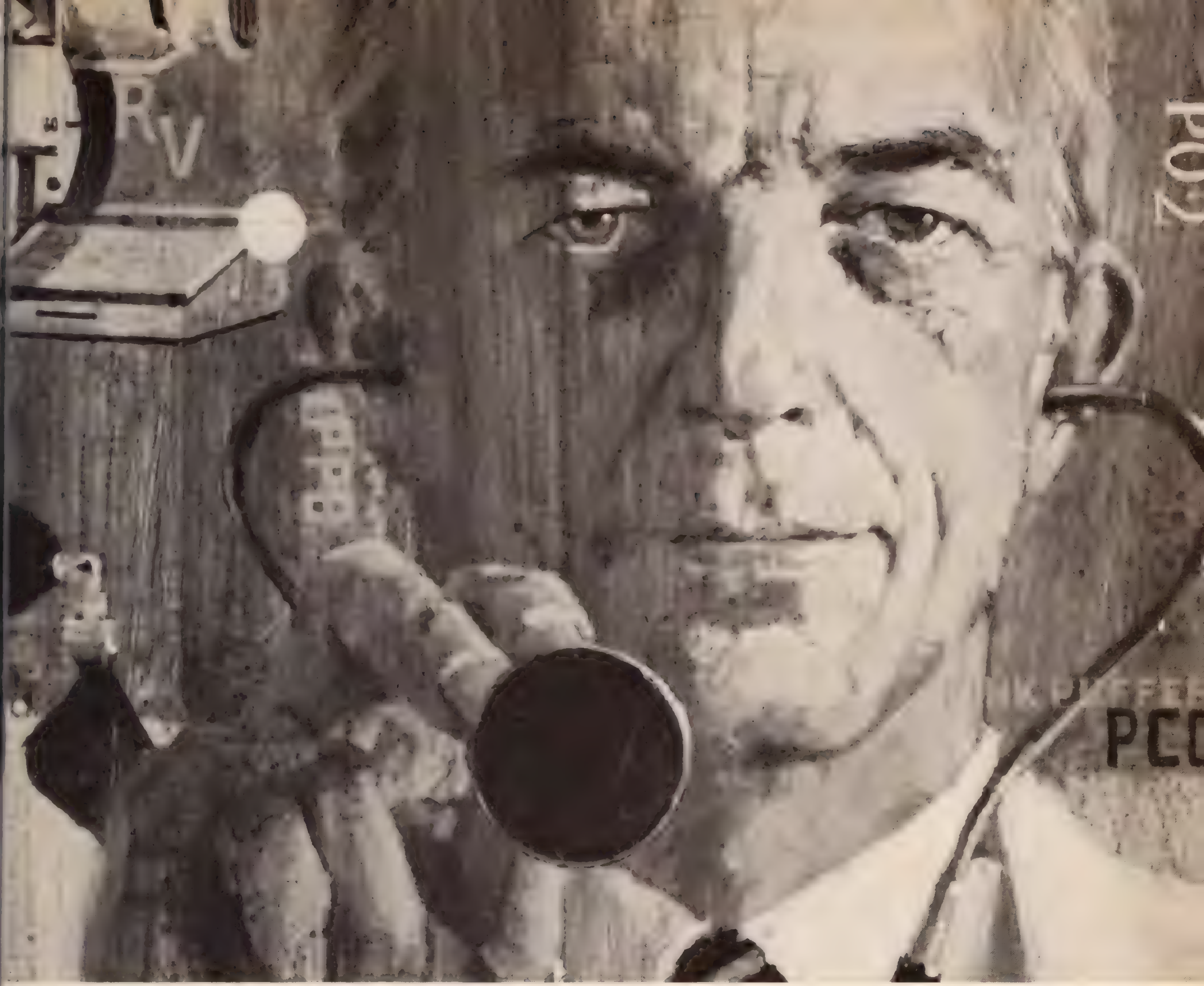

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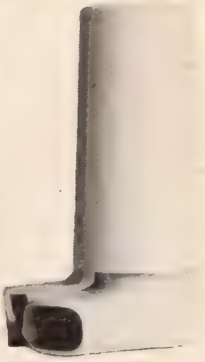

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the right combination in chronic bronchitis / emphysema / asthma

The negative power of undue anxiety in congestive heart failure...
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for severe anxiety accompanying congestive heart failure

Before prescribing, please consult complete product information, a summary of which follows:

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Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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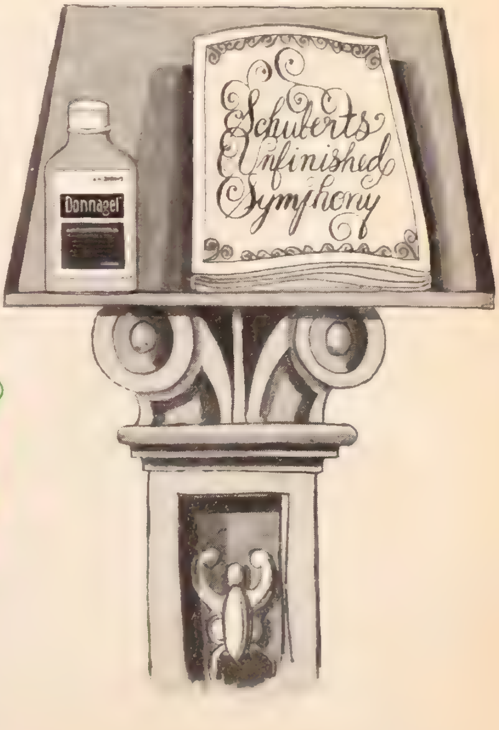

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Emergency Care. Surgical and Medical. Seventh edition. By Warren H. Cole, M.D., and Charles B. Puestow, M.D., with 28 Contributing Authors. Octavo of 438 pages, illustrated. New York, Appleton-Century-Crofts, 1972. Cloth, $12.

The original edition of this work entitled "First Aid: Surgical and Medical," was published in 1942 and was intended as a text for a course in first aid. It has now been expanded considerably, and great emphasis has been placed on definitive care of traumatic injuries and medical emergencies. Many outstanding authorities in the field of trauma have contributed to this new edition.

The Child. A Textbook for the Paediatric Team. By John Rendle-Short, M.A., M.D. Octavo of 191 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paperback, $9.25.

The author believes that the future of pediatrics lies in teamwork. In the past, only doctors, nurses, and parents were concerned with the sick child. Today, members of the pediatric team include speech therapists, physiotherapists, medical social workers, and many others. This book, therefore, emphasizes the team approach in the treatment of the sick child.

Basic Practical Surgery. By C. Barrie Williams, M.D. Duodecimo of 180 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paperback, $8.00.

The author feels that competence in surgery depends on a thorough knowledge of basic principles that have taken centuries to evolve, and he has presented the most important of these in this compact work. Many diagrams and tables have been included to simplify sections of the text.

Orthotherapy. By Arthur A. Michele, M.D. Octavo of 223 pages, illustrated. New York, M. Evans and Company, Inc., 1971. Cloth, $6.95.

This book is designed to help the millions of men, women, and children who are plagued with aches and pains that do not seem to be helped by ordinary medical care. It is written for the general public, but should be of interest to medical students, physicians, nurses, and physiotherapists as well as to everyone in the field of physical education.

The Essentials of Neuroanatomy. Second edition. By G.A.G. Mitchell, O.B.E., T.D., M.B. Quarto of 110 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paperback, $5.25.

The text of this new edition has been revised and improved. However, as deletions and additions have been almost balanced, this edition is only slightly enlarged. Several better illustrations have also been provided.

Tropical Diseases. Fourth edition. By Frederick J. Wright, M.A., M.D.Cantab., and James P. Baird, M.D. Quarto of 165 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paperback, $5.00.

This book serves as a supplement to the tenth edition of Davidson's "Principles and Practice of Medicine" and has been written for students and general practitioners living in the tropics. Considerable progress has been made in this field since the printing of the third edition, and every endeavor has been made to bring the text up to date by appropriate deletions and additions.

Notes on Medical Virology. Third edition. By Morag C. Timbury, M.D., Ph.D. Duodecimo of 134 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paperback, $5.00.

This is a lucid, concise, and comprehensive book which is particularly well suited to help medical students who are primarily concerned with the spectrum of diseases caused by viruses. Recommended references for further reading have been included.

Dynamics of Violence. Edited by Jan Fawcett, M.D. Octavo of 198 pages. Chicago, Illinois, American Medical Association, 1971. Paperback, $3.95.

This book is made up of a collection of articles dealing with the nature, causes, dynamics, and dimensions of violence. As a scientific study, it is intended to provide a greater understanding for coping with this problem on a clinical basis as well as a stepping-stone for greater research.

Myoplastic Amputation, Immediate Prosthesis and Early Ambulation. By Marian Weiss, M.D. Quarto of 245 pages, illustrated. Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, 1971. Cloth, $2.50.

This monograph is a team study conducted in the Department of Rehabilitation of the Warsaw Medical Academy and by the staff members of the Rehabilitation Center at Konstancin, and is based on fifteen years of research activities. It was prepared with support from the Special Foreign Currency Program of the National Library of Medicine.

Wine and Your Well-Being. By Salvatore Pablo Lucia, M.D. Duodecimo of 160 pages, illustrated. New York, Popular Library, 1971. Paper, $.95.

continued on page 790

"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."

– George Sarton, from "The History of Medicine Versus the History of Art"

Should nongovernment scientists and physicians play a role in drug regulation?

Opinion

Results of a questionnaire to 7000 physicians:

82.8%
Physicians should play a role

78.3%
Independent scientists should play a role

69.8%
Medical academicians should play a role

Opinion & Dialogue

Dialog

Should nongovernment scientists and physicians play a role in drug regulation?

Doctor of Medicine

Herbert L. Ley, Jr., M.D., M.P.H., Formerly Commissioner, F.D.A. (1968-1969) Currently Medical Consultant

In order for drug regulation to be effective, participation in the regulatory process from nongovernment physicians and scientists must be encouraged. Without such involvement, there will continue to be a high degree of controversy surrounding any regulations promulgated by the Food and Drug Administration.

There are two areas in which participation and communication by nongovernment physicians and scientists could significantly improve the process of regulation. First, scientists and physicians throughout the country could become involved in consulting relationships with the Food and Drug Administration in important scientific areas while regulatory policies are being evolved. If nongovernment professionals could bring their expertise and experience to bear early in the decision-making process, they would have less reason to criticize the final outcome.

Secondly, practicing physicians, academic physicians, and academic-based scientists could make it their business to comment on proposed regulations appearing in the Federal Register. Ideally, a system could be instituted whereby medical, scientific and technical people could see the Federal Register regularly, and provide the Food and Drug Administration with a body of opinion that has so far gone unheard. The FDA is caught among pressures from industry, Congress, the Presidential Administration and consumers. It should also feel pressures from practicing physicians and scientists.

In order to become more involved in these stages of the drug regulatory process, nongovernment physicians and scientists should begin to exercise their influence through their respective professional organizations, state and national medical societies, and specialty groups. Logically, a letter from these organizations representing a collective opinion has far greater weight in the regulatory process than individual letters. If the Food and Drug Administration receives opinions from these organizations early, before a regulation gets into the Federal Register, they are in a good position to respond with further study and review. Without such dissenting opinions, there is very little incentive to make changes in proposed regulations.

One instance in which practitioners did influence drug regulatory affairs in this way is the recent controversy that arose over the legitimacy of drug combinations. The strong opinion of practitioners on the value of such medication in clinical practice played a very prominent role in making the Food and Drug Administration modify its rather restrictive policy.

Another way in which practitioners can effectively influence drug regulations is by working with drug manufacturers conducting clinical trials of chemotherapeutic agents. When a drug is rated other than effective it may only mean that there is a lack of controlled clinical evidence as to efficacy. Thus, physicians might offer to conduct clinical studies that could help keep a truly effective drug in the marketplace. The treatment of diseases such as diabetes and angina are areas where the practitioner can aid in clinical studies because patients suffering from these diseases are rarely found in the conventional hospital setting.

By working with ethically and scientifically sound study designs in his everyday practice, the practitioner could begin to play an important part in determining official ratings on drug efficacy.

Nongovernment physicians and scientists and the FDA should also improve their lines of communication to the public. The medical community must develop a voice every bit as loud as that of the consumerists, the press, and others who sometimes criticize without complete information. If not, much of wha
the medical communit
and federal regulators d
will often be represented i
simplistic and somewha
misleading terms.

One illustration of th
misuse of the media in th
regard is the recall of ant
coagulant drugs severa
years ago. This FDA actic
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went far beyond its prol
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was a very uncomfortab
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taking these medicatior
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pharmacist had not bee
informed of the action l
the time it was publicize
in most states they we
deluged with calls fro
worried patients.

The practitioner can a
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One would be the creati
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is to be announced, the s
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The pharmacist, in tu
could notify the physicia
in his local community
that he and the physici
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would be to use profe
sional publications t
practitioner receives.

All of this leads back
my opening contention:
drug regulation is to be
fective, timely, and rela
to the realities of clini
practice, a better metho
communication and fe
back must be developed
tween the nongovernm
tal medical and scient
communities and the re
latory agency.

One of a series

ue

Maker of Medicine

Henry W. Gadsden,
Chairman & Chief Executive Officer, Merck & Co., Inc.

In my opinion, it is the responsibility of all physicians and medical scientists to take whatever steps they think are desirable in a law- and regulation-making process that can have far-reaching impact on the practice of medicine. Yet many events in the recent past indicate that this is not happening. For example, it is apparent from drug efficacy studies that the NAS/NRC panels gave little consideration to the evidence that could have been provided by practicing physicians.

There are several current developments that should increase the concern of practicing physicians about drug regulatory affairs. One is the proliferation of malpractice claims and litigation. Another is the effort by government to establish the relative efficacy of drugs. This implies that if a physician prescribes a drug other than the "established" drug of choice, he may be accused of practicing something less than first-class medicine. It would come perilously close to federal direction of how medicine should be practiced.

In order to minimize this kind of arbitrary federal action, a way must be found to give practitioners both voice and representation in government affairs. Government must be caused to recognize the essentiality of seeking their views. One of the difficulties today, however, is that there is no way for concerned practitioners to participate in the early stages of decision-making processes. They usually don't hear about regulations until a proposal appears in the Federal Register, if then. By that time a lot of concrete has been poured, and a lot of boots are in the concrete.

Physicians in private practice, and particularly clinicians, should press for representation on the advisory committees of the Food and Drug Administration, joining with academic and teaching hospital physicians and scientists who are already serving. Though practitioners may not have access to all available information, the value of their clinical experience should be recognized. Clinicians, for example, rightly remind us that difficulty in *proving* precise effects does not necessarily mean a drug is ineffective.

Unless practitioners are more involved in drug regulations, it will be increasingly difficult for the pharmaceutical industry and scientists elsewhere to make optimal progress in drug development. The benefit/risk ratio must be re-emphasized, and as part of this it must be acknowledged that benefit can come from the judgments of medical science as a whole. Even this concept, unfortunately, is not always accepted in drug regulatory processes. For example, if current medical opinion holds that an excess of total lipids and cholesterol in the blood is probably predisposing to atherosclerosis, and if a drug is discovered which reduces total lipids and cholesterol, the drug ought to be accepted *prima facie* as a contribution to medical science . . . until someone disproves the theory. The sponsor should not have to prove the theory as well as to develop and test the drug.

I feel a major new effort must also be made to erase the feeling of mistrust of medicine and of medicines that seems to be growing in the public consciousness. Triggered primarily by strident announcements in Washington, people are reading and hearing confidence-shaking things almost continuously. Although challenge and awareness are essential to medical advancement, our long-term goal is constructively to build, not destroy. This means strengthening patient-physician relationships based on mutual confidence and trust. And in matters of health policy, it means working toward participatory rather than adversary proceedings—where everyone with an interest and a capacity to contribute has an opportunity to be heard . . . and, if that opportunity is not spontaneously afforded him, he may seek it.

Opinion & Dialogue

What is your opinion, doctor?
We would welcome your comments.

P·M·A

The Pharmaceutical Manufacturers Association
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Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

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continued from page 784

This little paperback presents the value of wine from a variety of viewpoints: medical, psychologic, and social. The author has made many investigations into the use of wine in health care and has written a number of books on the subject.

Side effect of procainamide

Kenneth L. Wehr, M.D., and Earl Watts, M.D., reported in the *North Carolina Medical Journal* **32:** 56 (February) 1971, that physicians prescribing procainamide in treating cardiac arrhythmias should be alerted to the possibility of a syndrome resembling lupus erythematosus in individual patients. In the affected patient the drug can cause significant morbidity and, because the condition can be reversed by withdrawal of procainamide, early recognition is important. They reported on a series of seven patients on procainamide who had positive LE preparations and symptoms suggesting lupus erythematosus. They had been getting procainamide for cardiac arrhythmias for periods ranging two months to four-and-a-half years. The data suggest that this phenomenon occurs more frequently than has been recognized, since the symptoms are seldom dramatic. Whether the drug-induced syndrome actually unmasks a latent immunological disease or reflects a drug reaction is not clear, although from the statistics it appears doubtful that all cases reflect latent systemic erythromatosus.

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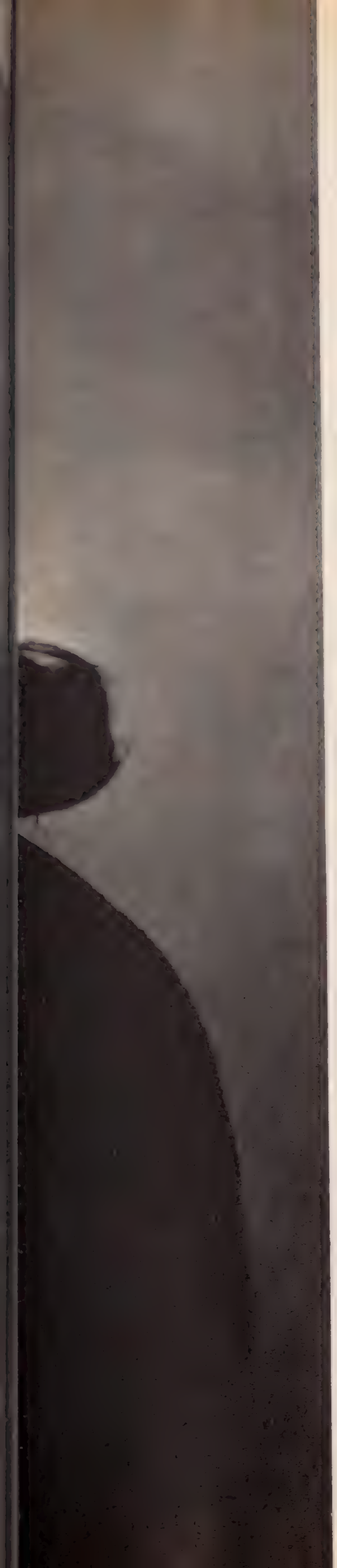

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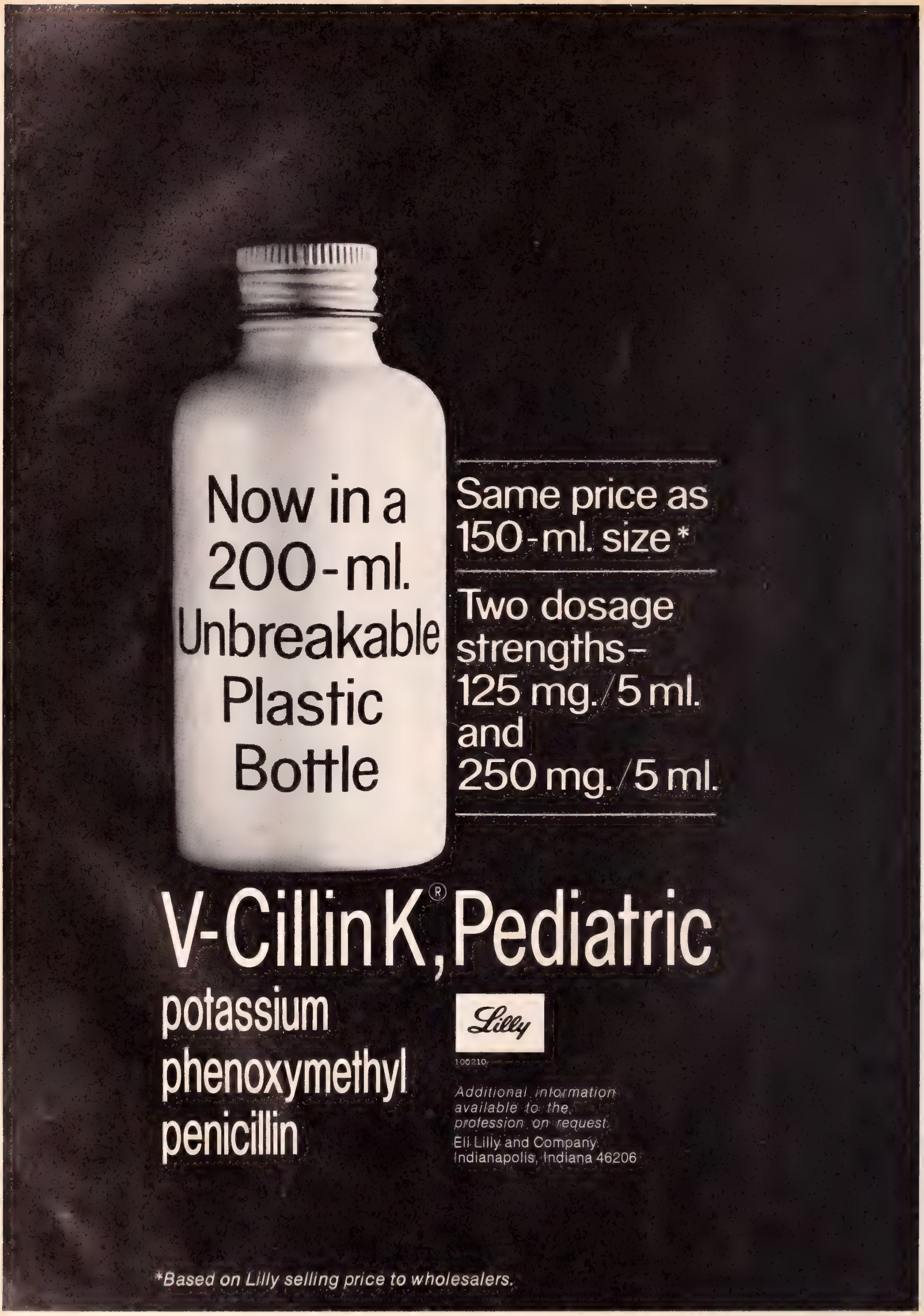

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Milton Helpern, M.D.

Festschrift for Milton Helpern, M.D.

This issue of the *Journal* appears in the nature of a Festschrift to honor the seventieth birthday of Milton Helpern, M.D., Chief Medical Examiner of the City of New York.

It is a signal honor for the *Journal* to do this for one of the most distinguished members of its Associate Editorial Board.

The collection of original papers by Dr. Helpern's students, colleagues, and friends in the field of forensic medicine was made possible only by the benign secretiveness of Beatrice Helpern who obtained for us the two previously unpublished historical articles by Dr. Helpern and to Michael Baden, M.D., Deputy Chief Medical Examiner, who has had this effort in hand for many months, and with whom it was a joy to work.

We hope it comes as a surprise to Milton, though we know full well what a hard man he is to surprise.

The issue marks a high point in the development of forensic medicine in this State and should be a valuable reference source for the future.

All of this is by way of introduction to the following graceful editorial written especially for this volume by one of Milton's oldest and dearest friends, Mr. Justice Bernard Botein, formerly presiding Justice of the State Supreme Court and presently President of the Bar Association of the City of New York.

Milton Helpern, M.D.

I know no man of medicine who has captured the respect and affection of men of law so completely and deservedly as Dr. Milton Helpern, Chief Medical Examiner of the City of New York.

Let's face it. In the area of forensic medicine, lawyers and judges view doctors with as much skepticism as doctors view them. The faith, at times reverence, which lawyers have for their family doctors, and which doctors in turn often have for their family lawyers, does not find professional parallel in the courtroom. The "battle of experts" is a frustrating, and can even be an unsavory courtroom spectacle.

In medical terms unintelligible to judge and jury, one expert diagnoses the plaintiff's injuries as black and the other expert testifies they are white. One states the plaintiff suffered a linear fracture of the skull; the other that it is only the suture line he was born with. The charlatan may be a much more impressive witness than the competent, honorable physician. And the jury is driven to groping for the truth.

Dr. Helpern, on the other hand, takes the extra cogitative trouble to translate enigmatic medical terms into lay language understandable by jurors. His impregnable integrity, scholarship, and articulateness have become legendary. His loyalty is to truth—to the validity of his finding, and not to any person involved in a lawsuit or other situation. As he himself has so aptly put it: "We are strictly a discovery agency. We are not interested in whodunit. All we want to know is *what* did it."

Dr. Helpern seldom testifies for the defense in a criminal case. Certainly not because of lack of sympathy for defendants—this kindly, modest man has devoted a lifetime to his arduous specialty because of an abiding love for mankind. But few prosecutors will dare seek an indictment when Dr. Helpern has ruled out a cause of death on which they would have to reply.

I understand no one has done more to elevate professional standards and efficiency in the official screening of deaths than Milton Helpern, by his own example and the administration of the important office he heads. There is no doubt that countless cases of deaths from accidents that had been erroneously certified as resulting from natural causes by unqualified medical examiners are now properly diagnosed; and in many instances needy families now recover the benefits of accident or workmen's compensation insurance to which they are entitled.

He is continuously adjuring his coprofessionals that in performing autopsies they must take time to learn the background and circumstances of the case. Helpern himself has been called "a (Sherlock) Holmes with a microscope." The lank, dour Sherlock Holmes with his magnifying glass and the portly, cheerful Milton Helpern with his microscope, both ferreting out elusive findings, make a formidable twosome. Helpern is a never-ending treasure trove of material for mystery writers; in 1965 the Mystery Writers of America gratefully voted him their much coveted *Raven.*

The ***New York State Journal of Medicine*** is to be congratulated for devoting an issue to this great man of medicine and law. As a lawyer and former judge I am happy to contribute my small meed of praise.

Bernard Botein
President, Association of the Bar of
the City of New York; former Presiding
Justice, Appellate Division, New York
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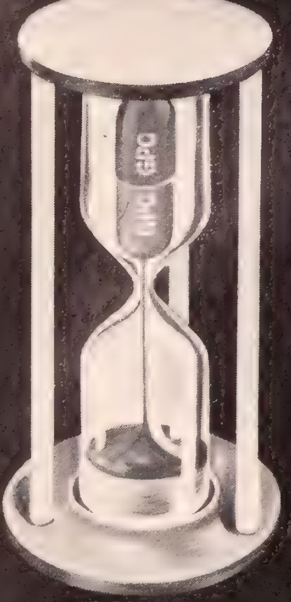

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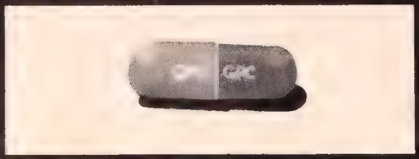

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FORENSIC MEDICINE*

Past, present, and future

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Murder, or the unjustified intentional killing of another person, is an ancient crime. The methods employed for murder in olden times were for the most part relatively crude and easily ascertainable from circumstances and external findings. Their recognition in most instances did not require the services of a physician except in cases of poisoning; and considering the difficulty of detecting poisons today with all our modern and intricate methods of analysis, it is somewhat frightening to contemplate on what basis the conclusion of a death by poisoning was reached. It is appropriate in this discussion to consider other types of homicide, including those which are unintentional, arising from assault on the person with or without the use of dangerous weapons, and also involuntary homicide resulting from culpable negligence, the two latter categories comprising manslaughter. From a medical standpoint, the same findings might be encountered on the person of a homicidal victim. The wounds in themselves do not always resolve the medicolegal problem or whether the case was one of manslaughter or murder or, in some instances, accident or suicide.

Coroner's limitations

The difficulty of restricting one's interest and discussion strictly to homicide is significant to emphasize, and such limitation in official concern is responsible for failure to detect numerous cases of the more subtle types of violent death, including many homicides in those jurisdictions in which the coroner is limited in his authority and can only investigate with a complete postmortem examination deaths which are obviously or reasonably suspicious of being the result of criminal violence or suicide. The premature classification of apparently natural and violent deaths is implicit in most statutes governing and limiting the authority of the coroner. The restrictions of these statutes by discouraging and interfering with thorough systematic postmortem examination in many cases in which the findings on the body are not outwardly suspicious of violence, have been detrimental to the proper administration of justice. The fact that such violent deaths were never discovered or even suspected, and that the community and authorities have remained in perpetual ignorance of the situation, does not in any way detract from its seriousness. For every initially undiscovered homicide in which subsequent circumstances and suspicion were responsible for an exhumation and a belated autopsy, sometimes with discovery of violence but usually unsatisfactory as to findings and interpretation because of the postmortem changes and time interval, it is also reasonable to conclude that many cases remain undetected. Belated discovery is only an indicator of the danger to the community of initial oversight that has resulted from an inadequate system of official investigation. Violent death may escape detection even with a most efficient system but generally the less comprehensive and less efficient the system, the more frequently will such and other types of deaths go unrecognized to the disadvantage of the public.

There is the cardinal principle in legal medicine which must not be violated and that is that a person may be seriously or even fatally wounded without immediate disability and without any or without conspicuous or substantial signs of traumatic injury. Yet most statutes governing the authority of coroners throughout the country curiously disregard this principle and take for granted the very answers which the investigation is meant to provide.

In ancient times perhaps more so than today, homicidal violence was inflicted with weapons and in a manner that left obvious traumatic effects. Before the days of civilian police and law enforcement agencies, retribution was usually on a personal basis. Postmortem examinations with autopsy were relatively infrequent and more apt to be carried out among the military and those executed for capital offenses.

Need for complete autopsy

There are records of instances in which the effectiveness of supposed antidotes for poisons were tested on condemned prisoners. Considering the great variety of crimes for which capital punishment was inflicted, there was no dearth of unfortunate subjects who were willing to undergo the test which, if successful, would bring about a reprieve. Thus, in the late 1500s, Ambroise Paré, at the request of Charles IX suggested the use of a condemned criminal for testing the supposed antidotal properties of a bezoar stone. The prisoner was a cook who had stolen two silver dishes from his master's house for which he was sentenced to be hanged and strangled. A potion of poison was administered and immediately afterward the supposed antidote. At once the victim began to vomit, suffered abdominal cramps, diarrhea, and great thirst. Within the hour he was in great agony, vomiting constantly, drenched in cold sweat with blood oozing from all orifices. Paré gave the victim a pint of oil to drink but remarked that it did him no good because it had been given too late. In all the victim survived seven hours and cried out that he would have been better off dying on the gallows. Paré performed an autopsy and found the bottom of the stomach black, hard, and dry as if it had been cauterized, indicative to him of poisoning by sublimate. The experiment satisfied the king that the antidote was of no value and ordered it thrown into the fire. In all fairness to Paré, he had told the king that he did not believe the stone had any value as an antidote, but the king insisted on it being tested.

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*Talk given before the John Shaw Billings History of Medicine Society at Indiana University Medical Center, Indianapolis, March 4, 1970.

One indeed wonders about the reliability of the interpretation of postmortem findings in suspicious and violent deaths which were not obviously the result of crushing and other blunt-force injuries and of penetrating wounds. The rapid postmortem decomposition and distortions which the dead body sometimes undergoes, as result of environmental conditions and the escape of decomposed blood from body orifices, must have led to erroneous conclusions of death by violence and traumatic asphyxia, even as such cases confuse the inexperienced observer today. The loss of soft tissues resulting from the ravages of insects, rodents, and even larger animals, of crustacea and fish, depending on whether the body is exposed in the air or submerged in water, must also have resulted in erroneous conclusions of violent death, and such changes may obscure the effects of injury and make difficult the autopsy and interpretation of the findings. Subtle effects of violence may be obscured or abolished.

I was asked to review a case in which a man's body was found submerged, floating face down in a fresh water pond, overgrown with algae. The person had been missing several days and when found the fully clothed body showed marked decomposition, bloating with gas, discoloration of the skin, and superficial loss of soft tissue on the nose and other parts of the face. The body was taken to the autopsy room of a neighboring hospital, and the pathologist was asked by the district attorney to perform an autopsy. This was an unpleasant task because of the advanced decomposition. There was a hurried inspection of the internal organs and a rapid conclusion was reached that no water had been inhaled in the lungs, also, that the skull was fractured and that there was a large "subarachnoid hemorrhage." The pathologist decided that the deceased was dead before his body entered the water, and in view of his interpretation of the findings in the head, he concluded that the victim had been assaulted and necessarily had been thrown into the water. A thorough official investigation of the circumstances provided ample basis for consideration of the possibility that the deceased had committed suicide.

The district attorney had taken it on himself to have the organs, which had not been removed but only inspected by the pathologist, taken out of the body by the undertaker prior to embalming, and then frozen and sent to the medical examiner's office in New York for examination. There was no subarachnoid hemorrhage. The brain was green because of decomposition but showed no evidence of injury. The photographs of the body prior to autopsy were like those one frequently sees of submerged bodies in which the exposed skin has become soft and macerated with loss of tissue. The lungs in their most peripheral margins contained numerous green algae, similar to those found in the pond water. Considering their location, it was reasonable to conclude that water had been inhaled and therefore that the deceased was alive when he entered the water, and, since there was not any subarachnoid hemorrhage or intracranial hemorrhage or brain injury, that the changes in the head were entirely postmortem.

For insurance reasons the body was subsequently exhumed for another autopsy. I was asked to witness the procedure for the district attorney. No skull fracture was found, and what the original pathologist had called a fracture was an evident artifact.

It is extremely easy to confuse portmortem changes due to decomposition with injury if one is not experienced with such findings. The corollary of this is that postmortem decomposition may obliterate subtle signs of true asphyxiation, making it impossible to prove by postmortem examination that strangulation or smothering had taken place. Nevertheless, it is amazing how much can be learned from a careful autopsy on a decomposed body and even on a mutilated dismembered body. There is no case in which it is not worth while trying. Unfortunately, the reaction of many pathologists and other physicians who are sometimes called on to examine such cases is one of distaste, and there is a tendency to close one's eyes hoping that the unpleasant object will permanently disappear. These cases are a challenge. They do not disappear, and failure to perform a careful and complete autopsy may result in overlooking a readily demonstrable or less conspicuous form of homicidal or other type of violence. All submerged bodies, regardless of how decomposed they are, deserve a careful autopsy in the public interest, but the person called on to perform this task must be experienced. It is not a job for the surgical pathologist or for the hospital pathologist who is unhappy if an autopsy has to be done more than a few hours after death.

Medical examiner's system

The test of an effective, efficient organization for the investigation of sudden, suspicious, and violent death is the systematic, consistent reporting of all cases with which it is concerned. In the medical examiner's system, as it has operated since 1918 when it was established by legislative act for the City of New York, the Office of Chief Medical Examiner is a separate municipal agency, the City comprising five boroughs, each a county, with a total residential population of 8 million and a transient population of about one-half million more. The medical examiner's law contains many essential and important provisions and has served as a prototype for similar statutes for other counties and states throughout the country. The medical examiner's system in New York City was patterned after that which was established in 1877 in Massachusetts to replace the coroner's system, but provides for the reporting of a greater variety of deaths and requires that all medical examiners, in addition to being physicians, also be skilled pathologists and microscopists. Thus the New York City law for the first time recognized that the basic medical discipline of a medical examiner is pathology so that meaningful autopsies could be performed as part of the postmortem examinations and in conjunction with the investigations carried out at the scene where the dead body is found. The law also requires that the autopsy, which is at the discretion of the medical examiner, include necessary microscopic, toxicologic, serologic, and microbiologic studies.

The medical examiner's system as it operates in New York City is the only jurisdiction in which safeguards exist for the reporting of all medical examiner's cases. The Health Code requires that every death occurring in the city be certified and the cause of death reported to the Burial Permit Bureau of the Health Department before the dead body can be taken from the place of death by a funeral director. Some attending physicians in private and hospital practice inadvertently neglect to report some medical examiner cases for investigation, but these are screened out by the Health Department during this routine review of all death certificates. Approval of death certificates is done over the telephone so as not to inconvenience the physicians and the family of the deceased. In this way a substantial number of medical examiner cases are referred to the medical examiner's office in addition to those initially reported. Some of these screened cases were proved to have been violent deaths of one type or another including deaths from abortion, poisoning, accidents, and suicides.

In recent years the medical examiner's office has initially investigated 30,000 of the 90,000 deaths which have occurred in the city, or one third of the total. Of these, in 1964, 6,000 deaths were turned back to the attending private or hospital physician for certification. Of the deaths in this "No Case" category, many occur in hospitals, and subsequent permission autopsies confirmed the fact that the deaths were natural. Included in the 30,000 cases are about 3,000 cremation requests which also require looking into, not only for the purpose of determining whether there might be some unusual circumstance which would make it wise to establish definitely the cause of death by autopsy but also to preclude any irresponsible accusations by disgruntled relatives and friends that the death was suspicious, a situation which could never be clarified after cremation. Occasionally among the cremation cases a suspicious violent death by poisoning has been encountered.

The remaining 21,000 deaths are investigated at the scene by a medical examiner or medical investigator who inquires into the circumstances of the death and prepares a report of his findings, including the examination of the undisturbed body, its position, condition, who found it, and when. All pertinent circumstances are recorded, also the names of witnesses and addresses of informants. The medical examiner can impound any objects which may require examination and may throw some light on the cause of death. Any obviously nonsuspicious cases of medically unattended death, the medical examiner or medical investigator may certify merely on the circumstances and his examination of the body at the scene. If he decides that the circumstances are not clear, are in any way suspicious, and that a cause of death should be determined by an autopsy, even though it may eventually prove natural but with a possibility of violence, he has the authority to order the body removed to the medical examiner's office for an autopsy.

In the event of a death indicative or suspicious of criminal violence, the autopsy must be performed by a medical examiner, who by training is a forensic pathologist, in the presence of another medical examiner, both of whom must review the findings, prepare the report, and sign it. Any other examinations which are indicated by the autopsy, such as toxicologic analysis, serologic and other tests for blood and blood stains, semen and seminal stains, histologic tissue specimens, and objects like fingernail scrapings, hair, and other material for microscopic study, are also carried out. In homicide cases the clothes become an integral part of the autopsy. Gunshot wounds especially require careful description, for only in this way can some estimate be given as to the distance of a weapon from the surface of the victim. In body wounds the clothing often provides the information as to the direction of the bullet and the range of fire. This appears elementary, but it is surprising in how few autopsies in gunshot cases throughout the country this information is recorded. These examinations are the responsibility of the medical examiner when he performs his autopsy. He may obtain assistance and ask advice of members of the ballistic bureau of the police department. The autopsy, however, is the physician's responsibility, and this includes an examination of the clothing of a victim of homicide and of a victim of a hit-and-run driver in a vehicular homicide.

The medical examiner is responsible for the removal of all bullets, not just a token one, in cases of multiple gunshot wounds. This, also, appears obvious, and yet it is amazing how often visitors, including physicians, will ask why it is necessary, first, to do an autopsy in an obvious gunshot wound, and, second, why it is necessary to recover all of the bullets. The answer is very simple. The bullets provide essential evidence for comparison with test bullets fired from a suspected weapon. Also, a little imagination will suggest that different caliber missiles may be involved. Occasionally, the blade of a piercing weapon may break off in the tissues and be recovered in the body. The actual comparison of bullets is the work of the trained police ballistics expert. The pathologist need not become a firearms expert. It is not necessary for the forensic pathologist to tote a gun to understand the effects of firearms on the body.

Of the 21,000 deaths which the medical examiner's office investigates and certifies, 7,000 include an autopsy. In 1969 there were 650 homicides. These are complete autopsies with whatever ancillary studies are indicated. In homicidal cases blood is always removed for grouping, and hair and fingernail scrapings are taken. In cases of sexual assault material is taken for semen and tests, including acid phosphatase determinations, microscopic examinations for spermatozoa, and grouping determinations. A routine medical examination of blood, brain, and stomach contents for alcohol and in indicated cases for other poisons is also carried out. There has been a large increase in the number of chemical examinations in recent years with increasing complexity in the analyses because of the advent of so many organic medications and other chemical substances which have taken the place of carbon monoxide as a means of poisoning. Whereas in former years 80 per cent of the poisonings were caused by carbon monoxide, a substance easily detected in the victim's blood, and 80 per cent of the suicides were caused by the inhalation of raw manufactured carbon monoxide containing illuminating gas, in recent years the deliberate ingestion of hypnotic and sedative drugs, with suicidal intent, has provided an increased amount of difficult work for the medical laboratory.

A large number of deaths from intravenous narcotism has similarly increased the complex work of the toxicologist. The problem of attempting to corroborate the circumstances in which an overdose of narcotic drugs has been deliberately administered to another person also makes additional complex work for the chemist.

When the medical examiner has determined a cause of death which is indicative or consistent with criminal violence, he is required to notify the police, if they are not already aware of the case, and also the district attorney of the proper county in which the crime occurred. Complete reports of the autopsies are prepared and copies sent to these agencies. Other types of deaths are reported to the proper agencies for prompt investigation and corrective action. A considerable amount of statistics is accumulated by a large medical examiner's office, but this is not its prime purpose. Its investigations, autopsies, and other examinations are in the public interest, and time is of the essence. There is an urgency about the work.

The investigation of such a large variety of deaths, all those which are sudden, unexpected, without medical attention, suspicious, unusual, violent, by casualty, suicidal, homicidal, by poisoning, or by abortion, are reportable. The policy is to report all deaths in which a traumatic injury may have played any part whatever. Among the unusual deaths are all unexpected deaths which occurred in hospitals or in physicians' offices during diagnostic, therapeutic, surgical, or anesthetic procedures. Among those occurring in physicians' offices have been a number which an autopsy proved to have resulted from criminal abortion.

The efficiency of a medical examiner's system cannot be judged from the detailed way in which single cases are investigated and reported. The test is in the consistency with which large numbers of cases are reported and properly looked into. The system is never perfect. This is something for which we must strive. Implicit in this is a sufficient number of qualified medical examiners and other scientific personnel, a system of communication, and an adequate budget for all purposes.

The only assurance for the discovery of all violent deaths, which include the criminal category, is to provide for the investigation of a large variety of cases. Deaths in the peripheral zone which perhaps overlap and encroach on the private physician and hospital have proved worthy of inclusion even though the jurisdiction is not sharply demarcated. This is an area from which many unsuspected violent deaths and poisonings, including some criminal abortions, are derived. If our circle of cases was more sharply defined and with a smaller radius, I am confident that the talents and facilities of an effective medical examiner's office would not be called on and would be wasted. This is the situation which exists in many jurisdictions at the present time. It is necessary not only to have a competent agency but also to have a system for the investigation of all cases which should be directed to it.

LAW AND PATHOLOGY THROUGH THE AGES

The coroner and his descendants—legitimate and illegitimate

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The task of drawing legal conclusions from medical determinations has faced the law, and its servants, lawyers from time immemorial. The purpose of this article is to describe the development of the medicolegal institution of the coroner down through the centuries, culminating with a survey of the role of the modern forensic pathologist in the context of present day law and practice.

Historical background

England. In the beginning the role of forensic medicine, as exemplified by the cases of that era, was hardly one of scientific exactitude. In *Hales* v. *Petit*,[1] decided in London in 1562, Sir James Hales, a justice of the common pleas and son of an eminent baron of the exchequer, had the audacity to drown himself in a river. In due course, a suit was brought by the crown's assignee against the widow for recovery of the deceased's property, since in those days a felon's property was forfeited to the crown (incidentally, a practice which was quite profitable to the crown). A suicide was then considered a felony, as it still is in many jurisdictions today. The issue in the case was whether this felonious suicide was committed before or after Sir James' death, since if it were completed after his death, his property would not be forfeited. Most illuminating of the state of forensic medicine in this bygone era was this statement made by Sir Anthony Brown, J.: "Sir James Hales was dead, and how came he to his death? It may be answered, by drowning. And who drowned him? Sir James Hales. And when did he drown him? In his lifetime. So that Sir James Hales, being alive, caused Sir James Hales to die, and the act of the living man was the death of the dead man."[2]

It is widely believed that this case formed the basis of some Shakespearian wit. Certainly in *Hamlet*, Act 5, Scene 1, we find the following legal exposition given by the First Gravedigger: "Here lies the water; good; here stands the man; good; if the man go to the water and drown himself, it is, will he will he, he goes; mark you that; but if the water come to him and drown him, he drowns not himself; argal, he that is not guilty of his own death shortens not his own life." "But is this law?" asks the other gravedigger. "Aye, marry, is't; crowner's quest law." Perhaps we are fortunate in not having those sorts of legal or theatrical-legal arguments to contend with today, but they do show how far the office of coroner has progressed since those primitive days.

In 1562, the office of coroner, whose job it had been to ascertain with his jury the cause of Sir James' death prior to the commencement of this suit, had been in existence for almost four centuries. It began in Anglo-American jurisprudence in the twelfth century. The office is first mentioned in articles of eyre for 1194,[3] and the majority view is that it was created in that year,[4] although there has been a great deal of speculation that the references of that year would have been much fuller had they been made about a newly created office rather than a pre-existing one. Throughout the Middle Ages, the coroner had a wide assortment of important judicial and administrative functions. These included the enrollment in the county courts of all private appeals of felony (the normal method of commencing a criminal prosecution in the twelfth century), hearing the appeals, receiving abjurations of the realm from convicted felons, hearing confessions, and holding inquests on dead bodies. This last was an important function; a rigid procedure commenced with the discovery of the death since the crown, whose servant the coroner was, had important rights in what had been the property of the deceased in cases of suicide. In fact, many of the coroner's functions had similar overtones; thus, the crown had rights in the property of all felons, as well as in the deodands (those objects whether animal or mineral, used to kill, or which caused the death of a man). The coroner was the crown's "man on the spot" to see that "justice" was done. Although the coroner was junior to the sheriff of his county and to the visiting justices, he was the keeper of the court rolls and probably, next to the Sheriff, the senior royal administrator present in their courtrooms.

From the twelfth through the thirteenth century, most coroners were elected by the knights and freeholders of their counties, although some coronerships were hereditary. By the fourteenth century, however, many were directly appointed by the King, and this coincided with the decline in the importance of the office. As the private appeals in criminal and civil suits lost ground to the new writs, and as the eyre itself declined in importance, the office became much less significant.

This period also saw the rise in importance of the justices of the peace, and these officials usurped many of the coroners' traditional functions. Thus, it was now their job to conduct preliminary investigations in cases of suspected homicide. From the middle of the fourteenth century, coroners were subject to judicial supervision by justices of the peace.[5] Nevertheless, coroners retained the obligation to hear inquests, and in 1487 an act was passed providing for payment for each inquest held on "a body slain," although no payment was to be made in cases of death by misadventure. Little changed in the next two centuries. If anything, the office fell into further disfavor.[6]

The calm did not last, however, and in the middle of the eighteenth century, a new conflict arose in England between the coroners and the justices of the peace. In 1751, an act was passed raising the fee to be paid for inquests "duly held," and allowing traveling expenses. However, these monies were charged to the rates, and therefore fell to be approved by the justices at quarter sessions. The justices refused payment except where the death had been accompanied by evidence of felony—on the basis that an inquest was not "duly held" without such evidence being present—thus effectively limiting the coroner's jurisdiction to cases where there was obvious evidence of violence, and ignoring his supposed duty to investigate all sudden, unexplained deaths. This limited jurisdiction came to be accepted by all the courts well into the nineteenth century.[7] This obviously prevented the coroner from developing into an effective medicolegal investigator.

In England, it was not until 1836 that an act was passed allowing for the payment of medical witnesses at coroners' inquests, and for payment for autopsies and toxicologic analysis. In that year, also, the register of births and deaths was established, making homocide much harder to hide and leading to a significant increase in the numbers of inquests held. But conflicts with the justices continued, and it was only by the Coroners Act of 1887 and the Coroners (Amendment) Act of 1926 that the coroners' duties and the extent of their jurisdiction were finally clarified. Since the passage of those statutes, it has been the function of the coroner to investigate all sudden, violent, or unnatural deaths and the deaths of people in prison by holding an inquest. No determination whatsoever, other than the cause of the death being investigated, may be made by the coroner or his jury under these acts and the rules made pursuant to them. It should be noted, with respect to the office of coroner in England, that, despite his important technical duties, it was not until the 1926 act that a coroner was required to have any qualification for the office. The requirements of that act, which are still in force, provide that the coroner be either a barrister, a solicitor, or a medical practitioner of not less than five years' standing in his chosen profession.

United States. Up to the middle of the second decade of the twentieth century, the office of coroner survived throughout the United States in a strikingly similar state of inefficiency and disorganization to that which prevailed in England. When these deficiencies finally became apparent, the solutions chosen diverged widely, both between the United States and the British Isles, and among the states themselves. In England, as in some of the states, the path chosen for the much-needed reforms was the requirement of professional qualifications for the coroners, and of medical assistance in cases where the coroner was a lawyer.[8] But in increasing numbers, the various states have come to replace the coroner entirely with a brand new office, that of the medical examiner.

This process began in Massachusetts in 1877, but it was only in this century that the revolution really took on significance. In several regions the coroners came under increasingly heavy fire as this century moved into its second and third decades. In Cleveland in 1912, in New York in 1915, and in Missouri in 1927, reports were published concerning the functions of the coroners' systems. These reports unanimously condemned them as being in the hands of politically corrupt forces, and without any scientific, medical, or legal facilities or personnel adequate to the task of reaching effective medicolegal determinations. Whereas England was in the process of tightening coroners' qualification requirements and limiting their jurisdiction solely to the issue of the cause of death, in these American jurisdictions the feeling grew that there should be a move away from jury hearings, even if organized by professional men, to a more centralized and efficient investigatory system based on scientific, rather than lay, determination.

Today, where both systems are still in operation in different parts of the common law world, it has not been the reorganization of systems that has really made forensic investigation more effective, but the reorganization of the personnel doing the work of investigation, and whether properly trained personnel have the authority and jurisdiction to make the key decisions. There is a consensus that a coroner who is trained as a forensic pathologist, or who has one on his staff, is just as effective as a medical examiner who is a pathologist similarly trained, and that both are considerably more effective than any of their counterparts who are without such training or assistance.[8,9] Thus, the factor of significance is not so much whether, in a particular place, the traditional coroners' functions are still carried out by a "coroner" or by a "medical examiner," but rather who the "coroner" or "medical examiner" is, and what his qualifications are.

In our opinion, there are definite advantages to the more modern medical examiner system, mostly related to the fact that it is an expert, executive system not dependent on or delayed by the need to explain complex jargon to juries; the old "inquest," in other words, is redundant under this modern system. This does, of course, cause some problems in insuring the proper supervision of the system while at the same time having the medical examiners sufficiently independent of the system for administering justice so that it can function objectively and effectively.

To make the much-needed change-over from unqualified to specialized personnel in charge of their medicolegal investigations, a number of states and cities have adopted medical examiner systems during the course of this century.[10] Following the examples of Massachusetts in 1877 and New York City* in 1918, many jurisdictions have moved over to this more streamlined approach to their investigational needs. Because it is a relatively young system, it has an identity problem that is more marked than that experienced by coroners. Both offices share some problems—such as the performance of a legal autopsy and deciding what can and should be done with dead bodies—but the medical examiner has additional problems relating to the precise definition of his role in society and of his relationship to the other parts of the system which administers justice, such as the prosecutor and the judiciary.

Role of the medical examiner

Michael Baden, M.D., the deputy chief medical examiner of New York City, has suggested quite forcefully that the medical examiner's role should no longer be seen as being limited to the documentation of physical causes of death in particular cases, but that he has a responsibility to interpret his findings so that unnatural death can be prevented.[11] Dr. Baden further suggests that it is the medical examiner's duty to communicate his unique findings to the world at large, not indiscriminately, but in such a way as to help isolate trends, and to contribute to the prevention of unnecessary deaths by pointing out their causes, whether physical or sociological. Even aside from the implications of these new approaches, however, there are several legal problems already confronting forensic pathologists.

Problems of pathologist. *Autopsy.* The foremost of the legal issues with which the forensic pathologist is presently confronted, whether or not he is a medical examiner, is the question as to when he may and should perform an autopsy. This has remained one of the most problematical questions of medical jurisprudence because it involves the reconciliation of two factors: statutory law and the wishes of the deceased and his family. Furthermore, the extent to which the deceased or his family retain any say in the proceedings is complicated by the confused state of the law as to what rights exist in cadavers and who possesses such rights as do exist. In some states such as New York, virtually all these conflicts have been reasonably clearly settled by a series of statutes. This has occurred in New York largely through the influence of a series of extraordinarily able and influential chief medical examiners. The scope of the medical examiner's authority in New York to investigate all kinds of violent and suspicious deaths within their jurisdictions is clear, including their discretionary authority to perform autopsies.[12] Furthermore, the New York public health laws control the disposal of all dead bodies, including the rights of parties in relation to autopsies not required by the medical examiner, and the removal of organs for transplantation purposes.[13,14] In other jurisdictions, however, the old common law rules still apply, and determination of exactly what those rules were or are is no simple business.[15]

Even where the statutes appear to lay down all the rules for the successful resolution of all the various conflicts of interest, however, this is such a sensitive area that conflicts between the individual and the pathologist continue to arise. As can be seen from the recent exhaustive survey of this subject by Waltz,[16] the conflicts which most commonly arise are those involving nonofficial autopsies. The state is not a source of authority for the autopsy, except in the case of unclaimed bodies,[17] but the state does require authority either from the deceased during his lifetime or from a surviving spouse or next of kin.[18] In cases where an autopsy has been performed without such authority, those whose authority should have been obtained are entitled to damages, both from the physician who performed it and from the hospital where it was performed.[16] This seems to be true even in jurisdictions where the common law rather than the more modern statutes prevail. Even though bodies are not regarded as commercial property, another legacy from the English common law, both courts and legislatures alike have come to recognize rights of possession strong enough to admit of remedies when they are transgressed by pathologists.

The medical examiner is not immune from suit. Despite the requirement that those alleging abuse of his authority must show that his actions both exceeded his actual statutory authority and that he was not acting in good faith at the time of his actions, some outraged parties have tried to press claims. Usually, however, the medical examiner's authority is broadly interpreted so that the "good faith" issue is not even considered. In the case of *Cremonese* v. *City of New York*,[19] physicians had been unable to determine the cause of a patient's death. As a result of the deceased's husband's refusal to allow an autopsy, they certified the cause of death only in the most general terms. The Board of Health declined to accept the vague diagnosis thus given, and a medical examiner thereafter conducted the autopsy. The husband's suit for damage was dismissed on the ground that the autopsy was within the medical examiner's statutory power to investigate any death occurring under any unusual circumstances. It should be noted, however, that the terms of applicable statutes do vary from state to state, as one pathologist in Florida recently discovered to his horror. In the case of *Jackson* v. *Rupp*, an autopsy was performed on a woman who had died in the hospital at the age of eighty-two, where permission of all her next of kin for the autopsy had been denied.[20] The autopsy was performed by the county's associate medical examiner, under the belief that the relevant 1951 Florida statute still allowed him to do so. He thought he could perform autopsies either when the death was violent or unusual and so on, or when requested to do so by the prosecuting attorney; the statute in fact prevented him from doing so unless both conditions were met. Although the case is not clear, it seems that malice might also have been established and judgment was entered for the plaintiff.[20]

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*New York was the first jurisdiction to require that its chief medical examiner be a qualified pathologist.

It has been pointed out, by the writer of the survey of the Rupp case and Mann, Kaye, and Jordan,[21] that if the attending physician or the medical examiner seeks permission for an autopsy which is refused by the next of kin, and the autopsy is then ordered anyway within the terms of the applicable statute, the impression given to the next of kin is that the autopsy is unlawful and merely the result of the whim of whichever physician initially sought their permission. The proper procedure suggested is that next of kin should merely be informed by the medical examiner that an autopsy, as required by law, will be performed. Under these circumstances, objections are much less likely to be forthcoming and much easier to deal with when they are.

Organ transplants. The second major legal problem presently confronting pathologists is that of transplantation of organs between human beings. In many ways this is a topic similar in its legal implications and pitfalls to the autopsy issue already discussed. The main problem relates to when there is adequate consent for such operations from the individuals concerned, although of course this presupposes that society as a whole permits them to give such consent (most relevant, for example, in the case of child donors). Because (1) this issue has been so well discussed in recent years,[22] (2) most states have enacted statutes governing most aspects of these operations, and (3) this is not primarily a forensic problem, full consideration cannot be given here to the problems of transplantation. Nevertheless, it is vitally important for pathologists to be aware that this is an area with its full share of legal problems, so they can seek and get competent legal advice before allowing themselves to become involved in these operations by their associates and colleagues. In this context it should be noted that many of the operations involving vital organ replacement are likely to require a medical examiner's attention, since head-injury type deaths to people with the young, healthy organs needed for these operations are by nature the type of case that a medical examiner is duty bound to study. Such cases require that the medical examiner's consent be obtained by the surgeons concerned irrespective of the other necessary consents, so he must be certain that his own job will not be impeded by the granting of such permission. The trend-setting office of Milton Helpern, M.D., in New York City has always taken the position that the medical examiners' normal practice should not be to object to the operation to be performed, after a preliminary investigation by the medical examiner concerned, except in cases where homicide is suspected.

Independence. A problem which is no less important to the proper functioning of unbiased forensic investigation, although much more nebulous in content, is the extent to which a medical examiner or any other pathologist can function independently of the prosecutor's office and the judiciary. If forensic pathologists are to be effective investigators they must function independently of the law enforcement agencies.[23,24] Inevitably, working arrangements will evolve between a medical examiner and the local prosecutor. Probably, since they will inevitably be funded by the same body, they will rarely, if ever, be on opposite sides in cases heard within their locality. But there the compromises of power must stop. As Wecht[24] has written, "There is nothing of a predetermined prosecutorial nature inherent in the medical examiner's office. It cannot be that way." Earlier in the same article, Wecht also wrote that "these men who are called in to help investigate criminal cases . . . must take a completely scientific and objective approach."[24] The importance of these principles, and of their being put into practice, cannot be overemphasized. Both of Wecht's[23,24] articles on the subject illustrate and underline these issues admirably.

It is also important to note that even where many of what are elsewhere the medical examiners' discretions, such as the ordering of an autopsy, are held by law enforcement officers, (for example, Florida) the pathologist must retain as much independence as possible when performing his functions and obligations. Otherwise, he will not have advanced forensic science over the medieval system he is supposed to replace. Indeed, it has been largely through the work of Milton Helpern, M.D., not only as chief medical examiner for New York City, but also as the recognized international spokesman for the modern forensic pathologist that this vital battle for the independence of the medical examiner's office has been brilliantly advanced and has become the accepted norm throughout the civilized world.

Disclosure of reports. A related issue to that of the medical examiners' status within the legal system is the question as to who is entitled to disclosure of his reports. In several jurisdictions the medical examiner is prohibited from disclosing his report to anyone except the local prosecuting attorney in criminal cases. In New York an order of a court of record or a justice of the Supreme Court is required, in theory at least, before anyone other than the district attorney for the county can see the records.[25] In practice, in New York City at least, it seems that the next of kin are usually furnished with a copy of the report on request, except in murder cases. In homocide cases, disclosure of the report is at the district attorney's discretion. In New York this discretion is usually exercised in favor of the defense. Nevertheless, there is much to be said for automatic disclosure to those with a direct interest in criminal cases. The defense is put at a huge disadvantage if, instead of having access to the medical examiner's report it must organize a whole new investigation from scratch. Furthermore, the first autopsy can be expected to produce the best data, again giving the prosecutor the theoretical advantage. Unquestionably, there is much room here for liberalization of the statutory requirements in favor of disclosure.

Closing comment

The motto overlooking the library at the office of the medical examiner of New York City is "Aequanimitas." But equanimity must be more easily spoken of than achieved by those who sit under it. Dr. Helpern has spent a lifetime battling to achieve that goal. Without a doubt, forensic pathology is one of the most challenging branches of medicine, not to speak of law. Yet, if equanimity is the goal, surely the cool, scientific approach of the pathologists associated with that office must be the right way of reaching it. There is in the air there, however, a strong sense of purpose as well as objectivity, to help the living by learning all that is possible about the dead. If the courts and legislatures of this country can successfully apply the truths that they are learning in individual cases and the sociologic and psychologic trends they are finding, then future generations of our society will benefit greatly from the sufferings of the present and past generations. There is no doubt that the science of forensic pathology has come a long way since 1194; today, despite the problems that persist, it is a far more effective social tool than it has ever been before. A large part of the credit for this achievement must be accorded to the pioneering international leadership which Dr. Helpern has supplied in the eighteen years he has served the cause of justice as the chief medical examiner of New York City.

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FORENSIC BLOOD GROUP GENETICS

Critical historical review*

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Thirty-three years have passed since I joined the Office of the Chief Medical Examiner to establish and direct the serologic laboratory, the principal function of which is to examine blood-stained articles and stains of body fluids and secretions in cases of violent death. The Office of the Chief Medical Examiner and the associated Department of Forensic Medicine of New York University School of Medicine, were already well known throughout the world, because a year before the famous book, *Legal Medicine and Toxicology,* had appeared, authored by Thomas A. Gonzales, M.D., Morgan Vance, M.D., and Milton Helpern, M.D. The second edition of this book appeared in 1954, and it still remains one of the classic reference works in this field. After Dr. Gonzales died in 1956, Dr. Vance briefly took over as acting chief, and then Dr. Helpern became the Chief Medical Examiner of New York City and chairman of the Department of Forensic Medicine at New York University School of Medicine. Due mainly to the efforts of Dr. Helpern, the dream of a new building for the Office of the Chief Medical Examiner became a reality. In the fall of 1960, the Second International Congress of Forensic Medicine held its meetings in the still incomplete building, while in February, 1961, the building was opened. Under Dr. Helpern's inspiring leadership the reputation of the Office as one of the world leaders in forensic medicine has grown. I vividly recall the many years of close association with Dr. Helpern, and I welcome this opportunity to present this article on the occasion of his seventieth birthday.

One of the topics discussed in the book, *Legal Medicine and Toxicology,* is blood grouping. This section was prepared by Dr. Vance and is remarkably fresh and up-to-date, considering that the last edition of the book appeared as long as seventeen years ago. One aspect not touched on in the chapter is the historical background and development of the subject. It has been stated that those who do not know or read history are destined to repeat its errors. Since this statement is sadly true also of the present state of some aspects of the field of blood grouping, I have selected as my topic of discussion the development of knowledge and understanding of the heredity of blood groups, and its application in medicolegal problems of disputed parentage, with special reference to the A-B-O blood groups.

TABLE I. Von Dungern and Hirszfeld's theory of heredity of the A-B-O groups

Phenotypes	Genotypes*
O	*aabb*
A	*AAbb* and *Aabb*
B	*aaBB* and *aaBb*
AB	*AABB*, *AaBB*, *AABb* and *AaBb*

* Italics are used to distinguish symbols for genes and genotypes from the symbols in regular type used for agglutinogens and blood groups (phenotypes).

Heredity of blood groups

When Karl Landsteiner, M.D.,[1] discovered the A-B-O blood groups at the turn of the century he immediately pointed out that this was the probable explanation of the erratic results of the very few blood transfusions that were being attempted at that time. Today, of course, the technic of A-B-O blood grouping is perfected, and the tests are done routinely before every blood transfusion, so that if inadvertently a group A patient is given group B blood, for example, and sustains a severe hemolytic reaction as a result, this could be due only to manifest negligence and the doctrine res ipsa loquitur would be applied. Already in 1902, Landsteiner together with Richter[2] showed that dried blood stains can be grouped and suggested the forensic application in cases of violent death. The turn of this century had also witnessed the rediscovery of Mendel's law of heredity, and in man one of its first applications was to the study of heredity of A-B-O blood groups. In 1908, Epstein and Ottenberg[3] reported a few families in which the A-B-O blood groups had been determined. The results indicated that the blood groups are hereditarily transmitted. In 1910, von Dungern and Hirszfeld[4] carried these studies further and suggested that the agglutinogens A and B were inherited independently of each other by two corresponding pairs of allelic genes, *A-a* and *B-b,* respectively. According to their theory, therefore, the genotypes corresponding to the four A-B-O blood groups would be as shown in Table I.

During the next decade no substantial further

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progress was made except that family studies were gradually accumulated by numerous investigators, all of which appeared to support the theory of von Dungern and Hirszfeld. Indeed, chiefly in Teutonic countries, the medicolegal application of blood grouping tests in problems of disputed paternity was started as early as 1924. At about the same time, the mathematician Bernstein[5,6] became interested in the problem and presented evidence that the theory of von Dungern and Hirszfeld was incorrect. In this review I shall not present Bernstein's proof in detail, because my purpose is only to show the value of a little arithmetic and elementary algebra in resolving problems of this nature.

A word of caution is necessary here, however. There has been a tendency for investigators to consult mathematicians to help them with the analysis of their data. Some of these workers appear to be embarrassed by their own weakness in mathematics and do not appear to realize that mathematics is only a tool. As a result, they have permitted mathematicians who analyze their data, but know little or nothing about their field, to draw their conclusions for them, with disastrous results, as illustrated by the recent history of the heredity and nomenclature of the Rh-Hr system. In Bernstein's case the situation was different, however, because he attacked the problem of A-B-O genetics while the subject was still new, so that he knew as much about blood grouping as workers in the field, and he had the advantage that he was not handicapped by their misconceptions resulting from errors made in their blood grouping tests, as will be shown. Bernstein pointed out that if the agglutinogens A and B were independent of one another, in the general population the frequency of agglutinogen A should be the same among persons who lack B as among persons who have B. If the frequency of each blood group is represented by its symbol with a bar above it, at first suggested by Bernstein, this can be expressed by a simple equality of two fractions as follows*:

$$\frac{\overline{\mathrm{A}}}{\overline{\mathrm{O}} + \overline{\mathrm{A}}} = \frac{\overline{\mathrm{AB}}}{\overline{\mathrm{B}} + \overline{\mathrm{AB}}}$$

After clearing fractions and cancelling equal terms on both sides of equation, the following simpler equality results:

$$\overline{\mathrm{O}} \times \overline{\mathrm{AB}} = \overline{\mathrm{A}} \times \overline{\mathrm{B}} \quad \text{(equation 1)}$$

During World War I, the Hirszfelds had carried out blood-grouping tests on individuals of various nationalities stationed in the Balkans. Their published data comprised 14 series of different nationalities, each of 500 or more individuals. Bernstein showed that the equality (formula 1) did not hold for any of these series, but instead that $\overline{\mathrm{A}} \times \overline{\mathrm{B}}$ was consistently considerably greater than $\overline{\mathrm{O}} \times \overline{\mathrm{AB}}$. (To cite an example from a more recent report, in New York City whites, the distribution is approximately as follows: $\overline{\mathrm{O}}$ = 44 per cent, $\overline{\mathrm{A}}$ = 38 per cent, $\overline{\mathrm{B}}$ = 13 per cent, and $\overline{\mathrm{AB}}$ = 5 per cent, so that $\overline{\mathrm{O}} \times \overline{\mathrm{AB}} = 220$ while $\overline{\mathrm{A}} \times \overline{\mathrm{B}} = 494$.) Bernstein concluded that the theory of von Dungern and Hirszfeld could not be correct, and he suggested instead that heredity was by triple allelic genes located on a single pair of chromosomes, such that agglutinogens A and B were determined by corresponding allelic genes *A* and *B*, respectively, while a third allelic gene *O* determined the absence of A and B. According to Bernstein, therefore, there were only six genotypes instead of nine, corresponding to the four blood groups, as shown in Table II.

TABLE II. Bernstein's theory of heredity of the A-B-O groups

Phenotypes	Genotypes*
O	*OO*
A	*AA* and *AO*
B	*BB* and *BO*
AB	*AB*

* See footnote to Table I.

With regard to the practical consequences of the two theories, the only essential difference involved blood group AB, for which, according to Bernstein, there was only a single genotype and not four possible genotypes as postulated by von Dungern and Hirszfeld (Table I). Thus, according to Bernstein's theory a group AB parent has to be genotype *AB* and therefore would have to transmit gene *A* to half of his children and gene *B* to the other half, so that a group AB parent could not possibly have a group O child, and, similarly, a group O parent could not have a group AB child. According to von Dungern and Hirszfeld, on the other hand, a group AB person could be heterozygote for both A and B, namely, of genotype *AaBb*, and so could have group O children (genotype *aabb*) and, similarly, group O parents could have group AB children.

The two contrasting theories could therefore be tested by family studies. Before presenting those results, however, I shall show how Bernstein applied the method of population genetics to test his own hypothesis, that is, the same method by which he had demonstrated the incorrectness of the theory of independent inheritance of A and B.

Bernstein's method

Basic to this test is the assumption that the distribution of the genes is the same among sperm and ova, and that mating and fertilization occur at random (panmixia). Bernstein assigned to the frequency of gene *A* the symbol p, to the frequency of gene *B* the symbol q, and to the frequency of gene *O*, the symbol r, where $p + q + r = 100$ per cent, because there are only these three kinds of genes

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*The bar placed above the symbol for the blood group is intended to indicate the frequency in the general population, namely, in per cent, of the blood group in question.

TABLE III. Possible matings in a population according to Bernstein

			Sperm	
		A	*B*	*O*
Ova		p	q	r
A	p	*AA* p^2	*AB* pq	*AO* pr
B	q	*AB* pq	*BB* q^2	*BO* qr
O	r	*AO* pr	*BO* qr	*OO* r^2

according to his theory. When random fertilization occurs of ova by sperm to produce the zygotes, there are 3 × 3 = 9 possible results as shown in Table III.

When the appropriate genotypes are collected together, the frequencies of the four groups can be expressed in terms of gene frequencies as follows:

$$\overline{O} = r^2 \qquad \text{(equation 2)}$$

$$\overline{A} = p^2 + 2pr \qquad \text{(equation 3)}$$

$$\overline{B} = q^2 + 2qr \qquad \text{(equation 4)}$$

$$\overline{AB} = 2pq \qquad \text{(equation 5)}$$

For example, to get the frequency of group A we combine the frequency of genotype *AA* = p^2 with the boxes in Table III for genotype *AO* = pr + pr = 2 pr.

A way to test the theory of Bernstein is therefore provided by equations (2) to (5), namely, to estimate the values of the gene frequencies p, q, and r from the observed frequencies of the four groups in the general population. As can be seen, there are three unknowns p, q, and r for the determination of which three equations are needed, but in this case we have four equations. Therefore, we can test for p, q, and r using the first three equations only, and then determine whether the values so obtained fit the fourth equation and the relationship p + q + r = 1.

The value of r is readily found from equation (2), namely,

$$r = \sqrt{\overline{O}} \qquad \text{(equation 6)}$$

If now equations (2) and (3) are added we obtain

$$\overline{O} + \overline{A} = p + 2pr + r^2 = (p + r)^2$$

therefore $\quad p + r = \sqrt{\overline{O} + \overline{A}}$

and subtracting equation (6),*

$$p = \sqrt{\overline{O} + \overline{A}} - \sqrt{\overline{O}} \qquad \text{(equation 7)}$$

Similarly,*

$$q = \sqrt{\overline{O} + \overline{B}} - \sqrt{\overline{O}} \qquad \text{(equation 8)}$$

Since p + q + r = 1, the following relationship should hold among the blood group frequencies:

$$\sqrt{\overline{O} + \overline{A}} + \sqrt{\overline{O} + \overline{B}} - \sqrt{\overline{O}} = 1, \text{ or } 100\% \qquad (9)$$

Bernstein tested this relationship (equation (9)) on the same series of populations studied by Hirszfeld, which he had used also to test the theory of von Dungern and Hirszfeld. He found that the relationship (equation (9)) indeed held closely, and the difference, D, of the sum of the calculated gene frequencies from 100 per cent was quite small in comparison with its standard error, or σ_D. Therefore, it was justifiable to adjust the estimates of the gene frequencies calculated from formulas (6), (7), and (8), so as to make their sum equal to 100 per cent. Without burdening the reader with the elaborate mathematics, I shall merely point out that Bernstein did devise formulas for such improved estimates of p, q, and r. These could be used to test the relationship (equation (5)), namely, $\overline{AB}$ = 2pr, and, again, the agreement with theoretic expectancies was entirely satisfactory.

In summary, therefore, the methods of population genetics used by Bernstein showed that the theory of independent inheritance of A and B was wrong, and supported instead his own theory of triple allelic genes.

When the results of the published family studies were inspected, however, they appeared to support the theory of von Dungern and Hirszfeld and to refute the theory of Bernstein, because the families included hundreds of examples of group AB parents having group O children, and of group O parents having group AB children. An even greater sore point was that in many cases the parent in question was the mother, so that if the theory of Bernstein was correct, in such families maternity would appear to have been excluded.

As it turned out, however, the seeming contradictions to the theory of Bernstein in the family material were virtually all ascribable to errors in the blood-grouping tests. This may appear inconceivable to readers who are familiar only with modern blood grouping and its use of easily available commercial high-titer reagents, rigidly controlled by the Division of Biologics Standards of the National Institutes of Health, and the multiple checks used to guarantee accuracy of the tests. I would like to remind those readers that as recently as World War II there were as many as 10 per cent errors in mass A-B-O blood grouping of members of our Armed Forces. At any rate, after Bernstein announced his theory, new family studies that were reported proved to be remarkably free of families having group AB parents with O children, or vice versa. Nevertheless, errors in testing continued to occur, as can readily be shown by analyzing family studies reported more recently. To be sure, the investigators had been alerted by Bernstein to the impossibility of families having group AB parents and O children and vice versa, and so rechecked their tests whenever such combinations were encountered by them. They failed to realize, however, that the "innocent" mating, A × B, which according to both theories could yield children of all four groups, O, A, B, and AB, could nevertheless reveal the presence of mistakes in technic when properly analyzed.

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* It should be pointed out that the set of formulas derived by Bernstein was slightly different from (7) and (8), but for simplicity his method has not been used here. The consequences are the same regardless which set of formulas is used.

The mating A × B actually comprises four different kinds of families, when the genotypes of parents are taken into account, and the situation in these matings is exactly the same according to both theories of heredity, as shown in Table IV. Therefore, this mating cannot be used to decide between the two genetic theories, but it can be used to check for the presence of errors in blood-grouping technic. If we take for the mating *AA* × *BB* the number of children to be *a*, for mating *AO* × *BB*, 2*b* children, for the mating *AA* × *BO*, 2*c* children, and for the mating *AO* × *BO*, 4*d* children, the total number of children of each group for all four kinds of families becomes

$$\bar{O} = d$$

$$\bar{A} = c + d$$

$$\bar{B} = b + d$$

$$\text{and } \overline{AB} = a + b + c + d$$

This gives rise to the inequality

$$(\overline{AB} - \bar{O}) \geqq (\bar{A} - \bar{O}) + (\bar{B} - \bar{O})$$

Table IV. Genetic analysis of the mating A X B

Genotypes of parents		Percent of children in groups			
Bernstein	v. Dungern and Hirszfeld	O	A	B	AB
AA x BB	AAbb x aaBB	0	0	0	100
AO x BB	Aabb x aaBB	0	0	50	50
AA x BO	AAbb x aaBb	0	50	0	50
AO x BO	Aabb x aaBb	25	25	25	25

$$(\overline{AB} - \bar{O}) \geqq (\bar{A} - \bar{O}) + (\bar{B} - O)$$

Source of data	No. of families	Number of children			
		O	A	B	AB
A. 1930-1942 Various authors	483	188	367	298	270
B. 1932 Buining	336	225	285	274	338

A. $(\overline{AB} - \bar{O}) = 82$ $(\bar{A} - \bar{O}) + (\bar{B} - \bar{O}) = 179 + 110 = 289$

B. $(\overline{AB} - \bar{O}) = 113$ $(\bar{A} - \bar{O}) + (\bar{B} - \bar{O}) = 60 + 49 = 109$

Comment

I collected from the older published studies on the heredity of the A-B-O blood groups more than 50 reports. In the combined results for the mating A × B there were 584 group O children, 1,084 group A children, 851 group B children, and 923 group AB children. Thus, $\overline{AB} - \bar{O} = 339$, while $(\bar{A} - \bar{O}) + (\bar{B} - \bar{O}) = 500 + 267 = 767$. Thus, in these studies there must have been 767 minus 339, or at least 428 mistakes in technic, an extraordinarily high figure in comparison with the total number of children typed, 3,442. If such a situation prevailed at the present time, one may well imagine what would happen to the practice of blood transfusion and the medicolegal applications of blood grouping. Fortunately, after 1930 certain physicians developed a special interest in blood grouping and began to specialize in the field. In 1932, Buining[7] did an extensive heredity study which included 336 families A × B, and among the children of those families he found 225 group O children, 285 group A, 274 group B, and 338 group AB. Therefore, in Buining's families $\overline{AB} - \bar{O} = 113$, while $(\bar{A} - \bar{O}) + (\bar{B} - \bar{O}) = 109$, indicating that Buining made no or hardly any mistakes in his tests. Unfortunately, data collected from other reports during the period 1932 to 1942 still showed a prevalence of mistakes. The latter included a total of 13 reports which in combination contained less then half as many children as were tested by Buining alone in his study. This demonstrates how dabblers in science are more apt to produce inaccurate findings than full-time specialists and students.

One of the complaints properly made by Dr. Helpern has been that there are too many dabblers and not enough experts in forensic medicine. This is due to the laxity of our legal system which permits any physician to testify as an expert in any branch of the science of medicine, no matter how highly specialized and complex that subject may be. It should come as no surprise, therefore, that when the medicolegal application of blood-grouping tests in problems of disputed paternity was first introduced in 1924 in Germany, there was no dearth of physicians ready and willing to act as experts. Considering the poor state of the science of blood grouping at the time, as has just been demonstrated, it was to be expected that there would be mistakes in the reports submitted to the courts, with resulting miscarriage of justice. Indeed, it is possible to prove by a simple arithmetic calculation that these early medicolegal reports were permeated with mistakes. As the reader surely knows, the blood-grouping tests only have exclusionary value as evidence, namely, they can be used to exclude paternity but cannot be used to prove paternity. Formulas have been derived by me and others in terms of the gene frequencies by which one can calculate the percentage of cases in which a man falsely accused of the paternity of a child can be exonerated by blood-grouping tests.

In the case of the A-B-O blood groups the chance is about 1 in 6, that is, in a series of 100 cases of falsely accused men no more than 16 or 17 would be exonerated by the A-B-O blood-grouping test. Yet, we read in some of the early reports of results of medicolegal blood-grouping tests that Ziemke,[8] for example, in 26 cases excluded 9 men, whereas, theoretically, no more than 4 or 5 men should have been excluded, even if all 26 has been falsely accused.

The situation in the early days was greatly aggravated by the confusion which prevailed regarding the nomenclature of the blood groups. The presently used nomenclature is satisfactory in that the symbols for the blood groups are terse mnemonics. Scientific symbols should be short to convey as much information as possible with the least effort, and, at the same time, the symbols must give some clue as to what they represent so as not to place a strain on one's memory and thus give rise to errors. Moreover, scientific symbols must be international to facilitate communication among scientists, irrespective of their nationality and language. The internationally used symbol group O, for example, satisfies all these requirements, since the very brief symbol O obviously stands for the absence of agglutinogens A and B in the red cells, and, therefore, by Landsteiner's rule, also for the presence of both agglutinins anti-A and anti-B in the serum; moreover, the use of the letter O standing for "zero" is a gentle reminder that both agglutinogens are absent in this blood group. It has pointed out that a good scientific nomenclature is like a teacher, for example, the symbols A and AB tell us that those two groups have the agglutinogen A in common, while the symbols B and AB tell us that those two groups share agglutinogen B. Unfortunately, in 1907, Janský,[9] and, in 1910, Moss[10] suggested naming the four blood groups by the use of the Roman numerals I, II, III, and IV. This suggestion immediately caught on because its simplicity appealed to the dilettante in that no knowledge or understanding of the blood groups was required, only the fact that there are four blood groups. However, although terse, the numbers were not true scientific symbols in that they were not mnemonics because a number provides no clue as to what it represents. Thus, the earlier workers in the field of blood grouping were mistaking naïveness for simplicity and did not recognize that Roman numerals were not scientific symbols for the blood groups but codes.* Codes do have a place in science, namely, for storing and retrieving information in computers, but here instead of Roman numerals or the decimal system the binary number system is best for the modern digital computer. Thus, if the zero is used to represent a negative reaction in the tests on the red cells and the unit a positive reaction, the four blood groups taken in their natural order O, A, B, and AB, can be simply coded as 00, 10, 01, and 11, respectively. The binary code has the advantage not only of its suitability for digital computers but also of its ready extension to accommodate further complexities in a blood group system.

The use of the Moss and Janský Roman numerals not only by physicians using blood transfusion therapy but also by investigators in the field of blood grouping retarded progress in the genetics of the blood groups and its applications for a long time. Consider, for example, the mating O × AB. This can be readily translated into genotypes according to the Bernstein theory, as follows: *OO* × *AB*, indicating that the former parent produces germ cells all carrying the gene *O* while the latter produces two kinds of germ cells, half carrying gene *A* and half carrying gene *B*. Consequently, in this mating, half the children are genotype *AO* or group A, and half genotype *BO* or group B. What does one do, however, when the same mating is expressed in Roman numerals as I × IV? On the face of it, how could such a mating produce children only of groups II and III? Obviously, to get the right answer one must first translate the Moss and Janský numbers into the correct phenotype and genotype symbols in terms of A-B-O; and when the answer is obtained, this must be translated back into the Moss-Janský numbers once more. This is reminiscent of the time when Roman numerals were used almost universally because people refused to convert to arabic numerals and the decimal notation. When such persons were given a problem in multiplication, for example, 56 × 93 or LVI × XCIII, they used an abacus, which is constructed on the basis of the decimal system, and after computing the answer translated it back into Roman numerals. In this way the adoption of arabic numerals could be delayed for four hundred years. When the Roman numerals were finally discarded, so was the abacus, and pen and paper took its place. It is significant that even today in the Orient, which still adheres to its quaint archaic number systems, every shopkeeper uses an abacus to make any necessary calculations.

It is sad to relate that the final adoption of the rational A-B-O nomenclature presently used was not the result of scientific reasoning but of sheer necessity caused by the existence of more than one method of designating the four blood groups in Roman numerals, namely, those of Moss and Janský. (Since such numbers constitute a code rather than a rational terminology, there are 4 × 3 × 2 × 1 or 24 possible methods of numbering the blood groups of which only two were actually used. In the case of the Rh-Hr blood types, in contrast, for a single phenotype such as Rh_1rh there actually are presently in use more than 20 different methods of designation using the coded symbols C-D-E.) The ambiguity between the two systems of numbering had to do with group O which was I Janský and IV Moss, and also involved group AB which was IV Janský and I Moss. As a result, some patients of group O were erroneously transfused with group AB blood with disastrous results. Since the exigencies of World War II could brook no such nonsense, in 1940 the Division of Biologics Standards of the National Institutes of Health issued an edict that labels of blood-grouping sera should carry only the designations anti-A and anti-B, respectively, and not the Moss and Janský numerals. This was the death knell for the Moss-Janský numbers when other countries throughout the world followed suit.

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*Nevertheless, the pressure for "simplicity" was so great that even Karl Landsteiner used the Janský numbers in a few of his papers. Numbers were still being used in published reports as recently as 1952 to designate A-B-O blood groups.

Conclusion

Some readers may wonder why I have selected the early history of the A-B-O blood groups as the subject of this article rather than some more up-to-date subject. The reason is that those who are unfamiliar with or ignore history are more apt to repeat previous errors. This, in fact, has happened in the field of blood grouping, where almost all the errors made in the past with respect to the A-B-O blood groups are being repeated at the present time with regard to the more complex Rh-Hr blood types. This includes not only unnecessary debates regarding genetics, and lack of understanding of and insight into the serology of the Rh-Hr types, but especially the readily avoidable confusion which prevails regarding Rh-Hr nomenclature. It should therefore come as no surprise to the reader that "dabblers" in blood grouping are still being permitted to act as experts in the cases of disputed paternity and for testing stains of blood and secretions in homicide and assault cases, with resulting mistakes leading to miscarriage of justice. Since this subject has been discussed in detail in other recent reports, it will not be further belabored here. Instead I shall merely close by adding my fervent wish to Dr. Helpern that the field of blood groups also may attract many more serious students who can develop into true experts to take the place of the still too numerous dabblers in this field.

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PEDIATRIC FORENSIC PATHOLOGY

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Pediatric forensic pathology concerns itself with all cases of violent, accidental, unexplained, or unexpected deaths in children aged up to fourteen years. As such, it will be considered in the context of general forensic pathology, with particular attention to those entities or aspects somewhat unique to the pediatric age group. Two points are immediately worthy of note. First, the pediatric group has been historically and arbitrarily defined as extending to the fourteenth year. This does a disservice to the medical spectrum and continuity of early adolescence. To extend the presentation into the teenage category would not serve the purpose of this article, and hence will be avoided except to note when a condition obviously is more properly identified with the adolescent period. Second, pediatric forensic pathology must bear a meaningful relationship to the forensic aspect of clinical pediatrics. That is to say, one should evaluate the fatal and legal aspects of any condition in the context of the condition as a whole. Such relationships will be noted and inferences drawn, but in a condensed fashion, since again, it is not germane to this article to enter into a larger discussion of the related clinical pediatrics.

This report is based on the experience of the Office of the Chief Medical Examiner of the City of New York and a review of the current literature. Selected reference articles are noted when pertinent. To facilitate the presentation, the material will be arranged under the following general headings: (1) homicide, (2) suicide, (3) child abuse and neglect, (4) crib death, (5) trauma, (6) poisoning, (7) infanticide and abandoned child, and (8) clinically and/or circumstantially unexplained natural death.

Since the early 1960s, the Office of the Chief Medical Examiner has handled an average of approximately 400 pediatric cases a year that required either examination or autopsy. The autopsy rate has generally been 85 per cent of such cases. Because of its special nature, drug addiction in the pediatric age group will not be included in this article.

Homicide

Homicide, as used in this article, will include battered children, but will not include infanticide. The battered child group will be considered again and in more detail under child abuse. Infanticide, although somewhat self-explanatory, is herein used to cover infant deaths under the age of two weeks. In 1964, out of 660 homicides committed in the City of New York, 68 occurred in the pediatric age group. This gives some perspective of the size of the problem. It is of interest that such a percentage was roughly maintained in the remaining years of the 1960s.

The mechanism of death is overwhelmingly that of blunt-force injuries, firearms, and drowning.[1] In the vast majority of cases, the perpetrator is one of the parents. When a nonparent is involved, a considerable number of cases are related to sexually motivated assault. In between 5 to 10 per cent of the cases the perpetrator is another child and, again, generally a relative. Multiple homicides in a single family is a common occurrence involving 20 per cent of all pediatric homicides in a study for the year 1964. Certain cases of blunt-force trauma are remarkable in that there was no readily discernible external evidence of injury before the autopsy.

Suicide

Cases which, on a combination of circumstantial and autopsy evidence, are regarded as being suicides, constitute approximately 1 per cent of the pediatric cases evaluated in a given year. As in other studies,[2] it has been our finding that suicide does not occur below the age of five and is distinctly uncommon between ages five and nine. In the United States, there are 100 suicides a year reported in the ten to fourteen age group. It should be noted that there are 650 suicides a year reported in the fifteen to nineteen age group. In both these latter age groups, the number of attempted suicides rises dramatically from the previous low plateau before the age of nine. Clearly, suicide and attempted suicide constitute an entity more properly identified with the adolescent period.

Males predominate in approximately a 3:1 ratio over females, although as most studies have borne out, there is a considerably higher incidence of female suicide attempts. The mechanism of death in approximately 90 per cent of cases involves firearms or hanging. This figure must be regarded with caution, since the rising incidence of suicide and attempted suicide by an overdose of a toxic compound is rapidly rising.[4]

Child abuse and neglect

The true incidence of child neglect and abuse in the community is difficult to ascertain. Although the general awareness of the condition by the medical profession and public at large and the more responsible reporting of cases by various physicians and nonmedical officials has provided more realistic data, it still must be recognized that a large number of cases are not reported. The forensic pathologist, in handling the fatal cases, is probably seeing a very small percentage of the total incidence.

Child abuse cases can be meaningfully separated into those with and those without obvious prior trauma.[5] In either category, most cases are seen in children under the age of four years. Cases with no obvious prior trauma pose the greatest problem in that the external examination may be essentially negative, and over half these cases come from apparently unremarkable middle class homes. The general appearance and nutritional status of these children is better than that seen in either neglected or previously traumatized children. The autopsy in either of these latter abused child states demonstrates a wide range of bony, soft-tissue, and visceral injury. In the child with obvious prior trauma there are commonly numerous scars and bruises of different ages, old and recent hemorrhage in the fat pads of the buttocks and soles, and in some, evidence of old or recent burns, commonly cigaret burns. Autopsy and/or radiography demonstrates fractures of the skull, ribs, and/or extremities in the vast majority of cases. These are of different ages. Subdural hemorrhage in all stages and lacerations of the liver, spleen, and mesentery have been noted.

Blunt-force nonpenetrating injuries of the chest and abdomen produce somewhat unique injuries in the child. Although these are present in abused children, they will be discussed under trauma.

Neglected children pose several problems. The examination and autopsy will document the marasmic changes (skin, loss of subcutaneous fat) and generally, with the exception of an occasional bronchopneumonia and/or sepsis, will not find any other significant cause of death. Since parents will generally deny having neglected the child, the problem is to correlate the overall impression of the autopsy and the case. In most instances, the family setting and the home situation will support the impression of a neglected child, but it will be noted that such a conclusion depends on a thorough scene investigation, an interview with the parents, and an analysis of the positive and negative findings at autopsy.

Crib deaths

Crib deaths are sudden, unexpected, natural deaths in children.[6] Almost all occur between the ages of six weeks and six months, with a marked peak in the third and fourth months. It is now considered that approximately 7,000 to 10,000 infants die of this condition or syndrome every year in the United States. The diagnosis is still essentially one of exclusion. The clinical setting of an otherwise normal, healthy child, more commonly male, generally dying sometime in the evening hours and having an essentially negative autopsy, is monotonously repeated. When clinically considered crib death cases are autopsied, a definitive noncrib cause of death can be established in approximately 15 per cent of cases. There is a distinct seasonal incidence in the temperate zone, with the vast majority occurring in the cold or inclement months of the year.

The principal problem with this entity is its recognition and proper definition. Accordingly, some physicians and pathologists will uncommonly diagnose it and will generally label the case as bronchopneumonia. On the other hand, one can readily overuse the diagnosis and not conduct a proper scene investigation and thorough autopsy which remain integral parts of the diagnosis by exclusion.

Trauma

Accidents constitute a chief cause of death in children between the ages of one to fourteen. Over the two year periods of 1964 and 1965, accidents constituted 28 per cent of the causes of death in our pediatric forensic cases. Up to eighteen months of age, the major entities in general are burning, child abuse, drowning, and poisoning. After eighteen months, and extending up to fourteen years with an average age of eight, injury due to motor vehicles becomes the predominant mechanism of injury and/or death. It should be noted that over half the cases, for whatever cause, occur in children under the age of five. Although figures will vary to a moderate degree, the general experience is that the major site of injury is head (41 per cent), thorax (8 per cent), upper extremity (25 per cent), abdomen (5 per cent), and lower extremity (21 per cent). Many cases, obviously, have multiple injuries. Again, the fatal or forensic aspect of this entity represents a small percentage of the overall incidence. In 1966 it was noted that 4 out of 10 children in the United States who died were victims of trauma and that injuries had then been the leading cause of death of children in this country for the previous ten years.[7] As of that year it was stated that more than 100,000 children are permanently crippled in the United States each year by accidents and that another 2 million children are temporarily incapacitated. Certain features of trauma in children are worthy of note: (1) The compressibility of the chest allows for more significant nonpenetrating soft-tissue injury in this area; (2) abdominal distention poses a great effect to the child because of the smaller chest volume; (3) blood loss is more life threatening because of the smaller total blood volume; and (4) there is the characteristic lability of the child to his trauma.

Blunt-force trauma accounts for about 80 to 90 per cent of serious injuries in children. Added to this is the higher incidence of head injury in children and the stated higher incidence of subdural hematoma in such head injury cases. While there are no totally unique traumatic lesions in the pediatric age group, certain points should be made: (1) Blunt force injury to the chest can produce significant cardiac and/or pulmonary contusions.[8] (2) In blunt force injury to the abdomen, the liver is more susceptible to trauma in children than in the adult. (3) Epidural hemorrhage is uncommon in children, particularly under the age of four and, when present, does not generally relate to a fracture nor involve the middle meningeal artery. (4) In infants and young children subdural hemorrhage is bilateral in approximately 70 per cent of cases. A further problem arises in that subdural hematoma may be present in infancy as a residuum from undiagnosed birth trauma or that when it occurs in a child beyond the infant period, trauma can only be documented in one half of the cases. (5) Of importance in autopsy is the diagnostically complicating terminal trauma of cardiac massage, whether manifested in the chest or abdomen.

A considerable literature has now accumulated on the accident-prone child.[9,10] This should be noted so as to recognize the meaning of multiple injuries of various ages in children. Generally, these occur in children over the age of four and hence should cause no confusion with the battered child.

Poisonings

In the United States, there are approximately 500 fatal poisonings recorded yearly in children under the age of fifteen, and 400 of these occur in the age span of one to four years. It has been stated that accidents and poisoning account for the largest number of deaths in the pediatric age group, and together constitute more than the next 7 causes of death combined. The number of fatal cases constitutes a very small percentage of those children who have ingested a toxic compound. The range of compound so ingested is virtually unlimited, but can be handily divided into those things considered to be household items and medicinals. Accordingly, children under five generally ingest household items such as cosmetics, soap, detergent, bleaches, cleansers, pesticides, and petroleum products.[11] The principal medicinal they ingest is aspirin. The clinical problem is the twofold one of identifying whether or not the patient has ingested a toxic compound and what that compound may be. This will depend on whether the child has been observed to ingest the substance and whether or not, in the older child, more than one substance has been taken. The chemical problem of identifying such substance(s) constitutes a major area of growth in clinical and forensic toxicology today. Autopsy findings, except to demonstrate the presence of material in the stomach or the occasional suggestive lesion (corrosive esophagitis and/or gastritis, "hydrocarbon lung"), will be essentially negative and, in that sense, suggestive of a possible toxic overdosage.

Psychoactive drug poisoning is uncommon in children under five, but does begin to show up in the adolescent period. As previously stated, this article will not discuss heroin addiction and/or overdosage in the pediatric age group. Lead poisoning should be noted, since it is undoubtedly a prevalent condition.[12] A significantly increased body lead burden is present in approximately 10 to 25 per cent of children in those parts of our cities which contain old, deteriorated housing. Approximately 2 to 5 per cent of such children demonstrate symptoms compatible with lead intoxication. Those situations in which there is a rapid dissolution of bone can lead to a significant acute rise in serum lead and may relate to acute lead encephalopathy. This entity can be confusing, since the child (generally one to three years of age) can die rather rapidly, and the clinical setting, other than as noted, may not suggest a toxic compound.

Acute iron toxicity due to the ingestion of large amounts of medicinal iron sulphate has been noted in children, and although it can go through various stages including one of shock, it should ordinarily present no major problem in diagnosis.

Infanticide and abandoned child

Infanticide is used, in accordance with the legal definition, to mean the killing of a newborn child by its mother. The killing of the child by any other person is technically a homicide. The designations of abandonment of the child and/or concealment of birth are noted as being separate entities but will not be discussed as such in this section. The problem of proof in an infanticide case is exceedingly difficult, since one must establish the live-born status of the infant and the unnatural mechanism of death involved. Both of these are compounded by the fact that many times it is virtually impossible to ascertain who the parents are; and by virtue of decomposition, to establish whether the infant was live-born and whether or not it died by a seemingly natural process. Although many unnatural mechanisms of death have been recorded, asphyxiation and multiple injuries involving primarily the head constitute the vast majority of cases. Drowning, manual strangulation, cutting of the umbilical cord with exsanguination, and incineration are noted, since each of these poses particular problems in its own right. The abandoned child can also die of exposure or of starvation and can, of course, show external evidence of animal or insect bite.

It should be expected that in those jurisdictions where legal abortion is available, infanticide, much like criminal abortion, should show a significant decrease.

Clinically and/or circumstantially unexplained natural death

Cases in the category of unexplained natural death include those children whose death is clinically or circumstantially unexplained or unexpected and whose cause of death is identified on autopsy. It does not include crib deaths, which on autopsy represent essentially a diagnosis by exclusion. It will be evident that the degree of circumstantial or clinical nature of the case will depend on the general care that the child receives. Accordingly, a wide range of diseases can associate with this "entity," but this will vary by socioeconomic group. Except to note this fact, no further remarks will be made concerning it. Encephalitis, meningitis (some meningococcal-Waterhouse-Friederichsen syndrome), laryngotracheobronchiolitis, lobular pneumonitis, acute epiglottiditis, and overwhelming sepsis with shock constitute the range of infectious disease found in some of these cases. Congenital heart disease, with particular reference to endocardial fibroelastosis, cardiomyopathy (idiopathic hypertrophy), and pulmonary stenosis is the next most prominent cause of death. Instances of coarctation of the aorta and patent ductus arteriosus have also been noted. A wide variety of other conditions, such as acute glottic edema, subglottic hemangioma, brain neoplasm, acute leukemia, and massive intracerebral or subarachnoid hemorrhage from an arteriovenous anomaly, have been recorded generally as individual cases by separate investigators.

Several problems should be noted under this heading. First, the use of postmortem microbiology, with particular reference to multiple organs and virus isolation, would probably explain a certain number of cases. Second, one must constantly be aware of the problem of toxic overdosage, whether accidental or otherwise, in a child. Third, and of particular note in the younger child (under two years of age), the difficult nature of defining a case of smothering should be borne in mind.

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DENTISTRY

An emerging forensic science

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The dentist has long been a casual contributor to the forensic sciences primarily in the area of identification of mutilated, decomposed, burned, and fragmented bodies. He was usually called on if the forensic investigation involved one of his patients or if the mass disaster occurred in the area where he lived or practiced. Most often the incident marked the beginning and end of his career as a forensic scientist. The forensic odontologist can be a fruitful and productive member of the investigative team. The more he is utilized, the more valid and rewarding will his contribution become.

The character of dental evidence available for comparison purposes in identification problems today is vastly different from that of two or three decades ago. The "dental record" at that time consisted of a written record of treatment rendered by the dentist, usually fillings or extractions. Because of the infinite number of combinations of present or missing teeth, filled or unfilled teeth, filling materials used, and so on, identification problems involving the dentist were reduced to exercises in probability. The role of the dentist was merely to recognize the various treatments rendered in the mouth he was examining or perhaps make a diagram of an unknown dentition for comparison with a diagram supplied by another dentist. The invention of the air-driven "high speed" dental drill approximately two decades ago radically altered dental treatment and considerably changed the dental evidence available.

In addition the philosophy of dentistry had gone from treatment of disease to prevention of disease. Rather than extracting teeth the dentist now "saves teeth" with sophisticated restorations, endodontic (root canal) therapy, and periodontal treatment. The character of the dental examination changed from the dental practitioner inspecting teeth with a mouth mirror and explorer to visual examination and charting of existing restorations, defects, and missing teeth, full-mouth radiographic examination, and plaster study casts of the existing conditions.

The dental record of the "seventies" will usually consist of the three elements described: chart, x-rays, and study casts. It contains a wealth of information which may be used for identification purposes. However, it is also fraught with dangers, for to be used to its potential it must be interpreted by a dentist with the skill to relate the information to evidence obtained at postmortem examination. Indeed dental treatment sometimes radically altered the appearance of a dentition; however, the anatomic landmarks recorded radiographically always remain unchanged.

In the past decade men such as Dean David B. Scott of Case Western Reserve University School of Dentistry, William G. Sprague, Robert C. Boyers, and George H. Green of the Armed Forces Institute of Pathology, and Soren Keiser-Nielsen of the Royal Dental College, Copenhagen, Denmark, began to organize a trained nucleus of forensic odontologists and lobby for their recognition as specialists. An annual course in forensic odontology was offered at the Armed Forces Institute of Pathology, and many dentists, pathologists, lawyers, and law-enforcement officers attended the five-day session which offered a basic introduction to this field. In addition one-day programs were organized by state dental societies. Three notable success were in 1969 and 1970 in Hartford, Connecticut, chaired by Dr. Lester L. Luntz, and the symposium of the Institute of Forensic Medicine of New York University and The City of New York in 1971. The latter attracted almost 400 registrants.

The greatest problem of the forensic odontologist has been the paucity of case material. Indeed one could spend a lifetime with an interest in this specialty yet never see enough meaningful problems to develop the experience and maturity to be considered expert in the area.

Men, such as Milton Helpern, M.D., have been changing the forensic odontologist from the fascinated visitor in forensic medicine to the trained member of the investigative team. He used his unique position in forensic medicine and his unique Institute of Forensic Medicine to give the dentist the training, status, and inspiration to become a forensic odontologist.

Purpose of identity

The two most significant areas being studied at the Institute are identification and human bitemark evidence. Not only may the dental consultant make comparisons for identification purposes but he also may give estimates of age, relative economic status, area of the country or world where dental restorations were accomplished, quality of dental treatment, and quality of oral health of an unknown.

When an entire dentition is available, identification is a relatively simple process. Jaw fragments, however, tantalize the forensic odontologist. The most memorable case involving fragmentary evidence was the West 11th Street townhouse explosion in New York City. This residence being used as a "bomb factory" by an S.D.S. Weatherman group exploded in March, 1970, snuffing out the lives of three young people. The details are well known. Two of the torsos found in the rubble, a young man and woman, were unidentifiable. Approximately one week later a fingerprint taken from a pinky found in the site was identified as belonging to Diana Oughton. A jaw fragment, a portion of the right maxilla containing three and one-half teeth, was found at the same time. Examination revealed the fragment belonged to a person in the late twenties. The central and lateral incisors and the cuspid were intact. The first bicuspid was shattered. By 60-power scanning microscope which revealed tool marks, dental cement, and gold fragments, the shattered bicuspid was believed to have contained a distal occlusal gold inlay. There was evidence of decalcification on the mesial surface of the central incisor which would indicate that tooth was in close contact with a left central incisor. Radiographs of the fragment were made at New York University Dental Center, marked, and kept as evidence.

Based on a written record of dental treatment which had conflicting entries the possibility of the fragment belonging to Diana Oughton was ruled out. Many comparisons with dental x-ray films belonging to possible male victims failed to allow us to identify the victim. Finally Elliott Gross, M.D., then deputy chief medical examiner, City of New York, brought a full-mouth series of radiographs taken when the Oughton girl was thirteen years of age. These were unearthed in the midwest. But for the normal aging changes, the anatomic landmarks were unmistakably identical to the radiographs we had taken of the fragment. These fifteen-year-old x-ray films confirmed the identity of the victim. It also proved the value of the graphic type of evidence and the value of an expert who has enough experience to enable him not to be timid in interpreting it. Indeed a single dental roentgenogram is more valuable than a lengthy written record, since it yields a multitude of anatomic areas of comparison.

Bite-mark evidence

Human bites have been inflicted during sexual activity, as a result of rage, and in defense and attack situations. It is very valuable to be able to establish the identity of the perpetrator of the bite for legal purposes, and the pursuit of the elusive perpetrator has occupied an international field of forensic odontologists. The problem once again is that the extreme lack of case material for most investigators militates against their gaining expertise in this facet of forensic odontology. In the past three and one-half years we have examined approximately two dozen bite marks and alleged bite marks in the skin of homicide victims. This includes single and multiple marks on victims. This number is at least equal to if not greater than all cases previously reported in the literature. We have learned a great deal in this area. However, it is but a drop in the sea of knowledge we must accumulate before we are willing to make positive identifications in court involving homicide cases.

The more markings seen the more readily one interprets the next case seen. The lower anterior teeth leave the best evidence, since the upper anterior teeth are utilized for holding rather than cutting in the dentition with a normal relationship. If the upper anterior teeth were much clearer than the lower teeth, it would lead us to suspect a prognathic jaw relationship.

Because of such factors as present or missing teeth, diastemas, rotations, wear, restorations, disease, deformation, and so on, we must conclude that the dentition involved in leaving marks in tissue must be arranged in an infinite number of combinations, since we have noted teeth as far posterior as the second premolars in bite marks. While it appears a simple problem to make comparisons, in actual fact it is not; because while we can very accurately reproduce the offending dentition, it is physically impossible to reproduce the injured tissue to make test bites in. In addition, human tissue is usually soft and yielding so that the offending bite is usually distorted. It is also almost impossible to find a flat surface to bite on the human body and would be more difficult to bite such a surface so that we are reduced to comparing two entities, the offending bite and test bite, which will never be truly comparable as is a fingerprint, since we cannot reproduce the three dimensions of the bitten surface. We are actually interpreting the situation based on our knowledge and experience.

At this point in bite-mark identification we have chosen to give an opinion as to the quality of the mark we have to examine and an opinion as to whether the suspect in question could have left the offending bite. We classify the marks as excellent, good, fair, and poor. We make the statement, "The bite mark is or is not consistent with the dentition of the suspect." The quality of the mark is meant as a guide for the person receiving the report of the examination. When all circumstances are taken into account, a "poor" bite mark may be more valuable in a particular investigation than a "good" bite mark from a case with different circumstances.

We have established a basic procedure with regard to handling these cases but may modify it as the situation dictates. All the medical examiners in the Office of Chief Medical Examiner, City of New York, are constantly looking for this type of evidence. The largest percentage of bite marks have been found on the "battered child" homicide victims, most of whom had multiple bite marks. In this type of case this evidence is most useful because of the limited number of persons who had the exclusive opportunity to commit the crime. The exclusion of suspects rapidly narrows the field of investigation for the law enforcement officer. Bite-mark evidence is also prevalent in sexually oriented crimes, so that both these victims are thoroughly examined for bites.

If bites are found, the dental consultant and the commanding officer of the photo unit, New York City Police Department, are notified. Color and black and white photographs are taken both with anatomic landmarks and 1:1. No markings of any kind are utilized, since this would be considered tampered evidence. Washings of the area are taken and examined for serologic groupings of the perpetrator. A description of the bite is made to be included in the autopsy protocol. None of the bites examined have been three dimensional; however, if one was, casts of the bite would be made. The teeth of the victim are examined if the bite is in an area which might be accessible to the victim and casts taken if needed. The tissue may be taken and preserved as evidence.

Casts of the teeth of all suspects are obtained and test bites made in a standard dental wax. These are compared with the photographs and a statement given to the chief medical examiner as to whether each suspect may be excluded or included in the group which may have left that bite. In addition, the serologist will also report his findings to the chief medical examiner who will now have two useful pieces of information concerning each suspect. Correlation of dental, serologic, and circumstantial evidence could be most useful to the investigators.

I believe that bite-mark evidence has definite possibilities for the future. I have seen evidence which I strongly believed could have been left only by the dentition in question because of the anomalies of occlusion of that particular person. However, I believe it is unfair to testify in that manner in court because not enough has been seen to justify such a finite conclusion. Attempts to produce bite-mark evidence to study experimentally has been a dismal failure. With tongue in cheek I must say we have encountered a complete absence of human volunteers, particularly female, to contribute anatomic areas likely to be bitten for research purposes. Nor have we been able to duplicate the circumstances surrounding the attack which apparently affect the quality of bite. I believe if we would be able to establish some nationwide method for the collection and evaluation of bite-mark evidence, we would be able to establish a system of classification and ultimately have our findings accepted in the courts as being arrived at in a fair, objective, scientific manner rather than the subjective way they must be presented today.

Other questions must be settled before the forensic odontologist knows the path he must take for acceptance by his colleagues as a forensic scientist. Criteria have to be established in regard to training and experience for recognition as an expert. The legality of the collection of dental evidence without violation of personal rights must be clarified. The position of the forensic odontologist should be created in either the academic community or governmental agency. An institute of forensic medicine would probably be ideal for it combines both these areas. Indeed it would be well to follow the precedent Dr. Helpern has established in this realm.

Conclusion

Forensic odontology must be presented to the dentist, dental student, physician, pathologist, medical student, lawyer, law student, law-enforcement officer, and lay public so that the role and capabilities of this scientist are clearly understood. Hopefully the dental profession will recognize this area as a specialty and recognize its practitioners with some type of certification.

The forensic odontologist has a very real and useful role in the administration of justice. If a climate favorable to this forensic science is established, I am certain we can look forward to its growth and development so that it, too, may serve the people.

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INFECTIONS AS FATAL COMPLICATIONS OF NARCOTISM

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TABLE I. Incidence of fatal infective complications

Complication	1950-1961 Cases	1950-1961 Per Cent	1969 Cases	1969 Per Cent
Local pyogenic infections and endocarditis	128	8.1	17	1.9
Tetanus	131	8.3	15	1.7
Viral hepatitis	30	1.9	33	3.8
Tuberculosis	34	2.1	...	...
Nontuberculous pulmonary infections	106	6.7	31	3.5
Total number of fatal infective complications	429	27.1	96	10.9
Total number of deaths from narcotism	1,586	100.0	877	100.0

The number of deaths from infective complications of narcotic addiction is relatively small and the incidence of this type of complication has not increased in New York City over the years (Table I). In fact, there has been a marked relative decrease in the incidence of fatal infective complication among addicts in recent years because of the great increase in the number of deaths caused by an "acute reaction to drug." The reason for this large increase in deaths from "acute reaction" is not the subject of this report. However, an important contributory factor in this rise is the fact that in recent years the physicians, the pathologists and the clinicians alike, are increasingly cognizant of the "acute reaction" and are more careful in detecting evidence of fresh injection of the drug. In the past, this condition had been erroneously diagnosed as overdosage of a drug. When the result of toxicologic tests was not supportive, the initial diagnosis was then dropped. It is now a well-known fact that many cases of sudden death occurring shortly after or even during the injection of a drug are not pharmacologic or dosage-related. Many other types of complications, especially of an infective nature have, in recent years, been more frequently brought to hospitals where adequate treatment can be offered. This is not only because addicts have been given more attention by the medical profession and others but also because of changing and open attitudes of addicts toward society.

A recent study in the Office of Chief Medical Examiner, City of New York, showed that an "acute reaction" was the cause of death in 77.5 per cent, or more than three quarters, of all deaths from narcotism in 1969 as compared with 48 per cent, or less than half of the deaths that occurred during the years 1950 to 1961. Accordingly, various types of infection were the direct cause of death in 10.9 per cent of all narcotic deaths in 1969 as compared with 27.1 per cent for the years 1950 to 1961. It should be pointed out that the incidence derived from a study of fatal cases is quite different from that based on a series of clinical cases. Unfortunately, there has been a tendency to overlook this important difference and the figures we published in our previous work[1] have often been used to compare with clinical data as if they were both from similar sources of material. The vast majority of deaths investigated by this office occur outside the hospital, and therefore the cases are beyond the scope of clinical investigation. It is also true that in a hospital setting there are many cases of treatable conditions which are not ordinarily investigated by a medical examiner. There has been a great awareness by clinicians of addiction and its medical sequelae, so the skill of diagnosis and treatment of various types of complications have improved. The addicts who are admitted with various types of infective complications are usually sicker than nonaddicts with similar diseases, largely because of their delayed seeking of medical help. A much higher mortality rate from bacterial endocarditis and tetanus has been reported in addicts than in nonaddicts.[2-4] In the past, fatal cases of malaria in addicts were often erroneously diagnosed as a withdrawal symptom.[5]

Causes of infection

Addicts become infected through repeated injections of crudely prepared solutions of drug mixture by unsterilized syringes. Syringes are frequently placed in lavatories and other hiding places and used in rapid succession by addicts who are not known to each other. There is no preliminary washing or sterilization of the syringe or

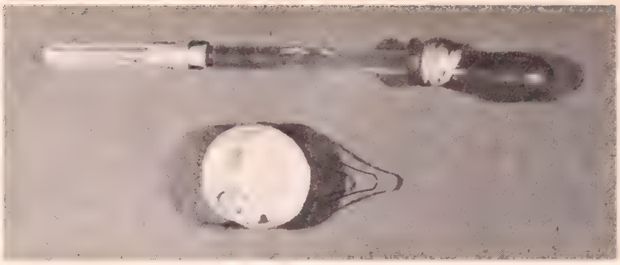

FIGURE 1. "Works" including medicine dropper connected with hypodermic needle and bottle cap supported by hair pin, called "cooker." According to addicts, heating drug mixture to boil is to obtain better solution rather than to sterilize drug.

cleaning of the skin prior to injection. Hiding the syringe is a common practice, the addicts thus avoiding arrest for illegal possession of a hypodermic syringe. The "works" are often located, if one really looks for them, in a cigaret box, behind the dresser, deep in a cupboard, or under the sink. In some sections of the city, the syringes are kept in a vacant apartment or "shooting gallery" and the addict pays a small fee to the owner, who is also generally a drug peddler. Not infrequently, several addicts, lacking sufficient money to buy the drug individually, pool their funds to buy a single portion or "shot" of drug which is then dissolved in water and drawn up into the syringe, each addict injecting his share of the solution, "shooting up together." Although many addicts have, at best, naïve ideas about sterilization and usually share unsterilized needles even if they know that one of the communal users has been jaundiced, some addicts use their own needle and wash it each time in a solution such as hydogen peroxide. According to addicts, the practice of heating the water mixture of a drug in a "cooker" such as a teaspoon or a bottle cap, supported by a piece of wire or hair pin, by a match flame or lighter to a boil and then drawing it up into a syringe or eyedropper through a small wad of cotton or newspaper flange is not an attempt to prevent themselves from becoming infected, but simply to obtain a better solution of drug (Fig. 1). A piece of wire is used to clean the syringe or eyedropper.

It is rather amazing that the repeated injections of drugs, often several bags a day, for a prolonged period of time without proper sterilization of drugs, syringes, and skin, do not cause more fatal cases of infection in addicts. The systemic lymphoid hyperplasia seen in chronic addicts may represent an immune reaction of the body to a longstanding insult by infections and to the introduction of various extrinsic materials.

Not infrequently an addict injects himself with a narcotic drug while he is in a hospital with a condition such as a serious case of infection and expires unexpectedly. Therefore, in all cases of death of addicts, a fresh injection site should be carefully sought for, and a toxicologic study of organs for narcotics included, in the postmortem examination.

TABLE II. Sex ratio in fatal infective complications (Based on 1950–1961 and 1969 figures)

Complication	Male to Female or (Number)	Male to Female (Ratio)
Total number of deaths from narcotism	1,984 to 479	4.1 to 1
Total number of fatal infective complications	347 to 178	1.9 to 1
Local pyogenic infections and endocarditis	103 to 42	2.5 to 1
Tetanus	59 to 87	0.7 to 1
Viral hepatitis	49 to 14	3.5 to 1
Tuberculosis	26 to 8	3.3 to 1
Nontuberculous pulmonary infections	110 to 27	4.1 to 1

Fatal complications of an infective nature encountered in this office included local pyogenic infection with diffuse cellulitis or abscess formation, bacterial and fungal endocarditis, tetanus, viral hepatitis, septicoemboli pulmonary infarction, nonspecific pneumonia, and tuberculosis. No cases of fatal malaria have been observed as a complication of drug addiction at this office since 1943. No case of syringe-transmitted syphilis has been recorded as yet in this office, despite the high incidence of prostitution and homosexuality among drug addicts.[5] Table I shows various types of fatal cases of infection and their relative incidences.

The sex ratio in various types of infection is closely related to the mode of drug injection; that is, female addicts, who often inject the drug subcutaneously, have a higher incidence of tetanus and local subcutaneous infection, while male addicts, who are apt to inject the drug intravenously, have a higher incidence of viral hepatitis. Table II shows the sex ratio in different types of infection.

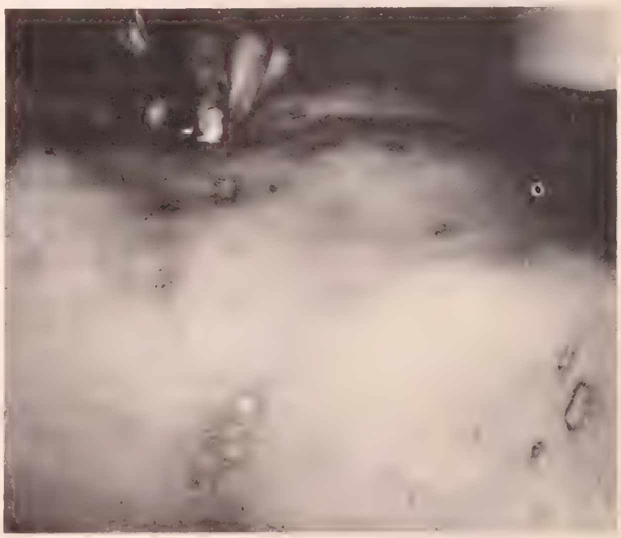

FIGURE 2. Example of unusual subcutaneous injection sites. Multiple abscesses of different stages are seen on abdominal wall.

Local pyogenic infection

Direct infection of injection sites by pyogenic organisms, known as "sores" by the addicts, is the most common complication (Fig. 2). It is very frequently seen in subcutaneous drug users or "skin poppers" and only occasionally seen in intravenous drug users or "main-line-shooters." The usual sites for subcutaneous injection are the lateral and anterior aspects of the thighs. Deltoid regions are used less frequently. Evidence of subcutaneous injections may be found in the areas where the deceased could not have reached. Numerous coin-shaped depressed scars of subcutaneous injection, or "nuts," may be found in such regions as the shoulders and back. Addicts in small groups often aid each other in the injection of drugs.

In their early stages, subcutaneous injection sites show liquefaction of adipose tissue and a mild nonspecific inflammation. Grossly, they are slightly indurated and release a small amount of a thin, oily fluid when cut. This liquefied fat can be mistaken for freshly injected drug. In later stages, the injection sites become cicatrized by dense, fibrous, connective tissue, leaving typical coin-shaped depressed scars of fairly uniform size. Various stages of this regressive change are found in the same general area. This process is primarily due to a chemical injury produced by the drug mixture containing various adulterants.

When an injection site becomes infected, the infection takes either the form of cellulitis or abscess formation. In cellulitis, there is a wide, deep, ill-defined, hard, or woody induration of subcutaneous structures that is sometimes very extensive. We have recently observed a case of cellulitis involving an arm and the entire corresponding side of the hemithorax. In spite of this, the inflammatory rubor is often unapparent in dark-skinned addicts. The tissue, on section, shows a tense edema and releases only a small amount of a thin, bloody fluid. The skeletal muscles are pale, dull, and interlaced by bands of swollen interstitial tissue. Microscopically, in addition to a marked degree of edema, there is a widespread leukocytic infiltrate. Unlike abscesses, which are characterized by several confluent pockets of fluctant pus under the skin, there is little evidence of tissue necrosis in cellulitis. Septic angitis and thrombophlebitis are frequently seen within and at the spreading margins of cellulitis and abscesses. Some of these vessels carry infections to distant organs such as the heart and lungs. The infected injection sites are also a potential source of generalized toxemia and septicopyemia. The pyogen-infected foci may secondarily become the seat of clostridial infection. Infection of an intravenous injection site is usually preceded by local thrombosis of the vessel.

Endocarditis

While certain pathomorphologic and bacteriologic points of interest are recognized, it is also noted that there has been too much emphasis placed on unusual cases of bacterial and fungal endocarditis occurring in drug addicts. Many reports on unusual cases and review articles based on such case reports have accumulated in the literature.[6-9] Some spectacular theories concerning endocarditis occurring in addicts have been advocated. The concept of "heroin type endocarditis versus morphine type endocarditis" is mentioned here only to condemn its unfound theoretical nature. It should be pointed out that in recent years the overall characteristics of endocarditis have shown a progressive modification in both addict and nonaddict populations. Endocarditis occurring on deformed rheumatic valves caused by Streptococcus viridans has only historic value as a prepenicillin era classic. Cardiac surgery, immunosuppressive drugs, radiotherapy, and antibiotics have all contributed to this overall changing characteristic. In this sense, it may be said that the endocarditis occurring in addicts is no more unusual than that seen as a delayed complication of heart valve surgery.

Endocarditis was seen more frequently in intravenous addicts than in subcutaneous addicts. Therefore, men were affected more frequently than women. The entry of primary infection, however, was usually obscure. The valves affected were mitral, aortic, and tricuspid, in descending order of occurrence. Our experience and that of others have shown that endocarditis in heroin addicts is predominantly on the valves on the left side of the heart. This is contrary to the erroneous belief that endocarditis developing in narcotic addicts is right-sided.

A variety of organisms have been cultured from the cases of endocarditis investigated by this office, and Staphylococcus aureus was the single most frequent organism isolated. Most cases of tricuspid endocarditis were caused by Staphylococcus aureus, whereas in all cases of Candida endocarditis, the affected valves were on the left side of the heart. Although staphylococci appeared to have a predilection for the tricuspid valve, the mitral and aortic valves were also affected by this organism.

In reviewing many cases of endocarditis occurring in addicts, it seems impossible to state that there is any close relationship existing between the pathogens and the valves. It has been suggested that heroin addicts characteristically have staphylococcal tricuspid endocarditis, whereas opium and morphine addicts have predominantly left-sided endocarditis which is infrequently staphylococcal.[6,7] It is difficult to understand how such a difference may exist between heroin and morphine for the valvular involvement, when one recalls the metabolic pathways of these two substances. Injection of opium involves another crude theory. It is also unlikely that the street samples of these three drugs are each contaminated by a different type of organism. What is necessary is a broad review of the city's experience with endocarditis in addicts and not merely of what is considered unusual and worthy of publication in itself.[3]

Apart from occasional cases of old, rheumatic valvulitis, the affected valves are in most part entirely free from any demonstrable, preexisting, anatomic lesions, such as congenital or acquired deformities. Candida endocarditis tended to be more often associated with some sort of underlying lesions.

The vegetations of Candida endocarditis were usually bulky and the embolization held in larger vessels, such as those of the extremities, as compared with bacterial endocarditis, where the embolization is seen in the smaller vessels of internal organs. Embolization of fine vessels also occurred in some cases of Candida endocarditis. The vegetations of endocarditis seen in addicts tended to be somewhat larger than those seen in nonaddicts. The most likely explanation is that many addicts usually receive no or very little treatment for the disease prior to their deaths. Tricuspid endocarditis was often clinically silent and its diagnosis missed. A large exuberant vegetation on the tricuspid valve caused by Staphylococcus aureus was an often unexpected surprise at autopsy (Fig. 3).

Another characteristic feature in tricuspid endocarditis was recurrent pulmonary embolism, which may be the only clinical and radiologic manifestation of the disease.[2-8] Unlike endocarditis of the left side, an extrapulmonary embolism occurs only rarely through the greater circulation.

Tetanus

According to an epidemiologic survey of tetanus in New York City, nearly three quarters of the cases of tetanus reported to the Bureau of Preventive Diseases were in addicts and four fifths of these were Negro women from the Harlem area. In Chicago, addicts are known to constitute at least half of the fatal cases of tetanus. Hence a periodic mass immunization of addicts with tetanus toxoid may be of value in protecting them from the disease.[10]

The sex ratio of the tetanus cases investigated by this Office was 5 to 3 with the female predominating, while the sex ratio of all deaths from narcotism was 7 to 2 with the male predominating (Table II). It may be said, therefore, that the chances of a woman addict contacting tetanus are approximately six times greater than those of a male addict.

It may also be said that tetanus is a disease of the "skin popper." Almost all cases of tetanus observed in this office were either in addicts who used the drug only subcutaneously or those who used both the intravenous and subcutaneous methods. Many women addicts inject the drug subcutaneously from the start, while some women have to change from the intravenous method to the subcutaneous method because of early obstructive change of their initially fine vessels. Multiple chronic abscesses were usually found on the thighs and occasionally over the deltoids of these tetanus victims.

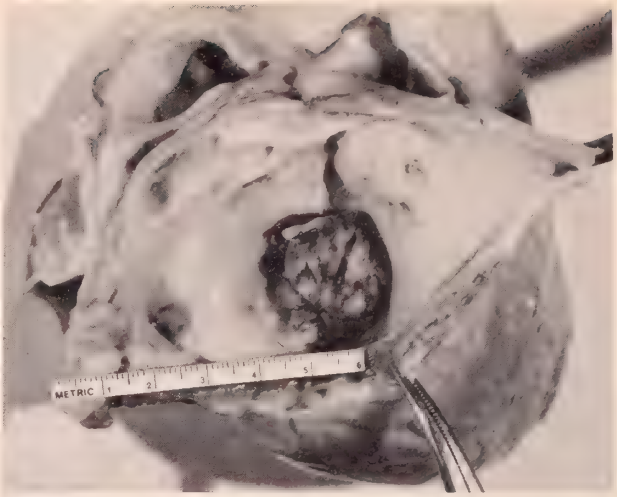

FIGURE 3. Staphylococcal tricuspid endocarditis. Large vegetation nearly occludes valve ostium. Diagnosis was clinically unsuspected.

Without clinical information, a postmortem diagnosis of tetanus is difficult to make. The mere isolation of Clostridium tetani from a given tissue at autopsy has only a limited value if it confirms the clinical diagnosis. On the other hand, a negative culture does not preclude the diagnosis. A positive culture of C. tetani is likely to be obtained at the deeper portions of the abscess where a mixed infection with pyogenic organisms is held. Pure infection with C. tetani is rare and does not produce much tissue necrosis. Mixed infection with pyogenic organisms provides a devitalized tissue and this enhances the anaerobic state of tissue favoring the growth of tetanus bacilli.

Repeated injections of a drug mixture that contains various adulterants not only brings infections to the tissue but also causes local irritation to produce a sclerosis of tissue. Quinine is a particularly irritating agent and can cause fibrous scarring not only subcutaneously but also perivascularly. Interconnecting abscesses of pyogenic infection on such fibrotic background provides an ideal milieu for C. tetani.

Viral hepatitis

Viral hepatitis is transmitted by the communal use of contaminated needles. The disease now stands as the most frequent fatal infective complication of drug addiction (Table I). The relative incidence of viral hepatitis for 1969 was more than double the relative incidence of viral hepatitis for the years 1950 to 1961. Viral hepatitis is the only infective complication of heroin addiction that shows a marked increase in recent years and it is a remarkable contrast with the incidence of bacterial infections. A clinical survey also showed that viral hepatitis was the most frequently observed infective complication requiring hospitalization.[2,3] The reason for this enormous increase of hepatitis is not clearly known. There is no evidence as yet to consider this increase as a manifestation of hepatitis as a cyclic disease like influenza and other viral diseases.

Varying amounts of round-cell infiltrate have been found along the portal areas of the liver in addicts who had shown some degree of abnormal liver function test results but were without clinical signs of viral hepatitis.

This finding has been interpreted as evidence of chronic viral hepatitis.[11] Attempts to reproduce a similar lesion in monkeys have not been successful.[12] It is probable that the histologic changes of the liver seen in many cases of chronic addicts merely represents a nonspecific reaction of the liver along with the splenolymphatic system to a longstanding insult by various injected foreign substances.

A recent survey showed that the detection rate of the serum hepatitis related antigen (S.H.) in acute viral hepatitis among addicts and nonaddicts were 54 per cent and 50 per cent respectively. The same survey also showed that 2 to 3 per cent of the addicts with no evidence of acute hepatitis had detectable quantities of the antigen, whereas only 0.1 per cent of volunteer blood donors were found to have the antigen.[13] Thus, the finding of the serum hepatitis antigen in addicts without hepatitis was increased 20- to 30-fold over that in a control population. The prevalence of detecting antiserum hepatitis hemagglutinating antibody is reported to be associated with advancing age of the addicts.[14] However, the reported incidences of hepatitis among persons with a positive Australian antigen and/or antibody are conflicting and fragmentary.[15,16] It appears that there has been no unanimity even in the clinical and histologic criteria for hepatitis.[17] The Australian antigen has been detected in a variety of conditions other than hepatitis. The complex immunologic status of addicts who inject themselves constantly with various foreign substances is readily understandable.

Cases of serum hepatitis transmitted by means of tattooing have been reported.[18-20] Tattooing is extremely prevalent among addicts. It is difficult, however, to estimate the actual incidence of tattoo-transmitted hepatitis in addicts. It seems that heroin addicts have a tendency to enjoy the feeling of the injection or needling on top of the sensation they get from the drugs. Many addicts squeeze the injectables in and out of the vein repeatedly to obtain this feeling, and often inject themselves with stuff other than heroin for a similar purpose.

Malaria

Since quinine was added as a diluent of heroin, there had been no cases of artificially transmitted malaria until recently. Quinine seems to have been first added as a diluent during the 1930s, a period when malaria was rampant among intravenous heroin addicts who had become infected directly through the common use of unsterilized syringes.[5] The addicts and those who prepared the drug mixtures soon learned that quinine was a cure and preventative of malaria and began adding it as a diluent of the heroin mixtures. The remarkable fact remains that despite the marked increase in addiction, there had been no cases of artificially transmitted malaria in intravenous addicts since 1943.

Recently, cases of malaria reappeared.[21,22] The cases reported have been either returning veterans from Southeast Asia or those who were in the United States but shared the syringes with the infected Indochina returnees. The drugs sold in Indochina were said to contain a lesser amount of additives to disguise the strength of the sample. According to the 1969 Annual Report of the U.S. Center for Disease Control, there were nearly 4,000 servicemen who had attacks of malaria after returning from Southeast Asia to the United States.[23] There are also additional unknown numbers of asymptomatic carriers of malaria among the Indochina returnees. In contrast to the usual mode of drug administration of heroin in New York City and other urban areas of the United States, only 10 per cent of military addicts were taking heroin intravenously, the remainder were taking it either by smoking or sniffing (or snorting).[24] The initial contact of malaria, therefore, may not necessarily be due to heroin injection but rather to conventional mosquito bites. Regardless of the mode of initial contact of malaria, these carriers will eventually become a potential source of infection for other addicts.

Because physicians lacked familiarity with the clinical manifestations of malaria and the unsuspected nature of the disease in this country, the malarial patients were sometimes admitted to the hospital as cases of withdrawal symptoms from narcotics.

Although occasional cases of malaria caused by Plasmodium vivax and Plasmodium malariae were reported to occur in addicts, the majority of cases were due to Plasmodium falciparum. P. vivax, which causes benign tertian malaria, has a predilection for reticulocytes and does not attack mature erythrocytes. The affected red cells are enlarged and show eosinophilic Schueffner's dots in mature forms. P. malariae, which is the cause of quartan malaria, is comparatively rare and attacks primarily older erythrocytes which already are about to be removed by the normal process of blood destruction. The affected red cells do not enlarge. P. falciparum is the cause of malignant

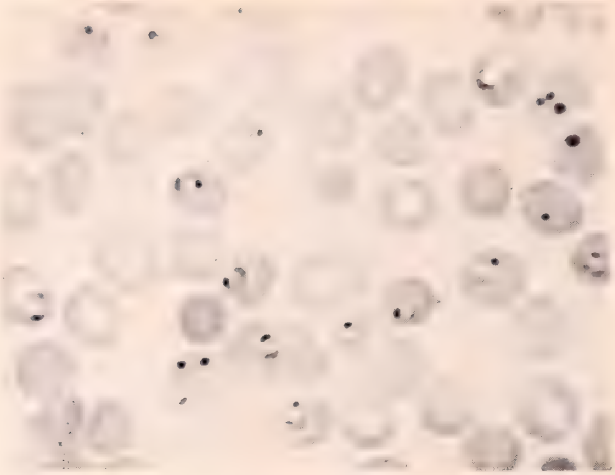

FIGURE 4. Parasitemia of Plasmodium falciparum. Note occasional red blood cells containing multiple trophozoites (Giemsa stain).

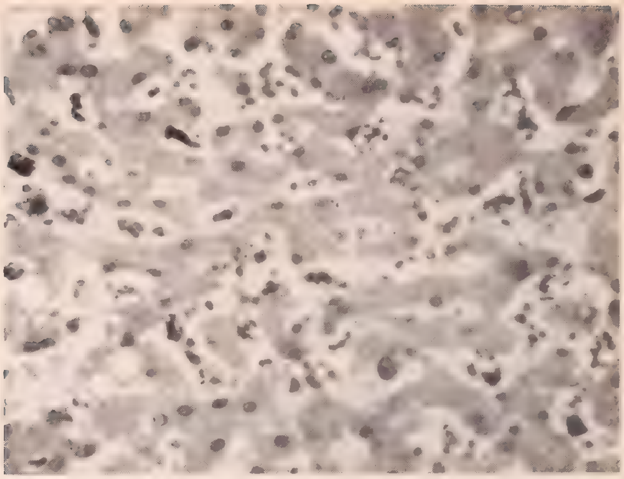

FIGURE 5. Distended sinusoids of liver crowded with swollen Kuppfer cells containing disintegrated, parasitized red blood cells and malarial pigment (hematoxylin and eosin stain).

estivo-automnal malaria and invades all erythrocytes regardless of age. Therefore, parasitemias may reach 50,000 per cubic millimeter. The affected red cells do not enlarge, and multiple infections of small trophozoites in a cell are very common (Fig. 4).

Pathologic findings in fatal cases of malaria are fairly constant. The organs are generally congested and have a darker color because of the presence of the malarial pigment hemozoin, derived from hemoglobin of the disintegrated erythrocytes. Clumps of malarial pigment are seen phagocytosed in the reticuloendothelial cells. The spleen is markedly large, mushy soft, and greyish brown. The follicles are markedly obscured. The liver is moderately large and shows a degree of parenchymatous degeneration of hepatocytes. The Kupffer cells are large and contain disintegrated red blood cells and abundant malarial pigment (Fig. 5). The kidneys show pale swollen cortices against congested medullae. Nephrotic syndrome has been reported to occur in cases of recurrent infection with P. malariae. Blackwater fever is a complication of falciparum malaria with acute massive hemolysis and subsequent hemoglobinuria. P. falciparum also causes red cells to agglutinate and adhere to the capillary walls. Consequently, the capillaries of many organs are plugged with parasitized red blood cells resulting in multiple small hemorrhagic infarcts and severe ischemia. Such change may be localized in the brain, heart, kidneys, or any other organs. A comprehensive study of fatal cases of malaria in addicts in New York City occurring during the 1930s showed that 30 per cent died of overwhelming malarial infection; 55 per cent with brain capillaries occluded by agglutinated, parasitized red blood cells; and 14 per cent from cardiac involvement.[5] The appearance of cerebral malaria is distinct. The brain tissue is dark greyish brown or rusty brown (Fig. 6). There is an intense pial congestion. Numerous small punctuate hemorrhages, not unlike those seen in massive cerebral fatty embolism, may be found in the white matter. As a screening test, a piece of unfixed brain tissue is gently squeezed into two layers of slide glass. Without the aid of a microscope, the malarial pigment along the capillaries that appear as a blackish dentric or a mosaic pattern can be demonstrated. Microscopically, the capillaries are markedly distended with red blood cells containing pigmented malarial parasites (Fig. 7). Multiple foci of perivascular hemorrhage are noted. Small nodules of proliferating glial cells, so-called malarial granulomata, are found around some of the vessels in the white matter. Small areas of demyelination and slight swelling of the nerve cells are also noted.

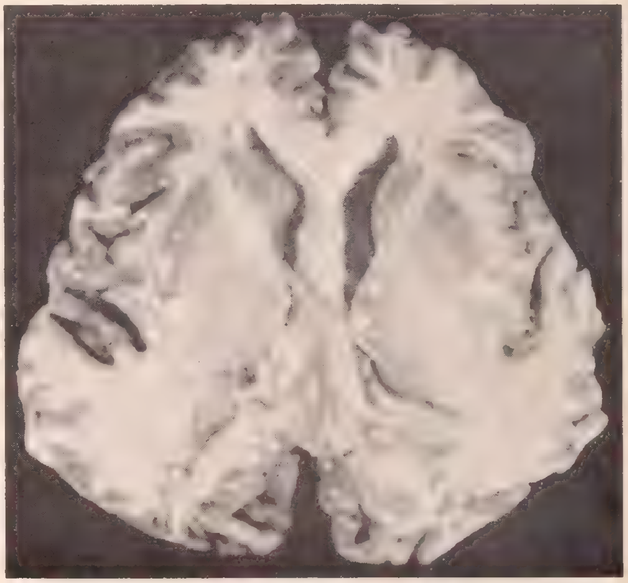

FIGURE 6. Cerebral malaria. Note dark coloration.

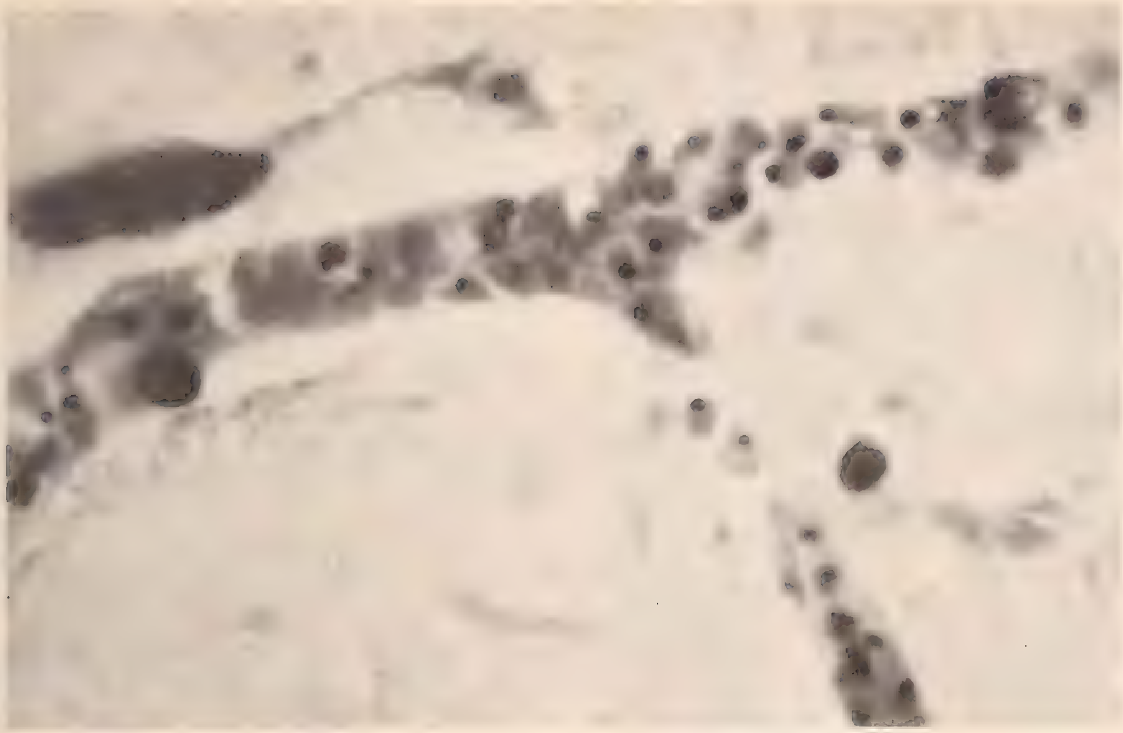

FIGURE 7. Cerebral malaria. Capillaries distended with parasitized red blood cells (hematoxylin and eosin stain).

Pulmonary infections

Nonspecific bronchopneumonia and septicoemboli lesions of the lungs comprise approximately 5 per cent of all deaths from narcotism. While bronchopneumonia from aspiration during a heavily drugged state or in a state of nonfatal "acute reaction" is not infrequent, there are also many cases of pneumonia that are not directly related to the drugs. Most addicts have rendered themselves very susceptible to various types of respiratory tract infections as the result of undernourishment and the unsanitary way they live.

A variety of organisms, often mixed types, are isolated from the lung tissues of these addicts. In the past there had been approximately 2 per cent of deaths from tuberculosis, but this figure has been steadily decreasing (Table I). This decline is probably the reflection of improved overall public health measures. Septic infarcts of the lungs occur either secondarily to local pyogenic infection of the injection sites or from tricuspid endocarditis. Multiple discrete abscesses of different stages are seen within the same lung. Thrombotic vessels are usually found in the vicinity of these lesions.

Summary

This report is primarily based on a study of 429 cases of death from infective complications of drug addiction investigated by the Office of Chief Medical Examiner, City of New York, during the years 1950 to 1961 and 96 cases of similar death that occurred during 1969. A total of 2,463 cases of narcotic death which occurred during the same periods were reviewed. Although no case of syringe-transmitted malaria was observed during these periods, a section on malaria is also given to meet with timely necessity. Despite the enormous increase in total number of deaths from narcotism over the years, the number of fatal cases of infection was relatively small. This is in large part due to the great increase in the number of deaths from an "acute reaction to drug." Viral hepatitis was the only infective complication of heroin addiction that showed a marked increase in recent years and it was a remarkable contrast to the incidence of bacterial infections. It is noted that there has been too much emphasis on unusual cases of infection, particularly with endocarditis, associated with drug addiction. The importance of recognizing the overall pattern of infective complications in a large series of cases is stressed.

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DEVELOPMENT OF DEPARTMENT OF FORENSIC MEDICINE AT NEW YORK UNIVERSITY SCHOOL OF MEDICINE

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The Department of Forensic Medicine has its origins in the last century when Bellevue Hospital and its medical school shared the use of the old morgue on the East River at the foot of East 26th Street with the coroners of New York County.

Autopsies on coroners' cases of patients who died on the four divisions of Bellevue Hospital on authorization by a coroner were performed by the hospital pathologists and were the only ones in which detailed records of the findings were prepared. The cursory examinations made by the coroners themselves were perpetuated only as brief causes of death written into a daily accession book in a fine Spencerian hand. Many cases reported to them were turned down, and many that were certified were hardly examined. Subtle violent death, of which there must have been many varieties, was rarely suspected or discovered.

Medical school affiliations

Toxicologic studies in coroners' cases in the latter part of the last century and early 1900s were asked for only occasionally and performed usually by Prof. R. A. Witthaus and Prof. John Mandel who taught chemistry and physics at the Bellevue Hospital Medical School. In 1898 the medical school became affiliated with New York University and was renamed the University and Bellevue Hospital Medical School. That year, the Cornell University Medical College was established as an offshoot of the Bellevue Hospital Medical School. Professor Mandel continued to teach at the New York University affiliated institution and later his assistant, Dr. Alexander O. Gettler, succeeded him there. Professor Witthaus had joined the Cornell faculty. These excellent teachers fascinated the medical students with the details of their personal experiences as expert witnesses in the sensational murder trials of the day.

The medical schools in the city at that time provided no formal instruction in forensic medicine except for a series of lectures in medical jurisprudence given at Cornell by members of its faculty. These included Professor Witthaus and Otto Schultze, M.D., who was a coroner's physician, a professor of gross pathology, and after 1918 medical adviser to the district attorney of New York County. William Larkin, M.D., another coroner's physician working at Bellevue, taught pathology at the Columbia University College of Physicians and Surgeons.

Both the University and Bellevue Hospital Medical School and the Cornell University Medical College, the old and the new schools, which had their origins in Bellevue Hospital, were closely associated there with the Columbia University College of Physicians and Surgeons. The three schools were responsible for the professional and teaching appointments and all the medical care on three of the four divisions of the hospital, all sharing the same department of pathology, which in turn, shared the same mortuary and autopsy room facilities with the coroners.

New pathology building

In 1904 the medical board of Bellevue Hospital on the recommendation of William C. Welch, M.D., who had been professor of pathology at the Bellevue Hospital Medical School before accepting the chair in pathology at Johns Hopkins University School of Medicine, appointed Charles Norris, M.D., director of the pathologic laboratory of the hospital, which at that time was in scattered makeshift quarters. Dr. Norris, a graduate of Yale University and the Columbia University College of Physicians and Surgeons, helped design the new pathology building at 400 East 29th Street which was opened in 1911, replacing the old morgue on 26th Street.

Dr. Norris had served his internship at Roosevelt Hospital and studied pathology as a graduate student in Edinburgh and Vienna. He was very familiar with and greatly influenced by the excellent medicolegal institutes on the Continent, especially in Germany and Austria. The design of the pathology building with its fine laboratories, large mortuary, and spacious autopsy rooms reflected his awareness of the need for such facilities and improvement in medicolegal investigation in the United States.

Abolition of politically appointed coroners

It was this concern which stimulated Dr. Norris and other pathologists to work for the abolition of the political elective office of coroner and the establishment of a municipal appointive medical examiner's office in New York City.

There had been growing dissatisfaction for many years with the work of the elected coroners, who were laymen nominated for political reasons without regard to competence or responsibility to the public. Sudden, medically unattended, suspicious, and violent deaths were inadequately investigated. Cases were refused and bodies hardly examined; autopsies were infrequent and, except for those performed by the pathologists at Bellevue and other teaching hospitals, were poorly done. Dr. Schultze and Dr. Larkin, coroners' physicians who were pathologists on the medical school faculties, provided the only exception to this desultory performance.

John Purroy Mitchell, mayor from 1913 to 1917, who had been elected on a reform ticket, acted promptly on complaints from many individuals, professional and civic groups, the district attorneys, and members of the bar about the incompetent work of the elected coroners and their staffs. He directed his commissioner of accounts, Leonard Wallstein, to investigate the office of coroner in each of the five counties of the city. The Wallstein report, completed in 1914, recommended their abolition, declaring the coroner system of investigation an ineffective anachronism, ill-equipped to carry out its important responsibilities. Promptly in 1915, the New York State Legislature enacted the law which abolished the office of coroner and in its place established the municipal Office of the Chief Medical Examiner for New York City, the first law to include the requirement that a medical examiner had to be a doctor of medicine and a skilled pathologist and microscopist. Appointments of medical examiners were to be made from the classified civil service after competitive examination.

Office of Chief Medical Examiner

The medical examiner's office began operation as an official city-wide agency in 1918. Dr. Norris, who had been director of laboratories at Bellevue Hospital since 1904, was appointed chief medical examiner by Mayor John F. Hylan. Several assistant medical examiners including Thomas A. Gonzales, M.D., and Benjamin Morgan Vance, M.D., were also appointed. The medical examiner's law, in recognition of the need, also provided for other related laboratory services: toxicology, serology, bacteriology, and histopathology. Dr. Gettler, principal chemist at Bellevue Hospital, who had been trained by Dr. Mandel, was assigned the additional task of toxicologist and continued to teach chemistry at the New York University and Bellevue Hospital Medical School and at the Washington Square division of the University.

In 1927 Essex County, New Jersey, established a medical examiner system modeled after that in New York City. Harrison S. Martland, M.D., a brilliant pathologist who was director of laboratories of the Newark City Hospital and a close associate of Dr. Norris and other physicians in New York, was appointed its chief medical examiner.

The Manhattan branch Office of Chief Medical Examiner had increased in size and activity and continued its close association with the department of pathology of Bellevue Hospital, sharing the facilities of the building at 400 East 29th Street and with the professional staff of the three medical schools at that hospital. In 1932 the only lectures in what was then called medical jurisprudence were given at Cornell by Dr. Schultze. When he became ill, Milton Helpern, M.D., an assistant medical examiner appointed the year before, was asked to give the lectures which he has continued since that time. Also in that year Dr. Norris and Dr. Vance initiated a course of lectures in legal medicine at Columbia University College of Physicians and Surgeons.

Department of Forensic Medicine

It was in that same year, 1932, that the Department of Forensic Medicine, the first of its kind in any American medical college, was established at the New York University School of Medicine and the first announcement of the department appeared in the medical school catalogue. Dr. Norris was appointed professor and chairman of the department, and Dr. Martland, Dr. Douglas Symmers, who had succeeded Dr. Norris as director of laboratories at Bellevue Hospital, Dr. Armin V. St. George, and Dr. Gettler were listed as members of its faculty. Dr. Gonzales, deputy chief medical examiner, Dr. Vance, and Dr. Helpern were also appointed to the department.

Its curriculum from its beginning has included undergraduate lectures and elective courses, and postgraduate courses in forensic medicine, pathology, toxicology, and serology, with full-time graduate courses leading to the degrees of Master and Doctor of Science in forensic medicine.

On the death of Dr. Norris in 1935, Dr. Martland was appointed chairman and professor of the Department. Dr. Gonzales, who succeeded Dr. Norris as chief medical examiner, was appointed chairman and professor of the department when Dr. Martland retired. On the retirement of Dr. Gonzales in 1954, Dr. Helpern who was appointed to succeed him as chief medical examiner, was also named professor and chairman of the Department of Forensic Medicine at the medical school. Other members of the department for many years include Prof. C. Joseph Umberger, Ph.D., who is also director of toxicology laboratories of the Office of Chief Medical Examiner and Prof. Alexander S. Wiener, M.D., director of serology and microbiology in the medical examiner's office.

More recently associate professors John V. Devlin, M.D., and Michael M. Baden, M.D., deputy chief medical examiners, and research professors in serology Jan Moor-Jankowski, M.D., director of the nonhuman primate center (LEMSIP), and Wladyslaw W. Socha, M.D., formerly professor of forensic medicine in Cracow, Poland, and research associate professor Michael M. Lyons, M.D., have joined the department.

Visiting members of the faculty in the past include Profs. Vladimir Palmovic, director of the Medicolegal Institute in Zagreb, and Heinrich Karplus, director of the Medicolegal Institute in Israel; Asst. Prof. Jorn Simonsen from the Institute of Legal Medicine in Copenhagen; and others.

Consultants to the department and to the Office of the Chief Medical Examiner from the schools of medicine, law, and dentistry include Profs. Valentino D. B. Mazzia, M.D., anesthesiology; Bert LaDu, M.D., pharmacology; Henry H. Foster, Jr., J.D., jurisprudence; and Asst. Prof. Lowell Levine, D.D.S., odontology.

The close relationship between the Office of Chief Medical Examiner and the New York University Schools of Medicine increased during the years and was firmly cemented by the gift from the university to the city during the administration of Mayor Fiorello H. LaGuardia of the land at the southeast corner of the medical center for the express purpose of providing a site for construction by the city of a building large enough to house all the official administrative, professional, and scientific functions of the medical examiner's office.

Funds were allocated by the City Planning Commission in 1956 under the chairmanship of the late James Felt during the administration of Mayor Robert F. Wagner. The building opened in 1960. It is completely equipped with administrative offices, ample mortuary and autopsy rooms, laboratories for forensic pathology, histology, toxicology, serology, and microbiology. It houses a chartered library of legal medicine and a large forensic pathologic museum. It contains conference and classrooms, animal quarters, and record storage facilities.

The Department of Forensic Medicine now carries out its activities in this building. The full-time professional staff of the medical examiner's office are also members of the faculty of the department and teach undergraduate, graduate, and postgraduate medical students. The department and the office also engage in research in the many subdivisions of forensic medicine, and in the training of medical examiners and forensic pathologists from many parts of this country and from countries abroad.

The department and the office together were hosts to the Second International Meeting on Forensic Medicine, Pathology, Serology and Toxicology on September 19, 1960, the occasion of the dedication of the building. The ceremony and the meeting were attended by leaders in forensic medicine from more than 40 countries throughout the world.

The Department of Forensic Medicine continues its scientific research into the many phases of forensic medicine and has published many authoritative scientific works. It has trained many postgraduate and graduate students who now hold positions of leadership in the field of forensic medicine throughout this country and the world. The Library of Legal Medicine publishes the *International Microform Journal of Legal Medicine* of which Paul F. Cranefield, M.D., is consultant editor.

The close liaison between the Office of Chief Medical Examiner and the New York University Schools of Medicine, Dentistry, and Law was further strengthened and formalized by the joint announcement by Mayor John V. Lindsay and president James M. Hester of the establishment of the Institute of Forensic Medicine of New York University and the City of New York on September 26, 1968, the date of the fiftieth anniversary of the Office of Chief Medical Examiner and the thirty-sixth anniversary of the Department of Forensic Medicine.

NARCOTIC ABUSE

A medical examiner's view*

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"If the entire materia medica at our disposal were limited to the choice and use of only one drug, I am sure that a great many, if not the majority, of us would choose opium." Thus, in 1915, did Macht reflect the opinion of physicians through the many centuries when the chief end of medicine was relief of pain, in his classic study of the history of opium use.[1] Abuse of opium and its derivatives has so increased during the past one hundred fifty years that illicit narcotic use is now responsible for major criminal and public health problems throughout the United States. Narcotic abuse has become the leading cause of death in New York City of persons between the ages of fifteen and thirty-five.[2] Nowhere in medicine is it more evident that it is not drugs that are good or bad, rather the uses man puts them to. And nowhere are the sorry consequences of the ignorance of physicians, and the medical profession's inability to learn from past error, more apparent than in the spread of narcotic addiction.

Historic perspective

Opium medications are listed in the Egyptian Ebers Papyrus dating from 1552 B.C. The collection of opium had become a large industry throughout Asia Minor before the time of Christ, and a number of writings of the time describe the manner in which the immature head of the poppy (Papaver somniferum) should be incised and the milky juice collected.[3] Galen in the second century, and Maimonides in the twelfth century were among many who widely recommended opium preparations for relief of pain and as a remedy for dysentery. Paracelsus (1490–1541) used opium extensively and referred to it as the "stone of immortality." Sydenham in the late seventeenth century wrote that "among the remedies which it has pleased Almighty God to give to man to relieve his sufferings, none is so universal and so efficacious as opium."

Opium was employed for the treatment of almost every ailment in Europe and America during the eighteenth and nineteenth centuries. In 1822 Thomas DeQuincey's unfortunate masterpiece *Confessions of an English Opium-Eater* did much to encourage and popularize the nonmedicinal use of tincture of opium, laudanum (from the Latin "laudandum," "something to be praised"), for purposes of pleasure and euphoria. The dangers of developing an opium "appetite," "habit," or "craving" after chronic use had already been appreciated. Opium smoking was introduced to the United States by Chinese laborers in California in the middle third of the nineteenth century and spread eastward after the Civil War.

Sertürner, a German apothecary, had inaugurated modern alkaloid chemistry in 1803 when he isolated morphine (which he named for Morpheus, the Greek god of dreams) from opium. After the hypodermic syringe was introduced into the United States in 1856, the subcutaneous use of morphine was widely recommended by physicians who thought it to be nonaddictive, unlike the oral opium preparations. During the Civil War there was extensive and casual dispensation of morphine for relief of pain; so many ex-soldiers were subsequently noted to be addicted that subcutaneous morphinism became known as "army disease." Despite awareness of morphine addiction in the latter third of the nineteenth century, many physicians espoused its use as a cure for alcoholism and thereby converted many alcoholics into morphinists. At this same time patent medicines became widely used, the active components of many being opium and alcohol.

During the 1890s, as the dangers of opium and morphine were beginning to be widely appreciated by the medical profession so that cures for morphinism were being sought—codeine was generally accepted as a nonaddictive cure for morphinism despite reports of codeine addiction—and when decrease in the abuse of morphine might have been anticipated, Dreser synthesized heroin from morphine in Germany in 1898. Heroin was immediately heralded by the medical profession in Europe and the United States as the most effective and useful analgesic ever known, as being nonaddictive, and as the treatment of choice for opium, morphine, and codeine addiction. A few warnings that physicians were now creating heroin addicts just as they had previously created morphine addicts were ignored. It wasn't until 1910 that

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*Reprint from Wecht, Cyril H., Editor, *1971 Legal Medicine Annual*, courtesy of Appleton-Century-Crofts, New York City.

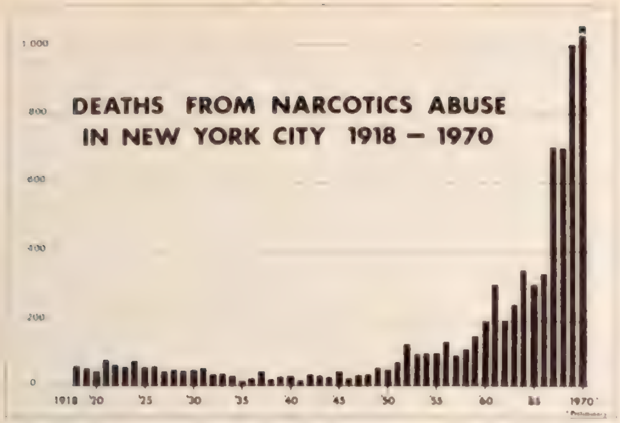

FIGURE 1. Deaths from narcotics abuse in New York City, 1918 to 1970

TABLE I. Median age of death from narcotism New York City

Year	Age
1918	28
1930	39
1940	45
1950	34
1960	29
1968	26
1969	23

the medical profession had awakened to the addictive dangers of heroin use.[3]

Various unsubstantiated estimates indicate that there were between 100,000 and 1 million opium and morphine addicts in the United States at the turn of the century, the great majority addicted to oral preparations, the result of carelessness by physicians or from use of patent medicines. The number of recognized heroin addicts was small, but legal use of heroin was becoming increasingly popular among the antisocial, criminal population. After passage of the Harrison Narcotic Act in 1914, the strained interpretation of which markedly restricted the ability of physicians and pharmacists to dispense opiates, heroin became the narcotic most easily available illegally; the number of opium and morphine addicts decreased markedly, the number of heroin addicts rose, and illicit trafficking in heroin was noted in many cities.

During the next few years outpatient clinics were opened in 40 cities across the country to treat narcotic addicts in the name of humanitarianism and crime reduction, although it was even then recognized that "ambulatory treatment is foreordained to failure. . . ."[4] The New York City Health Department Narcotic Clinic opened in April, 1919, and during the nine months of its existence treated 7,464 addicts with decreasing doses of morphine or heroin before the enforced closing of it and all other clinics by the Commissioner of Internal Revenue for being in violation of the Harrison Act.

Epidemiology

The Office of the Chief Medical Examiner was established in 1918, and its responsibilities have included investigation of all drug-related deaths in New York City since that date (Fig. 1).

Between 1918 and 1939 there were approximately 50 deaths per year due to narcotic abuse, reflecting a largely white, subcutaneous using ("skin-popping") heroin (and, to a lesser extent, morphine) addict population. The intravenous use ("mainlining") of heroin was introduced by sailors about 1930 with subsequent adoption by the majority of addicts. Psychiatric studies of addicted prisoners by Kolb in 1925 and 1927[5,6] concluded, as had earlier investigations, that in the vast majority of cases the addict was a criminal before he abused drugs and that although the increasing cost of heroin resulted in increased criminality, opiates did not directly cause addicts to commit violent crimes; that underlying psychopathology produced a susceptibility to opiate use; that the relatively high relapse rate was a result of the same psychiatric problems that had led to the original addiction; and that actual physical addiction and pains of withdrawal were relatively unimportant and irrelevant factors that unfortunately received major attention.

During this prewar period there was little indication that addicts outgrew or "matured out" of their addiction. The median age at death in New York City was twenty-eight in 1918, thirty-nine in 1930, and forty-five in 1940. The addicts grew older and had increasingly longer histories of addiction. There were few teen-aged deaths. It was not until after World War II, when greater numbers of young people began using heroin, that the median age decreased, with a marked drop during the past two years as progressively younger teen-agers have become involved (Table I).

During the 1930s and until 1943 Milton Helpern, M.D., presently chief medical examiner, investigated 136 deaths in New York City from falciparum malaria, spread by common use of needles, among heroin addicts.[7] Concerned drug pushers and users added quinine, which was then being used to treat malaria, to the heroin packets. There has not been a single death here from malaria among addicts since. Quinine is still used as a diluent, and its bitter taste is mistakenly thought by many addicts to indicate good quality heroin. Recently, because of shortages of quinine, increasing numbers of packets have been found without quinine, and the possibility of a return of malaria exists. Quinine is not commonly used as a diluent in other areas, such as the West Coast.

During World War II heroin and morphine were not readily available, and the number of addiction deaths decreased. Methadone was synthesized by the Germans in response to their morphine shortage and after the war was introduced into the United States; occasional deaths from methadone addiction were noted. As international trade resumed, heroin availability increased, especially in ghetto areas that had been created in part by population movements into the city during the war years because of wartime jobs in defense plants and navy yards. In 1950 the number of narcotic deaths had again risen to 57, but now most were black heroin addicts who used the intravenous method; 5 were teen-aged. Reports appeared of heroin use among high school students.

By 1960 the number of deaths directly due to narcotic use had gradually increased to 199; there was a rise to 306 deaths in 1965 and precipitously, to 1,016 in 1969. Most alarming about the deaths in 1969 was the number of teen-agers: 255 compared to 32 in 1965 and 15 in 1960. The first year in which children less than fifteen years of age died of narcotic abuse was 1969—there were 11 such deaths between the ages of twelve and fourteen. The youngest death was that of a twelve-year-old fatherless black child (Fig. 2). He had been truant from the public schools at age eight; he was sent to various "training schools" for delinquent boys at age nine; he slept in hallways in Harlem and drank wine at age ten; he became addicted to heroin at age eleven, and he died of an acute fatal reaction to a self-administered heroin injection one week after becoming twelve. The majority of the heroin addicts we investigate have similar antisocial histories, arrest records, or diagnosed mental illness prior to the use of narcotics, much as Kolb found in the 1920s.[5,6] During the past two years, as the use of heroin has increased among socially and psychologically marginal teen-agers, a sufficiently large drug-using peer group has arisen so that apparently normal, healthy adolescents have begun to imitate their emotionally disturbed drug-abusing colleagues. Deaths are now occurring in this normal group and among college students and affluent suburbanites. In 1969, 56 per cent of the narcotic deaths were black, 23 per cent white, and 21 per cent Puerto Rican. There were seven times as many male deaths as females. Also of concern in 1969 were deaths of returning servicemen who had become addicted while in the armed forces and were then discharged and sent home without treatment.

The "works"

Deaths from heroin abuse are the result of the manner in which the drug is taken: in unknown amounts with unknown diluents and without regard for sterile precautions. The mixture of varying amounts of heroin, quinine, and sugars is usually sold in glassine envelopes. The paraphernalia used to inject this "street heroin" are referred to as the "works": a "cooker"—a bottle top or spoon containing a piece of cotton believed by the addict to remove germs and impurities; a syringe—often made from an eyedropper (this is more easily manipulated with one hand than the usual medicinal syringe); a needle ("spike"); and a tourniquet—such as a belt, shoelace or stocking (Fig. 3). The heroin mixture and water are heated in the cooker with a match; the solution is then aspirated into the syringe and injected intravenously or subcutaneously. Recently the heroin "bags" in New York have contained about 100 mg. of white powder of which 5 to 40 mg. may be heroin with the average about 10 to 15 mg.; there is similar wide variation in the amounts of quinine and sugars present.

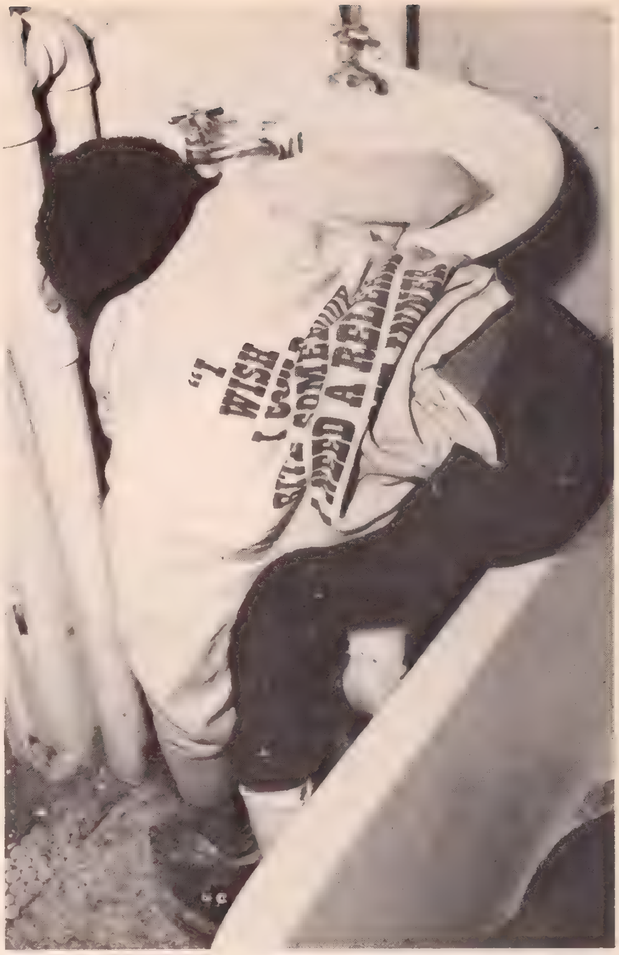

FIGURE 2. Scene of death of twelve-year-old boy in Harlem tenement bathroom following intravenous heroin injection.

A heroin addict may use from 1 to 100 bags a day with the average about 5. A bag costs $5.00, thus the necessity to steal—with the addict receiving approximately one third to one quarter of the value of the goods stolen. Recently the $5.00 glassine envelopes have been further divided into $3.00, $2.00, and even $1.00 bags to encourage sales to younger persons.

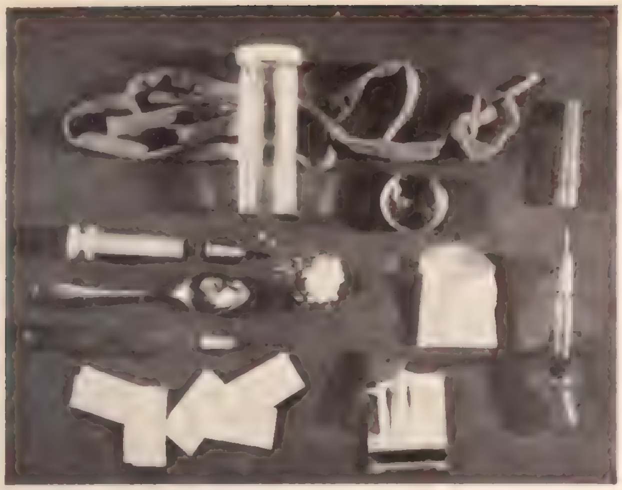

FIGURE 3. Street heroin and the "works": $5.00 "bags," one opened and emptied to show white heroin-quinine-sugar mixture; various needles and syringes, spoon and bottle-top "cookers"; shoelace tourniquet; water; matches; and razor blade to permit opening of "bags" without loss of powder.

Acute death

An acute fatal reaction following intravenous injection is the major cause of death of addicts and is commonly inaccurately referred to as "overdose." A pharmacologic overdose can sometimes be demonstrated, but the precise mechanism of death is not clear in most cases. There are probably many mechanisms for death, which may include an allergic-type reaction to heroin, quinine, or other diluents; a reaction to injected bacteria or other foreign materials; or a true pharmacologic overdose of heroin or quinine or other drugs. Since there are estimated to be at least 100,000 addicts in New York City who inject themselves 3 or 4 times a day and there are 3 or 4 deaths daily, this acute fatal reaction occurs surprisingly infrequently, about once in every 100,000 injections.

Addicts often "shoot up" in groups. Should one addict lose consciousness, the others will attempt a number of folklore type home remedies: pouring milk down the throat (which often goes into the lungs and causes a severe aspiration bronchopneumonia should the addict survive); putting the addict under a cold shower or in a bathtub filled with cold water; injecting saline or amphetamines into the arms, hands, or buttocks; or putting paper in the mouth presumably to assist breathing. These remedies tend to make existing hypotension and coma more severe. If the addict dies, the body is often moved to a nonincriminating area by his colleagues: the rooftop, hallway, a parking lot, a car, or the street. The distribution of the rigor mortis or lividity may indicate that the body was moved after death. Determination of the cause of death of an addict requires investigation of the scene and circumstances of death; interviews with family, friends, and police relative to any history of drug abuse; complete autopsy; and toxicologic analysis.[8,9]

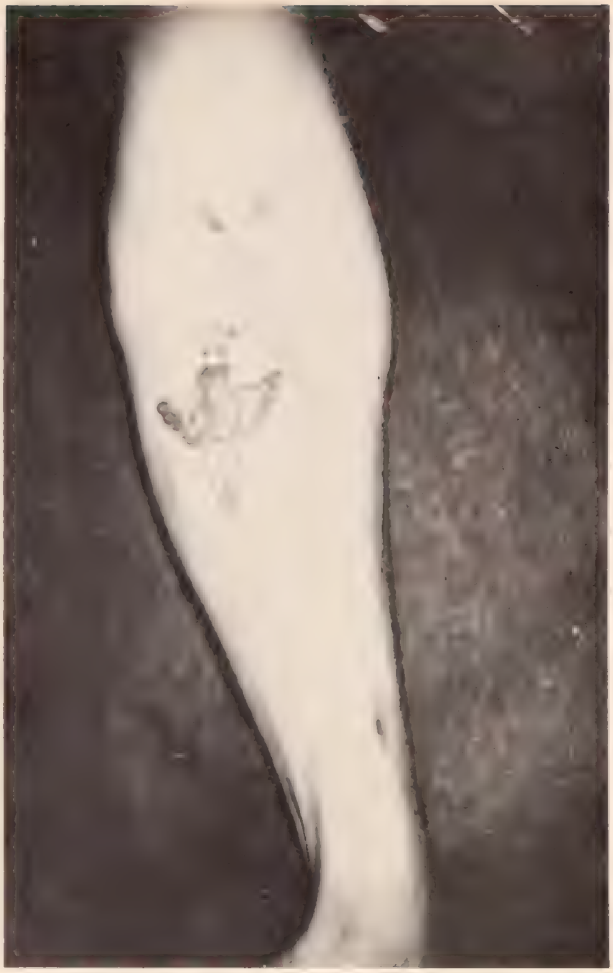

FIGURE 4. Intravenous addict: linear pigmented "mainline" scars most common on forearms; tattoos are often present.

Pathology. At autopsy the most striking findings are external: linear needle track scars, often pigmented, overlying fibrosed veins of the antecubital fossae, forearms, and dorsa of the hands in "mainliners" (Fig. 4); circular depressed scars and subcutaneous abscesses, most commonly on the thighs, in "skin poppers" (Fig. 5); and erythema of the mucosa of the nasal septum or perforation of the septum due to inhaling ("snorting") cocaine. A fresh needle puncture and underlying hemorrhage can usually be demonstrated in addicts who die following an intravenous injection. Tattoos are common in addicts, often self-made and nonprofessional, many with psychiatric implications: "I born to lose"; "I do not believe in friends"; "Mother"; almost never "Father."

The internal findings are remarkably unremarkable, and there are no lesions specific for chronic narcotic use, even after sixty years of addiction. Usually present are hyperplastic changes in the reticuloendothelial system, probably related to the

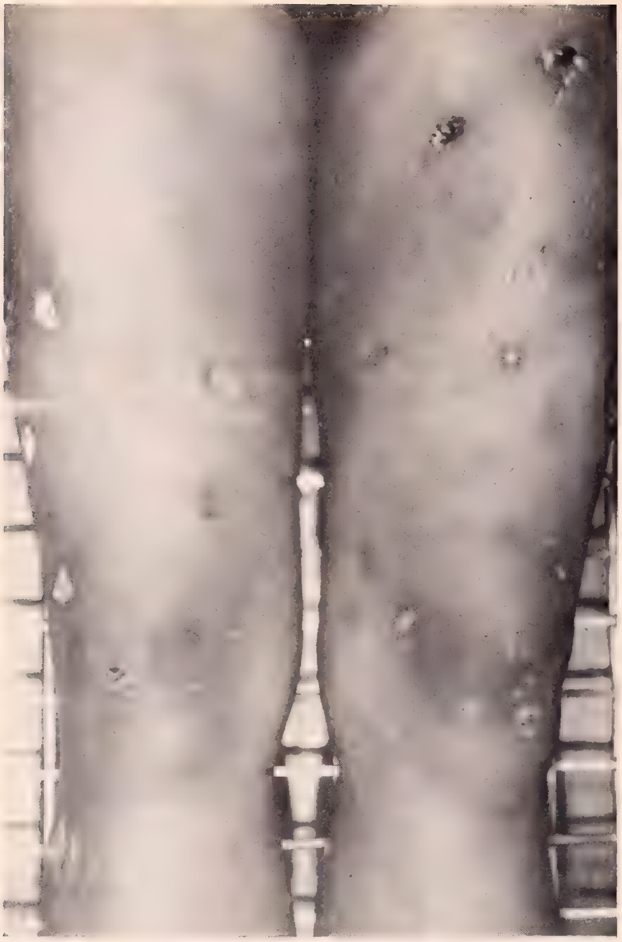

FIGURE 5. Subcutaneous addict: circular depressed "skin-popping" abscesses and scars are most common on thighs.

chronic antigenic stimulation of unsterile injections of foreign materials; these include enlargement of periportal and peripancreatic lymph nodes, persistence of the thymus gland, mononuclear cell infiltrates in the portal triads of the liver, and prominence of lymphoid follicles in the spleen.[8-10] Changes associated with the acute fatal reaction include marked congestion of the lungs with abundant froth present in the bronchi, trachea, and about the nose and mouth. Histologically, foreign material is usually not noted in the lungs unless the addict has also injected dissolved tablets or capsules intended for oral use that contain talc or other filler materials that may lodge in the pulmonary capillaries and cause a foreign body giant cell reaction. A small percentage of autopsies show central nervous system abnormalities that may be the result of hypoxia during coma at the time of prior episodes of "overdose" with recovery.[11]

These include bilateral and symmetrical necrosis of the basal ganglia, transverse myelitis, and peripheral neuropathies. The autopsy must also rule out any other cause of death to permit attribution of the death to narcotism.

Toxicology. Heroin is rapidly metabolized to morphine after injection into the body so that morphine and quinine are usually, but not always, found at autopsy, most commonly in the bile, urine, liver, or blood. Heroin and quinine may be recovered from the nasal mucosa if death follows inhalation of heroin. In 40 per cent of the fatal cases alcohol is present. In 10 per cent of heroin users who die of acute narcotism, barbiturates, amphetamines, or tranquilizers are also found in the tissues at autopsy. Heroin can also be recovered from the syringe and needle if they are found with the body.

Infectious complications. Between 10 and 20 per cent of the addict deaths are due to direct infectious medical complications, in particular hepatitis, infective endocarditis, and tetanus. Almost all deaths from tetanus in New York City presently occur in addicts, usually in subcutaneous users. Staphylococcus aureus and gram-negative bacilli are the organisms responsible for most deaths from endocarditis, with about 15 per cent due to fungi (usually Candida species); in the great majority of cases the aortic or mitral valve is involved, with some manifesting evidence of prior acquired or congenital cardiac abnormalities.

Traumatic death

In addition to deaths directly attributable to the heroin injections there is a high incidence of homicidal, suicidal, and accidental death among addicts. Addicts may fall from heights during burglary attempts or be involved in vehicular accidents while euphoric. In 1970 more than 150 addicts died as a result of homicide: shot by storekeepers or police or, more commonly, shot or stabbed during arguments among addicts and pushers.

The self-destructive nature of addiction and the constant knowledge that each injection could be fatal permits the interpretation that heroin use is a suicidal equivalent. If an addict intentionally commits suicide by taking too much heroin, it would not be possible to so conclude unless a note were found. However, addicts do commit suicide by other means: hanging, jumping from a height, and taking barbiturates. Some of the suicides by hanging have occurred in prison—usually during the first three days of confinement when the mental depression of withdrawal could be a contributory factor; consequently all addicts in New York City are closely observed on confinement, and their belts and shoelaces are removed. Female addicts, who are usually prostitutes before becoming addicted, not uncommonly become pregnant: we have recently seen an increase in the number of battered children in which one or both parents is an addict; second-generation addicts are not uncommon.

Non-narcotic drugs

Although abuse of barbiturates, amphetamines, marihuana, hallucinogens, and tranquilizers is probably much more widespread than is abuse of narcotics, deaths are not as common, perhaps because these drugs usually are taken in relatively known amounts and by mouth. When deaths do occur they are most often traumatic, incident to euphoria and clouding of the sensorium: falls and vehicular accidents. Again no specific pathology is present at autopsy apart from needle track scars in the intravenous barbiturate or amphetamine ("speed") users. The extensive abuse of amphetamine is particularly disconcerting since it continues to be widely prescribed by physicians principally for treatment of obesity, with little evidence that it has a role in the long-term management of the overweight patient whose need is usually to develop proper dietary habits. As a result of similar over-dispensation in Sweden, that country has recently enacted very strict controls over the ability of the physician to prescribe amphetamines.

There is undoubtedly underreporting of deaths associated with cocaine abuse because of the difficulty in recovering cocaine toxicologically using routine methods. We have in the past two years investigated 5 deaths associated with pentazocine (Talwin) addiction, one a physician and one a nurse. Subcutaneous pentazocine use causes very prominent depressed circular scars that can coalesce to form large ulcerated lesions.

Inhalation of volatile hydrocarbons such as glue, gasoline, paints, and solvents can cause euphoria. Death may result because of trauma incident to clouding of the sensorium or by suffocation, if in the course of inhalation a plastic bag has been placed over the head and then consciousness is lost.

Toxicologic examination of the lungs and other tissues may demonstrate toluene, acetone, benzene, isopropyl alcohol, or other hydrocarbons. In deaths following inhalation of Freon refrigerants the specific fluorocarbon can be demonstrated in the tissues, especially the lungs.

Death does not result directly from "overdose" of marihuana. Autopsies of marihuana smokers who have died of other causes have not demonstrated any specific pathologic lesions. More pertinent to current controversies concerning legalization of marihuana than questions about physical harm are the psychiatric implications: How often is marihuana use a manifestation of underlying emotional problems? Does its use in adolescents interfere with constructive maturation and the normal development of problem-solving technics? How much of its popularity is a result of its forbidden status? Will marihuana smokers switch to other, more harmful, drugs if it is legalized?

Urine testing

The initial identification of a parenteral drug user can usually be made by physical examination of needle-track scars, skin-popping scars, or fresh needle punctures. However, continued use of drugs, or identification of oral drug users, requires an objective means immune from the manipulativeness, articulateness, and dishonesty of the drug abuser. Urine testing has proved to be the most feasible means of such determination. During the past five years the Office of the Chief Medical Examiner has developed the Laboratory for Addictive Drugs for the New York City Addiction Services Agency.[12] This laboratory has proved to be most valuable in the identification of drug abusers for court use, for employment purposes, and in many varied drug-abuse prevention and treatment programs. The demonstrated value of urine testing has stimulated much research toward development of cheaper, more sensitive, and more rapid technics for routine use. Marihuana and LSD cannot presently be detected in body tissues or fluids, but marihuana components can be identified on fingers and teeth.

Treatment

Presently, the major modalities for treating drug abusers are therapeutic communities and drug substitution maintenance programs. Odyssey House is the prototype of the psychiatrically directed therapeutic communities having evolved from the peer group methods used by Alcoholics Anonymous and then applied to drug addicts by Synanon. This approach assumes that drug abuse is usually a symptom of underlying emotional problems which requires in-resident treatment to permit attempts at resolution of these problems and personality reconstruction; it is applicable to all types of substance and multidrug abuse. Group psychotherapy with psychiatrists and other professionals participating has proved to be very effective in dealing with the character disorders common to most addicts.

Methadone is the prototype for the drug substitution programs. The addict is gradually made tolerant to a daily dose of from 40 to 200 mg. of methadone per day. Because of narcotic cross-tolerance, the injection of heroin will not produce euphoria, and the addict, it is hoped, will therefore stop using heroin and will also stop stealing. There is a presumption that metabolic abnormalities are much more significant than psychologic problems. This approach is applicable only to narcotic abusers. Methadone itself is addicting, and the doses employed can be fatal when taken by a nontolerant individual either deliberately, to produce euphoria, or accidentally, as by children. In addition a number of deaths have occurred in New York City of persons on methadone maintenance who have abused alcohol, amphetamines, barbiturates, or heroin.[13] The advantages of methadone as a maintenance drug are that it can be given orally since it is readily absorbed from the gastrointestinal tract, and its pharmacologic effects persist for more than twenty-four hours so that only one dose is needed daily. The persistence of the pharmacologic effects, particularly the respiratory depression, was not appreciated by attending physicians in a few instances of fatal methadone poisoning in which the patient responded initially to nalorphine, which is a short-acting antagonist, then relapsed into coma six hours later after the effect of nalorphine had worn off. In treating methadone poisoning, nalorphine or other antagonists may have to be administered for from twenty-four to forty-eight hours under careful observation until the respiratory depression has ceased. Criticisms that the use of methadone to cure heroin addicts has similarities to the experience with codeine and heroin seventy years ago to cure morphinists have spurred research for less addictive antagonists such as cyclazocine and naloxone. These antagonists also only counter effects of narcotic drugs, and their use presupposes absence of underlying psychologic problems.

It is becoming increasingly apparent that there are many reasons for abuse of drugs. Mandatory for proper treatment is accurate initial diagnostic psychiatric evaluation: Is the addict patient schizophrenic, neurotic, or suffering from a character disorder? Is he black or white, eleven years old, twenty-one, sixty-one? Is he ghetto-born or affluent? Is he responding imitatively to peer pressure, to socioeconomic conditions? If drug abuse is a symptom for a variety of underlying conditions, it can be anticipated that many different treatment modalities will be necessary. As physicians we must begin to correlate the patient with the treatment most appropriate for him.

Conclusions

Society in general and the medical profession in particular have traditionally not heeded the self-abusing individual's "cries for help": suicide, alcoholism, narcotism. Current concerns about drug abuse relate primarily to criminal activity and inconvenience to others and ignore crucial mental and public health factors. The forensic pathologist has a unique and often exclusive opportunity to contribute to the understanding of many aspects of drug abuse: physical effects of drugs on the body as seen at autopsy; emotional and social factors that predispose to abuse of drugs as determined by interviews with friends, relatives, and police; evaluation of epidemiologic patterns. He also has a responsibility to translate these findings into terms that the public will understand and that will encourage the search for relevant solutions.

nec silet mors
nor is death silent

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CARCINOMA OF PROSTATE

Incidence, history, diagnosis, prognosis, classification, and therapy

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Prostatic cancer is a most important killer of men. In the United States it kills more males than any other cancer except pulmonary cancer. In the seventy-five year and older group it is the number one killer; 16.6 per 100,000 population in the United States died of prostatic cancer in 1964.

Deaths from prostatic cancer in 1945 in the United States numbered 10,145, while it is estimated that in 1970, 17,000 men died of prostatic cancer. It is, of course, most important to realize that these figures are resultants of estimates. The diagnosis of carcinoma on which these estimates are based is not always acceptable by all observers, as shall be shown.

From a different point of view, it is estimated that 11 per cent of all carcinomas in the male are prostatic in origin. Less than 1.1 per cent of these occur in males under the age of fifty. Young in 1927 estimated that 4 per cent of all men over sixty years of age have prostatic carcinoma. Routine autopsy figures have shown the incidence of prostatic cancer to be from 14 to 46 per cent and even up into the 90 per cent group, depending on the criteria for a diagnosis of carcinoma as well as the thoroughness of the search for the lesions.[1a]

Thirty-five thousand new cases of prostatic cancer are prognosticated for this year. This incidence level of new cases has remained fairly steady from year to year since 1935. These figures are derived from Cancer Statistics 1970 published by the American Cancer Society, and Cancer Prognosis Manual by James also published by the American Cancer Society in 1966.

History

Until the 1800s prostatic cancer was undoubtedly lumped with prostatic hypertrophy as a result of obstructive symptoms and was unrecognized as a separate disease by most doctors. The "scirrhus tumor" described by many early doctors was most often what we now know as benign prostatic hypertrophy.

In 1817 Langstaff reported a case of "fungus haematoides" originating in the prostate which was probably the first reported carcinoma.[1] In the same year Wadd[2] described a lesion which, in the illustration, appears to be prostatic carcinoma. His description is as follows:

> The malignancy of some cancerous appearances, produced by common irritation, is here shown by the state of the external parts, in a case where the urine had long ceased to pass by the urethra. A large mass of fungus covered the whole nates. In the perinaeum, scrotum, and groins, were numerous fistulae, through which the urine passed in all directions. It was one of the most distressing cases I ever witnessed.

Actually it was not until 1844 when Tanchon[3] compiled the statistics of 8,289 deaths from cancer and found 5 cases of cancer of the prostate that physicians realized this was an entity of importance although thought to be rare. Thompson in 1854[4] recognized the importance and predicted the future frequency of this disease and described a case of prostatic carcinoma with metastases to the spine, probably the first such case to be reported. Still prostatic cancer was thought to be rare. Albarran and Halle published their discovery of 14 cases of cancer in 100 cases thought to be benign prostatic disease. This actually jolted the awareness of most urologists to this disease, and statistics were soon published in many journals.

In 1891 Wyman[5] wrote:

> Cancer of the prostate is not distinguished from cancer in other glandular organs except by its location in the organs with which it is associated. It is however, rarely recognized, but it is probably more frequent than is commonly supposed.
>
> The difficulty in distinguishing cancer of the prostate from simple hypertrophy is considerable and it is quite likely that many cases of cancer die with all the symptoms of hypertrophy.

In 1905 Young[6] published a study of 40 cases and outlined a method of early diagnosis and even a possible cure for prostate carcinoma by surgery. His description of the radical perineal prostatectomy as carried out in 4 patients remains the classic description to date. It is, of course, always noted in reporting this procedure that Dr. Young was assisted in these first 4 cases by William Halsted, M.D. Dr. Young described his operation as follows:

> An inverted V cutaneous incision was made in the perineum as in the operation employed by me for simple hypertrophy of the prostate—each branch of the incision being about two inches long. By blunt dissection the end of the bulb and central tendon were exposed, and the latter divided, exposing in turn the recto-urethralis muscle, the division of which gave free access to the membranous urethra behind the triangular ligament. Urethrotomy upon a grooved staff, was followed by introduction of the prostatic tractors, which was opened out after it reached the bladder. While traction was made upon this instrument the rectum was carefully separated from the prostatic capsule by blunt dissection until the entire posterior surface of the prostate was brought into view. . . .

From the time of Young's operative procedures there was little further discovered about prostatic cancer until in the 1930s. Gutman *et al.*[7,8] showed the interesting correlations of carcinoma of the prostate with serum acid phosphatase determinations. This was followed shortly by the important revelations by Huggins and Hodges[9] that prostatic carcinoma sometimes is androgen dependent. Endocrine control of some prostatic cancers was discovered, and this contributed tremendously to the comfort and care of those patients thought to be beyond surgical control.

The development of the cold punch by Young, of the electric loop and the resectoscope as proposed by Stern and McCarthy and then redesigned by many, including Nesbit and Iglesius opened the way for a new type of therapy for the control of the obstructive symptoms of prostatic cancer although not designed primarily for that purpose.

In recent years, there have been many and varied efforts to find the endocrine cure for prostatic cancer as well as the diagnostic test for the diagnosis of prostatic cancer. Suffice it to say that the results have not been forthcoming, although some suspect them to be immediately around the next corner.

Diagnosis

Prostatic carcinoma is still a disease most frequently diagnosed by its secondary symptoms, by the obstruction, pain, or bleeding it causes rather than by its own presence. More than 80 per cent of the original diagnoses of prostatic carcinoma are associated with some of the symptoms of benign prostatic disease and/or obstructive uropathy.

Digital examination of the prostate is the examination most frequently showing the first evidence toward the diagnosis of prostatic carcinoma. Usually done as part of a routine physical examination or because of evidence pointing toward prostatic obstruction, the entire posterior aspect of the prostate can be measured and examined digitally. It is too often forgotten that only this rectal aspect is palpable. While approximately 83 per cent of cancers do occur in this area, others may and do occur in portions of the prostate that cannot be so readily reached for palpatory examination.

The actual finding of an irregular prostate, or prostatic nodule, or a hard area of the prostate is excellent evidence toward the diagnosis of carcinoma but is not the proof positive needed for therapy. Of 211 palpated prostatic nodules 108 were benign and 103 malignant. Also stony hardness occurred in 75 benign and 57 malignant glands.[10] Fibrosis, prostatic calculi, tuberculous infarcts, and abscess can counterfeit cancer, and so the diagnosis must be confirmed by biopsy. Biopsy transurethrally is possible, but to do this the tumor usually must be reached through the entire thickness of the prostate. More direct access to the suspected area can be available by use of the perineal or transrectal approaches. Both are used successfully, and the Vim-Silverman needle and its modifications are the most frequent instrument utilized. The Veenema punch, while a larger and much more dangerous looking instrument, can better be guided approaching the lesion and actually performing the biopsy, and the specimen retrieved is gratefully accepted by the pathologist with much less frequent reports of "insufficient tissue."[11,12] In our hands it has not been found dangerous.

The most reliable biopsy is, of course, the open perineal biopsy. This is approached as if for a perineal prostatectomy; the nodule or suspected area is exposed and a portion removed under direct visualization.

Often a "frozen section" examination of the tissue is processed immediately; and if findings are positive, radical perineal prostatectomy' can be accomplished using the same anesthesia and same incision.

Another method of obtaining a tissue diagnosis is occasionally attempted, since it is less dangerous to the patient. The prostate is massaged firmly, and fluid appearing in the urethra is smeared. If none appears, the first urine is centrifuged and smeared. Cells are studied as in the Papanicolaou methods for other organs. The results of this test have not been uniformly acclaimed, depending tremendously on the individual reading the slides, and many voices have been raised against the desirability of massage applied over possibly carcinomatous tissues. This has been considered a way of disseminating cancer cells through the body.

Other symptoms also point toward the diagnosis. Back pain of undetermined origin is also another opening wedge to make the diagnosis of prostatic carcinoma. When low-back pain is investigated carefully, rectal findings or x-ray findings may lead to the proper conclusions. Chemical findings, too, may help; this will be discussed.

Obstructive uropathy, either at the bladder neck or of one or both ureters, is often a fairly late manifestation of prostatic cancer. The intravenous urogram, often mistakenly called the intravenous pyelogram, can readily delineate unilateral ureteral obstruction or an irregular nodular obstructing prostate typical of prostatic cancer. Obstructive uropathy may indicate prostatectomy, and subsequent histologic examination by the pathologist reveals the unsuspected carcinoma. The question of whether this is an overlooked carcinoma or a carcinoma in situ which could not have been diagnosed preoperatively is rarely asked. It is sufficient to say that the carcinoma may be diagnosed as a result of surgical removal of a presumed benign prostatic hypertrophy. Melicow[13] found this in 6 per cent of cases.

If the diagnosis of prostatic carcinoma is considered, it can often be substantiated by positive findings in blood chemistries. Elevated total acid phosphatase determinations as shown by Gutman *et al.*[7,8] can certainly strongly indicate a prostatic neoplasm. The neoplasm would only cause a blood test with a positive result if the neoplasm had extended beyond the prostatic capsule or had metastasized or been recently manipulated.[14] In this case, a negative result is a negative finding while a positive result is suggestive only. It might be negative in prostatic carcinoma that has spread beyond the capsule, and it might be positive in multiple myeloma, Gaucher's disease, Paget's disease of bone, rickets, hyperparathyroidism, "lukemoid" reactions, and other conditions affecting bone growth. High acid phosphatase levels in bone marrow may be an early sign of bone metastases.[15]

The more recent work of Fishman, Bonner, and Homburger[16] and Hill[17] show the value of ascertaining the prostatic fraction of the acid phosphatase. This then becomes a specific test for carcinoma of the prostate that has spread beyond the capsule of the prostate. A positive or elevated result here under properly controlled conditions means a definite diagnosis of carcinoma of the prostate. There are no false-positive findings so far reported unless taken after rectal examinations.[18] A negative or not elevated result does not mean there is no carcinoma; it only means there is no spread of carcinoma. In the not too distant future this test should become routine in the diagnosis of prostatic carcinoma. The controlled conditions suggested are the following: It is necessary to remember that the blood to be tested (sigma method) must be chilled immediately and tested within an hour, and blood should be taken either prior to rectal examination or several days after such manipulation. Manipulation of the prostate by finger or instrumentation can raise the total and prostatic fraction acid phosphatases.

The need for specific diagnostic testing for prostatic carcinoma may be indicated by other tests. These are only too frequently serendipitous findings during work-up for other conditions. Routine roentgenograms of the chest may show metastases leading to the finding of a prostatic cancer, and studies of bones for fractures, trauma, or pain may lead to the discovery of prostatic cancer metastatic to the bones. The intravenous urograph has already been discussed.

When hematospermia has been the presenting symptom, work-up may include seminal vesiculograms. These roentgenograms of the contrast-filled seminal vesicles and often vasae can be accomplished in a retrograde manner transurethrally or in an antigrade manner trans-scrotally through the vasae. These diagnostic tests can reveal involvement of the seminal vesicles in prostatic cancer.[19,20] The value of this knowledge in prognostication of this disease will be discussed.

Lymphadenopathy with biopsy of the nodes and histologic examination may be another diagnostic approach to the more widespread prostatic cancer.

Strontium scan, not as yet widely available, may help in diagnosing prostatic cancer spread through the body.[21] This is actually only a measure of bone activity. Prostatic metastases to bone usually cause increased bone activity, therefore increased strontium pick-up.

Classification of prostatic cancer

Before therapeutic modalities can be evaluated we should know the course of untreated carcinoma in different involved groups. Unfortunately, we do not know this, and we have little with which to compare our therapies. This is why it is so important that a standard basis of nomenclature and a standard basis of classification be established.

To compare results of therapy of a prostatic nodule treated by "X" or "Y" treatments for five years is of little value. We must know if the lesion is actually, in contrast to clinically, stage A, B, or perhaps even C; we must know how its histologic makeup is graded; and we must know if any or all of this is based on clinical estimate or on histology and pathology. The prostatic nodule is rarely removed in toto, and, as Melicow says, the biopsy grading is the grading only of that part of the tumor removed. It may be much less or much more malignant than the remaining part of the lesion which is unexamined. Also the differentiation between grades 2 and 3 or between clinical stages B and C are not positive, clear-cut, differences but depend on the interpretations of the individuals involved. In another type of grading, a lesion may be described as in situ if it is a small nest of cancer cells, an island of cancer unsuspected, or a large body of cancer which is not readily available to the examining finger. Of course, this is even further exaggerated when the lesions are treated by other than surgical extirpation, for then the grading is only that of the biopsy, and the staging is only as good as the examining finger. The examining finger often finds difficulty in differentiating the exact extent of a lesion, and fibrosis or inflammatory reaction around a carcinoma may feel much like the carcinoma, thus increasing the clinical estimate of extension, staging.

Not having a good grasp of the natural history of the tumor means we do not actually know what percentage of patients would live five, ten, or fifteen years without treatment or with minimal treatment. Therefore, we do not know how much good we are doing with our therapies. We do know that probably five- or even ten-year followups are not adequate, and that fifteen-year survival at least should be the basis for comparative studies.

We have been told for years that there are two general types of prostatic cancer: (1) the small discrete nodule which has probably already spread when first diagnosed and is rapidly fatal; and (2) a type which grows quite large and seems irregularly confined, but which spreads slowly beyond the prostate with a relatively benign course. So far, we cannot differentiate these two types cytologically or even clinically until too late, but perhaps some day we will know enough to recognize the basic changes and differences.[22]

We have been told by Flocks,[23] Bett and Schroder,[24] and many others that prostatic cancer has a poorer prognosis in young individuals than in older ones, but what kind of prostatic cancer? Cook and Watson[25] find a difference in the disease symptomatology in younger age groups. Perhaps its a different grade. Others find that, given same stages and grades, age makes no difference.[26]

These are some of the reasons why it is impossible at this time to evaluate and compare the results of the different therapies offered by many different urologists. Almost no two groups use the same parameters as the basis for their statistics.

To have some basis for statistical comparisons, prostatic carcinoma has been classified in two dimensions: (1) cellular type and (2) extent of the lesion.

Cellular typing, as first suggested in 1920 and 1925 by Broders[27] consisted of classifying any tumor as to its cellular origin, that is, either as epitheliomas or epidermoid carcinoma arising "from the regenerative cells of protective epithelium" and those arising from "the regenerative cells of glands or secretory epithelium," known as adenocarcinomas. He also described mixtures of these types of tumors. Probably his most valuable suggestion was to grade neoplasms on the basis of cell differentiation. His classification is:

Grade 1—differentiated 100 to 75 per cent, undifferentiated 0 to 25 per cent
Grade 2—differentiated 75 to 50 per cent, undifferentiated 25 to 50 per cent
Grade 3—differentiated 50 to 25 per cent, undifferentiated 50 to 75 per cent
Grade 4—differentiated 25 to 0 per cent, undifferentiated 75 to 100 per cent

The lower grade, better differentiated lesions were "less malignant" and so more responsive to therapy. They metastasized, on the whole, considerably slower than the higher grades and so could be more readily contained or excised. The higher grade tumor was wilder, grew faster, and spread more readily to other areas. Its response to therapy was much less predictable and its cure more doubtful.

The classifications of prostatic cancer, in accordance with the clinical extent, has been called staging, and although grossly similar to the following outline, differs somewhat in different parts of the country:

Stage A: Clinically latent; or not clinically recognized; identified only by histologic examination of prostatic tissue removed at surgery or at autopsy
Stage B: Clinically early cancer; a nodule apparently confined within the prostatic capsule and absent clinical evidence of metastatic disease
Stage C: Clinically local extensive carcinoma without evidence of distal metastasis; characterized by abnormal induration extending locally beyond the prostatic capsule

This type of staging has obvious faults. If no rectal or a careless rectal examination is done, a large hard nodule could be "not recognized" clinically. Even with an excellent rectal examination Stage A could and does vary from a nest of 4 to 8 cells to a large nodule not adjacent to the rectal aspects of the prostate; Stage B is, of course, most likely to be misleading. "Apparently confined" within the prostate is asking that the examining finger delineate cells extending through the capsule. Actually in Stage C the "abnormal induration" may well be inflammatory reactions or fibrosis rather than carcinomatous spread. This clinical grading must be recognized as each clinicians' estimate of the progress of that patient's lesion. To use this estimate as a scientific basis of evaluating results of therapy is worse than useless.

Whitmore[28] refined the above clinical staging, and added the microscopic and anatomic findings as follows:

Clinical

- Stage A: Latent, not clinically recognizable (note the difference, from "recognized to "recognizable")
- Stage B: Early, nodule confined within prostatic capsule; no metastatic disease
- Stage C: Clinically local extensive carcinoma without distant metastasis; induration extending beyond capsule of prostate
- Stage D: Clinically metastatic cancer

Microscopic

- A: Found through microscopic examinations as serendipitous findings
- B1: Limited to prostate
- B2: Invading capsule of prostate
- B3: Invading seminal vesicles
- C1: Prostate and seminal vesicles
- C2: Plus regional nodes
- C3: With distant metastasis

This staging is a combination of clinical plus pathologic knowledge and, of course, then becomes much more reliable and so more useful as a basis for comparison. Staging in this fashion, however, cannot be accomplished without surgery, so that it is of no value in those patients to be treated completely conservatively or those not treated. Thus we have the main problem in evaluating therapies. We have little or no scientific basis for comparison until we have inflicted surgery on the lesion and, in so doing, altered the patient and the cancer. Basically this means we cannot truly prognosticate the course of an untreated prostatic cancer, because biopsy only gives a report on a small portion of the lesion, and excision needed for grade and stage no longer leaves the lesion untreated.

Therapy

From 1905 when Young[6] described the radical perineal prostatectomy there have been few improvements in his surgical or ablative technics, and this procedure has remained the standard operative approach for many urologists. Surgically it is an excellent approach. The most frequent sequelae are fistulas, incontinence, and impotence. Impotence is found in more than 95 per cent of patients operated on perineally. The incidence of fistulas and incontinence differ tremendously from center to center. Since 95 per cent of suspicious prostatic lesions can be palpated rectally, a big advantage of the perineal approach is the ease of open biopsy of the area in question. If frozen section reveals positive results, with the same incision and approach radical prostatectomy may be accomplished at the same time. Results of this operation, as results of the other types of therapy for prostatic cancer, cannot be compared with each other, since each reporter bases the statistics on a different classification and usually for different periods of survival; little comparative statistics are available. In Young's original report, follow-up was reported as a matter of months and yet he stated, "the four cases in which the radical operation was done demonstrated its simplicity, effectiveness and the remarkable satisfactory functional results furnished." He did not boast of his cures, only the potential for cure.

Suprapubic prostatectomy and transurethral prostatectomy with incidental findings of prostatic carcinoma are still the most frequent operations done on prostatic carcinoma. The argument as to what to do next after the serendipitous finding of prostatic carcinoma has been unsolved for years.[13,29–34] So many different conditions can fit into the classification of "carcinoma in situ," as the pathologists used to describe this.[35] The grading of the tumor may vary from 1 to 1V; the size could vary from a nest of cells to a large nodule that should have been diagnosed preoperatively. The location may be central, surrounded by normal prostate on all sides, or it might just as readily be peripheral with the tumor having been peeled off at the capsule. Transurethal resection of the prostate leaves much of this in doubt. Supra- or retropubic prostatic surgery may show the lesion extending to the margin of the adenomas but in no way indicates if the capsule is infiltrated or seminal vesicles are involved.[36]

Total extirpation of the cancerous lesion is the only sure cure of cancer at present. The question as to when extirpation is possible or even when extirpation has been complete is as yet unanswered.

Besides perineal radical prostatectomy (removal of the prostate including capsule and seminal vesicles),[6,22,37–42] retropubic radical prostatectomy has been favored by some because of the ease of examination of the bladder for tumor spread, the ease of recognizing the ureteral orifices, and the ease with which lymph-node dissection can be done.[43,44] The incidence of impotence is markedly reduced; fistulas and incontinence are also said to be less.[45]

Surgical approaches for radical removal of cancer of the prostate fall generally in the two mentioned classifications. Parasacral and transsacral approaches have been described, as has splitting of the pubis for better anterior approach. None of these have become widely popular.

Radical prostatectomy with node dissection, radical prostatectomy with total cystectomy, or radical cystectomy and pelvic exenteration have also been advocated for curative surgery. While radical prostatectomy alone has a surgical mortality rate of from 1 to 5 per cent, the mortality rates for pelvic exenterations range up to 20 per cent and for cystectomy 10 to 15 per cent. All run a 5 to 10 per cent risk of urinary incontinence, and most result in sexual impotence.

More radical surgical procedures have been attempted when the lesion was thought to have escaped the bounds of the prostate. This would appear reasonable in view of the cancer surgeons' dictum to take out all tissues involved. In cases of prostatic cancer the risks involved have been too obvious and too numerous to generate much enthusiasm among surgeons. First, the mortality and morbidity rates and sequelae are serious; second, the results statistically have shown no encouraging improvements in cure rates in the few series followed long enough to be significant.

Types of therapy aimed at removal of the cancer primary and at "killing" the remaining cancer cells have been suggested by many. Radiation has proved the most popular modality for that type of therapy, and Flock's[46-48] method of local infiltration of the area with radioactive gold (Au 198) has received much attention. Its usage requires radiation laboratory facilities not always available. The rational of its use is, of course, good. The results will be discussed.

Bumpus[49,50] may well have been among the earliest to advise radiation of prostatic cancer. He suggested the use of radium applications to the region. Needles, intracavitary applications, and radon seeds have all been advocated or used. Controls and results were poor. Radioactive phosphorous (P 32) has been utilized and suggested by Corwin *et al.*,[51] Morin and Stevens,[52] Vermooten and Maxfield,[53] and others. Cobalt 60 tele curie therapy was used by George *et al.*[54] and straight radiation therapy by others.[55]

Hormonal control of prostatic carcinoma has, of course, been widely utilized in many measures not aimed at extirpation or ablation of the lesion. The rational often expressed was that normal life expectancy being known, it is to be expected that the individual might do well and die with his prostatic cancer rather than because of it.[56-59]

Methods aimed at reducing, removing, or counteracting male hormones are numerous. At first orchiectomy was considered to be adequate.[60-62] Some suggested that subcapsular orchiectomy would leave sufficient tissue in the scrotum to satisfy man's vanity. O'Conor, Chiang, and Grayhack[63] proved this method did not stop androgen secretion. Irradiation of the scrotum has been used, and antiandrogen therapy (medical orchiectomy) also is in use.[64] Huggins, Scott, and Hodges,[65] of course, were the discoverers of hormonal controls of the prostatic cancers. They utilized orchiectomy and stilbesterol therapy at the onset and later suggested that perhaps that type of hormonal control might well be followed by surgical ablation of the lesion previously not removable.

Progestational or antiandrogen usage was suggested by many sources when it was found androgens originated from other sources than the testes. Adrenalectomy was suggested by Huggins and Scott[66] and others,[67,68] and adrenal suppression with dexamethasone therapy has been used. Going even further toward the hormonal control source, hypophysectomy was described by Straffon *et al.*[69] Radio frequency and cryosurgical hypophysectomy were utilized for these cancers of the prostate that had escaped other hormonal control as more or less a last resort to offer the patient some comfort.

Hormonal therapy, radiation therapy, as well as surgical methods were and are utilized in many combinations also.

Other methods, less favorably accepted at this time include TEPA,[70] yttrium chloride,[71] which caused severe and undesired reactions, mithramycin,[72] for metastatic disease, and internal iliac artery ligation in an attempt to stop or lessen the blood supply to advanced pelvic prostatic carcinoma. This latter measure has also been combined with modified total prostatectomy.[73] Regional perfusion technics utilizing various therapeutics has also been advocated. Hodges suggested radioactive phosphorous. Cryotherapeutic measures have been used by Jordon, Walker, and Drylie[74] and others.[73]

Evaluation of therapy

To evaluate the surgical approach, the surgeon must balance the possibilities of a cure, of improving life expectancy, and chances of life in comfort on one side against the risks involved in surgery, the alternate therapies available, and as much as is known about the natural history of prostatic cancer on the other side.

Natural history of Stage A clinical lesions shows that the great majority of these patients live long enough to die of other causes. The period of latency is unknown but has been estimated to average twenty years.[28] Actually, these cancers may differ from other cancers in more than size alone. So far we do not know enough about this. Survival rates of untreated latent Stage A cancers are, of course, not available. Obviously, to diagnose the lesion in life some therapeutic or diagnostic assault was made on it. The cancer may well have been cured by the suprapubic or transurethral surgery which made its diagnosis possible. At any rate, the opinion appears to be widespread that the majority of uncured patients with latent or Stage A prostatic cancer will die with the disease rather than because of the disease. With this in mind, no radical surgery would appear indicated for these patients, and probably Stage B is the area, if any, where radical surgery may be indicated. If the cancer is limited to the prostate (B1), radical surgery offers a cure. Unfortunately B2 stands a considerably lesser chance for cure and B3 almost no chance for surgical cure. It is almost impossible to tell B1 from B2 or B3 until surgery has been accomplished. If a radical prostatectomy is accomplished on B2 or B3 lesions, cancer cells are indubitably left in the patient. Should all radical prostatic surgery include local node dissections? Actually we cannot tell if this would contain all the cancer either; there might well be tumor in distal nodes already. Radical prostatic surgery probably cures prostatic cancer in only those patients in Grade B classification in whom the tissue studies confirm B1 postoperative classification. B2 postoperative classification would tend to show the lesion spread beyond the prostate. Radical surgery with node dissection might be attempted, but cure rate statistics are not good. Here again we must fall back on the fact that statistics from most clinics fail to be based on comparable statistical analysis, and so comparisons fail. Barnes figures for histologically proved, clinically considered curable, prostatic cancers treated conservatively are good.[33,34] His patients had transurethal resection of the prostate, estrogens, and/or orchiectomy. His results were the following: ten-year follow-up: 50 per cent living, 24 per cent dead of cancer, 26 per cent dead of other causes; fifteen-year follow-up: 30 per cent living, 32 per cent dead of cancer, 38 per cent dead of other causes.

These figures for conservative care of prostatic carcinoma thought to be surgically curable compare favorably with the reports of surgical therapy of similar lesions.[24,29,37-39] Barnes believes "unless a patient has a ten year or more expected survival, total prostatectomy is seldom indicated." Bumpus, in 1926, must have been of the same mind. He reports five- and ten-year "postponement of death," not cures. Cook[25,75] made the statement that specimens of prostatic cancer often show evidence of early metastasis into the perineural spaces so that it can be doubted whether radical removal is ever properly indicated. While theoretically there should be a time when the lesion is small and localized and amenable to radical surgery, Cook says he is unable to make a diagnosis at that time. He stated the ten-year salvage rate was not influenced by different methods of therapy. He quotes a 40 per cent survival at ten years of patients with prostatic nodules presumed to be cancer, not biopsied or staged.

Other clinics and other physicians offer statistics of interest but not readily comparable. Jewett *et al.*[76] believe that fifteen-year results after excision of prostatic nodules are impressive. He delineates 86 patients in this group with palpable prostatic nodules; 86 patients with locally limited (microscopically proved) cancer; 33 per cent lived fifteen years disease-free following radical prostatectomy. This he says is twice the survival number of the clinically comparable unoperated cases. (Note that clinically comparable is very different from microscopically proved.) Jewett *et al.*'s figures for fifteen-year survivals after radical excision is 33 per cent as is Berlin *et al.*[38] This is comparable to the expected survival generally. Barnes figures after more conservative surgery plus hormones show 30 per cent fifteen-year survival. Bett and Schroder[24] quote a 21.6 per cent fifteen-year survival in total perineal prostatectomy and believe survival expectancy is decreased compared with the general population of the same age. Colby in 1953[39] operated on 100 patients with suspected cancer. Of those having cancer 71 per cent had perineural invasion and therefore were presumably inoperable at the time of operation. He quotes 51 per cent five-year survivals cancer free. Chute's[44] 200 cases of retropubic radical prostatectomies were reported as showing five-year survivals superior to patients on hormonal therapy. Vickery and Kerr[77] reported 50 per cent ten-year survivals in well-differentiated cancer radically removed. Dees[40] reports 60 per cent ten-year survivals after radical perineal surgery and hormonal therapy. He suggests combinations of surgery plus hormonal therapy. Fergusson[78] believes radical surgery has little to offer, since so few cases are seen on time. He suggested super voltage irradiation, plus endocrines, plus surgery for palliation only. Ganem[79] found that patients with locally extensive cancer, too extensive for radical surgery, had a 59 per cent five-year survival on orchiectomy and hormonal therapy. Turner and Belt[41] found 47 per cent ten-year survivals after radical surgery in consecutive cases. All in all these figures are interesting in that they show in which direction care for prostatic cancer must progress. Earlier diagnosis is all important, and so far we have no early methods available other than the examining finger. Ablative surgery is the only cure for prostatic cancer available now. Yet we can probably hope to cure less than 2 per cent of clinically diagnosed cases. Flocks[46] found only 2 per cent of clinically diagnosed prostatic cancer to be actually limited to the prostate. Chemotherapy and hormonal therapy and radiation are the modalities remaining to us.

Hormonal therapy for prostatic cancer when first demonstrated was a tremendous break through in the treatment of cancer. Later we found that not all prostatic cancers respond to hormonal control and that hormonal therapy is, at best, a method of control rather than cure. Prostatic cancer is medically treated sometimes by female hormones. Actually its growth appears to be controlled at times by male hormones, but the female hormones offer an antiandrogen effect. Therefore, anything lessening androgen effects might slow the growth of prostatic carcinoma. Stilbestrol, orchiectomy, adrenalectomy, hypophysectomy, and progestational agents through their antiandrogen effects have produced symptomatic control. This is usually manifested by a lessening of tumor size, a lessening of pain from metastatic nodules, a lowering of the acid phosphatase, and a generally improved sense of well being. The problem of what therapy to give and when and how much has been recently made more acute by a cooperative study accomplished through the United States Veterans Administration. This effort did show that administration of female hormones is not entirely without danger. In fact, it tends to show that in certain groups more patients died from hormone-induced cardiovascular effects than from cancer. They used 5-mg. daily dosage of stilbestrol.

Since the Veterans Administration[80,81] reports suggesting that patients on stilbestrol died of vascular disease resulting from therapy, several changes in therapeutic regimens have been advanced. First, 1 mg. stilbestrol daily was found to have all the beneficial effects without the cardiovascular side effects. Second, many urologists now refrain from initiating hormonal therapy immediately on diagnosis of prostatic cancer. They withhold it until its effect is needed for the patient's relief either because of pain, growth of the tumor, or some other change in the lesion's status. It is still not definite whether orchiectomy is indicated to stop testicular androgen formation or if medical castration is sufficient. Some urologists do orchiectomies and give antihormonal agents also from first diagnosis; others give hormones and do orchiectomy only if and when the patient escapes from antiandrogen effect of the hormones. Still others do not do orchiectomy and use only antiandrogen effect of the hormones. Still others do orchiectomy and use antiandrogens only if the cancer escapes after the surgical procedure. No definitive answer is yet available to the question of which to do and when to do it.

Antiandrogen therapy has progressed from stilbestrol, however. Geller *et al.*[82,83] have used hydroxyprogesterone (Delalutin) and cyproterone acetate to good effect as nonestrogenic progestational antiandrogen agents and have thereby lowered or stopped the hormonal side effects often seen with stilbestrol. No gynecomastia, no vascular changes, and so on are noted, yet the drug effect is excellent in those responding. The prostatic acid phosphatase decreases; often the tumor size and pain also respond. Hence, the nonfeminizing progestational agents also are proved helpful in control of some prostatic cancers.

Complete surgical excision of prostatic cancer has been found to be possible in only a very few cases. Flocks[43] says less than 2 per cent, Cook and Watson[25] say none, and so on. Therefore, to cure cancer, other methods must be employed. Flocks uses surgery, as radical as possible, plus radioactive gold (Au 198) injected at the site of surgery into the pelvic tissues that could be harboring cancer cells. He also advised diethylstilbestrol (Stilphostrol) intravenously pre- and postoperatively. Many use orchiectomy and antiandrogen therapy pre- and postoperatively as well. Flocks' reports have not yet encompassed fifteen-year results, but it must be in such utilization of all available modalities that we will find the best survival rates.

Persky *et al.*[72] utilized mithramycin for good short-term results in alleviating pain from prostatic carcinoma. Hodges *et al.*[84] found shrinkage and palpatory changes from perfusion of the pelvic circulation with radioactive phosphorous.

Culp[42] expressed rule of thumb in regard to surgical intervention: "Because of the vagaries of prostatic cancer, the legitimate role of radical prostatectomy probably always will be controversial." He further suggests:

> Patient's physical status is important, but he will not offer radical surgery to a man over seventy.
>
> Oral estrogen therapy preoperatively may lessen dissemination of the tumor.
>
> No fixed lesions or lesions greater than 1.5 cm. are considered operable.
>
> If growth regresses after endocrine therapy, it may become operable.
>
> Castration is advised in higher grade lesions.
>
> Radical surgery is indicated in occult cancer of grade II histology. Grade I can be watched.

Summary

It must be obvious from this discussion that therapy for prostatic cancer cannot be critically judged as yet. Not only have criteria for cure differed in the past, but also criteria for the diagnosis and classification of prostatic cancers have differed widely. To form a basis for comparisons fifteen- and twenty-year follow-up must be made with all therapeutic approaches, and each patient must have his lesion classified as to stage and grade in some uniform widely accepted manner, such as Whitmore's classification.

New therapies, probably based on a greater knowledge of prostatic cancer's physiology, and natural history as well as on more complete understanding of the hormonal balances of this disease must be worked out. Our overall understanding of prostatic cancer as a disease or as several disease entities must be enlarged to account properly for our therapeutic results and improve our attack.

Until that time, therapy for Stage A, C, and D is still undoubtedly conservative, although several varieties of therapy exist. B1, B2, and B3 lesions may not be differentiated until after surgical excision, so these are the questionable cases. These may also be the only curable cases. Surgery, when available at the hands of a competent urologist, should be offered with complete explanations of the risks associated with the surgery. The fact that this may be the only cure must be offset by the complete explanation of the risks involved and the alternatives available. If the patient refuses the proffered surgery, no pressure should be applied in attempts to change his mind. At this point in time, the end does not justify the means.

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ANNUAL REVIEW OF NEW DRUGS

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TABLE I. Origin of newly synthesized drugs marketed in various countries

Country	Developed in Own Country	From Other Countries	Total Marketed
England	. . .	2	2
France	3	7	10
Germany	4	4	8
Italy	6	2	8
Japan	7	1	8
Switzerland	5	4	9
United States	10	4	14
TOTALS	35	24	59

In 1971 a total of 59 newly synthesized drugs were marketed in seven countries in which introduction of pharmaceutical products has been surveyed. An additional four new agents have been marketed in France. Data on these drugs, however, are too scanty to permit inclusion in this report. The drugs originated in the following countries: United States, 15; Japan, 9; Italy, 8; Switzerland, 7; France, 6; Germany, 4; Denmark, 2; Hungary, 2; Sweden, 2; Austria, 1; Belgium, 1; Mexico, 1; and Poland, 1.

These data suggest that Italy and Japan have made great progress in drug research and that more new drugs can be expected to emanate from these countries in the future. Until now there was no patent protection for drugs in Italy, a fact that resulted in some American new drugs being offered in Italy by domestic manufacturers before even the United States originator was selling the drug in Italy. Most likely patent protection for drugs will be offered in the future through pending legislation. Some of the Italian pharmaceutical manufacturers are now owned by American firms. The Japanese pharmaceutical industry is making great progress not only in sales, which is faster than in any other country, but also in the development of new research facilities. Very substantial sums of money have been spent on such development, and with the industry and especially the inquisitiveness of the Japanese mind this should result in new approaches to drug therapy.

Today more than ever, new drugs wander from one country to the other as indicated by Table I.

None of these 59 drugs represent what might be called a breakthrough in therapy. They are essentially a refinement in therapy, promising greater effectiveness, less adverse effects, or, with the new antibiotics, extension of action against additional bacterial pathogens. These drugs cover 33 therapeutic classifications, encompassing 13 anti-infectives, 9 cardiovascular and renal drugs, and 4 anti-inflammatory agents.

American vista

The use of drugs and sales of manufacturers have continued to increase during the year 1971, although the newly synthesized drugs offer little real innovation in therapy or permit treatment of diseases previously not responding to drug therapy. With the use of these drugs the physician will be able to vary and refine the treatment of his patients and bring relief perhaps more rapidly or with less adverse reactions. These are modifications in therapeutic results that only large-scale comparative therapy can crystallize. Perhaps the most outstanding drug of the year is the antitubercular agent rifampin, developed by La Petit in Italy and also synthesized by CIBA in Switzerland. Spectinomycin (Trobicin, Upjohn) has made its appearance at the right time, because there is a great need for the improvement of therapy of gonorrhea, the incidence of which has reached alarming proportions in recent years. The number of manufacturers introducing new drug products in the United States has decreased to the 1969 level after the temporary rise in 1970. Table II presents a comparison of new drug introductions in the United States between 1969 and 1971.

All newly synthesized drugs marketed in the United States were developed by the research departments of pharmaceutical manufacturers in this country and abroad. In Table III these drugs have been grouped into three classifications. This table also indicates whether these drugs had their origin in this country or abroad.

TABLE II. New drug introductions, in United States, 1969 to 1971

	1969	1970	1971
Types	62	105	83
Newly synthesized drugs	9	16	14
Duplicate single products	22	50	40
Combination products	31	39	29
Biologicals	9	5	11
Single	2	0	0
Duplicate	4	2	10
Combinations	3	3	1
TOTALS	71	110	94
New dosage forms	12	23	30
Number of manufacturers introducing new drugs	48	60	46

TABLE III. Class and origin of newly synthesized drugs introduced in the United States in 1971

Class	United States	Foreign Countries	Total Number	Per Cent
New original products	5	3	8	57.1
Derivatives of currently known structures	3	1	4	28.6
New salts or esters of old compounds	2	. . .	2	14.3
TOTALS	10	4	14	
Per cent	71.4	28.6		100.00

Review of single drugs

Anti-infective agents. Although our greatest advances in drug therapy have been made during the last thirty years in the treatment of infections, manufacturers are still trying to improve this therapy or to extend it. Another factor stimulating research in this area is the mutation of bacteria, becoming resistant to present therapy and requiring new agents to be conquered. The world of bacteria, fungi, and especially viruses is so great and flexible that we must be on the watch to keep on top of this aggressive group.

Bristol have expanded their semisynthetic line of penicillin antibiotics with hetacillin (Versapen). This drug in itself does not exert an antibiotic activity but is converted by the organism to ampicillin which is similar in its antibiotic spectrum to benzyl penicillin. Hogan, Holloway, and Scott,[1] of the Wilmington Medical Center, found in a group of 105 patients with an age range of fifteen to ninety-six years, that "hetacillin gives satisfactory antibacterial levels in infections caused by a wide variety of gram-positive and gram-negative microorganisms." Louria and Schultz,[2] of Bellevue Hospital and Cornell University Medical College, reported that hetacillin given both orally and intramuscularly "appears to be an effective antibiotic for pneumococcal lung infections."

Cephalexin (Keflex, Lilly) an orally given cephalosporin derivative has had a substantial review in the medical literature. The primary indications are susceptible infections of the respiratory tract, skin, and soft-tissue infections, and bacterial diseases of the urinary pathways. Walker and Gonzales,[3] of the Mercy Hospital in Baltimore, experienced only two failures in 84 newborn infants and children with respiratory tract and soft-tissue infections. A variety of infections occurring in general practice responded well when cephalexin was studied in 156 patients of all age groups by the General Practice Medical Research Unit in London, England. Montgomery and Cox,[5] of the Bowman Gray School of Medicine in Winston-Salem, North Carolina, found cephalexin to be "a unique and most welcome antimicrobial agent" in 48 patients with infections of the lower urinary tract.

Minocycline (Minocin, Lederle) is a semisynthetic derivative of tetracycline effective in appreciably lower doses. Like other tetracyclines, it is primarily bacteriostatic and has a wide spectrum of activity. The effectiveness of single oral doses (200 to 300 mg.) in 272 male patients with gonorrheal urethritis was reported by Thatcher, Pazin, and Domescik,[6] of the University of California School of Medicine in Los Angeles and of the National Communicable Disease Center in Atlanta. Increasing the dosage raised the incidence and severity of side effects. There was an overall cure rate of about 95 per cent.

With spectinomycin (Trobicin) Upjohn made available an antibiotic that exerts a specific action in gonorrhea, especially the acute form. Clinical studies have been published since 1965. A single intramuscular injection is frequently effective as evidenced in a series of 313 (148 female and 165 male) patients reported by Cornelius and Domescik,[7] of the U.S. Public Health Service in Atlanta, Georgia.

Favorable reports on the antituberculosis action of rifampin, also known as rifampicin, continue to appear in the literature in increasing numbers. This Italian drug may also prove to be useful in other infectious diseases. To avoid the development of resistant infections, rifampin is administered together with other antituberculosis drugs. In addition to effectiveness, the main advantage of its use is decreased toxicity which is welcomed by the patient. Newman *et al.*,[8] of the U.S. Public Health Service in Rockville, Maryland, compared the drug and isoniazid with the action of several other drug combinations and found it to be as effective as these but considerably less toxic than the best regimen previously available. Similar results were obtained by the investigators at the U.S. Public Health Service in Seattle, Washington. Orange coloration of the urine may appear in some patients. Capreomycin, developed by Lilly, is another antituberculosis drug that is given intramuscularly and that promises to find a useful place in combination with other compounds in the management of tuberculosis. Caution must be exercised in patients with renal diseases and preexisting auditory impairment.

There has been a need for a good smooth muscle relaxant for the treatment of spastic conditions of the urinary tract. The Italian drug, developed by Recordati and marketed by Smith Kline & French as flavoxate (Urispas) may fill the bill. Bradley and Cazort,[9] of the Meharry Medical College in Nashville, Tennessee, found in 24 patients that flavoxate compares favorably with propantheline bromide.

Both CIBA in Switzerland and Organon in Holland succeeded in synthesizing corticotropin (ACTH). This drug known as cosyntropin (tetracosactrin) has been marketed by Organon in this country. Its parenteral availability makes it useful in the treatment of a variety of conditions responding to corticosteroid therapy.

Propoxyphene napsylate is a derivative of the well-known analgesic dextropropoxyphene. The new drug can be offered in tablets and is also supplied with aspirin when a stronger analgesic effect is desired.

In this age of excessive use of narcotics by the young, a new effective narcotic antidote is most welcome. Fink *et al.*,[10] of the New York Medical College, found among the advantages of naloxone (Narcan, Endo) potency, rapid action, absence of secondary effects, and acceptability. Unfortunately, the action of naloxone appears to be relatively short. Pharmaceutical manufacturers have agreed to make a cooperative effort to find other antagonists that can successfully be used in the treatment of drug addiction. One can only hope that these efforts will succeed.

Chemotherapy of cancer. In the last ten years the treatment of cancer with drugs has made great strides, and new drugs are constantly being added to expand this form of therapy. In most instances such medication is palliative and must be reserved for the specialist, because patients must be carefully supervised to avoid undue toxic effects which are likely to occur with most of these agents. The latest addition is floxuridine (FUDR, Roche), an antimetabolite which is intended for regional intra-arterial infusion in carefully selected patients. Floxuridine is catabolized by the organism into 5-fluorouracil which interferes with the synthesis of deoxyribunocleic acid. The drug appears to be useful in the palliative management of carcinoma in which regional intra-arterial infusion is feasible.

Duplicate single drugs

These are products containing a single active ingredient which previously had been marketed by other pharmaceutical manufacturers. There were 40 such products compared with 50 in 1970. During the last two years, it is not only smaller firms marketing such drugs, but also the large firms are trying to enter this market, making their products available either under a trademark name or under a generic name. Smith Kline & French have entered this field on a large scale and offered 11 products as a special SK line. Prices for these drugs are usually lower than the original drug which may have been introduced many years ago. Lederle added the antituberculosis drug pyrazinamide to the five drugs marketed in 1970, and Upjohn is now offering nitrofurantoin. The exchange of products between CIBA-GEIGY and USV Pharmaceutical Corporation resulted in the latter marketing three duplicate single drugs which are also available by CIBA Pharmaceuticals. Since entirely new drugs are scarce, manufacturers are attempting to obtain a larger share of an already existing market or to expand the prescription of such drugs by the physician. In the biological field, Armour Pharmaceuticals have offered five compounds that are also supplied by others.

Combination products

The low level of the introduction of new combination products has been maintained. Only 29 such compounds were introduced in 1971. Among these were the following classes of drugs: analgesics, 4; eye preparations, 4; gastrointestinal drugs, 3; hematinics with vitamins, 5; and vitamins, 3.

Most notable is the almost complete absence of new combination drugs for coughs and colds and for dermatologic purposes. There were only two such compounds in 1971. As a rule, this field has been very productive, profiting from the imagination of manufacturers in combining various drugs. Maybe the "new" we can produce today does not promise to be any better than what we have. Merck Sharp & Dohme succeeded in obtaining approval for the sale of a triple vaccine against measles-mumps-rubella, which should facilitate vaccination of the young and reduce the incidence of these viral disorders. Simultaneous administration of penicillin and probenecid was found to be effective against penicillin-resistant gonorrhea strains by Kvale *et al.*,[11] of the U.S. Naval Hospital, Pearl Harbor, Hawaii.

General climate in United States

In the absence of conspicuous novelty in drug therapy, the year 1971 has been a year of stock taking of scientific knowledge and a year of experimentation and regrouping in the commercial aspect. Manufacturers have tried to adjust to existing drug legislation and to legislation and analyses to be expected. The Food and Drug Administration is planning to review the efficacy and safety of all nonprescription drugs. Manufacturers also will have to be prepared for legislation which extends the insurance coverage of prescriptions, at first for the aged and eventually for the total population. Attempts will be made at the same time to audit the prescription writing by physicians, which could result in an unfortunate control of medical practice by the computer.

New mergers have taken place such as that between the two giants, CIBA and GEIGY. Unfortunately, such mergers always bring about a substantial loss in accumulated knowledge of research, medical, and marketing personnel. Those who leave because they do not wish to adjust to the new situation represent a void that can be filled only gradually, and those who are assigned new positions can rarely make use of what they have learned in the past and in the scientific subjects of primary interest to them. The uncertainties that are created by any merger also add to the general confusion, and for many months work is progressing at a snail's pace because no one dares to make a decision.

Smith Kline & French are now marketing their products trifluoperazine (Stelazine), triamterene (Dyrenium), and triamterene plus hydrochlorothiazide (Dyazide) from Puerto Rico under the subsidiary title of SK&F Co. Has the current trend to use acronyms for government agencies now reached the pharmaceutical industry, and will there be only an MSD for Merck Sharp & Dohme or PD for Parke Davis? It would be a pity to lose the old familiar names which had real meaning behind them and deal instead only with letters of the alphabet. We use for computer purposes acronyms of names of manufacturers, but should our daily life be dominated by the requirements of the computer?

The subject of bioavailability of drugs at their place of action in the human organism has received much attention in 1971. This is attested to by the attendance of over 700 scientists at a conference on this subject, sponsored by the Drug Research Board and the U.S. Pharmacopeia, held in Washington in December, 1971. Bioavailability worries people, because it is very difficult to develop standards if we cannot define the methods to reach these standards.

The manufacture of tablets—the most contested form of medication—is still largely an art, and it is difficult to write specifications that can be controlled and duplicate every step of the way so that a guarantee of a specified bioavailability can be given. Even if such specifications could be written, which would have to include a description of particle size of drugs, the developer may hesitate to make them public.

The first manufacturer of a new drug may not necessarily achieve the best physical form of the drug to obtain maximum bioavailability. Subsequent manufacturers may offer an improved product. Whose standards are to be accepted? Greater bioavailability may result in excessive toxicity; the reverse will reduce therapeutic action and likewise endanger the patient. Numerous examples with anticoagulants and digitalis glycosides have been reported in the literature.

Then there is the question, in whom is bioavailability to be established as a test method, in normal subjects or patients receiving the drug for the treatment of disease? A further difficulty is the fact that conditions of absorption, metabolism, and excretion may change with the disease process and may not be the same in each patient for every day he takes the drug.

We are still dealing with a number of unknown and uncontrollable factors which are difficult to standardize. Until these problems can be solved, it remains with the physician to observe his patient constantly and guard him against variations in bioavailability, which may either be caused by variations in manufacture or by physiologic changes within the patient.

The danger of drug interaction is finally given the recognition it deserves and is today considered a major problem in drug therapy. Several textbooks are available today with tables listing possible interactions between two drugs. The National Library of Medicine expects to publish a massive retrospective study with over 3,000 citations and excerpts from the literature published from 1967 to 1970. This survey will be continued through 1971. Many of the adverse reactions observed today are due to interaction of drugs. But it is not only the physician who must be aware of this danger; the patient also must be made aware that he endangers himself if he takes other drugs than those prescribed by his physician. When a new drug is prescribed, all previous drugs in the home medicine chest should be discarded. Further light and guidance have been thrown on this subject by a two-day symposium on "Drug Interaction—Benefits and Hazards," held by the Drug Information Association in Philadelphia in January, 1972.

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Phenothiazine side effect

Reported side-effects of phenothiazine (Largactil) include dermatitis and necrotizing vasculitis, lens opacities and pigmentations of the cornea, skin discoloration, arrhythmias confirmed by electrocardiogram, jaundice (often heralded by eosinophilia), paralyzing ileus, and necrotizing vasculitis of the kidneys. Itamar Kott, M.D., and Israel Urca, M.D. (*American Journal of Surgery* **121:** 346 [March] 1971) report an uncommon side-effect: patches in the small bowel found at laparotomy probably due to phenothiazine given the patient for ten days prior to his operation. The patient was a man thirty-seven years old with a history of paranoid schizophrenia (at age thirteen to fifteen). Because of this psychiatric history he was given phenothiazine preoperatively. At operation no duodenal ulcer was found, but violet-red patches were seen on loops of the small bowel.

Biopsy revealed inflammatory infiltration rich in leukocytes and eosinophils. The histologic picture was identical with phenothiazine-induced lesions in various other organs.

CANNABIS SATIVA

The deceptive weed

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Cannabis sativa, or Indian hemp, is a common plant found in the temperate and tropical regions of the earth. Its first recorded use by man was in China several thousand years ago. A Chinese "Emperor," Shen Nung, so the story goes, who lived more than 2,700 years before Christ, advocated the use of the cannabis derivatives as an all-purpose medication. There is no evidence that the ancient Egyptians, the Hebrews, the Greeks, or the Romans used cannabis as a pleasure-inducing drug as they did alcoholic beverages. However, Herodotus reports that the barbarian Scyths from Asia Minor intoxicated themselves with vapors from burning hemp. From China the use of cannabis spread to Indochina, Siam, Afghanistan, and India, where it is now still widely used in three main forms, in spite of legal prohibition. The least active and the cheapest is "bhang," made from the upper portions of plants that grow wild in Indian fields. "Bhang" contains little resin and much cellulose; it is the equivalent of marihuana smoked in the United States. "Ganja" is made from well-selected flowers and leaves of plants cultivated for that specific purpose. Finally, "charas" is manufactured from the resin itself, carefully gathered from plants in bloom. "Ganja" and "charas" are similar to the hashish used in the Middle East and North Africa, and imported into the French and European markets. From India, the use of cannabis spread to the Middle East and to North Africa, where it met no opposition—the Muslim religion forbids the use of alcohol and wine but not the derivatives of cannabis. By the year 900 A.D., cannabis was already being abused in Arabian countries.

At present, cannabis preparations are widely used in West, East, and Central Africa.[1] In South Africa a cannabis preparation named dagga is smoked mostly by urban and rural Africans, while the colored and European sections of the community are not much involved in this practice.[2] In Morocca, Benabud[3] states that cannabis addiction, under the name of "kif," is widespread in country districts; kif smoking is part of the social structure. Cannabis is also used, to a lesser extent, in Algeria and Tunisia among native populations and represents, according to Galal,[4] a major health hazard in Egypt. The use of cannabis in North Africa never did spread to the European settlers who, until recently, had very large communities in Egypt, Algeria, Tunisia, and Morocco.

Lebanon is a major provider of cannabis preparations for neighboring countries and offers four varieties, colored from brown to yellow. In Lebanon, the use of cannabis is limited to the poor and uneducated people who live in the rural areas. The use of cannabis in France or Western Europe was practically unknown, except to a few initiates, during the one-hundred-thirty years that the French closely controlled North Africa and had close ties with Lebanon. The derivatives of cannabis have been known for several centuries to the Indians of South and Central America and of Mexico. De Farias[5] describes the use of maconha in Brazil, inhaled from pipes and cigarets, and in the form of electuaries.

The use of cannabis in the United States began in 1920 and took on increasing proportions. This instigated some medical-sociologic studies in the 1930s. As early as 1939, Walton[6] wrote a work entitled *Marijuana: The New Drug Problem in the United States.* At the same time, Mayor La Guardia appointed a committee to study the effects of marihuana in New York City. This committee published an extensive report in 1944, which still remains one of the most thorough studies on the effects of cannabis and has been used equally by proponents and opponents of marihuana use.[7]

During the twenty years following World War II, marihuana and cannabis caused few problems in the United States. But for the past five years the use of cannabis has been spreading quickly, especially among adolescents of high school and college age. The number of young Americans using it today is estimated at 12 million.[8] And since the "American Challenge" is contagious,

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Since this paper was submitted in November, 1970, the author has written a monograph *Marihuana, Deceptive Weed,* to be published by Raven Press in June, 1972, which updates this article.

especially in a world where distances are of little importance, many young people of Western Europe are tempted, or will be in the near future, by similar experiences.

Users of the derivatives of cannabis are faced with a legal problem. The use of these compounds is regulated by national and international laws on harmful drugs. International legislation proposed by a committee of experts from the World Health Organization aims to prohibit the use of any drug creating a "physical or psychological dependence endangering the health, security or well-being of the individual or of the social group to which it belongs" (1965).[9] The illegal drugs are: "opium derivatives, barbiturates, cocaine, amphetamines and cannabis derivatives;" and the United Nations, in its single convention of 1961, recommends that any national legislation of its member countries consider the possession of cannabis as an offense to be penalized.[9] This single convention was signed by the President of the United States and approved by the Senate in 1967. It is therefore the law of the land.

The national legislation of most countries outlaws the use of cannabis and spells out very harsh penalties toward users or sellers of cannabis. Enforcement of the law varies from one country to another. It is particularly strict in the popular democracies of Europe and Asia where any offense which might harm the ruling social order is harshly penalized. In those countries where sellers risk the death penalty, there seems to be no drug problem. In the Asian, Middle Eastern, South American, and African countries where cannabis has been used for many centuries this substance can still be readily obtained. In western countries, concerted efforts are made to enforce the ban on cannabis but when, as happens in the United States, there are millions of delinquents, the police forces are obviously outnumbered. In that context, a small but influential group of intellectuals in England and America now claim that the least active of the cannabis preparations, U.S. marihuana or Indian "Bhang," are not dangerous at all and that the present laws ought to be modified to allow all those who would like to use these substances to do so freely for their own enjoyment.

On July 24, 1967, a petition was published in the London *Times* advocating a reform of the laws regulating the possession and use of cannabis. This petition, signed by prominent persons from the worlds of literature, arts, and sciences, declared that cannabis was used by ordinary people to increase their sensory perception and to find solace and pleasure. In the United States, anthropologist Margaret Mead[10] publicly calls for the legalization of marihuana and its free sale to all persons over the age of sixteen. She declares, in fact, that marihuana does not cause any "addiction," does not have any known harmful properties, and is therefore a less dangerous drug than alcohol or cigarets.

Today pharmacologists are asked to study anew the properties of the derivatives of cannabis and to establish their toxicity. It should be emphasized that such a task goes beyond classical pharmacology, which is based on animal experimentation. There are, as yet, no precise methods to measure the psychosociologic behavior of laboratory animals. Therefore, the study of "psychotropic" drugs requires a joint effort among pharmacologists, psychologists, psychiatrists, and sociologists, studying either volunteers or chronic addicts. It is presumptuous to claim that scientists working in the United States will be able to determine whether or not marihuana is harmful to man within a couple of years by merely performing pharmacologic and toxicologic studies. If the acute effect of a single dose of cannabis can be evaluated in a relatively short lapse of time, it is not possible to assess rapidly the effects resulting from its chronic usage on the health or social and cultural activities of Western man. A general appraisal of the effects of cannabis has to take into account, in addition to pharmacologic data, historic and ethical factors as well as the perspective of a humanistic society in which man should preserve "a healthy mind in a healthy body" to fully develop his creative potential.

Composition and active principles

The toxic substances (tetrahydrocannabinols) of cannabis are present in variable amounts in the different parts of the weed, depending on plant strain, soil, and climate, plant strain being the single most determining factor of potency. The concentration of tetrahydrocannabinol in hemp crude extract may vary from 0.02 per cent to 6 per cent; 1 per cent is considered to be the concentration required to produce intoxication within fifteen minutes after smoking a cigaret containing 3 to 500 mg. of pulverized plant material.[8] Cannabinoid content varies in decreasing order from bracts to flower to leaves to small stems, and is very low in seed and roots. The extraction procedure is also an important factor in the potency of the final product. The most potent preparations are known as hashish and charas. These are prepared in the form of pastes which are smoked in pipes, eaten as a sweetmeat, or added to various drinks. All of these products are prepared as and when required for local consumption. Whether they are smoked, drunk, or eaten, the preparations often contain other pharmacologically active agents. Therefore the potency of the different available preparations will be quite variable, since it depends on the final amount of tetrahydrocannabinol present.

Moreau de Tours,[11] the first physician to study the toxic effects of cannabis in man, noted in 1840 that it was not possible to prepare active extracts of cannabis with plants grown from Egyptian

TABLE I. Classification of psychotropic drugs according to the main effect* of a single effective dose[19]

Psycholeptics (Depress Mental Function)	Psychoanaleptics (Stimulate Mental Function)	Psychodysleptics (Disintegrate Mental Function)
General anesthetics	Stimulate alertness: amphetamines	Hallucinogenics: LSD psilocybine mescaline
Hypnotics: barbiturates	Stimulate mood (antidepressants): monoamine oxidase inhibitors	Opiate derivatives: morphine heroin
Neuroleptics: phenothiazine butyrophenones reserpine	Tricyclic compounds (imipramine, lithium)	Cannabis derivatives: hashish marihuana
Tranquilizers	Convulsant drugs (pentylenetetrazol)	Depersonalizing drugs: phencyclidine
Anticonvulsants	Local anesthetics (cocaine)	
Antiparkinsonians: anticholinergics antihistamines	Psychostimulants (caffeine)	
Analgesics: antipyretics		
Ethyl alcohol		
Bromides		

* This effect depends on individual traits, such as age, sex, and metabolism, and the environment. Many of these drugs, depending on the dose, may have multiple actions.

seeds in the temperate climate of the Paris area. General surveys made recently on the effects of cannabis among university students in the United States which reported little untoward effects are difficult to interpret since the origin of the cannabis used is not always known, and assay for the active cannabinols was not properly performed.[8,12–14]

In 1940 it was discovered that the psychoactive components of the resin of Cannabis sativa were isomers of tetrahydrocannabinol. One of these isomers, the delta-9 form (using the dibenzopyran numbering system), was synthesized by Gaoni and Mechoulam[15] in 1964, and it is considered one of the major psychoactive elements of the derivatives of Cannabis sativa. The isolation of this compound is difficult, and attempts are still being made to isolate and synthesize all of the active elements of cannabis. However, it is already possible to produce in man and experimental animals, with very small amounts of Δ-9-tetrahydrocannabinol, effects quite comparable with those induced by concentrated extracts of Cannabis sativa grown in warm climates. Delta-9- and Δ-8-tetrahydrocannabinols, the major psychoactive compounds, have both been extracted from cannabis plant and resin, tested in animals and man, and produce a condition simulating cannabis intoxication.

Pure Δ-9- and Δ-8-tetrahydrocannabinol are produced synthetically in quantities sufficient for research by Arthur D. Little, Inc., Boston, Massachusetts, under contract by the National Institute of Mental Health.[16] Human experimentation with these compounds, however, will not be possible until animal toxicologic studies are complete.

Cannabis extracts and Δ-9-tetrahydrocannabinol have many pharmacologic properties which are common to stimulants, sedatives, tranquilizers, narcotics, and hallucinogens. Cannabis extracts and Δ-9-tetrahydrocannabinol potentiate barbiturate sleeping time and amphetamine excitement in mice.[17] It produces hallucinations but shows no cross tolerance to LSD or mescaline.[18] Its administration is accompanied by increasing tolerance, but no withdrawal symptoms accompany its discontinuance. Its classification by Delay and Thullier[19] among the psychotropic drugs which disintegrate mental function seems appropriate (Table I).

Toxicity

Acute toxicity. The acute toxicity of the derivatives of cannabis used as intoxicants (marihuana, kif, hashish) are reported to be low. Chopra and Chopra[20] quote the lethal dose of ganja per os in man as of the order of 8 Gm. per kilogram. However, the acute toxicity of the active components of cannabis is much greater. Joachimoglu[21] reports a median lethal dosage of 1.9 mg. per kilogram in mice for natural hashish extract injected intraperitoneally. As reported by Phillips, Turk and Forney,[22] the median lethal dosages of Δ-9-tetrahydrocannabinol are, in rats and mice: intravenously, 28.6 and 42.5 mg. per kilogram respectively (death occurring in fifteen minutes); intraperitoneally, 372.9 and 454.5 mg. per kilogram respectively (death occurring between ten and thirty-six hours); intragastrically, 666.1 and 481.9 mg. per kilogram respectively (death occurring in ten to thirty-six hours). These results indicate that Δ-9-tetrahydrocannabinol is poorly absorbed by the gut. Toxic signs preceding death in both species were ataxia, hyperexcitability, depression, loss of righting reflex, and dyspnea progressing to apnea. After intraperitoneal or intragastric administration, diarrhea was observed in rats and mice; rats also displayed tremor and lacrimation. Dewey, Yonce, and Harris[23] report a median lethal dosage in the range of 40 mg. per kilogram in the dog for Δ-9-tetrahydrocannabinol administered intravenously. With the same compound, Scheckel *et al.*[24] observed a 50 per cent mortality rate in the squirrel monkey after a dosage varying from 36 to 64 mg. per kilogram administered intraperitoneally. In man, absorption of large doses of cannabis through inhalation can be followed by prolonged coma, and even death, as described by Heyndrickx, Scheiris, and Schepens,[25] who report the fatal intoxication of a young man due to cannabis smoking. In this case, cannabinol was identified chromatographically at the exclusion of all other toxic compounds in the urine of the deceased. These results indicate that Δ-9-tetrahydrocannabinol is a lethal compound when present in high enough concentrations in the blood stream. Such concentrations can be reached by inhalation of strong cannabis preparations because of the rapid absorption of Δ-tetrahydrocannabinol by the lung, as occurred in the fatal case reported by Heyndrickx, Scheiris, and Schepens.[25] This report was corroborated by the observation of Gourves *et al.*,[26] who reported the case of a coma of four days' duration due to cannabis intoxication in a young French soldier, who, with conventional supportive therapy (intubation and intravenous fluids, 2.5 L. per twenty-four hours), recovered. He acknowledged having smoked nine to ten pipes of a mixture of tobacco and hashish with the intent of committing suicide, claiming that this method had been used by others. He admitted that each pipe contained 15 to 20 Gm. of smoking mixture. Assuming a 5 to 10 per cent Δ-9-tetrahydrocannabinol content for a potent cannabis preparation, and 50 per cent absorption of this toxic substance by the lung, the lethal intravenous dose of Δ-9-tetrahydrocannabinol in man would be of the order of 1,000 to 2,000 mg., or 30 mg. per kilogram. The intravenous median lethal dosage in rats is 28.6 mg. per kilogram. It is unlikely that similar plasma concentrations could be reached after ingestion of cannabis preparations because of the apparently poor absorption of Δ-9-tetrahydrocannabinol by the gut.

The toxicity of Δ-9-tetrahydrocannabinol is low relative to its pharmacologically active dose. However, the lack of severe, physically untoward effects of a psychotropic drug is poorly correlated with its psychotoxicity, or its ability to disintegrate mental function.

Chronic toxicity. Animals injected daily with tetrahydrocannabinol develop a marked tolerance for the drug. For instance, in the pigeon the dose can be increased over a one-month period from 1.8 mg. to 180 mg. per kilogram.[27] Systematic studies of chronic toxicity of these compounds in animals or man are not available yet. However, it should be kept in mind that with our present methods it is not always possible to establish histologic damage produced in the central nervous system by psychotropic drugs. These agents exert their action through molecular, biochemical mechanisms which do not distort gross cell architecture. It has not been possible to establish any significant brain damage after chronic administration of opium or morphine-like drugs after more than fifty years of study of opiates in animals and man. If one considers tobacco as an example of a very mild intoxicant, it would take several decades to evaluate the chronic somatic toxicity of cannabis on western populations. However, cannabis and its derivatives have been used for centuries by a large segment of the population of some Middle Eastern and Far Eastern countries.

Chopra and Chopra[20] report that in India conjunctivitis occurred in 72 per cent of the chronic cannabis users that were examined. This consists of an active congestion in the transverse ciliary vessels accompanied by a yellow discoloration of the conjunctiva due to deposition of yellow pigment around the vessels. Sterne and Ducastaing[28] have reported that arteritis may occur in young heavy smokers between twenty-five and thirty-five years old who administer large doses of cannabis to themselves (10 to 15 pipes a day). Furthermore, as will be discussed later, chronic use of cannabis—according to native or visiting psychiatrists and public health officers in India,[20,29,30,31] Egypt,[4,32] Morocco,[3,28] and Brazil[5]—is associated with a high incidence of psychiatric disorders. All of these reports are somewhat fragmentary and better attempts should be made to evaluate systematically the effects of the chronic usage of cannabis on the health of the population of these countries. At the present time, however, it should be noted that all of the native Asian or African physicians who have dealt specifically with the problem of cannabis intoxication in their countries state categorically that it does constitute a major health hazard, producing serious ill effects on the individual and on society. They are most adamant on maintaining present international legislation, which classifies cannabis as a dangerous drug and recommends the control of its use. The United States is a signatory of this international convention, a fact that some of the American lawyers advocating the legalization of cannabis seem to overlook.

Addiction, dependence, tolerance

It is usually stated that cannabis does not create "addiction" or a physical dependence because interruption of its use does not bring forth a "withdrawal syndrome" such as occurs with heroin. However, tolerance to cannabis administration has been observed in rats, dogs, and birds; McMillan *et al.*[27] have reported that pigeons displayed a marked tolerance to the behavioral effects of Δ-9-tetrahydrocannabinol. The effective dose (1.8 mg. per kilogram), which completely eliminated a learned food presentation schedule, could be subsequently and gradually increased over a one-month period to 180 mg. per kilogram. Nontolerant birds succumbed when given the higher dose. Black, Woods, and Domino[33] reported the development in seven weeks of similar tolerance to Δ-9-tetrahydrocannabinol in pigeons on scheduled controlled behavior and given a weekly intramuscular injection of Δ-9-tetrahydrocannabinol (10 mg. per kilogram) and other cannabis derivatives.

They concluded that tolerance and cross tolerance can occur among these cannabis derivatives, and that the tolerance is of a pharmacologic origin. Tolerance to the depressant effect of daily injections of Δ-9-tetrahydrocannabinol (125 mg. per kilogram) on the locomotor activity of rats was also observed by the eleventh day.[34]

Williams, Himmelsbach, and Wikler[35] reported in 1946 that the repeated administration of synhexyl (a synthetic derivative of cannabis) to volunteers resulted in decreasing effects within four to six days. The subjects requested an increase in dose as tolerance developed. Wilson and Linken[2] report that a few adolescent cannabis users tend to use increasing doses. These chronic smokers, who find great difficulty in breaking the habit and do not particularly enjoy their dependent needs, appear to suffer from some degree of psychic dependence coupled with a requirement for fairly high doses of the drug. In addition, like many chemical substances, particularly if they induce euphoria, the use of cannabis can create a state of psychologic dependence. In Egypt, 65 per cent of the consumers of hashish declared they would like very much to quit if they could. Such confessions indicate with certainty some form of psychologic dependence.[32] These experimental data might lead to a re-evaluation of the opinion held by many concerning the total absence of the development of tolerance to cannabis.[8,12]

Therapeutic applications

Until 1940, cannabis was a substance registered in all pharmaceutical compendia of Europe and America, but no significant therapeutic use was found for this compound. Some advocated it for psychiatric use as a sedative and antidepressant, and for the treatment of the withdrawal syndrome in heroin addictions, but it seems that today there are more specific medications for the treatment of depression (monoamine oxidase and tricyclic derivatives) and of the withdrawal syndrome (methadone). The treatment of psychoses by cannabis, first suggested and used by Moreau de Tours (1845),[11] is still favored by some,[12] but raises the same objections and the same difficulties encountered in treating these conditions with other psychodysleptic agents such as LSD: difficulties in predicting its "indications," in formulating the dosage, and in foreseeing the extent of and the reactions to the treatment.

Pharmacologic studies on animals

General effects. Grunfeld and Edery[36] studied the effects of two active derivatives of tetrahydrocannabinol on rodents (rat, mouse, and gerbil), on dogs, and on rhesus monkeys. In intraperitoneal doses of 10 to 20 mg. per kilogram, these derivatives suppressed the spontaneous activities of the gerbil in digging holes, of the mouse in performing on the rotating pole, and of the rat in avoiding a shock. These doses also brought forth a state of catalepsy in all the animals and of ataxia in the rat. In dogs, doses of 0.5 to 1 mg. per kilogram produced motor deficiencies, dysbarism along with a state of stupor, and a depression of the sensorium lasting between one and one-and-a-half hours. After being administered 0.1 mg. per kilogram, the rhesus monkeys showed a ptosis of the eyelid and an akinetic meditative state of withdrawal, along with a loss of aggressiveness and a refusal to accept food. That condition lasted two hours. Among all animals tested, the monkey was the most sensitive to tetrahydrocannabinol, since doses 10 times smaller than those administered to the dog and 100 times smaller than those administered to the rodent would cause deep alterations in his behavior. Amphetamines acted as antidotes to cannabis.

Scheckel *et al.*[24] noticed that tetrahydrocannabinol in intraperitoneal doses of 4 to 8 mg. per kilogram produced aberrant alterations in the spontaneous or conditioned behavior of the squirrel monkey. In larger doses (16 to 64 mg. per kilogram) they observed a period of stimulation, followed by depression and apparent hallucinations. Nine out of 14 animals died after receiving even higher doses of 32 to 64 mg. per kilogram.

Carlini and Masur[37] noted that daily intraperitoneal doses of extracts of Cannabis sativa (10 to 20 mg. per kilogram) produced a very significant state of aggressiveness in a hungry rat. This aggressiveness was more obvious in a low ambient temperature (15–18° C.) than in a higher ambient temperature (23–27° C.) and it could not be produced by caffeine, amphetamine, amobarbital, or ethyl alcohol. Using much larger intraperitoneal dosages in mice (100–400 mg. per kilogram) Garatini[38] observed moderate hypothermia, decrease of locomotor activity, potentiation of barbiturates, and inhibition of aggressiveness induced by isolation.

All these studies lead to the conclusion that acute or subacute doses of tetrahydrocannabinol cause behavioral aberrations, the effective doses being proportionally smaller as the central nervous system is more developed.

In animals, the reaction to cannabis is very different from that produced by ethyl alcohol. Cannabis resin has a teratogenic effect on rats, mice, rabbits, and hamsters. This effect was reported by Persaud and Ellington,[39] and by Geber and Schramm,[40] who produced fetal damage, litter resorption, stunting, encephalocele, phocomelia, and syndactyly by injecting cannabis resin early in pregnancy. As suggested by Pillard,[8] these results indicate that cannabis should be avoided by pregnant women. But chromosome breakage, such as that produced by LSD, has not been reported with cannabis.

Tar yield from marihuana smoke condensate is as carcinogenic to mouse skin as smoke tar from tobacco of commercial cigarets.[41]

Dewey, Yonce, and Harris[23] studied some cardiovascular effects of Δ-9-tetrahydrocannabinol in doses of 1 to 3 mg. per kilogram on anesthetized dogs. This produced a decrease in systolic, diastolic, and mean arterial blood pressure; heart rate; cardiac output; and total peripheral resistance. Delta-9-tetrahydrocannabinol (4 to 16 mg. per kilogram) produces in the rat a two- to threefold increase in plasma corticosterone mediated through the pituitary. The same dose produced an inhibition of antidiuretic hormone with twofold increase of urine output.[42] Rats fitted with chronically implanted electrodes and given 10 mg. per kilogram of tetrahydrocannabinol displayed a pronounced reduction in the level of paradoxical sleep which required two days for complete recovery.[34] Many more pharmacologic studies are required to determine the endocrine, metabolic, autonomic, and cardiovascular properties of the tetrahydrocannabinol compounds. This information will be useful in advancing our knowledge about basic pharmacologic mechanisms, but not in evaluating the untoward effects of cannabis on man and society.

Metabolism and distribution. Klausner and Dingell[43] administered carbon-14 labelled tetrahydrocannabinol intraperitoneally to rats in doses of 4 mg. per kilogram. The radioactivity of whole-body homogenates declined exponentially, with a half-life of sixteen hours. Fifteen minutes after the injection, there was an accumulation of tetrahydrocannabinol in tissues. Tissue-to-plasma ratios were as follows: brain, 2.7; lung, 55.2; liver, 12.1; fat, 5.5; spleen, 3.5; muscle, 3.0; kidney, 6.5; heart, 6.7; intestine, 3.5. Seventy-five per cent of the radioactivity administered was excreted in the urine and feces within one-hundred-twenty hours, with 90 per cent of this in the feces, mostly in the form of metabolites.

Studies on man

Metabolism and disposition. Delta-9-tetrahydrocannabinol is also very slowly eliminated in man.[44] After intravenous administration of tracer amounts of C^{14}-Δ-9-tetrahydrocannabinol to three volunteers, the amount of this compound in plasma declined rapidly during the first hour, with a half-life of about thirty minutes. After one hour, Δ-9-tetrahydrocannabinol fell much more slowly (with a half-life of fifty-six hours). The decline of total radioactivity and of the more polar ether extractable metabolites in plasma was similar to that of Δ-9-tetrahydrocannabinol. A rapid initial decline preceded a much slower phase of disappearance from the plasma. Polar metabolites were formed rapidly and were present in plasma at higher concentrations than Δ-9-tetrahydrocannabinol. The initially rapid decrease of C^{14}-Δ-9-tetrahydrocannabinol in plasma represents redistribution of Δ-9-tetrahydrocannabinol from the intravascular compartment into tissues (including brain) and metabolism. These findings are consistent with the reported clinical effects of a small dose of inhaled marihuana (containing approximately 5 mg. of Δ-9-tetrahydrocannabinol) which are maximum within fifteen minutes, diminished between thirty minutes and one hour, and largely dissipated by three hours. The slower decline of Δ-9-tetrahydrocannabinol in plasma (half-life, fifty-six hours) and of total radioactivity (half-life, sixty-seven hours) presumably represents retention and slow release of the drug from its stores. Since Δ-9-tetrahydrocannabinol is a nonpolar compound it may accumulate in fat or other tissues, such as lung, which have an affinity for drugs. It has already been reported that in animals, after intravenous administration of Δ-9-tetrahydrocannabinol, much higher levels of radioactivity were present in lung than in other tissues. If Δ-9-tetrahydrocannabinol is similarly bound in lung tissue of man, then it might explain the chronic bronchitis reported in habitual cannabis users.

Over a period of more than a week, about 30 per cent of the administered radioactivity was excreted in the urine and 50 per cent in the feces. The finding that Δ-9-tetrahydrocannabinol and its metabolites persist in man for long periods indicates that the drug and its metabolites accumulate in tissues when administered repeatedly. It may explain the fact that this small dose taken for the first time has little effect on the user.[13] Possibly, a critical degree of brain tissue saturation must be attained before effective threshold levels of Δ-9-tetrahydrocannabinol can be achieved. Furthermore, long-term administration of cannabis may induce the production of enzymes which convert the drug to an active metabolite. Like any other drug producing enzyme induction, it is likely that Δ-9-tetrahydrocannabinol will have profound and lasting metabolic effects in the chronic user. In any event, it will take many years to assess the effects of Δ-9-tetrahydrocannabinol and of its metabolites on the different tissues of man in which they accumulate. Lemberger, Axelrod, and Kopin[44] also showed that there was a more rapid decline in the plasma tetrahydrocannabinol concentration of chronic users, and that users excreted larger amounts of tetrahydrocannabinol in the urine. However, the total amounts eliminated in feces and urine were the same in users and nonusers. Such results suggest that with repeated administration, chronic marihuana users can metabolize tetrahydrocannabinol more rapidly than nonusers and that man does develop some tolerance to tetrahydrocannabinol.

Physiologic effects. *Acute effects.* These effects, as described by Hollister, Richards, and Gillespie[45] on volunteers who were receiving tetrahydrocannabinol for the first time by mouth, at an average dose of 0.6 mg. per kilogram, are generally very slight. The conjunctivas were congested but the pupils were not dilated. The subjects were in a state of drowsiness, but their reflexes were not hyperactive. In contrast, in LSD intoxication, one observes a dilation of the pupils, no bloodshot conjunctivas, hyper-reflexivity, and no drowsiness. In the course of an acute intoxication by cannabis, Hollister, Richards, and Gillespie also note a significant increase in heart rate and a reduction of the ergograph test, indicative of muscular weakness. Dizziness and nausea are also reported.[46]

Chronic physiopathologic effects. Reports on the effects of the chronic use of cannabis on the populations of the Middle East mention a certain number of pathologic conditions. Conjunctivitis is the most common complication (72 per cent in chronic cannabis users in India, as reported by Chopra and Chopra[20]), followed by chronic bronchitis and gastroenteritis.[3,20] Twenty-five to 70 per cent of hashish users have declared, in the course of inquiries, that they attributed their bad health to the chronic use of that drug.[20,29,32] Such reports are not very precise and the existence of endemic malnutrition and numerous parasitoses among the populations of the Far and Middle East could account for the development of the pathologic states imputed to cannabis. Yet, only a developed social organization based on a responsible, industrious population can meet the nutritional and medical needs of a country. Cannabis develops in its users a tendency to apathy, inefficiency, indifference, and withdrawal into themselves, which is unsuitable to the development of a productive, responsible society.

Recent studies indicate that cannabis might produce hepatotoxicity. In 1969, Kew, Bersohn, and Siew[47] performed liver function tests on 12 marihauna smokers who had not taken intravenous drugs or used alcohol to excess. Eight showed "mild liver dysfunction," and biopsy in 3 showed "striking parenchymatosis degeneration."

The most serious complication of cannabis intoxication has been described by Sterne and Ducastaing.[28] These authors observed 29 cases of progressive obliterative arteritis of the lower extremities developing in young Moroccan males who were heavy smokers of cannabis extracts. Evolution of the disease, which closely paralleled cannabis intoxication, was lethal in one to three years in spite of repeated limb amputations. According to Sterne and Ducastaing, cannabis-induced juvenile arteritis is a frequent disease among North African Muslims, and contrasts with their otherwise low incidence of arteriosclerosis (15 times less than the local European population). However, these observations, unique in the world literature, must be confirmed. Bitemporal headaches, which could be another effect of chronic cannabis intoxication on the peripheral vascular bed, have been recently reported in twenty- to thirty-year-old Americans who were habitual users of cannabis.[48]

Psychologic and behavioral effects. *Subjective effects.* The subjective effects of intoxication by cannabis have been known for a long time and have been described by numerous authors and writers, the most famous of whom lived in the middle of the last century. In 1850, Baudelaire, Gautier, and Dumas père formed the "club des haschischins." The works they wrote when under the influence of that drug are interesting for amateurs of hallucinatory tales.[49] They used, in fact, very large doses of cannabis. Since then, moderate effects have been described by numerous subjects. Those effects last from two to six hours when the drug is smoked in the form of marihuana, and from five to twelve hours when it is ingested in the form of hashish. After taking an effective dose, the user experiences a period of anxiety, which is called 'happy anxiety" by inveterate smokers. Along with this prodrome there is an intensification of sensory perception, both visual and auditive, and a distortion of the sense of time, time seeming to slow down. There appears to develop a splitting of the intoxicated subject's consciousness so that he seems conscious of his own intoxication and is even able to make fun of it. This ability to conserve a certain objectivity in the middle of an alteration of consciousness explains the fact that habitual smokers of small doses (5 mg.) of cannabis can behave soberly in public. They manage to observe and control their own intoxication.

All the subjective effects just related have been described by volunteers who had ingested a dose of tetrahydocannabinol amounting to 0.5 mg. per kilogram or smoked a marihuana cigarette containing 3 to 5 mg. of Δ-9-tetrahydrocannabinol.[13,45] These subjective effects depend on the dose administered and are influenced by exterior stimuli and individual susceptibilities. Thus, cannabis is used in the same West African country both to increase the religious meditation of the priests and to encourage the aggressiveness of certain warrior groups of the Baloubas tribes.[50] The total physical and social environment in which the drug is consumed will influence the subjective appreciation of the drug effects, and so must be rigidly controlled in human experimentation.

Objective effects. (*a*) Effects on speech structure: Bromberg[51] noted in 1934 that the rapid flow of ideas in the course of intoxication by cannabis conveyed an impression of intellectual brilliance and depth of thought. However, some confusion was evident when the subject wished to fix his thought and remember the idea he had just expressed. This alteration of immediate memory was systematically studied by Weil and Zinberg,[52] who used the technic of analyzing the subject's speech before and after intoxication by cannabis. They concluded that the characteristics of the speech difficulty are twofold: the subject forgets what he is about to say the moment immediately following the end of a sentence, and he has a strong tendency to discuss matters that have nothing to do with the preceding sentence because the logical sequence of his thought escapes him. The intoxicated subject acknowledges that he needs to exert a considerable effort to recall from one moment to the other the logical thread of what he is in the process of expressing. That difficulty is not related to the change in mood produced by cannabis; the change in mood is unpredictable in a neutral environment. Such observations led Weil and Zinberg[52] to express the hypothesis that speech problems produced by cannabis are due to a modification of the cerebral function per se, rather than to a modification in the motivation of the subject, produced by the drug.

Tinklenberg *et al.*[53] made similar observations of cognitive impairment in volunteers given 20 to 60 mg. of tetrahydrocannabinol by mouth. Impairment in immediate memory did not follow a smooth time function but was episodic, brief in duration, and not always under volitional control; it was accompanied by intermittent lapses of memory. The same authors[54] reported that oral doses of marihuana extract containing 40 to 60 mg. of Δ-9-tetrahydrocannabinol significantly impaired the social coordination of cognitive operations during a task that required sequential adjustments in reaching a goal. This disintegration of sequential thought is related to impaired immediate memory, and is associated with disorganized speech and thinking.[53,54] Cannabis does, therefore, interfere with the cerebral mechanism which controls the selection of information deriving from immediate memory storage. The influence of a chronic intoxication by cannabis on that mechanism, which is so important in individual and social behavior, is not known, but one cannot exclude the possibility that it could be seriously altered.

(*b*) Psychometric alterations: Hollister *et al.*[45] observed that subjects ingesting a dose of 1 mg. per kilogram of tetrahydrocannabinol for the first time showed a significant alteration of their intellectual performance, which was slower as measured by the number test, and diminished as measured by the tracing test. Testing marihuana cigarets containing very little Δ-9-tetrahydrocannabinol on two groups of marihuana smokers, "initiates" and "noninitiates," Weil and Zinberg[13] concluded that, in a neutral environment (that is, one without extrinsic sensory stimuli), the subjects' ability to fix their attention was not modified! All the noninitiates showed a deterioration of their intellectual performance. Four out of 6 "inveterate smokers" could perform a test as well as or better than before the intoxication, while the performance of 2 of them showed deterioration. These experiments by Weil and Zinberg, where subthreshold doses of Δ-9-tetrahydrocannabinol were used, are widely quoted to indicate that cannabis is a "mild intoxicant," as if the toxicity of alcohol could be judged by studying subjects taking half a pint of beer daily.

There is no question that cannabis decreases intellectual performance, as shown by Clark and Nakashima[55]: the psychometric tests on the discriminatory and retentive faculties of volunteer subjects that have never used cannabis deteriorate gradually as the dose is increased. However, there are important variations within the same subject and from one subject to another, as far as the dose necessary to alter the individual performance is concerned. These authors conclude:

> These results are consistent with those reached when studying the influence of drugs such as LSD on such a complex state as behavior which is influenced by a multitude of nonpharmacological factors. It is impossible to predict the effect of marijuana on different individuals or on the same individual at different times and in different circumstances. This impossibility to predict the effects of cannabis still increases the dangers of using that drug.

Manno *et al.*[14], after a quantitative controlled study of 12 volunteers, concluded[14]: smoking of marihuana cigarets containing 2.5 to 5 mg. of Δ-9-THC produces significant impairment in performance of both mental and motor tasks and alcohol induces an additional effect.

Psychopathologic effect. *Acute effects.* Moreau de Tours, in 1845, was the first to describe the acute adverse psychologic reactions induced by cannabis in his book on *Hashish and Mental Alienation.*[11] Since then, several authors have reported that a single dose of one of the derivatives of cannabis, either hashish or marihuana, may produce states of insanity or psychosis in certain subjects. Bromberg[51] classifies the mental reaction following the use of marihuana in Americans admitted to Bellevue Hospital as acute intoxications and toxic psychosis. The acute intoxications are characterized by a state of reactive fright and pain, the smoker fearing he is going insane.[56] These conditions usually occur in first-time users but have also been reported after multiple use. The cause of this reaction, which is not limited to neurotic persons, is not known. The occurrence of these acute anxiety reactions after smoking cannabis was also reported among British undergraduates.[2]

The second acute adverse effect, toxic psychosis precipitated by cannabis, is marked by symptoms of paranoia, depersonalization, and hallucinations that last for a few days or weeks. Allentuck[57] and Ames[58] describe the appearance of such psychosis in 6 out of 77 persons who had ingested 30 to 360 mg. of a cannabis extract. De Farias[5] reports the appearance of confusional hallucinations in a Brazilian Indian who had smoked 2 Gm. of cannabis. Talbott and Teague[59] reported cases of acute psychosis which developed in 12 soldiers in Vietnam after smoking one single cigaret of marihuana. One of them killed one of his comrades with a blast from his tommy-gun and boasted afterwards that he had just murdered Ho-Chi-Minh. These psychotic states lasted from three to eleven days.

Cannabis may precipitate an underlying psychosis. In 1967, Daly[60] reported a case of marihuana-induced schizophrenia in a British student, and in 1964, Asuni[61] described the occurrence of simple and paranoid schizophrenia in Nigerian schoolboys and students. In the same country, Boroffka[62] reported similar chronic schizophrenic reaction to cannabis. Smith[63] reported other cases of psychosis triggered by the use of cannabis. However, all of these acute reactions are infrequent.

Delayed effects. The delayed effects, or "flashback" abreaction symptoms, can occur days, weeks, or even months after the ingestion of a single dose of the drug without the user experiencing a new intoxication in the meantime. Abreaction is a specific symptom of hallucinogenic drugs; it has been described mostly after the use of LSD, but it has also been observed after an intoxication by cannabis.[56] This abreaction is characterized by a reappearance of the symptoms of intoxication and range from euphoria to anxiety or even delirious hallucinations.

The psychologic effects of cannabis which have been described would place cannabis in Delay and Thullier's[19] nomenclature of psychotropic drugs among the psychodysleptics, that is, drugs which "disintegrate mental function and produce a distortion of judgment and memory with impairment in evaluating the reality situation." Delay's nomenclature is quite helpful in categorizing all psychotropic drugs according to the main action of a single dose on mental function (Table I).

Chronic effects. Of chronic cannabis users admitted to hospitals in Brazil, India, and Nigeria respectively, 16, 13, and 25 per cent had schizophrenic disorders. This high incidence has led Chopra and Chopra,[30] Asuni,[61] and Andrade[64] to question the possible role of cannabis in the etiology of chronic mental illness. Benabud[3] claims that 27 per cent of 2,300 male patients admitted to psychiatric institutions in Morocco showed a "cannabis psychosis." The reason why there were three times more men than women in mental hospitals was that only men used cannabis.[3] Since many factors are involved in the development of chronic mental illness, it is not possible to ascertain on the basis of these reports the etiologic role of cannabis, but neither is it possible to ignore it. Galal,[4] General Director of the Research Control Center of the Egyptian Organization for Pharmaceuticals, declared in 1966:

> Dependence on hashish (cannabis) has represented and still represents the main challenge in the U.A.R. [in the control of dangerous drugs]. Dependence resulting from its continuous use has obvious social and medical aftereffects.[1]

Chronic intoxication has not been systematically studied in the United States; however, the following clinical observation of West[65] should be noted.

> There are many young people, including some of the brightest, who have been using marihuana now more or less regularly for 3 or 4 years. Addiction or even habituation is denied. The smoking is said to be simply for pleasure. Untoward effects are usually (not always) denied. But the experienced clinician observes in many of these individuals personality changes that may grow subtly over long periods of time: diminished drive, lessened ambition, decreased motivation, apathy, shortened attention span, distractibility, poor judgment, impaired communication skills, less effectiveness, magical thinking, derealization and depersonalization, diminished capacity to carry out complex plans or prepare realistically for the future, a peculiar fragmentation in the flow of thought, habit deterioration and progressive loss of insight. There is a clinical impression of organicity to this syndrome that I simply cannot explain away. There are too many instances of youngsters who should be getting their Ph.D.'s by now but who are drifting along smoking marihuana and gradually developing these symptoms. Some of them at least are not schizophrenic, not psychopathic, not avitaminotic, not using other drugs, not simply "dropping out" by choice. And a few of the brightest ones will even tell you, "I can't even read a book from cover to cover and grasp its meaning any more. I tell myself that I really don't care what's in it; that their topics are not important. But I really can't do it. Of course, I really don't care."

This opinion of West, from observations made on American students, is corroborated by that of Bejerot[66] who studied habitual users of cannabis in Sweden:

> The more I have seen of the Swedish hashish veterans the more convinced I have become that hashish, in time, leads people away from an ordered form of life. The attitude to life of veteran hashish smokers in many ways is reminiscent of the Orient—with its passivity, unworldliness, tendency to mysticism and fatalism—that one wonders to what degree these old and largely stagnant cultures are marked by the effects of the drug. On the other hand the Asiatic countries which have resisted dangerous drugs or overcome the drug problem, Israel, Japan and China, all present a dynamic development.

The subtle progressive changes in personality and behavior observed in all chronic cannabis users are consistent with the recently reported very slow elimination of Δ-9-tetrahydrocannabinol and of its accumulation in different tissues of the body.[44]

Interaction of cannabis with other compounds. The populations of the Middle and Far East who regularly consume the derivatives of cannabis are not subject to intoxication by tobacco, alcohol, or other pharmacologic substances commonly used in western countries. The possible interactions of tetrahydrocannabinol with other drugs must therefore be carefully appraised since it has been established that, in the United States, the consumers of cannabis do not abstain from smoking cigarets[67] or drinking alcohol[14,48] or from taking other drugs such as LSD, amphetamines, barbiturates, and opiates. Lambo[1] reports that, in Nigeria, when chronic use of cannabis is associated with alcoholism, personality disintegration is more pronounced. Bouquet[68] also comments that alcoholic macerations of cannabis resin in Russia do great harm.

Cannabis and alcohol: social aspects. The assumption that cannabis is less dangerous than alcohol is frequently stated. It is impossible to compare these two substances, which are very different in their chemical structure as well as in their metabolism, distribution, pharmacology, and physiologic effects. The comparison of their chronic effects on psychosocial behavior is very difficult to evaluate. Chronic intoxication by cannabis can only be observed in Eastern ethnic and cultural groups, which are very different from the western groups who consume alcohol. Wilson[69] reported, however, that those who become chronically intoxicated with cannabis in the eastern countries have an increased rate of mental illness morbidity, criminality, accidents, and family and professional conflicts. The same deterioration can be observed in western countries among chronic alcoholics. And Wilson concludes:

> The use of cannabis, like that of alcohol, can drive the individual to antisocial behavior in an undetermined proportion of the group who use them. Also, their use lessens for a variable length of time the intellectual potential of the cultural group of users.

Our society already has enough of a social problem with alcohol; it is now facing an increasing problem with a variety of centrally acting drugs, including cannabis derivatives. Can it afford to take on a second major social problem? Not according to Karl Evang, M.D., World Health Organization expert and head of the Norwegian board of health, who has declared that if cannabis became as widely used as alcohol, all ordered social life, as we know it, would cease to function in a decade or two.[70]

Alcohol is a most useful pharmacologic agent and solvent which enters into the composition of innumerable pharmaceutical and biological preparations. It is an essential chemical substance. Socially, alcohol has been used for several thousand years and, in spite of is abuse—for which we pay an exorbitant price—it has not stymied the development of Eastern or Western European countries or of North America. Cannabis, on the other hand, has no pharmaceutical usefulness, no industrial application. And it has been used for centuries in countries which are now called underdeveloped after having displayed brilliant periods of development.

Young Americans prefer cannabis to alcohol because with a very small dose of that drug, they can obtain the same euphoric and relaxing effects derived from much larger quantities of alcohol. There is no such thing as a little bit of marihuana; the "kick" is the ultimate, which is similar to being drunk. Cannabis has a longer euphoric effect than alcohol and it is not accompanied by the same unpleasant side effects that follow excessive libations. It seems also that some individuals can learn to control themselves more easily and achieve more complex tasks after an effective dose of cannabis than after an euphoric dose of alcohol. It is thus much easier, at first, for a young person to get intoxicated on cannabis and enjoy it than to get intoxicated on alcohol.

Some psychiatrists justify the use of cannabis by students. According to Greenwald[71]: "Marijuana restores to the student his ability to feel in an often hostile environment and the liberating action of that drug is going to allow him to experience more intimate social contacts." And Dr. Greenwald adds: "A simple fact remains: the pleasure of smoking marijuana has convinced many students that this drug is better than alcohol." He predicts that marihuana will soon be legalized in the United States and that cigaret manufacturers will sell that product. In that respect, one of the directors of a large American tobacco company declared recently: "A cigarette company would be stupid if it did not look into marijuana."[72] In the face of these declarations and those of Mead[10] and Greenwald,[71] many young people are encouraged to use cannabis, especially in the climate of revolt against family and social structures that exists in the new generation. An officer of the narcotics squad of Englewood, New Jersey, told me that many of the young people he had apprehended for carrying marihuana showed him newspaper clippings quoting the statements of some "prominent figures" claiming that marihuana was less dangerous than cigarets and alcohol and that since the drug should be legalized they were not committing a felony.

On the other hand, some psychiatrists[73,74] and psychoanalysts,[75] in view of observations made on their young patients, think that marihuana is particularly dangerous for the psychologic and emotional development of adolescent man. The drug only intensifies psychiatric problems by increasing departure from reality and impeding social or professional integration. The young marihuana smokers who smoke one or two cigarets a day have a tendency to become apathetic, to lose their efficiency, and to elude the difficulties of their daily life. They can no longer plan for the future; they give up concentration on their studies and the achievement of athletic or academic performances. These young people become introverts, care only for the present moment, lose all ambition, and have a tendency to express childish desires where magical thinking plays a prevailing part. For some predisposed young people, intoxication by cannabis represents the first step toward usage of more potent drugs. Indeed, all of the recent surveys on the use of cannabis among young people of England and the United States have established a statistical relationship between marihuana and the use of other drugs—legal and illegal.[74,76–78] The frequent combination, among American adolescents of high school and college age, of cannabis with other psychotropic drugs, has led some psychiatrists to suggest that cannabis might be the first step toward heroin addiction in the western drug subculture of today.[2,79,80] These authors suggest that the addict's personality, which is the result of a constellation of genetic, familial, and social factors, will be revealed and released by the use of cannabis.

Such an orientation toward addiction to opiates amphetamines, or LSD is all the more likely since the subject who yields to it is an adolescent, at a time when his psychological, social, and moral defenses are particularly vulnerable. In fact, today in modern societies one becomes an addict between fourteen and sixteen, and one is an inveterate addict between seventeen and eighteen.

It is most likely that if cannabis was made easily available to sixteen-year-old adolescents, as advocated by some, or to eighteen-year-olds, as suggested by a recent United States work force, it might draw a significant number of young people into addiction and make others drift into individual lethargy and social stagnation. Sociologic improvements for the adolescent culture, rather than pharmacologic reliefs, are called for on the part of our society and its responsible leaders. The overwhelming evidence at our disposal indicates that when cannabis (or any other psychotropic drug) is easily available, it is abused on a large scale. This abuse will lead, in turn, to behavioral disorders harmful to the individual and to society. There is no available evidence indicating that American society would be immune from cannabis abuse on a very wide scale should this drug become readily available. There is no compelling medical or social reason to rescind the national and international legislations which outlaw the use of cannabis. This does not preclude the introduction in the United States of more humane legislation for the control of cannabis abuse.

Summary

The derivatives of Cannabis sativa, such as marihuana and hashish, owe their intoxicating properties to isomers of delta tetrahydrocannabinol (Δ-THC), mainly Δ-9-tetrahydrocannabinol. The concentration of this toxic substance varies according to the plant from 0.02 to 6 per cent. This explains the wide variety of effects which have been reported in man. Delta-9-tetrahydrocannabinol has many pharmacologic properties (autonomic, cardiovascular, endocrine, centrally acting) which are common to stimulants, sedatives, tranquilizers, narcotics, and hallucinogens. It induces tolerance in experimental animals. In man, following a single tracer dose, Δ-9-tetrahydrocannabinol and its metabolites persist in plasma for more than three days and require eight days to be eliminated in urine and feces from the body. The prolonged retention of Δ-9-tetrahydrocannabinol and its metabolites in tissues, including brain and lung, is not inconsistent with the pathologic condition reported among chronic users, which includes mental and physical deterioration and psychosis, conjunctivitis, bronchitis, enteritis, and arteritis. Acute intoxication with an effective dose (5 to 10 mg. of Δ-9-tetrahydrocannabinol) tends to disintegrate mental function and produce a distortion of judgment and memory along with lower performance and impairment in evaluating the reality situation. In some instances acute psychotic reactions have been reported. For some adolescents, intoxication by cannabis represents the first step towards use of more potent drugs including heroin. Cannabis effects depend on the dose of Δ-9-tetrahydrocannabinol, the frequency of administration, individual characteristics, and environmental factors. Reports from areas of chronic cannabis intoxication indicate an increased morbidity, individual apathy, and social stagnation. Countries where cannabis has been used for centuries, which are afflicted with both underdevelopment in all areas and major health problems, are exerting concerted efforts today to ban the use of this drug through national and international measures fully endorsed by the United Nations. Repeal of the present legislation and unilateral abrogation by the United States of the international convention which outlaws the use of this compound lacks medical and social justification. The legalization of the use of cannabis would further compound the major drug abuse problem which presently besets American society. This does not preclude the introduction in the United States of more humane legislation for the control of cannabis abuse.

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Necrology

Charles Everett Farr, M.D., of New York City, retired, died on February 20 at the age of ninety-six. Dr. Farr graduated in 1903 from Yale University School of Medicine. He was a consulting surgeon at The New York Hospital. At ninety he retired as emeritus clinical professor of surgery at Cornell University Medical College and emeritus attending surgeon at The New York Hospital. A founding member of the New York City Cancer Committee (and former director), Dr. Farr was a Diplomate of the American Board of Surgery (and a founder), a Fellow of the American College of Surgeons, and a member of the James Ewing Society, the New York Academy of Medicine, the New York Surgical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralston Rainey Fillmore, M.D., of Brooklyn, died on February 7 at the age of forty-four. Dr. Fillmore graduated in 1963 from Albany Medical College. He was a clinical assistant attending physician at St. Vincent's Hospital and Medical Center of New York. Dr. Fillmore was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Thomas Hugh Gleeson, M.D., of New York City, died on February 8 at the age of seventy. Dr. Gleeson graduated in 1928 from the University of Toronto Faculty of Medicine.

Joseph Charles Miceli, M.D., of Woodhaven, died on February 19 at the age of seventy. Dr. Miceli graduated in 1925 from Long Island College Hospital. He was an attending otolaryngologic surgeon and bronchoscopist and esophagologist at Lutheran Hospital, Brooklyn. Dr. Miceli was a Diplomate of the American Board of Otolaryngology, a Fellow of the International College of Surgeons, and a member of the American Academy of Facial Plastic and Reconstructive Surgery, the American Academy of Ophthalmology and Otolaryngology, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

David Dodge Moore, M.D., of Islip, died on February 25 at the age of seventy-two. Dr. Moore graduated in 1925 from Columbia University College of Physicians and Surgeons. He was a consulting physician in internal medicine at Huntington Hospital, an attending physician in internal medicine at Central Islip State Hospital, and an attending physician on the medical staff at Southside Hospital, Bay Shore. Dr. Moore was a member of the New York Academy of Medicine, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Israel Newman, M.D., of Laurelton, died on February 12 at the age of seventy-four. Dr. Newman graduated in 1920 from University and Bellevue Hospital Medical College. He was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Edmund Henry Parizot, M.D., of Pearl River, died on February 22 at the age of seventy-nine. Dr. Parizot graduated in 1914 from Long Island College Hospital. He was a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene Rasko, M.D., of New York City, died on February 17 at the age of sixty-eight. Dr. Rasko received his medical degree from the University of Pecs in 1928. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bert Rosenberg, M.D., of Jackson Heights, died on February 16 at the age of thirty-seven. Dr. Rosenberg graduated in 1960 from State University of New York Downstate Medical Center College of Medicine. He was a member of the American Psychiatric Association, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Max Schatzberg, M.D., of The Bronx, died on February 25 at the age of sixty-one. Dr. Schatzberg received his medical degree from the University of Lausanne in 1940. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Armin Seibert, Jr., M.D., of Little Neck, died on February 12 at the age of forty-six. Dr. Seibert graduated in 1948 from Columbia University College of Physicians and Surgeons. He was an associate attending anesthesiologist at North Shore Hospital, Manhasset. Dr. Seibert was a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Howard Setleis, M.D., of Brooklyn, died in February at the age of forty-two. Dr. Setleis graduated in 1954 from State University of New York College of Medicine, Brooklyn. Dr. Setleis was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Parker Cornelius Thompson, M.D., of Brooklyn, died on July 10, 1971. Dr. Thompson graduated in 1931 from Long Island College of Medicine. He was an assistant attending surgeon at Lutheran Medical Center.

Frank Landale Tucker, M.D., of Brooklyn, died on January 30 at the age of seventy-seven. Dr. Tucker graduated in 1921 from the University of Vermont College of Medicine. He was a senior attending surgeon at Brooklyn Eye and Ear Hospital. Dr. Tucker was a Diplomate at the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Philip Weissman, M.D., of New York City, died on February 27 at the age of sixty-one. Dr. Weissman graduated in 1935 from New York Homeopathic Medical College and Flower Hospital. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the American Psychoanalytic Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Officers/County Medical Societies/1971–July 1, 1972

TOTAL MEMBERSHIP AS OF DECEMBER 31, 1971—27,032

County	*President*		*Secretary*		*Treasurer*	
Albany	Joseph T. Doyle	Albany	Ernest A. Kopp	Albany	Rudolph R. Del Giacco	Albany
Allegany	George Taylor	Cuba	Irwin Felsen	Wellsville	Kurt Zinner	Wellsville
Bronx	Joseph C. Polifrone	Bronx	John P. Albanese	Bronx	Alvin D. Yasuna	Bronx
Broome	Francis J. Gilroy	Binghamton	George Sandiford	Binghamton	Peter P. Zayac, Jr.	Binghamton
Cattaraugus	Paul Sum	Salamanca	William C. MacFarland	Olean	Andrew Klaczynski	Olean
Cayuga	Frank T. Moran	Auburn	William A. Ventimiglia	Auburn	F. Donald Hoffman	Auburn
Chautauqua	William E. Chalecke	Jamestown	Lewis F. Kibler	Jamestown	John R. Forbes	Dunkirk
Chemung	Raymond H. Stoddard	Elmira	Robert H. Huddle	Elmira	William K. Nowill	Elmira
Chenango	Robert D. Stone	Norwich	Hugh D. Black	Oxford	Norman C. Lyster	Norwich
Clinton	Daniel Webster	Plattsburgh	H. Freedman	Plattsburgh	Jack Heins	Plattsburgh
Columbia	Lewis A. Jarett	Hudson	Joseph Bellamy	Hudson	Joseph Bellamy	Hudson
Cortland	George G. Mauler	Cortland	David Farber	Cortland	Raymond D. Olson	Cortland
Delaware	Thomas E. Lavell, Jr.	Walton	Yong-Min Chi	Delhi	Yong-Min Chi	Delhi
Dutchess	Martin Koloski	Poughkeepsie	Marvin Goldstein	Poughkeepsie	Paul Garell	Beacon
Erie	Anthony P. Santomauro	Tonawanda	Frank J. Bolgan	Buffalo	Frank J. Bolgan	Buffalo
Essex	Virginia D. Weeks	Lake Placid	E. A. Munyan	Lake Placid	E. A. Munyan	Lake Placid
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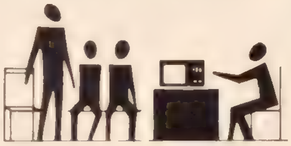

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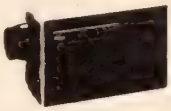

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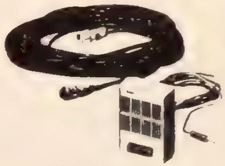

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NEW YORK CITY AREA

FRIDAY, APRIL 14

8:30 p.m.

American Hungarian Medical Association
2 East 103rd Street

1. **Experience with Dialysis**
   ERVIN A. GOMBOS, M.D.
   N.Y.U. School of Medicine
2. **Clinical Controversies in the Treatment of Shock—Including Shock Due to Coronary Occlusion**
   JACK H. BLOCH, M.D.
   Cornell University Medical College

April 16 and 17, 1972

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Coney Island Hospital Auditorium
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Registration will be Sunday at 8:00 a.m. in Room 2W1

SUNDAY, APRIL 16

9:30 a.m. Registration

The Jewish Hospital and Medical Center
555 Prospect Avenue
Brooklyn

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Program Committee
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April 17, 1972 / April 20, 1972

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Postgraduate Course

DISEASES OF THE HEART AND LUNGS IN INFANTS AND CHILDREN

Guest Faculty:
HERBERT L. ABRAMS, M.D., Harvard Medical School
DAVID H. BAKER, M.D., Columbia University
WALTER E. BERDON, M.D., Columbia University
LARRY P. ELLIOTT, M.D., University of Florida
KENT ELLIS, M.D., Columbia University
LEONARD M. FREEMAN, M.D., Einstein Medical College
SYDNEY S. GELLIS, M.D., Tufts University
HAROLD GOLDMAN, M.D., Einstein Medical College
HERMAN GROSSMAN, M.D., Duke University Medical School
JOHN A. KIRKPATRICK, M.D., Temple University School of Medicine
EDWARD B. SINGLETON, M.D., Baylor University

FEE: $175 (includes lunches)
$100 for Residents and Fellows

Write: JOHN A. EVANS, M.D., Department of Radiology, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.

April 17 / 24, 1972

3:30 p.m., Mondays

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

April 17
Myeloproliferative Disorders
HARRIET S. GILBERT, M.D.

April 24
Hypomagnesemic and Hypocalcemic Tetany
SOLOMON A. BERSON, M.D.

All Speakers are from Mount Sinai School of Medicine

April 18 and 25, 1972

8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Family Practice Section
Continuing Medical Education

April 18
Evaluation of Kidney Function—Azotemia and Proteinuria
JOSEPH McGINN, M.D.

April 25
Oral Manifestations of Systemic Disease
WILLIAM LAVORI, M.D.

April 18 and 25, 1972

8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

April 18
Peripheral Vascular Diseases
E. PERCHUK, M.D.

April 25
Review Highlights of Previous Lectures
GEORGE POLLACK, M.D.

April 18 and 25, 1972

9:00 a.m., Tuesdays

Queens Hospital Center Division of Pulmonary Medicine
Triboro Hospital
9th floor Auditorium
Parsons Blvd. and 82nd Drive
Queens

April 18
Fatal Type III Pneumococcal Pneumonia

Presenting as a "Pseudo Friedlander" Pneumonia
M. BRUMER, M.D.

April 25
Menstrual Hemoptysis with Pneumothorax—Rare Complications of Endometriosis
N. AMER, M.D.

April 18 and 25, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building, 4th Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Conferences

April 18
Slow Virus Infection
DONALD H. HARTER, M.D.
Columbia University P & S

April 25 at 11:00 a.m., Coney Island Hospital

Clinical Pathological Conference
KURT GERSTMANN, M.D.
Downstate Medical Center

April 18 and 25, 1972
12:00 Noon–3:00 p.m., Tuesdays

Maimonides Medical Center
Anesthesiology Department
4802 Tenth Avenue
Brooklyn

An Introduction to

BIRD RESPIRATORY THERAPY

1. **Bird Respirator Basic Construction, Application and Trouble Shooting**
2. **Respiratory Intensive Care Management and Case Discussions**

Faculty: PHILIP H. SECHZER, M.D., MARTIN S. BERNSTEIN, M.D., ELLEN KRASNOFF, ARIT, AAS, HERBERT M. SCHUB, M.D.

Advance registration required $10

TUESDAY, APRIL 18

8:00 p.m.

Psychoanalytic Clinic for Training and Research
Columbia University P & S
2 East 103rd Street

6th Annual John B. Turner Lecture

THE CACAPHONY OF HUMAN RELATIONS

LEO RANGELL, M.D.
Los Angeles, California

April 19 and 20, 1972

Columbia University School of Public Health and Administrative Medicine
21 Audubon Avenue

REFRESHER COURSE IN NURSING HOME ADMINISTRATION

FEE: $50

Apply: Program of Continuation Education, above address. Tel. (212) 568-4334.

April 19 and 26, 1972
11:00 a.m.–12:30 p.m., Wednesdays

Mental Retardation Institute
Seventh Floor Auditorium
105 East 106th Street

April 19
The Hyperactive Child
HARRY BAKWIN, M.D.
N.Y.U. School of Medicine

April 26
Metabolic Disorders in Mental Retardation
SELMA E. SNYDERMAN, M.D.
N.Y.U. Medical Center

WEDNESDAY, APRIL 19

11:00 a.m.

Jewish Memorial Hospital
Broadway and 196th Street

Pediatrics Conference

NUTRITIONAL STATUS OF MOTHERS AND CHILDREN IN EAST HARLEM

EDWARD WASSERMAN, M.D.
New York Medical College

4:00–5:30 p.m.

Westchester Square Hospital
Conference Room
1625 St. Peters Avenue
Bronx

RADIOLOGIC AND RADIOISOTOPE DIAGNOSIS OF PULMONARY EMBOLISM

LEONARD FREEMAN, M.D.
Albert Einstein College of Medicine

NO FEE AAGP CREDIT

April 20 / 22, 1972
9:00 a.m.–5:00 p.m., Thursday and Friday
9:00 a.m.–1:00 p.m., Saturday

Columbia University P & S
Columbia-Presbyterian Medical Center
630 West 168th Street

OPHTHALMOLOGICAL RADIOLOGY

G. D. POTTER, M.D., and Associates

FEE: $100

THURSDAY, APRIL 20

The City of New York Department of Health
Bureau for Handicapped Children
2 East 103rd Street

AN ALL DAY WORKSHOP ON CLEFT PALATE REHABILITATION

(The Morning Program will consist of reports from the various cleft palate centers in New York City and close with a special talk by RICHARD STARK, M.D., Director, Cleft Palate Clinic, St. Luke's Hospital Center. Following lunch, workshops are scheduled in each specialized area of cleft palate rehabilitation.

April 20 and 27, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
2nd Floor Conference Room
757 Bushwick Avenue
Brooklyn

April 20
Medical Staff Quarterly

April 27
Mortality Conference
SOL GLOTZER, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

THURSDAY, APRIL 20

8:00 p.m.

The Harvey Society
The Rockefeller University
Caspary Hall
York Avenue and 66th Street

CURRENT ENIGMAS IN CANCER RESEARCH

LLOYD J. OLD, M.D.
Sloan Kettering Institute for Cancer Research

FRIDAY, APRIL 21

8:00–9:30 a.m.

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

GENERAL PEDIATRIC PROBLEMS

Moderator:
OSCAR SCHWARTZ, M.D.

Panelists:
HOWARD A. JOOS, M.D.
NATHAN RUDOLPH, M.D.
BERTRAM D. COHN, M.D.
Downstate Medical Center

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

PRESENT STATUS OF COMPUTER ECG AND VCG ANALYSIS

LEON PORDY, M.D., the Members
of Mount Sinai Faculty and
Guest Lecturers

FEE: $35

April 21 / 25, 1972
9:00 a.m.–5:00 p.m., Friday–Tuesday

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

CELL PATHOLOGY AND SYSTEMIC NUCLEAR MALIGNANCY ASSOCIATED CHANGES (MAC) IN TISSUES AND SMEARS

HERBERT E. NIEBURGS, M.D. and Faculty

FEE: $200

FRIDAY, APRIL 21

10:30–11:30 a.m.

Wyckoff Heights Hospital
372 Stockholm Street
Brooklyn

GLOMERULONEPHRITIS AND ITS MIMICS

DONALD GRIBETZ, M.D.
Albert Einstein College of Medicine

MONDAY, APRIL 24

1:00 p.m.

Downstate Medical Center
4th Floor Lecture Hall, Basic Science Building
450 Clarkson Avenue
Brooklyn

R. Janet Watson Hematology Lecture

THE SYNTHESIS OF FETAL AND ADULT HEMOGLOBINS

THOMAS G. GABUZDA, M.D.
Jefferson Medical College, Philadelphia

8:00 p.m.

New York Heart Association
Heart House—2nd Floor Conference Room
2 East 64th Street

SURGICAL TREATMENT OF EXTRACRANIAL ARTERIAL OCCLUSIVE DISEASE—RECENT DEVELOPMENTS

ANTHONY M. IMPARATO, M.D., Moderator
N.Y.U. Medical Center

1. **Introduction to Surgery for Cerebrovascular Insufficiency**
   ANTHONY M. IMPARATO, M.D.
2. **Vascular Anatomy and Physiology of the Brain**
   HARRY A. KAPLAN, M.D.
   College of Medicine of New Jersey at Newark
3. **Radiology of Cerebrovascular Disease**
   NORMAN E. CHASE, M.D.
   N.Y.U. School of Medicine
4. **Surgical Treatment of Cerebrovascular Disease**
   CONSTANTIN D. PAPADOPOULOS, M.D.
   Cumberland Hospital, Brooklyn
5. **Summary and Discussion**

8:00 p.m.

The New York Academy of Medicine
Section on Ophthalmology
2 East 103rd Street

1. **Role of Interferon During Acute Viral Infections**
   SAMUEL BARON, M.D.
   National Institute of Allergy
   and Infectious Diseases
2. **Interferon Inducers in the Management of Herpes Simplex Kerato-Conjunctivitis**
   BERNARD KRONENBERG, M.D.
   New York Eye and Ear Infirmary
3. **Corneal Transplantation in Alkali Burns, Infant Corneas and Diffuse Corneal Edema**
   STUART I. BROWN, M.D.
   New York Hospital
4. **A Clinical Report on Tissue Adhesives**
   FRANK B. HOEFLE, M.D.
   New York Eye and Ear Infirmary
   Edward S. Harkness Eye Institute

TUESDAY, APRIL 25

9:00 a.m.

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

ALCOHOLIC CARDIOMYOPATHY

GEORGE BEAR, M.D.
N.Y.U. Medical Center

April 26 / 28, 1972

Brooklyn Eye and Ear Hospital
29 Greene Avenue
Brooklyn

3-Day Intensive Course in

OPHTHALMIC PLASTIC SURGERY

Conducted by
MARTIN BODIAN, M.D.

Invited Guest Speakers Include:
A. HARRIS, M. OBEAR, A. B. RIZZUTI, M.D.'s
and MR. H. GOUGELMAN (ocularist)

FEE: $125

Please contact MR. VERNON DRESSLER, Adm., above address.

WEDNESDAY, APRIL 26

Noon

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

Research Pediatric Seminar

ACTH CONTROL OF ADRENAL STEROIDOGENESIS AND RNA SYNTHESIS

SALVADOR CASTELLS, M.D.

2:00 p.m.

Terrace Heights Hospital
Auditorium
87-37 Palermo Street
Hollis (Queens)

One-Day Postgraduate Symposium

DRUG THERAPY IN RENAL DISEASE

JOSEPH LETTERI, M.D.
Nassau County Medical Center

NO FEE

8:30 p.m.

Association for the Advancement of Psychoanalysis
Karen Horney Clinic Building
329 East 62nd Street

CURRENT STATUS OF THE TREATMENT OF HOMOSEXUALITY: A PANEL

HARRY GERSHMAN, M.D.
American Institute for Psychoanalysis
LAWRENCE J. HATTERER, M.D.
Cornell University Medical College
CHARLES W. SOCARIDES, M.D.
Albert Einstein College of Medicine

FUTURE EVENTS

MONDAY, MAY 1

7:00 p.m.

The New York Society for Clinical Ophthalmology
2 East 103rd Street

1. **Plastic Surgery (Instruction)**
   VIRGINIA LUBKIN, M.D.
2. **Symposium: Angle Closure Glaucoma**

   Moderator: RALPH Z. LEVENE, M.D., New York

   Panelists: MILES A. GALIN, M.D., New York
   MAX FORBES, M.D., New York
   IRVIN P. POLLACK, M.D., Baltimore, Md.
   ANDREW de ROETTH, M.D., New York
   BERNARD SCHWARTZ, M.D., Boston, Mass.

TUESDAY, MAY 2

4:30 p.m.

"Diabetes Today"
Diabetes Center, New York Medical College
Cohn Research Building—Room R 114
Madison Avenue and 106th Street

STUDIES ON EXPERIMENTAL DIABETES AND SUBDIABETES

BRUNO VOLK, M.D.
Isaac Albert Research Institute

THURSDAY, MAY 4

5:00 p.m.

***The Parkinson's Disease Foundation**
Alumni Auditorium
Columbia University P & S
630 West 168th Street

CEREBRO-CEREBELLAR INTERACTION IN THE CONTROL OF MOVEMENT

SIR JOHN ECCLES, Nobel Laureate

*Third Annual James Parkinson Lecture

May 1 / 3, 1972
9:00 a.m.–3:00 p.m.

Brooklyn Eye and Ear Hospital Glaucoma Center
29 Greene Avenue
Brooklyn

20th ANNUAL GLAUCOMA SEMINAR

Under the direction of
A. S. ROSENBERG, M.D.

FEE: $150 (limited to six Ophthalmologists)

For information, contact Mr. Vernon E. Dressler, Adm., above address.

May 1 / 5, 1972
9:00 a.m.–5:00 p.m., Monday / Friday

Department of Radiology of the Long Island Jewish-Hillside Medical Center
Queens Hospital Center Affiliation
Clinical Campus of the Health Sciences Center
of the State University of New York at Stony Brook
82-68 164th Street
Jamaica

REFRESHER COURSE FOR RESIDENTS IN RADIATION THERAPY AND PHYSICS

Program Chairmen
JAMES H. DAVENPORT, M.D.
GERALD SHAPIRO, M.S.

FEE: $100

Apply: JAN J. SMULEWICZ, M.D., Dir., above address

June 1 / July 15, 1972
9:00 a.m.–4:00 p.m., Daily

French and Polyclinic Medical School and Health Center
345 West 50th Street

CLINICAL MEDICINE CURRICULUM

The course provides formal instruction in Medicine, Surgery, Pediatrics, Obstetrics-Gynecology and other specialties. The course content is based on the subject outline suggested by the Educational Council for Foreign Medical Graduates and is primarily intended for candidates for ECFMG, State Board and FLEX examinations.

Application must be made prior to May 15, 1972.
Write: The Dean, at the above address.

BROOME COUNTY

April 20 and 27, 1972
11:00 a.m., Thursdays

Charles S. Wilson Hospital
Redwood Room
Johnson City

Basic Science Seminars

April 20
Chronic Active Hepatitis
ROBERT A. LEVINE, M.D.

April 27
Granulomatous Disease of the Bowel
ROBERT A. LEVINE, M.D.

Conducted by the Upstate Medical Center, State University of New York at Syracuse

Medical Grand Rounds will be held at 10:00 a.m., preceding each of the above sessions. Approved for Category 1 Credit by AAGP.

BUFFALO AREA

State University of New York at Buffalo
2211 Main Street
Buffalo, N.Y. 14214
Tel (716) 831-5526

SCHEDULE FOR SPRING, 1972

April 13 and 14
Highlights of Current Problems of Clinical Anesthesia and Intensive Care

May 4 and 5
Surgical Aspects of Gastroenterology

May 17
Pediatric Cardiology

May 19
Community Psychiatry in the General Hospital

June 5 / 9
Refresher Seminar in Pediatrics

August
School Health

April 20 and 27, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

April 20
- **Auscultation—The S4**
  - **Summation Gallops**
  - **Quadruple Rhythm**
  - **Differentiation From Split S1**
  - **Relationship Between Severity of Lesion and Timing and Amplitude of S4**
- **Case Presentations**

April 27
- **Auscultation—The S1**
  - **The Components of S1 and Their Mechanisms**
  - **S4 + S1 as a Cause of a Split First Sound**
  - **The Loudness of S1**
- **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

May 4 and 5, 1972
8:15 a.m. Registration, Thursday

School of Medicine, State University of New York at Buffalo, Department of Surgery
The Parkway Ramada Inn
Niagara Falls

SURGICAL ASPECTS OF GASTROENTEROLOGY

FEE: $60

Apply: Continuing Medical Education, Main Street Division, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

CATSKILL MOUNTAIN AREA

May 9 / 11, 1972

New York State Academy of Family Physicians
Concord Hotel
Kiamesha Lake

24th ANNUAL SCIENTIFIC ASSEMBLY

NOTE: The program consists of a full day on all aspects of the narcotics problem, one-half day on ob/gyn and one-half day on pediatrics. Breakfast conferences are planned on hypertension, urology, arthritis and auto transfusion. A Workshop on Family Practice will be held with the directors of the Family Practice Departments participating in this workshop.

Write: Lawrence F. Kennedy, Ex. Dir., New York State Academy of Family Physicians, 84 Main Street, Binghamton, N.Y. 13905. Tel. (607) 722-2132.

NASSAU COUNTY

April 19 and 26, 1972
4:00 p.m., Wednesdays

Nassau County Medical Center
Meadowbrook Hospital
Radiology Department Classroom
East Meadow

NEOPLASTIC DISEASE OF THE COLON, BENIGN AND MALIGNANT

HAROLD CHIAT, M.D.
Nassau Hospital

April 20 and 27, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
2201 Hempstead Turnpike
East Meadow

April 20
Developmental Enzymology Application in Clinical Neonatology
NATHAN RUDOLPH, M.D.
Downstate Medical Center

April 27
Pediatric Mortality Conference

April 21 / April 23, 1972

American Association Medical Assistants New York State Society
Kings Grant Motel
Plainview

13th ANNUAL CONVENTION

For advance registration, contact BEVERLY CAINE, 61 Ellensue Drive, Deer Park, N.Y. 11729 or MAE SHERIDAN, 8 Barbara Court, Greenlawn, N.Y. 11740.

WEDNESDAY, MAY 3

1:00 p.m.

Long Beach Memorial Hospital
El Patio Beach Club
Atlantic Beach

ANNUAL TEACHING DAY

1. **Use of Antibiotics in Ambulatory Prophylaxis**
MARK LEPPER, M.D.
Rush Medical College, Chicago

2. **Pharmacology and Clinical Use of the Penicillins and Cephalosporins**
WILLIAM M. M. KIRBY, M.D.
University of Washington School of Medicine, Kansas

4. **Gram-Negative Septicemia**
VINCENT ANDRIOLE, M.D.
Yale University School of Medicine, Conn.

NO FEE CREDIT: Four hours AAGP applied for

Co-sponsors: South Shore Hospital and Peninsula General Hospital, Far Rockaway.

SYRACUSE AREA

THURSDAY, APRIL 20

1:00–4:00 p.m.

St. Joseph's Hospital Health Center and SUNY Upstate Medical Center
Gotham Inn—Exit 35
New York State Thruway
Syracuse

Dept. Family Practice

RADIATION THERAPY

ROBERT SAGERMAN, M.D.
Upstate Medical Center

NO FEE CREDIT: 3 hours Prescribed AAFP

WESTCHESTER COUNTY

TUESDAY, APRIL 21

4:00 p.m.

Grasslands Hospital
Conference Room E—Eastview Hall
Valhalla

RENAL TRANSPLANTATION AND PREGNANCY

IRWIN MERKATZ, M.D.
Cornell University Medical College

PHYSICIANS' PLACEMENT OPPORTUNITIES

NORWICH, N.Y., Chenango County, needs a good internist Board Eligible/Certified, for private practice with guaranteed income or part hospital based. The need is urgent.

CONTACT: THOMAS M. FLANAGAN, M.D., Chenango Memorial Hospital, Norwich, N.Y. 13815. Tels. (607) 334-4527 (Office) 4423 (Home).

BROOKLYN, N.Y., Kings County. Psychiatrist, half time, in outpatient facility within general hospital setting, experience working with children. Opportunities for private practice referrals from pediatric staff.

CONTACT: GERALD M. BLUM, M.D., Chief, Div. of Pediatric Psychiatry; Jewish Hospital and Medical Center of Brooklyn, 555 Prospect Place, Brooklyn, N.Y. 11238. Tel. (212) 240-1701.

PATCHOGUE, Suffolk County (Long Island). Associate in Family Practice.

CONTACT: M. G. JACOBY, M.D., 152 North Ocean Avenue, Patchogue, L.I., N.Y. 11774. Tel. (516) AT 9-1320.

SODUS, N.Y., Wayne County. Ob/Gyn and Pediatrician.

CONTACT: JOHN R. COOPER, M.D., Procurement Chairman, Wayne Community Hospital Foundation, Sodus, N.Y. 14551. Tel. (315) 483-9161. Ext. 30.

EVENTS RECEIVED AFTER DEADLINE

March 27 / May 22, 1972
4:00–5:00 p.m., Mondays

American Cancer Society, Broome County Unit R.M.P. Southern Subregional Health Continuing Education Cooperative
Our Lady of Lourdes Memorial Hospital
Lecture Hall
Binghamton

Lectures will be given by ANDREW ADAMS, M.D., Chief of Radiology Department, as well as the following guest lecturers:

March 27
Drug Reactions in Chemotherapy—Treatment
ARTHUR S. LEVY or EDWARD D. MILLER, M.D.'s

April 10
Nursing Care of the Cancer Patient
General Nursing Care
Rehabilitations of the Cancer Patient

April 24
Colostomy and Its Care
Stoma Clinic at Lourdes
MISS JEAN LAUX
Mastectomy, Laryngectomy Clubs

May 8
The Dentist and Cancer
DAVID PAYNE, D.D.S.

May 22
Genetic Effects of Radiations

CREDIT: 1 hour for each program AAGP

April 19 / 22, 1972

Department of Orthopaedics
Hospital for Joint Diseases

A SYMPOSIUM ON SURGERY OF THE HAND

Honoring
R. GUY PULVERTAFT, F.R.C.S.

For any additional information, please contact:
Mrs. Judy Birnkrant, Department of Orthopaedics, Hospital for Joint Diseases, 1919 Madison Avenue, New York, N.Y. 10035, (TRafalgar 6-7000, ext. 515).

April 26 and 27, 1972
8:30 a.m.–5:00 p.m., Wednesday and Thursday

Cornell University Medical College
1300 York Avenue
Auditorium

SYMPOSIUM ON ANALGESICS

Chairman
ALAN VAN POZNAK, M.D.

Write for Program: Dr. Poznak, above address

NO FEE

Made possible by a grant from Sterling Drug, Inc.

Trobicin®

sterile spectinomycin dihydrochloride pentahydrate, Upjohn

single-dose intramuscular treatment

High cure rate:* 96% of 571 males, 95% of 294 females
(Dosages, sites of infection, and criteria for diagnosis and cure are defined below.)**

Assurance of a single-dose, physician-controlled treatment schedule

No allergic reactions occurred in patients with an alleged history of penicillin sensitivity when treated with Trobicin, although penicillin antibody studies were not performed

Active against most strains of Neisseria gonorrhoeae in vitro (M.I.C. 7.5-20 mcg/ml)

A single two-gram injection produces peak serum concentrations averaging about 100 mcg/ml in one hour (average serum concentrations of 15 mcg/ml present 8 hours after dosing)

Note: Antibiotics used in high doses for short periods of time to treat gonorrhea may mask or delay the symptoms of incubating syphilis. Since the treatment of syphilis demands prolonged therapy with any effective antibiotic, and since Trobicin is not indicated in the treatment of syphilis, patients being treated for gonorrhea should be closely observed clinically. Monthly serological follow-up for at least 3 months should be instituted if the diagnosis of syphilis is suspected. Trobicin is contraindicated in patients previously found hypersensitive to it.

---

*Data compiled from reports of 14 investigators. **Diagnosis was confirmed by cultural identification of *N. gonorrhoeae* on Thayer-Martin media in all patients. Criteria for cure: negative culture after at least 2 days post-treatment in males and at least 7 days post-treatment in females. Any positive culture obtained post-treatment was considered evidence of treatment failure even though the follow-up period might have been less than the periods cited above under "criteria for cure" except when the investigator determined that reinfection through additional sexual contacts was likely. Such cases were judged to be reinfections rather than relapses or failures. These cases were regarded as non-evaluatable and were not included. JA72 1848-6

globin, hematocrit and creatinine clearance; elevation of alkaline phosphatase, BUN and SGPT. In single and multiple-dose studies in normal volunteers, a reduction in urine output was noted. Extensive renal function studies demonstrated no consistent changes indicative of renal toxicity.

Dosage and administration: Keep at 25°C and use within 24 hours after reconstitution with diluent.
Male—single 2 gram dose (5 ml) intramuscularly. Patients with gonorrheal proctitis and patients being re-treated after failure of previous antibiotic therapy should receive 4 grams (10 ml). In geographic areas where antibiotic resistance is known to be prevalent, initial treatment with 4 grams (10 ml) intramuscularly is preferred.
Female—single 4 gram dose (10 ml) intramuscularly.

How supplied: *Vials, 2 and 4 grams—with ampoule of Bacteriostatic Water for Injection with Benzyl Alcohol 0.9% w/v.* Reconstitution yields 5 and 10 ml respectively with a concentration of spectinomycin dihydrochloride pentahydrate equivalent to 400 mg spectinomycin per ml. For intramuscular use only.
Susceptibility Powder—for testing *in vitro* susceptibility of *N. gonorrhoeae.*

Human pharmacology: Rapidly absorbed after intramuscular injection. A two-gram injection produces peak serum concentrations averaging about 100 mcg/ml at one hour with 15 mcg/ml at 8 hours. A four-gram injection produces peak serum concentrations averaging 160 mcg/ml at two hours with 31 mcg/ml at 8 hours.

For additional product information, see your Upjohn representative or consult the package insert. MED-B-1-S (LWB)

Upjohn The Upjohn Company, Kalamazoo, Michigan 49001

When irritable colon feels like this

…in the presence of spasm or hypermotility, gas distension and discomfort, **KINESED**® provides more complete relief:

- ☐ **belladonna alkaloids—for the hyperactive bowel**
- ☐ **simethicone—for accompanying distension and pain due to gas**
- ☐ **phenobarbital—for associated anxiety and tension**

Composition: Each chewable, fruit-flavored, scored tablet contains: 16 mg. phenobarbital (warning: may be habit-forming); 0.1 mg. hyoscyamine sulfate; 0.02 mg. atropine sulfate; 0.007 mg. scopolamine hydrobromide; 40 mg. simethicone.
Contraindications: Hypersensitivity to barbiturates or belladonna alkaloids, glaucoma, advanced renal or hepatic disease.
Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.
Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.
Dosage: Adults: One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms. Children 2 to 12 years: One half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.

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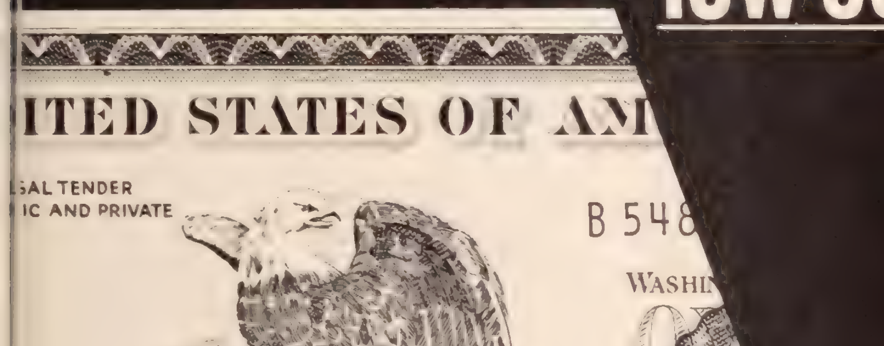
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INDICATIONS. EUTRON (pargyline hydrochloride and methyclothiazide) is indicated in the treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. *It is not recommended for use in patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone.*

Because of the potent diuretic properties of methyclothiazide, the combination is particularly suited for use when congestive heart failure or other conditions requiring diuretic therapy coexist with hypertension, or when edema attributable to antihypertensive therapy develops.

As discussed in regard to dosage and administration, it is desirable to establish the dosage requirements for EUTRON by the administration of Eutonyl and Enduron separately.

CONTRAINDICATIONS. 1. Pargyline therapy is contraindicated in patients with pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure.

2. Pargyline should not be administered to those with malignant hypertension, or to children under twelve years of age because significant clinical information concerning the use of the drug in these conditions is not available.

3. In general, the following drugs or agents are contraindicated in patients receiving pargyline hydrochloride:

a. Centrally acting sympathomimetic amines such as amphetamine and its derivatives (also found in anorectic preparations).

Peripherally acting sympathomimetic drugs such as ephedrine and its derivatives (also found in nasal decongestants, hay fever preparations and cold remedies).

b. Aged and natural cheese (e.g., Cheddar, Camembert, and Stilton), and other foods (e.g., pickled herring, Chianti wine, pods of broad beans, chicken livers, chocolate and yeast products), which require the action of bacteria or molds for their preparation or preservation, because of the presence of pressor substances such as tyramine. Banana peels are also contraindicated. Cream cheese, processed cheese, and cottage cheese can be allowed in the diet during EUTRON therapy, since their tyramine content is inconsequential.

In some patients receiving EUTRON, tyramine may precipitate an abrupt rise in blood pressure accompanied by some or all of the following: severe headache, chest pain, profuse sweating, palpitation, tachycardia or bradycardia, visual disturbances, stertorous breathing, coma, and intracranial bleeding (which could be fatal). A phenothiazine derivative or phentolamine may be administered parenterally for treatment of such an acute hypertensive reaction.

c. Parenteral administration of reserpine or guanethidine may cause hypertensive reactions from sudden release of catecholamines. Parenteral use of these drugs is contraindicated during, and for at least one week following, treatment with EUTRON.

d. Imipramine, amitriptyline, desipramine, nortriptyline, or their analogues should not be used with pargyline. The use of these drugs with monoamine oxidase inhibitors has been reported to cause vascular collapse and hyperthermia which may be fatal. A drug-free interval (about two weeks) should separate therapy with EUTRON and use of these agents.

e. Methyldopa or dopamine, which may cause hyperexcitability in patients receiving pargyline, should not be given.

f. Other monoamine oxidase inhibitors should not be added to a EUTRON regimen since they may augment the effects of pargyline.

4. Methyclothiazide is contraindicated in patients with a known sensitivity to methyclothiazide and/or other thiazide diuretics. It should not be used in patients with severe renal disease (except nephrosis) or complete renal shutdown. Thiazide diuretics should not be used in the presence of severe liver disease and/or impending hepatic coma. Hepatic coma has been reported as a consequence of hypokalemia in patients receiving thiazide diuretics.

WARNINGS

A. PATIENTS

1. PATIENTS SHOULD BE WARNED AGAINST THE USE OF ANY OVER-THE-COUNTER PREPARATIONS, PARTICULARLY "COLD PREPARATIONS" AND ANTIHISTAMINES OR PRESCRIPTION DRUGS WITHOUT THE KNOWLEDGE AND CONSENT OF THE PHYSICIAN.
2. PATIENTS SHOULD BE CAUTIONED ON THE USE OF CHEESE (SEE CONTRAINDICATIONS) AND ALCOHOLIC BEVERAGES IN ANY FORM.
3. PATIENTS SHOULD BE WARNED ABOUT THE LIKELIHOOD OF THE OCCURRENCE OF ORTHOSTATIC HYPOTENSION.
4. PATIENTS SHOULD BE INSTRUCTED TO REPORT PROMPTLY THE OCCURRENCE OF SEVERE HEADACHE OR OTHER UNUSUAL SYMPTOMS.
5. PATIENTS WITH ANGINA PECTORIS OR CORONARY ARTERY DISEASE SHOULD BE ESPECIALLY WARNED NOT TO INCREASE THEIR PHYSICAL ACTIVITIES IN RESPONSE TO A DIMINUTION IN ANGINAL SYMPTOMS OR AN INCREASE IN WELL-BEING OCCURRING DURING TREATMENT WITH EUTRON.

B. PHYSICIANS

1. WHEN INDICATED THE FOLLOWING SHOULD BE CAUTIOUSLY PRESCRIBED IN REDUCED DOSAGES:
   a. ANTIHISTAMINES
   b. HYPNOTICS, SEDATIVES OR TRANQUILIZERS
   c. NARCOTICS (MEPERIDINE SHOULD NOT BE USED)
2. DISCONTINUE EUTRON AT LEAST TWO WEEKS PRIOR TO ELECTIVE SURGERY.
3. IN EMERGENCY SURGERY THE DOSE OF NARCOTICS OR OTHER PREMEDICATIONS SHOULD BE REDUCED TO 1/4 TO 1/5 THE USUAL AMOUNT. CLINICAL EXPERIENCE HAS SHOWN THAT RESPONSE TO ALL ANESTHETIC AGENTS CAN BE EXAGGERATED IN PATIENTS RECEIVING EUTRON. THEREFORE THE DOSE OF THE ANESTHETIC SHOULD BE CAREFULLY ADJUSTED.
4. PARGYLINE HYDROCHLORIDE MAY INDUCE HYPOGLYCEMIA.
5. CARE SHOULD BE EXERCISED IN USING EUTRON IN PATIENTS WITH ADVANCED RENAL FAILURE.

The possibility of sensitivity reactions to methyclothiazide or pargyline should be considered in patients with a history of allergy or bronchial asthma.

There have been several reports published and unpublished, concerning nonspecific small bowel lesions consisting of stenosis with or without ulceration, associated with the administration of enteric-coated thiazides with potassium salts. These lesions may occur with enteric-coated potassium tablets alone or when they are used with nonenteric-coated thiazides, or certain other oral diuretics.

These small bowel lesions have caused obstruction, hemorrhage and perforation. Surgery was frequently required and deaths have occurred.

Available information tends to implicate enteric-coated potassium salts although lesions of this type also occur spontaneously. Therefore, coated potassium-containing formulations should be administered only when adequate dietary supplementation is not practical, and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported for sulfonamide derivatives, including thiazides.

EUTRON does not contain added potassium.

USE IN PREGNANCY

Pargyline Hydrochloride. Safe use of pargyline during pregnancy or lactation has not yet been established. Before prescribing pargyline in pregnancy, in lactation, or in women of childbearing age, the potential benefits of the drug should be weighed against its possible hazard to mother and child.

Methyclothiazide. Thiazides should be used with caution in pregnant women and nursing mothers since they cross the placental barrier and appear in cord blood and in breast milk. The use of thiazides may result in fetal or neonatal jaundice, bone marrow depression and thrombocytopenia, altered carbohydrate metabolism in newborn infants of mothers showing decreased glucose tolerance, and possible other adverse reactions which have occurred in the adult. When the drug is used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus.

PRECAUTIONS

Pargyline Hydrochloride. The therapeutic response to a variety of drugs may be changed, or exaggerated, in patients receiving a monoamine oxidase inhibitor such as pargyline hydrochloride. Caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers and narcotics (meperidine should not be used), should be used cautiously and at reduced dosage in patients who are taking pargyline.

Pargyline has not been shown to damage the kidney or liver. However, laboratory studies including complete blood counts, urinalyses, and liver function tests should be performed periodically. The drug should be used with caution in the presence of liver disease. All patients with impaired circulation to vital organs from any cause including those with angina pectoris, coronary artery disease, and cerebral arteriosclerosis should be closely observed for symptoms of orthostatic hypotension. If hypotension develops in these patients, EUTRON dosage should be reduced or therapy discontinued since severe and/or prolonged hypotension may precipitate cerebral or coronary vessel thromboses.

The hypotensive effect of pargyline may be augmented by febrile illnesses. It may be advisable to withdraw the drug during such diseases.

Since pargyline is excreted primarily in the urine, patients with impaired renal function may experience cumulative drug effects. Such patients should also be watched for elevations of blood urea nitrogen and other evidence of progressive renal failure. If such alterations should persist and progress, the drug should be discontinued.

An increased response to central depressants may be manifested by acute hypotension and increased sedative effect. Pargyline also may augment the hypotensive effects of anesthetic agents and surgery. For this reason, the drug should be discontinued from at least two weeks prior to surgery.

In the event of emergency surgery smaller than usual doses (1/4 to 1/5) of narcotics, analgesics, sedatives, and other premedications should be used. If severe hypotension should occur, this can be controlled by small doses of a vasopressor agent such as levarterenol.

Pargyline therapy should not be used in individuals with hyperactive or hyperexcitable personalities, as some of these patients show an undesirable increase in motor activity with restlessness, confusion, agitation and disorientation. Clinical studies have shown that pargyline may unmask severe psychotic symptoms such as hallucinations or paranoid delusions in some patients with pre-existing serious emotional problems. This can usually be controlled by judicious administration of chlorpromazine intramuscularly, or other phenothiazines, the patient remaining supine for one hour after administration.

Pargyline should be used with caution in patients with Parkinsonism, as it may increase symptoms. In addition, great care is required if pargyline is administered in conjunction with anti-parkinsonian agents.

In experience to date, pargyline has not been associated with eye changes or optic atrophy as reported with the use of some hydrazine monoamine oxidase inhibitors. However, patients receiving this drug for prolonged periods should be examined for any changes in color perception, visual fields, fundi, and visual acuity.

Clinical reports state that certain individuals receiving pargyline for a prolonged period of time are refractory to the nerve-blocking effects of local anesthetics, e.g., lidocaine.

Methyclothiazide. Thiazide therapy should be used with caution in patients with severely impaired renal function because of the possibility of cumulative effects. Caution is also necessary in patients with severely impaired hepatic function or progressive liver disease.

Thiazide drugs may reduce response to levarterenol. Accordingly, the dosage of vasopressor agents may need to be modified in surgical patients who have been receiving thiazide therapy.

Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effect of the drug may be enhanced in the sympathectomized patient.

All patients should be observed for clinical signs of fluid or electrolyte imbalance, including hyponatremia ("low-salt" syndrome). These include thirst, dryness of the mouth, lethargy and drowsiness.

Hypokalemia may occur during therapy with methyclothiazide. In such cases supplemental potassium may be indicated. Potassium depletion can be hazardous in patients taking digitalis. Myocardial sensitivity to digitalis is increased in the presence of reduced serum potassium and signs of digitalis intoxication may be produced by formerly tolerated doses of digitalis. Hypochloremic alkalosis may occur following intensive or prolonged thiazide therapy. Replacement of chloride may be indicated in such cases.

Thiazides may decrease serum P.B.I. levels without signs of thyroid disturbance.

ADVERSE REACTIONS. Generally side effects should not be severe or serious when the recommended dosages are used, and necessary precautions are observed. If side effects are severe or persist in spite of symptomatic treatment, the dosage should be reduced or the drug withdrawn. See also Warnings and Precautions.

Pargyline Hydrochloride. The most frequently occurring side effects are those associated with orthostatic hypotension (dizziness, weakness, palpitation, or fainting). These usually respond to a reduction of dosage. Patients should be warned against rising to a standing position too quickly, especially when getting out of bed. Severe and persistent orthostatic hypotension should be avoided by reduction in dosage and/or discontinuation of therapy.

Mild constipation, fluid retention with or without edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition nightmares, impotence and delayed ejaculation, rash and purpura, have also been encountered. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Gain in weight may be due either to edema or increased appetite. Drug fever is extremely rare. In some patients reduction of blood sugar has been noted. Although the significance of this has not been elucidated, the possibility of hypoglycemic effects should be borne in mind. Congestive heart failure has been reported in patients with reduced cardiac reserve.

Methyclothiazide. Side effects that may accompany thiazide therapy include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesias, weakness, skin rash, photosensitivity. Jaundice and pancreatitis also have been reported.

Blood dyscrasias, including thrombocytopenia with purpura, agranulocytosis and aplastic anemia, have been reported with thiazide drugs.

Thiazides have been reported, on rare occasions, to have elevated serum calcium to hypercalcemic levels. The serum calcium levels have returned to normal when the medication has been stopped. This phenomenon may be related to the ability of the thiazide diuretics to lower the amount of calcium excreted in the urine.

Elevations of blood urea nitrogen, serum uric acid, and blood sugar have occurred with the use of thiazide drugs. Symptomatic gout may be induced.

Although not established as an adverse effect of methyclothiazide, it has been reported that thiazide diuretics may produce a cutaneous vasculitis in elderly patients.

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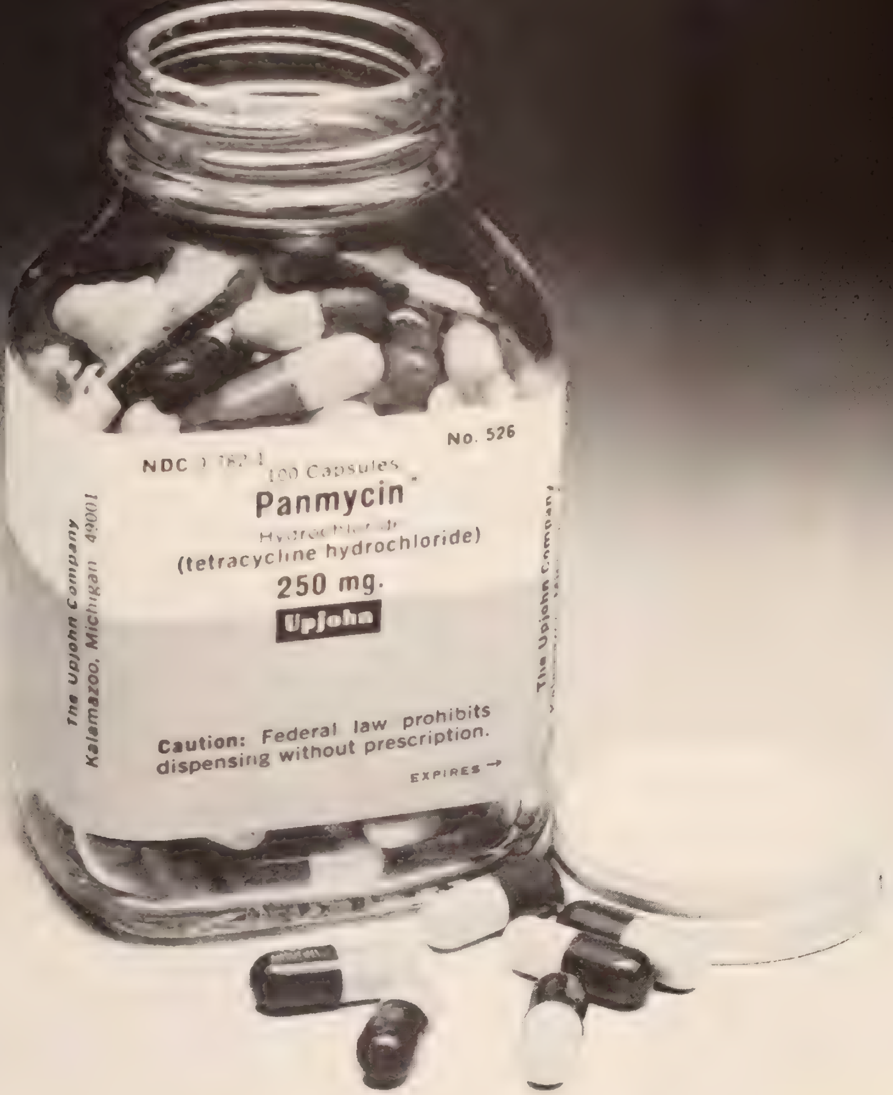
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Month in Washington

The Senate Finance Committee has completed public hearings on the catch-all Social Security amendments bill (H.R. 1) and is expected to approve legislation soon containing important peer review changes in Medicare and Medicaid and a national catastrophic protection plan.

As approved by the House last spring, the bill was much the same as the one that went through the previous congress only to be stalled when there was not time at the end of the session to reconcile differences in the House and Senate versions.

The bill before the committee would:

—Authorize HMO (health maintenance organization) experiments.

—Extend Medicare to disabled Social Security beneficiaries, and authorize experiments with peer review mechanisms.

—Restrict physicians' fee increases to a cost-of-living index.

—Give the Department of Health, Education, and Welfare stronger policing powers over abusers.

—Authorize experiments with prospective payments to institutions.

The committee appears certain to add two major provisions. One would institute a sweeping catastrophic protection plan for all Americans administered by Social Security; the other is the PSRO (professional standards review organization) plan under which groups of physicians including medical societies and foundations would have first opportunity to set up monitoring programs for Medicare and Medicaid in their areas.

In a statement filed with the Senate Finance Committee, the American Medical Association commented on a number of provisions of the proposed legislation. With respect to the catastrophic protection plan, the AMA advised against its adoption, saying: "We believe that catastrophic coverage, to achieve its purpose, must be tied in with adequate basic coverage in order to afford the best range of protection." The Association recommended in its place that the basic and catastrophic provisions of its own Medicredit proposal be adopted by the committee.

The Association supported provisions in H.R. 1 authorizing the secretary to conduct experiments in community-wide peer review programs. It pointed to the many peer review activities presently ongoing, noting that under the experimental authority various programs, including those with PSRO features, could receive necessary broad-scale experimentation. It stressed the need for further research and experimentation, cautioning against the adoption of a single nationwide program.

"If enacted," the AMA said, "PSRO would lock peer review into one single, untested, nationwide program, with unpredictable consequences. On the other hand, many valuable benefits can be gained through appropriate experimentation. H.R. 1 (prior to the PSRO amendment) provides authority to the Secretary of HEW to conduct such experiments in community wide peer review programs, and we believe it would be wise to implement this authority before any single overriding plan is adopted."

With respect to the HMO provision of the bill, the AMA statement noted that under separate legislation "an effort is underway to bring HMO's into existence without evidence of their economic justification or viability without continuing Federal subsidy after being established."

> Before any such program is initiated nationwide and is held out as a realistic benefit available to beneficiaries under the Medicare program, it is our recommendation that cost and utilization data first be developed.
>
> Besides the consideration of whether the HMO provision will in fact result in cost savings to the program, there is the paramount consideration of the health care which will be provided to the beneficiary. We are not alone in expressing serious concern about a program which provides incentives to providers for lower utilization of benefits, and this aspect of the program—underutilization—must be watched very closely so that the beneficiaries receive the best quality care. There are many additional questions to be resolved concerning the efficacy of this form of contract medicine. Moreover, it is important that the control and operation of the HMO be under the direction and supervision of physicians so that high quality care is provided. Operation of the health maintenance organizations under the direction of individuals or groups not competent in the health field should not be sanctioned.

The AMA statement also pointed out the following:

1. Opposed the proposed Medicare limits of 75 per cent on prevailing charge levels, stating "we know of no such direct statutory limitations on prices, wages, or charges in other private sectors of the economy.
2. Opposed as "unjustifiably repetitive" a further study of inclusion of chiropractic benefits under Medicare.
3. Said needy disabled persons should be covered under Medicaid rather than included in toto under Medicare and thus changing the concept of Medicare as a program for those over age sixty-five.
4. Opposed any Federal restrictions on drugs physicians may prescribe for patients covered under Federal programs.
5. Urged the committee to extend for five years maternal and child health programs under Social Security.

* * *

Sen. Edward Kennedy (Democrat, Massachusetts) has promised the California Medical Association his

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Senate Health Subcommittee would not make public the information contained in the working papers involved in the California Medical Association's medical staff survey of hospitals. The senator said the papers would be treated as confidential documents and examined only under special committee rules at closed sessions.

However, Kennedy refused to grant the California Medical Association's request at a one-day public hearing to exempt working papers from the scope of a subcommittee subpoena for the final California Medical Association's medical staff reports and working papers on 45 California hospitals, most of which had been disapproved by the investigators.

CMA president Jean Crum, M.D., told the subcommittee, "we believe that to subpoena work papers that include the personal impressions noted by the CMA surveyors, and sometimes the names of patients and physicians, could prove to be highly harmful to this important segment of the medical profession's comprehensive peer review activities."

There was no dispute over turning over to the Subcommittee the CMA's final reports.

Kennedy said the information was needed to allow the subcommittee "to adequately fulfill its responsibility in drafting health maintenance organization legislation in respect to the quality of medical care."

The controversy, however, poses a larger issue than the immediate case of California.

A provision of the catch-all Social Security bill (H.R. 1) before the Senate Finance Committee establishes peer review organizations nationally under Medicare and Medicaid. Thus, the confidentiality of working peer review papers may become a problem that Congress will have to settle.

Although Kennedy's decision to examine the papers only in closed sessions was a significant concession, the CMA still was compelled to turn over all of the information requested including the working papers, to the Subcommittee.

* * *

A cabinet-level department of health is slated to receive a serious push in Congress this year, although time will not permit enactment. Rep. Paul Rogers (Democrat, Florida) influential chairman of the House Health Subcommittee, plans to introduce legislation and hold hearings.

Impetus to the drive could come from the Democratic Party's National Convention where a party plank provision may endorse the health department idea.

However, the Administration opposes the plan. President Nixon's moribund cabinet reorganization plan moves in the opposite direction, calling for the Department of Health, Education, and Welfare to be changed to a Department of Human Resources with added welfare programs from Labor and Agriculture Departments thrown in.

There is no question, however, from the standpoint of size and importance that health ranks a cabinet spot. Federal outlays for health next fiscal year are put at $25.5 billion, 10.3 per cent of all Federal expenditures. However, Administration supporters argue it makes sense to contain under one umbrella most programs involving health and welfare as they are intimately connected and need single supervision. Education is not quite so related, but there has not been much pressure to separate this function which ranks third in spending at HEW (about $6 billion) and fits in as well at HEW as anywhere else.

Backers of a health department contend that health gets shortchanged because it does not have cabinet rank. Rogers argues that health is an administrative mishmash and that as a result the White House Office of Management and Budget is the real maker of health policy. "The Federal health establishment is entitled to have a full-time secretary of health who can be heard in the White House over the guillotine of the Office of Management and Budget," Rogers declared in a speech last fall.

* * *

The legalized use of marihuana would appear a long way off despite reports showing growing support for "decriminalization." Only continued increase of marihuana smoking over a number of years and a new generation of lawmakers could bring about climate for legalization, congressional experts predict. However, scaling penalties further down, especially for use, is a real possibility. The National Commission on Marihuana and Drug Abuse is reported ready to recommend dropping all criminal sanctions against private use, but this falls short of legalization, since sellers and importers would continue to be subject to criminal action.

The National Institutes of Mental Health yearly report to congress on health aspects of marihuana found relatively little evidence of serious ill-effects with acute reactions apparently rare. Current information does not justify making marihuana legal, according to Bertram Brown, M.D., director of National Institute of Mental Health, who nevertheless criticizes harsh penalties. Preliminary survey findings that chronic users of the drug in Greece and Jamaica appear to be healthy surprised the researchers. However, its effect on emotionally unstable teen-agers can be a serious retarding development, causing breakdowns.

* * *

The government has elevated alcoholism to a priority target with submission to congress of the first special report on alcohol and health. The report contains current information on the health consequences of using alcoholic beverages. No recommendations for legislative action are being submitted at present.

A $200,000 radio-TV ad campaign has been started by the HEW Department to call the public's attention to warning signs of alcoholism and to discourage drinking to excess. Although the first efforts will be made in the public education field, the government's prime emphasis remains on rehabilitation and treatment.

The 120-page report summarized current scientific knowledge on the health consequences of using alcoholic beverages, and represents the first part of a three-year comprehensive study being undertaken by the National Institute of Alcohol Abuse and Alcoholism to help the nation combat alcohol-related problems.

In the initial fact-finding phase, the Institute established a consultant task force to gather and develop information, to analyze existing literature, and to identify those human health problems that are correlated with the use and abuse of alcohol.

Subsequent phases will design and test methodologies for assessing precisely and completely the ways alcohol affects selected areas of well-being, as well as identifying the most feasible methods for mounting ef-

continued on page 908

140/90 is normal blood pressure...or is it?

An extensive study based on nearly 4 million life insurance policies suggests that a blood pressure reading of 140/90 requires close medical supervision.

The Build
and
Blood Pressure
Study

Study Findings. Twelve years ago the Society of Actuaries reported on an extensive study based on the lives and deaths represented by almost 4 million life insurance policies. From this vast survey—"The Build and Blood Pressure Study"[1]—insurance experts concluded that:

- Blood pressure above 140/90 is accompanied by increased morbidity and requires close medical attention.
- Even small increments in either systolic or diastolic blood pressure progressively and steeply shorten life expectancy.

Other Studies. Studies conducted with large numbers of patients since that time have echoed the above findings. Two studies published in 1970—the VA Cooperative Study Group on "Effects of Treatment on Morbidity in Hypertension"[2] and the "Framingham Study"[3]—suggest that treatment of even mild hypertension may, over time, offer significant benefits to the patient.

Another Point of View. Although a growing body of studies suggests that treatment of mild hypertension is warranted, medical opinion is not unanimous. Some clinicians recommend that drug treatment for mild hypertension be reserved for patients with additional risk factors such as smoking, high cholesterol levels, heart or kidney involvement, or a family history of vascular disease. Dr. Walter M. Kirkendall stated this position in his recent paper "What's With Hypertension These Days?"[4] Discussing the management of hypertension in patients with a sustained diastolic pressure up to 100 mm Hg, he said: "Generally, I do not recommend antihypertensive therapy unless patient's blood pressure approaches the upper limit for the group and a number of adverse factors exist, such as male sex, family history of vascular disease, youth, evidence of heart or kidney involvement."

Drug Therapy for Hypertension. Although opinion varies on when to start drug therapy for mild hypertension, many physicians agree that treatment should start with a thiazide diuretic such as HydroDIURIL. For the adult patient, the usual starting dosage is 50 mg b.i.d. Dosage adjustments are recommended as the patient responds to treatment. The patient whose therapy begins with HydroDIURIL frequently can continue to benefit from it, because HydroDIURIL usually maintains its antihypertensive effect even when therapy is prolonged.

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Therapy to Start With

For a brief summary of prescribing information, please see next page.

---

1. Society of Actuaries, *The Build and Blood Pressure Study*, 1959.
2. Veterans Administration Cooperative Study Group on Antihypertensive Agents, "Effects of Treatment on Morbidity in Hypertension," JAMA *213*:1143-1152, Aug. 17, 1970.
3. Kannel, William B., *et al.*: "Epidemiologic Assessment of the Role of Blood Pressure in Stroke—The Framingham Study," JAMA *214*:301-310, Oct. 12, 1970.
4. Kirkendall, Walter M.: "What's With Hypertension These Days?" Consultant, Jan. 1971.

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Therapy to Start With

Drug Therapy for Hypertension. Although opinion varies on when to start drug therapy for mild hypertension, many physicians agree that treatment should start with a thiazide diuretic such as HydroDIURIL. For the adult patient, the usual starting dosage is 50 mg b.i.d. Dosage adjustments are recommended as the patient responds to treatment. The patient whose therapy begins with HydroDIURIL frequently can continue to benefit from it, because HydroDIURIL usually maintains its antihypertensive effect even when therapy is prolonged.

CONTRAINDICATIONS: Anuria; increasing azotemia and oliguria during treatment of severe progressive renal disease. Known sensitivity to this compound. Nursing mothers; if use of drug is deemed essential, patient should stop nursing.

WARNINGS: May precipitate or increase azotemia. Use special caution in impaired renal function to avoid cumulative or toxic effects. Minor alterations of fluid and electrolyte balance may precipitate coma in hepatic cirrhosis.

When used with other antihypertensive drugs, careful observation for changes in blood pressure must be made, especially during initial therapy. Dosage of other antihypertensive agents, especially ganglion blockers, must be reduced by at least 50% because HydroDIURIL potentiates their action.

Stenosis and ulceration of the small bowel causing obstruction, hemorrhage, and perforation have been reported with the use of enteric-coated potassium tablets, either alone or with nonenteric-coated thiazides. Surgery was frequently required, and deaths have occurred. Such formulations should be used only when indicated and when dietary supplementation is impractical. Discontinue immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occurs.

Thiazides cross placenta and appear in cord blood. In women of childbearing age, potential benefits must be weighed against possible hazards to fetus, such as fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

The possibility of sensitivity reactions should be considered in patients with a history of allergy or bronchial asthma. The possibility of exacerbation or activation of systemic lupus erythematosus has been reported for sulfonamide derivatives, including thiazides.

PRECAUTIONS: Check for signs of fluid and electrolyte imbalance, particularly if vomiting is excessive or patient is receiving parenteral fluids. Warning signs, irrespective of cause, are dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances. Hypokalemia may develop (especially with brisk diuresis) in severe cirrhosis; with concomitant steroid or ACTH therapy; or with inadequate electrolyte intake. Digitalis therapy may exaggerate metabolic effects of hypokalemia, especially with reference to myocardial activity. Hypokalemia may be avoided or treated by use of potassium chloride or giving foods with a high potassium content. Similarly, any chloride deficit may be corrected by use of ammonium chloride (except in patients with hepatic disease) and largely prevented by a near normal salt intake. Hypochloremic alkalosis occurs infrequently and is rarely severe. In severely edematous patients with congestive failure or renal disease, a low salt syndrome may occur if dietary salt is unduly restricted, especially during hot weather.

Thiazides may increase responsiveness to tubocurarine. The antihypertensive effect of the drug may be enhanced in the postsympathectomy patient. Arterial responsiveness to norepinephrine is decreased, necessitating care in surgical patients. Discontinue drug 48 hours before elective surgery. Orthostatic hypotension may occur and may be potentiated by alcohol, barbiturates, or narcotics.

Pathological changes in the parathyroid glands with hypercalcemia and hypophosphatemia have been seen in a few patients on prolonged thiazide therapy. The effect of discontinuing thiazide therapy on serum calcium and phosphorus levels may be helpful in assessing the need for parathyroid surgery in such patients. Parathyroidectomy has elicited subjective clinical improvement in most patients, but has no effect on hypertension. Thiazide therapy may be resumed after surgery.

Use cautiously in hyperuricemic or gouty patients; gout may be precipitated. May affect insulin requirements in diabetics; may induce hyperglycemia and glycosuria in latent diabetics.

ADVERSE REACTIONS: Rare reactions include thrombocytopenia, leukopenia, agranulocytosis, aplastic anemia, cholestasis, and pericholangiolitic hepatitis. Nausea, vomiting, diarrhea, dizziness, vertigo, paresthesias, transient blurred vision, sialadenitis, purpura, rash, urticaria, photosensitivity, or other hypersensitivity reactions may occur. Cutaneous vasculitis precipitated by thiazide diuretics has been reported in elderly patients on repeated and continuing exposure to several drugs. Scattered reports have linked thiazides to pancreatitis, xanthopsia, neonatal thrombocytopenia, and neonatal jaundice. When adverse reactions are moderate or severe, the dosage of thiazides should be reduced or therapy withdrawn.

For more detailed information, consult your MSD Representative or see the Direction Circular. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486

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Abstracts

Walton, L. A.: Immediate morbidity on large abortion service; the first year's experience, ***New York State J. Med.*** 72: 919 (Apr. 15) 1972.

During the first year of New York's liberalized abortion policies, the Pregnancy Interruption Service of the Kings County Hospital Center performed 6,256 abortions. Of the 1,978 saline amniocentesis abortions, 7.38 per cent showed complications; and of the 4,222 suction curettage abortions, 0.77 per cent showed complications. 56 abortions were surgical, for reasons outlined. Major complications of saline amniocentesis were retained placenta and/or placental fragments, with or without concommitant fever, bleeding, or both; and intra- or post partum fever. Major complications of suction curettage abortions were uterine perforation, failed dilatation and curettage, cervical laceration, ectopic pregnancy, and hemorrhage.

Arlen, M., Shah, I. C., Higinbotham, N., and Huvos, A. J.: Induction of osteogenic sarcoma of head and neck induced by radiation therapy, ***New York State J. Med.*** 72: 929 (Apr. 15) 1972.

Seven cases of radiation induced sarcoma of the head and neck were seen at the Memorial Hospital between 1931 and 1970. Their case histories are reviewed. The primary diseases originally treated by radiation were retinoblastoma, benign osseous lesions of the jaw bone, and soft-part tumors of the oral cavity. All patients had a relatively long latent interval, ranging from seven to twenty-three years, between the completion of the radiation therapy and the development of the new lesion. The new tumors arose in the mandible or in the maxilla and adjacent parts of the orbit. The symptoms of the new lesions were usually pain and swelling; two lesions ulcerated. Treatment was surgical; most patients underwent resection of either the mandible or maxilla. Six of the seven tumors reappeared, primarily at the site of operation, and rapidly spread to the cranial cavity, and death of the patients took place within six to eighteen months of the initial appearance of the sarcoma. One patient survived for three years. The seventh patient underwent multiple reconstructive procedures and survived for twelve years after the resection of the sarcoma. She eventually died of renal failure.

Davis, M. V.: Relationship between pulmonary disease and hiatal hernia with gastroesophageal reflux, ***New York State J. Med.*** 72: 935 (Apr. 15) 1972.

Recurrent or persistent bronchitis is one of the most common problems seen by thoracic consultants. In the past, infection, allergy, smoking, and air pollution have been postulated as the major causes. Although many of the patients have been found to have hiatal hernias, these are usually passed off by radiologists as incidental because they are small. Experience has begun to show that even patients with no hernias may have the esophagogastic symptoms of bloating, postprandial distress, hunger pain, food and seasoning intolerance, and excessive belching even without a hernia if they have gastroesophageal reflux. Gastroesophageal reflux is also capable of producing respiratory problems, and in the opinion of the author, is one of the most common noninfectious causes. Significant gastroesophageal reflux is usually caused by a wide esophagogastric angle. The Belsey hiatal hernia repair technic can be successfully used to remedy the situation.

Siddiqi, S., and Eisinger, R. P.: Calcium deposits in the thyroid region; in patients undergoing long-term hemodialysis, ***New York State J. Med.*** 72: 939 (Apr. 15) 1972.

Irregular spicules of calcium were noted in the region of the thyroid gland in 8 of 16 patients undergoing hemodialysis, as compared to none of the controls. The thyroid region may be an early site of metastatic calcification presaging more dangerous deposits, and thus it could be a region which should be monitored in patients receiving maintenance dialysis.

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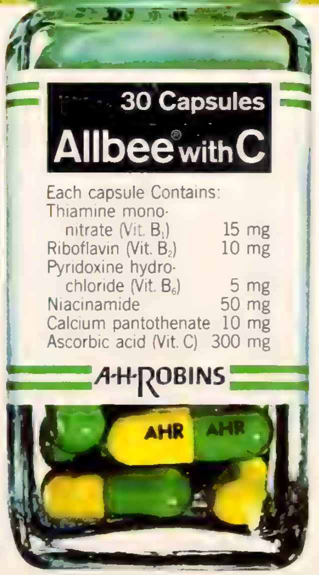
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phenobarbital	(¼ gr.) 16.2 mg.	(½ gr.) 32.4 mg.	(¾ gr.) 48.6 mg.
(warning: may be habit forming)			

Brief summary. Side effects: Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction as in prostatic hypertrophy. Contraindicated in patients with acute glaucoma, advanced renal or hepatic disease or hypersensitivity to any of the ingredients.

A. H. ROBINS COMPANY, RICHMOND, VIRGINIA 23220

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Abstracts in Interlingua

Walton, L. A.: Morbiditate immediate in un servicio grande pro abortos; experientia del prime anno, ***New York State J. Med.*** 72: 919 (15 de April) 1972.

Durante le prime anno del politica del aborto liberalisate in New York, le Servicio de Interruption del Gestation, del Hospital Kings County, ha facite 6,256 abortos. Del 1,978 abortos facite con amniocentesis saline, 7.38 pro cento habeva complicationes. De 4,222 abortos facite con curettage ab suction, 0.77 pro cento habeva complicationes. Per rationes reportate, 56 abortos esseva facite chirurgicmente. Le principal complicationes del amniocentesis saline esseva retention del placenta e/o de fragmentos placentari, con o sine febre concommitante, hemorrhagia o ambe, e febre intra o postparto. Le principal complicationes del aborto con curettage ab suction esseva perforation uterin, insufficiente dilatation e curettage, lacerationes del cervix, hermorrhagia, o non aborto debite a gestation ectopic.

Arlen, M., Shah, I. C., Higinbotham, N., e Huvos, A. J.: Osteogenic sarcoma del capite e collo inducite per radiotherapia, ***New York State J. Med.*** 72: 929 (15 de April) 1972.

Septe (7) casos de sarcoma del capite e collo inducite per le radiotherapia esseva observate in le Hospital Memorial inter 1931 e 1970; lor historias clinic esseva revistate. Le morbos primari tractate originalmente con radiationes esseva retinoblastomas, lesiones parte blande del cavitate oral. Omne patientes habeva un longo intervalo latente, variante inter 7 e 23 annos, inter le completion del radiotherapia e le disveloppamento del lesion nove. Istes nove tumores appareva in le mandibula o le maxilla e partes adjacente del orbita. Generalmente, le symptomas esseva dolor, edema, e ulceration in duo casos. Le tractamento esseva chirurgic; le plus parte del patientes habeva resection del mandibula o le maxilla. Sex (6) del septe tumores reappareva primarimente in le sito del operation chirurgic, e propagava rapidemente al cavitate craneal. Le patientes moriva inter 6 e 18 menses del apparition initial del sarcoma. Un patiente supervivete 3 annos. Le septimo patiente habeva multiple procedimentos reconstructive e supervivete 12 annos depost le resection del sarcoma, mais moriva de insufficientia renal.

Davis, M. V.: Relation inter le morbo pulmonari e le hernia hiatal con refluxo gastroesophageal, ***New York State J. Med.*** 72: 935 (15 de April) 1972.

Le bronchitis recurrente o persistente es un de problemas plus commun vidite per le consultantes thoracic. In tempore passate, le infectiones, le allergia, le fumar e le aer polluete esseva postulate como le causas principal. Ben que plure del patientes esseva trovate con hernia hiatal, iste morbo esseva informate per le radiologistas como un trovato incidental perque es parve. Le experientia ha comenciate a demonstrar que mesmo le patientes sin hernia pote haber symptomas esophagogastric de distention, affliction post-prandial, dolor de fame, intolerantia per alimentos, e condimentos e eructation excessive si istes patientes ha refluxo gastroesophageal. Iste refluxo etiam pote causar problemas respiratori e, de accordo con le opinion del autor, es un del causas noninfective plus commun. Le refluxo gastroesophageal significative es generalmente causate per un angulo ample esophagogastric. Le technica reparatori de Besley del hernia hiatal pote esser usate successosemente pro meliorar le situation.

Siddiqi, S., e Eisinger, R. P.: Depositos de calcium in le region thyroide de patientes tractate prolongatemente con hemodialysis, ***New York State J. Med.*** **72:** 939 (15 de April) 1972.

Irregular spiculas de calcium esseva observate in le region del glandula thyroide in 8 de 16 patientes tractate con hemodialysis, comparate con non depositos in le controles. Le region thyroide pote esser un sito temprane pro calcificationes metastasic presagente de depositos plus periculose. In consequentia, iste region debe esser observate serialmente in patientes intra therapia de mantenimento con hemodialysis.

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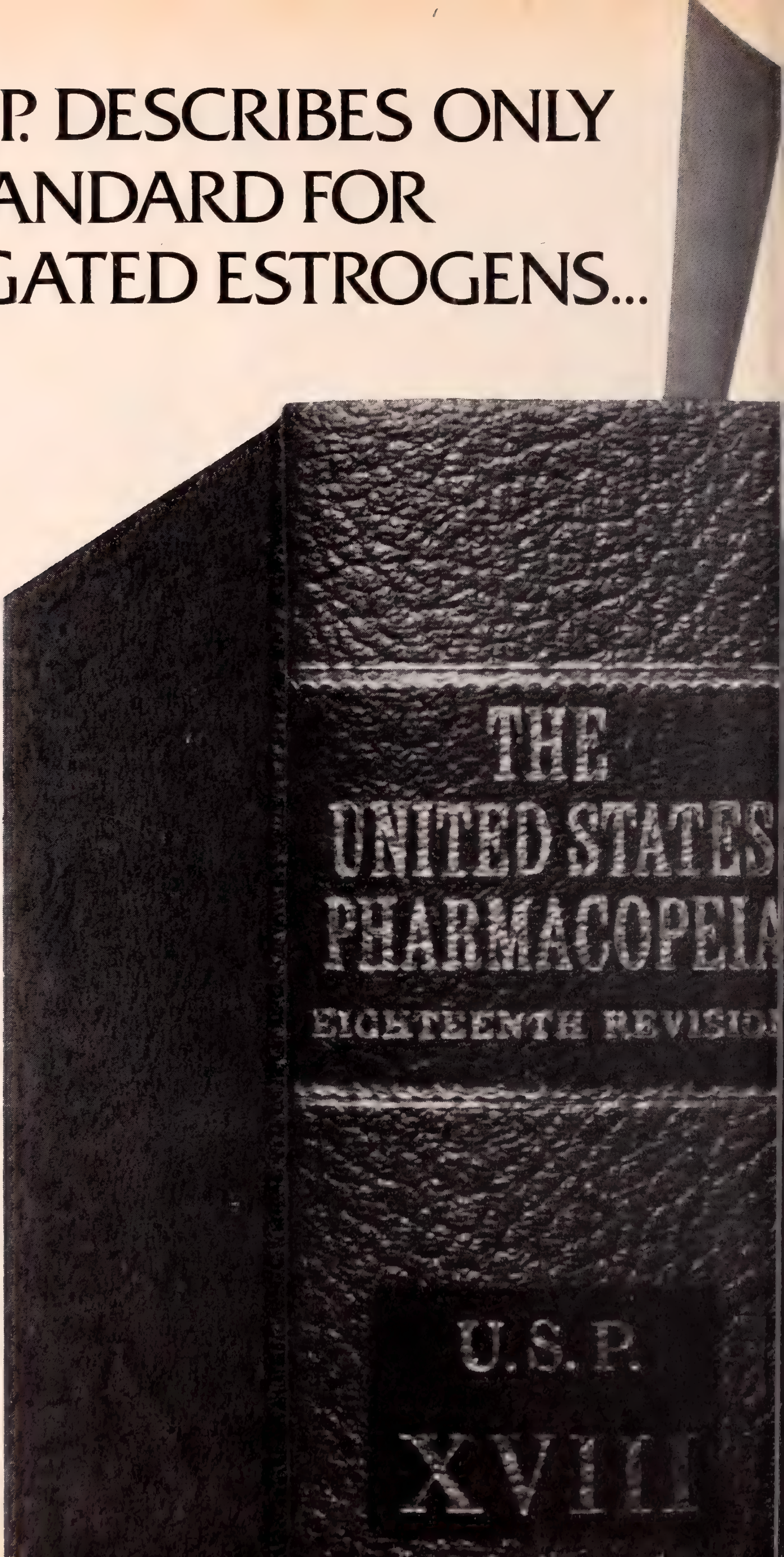
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BRIEF SUMMARY

(For full prescribing information, see package circular.)

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Indications: PREMARIN provides specific replacement therapy in the management of estrogen deficiency states, notably in the menopause and postmenopause.

Precautions: *In the female:* To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.

Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

Estrogen Deficient Atrophic Vaginitis, Kraurosis Vulvae, and Pruritus Vulvae—1.25 mg. to 3.75 mg. daily, or more, cyclically—depending on the tissue response of the individual patient.

How Supplied: PREMARIN (Conjugated Estrogens Tablets, U.S.P.). No. 865—Each *purple* tablet contains 2.5 mg. No. 866—Each *yellow* tablet contains 1.25 mg. No. 867—Each *red* tablet contains 0.625 mg. No. 868—Each *green* tablet contains 0.3 mg.

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continued from page 898

fective prevention and treatment programs in the field of alcohol abuse and alcoholism.

The report said that alcohol is the most abused drug in the United States, estimating that there are now 9 million alcoholics or problem drinkers in America—almost 10 per cent of the work force.

* * *

The Coalition for Health Funding has stepped up its attack on the Administration's health budget, charging it falls $2.7 billion short of "expansion of health services essential to solving the health crisis which the President himself warned about."

Officials of the Coalition, composed of 21 health organizations and interested lawmakers, have centered their attacks on the Administration's Office of Management and Budget and the congressional appropriating committees that often do not allot as much money as has been authorized.

Book Notes

Growth Control in Cell Cultures. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Julie Knight. Octavo of 275 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $11.75.

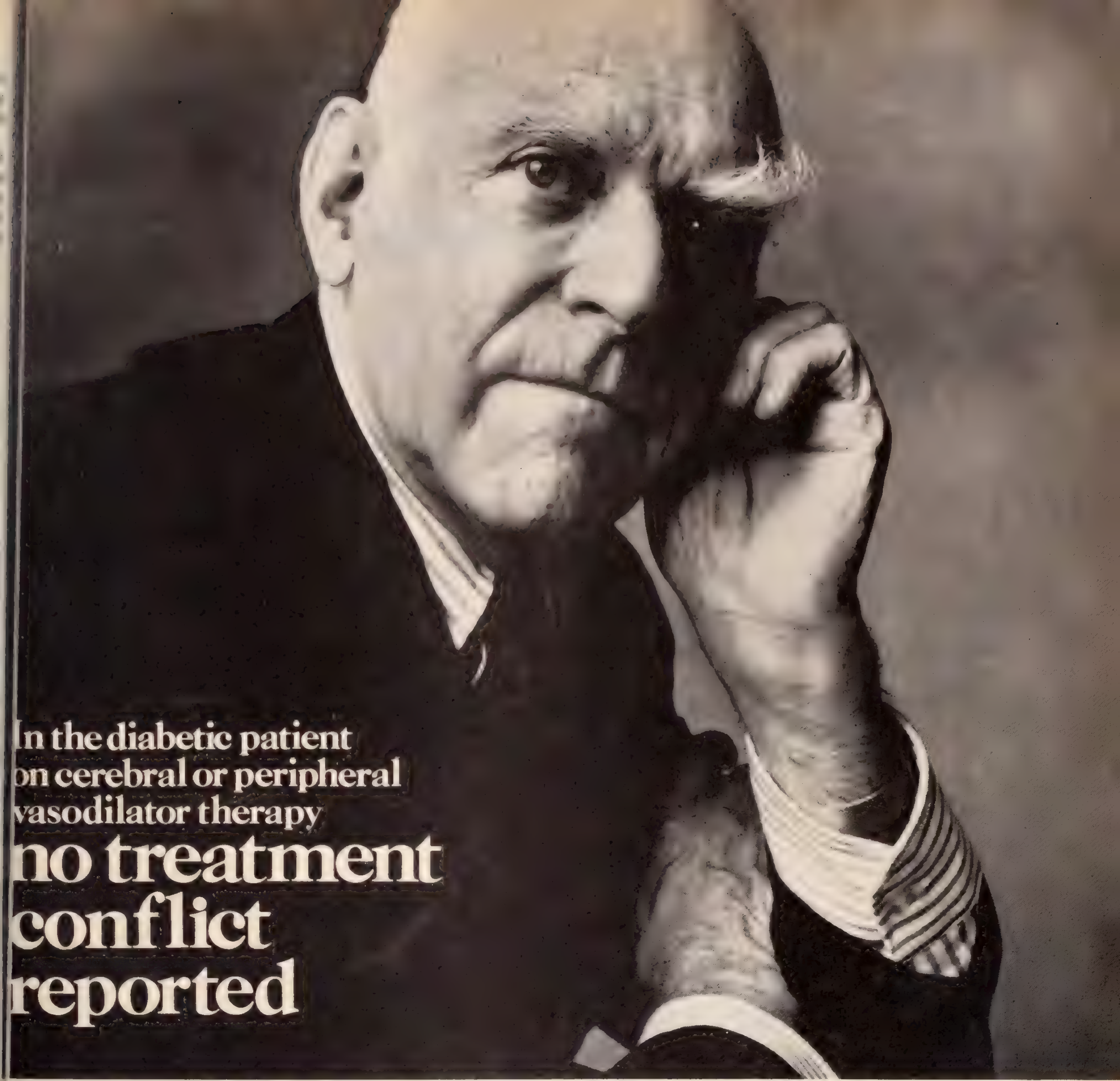
The growth of normal mammalian and avian cells in culture is inhibited by contact with other cells, but growth also depends on many other factors and the nature of their interaction is unknown. This symposium should be of particular interest to virologists working with oncogenic viruses, as well as to those interested in cell regulatory processes in general.

Vocabulary of Medicine and related Sciences. English-French. By W. J. Gladstone. Quarto of 298 pages. Paris, France, Masson & Cie. (American distributor, Eliot Books, Inc., Long Island City, N.Y.), 1970. Paper, $10.50.

This work is not an academic dictionary but a working vocabulary of words and expressions which have seemingly escaped the attention of writers of multilingual medical dictionaries. These are terms that may prove puzzling or otherwise difficult to translate, even when they assume the form of simple, ordinary words.

The Clinical Apprentice. A Handbook of Bedside Methods. By John M. Naish, M.D., and Alan E. A. Read, M.D., with a Chapter by John Apley, M.D. Fourth edition. Duodecimo of 244 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $7.25.

This book has been written expressly for students receiving their clinical training in medicine. Even though there has been an enormous change in medical technics since the first edition of this work appeared in 1948, the authors feel that little change is required in the time-honoured methods of clinical inquiry and examination.



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There are no known contraindications in recommended oral doses other than it should not be given in the presence of frank arterial bleeding or immediately postpartum.

Although not all clinicians agree on the value of vasodilators in vascular disease, several investigators[2-5] have reported favorably on the effects of isoxsuprine. Effects have been demonstrated both by objective measurement[3,5] and observation of clinical improvement.[2,4]
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Caution, very close observation, and careful adjustment of dose are necessary when: insulin is withdrawn during the trial period in order to avoid ketosis, acidosis, and coma; thiazide diuretics are administered which may result in aggravation of diabetic state and increased tolbutamide requirement, temporary loss of control, or even secondary failure; treating patients with impaired hepatic and/or renal function and debilitated, malnourished, or semistarved patients in order to avoid severe hypoglycemia which may require corrective therapy over several days; and treating patients with severe trauma, infection, or surgical procedures where temporary return to insulin or addition of insulin may be necessary. Response to tolbutamide is diminished in patients receiving therapy with beta blocking agents.

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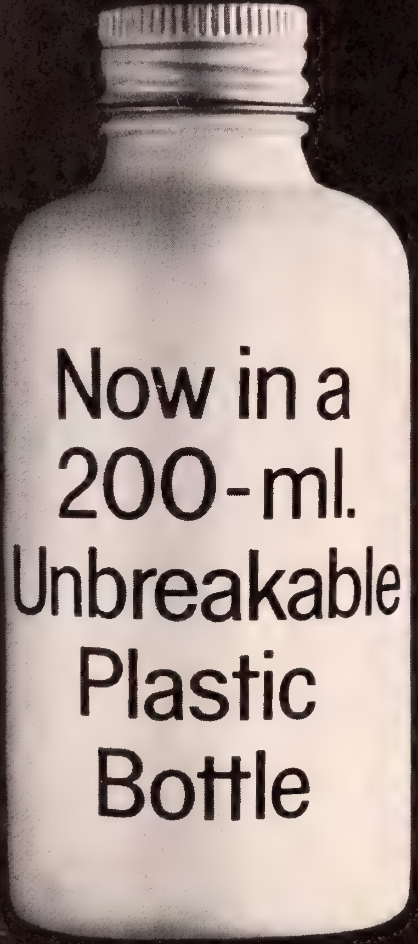

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What hath God wrought?

Electronic perfection has reached a new high in the development and practical demonstration of a device which can relay the electrocardiographic components of a patient's heart beat thousands of miles and be received by telephone.

The demonstration took place recently at Stanford University, where a patient's electrocardiogram was relayed from Stanford to Manila, where the signal was bounced off a synchronous satellite over the Pacific back to Stanford. The electrocardiogram was received by telephone in the same room with the patient after the signal had travelled 51,000 miles. There was no distortion and a direct recording of the patients electrocardiogram made immediately matched exactly with the one transmitted.

This opens up tremendous possibilities. It is suspected that approximately 150,000 people in this country die suddenly each year from heart attacks before reaching medical aid. It is also strongly suspected that arrhythmias unnoticed by the patient may precede by some days the fatal heart attack. To clear up these suspicions a group of high risk patients are being studied at Stanford by means of several different types of monitoring devices to determine the incidence of arrhythmia among them.

The effect on mortality of correction of the arrhythmias by appropriate drug therapy will also be studied.

The most interesting monitoring device being used is one which weighs five and one-half ounces, is the size of a cigaret case, and is strapped to the patients chest by two electrodes. When an abnormal rhythm occurs the instrument sounds a warning beep. The patient calls his physician, who having a prior electrocardiogram before him asks the patient to record. The patient places the telephone receiver next to the device and pushes a button to activate it. The physician places his telephone receiver on top of a console the size of a table radio and receives immediately a printout of the patients current electrocardiogram. The transmission lasts forty seconds and can be repeated as often as desired.

This medical DEW line, now on this side of the horizon could effectively alter the mortality statistics of heart disease.

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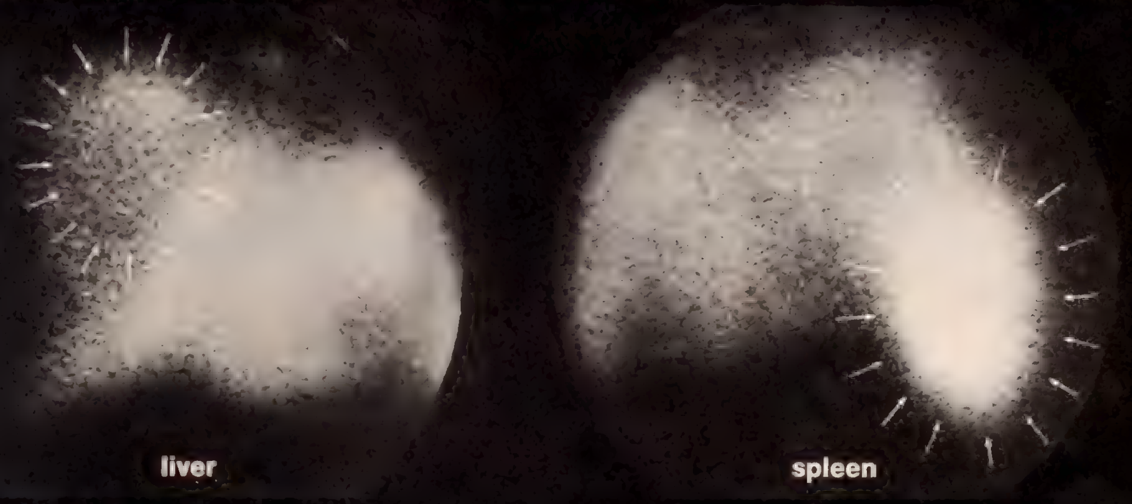

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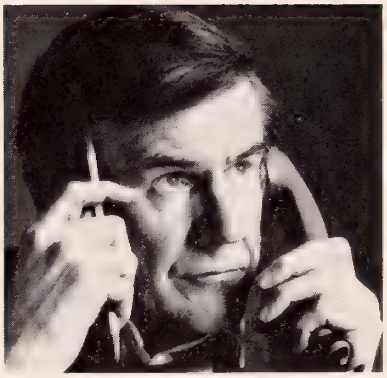

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IMMEDIATE MORBIDITY ON LARGE ABORTION SERVICE

The first year's experience

During the first year of New York's liberalized abortion policies, the Pregnancy Interruption Service of the Kings County Hospital Center performed 6,256 abortions. Of the 1,978 saline amniocentesis abortions, 7.38 per cent showed complications; and of the 4,222 suction curettage abortions, 0.77 per cent showed complications. 56 abortions were surgical, for reasons outlined. Major complications of saline amniocentesis were retained placenta and/or placental fragments, with or without concommitant fever, bleeding, or both; and intra- or post partum fever. Major complications of suction curettage abortions were uterine perforation, failed dilatation and curettage, cervical laceration, ectopic pregnancy, and hemorrhage.

LESLIE A. WALTON, M.D.
Brooklyn, New York

Assistant Professor, Department of Obstetrics and Gynecology, State University of New York Downstate Medical Center, Kings County Hospital Center

Abortion care in municipal hospitals became a new challenge after New York State's liberalized abortion law was passed. The immediate morbidity encountered on one such service is detailed herein.

New York State's liberalized abortion law necessitated a rapid re-evaluation of the methods used to deliver short-term health care to a large indigent population. Municipal hospitals in New York City had a meager experience in the past with terminating unwanted pregnancies. One such hospital, Kings County Hospital in Brooklyn, found itself to be the hub of abortion activity in the municipal system. This hospital had done 21 therapeutic abortions in 1968, 16 therapeutic abortions in 1969, and 8 therapeutic abortions in early 1970. Thus, innovative measures had to be instituted rapidly.

Organization

The following outline of the service evolved on a permanent basis a few months after its creation. All the abortions are done on a separate floor of a building distinct from obstetrics and gynecology. The unit consists of a 10-bed recovery room, a 6-bed labor and aborting room, and 3 operating rooms. The entire pre-abortion screening—history and physical examination, hemogram, chest x-ray, urinalysis, Papanicolaou smear, sickle-cell preparation, blood typing and Rh factor, VDRL, and occasionally two hours postprandial blood sugar—is done in the outpatient department where the abortions are scheduled. Any patient with a medical complication is admitted to inpatient obstetrics and gynecology for evaluation and abortion by the resident staff. The well patient is scheduled for the abortion on an outpatient basis after having been seen by a family planning counsellor, a social worker, and a psychiatrist, depending on the patient's need. All patients pay for the abortion by Medicaid, other insurance, or self.

On the scheduled day, the patient arrives at the abortion unit with an escort. Suction curettages are performed up to twelve weeks of gestation using intravenous meperidine hydrochloride (Demerol) and diazepam (Valium) and a concomitant paracervical block. These patients are discharged four to six hours later with an escort and given an appointment for family planning. Patients who are candidates for salt amniocentesis have the procedure done in the same unit. Usually 180 cc. of amniotic fluid are removed and 180 cc. of 23.4 per cent salt solution instilled. The patients are observed for four hours for any unusual side effects and then discharged to return when

TABLE I. Immediate complications encountered in 1,978 saline abortions performed at Pregnancy Interruption Service at Kings County Hospital Center from July 1, 1970, to June 30, 1971

Complications		Number Of Patients	Per Cent Of Total
Retained placenta and/or placental fragments		57	2.88
Retained placenta and fever		41	2.07
Intra- or postpartum fever		16	0.81
Retained placenta and bleeding		14	0.71
Retained placenta, fever, and bleeding		12	0.61
Severe postabortal hemorrhage		5	0.25
Pre-eclampsia, intra- or postpartum		3	0.15
Others		8	0.40
Hysterotomy with empty uterus	1		
Hypofibrinogenemia	1		
Salting of ovarian cyst	1		
Possible pulmonary embolus, post salting	2		
Severe anxiety reaction requiring hospitalization	1		
Cardiac irregularity, new murmur post salting	2		
Totals		156	7.88

TABLE II. Immediate complications encountered in 4,222 dilatation and curettage abortions performed at Pregnancy Interruption Service at Kings County Hospital Center from July, 1, 1970, to June 30, 1971

Complication		Number Of Patients	Per Cent Of Total
Uterine perforation, conservative management		6	0.14
Uterine perforation, exploratory laparotomy		2	0.05
Known failed dilatation and curettage		6	0.14
Cervical laceration and repair		6	0.14
Ectopic pregnancy post dilatation and curettage		6	0.14
Hemorrhage post dilatation and curettage		4	0.09
Others		3	0.07
Convulsion post paracervical block	1		
Meperidine hydrochloride overdose	1		
Allergic reaction—generalized (meperidine hydrochloride and/or diazepam)	1		
Totals		33	0.77

they are in labor. Salt amniocentesis is not done on patients with heart disease, renal disease, hypertension, diabetes mellitus, hemoglobinopathies, previous cesarean sections, and epilepsy under therapy. These patients are admitted directly to the gynecology unit for evaluation and hysterotomy.

All of the abortions are done by 10 board-certified or board-qualified physicians working on a session basis. There is one physician who works daily in the unit.

Between the hours of 8:00 P.M. and 8:00 A.M., the salt amniocentesis patients are cared for by fourth-year medical students with the gynecology residents serving as consultants. Any patient who has a fever, excessive bleeding, retained placenta or placental fragments, or any other complication is transferred immediately to the gynecology unit for intensive care. Similarly, any curettage patient with any immediate complication is transferred to the gynecology unit.

Results

During the year, July, 1970, to June 30, 1971, 6,256 abortions were performed. Of these, 1,978 were saline amniocentesis, 4,222 were suction curettages, and 56 were either hysterotomy or hysterectomy. The immediate complications encountered are detailed as follows.

The placenta or parts of it was classified as retained if not passed four hours after aborting the fetus. Any patient with a temperature between 100.4° F. and 100.8° F. which persisted four hours later or a temperature of 101° F. or over was considered as being febrile and was treated. The fever was usually due to amnionitis and endometritis. Bleeding refers to estimated blood loss of about 500 cc. or greater, or a documented fall in hematocrit of 3 points or more.

Comment

There were no deaths during the first year. As can be seen, 156 of the 1,978 salt amniocentesis patients had the immediate complications listed (Table I). Retained placenta with or without other concomitant complications, was present in 6.27 per cent of the patients. In a similar large series Wagatsuma[1] found that 1,685 of 2,930 patients (58 per cent) had retained placenta. However, his patients were not centralized and not all were cared for by specialists. Of the 32 patients who had bleeding as defined in this report, 15 required blood transfusion.

The less than 1 per cent immediate complications with curettage compares favorably with the large European experience (Table II).[2]

Tietze and Lewit[3] in an exhaustive review of 42,598 abortions done between 1970 and 1971 in the United States cited a 10.1 per cent overall incidence of complications which rose to 13.6 per cent if the patients were followed. Our overall incidence of immediate complications was 8.1 per cent but because of the large number of patients aborted and the difficulty of obtaining adequate follow-up as the patients returned to their various locales, we could not obtain a satisfactory follow-up.

As can be seen, myoma uteri, failed saline

TABLE III. Indications for abdominal surgery* at Pregnancy Interruption Service of Kings County Hospital Center from July 1, 1970, to June 30, 1971

Indication		Number Of Patients
Myoma uteri		10
Failed saline		10
Previous cesarean sections		7
Hypertension		7
Carcinoma of cervix		4
Heart disease		3
Ovarian cyst		3
Hemoglobinopathy		3
Diabetes mellitus		2
Epilepsy		2
Others		5
Grand multiparity	1	
Hydrocephalus	1	
Empty uterus	1	
Perforated uterus	1	
Ovarian cyst	1	
TOTALS		56

* Type of surgery: Hysterotomy, 39; hysterectomy (simple, modified, or radical), 16; cystectomy, 1; tubal ligations 12.

induction, and the presence of a cesarean section scar accounted for hysterotomy or hysterectomy in 50 per cent of the patients (Table III). Patients who had had one cesarean section done in a reputable institution, or in whom confirmation was obtained that a low uterine segment section was done, were approved for "salting." All other cesarean section patients underwent hysterotomy. There was no serious morbidity in this group of patients.

Conclusion

It would seem that with the large volumes of abortions being done, some proved method of outpatient abortion has to be adopted. The morbidity encountered on one such service has been documented.

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URTICARIA AND ANGIOEDEMA

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Urticaria customarily involves the superficial skin layers in contradistinction to angioedema which involves the submucosa and deeper cutaneous tissues. Intensely pruritic, urticaria may be sparsely scattered over the entire body, localized to a particular area, such as the palms and soles, or may coalesce to form giant hives. Individual wheals seldom persist longer than forty-eight hours. However, new eruptions may continue to recur for indefinite periods of time. Angioedema is characterized by a well-demarcated swelling which is often erythematous and may involve the gastrointestinal tract and/or the upper respiratory tract as well as the skin.

The occurrence of urticaria and angioedema is probably more frequent than usually described because of the evanescent, self-limited character of such eruptions. Women appear to have a greater propensity toward urtication. Fifteen to 20 per cent of a group of college students surveyed by questionnaire revealed a whealing experience. However, in a general dermatologic practice only 1 to 2 per cent of the patients complain of urticaria or angioedema.

Any age group may experience urticaria or angioedema. Such eruptions appear most frequently after adolescence with the highest incidence occurring in persons from twenty-one to thirty-three years of age. The average age of onset of chronic urticaria is thirty-five years, with an average duration of six and one-third years. However, chronic urticaria or angioedema have been known to persist for longer than twenty-five years. Rarely has urticaria occurred during the first decade of life or after age sixty.

An operational classification based on the recognition of participating immunologic mechanisms has provided an approach to the treatment of these entities. Criteria included the recognition of the precipitating antigen, participating antibody, release of specific chemical mediators, capacity for passive transfer reactivity by the Prausnitz-Küstner technic to monkey or human skin, or shortening of the latent period on repeated antigen administration.

Anaphylactic

Systemic anaphylaxis in man is characterized by respiratory distress consequent to bronchospasm, and/or upper airway edema, and/or urticaria-angioedema. Any one of these reaction patterns may occur in the absence of other systemic signs. Clinical manifestations are explosive in onset beginning within seconds or minutes following the administration of a protein, polysaccharide, or hapten antigen. Customarily the antibody is characterized by the passive transfer with a wheal and flare response from the affected individual to normal human and monkey skin sites or lung. In skin testing the serum from an affected individual is intradermally placed, and this site is subsequently challenged with the offending antigen after an appropriate interval, usually twenty-four hours. The incidence of the positive skin reaction or passive transfer in circumstances in which the history clearly suggests an anaphylactic event is appreciable. The responsible immunoglobulin is presumably of the E class. The recognized mediators of the immunologic inflammatory reaction are several. The sine qua non for a mediator of urticaria and/or angioedema would be the capacity for such a substance to increase vascular permeability. In man the local administration of either histamine or bradykinin elicits the production of the wheal, whereas serotonin injection does not. There are no data in this regard on the effect of SRS-A (released during anaphylaxis) slow-reacting substance. Three different by-products of the complement system yield a local increase in vascular permeability in man. One of these, anaphylatoxin, is C3a (a fragment of C3, the third component of complement) produced by the action of a complex of the fourth and second components, termed C3 convertase; anaphylatoxin has been isolated in highly purified form and has been shown to be an active permeability factor in man. Permeability increasing properties has also been associated with C5a.

The list of substances eliciting systemic anaphylaxis with urticaria is diverse. Substances used for the diagnosis and treatment of disease are the major offenders. Ingested foods of various sorts have been implicated; but in the absence of an obvious associated gastrointestinal episode characterized by colicky pain, bloody diarrhea, and associated systemic manifestations of urticaria, hypotension, and/or respiratory insufficiency due to laryngeal edema or bronchospasm, the diagnosis is difficult to establish. Also the diagnosis can be reasonably secured if elimination of food from the diet brings relief and if reintroduction repeatedly and consistently produced urticaria or angioedema. Skin testing to detect food allergies has proved to be hazardous at times and usually unreliable; only when passive transfer can be established, as in the original description of passive transferred sensitivity to fish by Prausnitz and Küstner, can an offending antigen (food) be identified with certainty. It is now commonly appreciated that some puzzling cases of recurrent urticaria occurred in penicillin-sensitive patients whose intake of milk products included appreciable quantities of milk from penicillin-treated cows.

Atopic

Individuals subject to allergic rhinitis or asthma due to specific environmental allergens, such as ragweed pollen and animal dander, possess functionally demonstrable antibody of the Immunoglobulin-E class. Such persons respond to natural encounters with airborne allergens by developing symptoms of rhinitis or asthma. Less commonly, but especially in the presence of unusually large concentrations of antigen in the environment, they develop urticaria and angioedema. Both the amount and portal entry of antigen in the body apparently determine the consequent clinical manifestation.

Cytotoxic

A cytotoxic reaction is typified by transfusion reaction in which donor erythrocytes bearing isoantigens react with recipient isoantibodies in the presence of serum complement, resulting in either enhanced clearance by the reticuloendothelial system, intravascular hemolysis, or both. Although clinically much less common, a similar cytotoxic hemolytic reaction may result from the transfusion of blood with a high titer of isoantibody against a recipient isoantigen. Isoantigens are not restricted to erythrocytes, and their presence has been demonstrated in most epithelial tissues by immunofluorescent technics. Whether the urticaria occurring in man in association with transfusion reactions is due to isoantibodies reacting with tissue antigens so as to discharge chemical mediators is unknown. Alternatively, the primary reaction could occur as a result of the activation of the complement system with urticaria occurring in response to the appearance of various by-products of this activation.

In contrast to anaphylactic or atopic urticaria in which a noncomplement-fixing Immunoglobulin-E antibody is involved, the urticaria associated with transfusion reactions may reflect the presence of a complement-fixing antibody of the Immunoglobulin-G or Immunoglobulin-M class.

Accelerated

The accelerated group includes reactions which occur hours after antigen administration. Patients with a positive skin reaction and circulating antibodies of the Immunoglobulin-G class to the major antigenic determinant of penicillin (penicilloyl) developed urticaria several hours after the parenteral administration of benzylpenicillin. The appearance of urticaria coincided with a drop in the circulating Immunoglobulin-G antibody against the major penicilloyl determinant. After three to six days of continued therapy, the circulating antibody to the major determinant reappeared, and urticaria subsided. Such observations suggest the urticaria resulted from the presence of an immunoglobulin-E antibody against the major determinant and that the reaction was modified by the presence of "neutralizing" antibody (Immunoglobulin-G) of the same specificity. Explosive accelerated reactions occur most frequently with antigens of minor determinant specificity in which case neutralizing antibody has not been produced or with major determinant specificity when the immunoglobulin-G response is impaired. Subacute urticaria of the accelerated type is merely a modification of anaphylactic urticaria.

Serum sickness

During the era when acute infectious diseases were treated with antisera of animal origin, approximately 10 per cent of the treated patients responded with a characteristic serum-sickness syndrome, including urticarial eruptions. The urticaria and angioedema, accompanied by lymphnode enlargement, fever, splenomegaly, arthralgia, and albuminuria, often occurred seven to twelve days after the injection of 50 to 200 ml. of heterologous antiserum. Characteristically, urticaria due to serum sickness was associated with pruritis and whealing at the injection site. Data have been presented suggesting the occurrence of circulating antigen-antibody complexes accompanied by increased synthesis of immunologlobulins during the course of serum sickness in a man. The occurrence of urticaria in serum sickness in man may relate to the event that localizes the complexes to the vasculature, glomeruli, or both, and may reflect the participation of Immunoglobulin-E or some complement-dependent mechanism.

Hereditary angioedema

In 1878 Dinkelaker, a student of Quincke, called attention to an unusual form of angioedema often associated with upper respiratory obstruction. Shortly thereafter this disorder was termed angioneurotic edema by Struebling. It was Osler, in 1888, who initially described the hereditary nature of this disorder. The first evidence of a biochemical abnormality was the observation that patients with hereditary angioedema were deficient in an inhibitor of the kinin-forming enzyme kallikrein. Subsequently, it was demonstrated that affected patients also lack the inhibitor of C1INH (the activated esteritic first component of complement). This inhibitor of the C1 (first component of complement) also was active against kallikrein. Recently these findings have been confirmed and extended.

Hereditary angioedema is characterized by recurrent, well-circumscribed subepithelial edema of the skin and mucous membranes of the gastrointestinal and upper respiratory tracts. Cutaneous edema may develop over several hours at any given site; it does not pit and is seldom pruritic. Urticaria has not been observed. Involvement of a portion of the face or of an extremity is common. In some instances local trauma has clearly precipitated an attack in an extremity. The tissue damage associated with dental extraction or tonsillectomy has resulted in oropharyngeal edema, progressing to airway obstruction. Although cutaneous involvement tends to be well circumscribed, circumoral or labial edema may progress to involve the contiguous mucosa. There can be concurrent or isolated involvement of the gastrointestinal tract, with associated nausea, vomiting, or colic. Surgical intervention, however, is not associated with any significant morbidity or mortality rates. The inordinate mortality rate associated with hereditary angioedema is inherent in the predilection of certain affected individuals to develop total airway obstruction due to laryngeal edema.

The pathologic alterations occurring in hereditary angioedema have been described in the study of tissues of several affected individuals obtained by cutaneous and peroral jejunal biopsy at laparotomy and at autopsy. Skin changes consisted of subcutaneous edema; leakage from the postcapillary venules was apparent on electron microscopic examination. Upper respiratory tract involvement always revealed laryngeal edema without significant inflammatory response. Spongiosis of the mucosal epithelial cells with cytoplasmic vacuole formation was prominent. Marked submucosal edema with masking of the submucosal fibrous structures was also demonstrable. However, there was little inflammatory response and no tissue eosinophilia. Diffuse edema and hemorrhage of the lungs presumably occurred secondary to asphyxiation. Jejunal tissue demonstrated edema of the lamina propria, particularly of the superficial portion of the villi, giving rise to a club-shaped appearance, and occasionally submucosal edema was demonstrable. The mucocutaneous and visceral tissue findings in hereditary angioedema can be distinguished from those of fatal systemic anaphylaxis, wherein the involved organs contain an inflammatory infiltrate frequently with prominence of eosinophils. Death in hereditary angioedema appears consequent to asphyxiation with associated submucosal edema of the larynx, while the edema of the lamina propria of the small bowel may account for the abdominal colic.

The increased risk of death of asphyxiation from acute laryngeal edema in hereditary angioedema demands identification of such affected individuals. The clinical syndrome described in the aforementioned associated with its occurrence in more than one generation is highly suggestive of the diagnosis, but confirmation is necessary. Moreover, many familial histories are fragmentary, and in several instances the condition appears to have arisen spontaneously, further underlining the need for positive identification. It is thus fortunate that a serum abnormality unique to these patients, characterized by the functional absence of the serum alpha-2 globulin inhibitor of the activated esteritic C1 and kallikrein has been described.

Three different laboratory procedures can be used to study directly the protein concentration of functional state of the C1 inhibitor C1INH. The first, a biochemical method, applies the knowledge that the C1INH present in normal serum will block the splitting of the synthetic aminoacid ester substrate, N-acetyl L-tyrosine ethyl ester, by C1 esterase. Inhibition fails to occur in the serum of patients with hereditary angioedema.

In a second method, estimation of the concentration of inhibitor protein is made by double diffusion in Ouchterlony plates. Marked reduction in inhibitor protein was found in the serum of 25 patients from 10 kindreds with hereditary angioedema. Of great interest were sera of 9 patients from 2 other kindreds, devoid of inhibitor activity by biochemical assay yet containing normal quantities of protein as assayed by immunodiffusion against specific antibody to normal inhibitor protein. These sera apparently contain a structurally altered, antigenically intact, nonfunctional protein, which represents a second genetic variant of hereditary angioedema and occurs in nearly 12 per cent of the kindreds.

Based on the ability of the C1 inhibitor to block the action of C1 in the immune hemolysis is the third technic available for direct measurements of the inhibitor. This assay is highly specific and more than 1,000 times as sensitive as the esterase assay. Both genetic forms of hereditary angioedema show greater than 99 per cent reduction in functional C1INH activity with this hemolytic assay.

Three additional, albeit indirect methods can be used to screen for hereditary angioedema by determining the concentration of the natural substrates, C4 and C2 of the unihibited C1 enzyme. Given the appropriate clinical history, significant depletion of either C2 or C4 would offer evidence for the absence of functioning C1INH. Initial studies using immune hemolysis to show that depletion of C2 could be used to detect hereditary angioedema, both in remission and during attacks, have been confirmed. Subsequently it has been established that demonstration of C4 depletion is even more sensitive for the detection of a stoichiometric titration for hemolytic C4 activity and a radial immunodiffusion assay for C4 protein concentration. The radial immunodiffusion assay for C4 protein offers a reliable means of screening for hereditary angioedema. Confirmation requires direct estimation of the C1INH and radial immunodiffusion. If C4 is reduced but C-1INH is present by immunodiffusion, diagnostic confirmation must depend on the demonstration of a nonfunctional C1INH protein, using either biochemical or hemolytic assay technics.

In considering the pathogenesis of hereditary angioedema, one must also be cognizant that the C1INH inhibits the action of kallikrein. The finding that C1 and kallikrein share a common inhibitor, C1NH introduces the possibility that both the complement and the kinin system are involved in the pathogenesis of hereditary angioedema. In this regard, it should be noted that intradermal injection of either C1 or kallikrein will elicit a local increase in vascular permeability to an exaggerated degree in subjects with hereditary angioedema. It is thus conceivable that the ready activation of the kinin system in response to nonspecific injury yields not only the vasoactive nonapeptide, bradykinin, but also recruits the complement system possibly through an action of kallikrein on C1, resulting in the possible elaboration of an additional peptide from the action of C1 on its natural substrates, C4 and C2.

Evaluation of therapy for hereditary angioedema has been difficult because of the episodic and self-limited nature of the attacks. Subcutaneous administration of epinephrine appears to reduce but not entirely reverse localized angioedema of this type. Aerosolized epinephrine may enhance resolution of pharyngeal and laryngeal edema, but the physician must be prepared to establish an airway by tracheostomy if respiratory obstruction is progressive. The antihistaminic and corticosteroid drugs have not been of convincing value. Methyltestosterone administered sublingually appears to benefit some patients. Recent experience suggests that inhibition of the plasmin activation by epsilon aminocaprioic acid or tranexamic acid (transAMCHA) prevents attacks.

Cold urticaria

A cold-sensitivity state characterized by urticaria and occasionally by profound syncope was first described by Bourdon in 1866. The cutaneous manifestations of cold urticaria may be localized to the point of contact or become more generalized consequent to sudden ambient temperature change or prolonged cold contact. Hypotension and profound syncope may accompany either a localized or generalized urticarial reaction but usually results from prolonged exposure.

Such reactions to cold occur in association with a variety of disorders including syphilitic hemoglobinuria, multiple myeloma, and other paraproteinemias, as well as the full range of conditions associated with cryoglobulinemia. However, in many instances this idiopathic (essential) type of cold urticaria may be acquired or familial in nature. The familial idiopathic type has its onset shortly after birth, cannot be passively transferred, and is difficult to produce by local cold application. Half of the offspring may be afflicted.

The acquired idiopathic form of cold urticaria has a later clinical onset and mainly affects adults. Usually the symptoms develop on cold exposure, but a few individuals have noted the onset of symptoms on subsequent warming. Syncope following cold water immersion is not unusual, and drowned persons have been found with generalized urticarial eruptions. Ingestion of cold foods may produce respiratory distress with the development of buccal, glossal, and pharyngeal edema. Diverse factors, including measles and mucoplasmal infections, anaphylaxis consequent to stinging insect reactions, serum sickness, and jellyfish contact are recognized precipitants which suggest an immunologic mechanism may be operative for some types of cold urticaria. Furthermore, a background of atopy is present in nearly half the affected persons.

Cold urticaria usually can be diagnosed by application of ice for measured amounts of time; a fifteen-second exposure may suffice, but two minutes are usually required. Rarely a specific temperature of even warming may be necessary for urtication to develop. Mild temperature alterations, even as slight as those occurring in the tropics, may produce urticaria. A refractory period often follows urtication with a temporary period of tolerance that develops even after cold testing.

Passive transfer of this disorder from an affected individual with the acquired idiopathic cold urticaria as well as atopy was first described in 1950. Urtication occurred only after the recipient skin site was cold-challenged and then warmed. Exhaustion of the recipient site by repeated cold application failed to prevent the wheal-and-flare response to injection of ragweed extract to which the subject was sensitive, thus establishing the specificity of the passive transfer of essential cold urticaria. The responsible factor could be absorbed by human skin, and the optimal time for testing by cold challenge was three hours after passive transfer. Storage of the serum diminished the capacity to transfer cold urticaria passively but did not diminish the capacity to transfer the wheal-and-flare response to ragweed extract; however, both capabilities were abolished by heating the serum at 56°C. for four hours.

A kappa-type, Immunoglobulin-G cryoprecipitate occurring in a patient with cold urticaria was also found to exhibit mast-cell degranulation in biopsies of the urticarial sites. This secondary type of cold urticaria could be passively transferred to normal recipients by using the whole serum as well as the isolated Immunoglobulin-G cryoprecipitate.

The treatment of essential cold urticaria is contingent on firm establishment of a lack of any causative underlying disease process. Only by relieving the primary disorder in patients suffering from secondary cold urticarial disorders can effective remission be obtained. Antihistaminic and corticosteroid drugs have been disappointing in treating idiopathic cold urticaria. Cold desensitization, a tedious daily cold-immersion process, has been of unpredictable value.

Light urticaria

Urticarial eruptions consequent to sun exposure were described by Ward (1905). This unusual disorder is intensely pruritic and is characterized by the occurrence of whealing on an erythematous base in exposed areas. The face and dorsa of the hands are usually spared. Women are more commonly afflicted by this disorder which begins suddenly at any age, usually the third or fourth decade of life. Prolonged exposure of sensitive individuals occasionally eventuates in bronchospasm and syncope. Slight exposure results in only mild erythematous eruptions. Individuals with atopic reactions are not predisposed to this disorder, and there is no apparent familial predilection for it. Prolonged sun exposure, viral infections, insect or jellyfish stings, and various drugs and chemicals are alleged precipitating factors. Further allergic reactions are associated with a latent period which may become shortened on prolonged repeated exposure. There is little or no hyperpigmentation following the photoallergic reaction. Such induced urticaria can be passively transferred by serum of affected individuals when irradiation is administered thirty minutes to four hours after transfer to the prepared site. This capacity to transfer photoallergic urticaria passively is abolished by heating the serum at 56°C. for thirty minutes, aging after eight days, irradiation of the serum with ultraviolet light, or storage at 0°C. Pretreatment with antihistaminic drugs will prevent the reaction. However, irradiation of the recipient site prior to the passive transfer will not prevent the reaction. Only serum from patients with urticarial eruptions occurring at solar wavelengths between 2,850 to 3,200 Å can participate in passive transfer. The transferable factor resides in the gamma globulin.

Avoidance of exposure to sunlight is the most effective therapy for diminishing photoallergic reactions consequent to sun exposure. Graduated exposure and protected garments may mitigate the intensity of the reaction; however, topically applied creams which reflect or alter the 2,850 to 3,200 Å wavelengths usually are effective.

Urticaria due to chemical histamine liberators

A variety of chemical compounds in clinical use possess inherent ability to release histamine from mast cells. Such substances produce a wheal and flare when injected intracutaneously and may evoke symptoms of local or generalized histamine release when administered in doses sufficient for systemic absorption. Common examples include morphine, codeine, polymyxin B, and d-tubocurarine. Individuals with increased numbers of mast cells, as in urticaria pigmentosa, are likely to experience the effect of histamine liberation inducted by such substances. Certain drug reactions which may otherwise appear to be of the immunologic, anaphylactic type, may be the result of nonimmunologic chemical histamine liberation. Although certain of the reactions to radiographic materials are entirely consistent with anaphylaxis, others could represent an idiosyncratic sensitivity to histamine liberator drugs or cytotoxic phenomena.

Angioedema due to aspirin

Angioedema which occurs after the ingestion of aspirin is apparently an acquired state which usually develops after middle age in predominantly nonatopic patients. It is a manifestation of a syndrome which includes rhinitis, nasal polyposis, and bronchial asthma. Salicylates other than acetylsalicylic acid fail to induce symptoms in aspirin-sensitive patients. Immunochemically dissimilar substances, including tartrazine (yellow number 5), aminopyrine, and indomethacin, may also initiate the syndrome in a susceptible patient. There is no evidence for the participation of antibody in this reaction, and the identity of the chemical mediator responsible for the increase in vascular permeability is not known. Recently it has been suggested that this abnormality resides at the kinn receptor site.

Cholinergic urticaria

Cholinergic urticaria constitutes a morphologically distinct whealing reaction following heat exposure, stress, or exertion in which the lesions are often small, circular, and surrounded by a pronounced erythematous flare. Individuals so affected exhibit unusual cutaneous sensitivity to cholinergic agents, but otherwise the mechanism of the appearance of these lesions remains obscure.

Dermatographism

All normal skin has a certain threshold beyond which simple mechanical irritation will produce whealing. Individuals who are dermatographic exhibit a lower threshold to simple stimuli. Detailed studies in which great concern is shown for the manner in which an artificial stimulus of carefully graded intensity is applied to the skin have permitted assessment of the degree of cutaneous susceptibility to whealing due to pressure. However, the basis of the difference between dermatographic and normal individuals remains unknown.

Miscellaneous

Certain clinical situations in which urticaria or angioedema are known to occur do not lend themselves to classification in any of the previous categories. An example is the occurrence of urticaria in myeloproliferative syndromes such as polycythemia vera, myeloid metaplasia, and acute chronic myelogenous leukemia. In this group of disorders there appears to be some relationship between the presence of increased numbers of histamine-containing cells (especially basophils) and urticaria. Urticaria, especially of the chronic form, has been attributed to bacterial or mycotic infections. Although individual case reports often are reasonably convincing, the mechanism remains to be established. The association of urticaria with dental caries and moniliasis, although interesting, is largely anecdotal. Premenstrual exacerbations of urticaria occur commonly, and urticaria has been induced in relation to the administration of progesterone. Although emotional stress appears to predispose some individuals to urticaria and angioedema, as well as exacerbate the recurrence of such eruptions, there is no life experience or personality type which predictably is predisposed.

Treatment

Identification of the etiologic factor and its elimination provide the most satisfactory therapeutic program for the treatment of urticaria. Acute urticarial eruptions may be evanescent and seldom require a physician's services. However, in less than a third of chronic urticarial sufferers can an etiologic mechanism be established. Nonspecific measures including dietary manipulation, hydration of the skin, and administration of antihistamine and sympathomimetic drugs often provide symptomatic relief of both urticarial and angioedematous reactions. The subcutaneous administration of epinephrine hydrochloride may provide more prolonged benefit from such symptoms. It is the drug of choice whenever the anaphylactic syndrome occurs and particularly in association with syncope or upper respiratory obstruction. Antihistaminic drugs may be required in full dosage to suppress an eruption. Hydration of the skin is preferable to the use of drying agents; this can be accomplished by the use of bath oils as well as hydrating lotions after bathing. Topical steroids are seldom effective in the treatment of the urticarial reaction. Systemic steroid therapy often provides total relief of the symptoms. Because of side effects associated with prolonged steroid therapy, the administration of such drugs is seldom warranted until an underlying disorder responsive to corticosteroid therapy can be established. When steroids are necessary, a nonsuppressive schedule, that is, a single dose after breakfast every other day, should be adhered to. The life-threatening complications of upper-respiratory obstruction occur most frequently in sufferers of hereditary angioedema and anaphylaxis. The recurrent pruritic eruptions although disconcerting may precipitate a variety of personality alterations in the patient. For this reason reassurance is necessary and adjunctive therapy for specific disorders indicated. Caution is necessary in those individuals with a history or evidence of respiratory obstruction as previously mentioned.

Course and prognosis

Chronic urticaria is a disease which seldom is life-threatening. Episodic recurrences have been observed in nearly one fifth of the patients with urticaria for as long as thirty years despite the most judicious management. In most instances, acute urticaria is transient and insignificant. However, acute urticaria may be indicative of a subsequent serious, even fatal anaphylactic reaction and requires attention to and preferably the establishment and eradication of the etiologic factor. Specific attention always should be directed to those disorders with complications requiring emergency therapy, as in the anaphylactic syndrome and in cases of hereditary angioedema.

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Question and answer period

Physician: Have you found hydroxyzine to be especially useful in the treatment of urticaria?

Dr. Sheffer: Hydroxyzine does have definite antihistaminic qualities. Most patients have received it before they come to me, and I then change to cyproheptadine.

Physician: You touched on the fact that there might be genetic variants of hereditary angioedema. What advice would you give about searching for it in those patients who do not have a family background, and where the diagnosis is not likely judging from the history? Might forme fruste of this disease be present?

Dr. Sheffer: Once we have established the biochemical basis for the disease, I think it is incumbent on us to study all of the offspring. So far we have not identified anybody who has had a normal C1INH and then developed the disease subsequently. We do have children in one particular family who had a reduction in their C4 concentration, lacked the inhibitor, and eventually developed the disease. It is of interest that they started to have well-demarcated flushing episodes, then full-blown cutaneous angioedematous episodes, and in one instance gastrointestinal symptoms as well. This disease can begin at any age. We had a patient whose first manifestations were at eighteen months and another who started at age fifty-eight. It was at one time thought that it was accentuated during pubescence, but I see the onset of symptoms occurring at any age. We now think that urticaria does not occur in association with hereditary angioedema.

The important thing here, in the patient in whom you suspect hereditary angioedema, is to exclude this possibility by estimating or establishing the functional nature of the inhibitor of the first component of complement, C1INH, and the easiest way is to assay the C4 protein. We do this on everybody with angioedema.

OSTEOGENIC SARCOMA OF HEAD AND NECK INDUCED BY RADIATION THERAPY

Seven cases of radiation induced sarcoma of the head and neck were seen at the Memorial Hospital between 1931 and 1970. Their case histories are reviewed. The primary diseases originally treated by radiation were retinoblastoma, benign osseous lesions of the jaw bone, and soft-part tumors of the oral cavity. All patients had a relatively long latent interval, ranging from seven to twenty-three years, between the completion of the radiation therapy and the development of the new lesion. The new tumors arose in the mandible or in the maxilla and adjacent parts of the orbit. The symptoms of the new lesions were usually pain and swelling; two lesions ulcerated. Treatment was surgical; most patients underwent resection of either the mandible or maxilla. Six of the seven tumors reappeared, primarily at the site of operation, and rapidly spread to the cranial cavity, and death of the patients took place within six to eighteen months of the initial appearance of the sarcoma. One patient survived for three years. The seventh patient underwent multiple reconstructive procedures and survived for twelve years after the resection of the sarcoma. She eventually died of renal failure.

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The use of pre- and postoperative radiation therapy in the patient with head and neck cancer appears to engender the development of a long list of complications. Of primary concern among these is the appearance of new malignant growths. The present report deals with this specific phase of the problem: radiation-induced sarcoma arising within the bones of the head and neck. During the period 1931 to 1970, 50 cases of radiation-induced osseous neoplasm were seen at the Memorial Hospital. Seven of these tumors arose in the area of the head and neck. Each case met the established criteria for radiation-induced sarcoma of bone, namely: (1) microscopic or x-ray evidence of nonmalignancy, (2) x-ray given to patient with resulting tumor developing in the path of the radiation beam, (3) a relatively long asymptomatic period, and (4) resulting sarcoma histologically proved.

Case reports

Case 1. A twenty-six-year old female was admitted to Memorial Hospital in March, 1943, with swelling of the left side of the face. In 1930, she had received radiation therapy for a benign osseous growth of the left maxilla. She remained asymptomatic until the present swelling appeared. A biopsy was taken from a 2 by 1 cm. ulcerating lesion over the left bicuspid area. Bleeding from the biopsy site required external carotid ligation. The pathology report showed osteogenic sarcoma. On April 2, 1943, she underwent a left maxillectomy. Multiple stage reconstructions were carried out from April 9, 1943, to July 31, 1945. The patient remained well until September 2, 1957, when she expired from chronic renal failure.

Case 2. A fifty-four-year old male was seen in 1948 for swelling and ulceration in an area of the left jaw which produced trismus. In October, 1936, he developed pain and swelling over the left jaw. A partial excision of the mass was carried out, revealing reticulum cell sarcoma. A second excision of tumor was performed in May, 1937, followed by 4,599 r to this area. He remained well until the reappearance of swelling and ulceration in July, 1948. Biopsy now revealed an osteogenic sarcoma, predominantly spindle cell, but with considerable areas of osteoid and cartilaginous elements. A mandibular resection was performed. Rapid recurrence of this tumor was noted in the left submaxillary area with extension across the left submental area. He expired in April, 1949.

Case 3. A fifty-two-year old male was first seen in May, 1932, with a lesion arising on the buccal mucosa. The lesion was biopsied at Bellevue Hospital and implanted with 10 radium needles, after a diagnosis of epidermoid carcinoma had been established. Six weeks later 8 gold seeds were inserted. In May, 1936, nodes were palpated in the upper neck. Nine x-ray treatments were given to the submaxillary area. In July, 1936, a right radical neck dissection was performed. He remained free of disease until August, 1951, when a 1.5 by 3-cm. mass appeared in the right alveolar process. He was admitted at this time to Memorial Hospital, where excision of the right mandible and a portion of the left maxilla was performed. Biopsy was reported as "postradiation osteogenic sarcoma." On March 14, 1952, a 4-cm. mass reappeared in the operative site. He underwent a right maxillectomy on March 18, 1952. Diplopia developed in May, 1952, with recurrent tumor being noted shortly thereafter. The patient expired in July, 1952, sixteen years after the last course of radiation therapy and eleven months after surgery for the radiation-induced osteogenic sarcoma was given.

Case 4. A twenty-three-year old male was first admitted to Memorial Hospital in January, 1947. He had developed pain and swelling of the left jaw in 1938 at the age of fourteen. Ten x-ray treatments had been given when a diagnosis of sclerosing osteitis was made on biopsy. Over the next three years several courses of therapy were given for an estimated tissue dose of 4,500 r. He remained well until July, 1945, when persistent swelling and pain appeared over the jaw bone. In August, 1945, a partial mandibular resection was performed and the patient told that he had osteomyelitis. In September, 1946, an ulcer crater appeared in the lower angle of the jaw (Fig. 1). Biopsy now revealed a spindle-cell sarcoma with osteogenic components arising within the residual jaw bone. Excision of tumor was performed but recurrence developed and a maxillectomy was performed in January, 1947. A second recurrence developed; in September of that year an orbital exenteration was carried out in an attempt to control local disease. Tumor recurrence again developed in the defect and progressed until the patient expired in December, 1947.

Case 5. A ten-month old male was admitted to Memorial Hospital on September 14, 1944, one month after enucleation of his left eye for retinoblastoma. Tumor was found in the right eye and treated through 2 ports with 250 kv. The total air dose to each field was 8,000 r. The beams crossed the retina at 2.5 cm. from the temple surface and 3 cm. from the nasal surface. Estimated depth dose of the temporal field was 5,750 r and of the nasal field 4,280 r. The total tumor dose delivered over a three-month period was 11,040 r. Three years postradiation, a dense cataract developed in the right eye. His condition remained stable until June, 1967, when a swelling developed over the frontal bone. Biopsy revealed osteogenic sarcoma considered due to the previous radiation therapy. The tumor progressed with invasion of the cranial vault. He expired on August 10, 1968, twenty-three years following his initial radiation therapy.

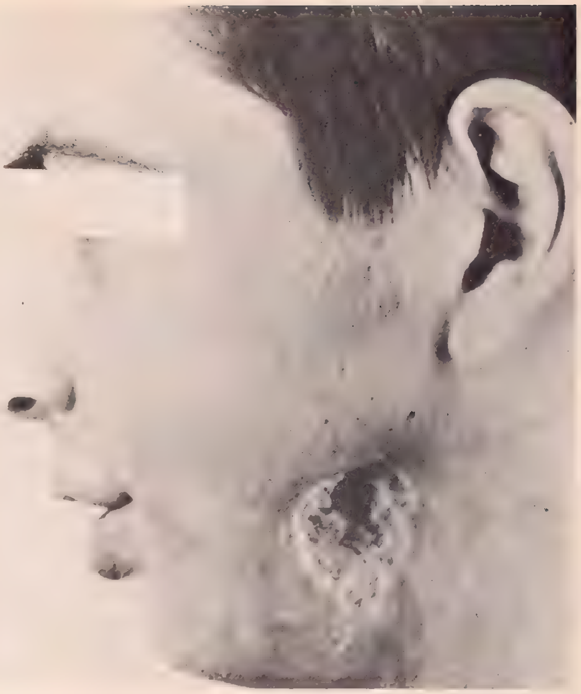

FIGURE 1. Case 4. Ulcerating sarcoma at angle of jaw.

Case 6. A two-year old female was admitted to Memorial Hospital on November 21, 1958, following enucleation of her right eye for retinoblastoma. She was referred for radiation therapy for tumor noted in her remaining eye. There were 2,000 r delivered to the left orbit through a temporal port and 3,600 r through a nasal port. Regression of the tumor mass was noted. In June, 1959, 6 doses of 2.5 mg. of methotrexate were given, and an additional 2,000 r were delivered to this region. In May, 1960, 1.2 mg. of trimethylene melamine were given intra-arterially followed by an additional 4,000 r to the orbit. On January 5, 1961, the left orbit was enucleated for failure to control tumor growth.

The patient remained well until November, 1965, when a painless swelling appeared over the bridge of the nose (Fig. 2). X-ray films revealed a 2.5 by 2.5-cm. mass containing mottled calcification. Biopsy confirmed the impression of radiation-induced osteogenic sarcoma. On December 10, 1965, a modified Weber-Fergusson maxillec-

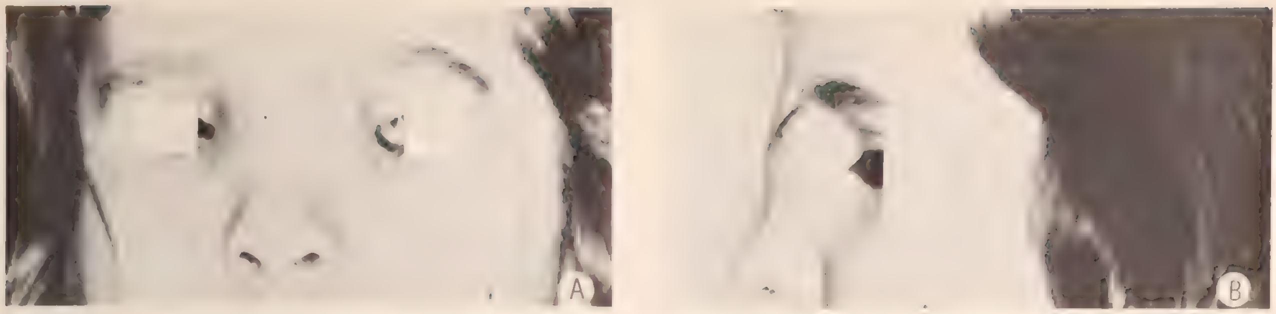

FIGURE 2 Case 6 (A) Anteroposterior view showing swelling over bridge of nose due to sarcoma. (B) Lateral view showing tumor producing swelling of bridge of nose

tomy was performed. In July, 1967, recurrence was noted in the region of the ethmoids (Fig. 3). This was re-resected. Recurrence was again noted, however, with eventual spread to brain and lungs. She expired on August 29, 1968, seven years following her last course of radiation.

Case 7. A nine-year old female was first treated at age two and a half by enucleation of her right eye for retinoblastoma. Six months later tumor appeared in the left eye. She was then treated with 250 kv., using a 0.5-mm. copper filter, 60 cm. target skin distance, and a 2.5 cm. portal. She received a second course of radiation therapy in 1941. The tumor dose in the vicinity of the lacrimal and ethmoid bones was 13,290 r, which had been given in 1939. An additional 10,000 r were delivered in 1941 for a total of 23,290 r. In February, 1946, a painless swelling appeared through the left nostril. She was admitted to Memorial Hospital where biopsy of the mass revealed osteogenic sarcoma with chondromatous elements. A left maxillectomy and orbital exenteration were performed. Recurrence appeared in May, 1946, with the patient expiring shortly thereafter.

Clinical material

Table I summarizes the preceding case histories. The primary diseases for which radiation therapy had been employed consisted of retinoblastoma (3 cases), benign osseous lesions of the jaw bones (2 cases), and soft-part tumors of the oral cavity (2 cases). Three of the tumors developed within the mandible, and 4 developed in the maxilla and adjacent osseous structures of the orbit. Among this group of patients, 2 had presented signs and symptoms of primary osseous disease. Radiation had been given to control tumor growth but instead resulted in changes leading to sarcomatous degeneration superimposed on the pre-existing bone disease. In the 5 other cases, the primary disease process was considered extraosseous, the involved bone having been in the path of the radiation beam. The dose of radiation delivered to the site of primary disease ranged from 4,500 r to 23,000 r. The patients with osseous and extraocular disease received modest amounts of radiation therapy. The average dose was 4,500 r. In contrast, the 3 patients with retinoblastoma received far higher doses, ranging from 11,040 to 23,000 r (Case 7). This group received their dosage schedule over a period of three months to two years. Such extensive radiation therapy had been carried out in an effort to control disease in the remaining eye. In no instance could function of the remaining eye be preserved; enucleation of the second eye was carried out in 1 of the 3 patients in this series.

All of the patients in this series had a relatively long latent interval between completion of radiation therapy and the appearance of their new primary lesion. This ranged from seven to twenty-three years. In no instance was the new primary sarcoma thought to be related to pre-existing

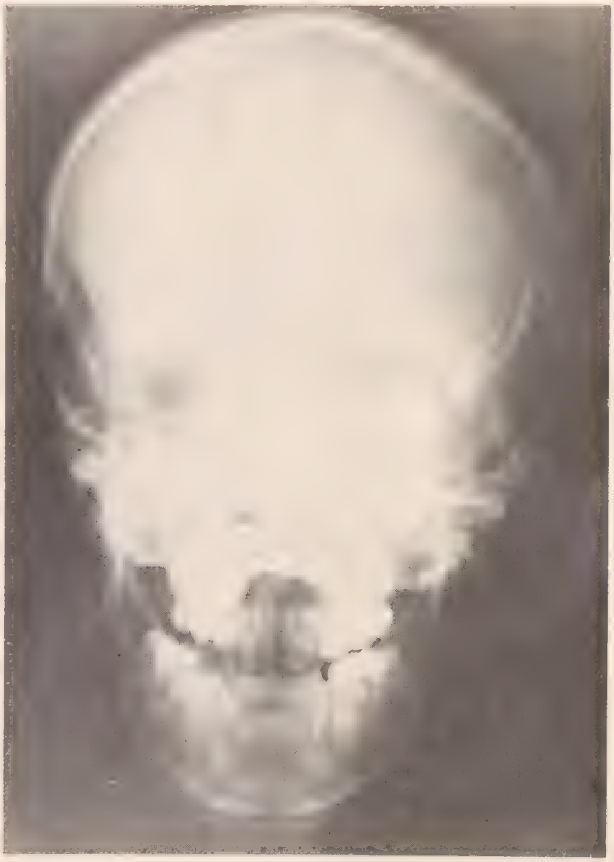

FIGURE 3. Case 6. Osteogenic sarcoma of nasal cavity extending to right orbit and ethmoids.

TABLE I. Summary of case histories of 7 patients developing osteogenic sarcoma following radiation therapy

Patient	Primary Disease	Age at Treatment (Years)	Radiation Therapy	Age With Disease (Years)	Tumor Site	Latent Period (Years)	Result
1	Benign osseous growth maxilla	13	. . .	26	Left maxilla	13	Alive 14 years
2	Reticulum-cell sarcoma, jaw	42	4,599 r	54	Left mandible	11	Expired 8 months
3	Epidermoid carcinoma, buccal mucosa	36	Implant radium	52	Right mandible	16	Expired 11 months
4	Sclerosing osteitis, jaw	14	4,500 r	23	Left mandible	7	Expired 2 years, 4 months
5	Retinoblastoma	10 months	11,040 r	23	Frontal bone	23	Expired 1 year, 2 months
6	Retinoblastoma	2	9,600 r	9	Bregma	7	Expired 3 years
7	Retinoblastoma	$2^{1}/_{2}$	23,210 r	9	Left sinuses	7	Expired 4 months

disease. The site and manner of appearance of each of the new primary tumors varied. Three of the lesions arose in the mandible, and in 4 the maxilla and adjacent osseous structures of the orbit were involved. Pain and swelling were the typical symptoms to appear at the time of the development of the osteogenic sarcoma. In 2 instances the lesions ulcerated at the time of their clinical appearance. Swellings appeared over the frontal bone, bregma, alveolar process of the mandible, and through the nostril.

Treatment in most cases was surgical; 6 of 7 patients underwent resection of either maxilla or mandible. In one instance, an orbital exenteration was carried out along with the maxillectomy. Recurrence developed in all but 1 patient. Six of the 7 patients had rapid reappearance of their tumors primarily at the site of operation, with the recurrent disease spreading rapidly to the cranial cavity. Demise of the patient followed within a six to eighteen-month period following initial appearance of the sarcoma. Case 6 survived for three years. Case 1 underwent multiple reconstructive procedures; she survived for twelve years following resection of the osteogenic sarcoma, only to expire from renal failure.

Pathology

Tumor containing abundant bone with osteoid formation occurred most frequently in the head and neck area, with the well-differentiated fibrosarcoma predominating in only 2 cases (Figs. 4 and 5). Variations containing giant-cell sarcoma with numerous epuloid giant cells have also been seen (Figs. 6 and 7). In no instance was there any chondromatous portion to the tumor, although chondrosarcomas can occur as distinct entities unto themselves in this region.[1]

Comment

Induction of sarcomas arising in bone can occur in two ways following radiation therapy.[2] In the first, a primary bone tumor of the skull or jaw bones is treated by radiation therapy; after a latent period of at least four years, sarcomatous degeneration occurs at the site of the pre-existing pathologic condition. In the second, a soft-part lesion of the oral cavity or head and neck is treated with tumor developing in the bone which lies in the path of the radiation beam.

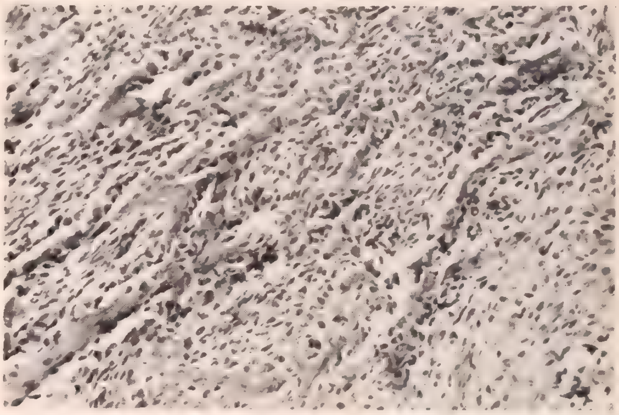

FIGURE 4. Case 7. Osteogenic sarcoma with abundant bone and osteoid formation (hematoxylin and eosin stain).

In the head and neck region there has been marked variability in the dosage schedule for the various diseases that have been treated, so that it has been difficult to predict levels which are responsible for the induction of tumor. It is postulated, however, that at least, 3,000 r are essential to act as an inciting factor.[3]

In the early reports dealing with osteogenic sarcoma of bone from radiation, it appeared that the underlying pathologic process was usually a benign, bony lesion. In the present study, as well as other recent reports of radiation-induced sarcoma of bone, it is quite evident that primary osseous disease is not essential for malignant transformation and that radiation of visceral and soft-part neoplasms may eventuate in this disease.[4] The frequency of this entity appears to be increas-

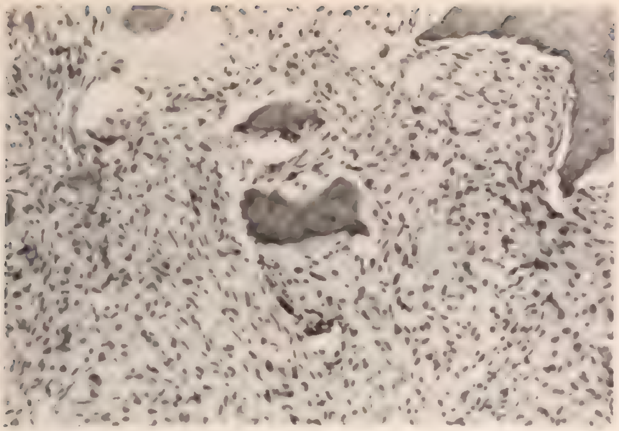

FIGURE 5. Case 4. Well-differentiated fibrosarcoma invading and surrounding mandibular bone (hematoxylin and eosin stain).

ing, more cases being associated with radiation for soft-part neoplasms.[5] Among the 7 cases in the present study, there were 5 extra-osseous tumors. In 3 instances extreme levels of radiation to tumor were employed (9,600 to 23,000 r). Little evidence of necrosis of bone secondary to these levels was noted. This appears to go along with the concept that the younger the patient, the more tolerant he is to radiation damage.

Osteogenic sarcoma arising in the jaws or facial bones have been previously described. Kragh, Dahlin, and Erich[6] reviewed 44 such cases of osteogenic sarcoma. Nineteen of the tumors in this series arose in the mandible, 14 in the maxilla, and 2 in the ethmoid region. The remaining tumors developed from the walls of the antrum and ethmoid. Four of the osteogenic sarcomas arose in tissue that had been radiated previously for benign conditions. Two of these were sarcomas that arose in pre-existing fibrous displasia, the third followed treatment of a giant-cell reparative granuloma, and the fourth developed after radiation for keloids about the chin. In this series the latent interval between radiation and the onset of sarcoma averaged 14.7 years.

In a review of the literature by Skolnik, Fornatto, and Heydemann,[7] 8 cases of radiation sarcoma of the skull bones were evaluated. They added 2 additional cases of osteogenic sarcoma arising in previously irradiated temporal and frontal bones. Three of the reviewed cases had been reported by Cahan *et al.*[3] and included 1 each of mandible, maxilla, and ethmoid. In their 5 other cases, 2 had arisen in the mandible, 2 in the nasal bones, and 1 in the ethmoid. The levels of radiation that were reported to be associated with malignant transformation were within the levels considered therapeutic. For the patients who developed sarcoma in association with retinoblastoma, however, excessively high levels had been employed, as in our series. In Tebbert and Vickery's[8] case of retinoblastoma, 19,800 r in air had been delivered over an eleven-month period of time. The latent period to tumor development ranged from four to eighteen years with an average of six to seven years. There were no survivors among the cases reported by Skolnik, Fornatto, and Heydemann.[7] This apparently characterizes the virulent nature of this tumor when it appears in the head and neck.

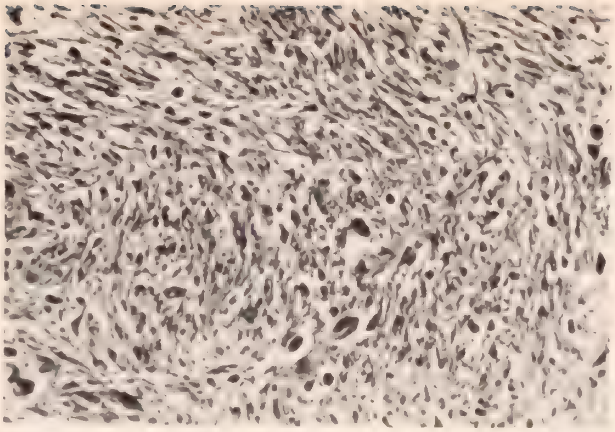

FIGURE 6. Case 3. Characteristic pattern of spindle and giant cell sarcoma in which the fibroblastic, spindle cell elements predominate (hematoxylin and eosin stain).

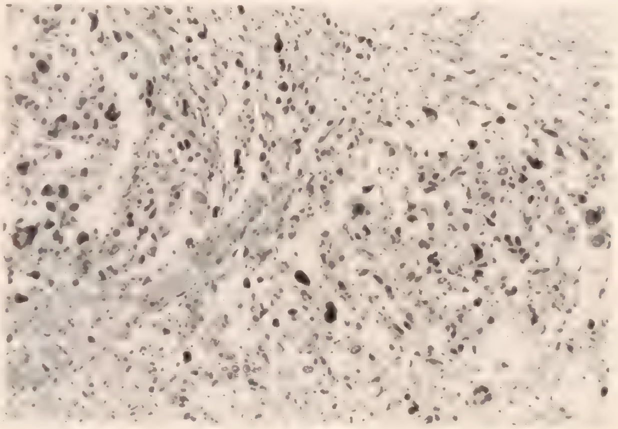

FIGURE 7. Case 5. Spindle and giant cell sarcoma with numerous epulis-type giant cells (hematoxylin and eosin stain).

In a report by Arlen *et al.*[5] reviewing 50 cases of radiation-induced bone sarcoma seen at Memorial Hospital, the overall survival rate stood in marked contrast to results seen with the group of tumors appearing in the head and neck. Twenty-six per cent of the patients in the overall series survived more than five years free of disease. Only 1 patient (Case 1) survived five years in the present group of head and neck cases. When one compares spontaneously appearing osteogenic sarcoma with radiation-induced tumors, there is a fall-off in survival among the former group to 16 per cent.[6]

While the number of reports of radiation-induced osteogenic sarcoma arising in the head and neck are few,[8-10] a number of distinct cases following radiation for retinoblastoma have been reported.[11] Shah, Arlen, and Miller[12] reviewed 13 of these cases, 3 of which are included in the present report. Levels of radiation therapy among these patients ranged from 9,900 to 23,000 r with an average of 16,000 r delivered over a three-month to two-year period. The latent period between radiation and appearance of tumor ranged from four to twenty-three years. As one would expect, tumors arose in the frontal bones and those skull bones associated with orbital structures.

Surgery was employed in those instances where sarcoma appeared in the jaw and skull bones. This included wide excision, mandibulectomy, maxillectomy, or maxillectomy combined with orbital exenteration. The most favorable tumors to treat were those which arose in the jaw bones. While survival rate for the entire group was extremely poor, those arising in the jaw could be more easily managed with symptoms ameliorated for a longer period of time (four years). Those lesions developing after radiation therapy for retinoblastoma have done the poorest, the longest survival in our series being thirty-two months (Case 6).

The behavioral pattern of radiation-induced osteogenic sarcoma appearing in the head and neck appears to stand in contrast to osteogenic sarcoma appearing spontaneously within the cranial and jaw bones. The latter group has a favorable prognosis, with results as high as 40 per cent survival being reported.[6] A major factor in the poor survival among the head and neck group has been the fact that many arise in those bones closely approximating the cranial cavity, and as such, one fails to completely extirpate the tumor by surgery. As with the other osseous tumors of the head and neck, such as the spontaneous osteogenic sarcoma[13] and chondrosarcoma, distant metastasis is uncommon.[1] Only 3 patients among the 13 reported with retinoblastoma had pulmonary metastasis. All other patients died of locally recurrent disease.

Radiography in detecting early bone changes in the head and neck has been difficult. Pre-existing radiologic findings of osteitis have been considered an essential part of the overall picture, but, unfortunately, have not been seen among our head and neck patients. Thus, in this group of patients, evaluation of pre-existing films has failed to give any clue that malignant transformation is occurring.[14] The most common finding suggestive of tumor formation is the presence of a destructive lesion with or without pathologic fracture, as well as the appearance of new bone formation. When malignant transformation occurs in bone, the characteristic tumor to appear usually contains one or multiple components of the basic cells comprising the stroma of bone. While fibrosarcoma is the most common tumor to develop as a result of radiation to bone, osteoid and bone-producing tumors predominate in the head and neck area. Chondrosarcoma presents itself as a distinct entity and has been reported separately.[1]

There have been many reports speculating as to the cause and relationship of radiation to the induction of sarcomas. Cole and Nowell[15] have described a sequence of events incorporating, as the initial event, somatic mutation taking place in one of a small number of irradiated cells. The effect has been considered due to direct action of radiation on the genetic apparatus or possible activation of a latent virus. Once specific mutations have taken place, it is essential that mitosis occur, otherwise the mutated cells lie dormant. The effect of a reparative phenomenon associated with radiation is in the induction of mitosis. This may be the deciding factor allowing rapid growth of the tumor to take place. In the light of newer information, the presence of an infectious agent in patients with osteogenic sarcoma is now suggested.[16] It is not inconceivable to associate prolonged periods of radiation, as seen in many of our cases, with an overall picture of tumor induction.

Summary

The use of pre- and postoperative radiation therapy in the patient with head and neck cancer appears to engender complications including the appearance of new malignant growths. During the period 1931 to 1968, 50 cases of radiation-induced osseous neoplasms were seen at the Memorial Hospital. Seven of these tumors arose in the head and neck region. Each case met established criteria for radiation-induced osteogenic sarcoma. Other cases of the same phenomenon appearing in the literature are reviewed.

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RELATIONSHIP BETWEEN PULMONARY DISEASE, HIATAL HERNIA, AND GASTROESOPHAGEAL REFLUX

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Recurrent or persistent bronchitis is one of the most common problems seen by thoracic consultants. In the past, infection, allergy, smoking, and air pollution have been postulated as the major causes. Although many of the patients have been found to have hiatal hernias, these are usually passed off by radiologists as incidental because they are small. Experience has begun to show that even patients with no hernias may have the esophagogastric symptoms of bloating, postprandial distress, hunger pain, food and seasoning intolerance, and excessive belching even without a hernia if they have gastroesophageal reflux. Gastroesophageal reflux is also capable of producing respiratory problems, and in the opinion of the author, is one of the most common noninfectious causes. Significant gastroesophageal reflux is usually caused by a wide esophagogastric angle. The Belsey hiatal hernia repair technic can be successfully used to remedy the situation.

In the office of a thoracic consultant everybody seems to have a cough. Properly, most of the patients seen have bronchitis which has either failed to respond to standard treatment or has recurred often enough to become annoying. Pain, hemoptysis, dyspnea, wheezing, and sputum production also rank high on a statistical list of complaints. Ever since bacteria were proved to be the cause of certain diseases of the bronchi and lungs, the word "infection" has been synonymous with the symptons of bronchitis. Since the 1940s, potent, safe, antimicrobial agents, effective enough so that one might reasonably expect infections to be controlled, have become increasingly available, but cough, lung congestion, wheezing, and phlegm, like "Ol' Man River. . .jus' keep rolling along."

Allergy, a fashionable cause of bronchitis in the fifties and sixties is now running second to air pollution in the lay press and in the minds of the public. The pediatrician sees bronchopneumonia and bronchiolitis in infancy, asthmatic bronchitis and recurrent pneumonitis in the preschool and school years. Internists, general practitioners, and others of us regularly see various combinations of bronchitis, laryngitis, and bronchopneumonia, with or without wheezing and "congestion." In a large number of patients these problems recur in spite of adequate treatment for infection and allergy, and regardless of whether or not pollutants can be identified in the inspired air. The high incidence is impressive enough, but it is the significant number and percentage of patients who have repeated disabling recurrences that demands a further look into the basic cause.

Tobacco smoking has been accepted by the profession and the public as a most important etiologic and aggravating factor and one of the leading influences which perpetuates bronchitis. However, a concept is emerging that heavy smoking can also represent a symptom of bronchitis, and that compulsive smoking can be perpetuated by bronchitis, as well as aggravate or cause it.

Symptomatology of hiatal hernia and gastroesophageal reflux syndrome

Esophagogastric symptoms. The standard pattern of bloating, postprandial distress, hunger pain, heartburn, food and seasoning intolerance, and excessive belching is well known by all physicians to be associated with a variety of upper abdominal conditions. In previous years the gallbladder, duodenum, stomach, and pancreas have been incriminated most often. The usual diagnoses are gastric or duodenal ulcer, gastritis, duodenitis, cholecystitis, pancreatitis, and so on. Radiologists and gastroenterologists have, with great frequency, identified small, sliding hiatal hernias in patients with these complaints, but they tend to pass off the finding as incidental, and use language in their reports that minimizes its significance. The size of a hiatal hernia has come to be thought of as an index of its ability to produce

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symptoms, and only recently has this concept been successfully challenged. Not only has experience begun to show that symptoms and pathologic changes are not dependent on the size of a hiatal hernia, but also it has become increasingly evident that large numbers of patients have the same esophagogastric symptoms and the same morbid changes without a hernia if they have significant recurrent gastroesophageal reflux.

Bronchopulmonary symptoms. Attention has been called by several authors to the possibility that hiatal hernia and/or gastroesophageal reflux are found in a high percentage of patients with chronic or recurrent laryngeal, tracheobronchial, and pulmonary problems. Belsey's[1-10] thesis that gastroesophageal reflux is capable of causing severe respiratory as well as esophagogastric problems, overlooked during the fifties, has earned increasing acceptance within the last ten years. It is the thesis of this report that frequent recurrence or persistence of symptoms and signs of tracheobronchopulmonary infections should lead one to consider etiologic factors other than infection. In my opinion, the most common and most important of the noninfectious causes is gastroesophageal reflux. The mechanism is aspiration, hence the now popular use in some circles of the terms "aspiration bronchitis," "aspiration pneumonitis," or as the British are wont to say, "inhalation pneumonitis." One very important factor relating to severity may be the presence and sensitivity of the patient's gag, palatine, and cough reflexes.

True incidence of gastroesophageal reflux

It is probably factual to say that gastroesophageal reflux occurs in everyone at one time or another. Surely all are familiar with the nonemetic regurgitation in overfed babies when they are hoisted to a shoulder and "burped." The familiar pattern of fatigue, excessive coffee intake, adaptation stress, and heartburn must linger still in the minds of most former medical students. Easily 50 per cent of the adult population have learned through repeated experience that certain foods, such as onions, cucumbers, green peppers, and many of the standard condiments, give them "indigestion" or leave them with some form of postprandial distress. Such symptoms traditionally point to disorders of one or more of the organs of the upper abdomen, all of them reasonably well understood and reasonably well studied except hiatal hernia and gastroesophageal reflux. It is quite fair to state that even though hiatal hernias are very commonly diagnosed, they are not very commonly incriminated as the cause of symptoms. Some symptoms are attributed to disease in other organs and some are attributed to nervousness, psychosomatic reactions, and so on. A careful examination of our own case material has led us to firm acceptance of the concepts outlined by Belsey.[1] Studies of our patients and of the attitudes of our learned colleagues have led us to certain impressions:

1. Gastroesophageal reflux is variable in the same patient from time to time.
2. Gastroesophageal reflux may cause no disease in patients, even though it is present frequently.
3. It appears that the volume of the reflux, the frequency of the reflux, and the ease by which it can be elicited either during examination or under the patient's own normal circumstances, represent important factors regarding whether or not pathologic changes and symptoms ensue.
4. There seems to be little doubt now that both alimentary and respiratory symptoms accompany gastroesophageal reflux and may well be caused by it.
5. Careful examination including a meticulous history will reveal, in the majority of cases, that both the alimentary and the respiratory systems are involved.
6. Any physician who approaches this problem as we now do must deal with reports from radiologists and gastroenterologists indicating entirely normal study results and normal anatomy in patients who are intensely symptomatic. This has led us to question the criteria for normalcy in the radiographic examinations presently conducted for the esophagus and stomach.
7. Admittedly, many patients who are affectionately known as "crocks" by irreverent house officers have this condition. We have come to accept these patients and treat them on the same basis as all others, with surprisingly excellent results and a very low failure rate.

Similar symptoms are seen in the spill-over tracheobronchial aspiration syndrome in patients who have chronic esophageal obstruction, a finding in some 2 to 10 per cent of patients with hiatal hernia and/or gastroesophageal reflux.

It is apparent that gastroesophageal reflux deserves more attention than it has been getting. Part of the reason why it might not be well understood may lie in the fact that many of the symptoms, both in the respiratory and the alimentary systems, are subtle. Also, hiatal hernia and gastroesophageal reflux represent a great masquerader. Further, gastroesophageal reflux may be normal in some patients under certain conditions, and almost surely is variable in each patient from time to time.

A review of our own operative cases up to 1968 revealed that respiratory symptoms were present in over 40 per cent and esophagogastric symptoms were present in over 90 per cent.[5,6]

Our earliest experience was with a series of 9 children with severe recurrent pneumonitis or bronchitis, all of whom were operated on to correct gastroesophageal reflux, compared with 9 similar children who were not operated on.[5] Late follow-up of these early cases reveals that all of the operated cases have remained well and all of the nonoperated cases have continued in various degrees of bronchopulmonary disability. Follow-up time is now over four years.

Abnormal, "normal" radiographic anatomy

We have now come to believe that a wide esophagogastric angle associated with a high position of the esophagogastric junction at or immediately below the esophageal hiatus in the diaphragm represents the anatomic situation which most often predisposes an individual to significant gastroesophageal reflux (Fig. 1). In many cases this is associated with flatulence of the esophagogastric junction, or chalasia, as described in the older pediatric textbooks. We consider this to represent a definite, identifiable, anatomic abnormality, contrary to the opinion of most of those whose x-ray reports we have read.

Respiratory syndromes associated with gastroesophageal reflux

As our experience has increased and our concepts have become crystalized, we have come to associate all of the following with gastroesophageal reflux, considering the reflux itself, with or without a demonstrable hernia, to be the primary etiologic factor: (1) recurrent laryngitis, (2) recurrent tracheobronchitis, (3) recurrent pneumonitis, (4) bronchiectasis, (5) exacerbations of noninfectious "infections" in people with a variety of chronic bronchopulmonary problems, and (6) certain cases of cor pulmonale.

Teachers and authors of a generation ago used to stress the importance of gag and palatine reflexes, or their absence, in bronchiectasis. It seems to me that this concept deserves to be revived, since frequent, significant gastroesophageal reflux, plus diminution or absence of the gag reflex, lead to severe, recurrent bronchopneumonia and bronchiectasis. This idea is compatible with the anatomic distribution of bronchiectasis in the middle lobe and basal segments on the right, and the lingula and basal segments on the left. It also is compatible with the finding that bronchiectasis is bilateral in the majority of cases. Further, it sheds some light on the fact that many patients in whom pulmonary resection for bronchiectasis is performed have recurrence of symptoms and disease in additional segments which become dependent after the originally dependent ones have been removed.

Surgical technic

Interested readers are referred to previous publications regarding the surgical technic.[1-3,5-7,10,11] The anatomic objectives of the Belsey hiatal hernia repair approach we now employ may be enumerated as follows:

1. To attain the placement of over 1 inch of esophagus below the diaphragm.
2. To attain enough length to suture the esophagus and stomach to the under surface of the diaphragm without tension.
3. To attain a sharp esophagogastric angle which will provide a paraesophageal fundus and a valve-like mechanism at the esophagogastric junction.
4. To reactivate the hiatal sling pinchcock.
5. To remove permanently damaged bronchiectatic segments concomitantly with hiatal hernia repair.

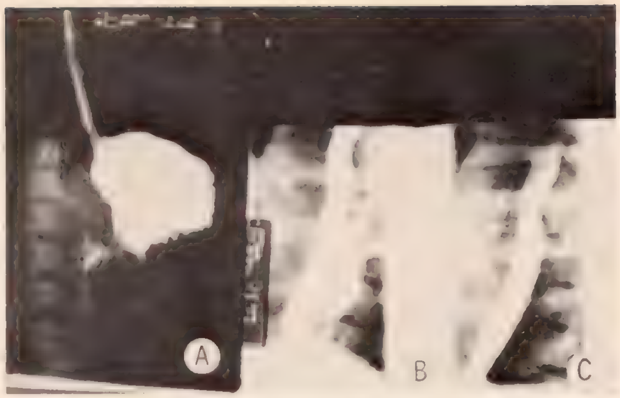

FIGURE 1. (A) High entry of esophagus into stomach with wide esophagogastric angle. (B) Esophagus filled with barium on water test. (C) Esophagus filled with barium due to spontaneous reflux.

Clinical approach

The decision to recommend surgery is based on the severity and duration of symptoms, correlation with radiographic and fluoroscopic findings, and response to medical therapy. Regularly, only 50 per cent of the patients who are referred to us for surgery come to operation.

Compelling indications for operation. Repeated regurgitation of gastric contents, repeated aspiration bronchopneumonitis, and recurrent hemoptysis all constitute compelling indications for operation. Any type of esophageal narrowing, even temporary, must be held open to suspicion. It must be considered not only dangerous to the patient at the time, but representative of certain evidence that the esophagus is becoming scarred, hence later operation will be more difficult.

Medical treatment indicated. Postprandial distress, flatulence, excessive belching, heartburn, and most of the painful states that we see in this condition can be handled well with medical therapy. Medical treatment is indicated for the acute phase of the respiratory inflammatory states; however, recurrent bronchopulmonary problems should be considered for surgical correction.

Results of surgery

Previous reports contain detailed statistical analyses of our cases from 1965 to 1968. The results since that time have been similar. We have had no deaths due to the surgery, except the single one previously reported. One patient with known cirrhosis of the liver died, six and a half weeks after the operation, of uncontrollable gastrointestinal hemorrhage. In our first 294 operative cases, 17 patients required nasogastric decompression in the postoperative period. None of the cases in the second half of this series have required this, probably representing a difference in attitude on the part of the surgeons regarding this aspect of postoperative care.

Conclusions

Gastroesophageal reflux is capable of causing severe symptoms and severe pathologic changes in both the alimentary and respiratory systems.

Operations for hiatal hernia can control both if they control gastroesophageal reflux.

A re-evaluation of criteria regarding normalcy in the radiographic anatomy of the esophagus, the esophagogastric junction, and the diaphragm is in order.

The clinical results are over 92 per cent satisfactory in a fairly large series of patients treated surgically, with only 1 operative death in over 500 cases.

Summary

Some of the current and changing concepts which have come to incriminate gastroesophageal reflux as the basic etiologic factor in many of the symptom complexes of the upper gastrointestinal and respiratory tracts have been reviewed.

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CALCIUM DEPOSITS IN THYROID REGION

In patients undergoing long-term hemodialysis

Irregular spicules of calcium were noted in the region of the thyroid gland in 8 of 16 patients undergoing hemodialysis, as compared to none of the controls. The thyroid region may be an early site of metastatic calcification presaging more dangerous deposits, and thus it could be a region which should be monitored in patients receiving maintenance dialysis.

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An association between uremia and soft-tissue calcification has been recognized for more than a hundred years.[1] This phenomenon is being observed more frequently since the advent of chronic hemodialysis. Deposits occur in blood vessels, cornea, lungs, kidneys, stomach, heart, joints, and skin.[2] This study calls attention to the occurrence of calcification in the thyroid region in patients with end-stage renal disease who are maintained by chronic hemodialysis.

Methods

Sixteen patients undergoing chronic hemodialysis and 6 patients on long-term peritoneal dialysis were studied with lateral roentgenograms of the neck using soft-tissue technic. Twelve patients over forty years of age with laryngopharyngeal carcinoma—in whom lateral roentgenograms of the neck were routinely taken with similar tech-

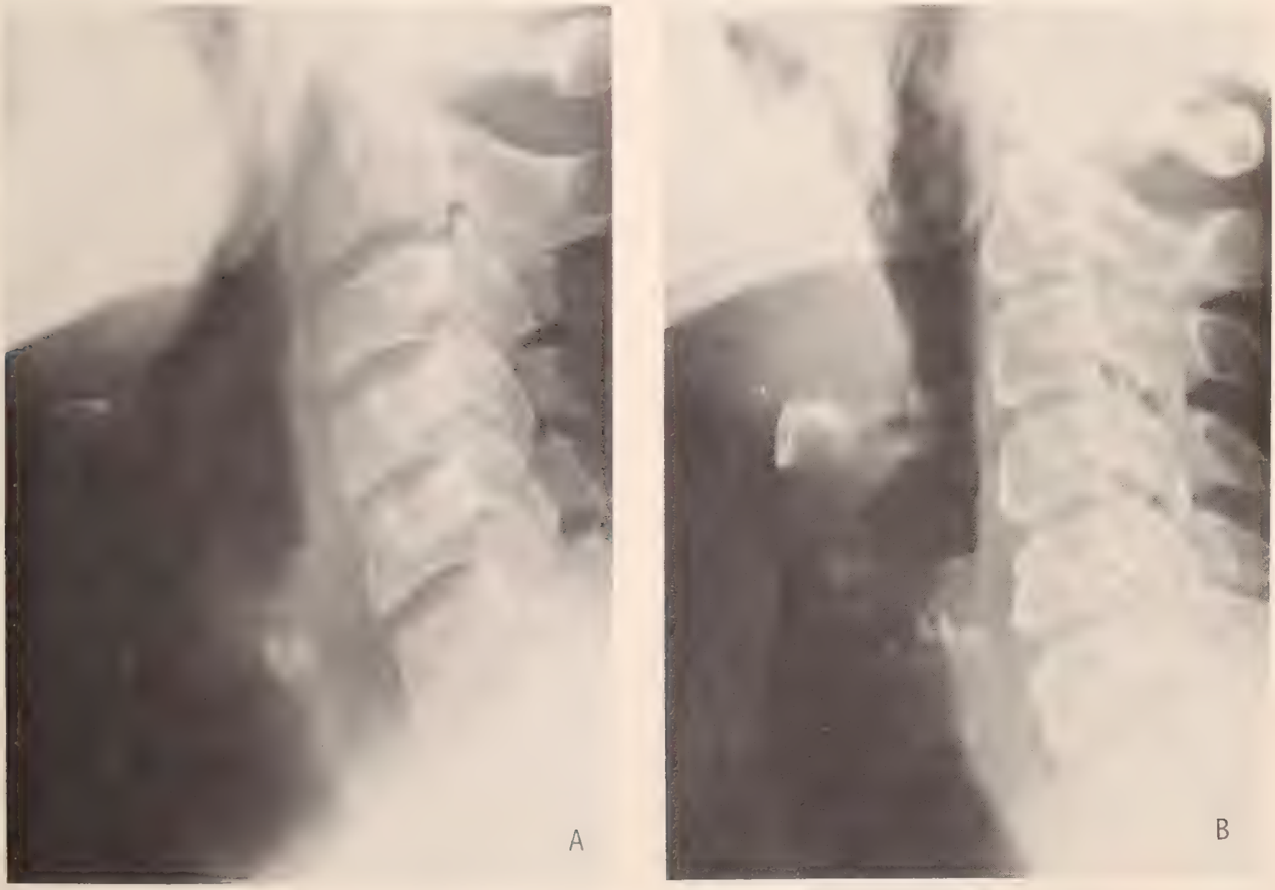

FIGURE 1. Irregular calcification in the region of the thyroid gland in patients 9 (A), and 16 (B).

TABLE I. Calcification in the thyroid region in patients undergoing chronic hemodialysis

Patient	Age (Years)	Sex	Duration of Dialysis (Months)	Renal Disease*	Serum Calcium (mg. per 100 ml.)	Serum Phosphorus (mg. per 100 ml.)	Alkaline Phosphatase (I.U.)	Other Metastatic Calcifications	Bone Disease	Thyroidal Region Calcification
1	51	M	21	CGN	9.5	7.4	60	. . .	+	−
2	36	M	24	CGN	7.1	9.4	79	Periarticular	+	−
3	51	M	23	CGN	8.8	10.0	68	. . .	−	−
4	37	M	25	CGN	9.6	9.9	53	. . .	+	+
5	36	M	25	CGN	9.5	11.0	137	Periarticular	−	−
6	22	M	21	RPGN	9.0	8.4	134	. . .	−	−
7	38	M	21	CGN	8.0	6.3	156	. . .	−	−
8	28	M	42	MGN	9.4	13.8	53	Aorta Cornea	+	+
9	39	M	25	MGN	9.0	8.5	155	. . .	−	+
10	51	M	30	CGN	9.0	6.0	74	. . .	+	+
11	42	M	34	PD	8.0	10.4	182	Periarticular	+	+
12	50	M	21	CGN	9.6	8.0	184	Periarticular	+	+
13	29	M	46	CGN	8.7	6.7	255	Periarticular	−	+
14	45	M	24	PD	9.0	11.0	139	Cornea	−	−
15	50	M	39	PD	9.0	8.7	78	Joints and periarticular	+	−
16	40	F	36	MGN	10.0	11.2	76	Falx	−	+

* MGN = Membranous glomerulonephritis
RPGN = Rapidly progressive glomerulonephritis
CGN = Chronic glomerulonephritis
PD = Polycystic disease

nic—and 10 patients with chronic uremic acidosis who did not yet require dialysis, were studied as controls. Presence or absence of calcific deposits in the region of the thyroid gland was diagnosed by a radiologist who had no knowledge of the patient's clinical diagnosis.

Histologic examination of thyroid tissue was not possible and hence the precise location of the observed deposits could not be verified.

Results

The age, sex, duration of dialysis, chemical parameters, and other associated calcifications of the subjects are presented in Table I.

Calcification in the form of irregular spicules was noted in the region of the thyroid gland in 8 of the 16 patients undergoing hemodialysis (Fig. 1 and Table I). Calcification was not seen in the films of uremic patients before dialytic therapy, in 6 patients after an average of fifteen months of peritoneal dialysis or in patients without recognized renal disease.

Average duration of dialysis was thirty-two months in patients with calcium deposits in the region of the thyroid and twenty-five months in those without. No clear relationship was observed between presence of calcification in the thyroid region and other calcium deposits or bone disease; or with serum levels of calcium, phosphorus, and alkaline phosphatase.

Comment

Although the presence of psammoma bodies is highly suggestive of cancer of the thyroid, calcifications of a benign gland are usually sharply defined, dense, and irregular in size and distribution.[3] This pattern was observed in the present study in half of the patients undergoing prolonged chronic hemodialysis. In contrast, among 101 routine autopsies in patients over forty years of age, only 8 per cent had thyroidal calcifications considered large enough to have been visible by x-ray examination.[4]

Soft-tissue calcification in uremic patients occurs in normal tissue exposed to an abnormal environment. In contrast, abnormal or damaged tissue may calcify even in a normal chemical environment.[2] Since the thyroid gland undergoes dystrophic changes, both local and systemic factors may act together to cause thyroidal calcification in uremic subjects.

The observation that calcification in the thyroid region occurs frequently in patients undergoing long-term hemodialysis suggests that this area may be observed as a key to the appearance of metastatic calcification in such patients. If such calcification can be shown to presage deposits elsewhere, therapy may then be considered to prevent deposition of calcium in more critical sites.

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RECONDITIONING AFTER KNEE INJURIES

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Much has been written about rehabilitation after knee injuries. In spite of this we constantly see patients who unnecessarily remain with inadequate knee function or whose recovery could have been speeded up by relatively minor changes in management. This is equally true of conservative treatment of ligamentous injury of the knee as it is of postoperative treatment of the knee joint.

Injuries to the ligaments of the knee joint occur frequently, especially as occupational and athletic injuries. We should like to review the following groups[1]: (1) Injury to meniscus, tear of cruciate ligaments, and major tear of collateral ligaments. (There is considerable interarticular swelling, anteroposterior instability or lateral instability exceeding 15 degrees, marked vastus atrophy, limitation of motion and disability, and locking or past episodes of locking.) (2) Possible injury to the meniscus and incomplete tear of collateral ligaments. (There is considerable interarticular swelling, limitation of motion, mild degree of instability up to but below 15 degrees, marked vastus atrophy, and considerable functional impairment. The patient cannot walk without support.) (3) Serious sprains of knee joint with incomplete tear of collateral ligaments. (There is little or no interarticular swelling, lesser degree of quadriceps atrophy, less limitation of motion, and no or little instability. The patient can walk unsupported.) (4) Mild sprain. (There is no interarticular swelling, minimal degree of quadriceps atrophy and weakness, and limitation of motion. The patient can walk but is not able to be active in sports or heavy labor.)

TABLE I.

Treatment Results in 208 Knee Injuries Treated by Immediate Mobilization

Cases	*Per Cent*	*Type of Injury*
68	32.7	Severe (questionable injuries to the meniscus and incomplete tear of collateral ligaments)
107	51.5	Moderately severe (severe sprains of knee joint, incomplete tear of collateral ligaments)
33	15.8	Slight (mild sprains)

Sex Distribution		*Average Age:* 39.0 years
Male	57.4 per cent	57 Cases (27.4 per cent) had suffered previous injury to the same joint
Female	42.6 per cent	

Findings of Last Examination:

148 Good* results (71.2 per cent)	56 Fair** results (26.9 per cent)	4 Poor*** results (1.9 per cent)

**Last examination shows a perfectly normal knee, asymptomatic and in every way equal to the uninjured knee. Passed weight-lifting and scale test. Patient returning to all activities and sports as prior to injury.*

***Either (1) not able to resume all sports or (2) slightly symptomatic such as easily fatigued or having occasional pain or (3) slightly below in strength as compared to contralateral side or lacking in full extension to 180°. (If one of these conditions was present, the case was tabulated as Fair.)*

***More than one *of the above-mentioned conditions present or patient still complaining.*

For major or complete tear of ligaments or of a meniscus, surgical correction is strictly indicated.

Clayton and Weir[2] have demonstrated that divided and immobilized ligaments heal with a gap of fibrous tissue at the cut ends, whereas suture of ligaments results in strong union. The advisability of immobilization as a matter of healing of an

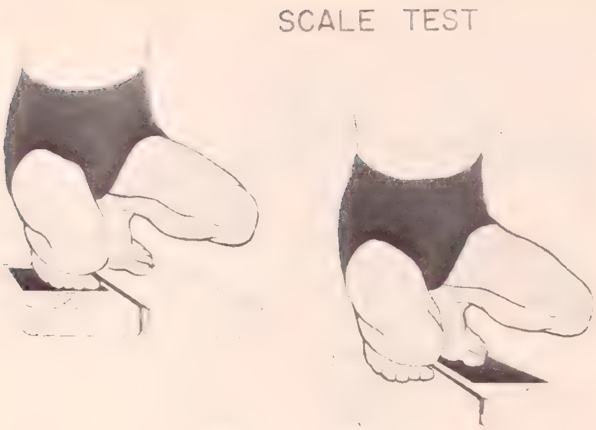

FIGURE 1. Scale test.[9]

incomplete ligamentous injury is therefore questioned. In our experience knee injuries in the aforementioned group are best treated by immediate active motion without weight bearing rather than by immobilization. Muscle atrophy and joint stiffness are reduced to a minimum and rapidly eliminated. The danger of permanent residual loss of strength and flexibility are reduced. It is easier to rehabilitate the knee completely, and time is gained; therefore, it is least exposed to the danger of reinjury. This is especially important in athletic and occupational injuries in which identical trauma is likely to occur. We have evaluated 208 knee-joint injuries (Table I). Final follow-up in 127 of these cases ranged from two to twenty years.

Examination of strength and flexibility of knee joint[1,3]

As long as the patient cannot bear weight, the strength and flexibility is evaluated first in the lying position and flexibility graded and compared with the contralateral extremity. Strength is evaluated by the ability to take resistance and to extend over the edge of the table against gravity to 180 degrees.

Once the patient can stand, strength can be evaluated in the scale test (Fig. 1). The patient is placed with one foot on the scale and the other one on a book. He is asked to complete the knee bend; and when he does, the poundage taken is read off the scale. Then the legs are reversed and again the scale is read off. The difference of weight borne by the injured knee indicates the relative lack of strength. When active range is full, the patient may still not be able to do a full knee bend. He is asked to get down on both knees, and the distance of his seat from the heel is measured. The difference between the noninjured side and the injured side indicates lack of active flexibility.

Treatment

The area of pain is identified by palpation and active motion. Then the painful area is sprayed with ethyl chloride spray.[4-7] The patient starts active movement of the knee without weight bearing in a supine position. As he increases his range, new painful areas appear which again are sprayed, and the active motion is continued. The motion consists of flexion and extension of the knee with rest between each movement. This treatment lasts from ten to thirty minutes and should be carried out within pain limits.

It is helpful to precede the treatment with active motion and ethyl chloride spray, with a period of fifteen minutes with stimulation of quadriceps, vastus medialis, and popliteus by use of sinusoidal current. We use a Medcolator apparatus with two pads, one at the vastus medialis and one at the popliteus, trying for good contractions but contractions that are still comfortable and do not cause any pain. The patient should be in a supine position with a pillow under the knee, and the electrodes are strapped to the knee with the help of an Ace bandage.

In mild sprains immediate use of the extremity may be allowed if the patient is able to perform normal movement and weight bearing without pain, but he is strictly forbidden to walk unless he can do so normally and without limping and pain. Any excessive strain or sudden movement is prohibited in the acute phase of the injury.

A patient with a more severe disability in groups (1) and (2) is advised to rest and urged to continue active movements by flexion and extension of the knee and quadriceps areas, each movement to be repeated two or three times only, once every twenty to thirty minutes. While a few treatments may suffice in a mild case, in a more severe case it will take several weeks of treatment to get reasonably good function. As soon as swelling subsides, the patient is permitted to ambulate with the help of crutches, simulating normal steps but only with partial weight bearing and within pain limit.

An effective treatment will usually not require the use of ethyl chloride after the second week. However, therapeutic exercises will have to continue with gradually increasing severity until full range and full strength of the muscles have returned. Immobilization of the knee joint should be avoided because it is contrary to the basic principle.

The exercises should never be abrupt and painful to avoid muscle spasm. The use of ethyl chloride spray as surface anesthesia is only a means to make exercise possible. In itself, without exercise, the spray is useless.

Reconditioning after knee surgery should start immediately after the operation in the case of simple removal of the medial meniscus.[8] It will have to be postponed for six to eight weeks after repair of ligaments or ligament plastic. In the latter case necessary immobilization in a plaster cylinder will make the patient ambulatory with crutches with or without weight bearing, depending on the severity of the case, and partial and complete weight bearing should be used as soon as possible.

Immediate mobilization after meniscectomy will first consist of supine movements only, flexion and extension of the knee, and tightening of the quadriceps performed two or three times on the half-hour. Later some movement on the hour should be started, the first day after surgery, if possible. Once the patient can extend his knee fully, he may add extension of the knee over the pillow and then extension of the knee over the edge of the bed or plinth. He should not do these movements if he cannot actively extend the knee to 180 degrees. He should definitely not bear any weight and, if possible, avoid walking at all until he can extend his knee fully. When he starts to walk, he should not be made to walk without crutches until he can do so without pain and without limping. We see many knees after successful surgery in which flexion contracture of 160 or 170 degrees develops, because the patients were made to walk before the necessary quadriceps strength had developed, and they limp with the knee fixed in semiflexion.

While weight bearing must be postponed until the leg is strong enough to tolerate it, the other mistake most frequently seen is the stopping of exercises when the patient can walk normally and leaving the rest up to him. To avoid recurrence, especially in knees subjected to potentially great strains such as occupational or athletic strains, reconditioning should stop only when the joint is as strong as the contralateral side, preferably stronger, and full range is possible.

For reconditioning of knees after ligament plastics or repairs, the same regimen should start once the plaster cylinder has been removed. At that time the patient will again not be ambulatory. He will have to start with supine exercises in the same sequence as mentioned previously, and he should walk with crutches only when he is ready to do so without pain and discomfort. He should then gradually start with crutch walking and discard crutches only when he can walk without limping.

Therapeutic exercises[1,3,9,10]

The exercises given to these patients are as follows: (1) The patient is supine and the knee is flexed and extended to the full range. In the acute state this movement may have to be aided by use of ethyl chloride spray and by eliminating weight, having the patient slide with his heel on a plinth or bed. This should be done slowly and go to the full range with all muscles of the knees relaxed. If full extension is not possible, a pillow may have to be placed under the knee permitting the limb to rest at the maximum range. (2) A pillow is placed under the knee and the knee is extended to 180 degrees. This exercise should be possible to 180 degrees. (3) Tightening of the quadriceps muscle is carried out (quadriceps setting). These three movements are used in the acute stage and are the beginning movements of every expanded program; then they are used as limbering up and warming up movements. It is important that all muscles be relaxed between movements.

If quadriceps setting is difficult in a recent injury, it can be helped by the following maneuver: (4) The patient lies supine with the injured knee extended and the good knee flexed. The injured knee is held down to the plinth or bed by the therapist, and the patient is asked to sit up holding his hands behind his neck. In most cases he will need the help of the hip flexors of the anchored knee and will therefore be forced to contract the quadriceps and vastus medialis when making this movement.

The patient sits on a plinth with legs hanging over the edge, the good leg resting on the chair and the injured leg extended 180 degrees. This exercise can be performed soon with the help of a therapist who brings the leg to full extension but should be avoided by the patient without assistance if he cannot extend it fully. If he can do so in a lying position but not against gravity, it means that the quadriceps muscle is not adequate to lift the weight of the leg, and the excessive load will only postpone the return of full function. Resistance of extension and flexion is given by a therapist as soon as the patient can lift the limb without assistance; and if he can, assistance is given to complete the range.

Weight-lifting exercises should not be started before the patient can extend the knee against gravity to 180 degrees without assistance and before he can tolerate minor resistance up to 5 or 10 pounds. We like to increase the weight at each session from movement without weight to two or three movements with the boot, adding half pounds or pounds gradually until the maximum tolerated weight to the range of 180 degrees is achieved. Then we take 1 pound or a half pound off, gradually returning to lifting without weight. Gradual increase of weight serves as a warm-up and workout and the decrease as a cool-off. (5) The patient lies prone with a pillow under the knee. The knee is flexed and extended to full possible range. Resistance is given to flexors and extensors. Flexors are gently stretched if necessary.

Exercises to strengthen calf muscle and to strengthen the abductors and flexors may be necessary. We do not use them as a routine unless weakness in these muscle groups is evident.

TABLE II.

Evaluation Results in 121 Patients

	Our Evaluations at Final Examination		*Patients' Own Evaluations*	
Good	86	(71.1 per cent)	106	(87.6 per cent)
Fair	35	(28.9 per cent)	15	(12.4 per cent)
Poor	0		0	

Common errors of treatment

The most common mistakes in the treatment with ethyl chloride spray and exercise are failure to use ethyl chloride over the whole painful area; overdose of exercise and violent exercise neglecting the pain limit; forgetting home exercises; neglecting supportive prescription, meaning the request of the patient to avoid weight bearing, to avoid exertion, and to use crutches; neglect of follow-up treatment; failure to explain exercises properly to the patient and get him to cooperate properly; wrong indication for use of surface anesthesia and immediate mobilization, such as overlooking internal derangement or major ligament tear; and neglect of home exercises.

When the acute phase after injury has subsided and the patient is strong enough to tolerate some resistance after surgery, weight-lifting exercises may be added as described previously. It is necessary that he be able to extend the knee fully and tolerate the weights to the full range. Active manual resistance, however, should continue, and the patient should come in for active manual resistance three times a week and do weight-lifting exercises on the three other days.

Unsupported walking should be permitted only when the patient is able to walk without a limp. Limping with the knee in semiflexion will perpetuate this lack of extension and will result in an inadequate knee. Home exercises for the patient should be taught during the treatment sessions and so should weight lifting, even though it later becomes the responsibility of the patient. With weight lifting it is important to see that the patient lifts with a pillow under the knee, the other knee rested on the chair and with the toes of the injured leg rotated outward to affect the vastus medialis rather than the vastus lateralis which usually does not require strengthening. Once the patient is capable of doing knee bends, they should be added to his reconditioning program. He should do only two or three repetitions at a time, and after knee bending he should get on his knee and sit back on his heel to stretch the quadriceps. He should do the knee bends only after a thorough warm-up. He should exercise without weight lifts and with weight lifts before and after knee bends.

Restoration of strength is essential to avoid reinjuries (Tables I and II).[1] In 208 patients with knee injuries 57 had one or more previous injuries, and of this group 39 answered our questionnaire after treatment. Thirty-three had stable results. It is noteworthy that many stated the knee was now normal and stronger than before injury. Only 6 reported reinjury. The history and treatment records of these 6 patients revealed that all injuries occurred during strenuous athletic activities. Two had not reconditioned their knee to full strength, and 2 others had been warned not to participate in athletic activities and advised that treatment had not been included. In other words, there were only 2 fully reconditioned patients who

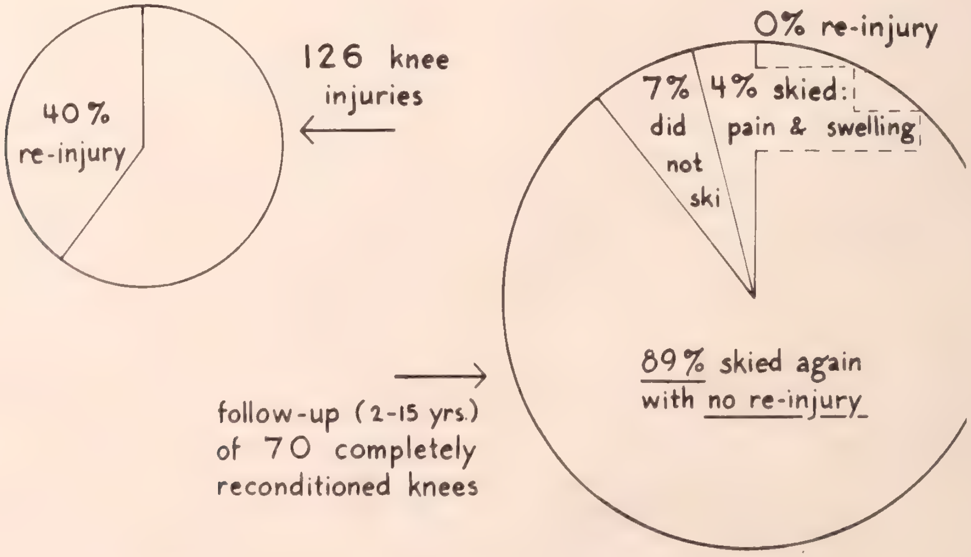

FIGURE 2. Reconditioning prevents reinjury.[9]

had suffered reinjury. A special group consisted of patients who had suffered ski injuries: 126 were treated and evaluated; 51 had more than one injury to the same knee; and in a follow-up of 70 patients 62 continued to ski without further injury, 5 had no complaints but did not ski, and only 3 returned to skiing with the complaint of occasional pain and swelling (Fig. 2).

Summary

Use of surface anesthesia and therapeutic exercises for immediate mobilization after ligamentous injury to the knee is described. It is believed that this approach is superior whenever immobilization can be avoided.

Use of reconditioning exercises after surgery has been described, and pitfalls, such as premature walking and premature use of weight lifting, have been mentioned.

Evaluation of 208 cases and a complete follow-up of 121 over an average of ten years have been presented.

Full restoration of muscle strength and range rather than passage of time is a measure of rehabilitation. The gauging of strength and flexibility should be used to determine whether the patient is ready to resume his occupation or sports. Immobilization is not a prerequisite for healing and rarely a good medium for treating ligamentous injuries not requiring surgery.

Reconditioning after surgery should start at the earliest moment and continue until full strength and flexibility of the joint has been achieved.

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Clinical Anesthesia Conference

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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HORNER'S SYNDROME FOLLOWING CAUDAL ANESTHESIA

A patient's unusual complaint during the course of caudal anesthesia brought the following rare complication to our notice.

Case report

The patient, a twenty-five-year-old female primigravida, was admitted to the labor floor in active labor. Her general condition was good. Physical examination and laboratory data revealed no abnormality.

Continuous caudal anesthesia was started when the cervix was dilated about 7 cm. This was performed with the patient in the left lateral position. A test dose of 2 ml. of a 3 per cent solution of chloroprocaine hydrochloride was injected through the catheter to make sure there had been no accidental dural puncture. This was followed by 20 ml. of a 3 per cent solution of chloroprocaine. The patient was turned on to her back. Caudal anesthesia ensued promptly, and the patient was completely relieved of labor pains.

The sensory level was noted to be unexpectedly high at the fourth thoracic nerve ten minutes after the injection of the 20 ml. of chloroprocaine. The blood pressure dropped from 110/80 to 90/60 and soon after to 80/60 mm. Hg. There was also fetal bradycardia. Turning the patient to the left lateral position did not relieve the hypotension; mephentermine 7.5 mg. was administered intravenously, and the rate of intravenous infusion of 5 per cent dextrose in water was increased. The blood pressure rose to 100/70 mm. Hg, and the fetal heart rate returned to normal.

At this time the patient complained of inability to open the left eye and a "funny" sensation on the left side of the face. Examination revealed Horner's syndrome on the left, the right side being normal.

The patient had an uneventful delivery, and the caudal anesthesia wore off after an hour; Horner's syndrome disappeared first.

Comment

A review of the literature failed to reveal a report of a similar case, and the explanation for this unusual complication is speculative.[1,2]

The clinical manifestation of Horner's syndrome are ptosis due to paralysis of the sympathetic supply to levator palpebrae, miosis caused by paralysis of the dilator pupillae, vasodilatation and anhydrosis resulting from paralysis of sympathetics to the skin and blood vessels, and sometimes enophthalmos. Preganglionic sympathetic fibers from first and second thoracic spinal segments pass upward along the sympathetic chain to relay mainly in the superior cervical ganglion for distribution to the head and neck.[3]

Horner's syndrome may occur if the local anesthetic drug paralyzes either preganglionic sympathetic fibers of the first and second thoracic spinal segments or postganglionic fibers in the cervical ganglia or cervical sympathetic chain.

During spinal anesthesia the level of sympathetic denervation extends two to six spinal segments higher than the level of somatic sensory anesthesia.[4] During epidural anesthesia the corresponding zone of differential blockade is rare, occurring in less than 5 per cent of cases.[5] The recommended dose for caudal anesthesia to obtain sensory levels to the tenth thoracic vertebra is 20 to 40 ml. of 3 per cent chloroprocaine hydrochloride, 1.5 per cent lidocaine, or 1.5 per cent mepivacaine.[6] In this patient 20 ml. of 3 per cent chloroprocaine may have been an overdose. Dose requirement at term pregnancy is reduced by one third to one half.[5] The precise reason for the decreased need of local anesthesia at term pregnancy has not been demonstrated. Two mechanisms may be responsible. First, the pregnant

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uterus causes a partial occlusion of the inferior vena cava at term, and a portion of the venous return from the legs and pelvic structure is diverted into the internal vertebral plexus with resultant engorgement of the extradural veins and reduction of the remaining volume in the epidural space. During labor, contractions of the uterus further augment this distention, and epidural pressure in the lumbar area rises by 10 to 20 ml. water with each contraction.

Second, increased permeability of membranes and blood vessels may be possible factors, perhaps related to humoral changes.

Also, the left lateral position may be the reason for the sympathetic blockade on that side. Effect of posture is most pronounced when fast-acting local anesthetics, such as chloroprocaine, are injected in the lateral position.[5]

It is unlikely that an inadvertent dural puncture caused a total spinal anesthesia. In such complications anesthesia of motor fibers causes respiratory paralysis, which was absent in this patient.

This unusual complication of unilateral Horner's syndrome with concomitant hypotension demonstrates the need for vigilance and prompt application of therapeutic measures in even the most routine anesthetic procedures in healthy patients.

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Number two hundred one in a series of Clinical Anesthesia Conferences

Case Reports

ISOLATED MEMBRANOUS SEPTAL ANEURYSM

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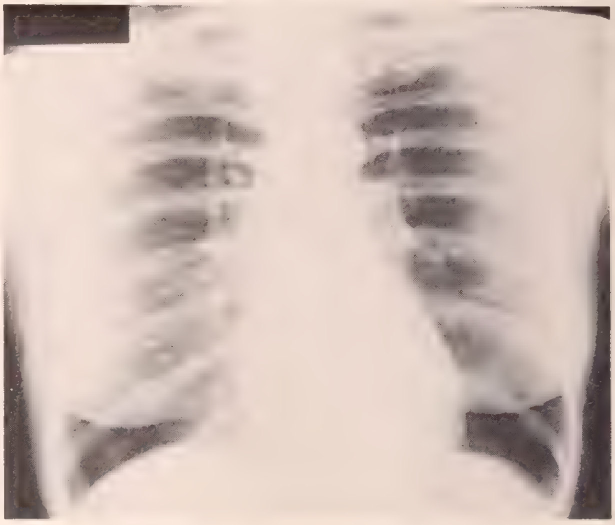

FIGURE 1. Chest x-ray of patient.

Aneurysm of the membranous portion of the interventricular septum has been reported previously in association with interventricular septal defect.[1-4] Other congenital anomalies have also been reported associated with a membranous septal aneurysm.[1] We have previously reported 3 patients with this lesion who had it associated with a ventricular septal defect.[1] Aneurysm of the membranous septum as an isolated cardiac lesion is rare.[1] The following case is reported because of the finding of an isolated membranous septal aneurysm and because the patient's history would tend to support the theory that these aneurysms result from spontaneous closure of a ventricular septal defect.[1,3,4]

Case report

A fifty-three year old housewife was referred for coronary angiography because of recurrent chest pain of two years' duration. The pain began in the left precordium and radiated to the back, lasting from five to sixty minutes. During this time, her electrocardiogram remained normal, and an exercise stress test result was normal. Because of the uncertain etiology of the pain, she was hospitalized for evaluation.

During childhood, the patient had been told on repeated examinations that she had a heart murmur and had been advised to limit her activity. During elementary and junior high school, she was still restricted from physical exercise because of the heart murmur. She was subsequently married and had two children, and has not since been informed of a heart murmur.

Physical examination revealed a well-developed woman in no distress. Blood pressure was 130/80 and pulse was 70 and regular. The heart was not enlarged as revealed by palpation or percussion. A faint, localized, early systolic murmur was heard along the lower left sternal border. The remainder of the physical examination was unremarkable.

Chest x-ray and electrocardiogram gave normal findings (Fig. 1).

Right and left side of the heart catheterizations were performed. Intracardiac shunts were excluded by blood oxygen studies and by means of a platinum tip electrode with hydrogen inhalation. Intracardiac pressures and cardiac output were normal. Selective cinecoronary angiography was normal. Biplane angiography was performed with injection of contrast material into the left atrium via a transseptal catheter. There was normal opacification of the left atrium, left ventricle, and aorta. Immediately below the right coronary sinus, a pouch-like structure was noted bulging anteriorly (Fig. 2). There was slight widening of the inferior aspect of the aortic arch, just distal to the left subclavian artery, consistent with a "ductus diverticulum."

Comment

This patient had no evidence of organic heart disease, but a membranous septal aneurysm was

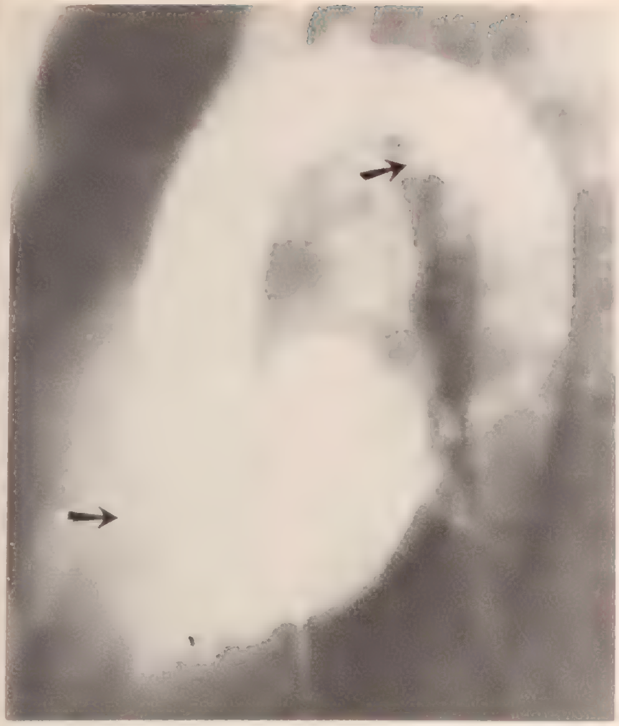

FIGURE 2. Lateral film of biplane angiogram, demonstrating membranous septal aneurysm (arrow on left), projecting anteriorly below right coronary sinus, and a ductus diverticulum (arrow on right).

found incidentally during cardiac catheterization. The angiocardiographic findings are typical for an aneurysm located below the right coronary cusp.[2] Although an isolated membranous septal aneurysm is not rare at necropsy, the diagnosis is rarely made during life.[1] Only 3 other instances of isolated membranous septal aneurysm have been reported.[5-7] One of these patients was studied because of an enlarged heart,[5] and the remaining 2 patients were evaluated because of a murmur, which may have been related to the aneurysm.[7] Membranous septal aneurysm is most often associated with an additional cardiac anomaly, usually a ventricular septal defect.[1] The indication for cardiac catheterization is usually the associated anomaly. In the absence of an associated anomaly, membranous septal aneurysm can be diagnosed only if some other indication for cardioangiography exists. In our patient, the history of unexplained chest pain warranted a complete evaluation.

It has been proposed by several authors that these aneurysms are acquired and result from weakness of the membranous septum following partial or complete spontaneous closure of a ventricular septal defect.[3,4,8,9] In our patient, the history of a heart murmur heard during early childhood, and the restrictions placed on her physical activity, suggest that the murmur was of an organic origin. The abnormality of the membranous septum in this patient, and the appreciation that spontaneous closure of a ventricular septal defect in early childhood is not uncommon,[10] suggest that the early murmur noted in this patient was from a ventricular septal defect. It is thus apparent that the membranous septal aneurysm probably represents a residual of a ventricular septal defect that closed spontaneously. It is also interesting that a ductus diverticulum was present in our patient, representing the residual of another shunt which had closed spontaneously.

Summary

A fifty-three-year-old woman with an isolated membranous septal aneurysm is reported. The rarity of this finding and its possible relationship to spontaneous closure of a ventricular septal defect is discussed.

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PRIMARY NONURACHAL ADENOCARCINOMA OF BLADDER

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Nonurachal, primary adenocarcinoma of the bladder is an uncommon lesion. Of over 5,000 bladder tumors recorded in the tumor registry of the American Urological Association, Dean and Ash[1] reported 69 adenocarcinomas, but did not separate those of urachal origin. Mostofi, Thompson, and Dean[2] reviewed 44 cases of adenocarcinoma, of which 17 were probably of urachal origin and 27 were primary vesical adenocarcinomas. Miller, Mitchell, and Brown[3] listed 1,500 bladder tumors of which only 3 were adenocarcinomas. Several case reports of primary, mucus-producing adenomas have appeared which described urachal tumors.[4-6]

Cystitis cystica, or cystitis glandularis, is frequently associated with primary adenocarcinoma of the bladder and is believed to be a precursor to this malignant lesion.[7-10] The occurrence of cystitis cystica or cystitis glandularis is important for two reasons: (1) When it occurs alone, it may be a premalignant lesion[9]; (2) when it occurs with adenocarcinoma it can distinguish primary adenocarcinoma from that of urachal origin.[8]

The presence of adenocarcinoma of the bladder should alert the physician to the following differential diagnosis.

I. Metastatic adenocarcinoma
    A. From distant organs to the bladder
    B. From direct extension from the colon or female genital tract
II. Urachal adenocarcinoma
III. Primary adenocarcinoma

It is not possible to distinguish the origin of bladder adenocarcinoma by microscopic examination. The diagnosis depends on clinical findings. A complete gastrointestinal work-up is mandatory. This should include upper gastrointestinal series, small-bowel series, barium enema, sigmoidoscopy, and gynecologic work-up in females.

When the patient's symptoms originate in the bladder, the adenocarcinoma is unlikely to be metastatic. Direct invasion of the bladder by adenocarcinomas of the colon and female genital tract is common. However, the origin of these invasive tumors is readily apparent. When cases of direct extension are excluded, the incidence of cancer metastatic to the genitourinary tract is low. Klinger,[11] on the basis of 5,000 autopsy cases, reported 142 cases of cancer metastatic to the genitourinary tract. Of these 142 cases, only 33 had bladder involvement, and of these 33, there were only 13 cases in which the bladder was the only genitourinary organ involved. Of the 142 patients, 27 patients had clinical symptoms related to the urinary organs, but these were not the symptoms which brought the patient to a physician's attention. The infrequent and late symptoms produced by tumors metastatic to the bladder are due primarily to the invasion of the bladder muscularis, and secondarily to the involvement of the mucosa. By the time metastasis to the bladder is symptomatic, the source of the tumor is readily apparent.

Mucus-forming adenocarcinoma of the prostate has been reported.[12] Metastasis to the bladder from mucus adenocarcinoma of the prostate has never been reported.

Adenocarcinomas of urachal origin, although rare, do occur more frequently than either metastatic or primary adenocarcinomas of the bladder.[7,13] The urachal remnants are found in the intramural part of the bladder dome. Wheeler and Hill[8] listed the following five characteristics of urachal tumors which distinguish them from primary adenocarcinomas of the bladder.

1. Predominant involvement of the muscularis rather than the submucuosa with an intact or ulcerated bladder epithelium.
2. Demonstration of a urachal remnant connected with the neoplasm.
3. Absence of cystitis cystica or cystitis glandularis.
4. Location, dome of the bladder.
5. Presence of a suprapubic neoplastic mass.

According to Mostofi, Thomson, and Dean,[2] the five-year survival rate of patients with urachal adenocarcinoma is 16 per cent, while that for patients with primary adenocarcinoma is 33 per cent. The poorer prognosis for urachal tumors may be due to late discovery. The differential diagnosis between urachal adenocarcinoma and primary adenocarcinoma may be difficult if the latter has invaded the full thickness of the muscularis. In such a case, from a practical point of view, the prognosis would be the same. The main point in differential diagnosis between urachal

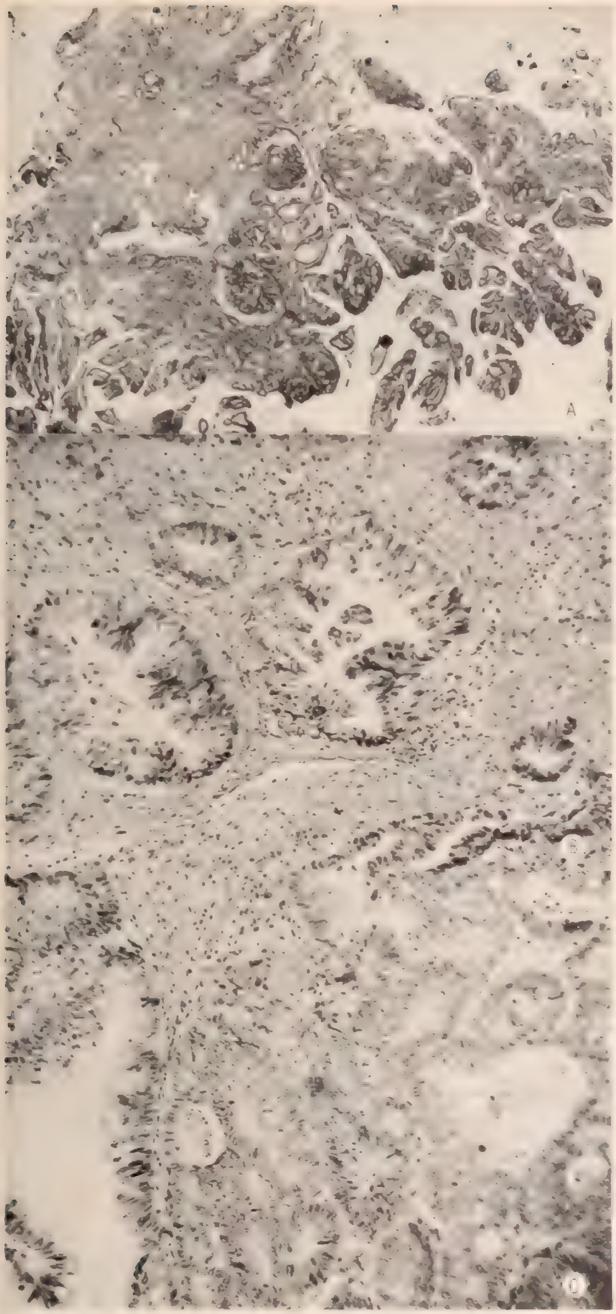

FIGURE 1. (A) Lower power view of tumor showing papillary lesion with submucosal invasion. (B) Higher magnification of submucosal invasion. (C) Higher magnification of tumor.

and primary adenocarcinomas is the location of the tumor. The histology of adenocarcinomas in the bladder is the same regardless of the origin.[14]

Primary adenocarcinoma of the bladder can be treated in the same manner as the more common transitional cell type, depending on the stage of the tumor. Mostofi, Thomson, and Dean[2] estimated that the prognosis for primary adenocarcinoma of the bladder was similar to that of infiltrating grade II transitional cell carcinoma of the bladder.

Pathogenesis

The most widely accepted theory of the pathogenesis of primary adenocarcinoma of the bladder is that it arises through metaplasia of the transitional epithelium.[2,7,10,13] The usual sequence of events is thought to be cystitis cystica, followed by cystitis glandularis, followed by adenocarcinoma.

Shaw, Gislason, and Imbriglia[9] reported a case of cystitis glandularis, followed for five years, which developed adenocarcinoma of the bladder. Other authors have reported the association of cystitis glandularis and primary adenocarcinoma.[7,10]

There are not enough cases of primary adenocarcinoma of the bladder to definitely establish cystitis cystica or cystitis glandularis as precancerous lesions. Except for Shaw, Gislason, and Imbriglia's[9] case, these lesions have not been well documented as occurring before adenocarcinoma develops. There is sufficient evidence to warrant periodic cystoscopic examination in patients who have cystitis cystica or glandularis.[7,10,13] Chronic infection predisposes a patient to these conditions and should be treated vigorously. Causes of obstructive uropathy must be carefully looked for in patients with resistant infections. In women, chronic urethritis, urethral caruncle, and distal urethral stenosis are frequently overlooked as causes of chronic bladder infection. In older men, benign prostatic hypertrophy can produce a symptomatic chronic urinary retention which may result in the lesions discussed here.

Case report

A sixty-two-year-old man was admitted to the Jewish Hospital and Medical Center of Brooklyn because of gross hematuria. He had urinary frequency and nocturia for one year prior to admission.

An intravenous pyelogram was normal. At cystoscopy, a large amount of mucus and blood was aspirated from the bladder. There was trilobar hypertrophy of the prostate resulting in obstruction of the bladder outlet. The bladder mucosa was moderately edematous and trabeculated. A large papillary lesion was present on the left lateral wall and touching the hypertrophied middle lobe of the prostate. The papillary lesion was resected first and its base fulgurated. Then the hypertrophied prostate was resected. Grossly, the tumor consisted of multiple, irregular fragments of pinkish-gray, soft tissue, the largest measuring 2 by 2 by 1.2 cm. Papillary projections covered with mucus were observed. Histology revealed a papillary mucus-producing adenocarcinoma with submucosal invasion (Fig. 1). Fragments of smooth

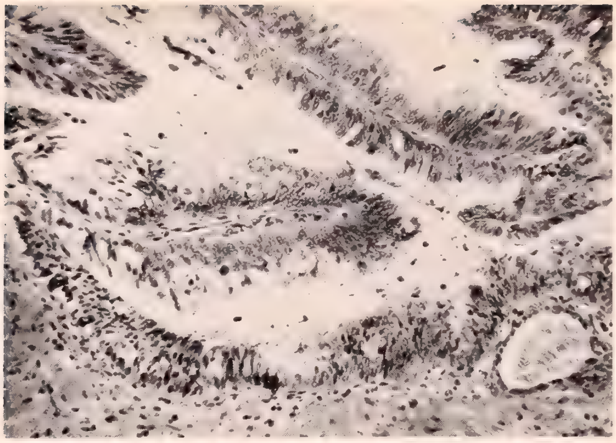

FIGURE 2. Cystitis cystica (bottom right).

muscle were free of tumor. Cystitis cystica was noted near the tumor as well as in a fragment devoid of tumor (Fig. 2). No foci of cystitis glandularis were noted.

The prostatic fragments revealed glandular and fibromuscular hypertrophy. The postoperative course was benign. Upper gastrointestinal series, small-bowel series, barium enema, and sigmoidoscopy findings were negative. Ten days postoperatively, the patient was recystoscoped. There was no gross tumor within the bladder. The area of resection was biopsied. No evidence of tumor was found. The patient has been followed for one year with observation cystoscopy at three-month intervals and has remained well and free of tumor.

Summary

A case of primary nonurachal adenocarcinoma of the bladder is presented. This is a rare lesion which usually alerts the physician to the possibility that this is a metastatic lesion. When the patient's symptoms are of bladder origin, in all probability the adenocarcinoma originated from the bladder. The differential diagnosis between urachal adenocarcinoma and primary adenocarcinoma is discussed.

Primary adenocarcinoma of the bladder is associated with chronic cystitis and arises from cystitis cystica and cystitis glandularis. Patients with these lesions should be followed with periodic cystoscopy. Causes of obstructive uropathy should be looked for in patients with chronic resistant urinary tract infections.

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BACKGROUND OF CLINICAL CARDIAC ELECTROSTIMULATION

VI. Precursor apparatus and events to the electrical treatment of complete heart block

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Accounts of apparently lifeless persons being revived can be found in the oldest chronicles of history. Those singular events were for the most part interpreted as dispensations from benevolent divinities. Resuscitation schemes established in the Far East and even in primitive societies were virtually ignored by occidental medicine for millennia. Only in the latter part of the eighteenth century, following the creation of rescue associations and of humane societies, did resuscitation practices receive proper recognition in Europe and America.[1] The first successful reversal of apparent death by means of electroshock took place in 1774. Fittingly, the incident was reported in the *Registers* of the Royal Humane Society of London.[2]

Previous articles in this series have recounted the evolution of electrotherapy for cardiac disorders.[3–9] Since to a large measure electricity was used with resuscitative intent, its application to remedy complete heart block could have been surveyed before under that heading. However, there are several good reasons for arrogating a separate section to the subject of heart block.

As I have related, there were numerous physicians who resorted to electricity for bolstering defective cardiac action.[8,9] But the inclusion of heart block in that line of treatment was done rarely, fortuitously, and unknowingly. The concept of employing electricity specifically for the management of Morgagni-Adams-Stokes disease was quite tardy in being formulated. Nevertheless, this most stirring dimension in the history of medical electricity, by its very momentum and the enormity of attention devoted to it, has in less than one score years outraced by giant steps practically every other therapeutic indication of electricity.

The story of Morgagni-Adams-Stokes disease has been narrated in detail elsewhere.[10] It is worth while to remember that replication of the condition in the laboratory as well as the identification by clinicians of the site of deranged atrioventricular conduction began at the turn of the present century. Although the mainstays of therapy during the first half of this century were almost all medicinal, electricity was in fact tried before then on a semiempirical basis for treating bradycardias consonant with heart block.

Galvanization of vagus nerve or of precordium

In 1871 Neftel[11] wrote,

> Mr. K., aged fifty-four, merchant, of a good constitution, and formerly of excellent health, and very active, for the last few years suffered much from dyspepsia, and at times would become very low-spirited and depressed, without any particular cause. He has consulted several eminent physicians, and, as no organic disease could ever be detected, the majority considered him a hypochondriac. When I examined him, in December, 1868, I found his liver somewhat enlarged, and a great deal of tenderness in the right hypochondriac region and also corresponding to the seat of the pancreas. The urine contained a considerable amount of oxalate of lime. After having observed the patient for some time, I was called in during one of his fits of depression, and found him lying on a sofa, in a very apathetic condition, pale, and talking very little, in a low voice. I was much surprised to find his pulse 45, his normal pulse being always about 75. The sounds of the heart and its pulsations were very feeble and hardly perceptible. Similar attacks of depression, as he called them, occurred once a week or once a fortnight. It was evident to me that the patient exhibited the phenomenon of reflex irritation of the vagus, induced by sensitive abdominal nerves of some diseased viscus.
>
> I prescribed the use of Vichy (water) and other internal remedies, simultaneously with which I galvanized the pneumogastric nerve, three times a week, with a descending current. The patient has very much improved and has not had these attacks any more.

In 1888 Onimus and Legros[12] remarked,

> We have had the opportunity of performing electrization of the pneumogastric not only in vigorous persons, but also in pathologic paralysis of the pneumogastric nerve. We have seen these patients

> experience real relief for some time after electrization, and Doctor Huchard has published very conclusive observations in that regard. In two of these patients, and in the presence of Professors Peter and Potain, we applied electric currents directly to the pneumogastric. Far from having the least accident, as might have been feared, this application was followed for several days by a considerable amendment in cardiac and pulmonary symptoms. . . .
>
> For a long time Dr. Duroziez has insisted in France on the advantages which can be reaped from electrization of the precordial regions in certain affections of the heart.
>
> "I believe," he says, "that one can electrize the heart like all other muscle; but the heart does not react in the same manner as the muscles of animal life.
>
> "I place one of the armatures at the apex, and the other to the site where the two lungs unfold to expose the heart. In a certain number of cases I note that an effect is produced. I may be told that it is a reflex effect. I act on a deep muscle; why should I then not act on the heart?
>
> "A 27 year old woman, afflicted first by dizziness, two syncopes, and then by paralysis and temporary mental disturbances, came under my observation. When I examined her the first valve sound was inaudible beneath the sternum, and I could not produce any murmur by compressing the crural (artery). Electrization practised as I have indicated restored the first sound and the murmur for progressively longer periods, as we advanced in the course of the sessions.
>
> "This woman presented, in our opinion, a case of fatty degeneration of the heart . . .
>
> "Electrization may be useful in syncope, in congestion of the cardiac chambers, in asystole, and at last in fatty degeneration of the heart."

On February 16, 1899, Grand[13] presented before the French Society of Electrotherapy the particulars of a case of "permanent slow pulse" cured by electricity. Discussants of the report expressed disbelief in the correctness of the diagnosis, and questioned whether the patient might not have been merely a hysteric. They evidently failed to either grasp the implications or envisage the potentialities of Grand's novelty. The minutes of the meeting recorded,

> Mr. Grand reports the observation of a 61 year old woman whose pulse rate was 35 to 37 beats per minute. She experienced, moreover, dizziness, ringing in the ears, nausea, and vomiting. Auscultation of the heart disclosed a systolic murmur and factitious sounds. No syncopal, epileptiform, or apoplectiform attacks; therefore the case was one of permanent slow pulse rather than of Stokes-Adams disease.
>
> The diverse disorders had lasted over one year when the electric treatment was started. It comprised galvanization of the pneumogastric in the neck: daily sessions, with positive pole on the left, 5 milliampere intensity, 10 to 15 minutes duration.
>
> This galvanization was accompanied by franklinization with cephalic orientation. The paroxysms gradually became shorter and interspaced longer. The pulse rate rose to 50 or 60 in the minute; and, after six weeks of treatment, a return to the normal state was arrived at. The patient regained the 25 pounds of weight which she had lost. The cure has held for the past four years.

King[14] echoed a contemporary opinion that "whenever the heart muscle itself or its innervation is at fault, electricity has been found curative in many cases hitherto unresponsive to treatment." Presumably, heart block was among the examples of deranged cardiac innervation so treated.

In 1912 Bonnefoy[15] included in the list of conditions amenable to remedy by high-frequency currents, "cardiac hypertrophy, endocarditis, (cardiac) dilatation, permanent slow pulse." He gave no particulars whatsoever about any patients with "permanent slow pulse" treated in that fashion.

Bergonié's "electrogymnastics" and other schemes

Webb[16] encouraged trials with the curious Bergonié method in instances of bradycardia[6]:

> In states where the rhythm of the heart is disorganized, not only from errors in the transmission of nerve-impulses, but also at times in actual organic cardiac disease, much can be done by carefully administered Bergonié treatment in conjunction with medicinal and other remedies, and the distress that accompanies these departures from the normal rate of heart-beats can be relieved. Gradually also the tendency to the abnormal passes off, and a return to the normal takes place. By the Bergonié method the muscles (accessory pumps) of the body are thrown into rhythmic contraction —the rate and intensity of such contraction pump blood in the veins, and, owing to the arrangement of valves, such blood must flow towards the heart. If the rate of the contractions is so regulated as to be at first a few beats faster or slower than the heart contractions, the rate at which blood is pumped into the heart is exactly that number of beats nearer the normal than is the existing rhythmic error, and the heart is compelled to beat synchronously with the new rate of inflow. By steady perseverance in treatment, daily approximating the rhythm of the muscular contraction nearer and nearer to the normal, the vicious habit of the heart is overcome, and the error in the nerve vibration causing the functional fault is remedied.

These and analogous communications leave little room for doubt that, until about the half-way mark of the present century, the treatment of complete heart block with electricity was an arbitrary undertaking. The current was meant to be a sort of "tonic." There was assuredly no thought of mechanically usurping the function of the natural pacemaker, neither for subjugating it altogether nor harnessing it to a deputy status for artificially impelling the heart.

And yet complete heart block, especially as manifest in the Morgagni-Adams-Stokes syndrome, was a formidable ailment, attended with

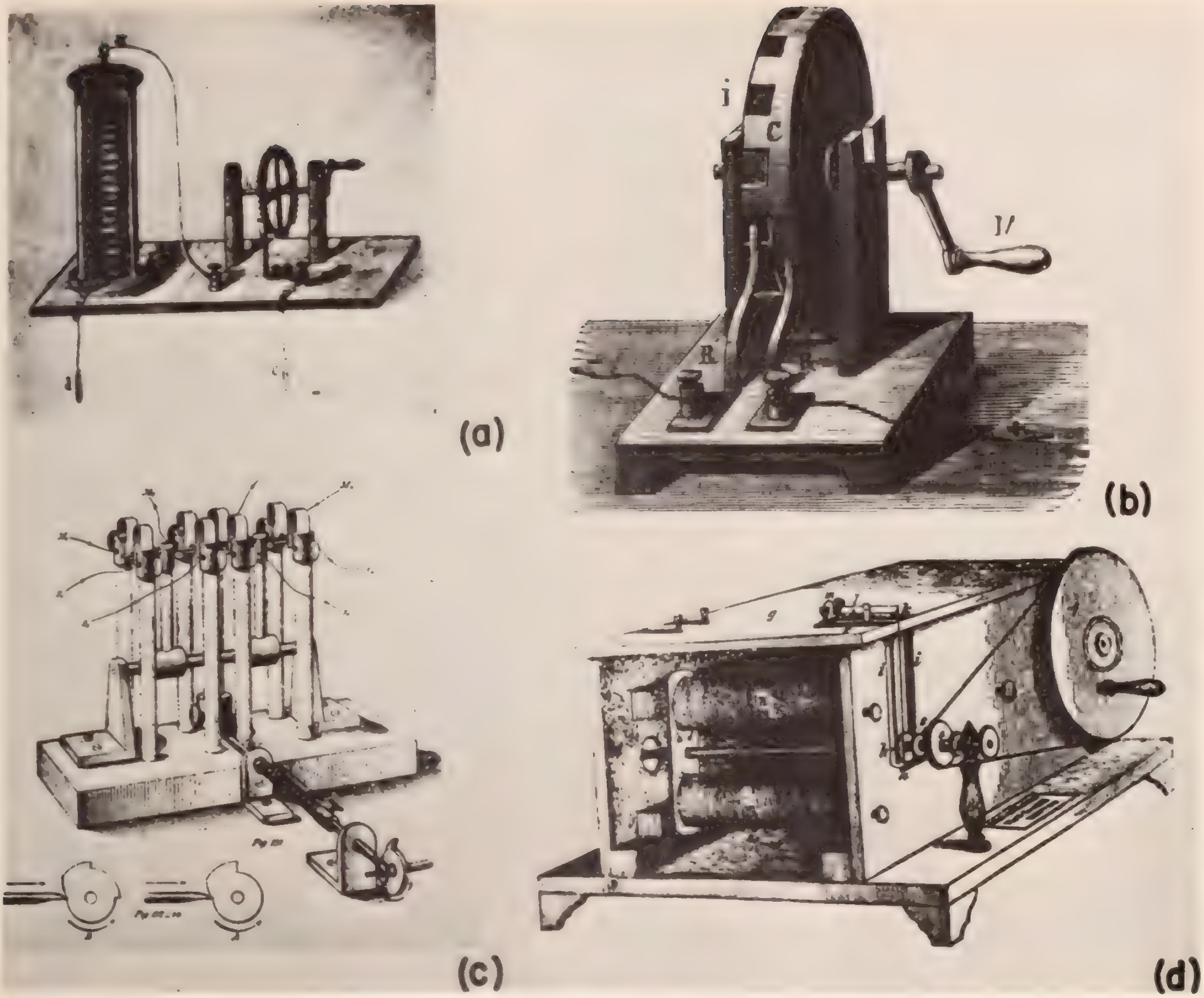


FIGURE 1. Current interrupters. (a) and (b) Simple voltaic instruments with make-and-break connections. (c) Du Bois-Reymond's "rheotome." (d) Page's "electrotome."

high morbidity and mortality rates, and urgently requiring solution. Attemps to detour impaired atrioventricular conduction channels by grafting into the ventricular substance a strip of tissue encompassing the sinoatrial node—a stratagem conceived over sixty years ago by Erlanger[17]—uniformly were exercises in futility and have continued to be so to date.[18-26] Just as barren have been latter-day efforts at spurring the heart with "endocrine pacemakers."[27,28] Medicinal therapy, consisting in the main of chronotropic sympathomimetic amines, yielded evanescent benefit or none at all.[29] When cardiac stoppage eventuated, wanton and blind goading of the heart with needles would often be tried; frequently, the cost of this very gesture of desperation was lethal hemopericardium. It is against this gloomy scenery of the fairly recent past that the revolutionary medical advance which was pacemaker therapy stands out best.

Evolution of concept of rhythmic electrostimulation

Before broaching the era of pacing against heart block, a few remarks are called for to help dispel a common misconception that repetitive electrostimulation of the heart was unheard of before pacemaker technology came into being. Actually, periodic stimulation was a standard laboratory maneuver for a long while. Make-and-break stimuli formerly were elicited by foot pedal, telegraph key, push button, or hand switch. The "rheotome" of Du Bois-Reymond[30] was a progenitor of innumerable interval-timed current dischargers.[31] The "electrotome" of Page[32-34] was another (Fig. 1). A wide assortment of "breakers," "interrupters," "undulators," and "trembleurs" were marketed by the turn of the last century (Fig. 2).[35-38]

It is interesting to note, in retrospect, that means

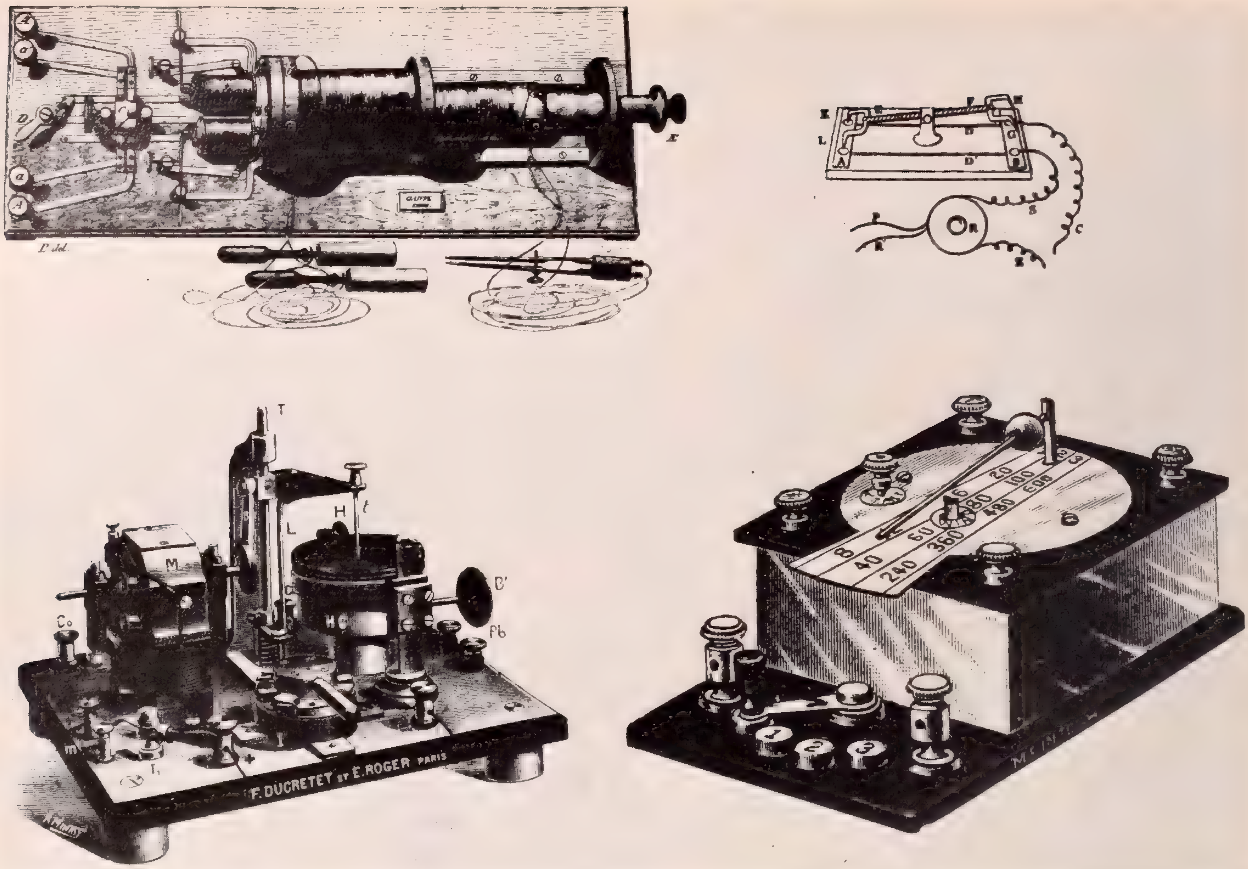


FIGURE 2. More advanced varieties of current interrupters. They enabled reliable delivery of equispaced, repetitive stimuli.

for interrupting the galvanic current were instituted shortly after the invention of the voltaic battery. For instance Aldini,[35] in his recommendations on resuscitation by electricity, had proferred a mechanical method for regulating and recording the number of shocks given. A lever worked by hand and attached to a screen or to a pendulum was to be so manipulated that, "supposing the vibrations to take place every second, the patient may experience in half an hour 1,800 galvanic shocks, recorded on a dial."

I have already quoted elsewhere the 1873 editorial in the *British Medical Journal* which specified that when cardiac electropuncture was used for overcoming syncope, "the current should be weak, and only act for a second at a time, then be interrupted and used again in a similar manner."[9] In the physiology laboratory, sequential phenomena of the cardiac cycle often were studied by applying consecutive, isochronal, induction shocks to hearts paralyzed by coincidental vagal excitation or by drugs.[39-68] Occasionally, these investigations were undertaken on animals with morphologic heart block. Exemplar of the former approach, and most certainly primal in their conception of artificial cardiac pacing, were the researches of MacWilliam (Fig. 3).[69-72] The following rendition is reiterated from passages quoted earlier in extenso[8]:

> Contraction of the mammalian heart, whether resulting from stimulation of the auricles or of the ventricles, whether excited in the normal order or in reversed fashion, is effective in causing a discharge of blood from the ventricles into the great vessels and a marked improvement in the condition of the heart and of the circulation generally . . . .
>
> Galvanic and faradic currents, too weak to induce fibrillar contraction in a heart of depressed excitability, have a comparatively trivial influence in exciting or accelerating its beat. We want a much more effective and speedy mode of exciting rhythmic contraction, and one that will have a direct and powerful influence in calling forth a series of beats in the depressed or inhibited heart, while at the same time free from the danger of throwing the ventricles into delirium. Such a mode of excitation seems to be available in the form of a periodic series of single induction shocks sent through the heart at approximately the normal rate of cardiac action. A single induction shock readily causes a beat in an inhibited heart, and a regular series of induction shocks (for example, 60 or 70 per minute) gives a regular series of heartbeats at the same rate. Never on any occasion have I seen fibrillar contraction excited by such a mode of stimulation . . . .
>
> I have on several occasions introduced a fine platinum wire through the chest wall so as to come in contact with the ventricles and have then faradised, the other electrode being applied to the outside of the chest wall; the fibrillar contraction was at once in-

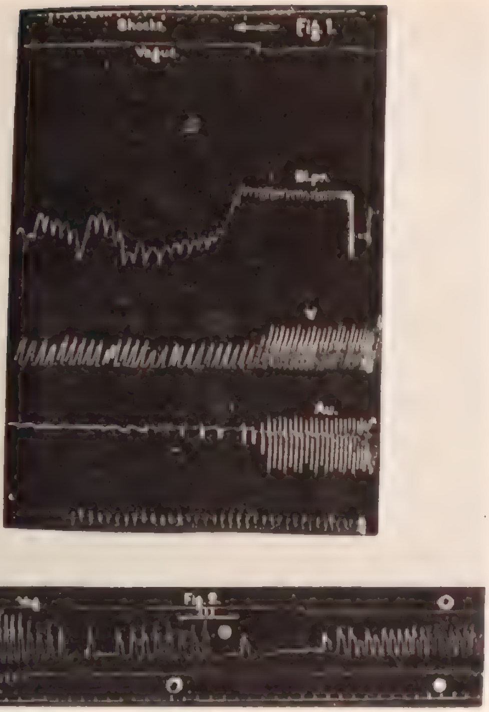


FIGURE 3. Tracings from one of MacWilliam's reports in 1889. Cat heart depressed by vagal stimulation had its activity redeemed by periodic series of induction shocks to ventricles.

> duced. By the use of single induction shocks I have never seen the fibrillar contraction excited either when the shock is passed through the thoracic walls or when it is applied to the exposed heart. The single induction shock seems to be free from the dangers accompanying the use of the faradic current. Hence I have urged its superiority as a means of cardiac stimulation . . . .
>
> The depressing influence exerted through the vagus nerve upon the rhythm and contraction force are in large measure counteracted by direct excitation of the organ. In order that such excitation should be as effective as possible it is probably best to send the stimulating shocks through the whole heart, so that the auricles may come directly under their influence as well as the ventricles. In order to do this in man one electrode should be applied in front over the area of cardiac impulse, and the other over the region of the fourth dorsal vertebra behind, so that the induction shocks may traverse the organ. The electrodes should be of considerable extent (for example, large sponge electrodes), and they and the skin should be well moistened with salt solution. The shocks employed should be strong, sufficient to excite powerful contraction in the voluntary muscles.
>
> Such a method, it seems to me, is the only rational and effective one for stimulating by direct means the action of a heart which has been suddenly enfeebled or arrested in diastole by causes of a temporary or transient character.

In 1909 Erlanger and Blackman succeeded in producing chronic, complete heart block in dogs by compressing the atrioventricular bundle in a specially designed screw clamp.[73-76] One of their experiments concerned the electrical stimulation of the tissue embraced by the clamp.

> For the purpose of testing the effect of electrical stimulation, the clamp was converted into stimulating electrodes. All of the hook, excepting the barb, was heavily coated with shellac. The brass block of the clamp was replaced by one of hard rubber, and the edge directed toward the barb was armed with a small platinum plate. This plate was connected, through the block, with a small binding post situated on the upper edge of the block. Another binding post was attached to the free end of the brass bar which carries the hook. After the clamp had been successfully placed upon the heart, the terminals of an induction coil were connected with the two binding posts. When this clamp was tested upon the tongue, it was found that the current passed between the point of the hook and the edge of the block directed toward it only.
>
> Tetanic stimulation of the tissue included in the grasp of this clamp never reproduced the picture of stoppage of the ventricles, neither when the sequence was normal, nor after complete heart-block had been produced. With strengths of stimulation short of those that caused fibrillation, the ventricles usually responded with frequent contractions, which were often irregular in force rhythm. But the result obtained was rarely constant.

The authors in no wise adverted to the possibility of using this model or a modification thereof to combat clinical heart block.

Artificial pacing used clinically thirty years ago

The reader will probably be startled to learn, as I was, that the Hyman artificial pacemaker was used clinically for the management of Adams-Stokes disease in the 1940s.[9] The surprise is understandable, since no report of the cases was published.

The following are the proceedings of a conference held on February 16, 1942, by the Brooklyn Naval Hospital Clinical Society.[77] In attendance were Albert Hyman, M.D., George Cramp, M.D., Burton Opitz, M.D., Walter Bensel, M.D., Homer Cudmore, M.D., Franz Groedel, M.D., and Alexander Richman, M.D.

> **Dr. Opitz:** About 10 days ago, Drs. Hyman, Bensel, Groedel and Williams met at my laboratory at Columbia University. We were discussing the extended possibilities of the Hyman pacemaker. While it is true that Dr. Hyman originally intended this instrument to be used as an emergency measure in reactivation of the stopped heart, (we considered) the concept of using it when dangerous rhythms occur before cardiac arrest develops. In other words, the instrument could be used before, rather than after, cardiac arrest, and I wish that Dr. Hyman would discuss this newer concept of his instrument.
>
> **Dr. Hyman:** What Dr. Opitz has in mind was the problem of using the pacemaker in such serious arrhythmias as complete or third-degree heart block with ventricular rates so low that Stokes-Adams syn-

drome occurs. We had one case here in this hospital, a retired engine room officer aged 76, with ECG evidence of complete atrial and ventricular dissociation. The atrial rate averaged 76 to 80 beats per minute, while the ventricular rate was 32. At 24 he became unconscious; no pulse could be felt at the wrist; blood pressure was difficult to determine and was written down as 52/34. He had received an intracardial injection of epinephrine on a previous day, which speeded up the heart rate, and he recovered consciousness. About 4 days ago, during a long period of Stokes-Adams (attack), he received a 30-minute application from the pacemaker, with a more or less prompt return to consciousness. Dr. Richman, who is in charge of the ward, is here, and I would like to ask him to present more details to you.

Dr. Richman: I have the records of this patient here. First you will note the complete heart block pattern in the ECG with an atrial rate of 84 and a ventricular rate averaging 28 with certain long intermissions. In one spot the ventricular rate got down to 12 bpm. He was totally unconscious. Dr. Hyman and I applied the needle electrodes directly to the right atrium, and we have here an ECG record showing when the artificial pacemaker started to work, and the speeding up of the ventricular complexes to about 76 bpm. However, when we stopped the pacemaker, the venticular idiopathic rate went back to the 20's with 24 bpm in about 5 minutes. We decided to keep the pacemaker going as long as possible; but with this model, the spring motor will run only about 8 minutes before rewinding is necessary . . . .

Dr. Hyman: Let me interrupt at this point to say that a new type of motor, electrically driven by batteries, will run for about 2 hours. We are waiting for this from the Adlantco X-Ray Corporation, the Seimens and Halske manufacturers in Europe. But the large question is in regard to the expanded use of the instrument. As Dr. Opitz says, the instrument can be of value not only in cardiac arrest but also in the management of the dangerous arrhythmias like complete heart block with Stokes-Adams complications.

Dr. Groedel: I have also talked about this further use of his pacemaker with Dr. Hyman. I like the German concept of Spaziergang von Herzstillstand, which boldly translated means "walking" or "pacing" the heart during cardiac arrest. In other words, such an external pacemaker finds a place in the treatment of certain types of heart block before complete standstill occurs. The problem here, as Dr. Hyman says, is in regard to a long-running motor for his instrument.

Dr. Cudmore: I would like to get back to the clinical utility of his pacemaker. I can understand that the instrument has a clinical application beyond Dr. Hyman's original concept of reactivating the stopped heart. I believe that this second idea may have even more importance than the resuscitation angle. I heard the expression of "walking" or "pacing" the heart beat from Dr. Groedel only a few months ago, when the whole project of Dr. Hyman's Resuscitation Unit Team came up at the Board meeting. The subject, of course, needs further research and development.

Dr. Opitz: The concept of expanding the field of usefulness of Dr. Hyman's pacemaker is, I believe, a most important problem. In simple cardiac resuscitation, the instrument has proved its value in any number of operating rooms and on the emergency service of our local New York hospitals. Whether the instrument can be equally successful in the management of complete heart block with very low idioventricular rates or in ventricular fibrillation remains to be seen. Meanwhile, I think that the instrument fills an important role in cardiovascular collapse and death from standstill of the heart.

This is the program abstract of a paper. "Preliminary report on the use of the artificial pacemaker in complete heart block," by Albert Hyman, Homer Cudmore, Joseph Hodes, Joseph Wolffe and Allan Sussman, which was read on February 11, 1946, at a meeting of the New York City Hospital Clinical Society[77]:

> This a pilot study concerning the possible use of the Hyman Artificial Pacemaker in the control of the Stokes-Adams syndrome with complete, or third degree heart block. Three patients from the First Medical Service of New York City Hospital were treated. All three were selected on the basis of advanced arteriosclerotic heart disease, with electrocardiographic evidence of complete heart block, and with ventricular rates of 26 to 12 beats per minute. Blackouts occurred in all three. One case, EBMc, a man of 70, had repeated periods of unconsciousness. A woman, age 68, had a ventricular rate of 18; and a man, age 76, had a ventricular rate of 22. They were treated by intracardial, bipolar, direct current, needle placement in the right atrial region. Synchronous electrocardiographic tracings were made in the first two cases during the periods of unconsciousness and the return of consciousness after 60 seconds to three minutes of introduced pacemaker current. The tracings are herewith shown. The third case was difficult to handle: his episodes of Stokes-Adams fits were associated with a wild thrashing and movements on the bed which necessitated forcible restraints and rendered difficult, and often impossible, electrocardiographic tracings while the pacemaker was working. However, the clinical notes show that the ventricular pulsations increased from about 10 to 12 beats per minute to 74, as determined from the pre-setting of the pacemaker impulse release. The artificial pacemaker rhythm and rate persisted for varying periods of time after withdrawal of the bipolar needle. These periods of regular pulse rates of 66 to 96 lasted from only a few minutes to 10 days in Case 2 of the woman, FSS. The third patient died after three days after the first artificial pacemaker application. He did not recover consciousness during the last 36 hours, although the ventricular rate never dropped below 44. Postmortem (Dr. Lisa) in this case showed a markedly scarred myocardium from a number of previous infarcts. The main bundle system was considerably calcified. The X-ray taken about two weeks before showed raphide streaks of varying density which, in retrospect, indicated marked areas of myocardial calcification. The other two patients are presented here, together with their electrocardiograms before and after intracardial stimulation by the bipolar needle method.

This "preliminary" report stayed unpublished, and there was no sequel.

Other ventures based on repetitive electrostimulation

At about this time various laboratories engaged in exploring the feasibility of cardiac reanimation from standstill constructed electronic devices and probed aspects of the subject that just fell short of being applied to the problem of heart block. Claude Beck, M.D.'s exhortations commanded a wider audience after his successful defibrillation of a human heart at operation became known.[7] Electrical equipment and guidelines for cardiac resuscitation occupied the labors of many investigators, among whom should be cited Leeds, Mackay, and Mooslin[78] for their meticulous analysis of the effects of current strengths of the heart.[79-82]

The sinoatrial node, as the natural cardiac pacemaker, received especial attention in efforts to revivify motionless or laggard hearts. Because topographic localization of this structure according to bony landmarks on the thoracic wall was imprecise, Sweet in 1947[83] advocated direct digital massage of the node. Stimulation of the atrioventricular node, electrically and without thoracotomy, was achieved shortly after by Bigelow, Callaghan, and Hopps, as related elsewhere.[9] Their preliminary report of 1950 remarked[84]:

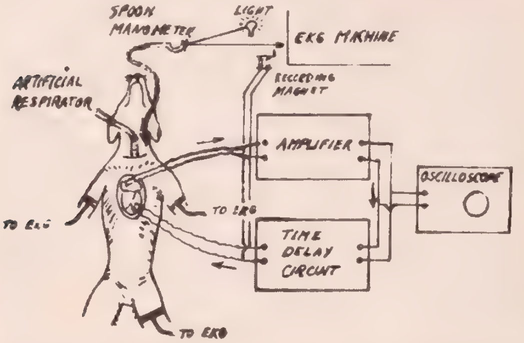
> Medical men have little fear of temporary cessation of respiration and successfully apply artificial respiration in several forms for prolonged periods. With evidence that many hearts, including those in the hypothermic state, which have ceased beating still have the power to contract following mechanical stimulation, it seemed reasonable to consider the use of an artificial pacemaker to restore heart function. It was felt that, using the principle of electrophrenic respiration, periodic electrical stimulation of S-A nodal area might restore the beat. This could conceivably be carried out for prolonged periods until the organism had been restored to a state where spontaneous normal heart action was regained. As yet no report of a similar technic used in the intact animal has been found in the literature.
>
> This is a very early report of such a procedure which has been attempted recently in four cases of cardiac standstill, in each case with restoration of heart action. The stimulator, with rotating potentiometer, has been used to deliver impulses at any desired rate. An indifferent electrode is clipped onto the chest wall and the stimulating electrode placed in the region of the S-A node. Normal appearing heart action is observed and the heart rate is varied within limits by adjusting a dial.
>
> In two experiments the artificial pacemaker was used for ten to 15 minutes, and when it was discontinued the heart returned to standstill. In the other two animals following electrical control of the heart beat for ten and 30 minutes, normal spontaneous heart beats returned.
>
> In one of these following cardiotomy at 20°C the heart was sutured and clamps removed. Ten minutes later in the presence of good vigorous heart action and normal venous pressure, ventricular fibrillation set in. The heart was defibrillated by the technic described, producing cardiac standstill. Electrical stimulation of the S-A nodal area was then carried out for ten minutes, testing effect of withdrawal of this at intervals until spontaneous heart action was restored. The chest was closed and the dog rewarmed to normal body temperature, only to die several hours later.

Herrod *et al.*[85] applied repetitive stimuli to the sinoatrial node, atrioventricular junction, and ventricular septum of normal, drug-depressed, and arrested canine hearts. Blunt-tip electrodes were used on these structures after opening the thorax. Retrospective inspection of the published graphs reveals fairly good correlation between pacing and control of heart action. And yet the authors were prematurely and unaccountably discouraged by the results:

> Repetitive electrical stimuli in small current intensities of 2-3 volts (0.04–0.06 amps.) and stimulus durations of from 0.02 to 0.10 seconds will superimpose beats upon the normally beating heart and are capable of completely dominating the rhythm of the heart when its conductivity is altered by large doses of procaine amide. Stimuli of greater intensities or longer durations will result in fibrillation of the ventricles. When the conductivity or the contractility of the heart has been damaged by anoxia, as occurs in standstill after asphyxia, standstill after defibrillation, and in severe depression due to drugs, repetitive electrical stimuli are ineffective in producing sustained forceful myocardial contractions. However, where the conduction fibers or the muscle tissue are not damaged by anoxia to a degree where they are incapable of response, the application of repetitive electrical stimuli will cause prompt resumption of vigorous ventricular contractions with improvement in blood pressure and blood flow.
>
> The possible clinical applications of such a device are still extremely limited, for in no instance of clinical cardiac arrest, whether it be standstill or ventricular fibrillation, would these electrical stimuli in their present form replace rhythmic manual compression of the heart. From these studies one might conclude that such stimuli could be of use in vagal asystole were they applied prior to the onset of anoxia, and perhaps in certain instances of drug depression. . . .
>
> Rhythmic manual compression is more effective than repetitive electrical stimulation for reviving the heart in standstill.

In 1942 Butterworth and Poindexter[86] had sought to simulate the Wolff-Parkinson-White and ventricular fusion beats phenomena by an ingenious experimental preparation (Fig. 4).[87] This consisted of short-circuiting the normal cardiac conduction pathway by an electronic system which sensed the atrial muscle impulse, amplified it several thousandfold, and then released it onto either ventricle. A similar system for intercepting, magnifying, and then rerouting the cardiac excitation process was used in 1949 to breach heart block by Hellerstein, Shaw, and Liebow.[88] Their "extracorporeal electronic bypass of the A-V node" conveyed amplified P-wave signals to the right ventri-

In cats and dogs, under nembutal anesthesia, the sternum was removed to expose the heart, and the incised pericardium was sutured to the exposed rib margins to form a cradle for the heart. An automatic positive pressure respirator was used to maintain respirations after the chest was opened. The current of excitation produced by the right auricle was picked up by small, riding, silver electrodes and carried to the amplifier. The output of the amplifier was connected to a cathode-ray oscilloscope and also to the input of the time delay circuit (Fig. 1). The output of the time delay circuit was then utilized to stimulate the right



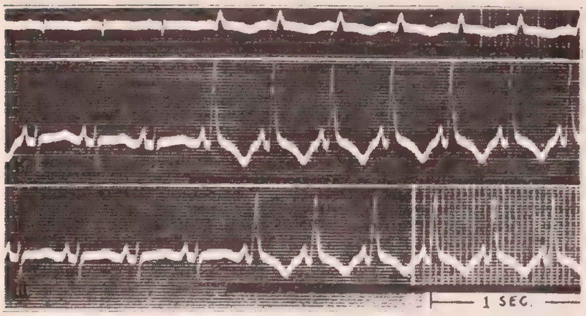


Fig. 4 (cat 12).—Standard leads showing normal complexes and complexes with a short PR interval and a wide QRS group. The time during which the amplifier was turned on is indicated by the black base line

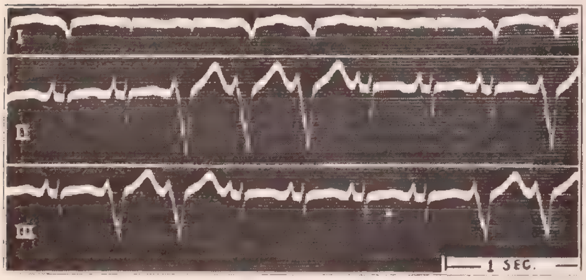


Fig. 5 (cat 12).—Standard leads showing normal complexes and complexes with a short PR interval and a wide QRS group. The time the amplifier was turned on is indicated by the black base line

FIGURE 4. Butterworth and Poindexter's scheme for ventricular stimulation by diverted and amplified sinoatrial nodal current of excitation. They did not direct this notion to clinical management of atrioventricular dissociation. Courtesy of Dr. Butterworth and publishers. Upper illustration: Am. Heart J. **28**: 149 (1944)[87]; electrocardiograms: Arch. Int. Med. **69**: 437 (1942).[86]

cle through the intermediary of an indwelling catheter electrode. They stated,

> The ease with which the apparatus may be applied to the intact animal, using cardiac catheters (pick-up electrode near the SVC-RA junction, output electrode mounted on the end of a cardiac catheter within the cavity of the right ventricle), suggests a possible application in human patients with sudden complete A-V block, where other therapy has failed.

Although studies on sinoatrial nodal stimulation continued in a few scattered laboratories, the method was superseded by others aimed at electronic regulation of ventricular contractions in heart block. When it resurfaced again, it was under the guise of atrial-triggered or "synchronous" pacemakers intended to bypass impeded atrioventricular conduction.

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INAUGURAL ADDRESS

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This has been a difficult year not only for the Society but for medicine in general. The new building assessment, the Health Department's new interpretations of rules, and the soaring malpractice insurance premium rates did not do much for the morale of our members. I am not especially concerned about the traumatic effects of the assessment on our Society. In the final analysis, it was the only sensible thing to do. Our new building is a magnificent structure which will reap us great benefits in years to come, despite the generalized discomfiture it has stirred among some of our membership. I firmly believe that this Society has made a great investment in its future and that time will justify what to some may presently seem an extravagance. I am *more* concerned with the generalized attack on our profession.

I do not know of another time, in my experience at least, when we have had to assume the defensive posture that has been thrust on us. The strident voices of those in high places of responsibility are heard throughout the land. We have become a prime target for criticism from increasing segments of our population. There has been a gradual but definite erosion of confidence in medicine at all levels. The physician is becoming low man on the totem pole, even in our hospitals. Fewer physicians are being appointed to governmental committees in areas directly involved in medical care. Even the physician membership on Blue Shield governing boards (wasn't that once called the Doctors' Plan?) is being legally reduced to a token force. The arbitrary and unilateral cutbacks in Medicare and Medicaid are further manifestations of this insidious attack. Need I mention more?

It seems obvious to me that to combat this trend the physicians of this State must be united as never before. If we agree then, that a Medical Society is needed, let us look at its purpose and its performance. Is it doing the job it set out to do? Is it being responsive to its members' desires and needs? Do its officers, trustees, councilors, and delegates represent a democratic choice?

By the same token, the members must ask themselves, are they sharing in the burden? Are they putting their best foot forward for quality medical care? Are they telling it as it is to the people?

Role of MSSNY

Let us look at Article I of our Constitution and see how we are doing! I have extracted 4 main headings.

1. "To federate into one organization the medical profession of the State of New York."

According to the *AMA's Reference Data, 1971* revised editions, exclusion of Federal employes, medical teaching, administration, and others, we have about 27,000 members in this Society. Can a Society with such a large membership and with varying interests combine into an effective force working for the interests of all? I think we have done so rather well.

The specialty groups play a very important part in our organization, and I am delighted that our interspecialty committee has become stronger than ever before. I hope that these groups will always act under the umbrella of the Society and not attenuate this Society's effectiveness by splinter action. It is equally incumbent on the Society to not isolate these groups. I call for continued and greater cooperation between this Society and the specialty groups.

I feel greater effort should be made toward attracting new members, as well as improving membership retention.

2. "To extend medical knowledge and advance the science and art of medicine."

Our Committee on Continuing Medical Education has done yeoman work and has spent many hours on this complex issue. We are encountering the expression "quality medical care" more and more, especially from governmental agencies. It is a term which means different things to different people. With the advent of bigger and better emergency rooms and the concomitant expectations of the public for this service, the definition of quality medical care has taken on new connotations. Our emergency rooms are becoming outpatient clinics. To one patient it may mean having a physician immediately available, day or

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night, regardless of the need or the complaint. To another patient, quality medical care may mean gourmet food and a baronial hospital room.

To a physician, however, quality medical care can mean only one thing and that is care rendered by a competent, up-to-date, conscientious, well-trained physician. The patient has a right to expect this, and we would be the last to argue the point. Quality medical care also means peer review done *by* physicians *on* physicians. We must not lose this responsibility of speaking out when we find shortcomings in the care of our patients. The peer review committee of the Society has done outstanding work and is looked on as a model for other societies. If we really believe in quality medical care, then we must support continuing medical education and peer review. We need have no fear of reexamination, recertification, or the accusations of self-appointed zealots if we follow the recommendations of these committees. To show you the importance which some of our profession itself attaches to continuing medical education and professional competence, I need only remind you of the action of the Oregon Medical Association. This body has recently ousted 11 physicians from membership because of their failure to meet their society's requirements in continuing education. This was not a requirement imposed by government but rather one by physicians on themselves. It raises the interesting question of whether minimal standards of continuing education should be required for membership in medical societies.

3. "To promote the betterment of public health."

As you well know, the committees of this society are generally divided into three commissions. The Commission on Public Health and Education is responsible for promoting the betterment of public health. The amount of constructive work that is done by this commission was a revelation to me. Each committee of this commission has a representative of the State Department of Health assigned to it as adviser and liaison officer. This commission is doing its work in a highly productive manner and serves our society and the people of this State admirably.

4. "And to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State."

It is in this area that the Society has the potential for its greatest triumphs as well as its most costly defeats. The problems of medicine and health are endless, and if we are to do anything at all in this area it requires the complete cooperation of all of our members. The Venereal Disease Prevention Education program of the Society is a classic example of one of its best efforts. Those of us who experienced firsthand this activity on the campuses and schools of our State could not but be impressed with its success. Similar programs on other problems should be devised and offered to the people of this State.

I think that we are doing a reasonably good job in fulfilling Article I of our constitution. I do feel, however, that we should and could do a better job. Physicians must take a larger and more active role in the issues affecting community health and life. We cannot afford the luxury of hiding behind the, "I'm too busy" excuse, although we are indeed busy. Somehow we must find the time to reassert our natural role. Physicians are knowledgeable and uniquely qualified to lead. In what other profession does one see firsthand the results of inadequate housing, malnutrition, pollution, poverty, and poor education? We see it all! If we really believe that the Society must enlighten the people of this State in regard to problems of medicine and health, then we must be the first to point out areas in which there is lack of medical care. Lack of medical care in the inner-city areas should be of just as much importance to physicians upstate as the lack of rural care should be to those in the big cities. George Himler, M.D., in his scholarly report on foundations, has shown how this very problem can be attacked. I suggest that this should be required reading for all members. All the foundations and institutes in the world, however, will not work unless this Society dedicates itself to things as they are and not as they have been. Your Society has given you a blueprint for a viable and reasonable method of delivering quality medical care. I trust that it will be given an honest chance to work.

Survey

I should like to address myself to some of the internal workings of this Society. There have been ripples of concern from some quarters about the manner in which we elect our officers, trustees, councilors, and our delegates to the AMA. To satisfy myself, I have gone over the elections of the past fifteen years (1956 to 1970) and have plotted them so that we may see for ourselves just how democratic this organization has been (Chart).

An explanation is needed for those unfamiliar with the workings of the Society to justify some of the apparent discrepancies. The position of president is usually alternated between Upstate and Downstate each year. The geographical boundaries of these two entities, I leave to our political demographers. The position of vice-president has traditionally gone to a deserving member of the Society for past services and has had no relationship to area representation. In the past few years, however, more attention has been given to this important position. As a result of the changes in our constitution, I imagine that both the president and the vice-president will now be chosen from the same area inasmuch as the matter of

District Branch (DB)	1	2	3	4	5	6	7	8	9
DB % Total MSSNY Membership	53	11.5	3.3	2.6	5.1	2.8	5	7	9.3
President	5	1	0	1	3	2	1	1	1
Vice-Pres	4	2	2	0	4	0	0	2	1
Secretary	12	1	0	0	0	0	0	0	0
Asst Secy	14	0	0	0	0	0	0	0	1
Treasurer	15	0	0	0	0	0	0	0	0
Asst Treas	15	0	0	0	0	0	0	0	0
Officers-15 Years (88)	65	4	2	1	7	2	1	3	3
% of Officers	72	4.5	2	1.1	7.7	2	1.1	3.3	3.3
Councillors-15 Years (193)	44	19	17	15	24	25	10	23	17
% of Councillors	22	10	8	7.5	12	12	5	12	8
Trustees-15 Years (102)	43	7	7	4	17	9	3	4	8
% of Trustees	40	7	7	4	16.8	9	3	4	8
Delegates-15 Years (169)	75	12	6	9	20	16	8	15	8
% of Delegates	44	7	3.5	5.3	11.5	9.4	4.7	8.8	4.7
Total of All Offices (552)	227	42	32	29	68	52	22	45	36
% of All Offices	42.5	7.5	5.8	5.2	12	9.2	3.9	8	6.4
DB % Total MSSNY Membership	53	11.5	3.3	2.6	5.1	2.8	5	7	9.3

succession has now been changed. The obvious disproportion of the next four positions is apparent and was started years ago when we did not have the staff arrangements we now have. I would look for a more equitable distribution of these positions in the years to come. I will not go over each, but they are being offered for your information. Although some other conclusions may be arrived at, I feel that there has been remarkably good representation, considering we follow no real ground rules.

I have made no attempt to break the district branches down into counties. For those who would do away with the district branch concept, I point out that these statistics show that we do have reasonable representation.

Although I do not believe that membership in the AMA should be mandatory, I am distressed that the AMA has lost so many New York members. The eternal cry is raised, who needs the AMA? What does it do for me? It's too liberal! It's too reactionary! It's too conservative! Anyone who has followed the AMA knows that the voices of dissension and criticism are now being heard in that organization. As all organizations must change to survive, the AMA is changing. What direction it takes depends on those of you who are interested enough to have a part in the action.

There is not a single physician in this country today who has not benefited from the AMA when one considers the fantastic amount of work that they have done on a national scale in all facets of medicine and public health. A look at their journals, magazines, committees, councils, and task forces will vouch for this.

I think it morally unacceptable for us to share in the benefits of the AMA without supporting the AMA. Its actions, however, have not always made friends nor influenced people. It will take a long time before I can fully accept the defeat of two of our illustrious sons who ran for trustee. This Society does not expect any special favors because of its size, but I do feel there should be some effort toward a more equitable representation on at least a geographic basis. I had never been a delegate to the AMA until this year, so I cannot criticize past activities of our delegation. I do feel, however, that New York must have a more effective voice in the affairs of the AMA. The AMA, as well as the MSSNY, must better reflect the desires of its members or there may be a further exodus from the ranks! I urge all members who have withdrawn from the AMA to reconsider and rejoin. Whether they belong to the AMA or not, all physicians will be equated with that organization and its actions. At least, let us have a voice!

The practice of medicine in the "Age of Aquarius" is, and will continue to be, a frustrating experience. We are beset with foundations, HMOs, institutes, PSRO, multiphasic testing, CHAP, peer review, physicians' assistants, medical manpower shortages, medical crises, Medicare, Medicredit, Medicaid, health care, third parties, usual and customary, relative value scales, EMPAC, and AMPAC. It would be funny, if there were not tragic overtones.

Future

That long list emphasizes the problems facing organized medicine, and you will notice that this is the first time that I have used the word "organized." When the word organized is used, it conjures up thoughts of unions and strikes. Anyone who reads medical journals these days knows that there is an increasing number of physicians who advocate unionization of the medical profession. When you form a union there is always the implied threat of strike action. I think Dr. Himler put it succinctly when he said of such an action, "The transcendental importance of constantly available medical services makes the threat of their being withheld intolerable." I recall to your minds, however, that only last year on this very dais our colleague Raymond Robillard, M.D., from Montreal, told us in detail the bloody events leading up to that very thing—the withholding of services except for emergencies. How much provocation is necessary to make reasonable men and women alter lifelong convictions? I trust this Society may never have to take such action.

We must, therefore, gird ourselves for the job ahead. We have made an excellent start in the revamping of our legislation department. The foundations for medical care offer great promise, but they are still in their infancy, and their effectiveness has yet to be proved. The New York Institute for Research and Development in Health Care must be given every chance of success and time to become functional. Research and planning must be beefed up to achieve their potential. Medical students, interns, and residents must become part of our family and they must be heard. We must devote more time to our communities and their problems.

We must employ more public forums on medical and health problems! We must be more aggressive with our political leaders! We must take more time to communicate our views to our patients! How many of us have spoken to a service club lately? How many of us have taken time to answer the often libelous and phoney charges against the profession?

In addition to a vigorous and dynamic approach to our problems, the Society itself must be staffed by energetic, knowledgeable people. This Society has indeed been fortunate to have the continued vigor which our executive vice-president brings to his office. I have never believed in the indispensable person, but he may make me change my mind.

Although we are not the oldest profession, there are those who would treat us as such. We have been berated for the ever-spiralling cost of medical care when we have been only minimally responsible. We have been belabored for overutilization and then sued for malpractice. When the high cost of Medicaid for the inner cities and rural areas became apparent, the "second-class citizens," for whom the plan was designed, were soon forgotten. Financial incentives are now being offered to lure the physician back into the very areas he had long been serving with only humanitarian incentives. At a time when the hysterical shrill of "medical crisis and medical manpower shortage" is heard throughout the land, there are many physicians stopping part-time and limited practices because of the exorbitant malpractice rates.

On December 1, 1862, Abraham Lincoln stated to the Congress:

> The dogmas of the quiet past are inadequate to the stormy present. As our case is new so we must think anew and act anew. We must disenthrall ourselves.

It is in times of disorder and chaos that men and women are given their greatest opportunities. We must indeed disenthrall ourselves with the past and look to the future. What profession offers more challenges than ours—a profession whose very history is steeped in change itself!

I have mixed thoughts about the year ahead. I wonder if 1972 can be a very good year for any medical society president. I offer no great plans, programs, or panaceas to solve all our problems. I do have, however, a deep love and respect for the practice of medicine. I feel it the obligation of all members of this Society to foster and maintain that love and respect for our profession. We know that Rome wasn't built in one day: neither was it destroyed in a day. The destruction of a state or an organization comes from within, when it loses its will to fight for those beliefs which made it strong. If we stop believing in ourselves and in our profession then all the groups, foundations, institutes, and even unions will not avail us.

When the history of the Medical Society is written let it not be said "that we have met the enemy and they are us"!

TELEPHONE LECTURE NETWORK

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The Telephone Lecture Network is an operational project of the WNY-RMP (Regional Medical Program for Western New York). Initiated in September, 1968, it was originally designed to keep physicians and nurses abreast of the latest medical advances. Scheduled programs now include all members of the health professions from the medical record librarian and the hospital administrator to the dentist and the physician. In addition, the network has arranged for physician specialty programs, WNY-RMP administrative meetings, taped (lecture) program broadcasts, language programs for foreign personnel, and survey interviews.

All network endeavors are funded by the Federal government under Public Law 89-239 to the Regional Medical Program for Western New York. The goal of the program is to raise the quality and speed the delivery of health care to all in the region, and to bring the benefits of modern research more rapidly to patients. The extension of the Telephone Lecture Network to encompass the family is but an expansion of the overall WNY-RMP effort to direct the fruits of medical research to the people.

Parents of diabetic children solve problems mutually

Despite their predicament, children with abnormal medical conditions must learn independence, both physical and mental. Thus, parents of diabetic children recently met through the Telephone Lecture Network, which is sponsored by the Regional Medical Program for Western New York, to learn how five Jamestown, New York, citizens approached this problem. The 60-outlet Telephone Lecture Network extends into seven Western New York counties and two nearby Pennsylvania counties. It is one of 55 RMPs in the country.

Instigating the evening lecture was the Parents of Diabetic Children organization of Buffalo, which heard the lecture at Sisters of Charity Hospital in Buffalo. Others listened in from four other Western New York hospitals: Jamestown General and Women's Christian Association (W.C.A.), both in Jamestown; Brooks Memorial, Dunkirk; and Lockport Memorial. All were there to learn how an area camp has organized to accommodate diabetic children.

They wanted to gain insight from the experiences of the professionals in the small community of Jamestown, who had met and solved a common problem.

Certainly there are problems from the camp's point of view. However, by working together, the community, hospitals, and camp staff can usually overcome these problems. Presenting their way of solving the inherent problems were Maurice Furlong, M.D., a Jamestown pediatrician and medical director for the local camp for diabetic children; Skender Sellman, director of social work for two Jamestown hospitals; George Manos, director of the Lake Chautauqua Lutheran Camp; Robert Woodard, principal, Frewsburg Central School, who is the parent of a diabetic child; and Mrs. Shirley Glatz, head pediatrics nurse, W.C.A. Hospital.

The pediatrician and social worker first met to discuss the needs of parents of chronically ill children. In January, 1967, the W.C.A. Hospital of Jamestown called in the parents of local diabetic children to bring them together for mutual support. The goal? To help them help their children and to help them as individuals.

The camp director was invited to depict the structure of Lake Chautauqua Lutheran Camp at Bemus Point. He presented the camp as a noncommercial small-group situation, which permits the children to relate well to one another. He also informed the parents that the camp was interested in training personnel to accommodate the diabetic children. As an arm of the church, the camp staff want to minister to people of all kinds. They have worked with both the economically and sociologically underprivileged who attend the camp through grants.

The meeting also acquainted the parents with community resources. The principal, one of five parents who attended the meeting, revealed that he enjoyed the opportunity to meet parents and professionals involved with the handicapped. He wanted an experience for his daughter that would help her lead a normal life. She had adjusted well to receiving insulin daily. However, when looking for a camping experience for her, he found that most were too far from the area, too expensive, and too medically oriented. He preferred to send his daughter to a camp where she would "not be singled out as something special."

Plan of camp

With these goals in mind, Lake Chautauqua Lutheran Camp staff began training. Likewise, they planned camp programs with few limitations on the diabetic children's activities. Medicine is de-emphasized. Of course the camp faces problems with the admission of diabetic children. Diet must be watched. Insulin must be administered, and precautions must be taken against accidents.

However, the aforementioned pediatrician has made himself available in the summer. Restrictions are placed on the number and the type of diabetic campers taken; each is screened by a physician and the camp nurse. The aforementioned head nurse usually discusses the capabilities and personality of each diabetic applicant. In other words, camp staff rely on the physician, parents, and local hospitals to help keep diabetes under control.

According to its director, the camp has had only 1 case of shock since it began admitting diabetics. An active twin boy who "loved camp" went into severe shock after too much activity. He was pulled out of shock quickly with the assistance of a local hospital and returned to camp the next day.

Says the principal, "You can't be apprehensive—and you can't write it off." Regardless, the diabetic child's successful camping experiences help the parent feel secure about the child's safety because the camp is committed to taking good care of the children. The social worker noted that this shows good staff-parent orientation. This educational process is important for the parents dealing with their own anxieties.

Surprising things happen at camp, too. The daughter of the principal, who was the first diabetic to attend the Lake Chautauqua Lutheran Camp, learned to inject insulin at camp. Her parents had had negligible response when they tried to get her to give herself a shot before she went to camp. They could not press the issue for fear they would frighten the child. The principal was pleased when his daughter came back from camp and had learned to administer her own shots.

Being away from home helps the children adjust to new situations. The camp situation helps, too, especially when one camper is more advanced than another. Having one diabetic at the camp who gives himself shots wins half the battle for another diabetic. The children tend to watch one another. Also promoting the cause was the camp nurse's club in which everyone had to give himself a shot.

Each morning at camp, the diabetic goes to the infirmary for a urinalysis and an insulin shot by either the nurse or himself. He goes with others who have scraped knees, runny noses, and "heaven knows what else," in the words of the camp director. The first aid station helps the diabetic realize that he is not the only one with problems.

The child learns to accept responsibility and realize that it is for his own good that he must eat different foods. The nurse helps him remember the proper diet. Occasionally at the canteen, the compassionate friend of a diabetic will take diet soda or turn down sweets altogether. These and other experiences help the diabetic realize that his parents are not trying to deprive him.

The child grows up and begins functioning away from his family, both parents and siblings, despite his handicap. He realizes that although he can never do everything that others do, he can still enjoy a good life.

Strengthening patient-family relationships

Telephone Lecture Network programs help the handicapped patient know that his family is for him. So it is that families and institutional personnel tell staff of the Telephone Lecture Network, an operational project of the Regional Medical Program for Western New York.

The feelings of the family often make it difficult for them to show their concern. Parents are frequently ashamed if they have a retarded child. Families feel guilty if a spouse or a sibling becomes ill.

The predicament of a diabetic child, who must have fruit for dessert while his siblings have cake with icing, can be somewhat relieved by an understanding family. The situation is reversed when the family has fruit for dessert; the siblings often blame the diabetic for their plight.

Because the handicapped child often feels singled out, several Jamestown, New York, parents have worked closely with a local camp to find ways to make the child feel more secure in a camp situation. They have integrated diabetic children into a regular camping experience. Such integration includes de-emphasis of the child's medical condition. Five Jamestown citizens recently described this camp program over the network: a pediatrician, a social worker, the camp director, a school principal who has a diabetic child, and a nurse. According to the Jamestown group, the children need the camp; it makes them better people. It helps them learn to take care of and coordinate themselves.

Both a good staff-parent orientation program and the successful camping experiences of the children have helped minimize the parents' anxieties. Knowing that their children are safe, the parents are relieved of medical worries and begin to treat the children as individuals. The presentation of the camping experience on the Telephone Lecture Network has provided a source of mutual support for parents of other diabetic children.

A multitude of experiences described over the network has fostered such support. The parents are reassured when the children find compassion in others. Especially thoughtful is the friend who takes diet soda or passes up sweets altogether because the diabetics must. Also heartening to the parents is the children's acceptance of self-responsibility. When the children understand that their special diet is for their own good, they begin to realize that their parents are not trying to deprive them of things. They are enlightened when they see nondiabetic children at the camp with problems of their own. When they go to the infirmary in the mornings for urinalysis and insulin shots, they go with others who have scraped knees, runny noses, and "heaven knows what else," in the words of the camp director.

Those tuning in to the Telephone Lecture Network learn how the group experience helps the chronically ill child in still other ways. In the case of the child who has yet to administer his own insulin shot, the group situation sometimes instigates the child's first try. This encourages the parents, who have often had negligible response prior to their child's camping experience. Children tend to imitate; and camp is no exception. The group situation promotes competition. The contrast of the environment from that of home also eases adjustment.

The camp experience enables the child to grow up and function away from his family despite his handicap. He finds out that he can never do everything that others do but that he can still enjoy a good life. Above all, the total cooperative effort of the Women's Christian Association Hospital in Jamestown, the Lake Chautauqua Lutheran Camp at Bemus Point, and the parents has borne fruit, and cooperation or mutual support within the community is the goal of the Telephone Lecture Network programs.

Family preparation

A licensed practical nurse at the West Seneca (New York) State School suggests that the community should be made aware of problems faced with medical handicaps before the onset of such handicaps. The family should be prepared for institutionalism when all are well, before illness or retardation hits the family. They should be oriented while they are in the right frame of mind, before they confront the problem and panic. Such orientation, through such media as the Telephone Lecture Network, could help enlighten the family before one of its members becomes institutionalized. It could help alleviate misunderstanding, fear, and superstitions about institutionalism.

Prior to admission, West Seneca State School helps families adjust to the situation. A social worker visits the home. The parents tour the institution and meet the doctor. West Seneca State School authorities have suggested that Telephone Lecture Network programs could add to the family's awareness of some of the problems faced by parents, when a child has to be institutionalized. They have also noted that the community could be made aware of some of the problems concerning health facilities through such media as the telephone network.

Children, who often mirror their parent's feelings, usually gain confidence in the institution when their parents are reassured. This, in turn, reinforces the parents' acceptance of institutionalism.

A TLN program, "Hemodialysis in Depth," has strengthened confidence in hemodialysis procedures. Prior to the network program, some patients appeared to think their health care team alone practiced the dialysis concepts taught. Through this presentation, the listener now realizes this is a group endeavor.

An example from Hamot Hospital (Erie, Pennsylvania) will remind the reader that chronic disease does not always involve a parent-child relationship. A dialysis technician reports that a Hamot Hospital patient must reinstill faith in her daughter who takes care of her. The difficulty lies in the reversal of their roles.

Regardless of the familial relationship involved, the network helps those listening to realize that they are not the only ones "going through it." Emotional barriers are transversed through network lectures, and those who blame themselves are enabled to accept illness.

The family faces the patient's physical and emotional problems. The longer the patient is on dialysis, the more emphatic the problems usually become. For example, the diet of the hemodialysis patient is restricted. Two and a half glasses of fluid is the maximum allowed every twenty-four hours, according to a dialysis nurse. Medication must be taken. Disposition also becomes a problem. The patient may become self-centered and bitter, believing that his family does not care because he is "going to die anyway."

Dialysis personnel agree that the family should help the patient. However, the patient must be responsible for himself. For his family to help, the patient must want help. Whatever is done, the family must live with themselves afterward. Those involved should accept dialysis and the treatment procedures that accompany it. This includes the understanding that diet is important, despite the three-day-a-week dialysis.

Problems encountered in families with chronic illnesses are often reflected in a marriage. Interviews reveal that if the marriage was shaky before the patient became sick, it usually falters, to say the least. The patient's spouse may remind him from time to time that life rests in the hands of his mate. If the marriage was strong before the patient's illness, it generally holds together. The mutual understanding of husband and wife will persevere through illness. The author perceives the possibility of strengthening family relationships under duress through TLN presentations.

It has been said that the staff and physicians can often help the patient more because they understand the situation better. However, helping the patient usually means helping the family too. A nurse at Buffalo General Hospital states that she treats both spouse and patient in a very normal manner. She tries to tell the spouse first what the patient is like, that is, how he is responding to treatment, then listens. In that way, she feels the spouse knows that someone else understands.

She adds that it is good for the spouse to let the patient know how far he can go and get his feelings off his chest when necessary.

A Hamot Hospital dialysis technician pointed out that when she and her high school class gave up senior class entertainment funds for a girl in need of dialysis, no one explained what dialysis is. All they knew was that someone was going to live because of them. The need for health education of the community in general is important. Only when their minds are most receptive can people be made aware of health needs such as dialysis. Then, when faced with a mentally retarded child or a mentally or chronically ill spouse, child, or sibling, they (the family) understand and are prepared to help.

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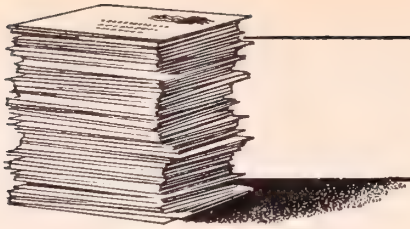

Letters to the Editor

Community approach to addiction problem

To the Editor: Within the last few years the problem of drug addiction has mushroomed to alarm not only the residents of the slums but also of suburbia with its rich and powerful residents. In 1959, there were 45,391 active narcotic addicts recorded by Federal enforcing agencies. In 1963 this number rose to 48,535, and in 1968, to 64,011. While in 1959 only 3.8 per cent of the recorded addicts were under twenty-one years of age, in 1968 their number increased to 4.2 per cent. New York State alone accounted for 50 per cent of all known addicts. The National Institute of Mental Health estimated recently that there were 250,000 heroin addicts in the United States. It is well known that 75 per cent of addicts belong to minority groups. There are about 20 million marihuana users, while 8 billion amphetamine tablets are produced annually in this country.

When we look at all these figures we may think that we are facing a new phenomenon. Actually, this is not really true. Marihuana was well known to the Chinese since 2700 B.C., who used it for the treatment of gout. Opium was known to the Egyptians since 1500 B.C. and heroin was introduced in medicine at the end of the nineteenth century. It is noteworthy that during all these years the "drug habit" was not considered illegal. It was not until 1909 that a Federal law was enacted in an attempt to control the use of opium, and marihuana was outlawed in the United States as recently as 1939. Thus, drugs did not become a source of social concern in the western hemisphere until about two decades ago.

Comment

Many societal factors may be causing today's serious drug problem, to name a few: the consequences of World War II and later the Korean and Vietnam wars, the rapid increase of the urban population, the expansion of our means of communication, and so on.

Other incriminating factors for drug use among the young are peer group pressures, rebellion against parents, as well as against society, and so on. Different factors are especially serious in the sphere of drug abuse as follows:

1. Chemical interplay
2. Personality of the addict
3. Addict's environment and his network of communications
4. Physician's role (in 1967 drug stores filled 178 million prescriptions of drugs that affect mood and behavior which represents a 65 per cent increase in comparison with 1958. It is worth mentioning that the majority of the prescriptions were given by general practitioners.)

In addition to these crucial factors in addiction, we have to keep in mind the attitudes which people have toward the addicts. Viewed as patients by clinicians, the addicts are seen as criminals by society. To emphasize the latter, it should be pointed out that it was not until 1966 that the first attempt to humanize the approach to addiction occurred through the Narcotic Addict Rehabilitation Act which permitted addicts to elect civil commitment to a therapeutic program rather than to be persecuted and jailed. It was not until 1968 that amendments to this law permitted the development of community-based treatment programs. Due to the high cost of operations, however, this was of limited benefit.

There is little doubt that the rapid growth of drug abuse in recent years has surpassed by far society's attempts to deal with this situation. This discrepancy has created a series of problems which underline our inability at this time to be effective in eradicating addiction as a social threat. For one, we are reacting to symptoms rather than looking for the cause of the illness. Thus, we spend more time and effort in treating addicts than in evicting the "pushers" from the community. There is also the fact that addiction has become a national concern with large sums of money being expended to deal with a most complex subject without real planning and coordination and thus, limited results.

Another issue resides in the emphasis on the use of ex-addicts in the programs who, to maintain their jobs, not infrequently tend to perpetuate the addiction problem. We must also note the philosophy used in treating addicts which in the majority of cases has resulted in their isolation from the community, thus hindering their successful return to normal functioning. There is, therefore, before us the same open question as to which road will most likely lead us out of this complicated bind. It seems that the many comprehensive programs initiated by the federally funded mental health centers since 1963 have proved to be successful in ameliorating mental illness. They have also been successful in developing community resources and input for the rehabilitation of the mentally ill. This is best illustrated by the reduced admission rates to State hospitals. One could ask, "Why not use the lessons learned in the last 10 years with the 'mentally ill' in the field of drug addiction?"

It is my belief that the use of comprehensive community programs will permit us to stop the isolation of the addict from society in the immediate future. The experience gained by the history of persecution and punishment to which the mentally ill were subjected until quite recently should help us avoid repeating the same error with the addict population. After all, who carries the final responsibility for whatever happens to our society? In my opinion, this responsibility resides in local communities. We should, therefore, provide these communities with the financial resources necessary to develop comprehensive neighborhood-based programs. These programs must contain not only treatment for the afflicted addicts, but also strong measures against the "pushers." Above all, educational and preventive approaches will of necessity permeate everything that is done!

Conclusion

The addiction problem has in recent years increased to a point at which it has become a national priority. Many factors are incriminated as the cause of this situation, with emphasis on the Vietnam War and the attitudes that society has toward addicts.

The many efforts made by the existing governmental agencies in eliminating the addiction problem have, so far, showed mediocre results. The reason for this is probably due to the treatment of symptoms instead of the causes of this illness. A community approach to the drug problem is suggested with development of comprehensive community-based programs and major emphasis placed on educational measures and eradication of "pushers" from the local communities.

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Are end results of H.M.G. therapy misinterpreted?

To the Editor: Popular perception of the clinical value of H.M.G. (human menopausal gonadotropin) is greatly distorted by the arrangement of data which are presented in various research reports dealing with induction of ovulation. Such reports are intended to promote the use of H.M.G. rather than to divulge the actual clinical results, and the facts are obscured in a mass of irrelevant or misleading data. The true measure of the value of H.M.G. is an increase in the ratio of normal gestations, the expense to the patients in terms of normal gestations, and the incidence of significant morbidity.

With these factors in mind, the data in one of the research reports have been arranged to indicate more clearly the end results. The value of H.M.G. therapy has commonly been based too much on the opinions or on the results from few successful cases which have been widely publicized in the public and medical press.

Table I reveals the ratio of conceptions among different clinical groups reported in the Cutter Laboratories[1] and Thompson and Hansen[2] series. This series is the principle basis for the commercial exploitation of H.M.G. Perusal of many reports on H.M.G. therapy reveals that few of the treated patients have a proved pituitary failure. Gemzell[3] reported an incidence of about 5 per cent. Thus, much of the therapy in most research series is purely empiric. Since clinical controls are not used, the ratio of conceptions rightfully attributable to the therapy is merely presumptive.

Table II shows the cost for H.M.G. therapy in the Cutter Laboratories and Thompson and Hansen series, which is apparently representative of other research groups in the United States. It is evident that the results presented in Tables I and II are not in line with general beliefs concerning the effectiveness of this therapy; but these figures differ from the original data only by the arrangement, so that one may more clearly perceive the actual end results.

A clinical analysis or evaluation of data presented in many other research reports on the induction of ovulation will, likewise, produce a very different perception of the end results than a cursory reading of these reports, largely due to differences in diagnostic criteria on which the therapy is predicated.

Unfortunately, some periodicals dealing with the various facets of the reproductive problem, including major publications on gynecology, endocrinology, and fertility, limit their pages to the publication of only new and original research which is accepted at face value, thus assuring the perpetuation of many false beliefs and practices arising from faulty research.

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TABLE I. Ratio of conceptions and full-term gestations after therapy with H.M.G.

Condition	Number of Patients*	Per Cent of Conceptions	Number of Births	Per Cent of Term Deliveries
Amenorrhea				
Primary	74 (6.2)	22	10	13.5
Secondary	293 (24.7)	28	55	19.0
Secondary with galactorrhea	70 (5.9)	42	22	31.5
Polycystic or probable polycystic ovaries	212 (17.8)	26	25	12.8
Anovulation and irregular cycles	315 (26.5)	24	51	16.0
Miscellaneous	229 (19.2)	20	27	11.8
TOTALS	1,193		190	16

* Per cent in parentheses.

TABLE II. Cost of H.M.G. therapy

Number of Patients Treated	Total Treatments	Treatments Per Patient	Number of Conceptions	Treatment Per Conception	Number of Births	Treatment Per Birth	H.M.G.* Per Conception
1,286	3,002	4.2	299	9.9	203	15	$1,350
650 (Clomid therapy)	1,571	4.1	169	10.7	115	13.7	$1,233
212 (Polycystic ovaries) †	546	3.9	50	9.1	25	22	$1,980

* Cost must be added to extensive laboratory control tests and for professional services.
† Diagnosis in most of these cases was presumptive; consequently, figures do not indicate results which might be anticipated in patients with proved Stein-Leventhal syndrome.

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1. Thompson, C. R., and Hansen, L. M.: Pergonal (mena-

tropins), a summary of clinical experiences in the induction of ovulation, Fertil. & Steril. **21:** 844 (1970).

2. Cutter Laboratories, Inc.: Treatment of female infertility with Pergonal (menatropins), Product Information, Berkeley, California, Cutter Laboratories, Inc., 1970.

3. Gemzell, C.: Induction of ovulation with human gonadotropins, Internat. J. Obst. & Gynec. **8:** 593 (1970).

Schreber reconsidered

To the Editor: May I correct an omission in the bibliography of my article, "Paranoia and Homosexuality, Schreber Reconsidered," published in the ***New York State Journal of Medicine*** June 15, 1971, page 1506. In submitting the article for publication, I did not try to compile an inclusive bibliography: this would have been too lengthy for an article covering the subjects of paranoia and the Schreber case. However, in condensing my original list of references to those most relevant to my text, I unfortunately omitted a most important reference to William G. Niederland, M.D., which should have been indicated at the same point in the article as the reference under number 15 and is as follows:

> Niederland, W. G.: Further data and memorabilia pertaining to the Schreber case, Internat. J. Psychoanalysis **44:** 201 (1963).

The double reference may have been a factor in this oversight. The omission is most unfortunate since Dr. Niederland's researches have contributed greatly to our understanding of a fascinating case.

May I take this opportunity of referring interested readers to his other articles on this subject. I will not detail them since they are well known. I do not want to trespass further on your space, and my original intention was not to give an inclusive bibliography.

I regret any inconvenience caused to you or your readers.

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Genetics in the Bible

> *The secret things belong to the Lord, but the things that are revealed belong to us and our children forever.*
> —*Deuteronomy* 29: 28

In these days of restricted funds for research and patient care it might be well to return to an original form of research, the study of earlier literature. The *Book of Ecclesiastes* reminds us that there is nothing new under the sun.[1] In the field of genetic control, one of the earliest written records of our civilization gives evidence of such an attempt. We are told in *Genesis* that when Laban and Jacob discussed what wages the former should pay the latter for his seven years' work, Jacob suggested that he be given the spotted, speckled, and the dark of Laban's flock after separating them from the other sheep and goats.[2] To this Laban agreed.

Now Jacob thought:

> If he took rods of fresh poplar, almond, and plane trees, and peeled white streaks into them, making the white appear which was in the rods; and if he set these rods which he had peeled over against the flocks in the gutter in the watering troughs where the flocks came to drink, . . and they conceived when they came to drink, that spotted, speckled, and dark sheep and goats would be brought forth.[3]

Simply at the sight of these rods.

However, *Genesis* later supplies the conclusion of Jacob's experiment:

> . . . and it came to pass at the time that the flock conceived, that I (that is Jacob) lifted up my eyes and saw in a dream, and behold, the he goats which leaped upon the flocks were streaked, speckled, and grizzled, and the Angel said to me in the dream, "Jacob" . . and I said: "Here am I." and he said: "Lift up now thine eyes and see all the he goats which leap upon the flock are streaked, speckled, and grizzled."[4]

The story of the peeled rods has often found its way into so-called old wives' tales and similar folkloric explanations of birth marks and comparable stigmata. Basic truths were revealed to Jacob but ignored. Then, in 1865 came Mendel's peas.

In this way too, we can exclude unwanted inheritable characteristics, such as sickle-cell disease, hemophilia, and the like. While we must bend our efforts toward improved treatment for these unwanted diseases, we should make more rapid progress toward their eventual elimination. It will not be an easy task. Every person who may be affected must be given easy access to be tested—free, if necessary. Well-publicized programs directed to individual persons through physicians' offices, to groups through clinics and social organizations, even to nations through WHO (World Health Organization) may be required. We do isolate human beings (and animals) to prevent disease from spreading horizontally during short periods of time. We would be well advised to attempt to prevent disease from being transmitted vertically from one generation to another over long periods of time. It may take several generations to achieve it, but the saving will be worth the price.

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References

1. Ecclesi. 1: 9–11.
2. Gen. 30: 27–41.
3. *Ibid.*: 37 and 38.
4. *Ibid.* 31: 10–12.

Trips at home

To the Editor: For many of the younger generation, taking a trip now seems to involve transportation by marihuana, mescaline, LSD (d-lysergic acid diethylamide), and a variety of the other chemical agents. The older generation waits for vacations and arranges for transportation by bus, automobile, jet, and steamship. Books and articles on such trips abound. One could almost say that geographic movement is the opiate of middle-aged people. They cover many miles, pass over many borders, and pack and unpack until they become greatly skilled in that art. After unpacking at a new location, they visit sites and sights. They enjoy sitting at a cafe and watching people passing on the streets, making note of architectural features, both old and new, and, perhaps, even photographing all of it. Then there is food and drink of all variety to try, and natural wonders and native customs and costumes to see. For some, it is almost as though they are doing their duty and then, at the customhouse, paying it.

I do admit that I have at times been an active participant in this parade. And I have enjoyed some of it. Some happy memories are those in which I recall sitting at a cafe table on the main square of Oaxaca savoring cerveza after cerveza, or hearing with wonder the sounds of many mandolines on Capri. Nor will I forget the excitement of viewing, outside of Tunis, where Carthage had stood, or the underwater brilliance of the animate and inanimate sights along the coral reefs off St. Thomas. I have viewed museums, mountains, monuments, mariachis, murals, and even the syringe that was used to embalm the executed Emperor Maximillian. I have tasted food, hot and cold, sauced and unsauced; drunk wines both red and white and resinated and unresinated. I have enjoyed it all, by and large. I like travel, going to new places, and seeing what the world has to offer. It certainly has plenty. So let it be known that I am not peddling sour grapes. However, there is something else, something I would like to bring to general attention.

Perception and focus

I have become aware of a kind of paradox that seems to be the essence in understanding a lot about trips and travel. When I walked along the waterfront in Naples, when I viewed the flowering trees or the people at Cuernavaca, I realized that for some reason I was actually seeing. My perceptual apparatus was somehow tuned and focused. On the other hand, in my own country, in my own city, in my familiar environment, my eyes seemed to be functioning neurologically, but I was not really seeing. Moreover, as I became aware of this, it seemed that it was not because there was less to see, nor that the people or sights that one encountered were less striking or less interesting inherently—it was just that I was not there to see. The focus was turned off. I was not perceiving.

Living as I do in the middle of New York City, where there is always plenty to see and hear, this state of affairs became clearer and clearer to me. If one left out the arbitrary determinants of variations in individual taste, of esthetic values, and of specific content, there was as much to arrest my focus here as when I blinked in wonder at the sights while I was in Rome, or Mexico City, or Halifax, Nova Scotia.

This was particularly brought home to me by observing how my young children looked and listened to the things about them. On one occasion, I clocked my two and one-half-year-old daughter; she took sixty-five minutes to complete a tour around one city block. She was seeing and actually taking the time to make note of, and to touch, various pieces of grillwork, numerous architectural embellishments, stairways, and the like. She studied the store fronts, their contents and designs. She observed the "natives" and their pets, and all their "customs," and what the workmen were doing. She was noticing that which by some mechanism of smooth blocking-out I had ceased to notice for years. I am not suggesting in silly sentimentality that children see miracles in nothingness. She was seeing what I began to see were, indeed, things worth looking at, and hearing things that were, indeed, fun to hear.

So I began to wonder why seeing, hearing, and touching things was so much easier in Rome or Paris than in New York City. Why were we able and willing to engage our focal awareness when away from home? I also wondered why it seems so much simpler and so much more interesting to pick up conversations with strangers when one is away from one's home territory. It seemed almost as though one expected to be a more interesting and rewarding human being because one was a visitor from a foreign land. You did not have to apologize for not having been introduced. After all, you had just arrived.

Oddly enough, when approached with the same frame of mind, New Yorkers are quite willing to talk to other New Yorkers in most instances. I do believe the same would occur in other cities if one tried to talk to one's cohabitants. Poetically stated, I guess we are all really strangers in our own strange lands. So you have to prime yourself to talk and be prepared to listen. You have to have the time and inclination to do it. While this mechanism seems to be turned on in a foreign place, at home it seems to be turned off. Just as with the modality of seeing, hearing can be just as remarkable when it is turned on at home. The sounds and the conversations, odd and unique, are there to be enjoyed, but usually go unheeded. On a day-to-day basis, it is as if peoples' senses are dulled to their ordinary environments, deadened to the life that goes on around them.

Thoreau,* in his essay, "Walking," stated:

> I have met with but one or two persons in the course of my life who understood the art of walking, that is of taking walks. . . . It sometimes happens that I cannot easily shake off the village. The thought of some work will run in my head and I am not where my body is, I am out of my senses. In my walks I would fain return to my senses.

The senses

It is this returning to the capacity to perceive and focus on our senses that traveling seems to enable us to do more efficiently. It is as if we can allow it to happen only when we free ourselves of our everyday concerns, worries, and overscheduled lives by transporting ourselves geographically away from them. Suddenly we can see, hear, smell, and taste again. But I can smell pizza baking right around my corner, and camarones cooking, and empanadas. And they taste just as good as one walks along in New York City as in their native habitat. Of course, in terms of smelling and tasting, my neighborhood is probably exceptional. In a short walk I could smell and taste foods of at least a dozen countries of Europe and Asia, to say nothing of kosher and soul food. But then, I am sure the same could be said of the neighborhoods of many other urban centers.

As I mentioned, I do not deprecate traveling to distant countries, and certainly I do not derogate walking in the country. It is a different thing and has more than I can say to commend it. And it also has plenty of advocates. My message is that the enjoyment of one's senses is also possible in the city and just around the corner.

Geographic transporting does seem to free the senses for some. That, too, has plenty of advocates. Many young people feel that chemically transporting themselves is their way of freeing their senses. Of course, that is a big area of public and private outstanding controversy at the present time. But neither chemicals nor geography are really necessary, anyway. I am suggesting that one can see, hear, touch, smell, and taste on a walk out of your own front door and down your own street. One does not have to wait until the next vacation. To quote again from his essay, "Walking," Thoreau says:

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*Thoreau, H. D.: Walden and Other Writings, New York, Modern Library, 1937, p. 597.

> Above all, we cannot afford not to live in the present. He is blessed over all mortals who loses no moment of the passing life. Unless our philosophy hears the cock crow in every barnyard within our horizon, it is belated . . . One day the sun shall shine more brightly than ever he has done, shall perchance shine into our minds and hearts, and light up our whole lives with a great awakening light, as warm and serene and golden as on a bankside in autumn.

The "sun" that Thoreau evokes so poetically, of course, is the brightness of our own capacity to perceive, to feel, to enjoy what is in the world around us, and to be alive in our senses. In a recent motion picture, the director shows us, among other things that are of questionable value, an endless variety of faces of all sorts of people. However, to me it appeared to be artificial and contrived when presented in that form. On any city street one can see as many faces as he has found, and fortunately, they are not all leering and ugly. Although, of course, some are. The faces are seen in a full variety of assorted moods, happy and unhappy. They are all there to be seen and all else that comes along, too.

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Strange behavior with oxazepam

To the Editor: The prescribing of tranquilizers by the medical profession has become so well established that there seems little concern for the efficacy of a multitude of regimens. Diazepam (Valium) produces the most enthusiastic becalmed patients but has the inevitable withdrawal symptoms, so that a form of habituation results. Chlordiazepoxide hydrochloride (Librium) has its habituees, but it takes four or five days to become fully effective, so that the person taking an occasional dose when nervous is in error. Oxazepam (Serax), a metabolite of diazepam, therefore, presents itself as a relatively benign, useful drug with dosage which can be easily tapered.

Oxazepam, 15 mg. (Serax-15) usually is reserved for younger, older, and slighter individual persons, and oxazepam, 30 mg. (Serax-30) is used routinely for mature adults. In the course of prescribing this tranquilizer for several hundred people, several were encountered with unusual results. One patient returned with the story that after taking several doses, she disrobed in public and had to be recovered from a police station. Another patient described a severe altercation with her husband after taking oxazepam, 30 mg., for a period of time. A third patient had strange sensations and felt her behavior toward her family was altered.

These cases do not alter the general effectiveness of the drug in the vast majority of people. It raises the question of whether or not we have available a sufficiently potent preparation for selected use. In England I am told oxazepam, 50 mg., (Serax-50) is marketed. Surely there is ample reason to consider it for the American market, too.

HOWARD S. ZUCKER, M.D.
302 Avenue N
Brooklyn, New York 11230

Necrology

Samuel Bleichfeld, M.D., of Buffalo, died on February 18 at the age of sixty-eight. Dr. Bleichfeld graduated in 1928 from the University of Buffalo School of Medicine. He was an examining physician at the Veterans Administration Hospital Outpatient Department. Dr. Bleichfeld was a member of the American Academy of General Practice, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Francis T. Chase, M.D., of Utica, died on March 10 at the age of eighty-six. Dr. Chase graduated in 1914 from New York Homeopathic Medical College and Flower Hospital. He was a consulting ophthalmologist and otolaryngologist at St. Luke's Memorial Hospital Center, Utica State and Broadacres Hospitals. Dr. Chase was a member of the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gaetano de Yoanna, M.D., of Brooklyn, died on February 22 at the age of eighty-four. Dr. de Yoanna graduated in 1908 from Long Island College Hospital. He was a consulting surgeon at Long Island College Hospital. Dr. de Yoanna was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

John Dean George, Sr., M.D., of Verona, died on March 12 at the age of ninety-eight. Dr. George graduated in 1901 from the University of McGill Faculty of Medicine. He was an honorary member of the medical staff at Oneida City Hospital. Dr. George was a member of the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Neslie Derrick Gunthorpe, M.D., of New Rochelle, died on November 5, 1971. Dr. Gunthorpe graduated in 1929 from Howard University School of Medicine. He was a member of the New York Academy of Medicine.

Max Jacoby, M.D., of New York City, died on December 19, 1971, at the age of eighty-three. Dr. Jacoby received his medical degree from the University of Berlin in 1912. He was a senior clinical assistant urologist (off service) at The Mount Sinai Hospital and an attending urologist at Madison Avenue Hospital. Dr. Jacoby was a member of the American Urological Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward W. Jones, M.D., of Watertown, died on June 15, 1971. Dr. Jones graduated in 1900 from the University of Buffalo School of Medicine.

Isador William Kahn, M.D., of New York City, died on March 4 at the age of eighty-one. Dr. Kahn graduated in 1912 from University and Bellevue Hospital Medical College. He was an attending gynecologist at the Daughters of Jacob Geriatric Center. Dr. Kahn was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the Pan American Medical Association, the American Geriatrics Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James I. Kearney, M.D., of Rochester, died on November 3, 1971, at the age of ninety-two. Dr. Kearney graduated in 1905 from Georgetown University School of Medicine. He was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jesse Lee Kinner, M.D., of Elmira, died on September 23, 1971, at the age of eighty-six. Dr. Kinner graduated in 1910 from George Washington University School of Medicine. He was an honorary member of the medical staff at Arnot-Ogden Memorial Hospital and an honorary surgeon at St. Joseph's Hospital. Dr. Kinner was a member of the Industrial Medical Association, the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Moritz Lewinski, M.D., of New York City, died on June 26, 1971, at the age of seventy-six. Dr. Lewinski received his medical degree from the University of Heidelberg in 1920. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Howard Liesenbein, M.D., of Poughkeepsie, died in February at the age of fifty-two. Dr. Liesenbein graduated in 1944 from New York University School of Medicine. He was an associate attending physician at Vassar Brothers Hospital. Dr. Liesenbein was a member of the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sidney Nechemias, M.D., of Far Rockaway, died on February 14 at the age of sixty-five. Dr. Nechemias graduated in 1931 from the University of Edinburgh Faculty of Medicine. He was an attending obstetrician and gynecologist at St. Joseph's Hospital. Dr. Nechemias was a member of the American Academy of General Practice, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Hans Neuberg, M.D., of Rochester, died on January 27 at the age of sixty-nine. Dr. Neuberg received his medical degree from the University of Freiburg in 1926. He was a senior attending dermatologist at Genesee Hospital and a consulting dermatologist at Rochester General Hospital and the Veterans Administration Hospital Outpatient Department. Dr. Neuberg was a member of the American Academy of Dermatology, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Norman Henry Pritchard, M.D., of New York City, died on March 11 at the age of sixty-eight. Dr. Pritchard graduated in 1931 from Columbia University College of Physicians and Surgeons. He was an attending gynecologist at Harlem Hospital Center. He was a founder and former chief of the gynecological service at Mount Morris Park Hospital. Dr. Pritchard was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Audley D. Stewart, M.D., of Rochester, died on January 28 at the age of eighty-nine. Dr. Steward graduated in 1910 from the University of Pennsylvania School of Medicine. He was a consulting surgeon at Rochester General Hospital. Dr. Stewart was a Fellow of the American College of Surgeons and a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Weston Barnum Stibbs, M.D., of Poughkeepsie, died on October 19, 1971. Dr. Stibbs graduated in 1920 from George Washington University School of Medicine.

Max Strauss, M.D., of Forest Hills, died on February 22. Dr. Strauss graduated in 1907 from University and Bellevue Hospital Medical College. He was an associate attending psychiatrist emeritus at Maimonides Hospital of Brooklyn.

Henry Herman Townsend, M.D., of Solvay, died on February 24 at the age of sixty-nine. Dr. Townsend received his medical degree from the University of Berlin in 1926. He was a senior attending general practitioner at Community-General Hospital of Greater Syracuse. Dr. Townsend was a member of the American Academy of General Practice, the American School Health Association, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herman G. Weiskotten, M.D., of Skaneateles, died on February 12 at the age of eighty-seven. Dr. Weiskotten graduated in 1909 from Syracuse University College of Medicine. He was a Diplomate of the American Board of Pathology (Pathologic Anatomy) and a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

The following chart was adapted by the Suffolk County Medical Society from one prepared by the Suffolk County District Attorney's Office

Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana ("Pot," "Grass")	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines ("Pep Pills," "Ups")	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates ("Goof Balls," "Downs")	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

MEDICAL SOCIETY OF THE STATE OF NEW YORK
ORGANIZED 1807

Officers/County Medical Societies/1971–July 1, 1972

TOTAL MEMBERSHIP AS OF DECEMBER 31, 1971—27,032

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Medical Society of the State of New York

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SCIENTIFIC EXHIBITS

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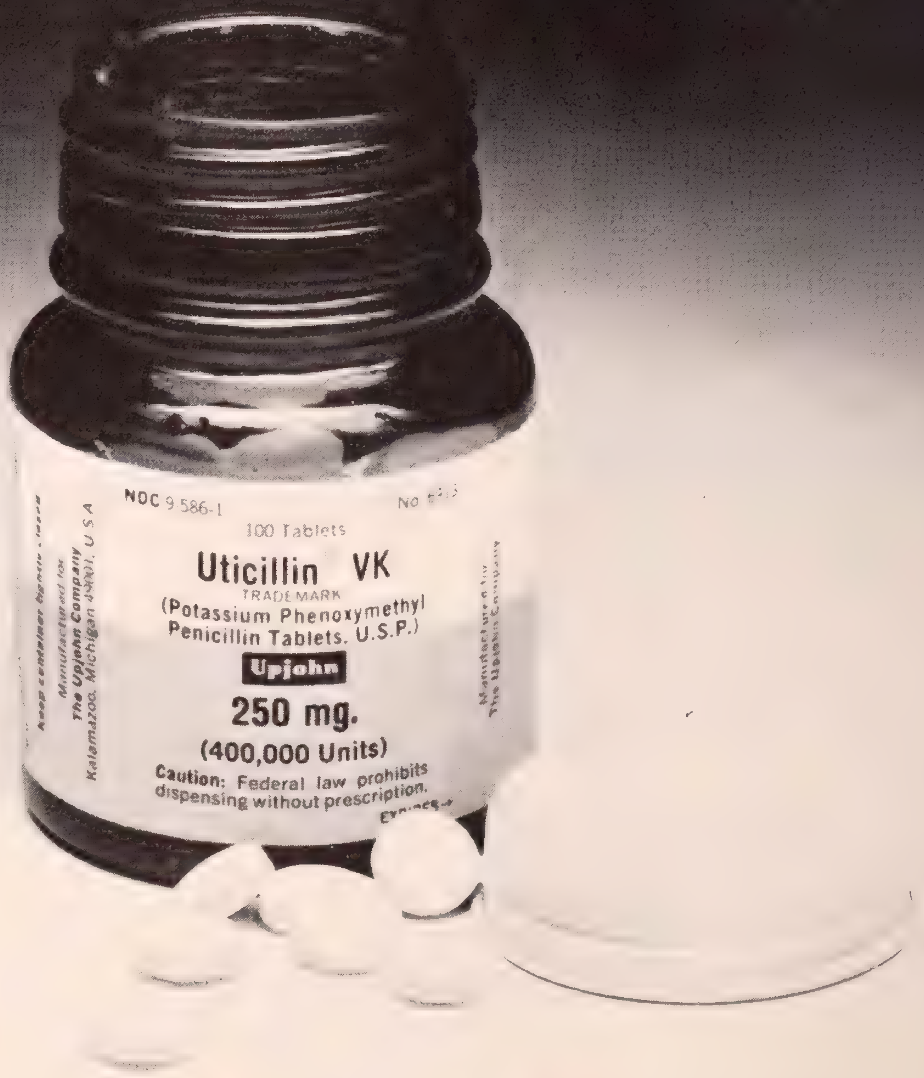
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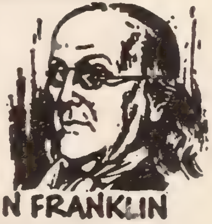
FOR RENT: POMONA, N.Y. (ROCKLAND COUNTY) OFFICE SUITES, built to suit, in new, prestige, professional bldg. to be completed Spring, 1973. Located in very rapidly growing suburban community, 40 min. N.Y.C. Alan J. Tuckman, M.D., (914) 634-3222.



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For free information on how you can prevent blindness and save sight write to the

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NEW YORK, N. Y. 10016

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HOPE continues to be kept alive by some splendid professionals who donate time and talent to an idea as bright and promising as the name given it.

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(continuous release form)

(diethylpropion hydrochloride, N.F.)

When girth gets out of control, TEPANIL can provide sound support for the weight control program you recommend. TEPANIL reduces the appetite—patients enjoy food but eat less. Weight loss is significant—gradual—yet there is a relatively low incidence of CNS stimulation.

Contraindications: Concurrently with MAO inhibitors, in patients hypersensitive to this drug; in emotionally unstable patients susceptible to drug abuse.

Warning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease. Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks.

Adverse Reactions: Rarely severe enough to require discontinuation of therapy, unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathomimetic agents, it may occasionally cause CNS effects such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic cardio-arrhythmia, palpitation, and increased blood pressure. One published report, described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. *Allergic phenomena* reported include such conditions as rash, urticaria, ecchymosis, and erythema. *Gastrointestinal effects* such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria.

Convenience of two dosage forms: TEPANIL Ten-tab tablets: One 75 mg. tablet daily, swallowed whole, in midmorning (10 a.m.); TEPANIL: One 25 mg. tablet three times daily, one hour before meals. If desired, an additional tablet may be given in midevening to overcome night hunger. Use in children under 12 years of age is not recommended.

1-3325 (2876)

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Division of Richardson-Merrell Inc
Cincinnati, Ohio 45215

Painful night leg cramps...

unwelcome bedfellow for any patient– including those with arthritis, diabetes or PVD

- ☐ Prevents painful night leg cramps
- ☐ Permits restful sleep
- ☐ Provides simple convenient dosage — usually just one tablet at bedtime

Prescribing Information — Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** Quinamm is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

Merrell

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Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215

1-3508(3050)

Trademark: Quinamm

Quinamm
(quinine sulfate 260 mg., aminophylline 195 mg.)

Specific therapy for night leg cramps.

WHAT GOES ON in medicine

NEW YORK STATE **May 1–15, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Donald C. Walker, M.D., Advisor
Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON,
420 Lakeville Road, Lake Success, New York 11040.
Telephone 516-488-6100.

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NEW YORK CITY AREA

May 1 / 3, 1972
9:00 a.m.–3:00 p.m.

Brooklyn Eye and Ear Hospital Glaucoma Center
29 Greene Avenue
Brooklyn

20th ANNUAL GLAUCOMA SEMINAR

Under the direction of
A. S. ROSENBERG, M.D.

FEE: $150 (limited to six Ophthalmologists)

For information, contact Mr. Vernon E. Dressler, Adm., above address.

May 1 / 5, 1972
9:00 a.m.–5:00 p.m., Monday / Friday

Department of Radiology of the Long Island Jewish-Hillside Medical Center
Queens Hospital Center Affiliation
Clinical Campus of the Health Sciences Center
of the State University of New York at Stony Brook
82-68 164th Street
Jamaica

REFRESHER COURSE FOR RESIDENTS IN RADIATION THERAPY AND PHYSICS

Program Chairmen
JAMES H. DAVENPORT, M.D.
GERALD SHAPIRO, M.S.

FEE: $100

Apply: JAN J. SMULEWICZ, M.D., Dir., above address

MONDAY, MAY 1

7:00 p.m.

The New York Society for Clinical Ophthalmology
2 East 103rd Street

1. **Plastic Surgery (Instruction)**
   VIRGINIA LUBKIN, M.D.
2. **Symposium: Angle Closure Glaucoma**
   Moderator: RALPH Z. LEVENE, M.D., New York
   Panelists: MILES A. GALIN, M.D., New York
   MAX FORBES, M.D., New York
   IRVIN P. POLLACK, M.D., Baltimore, Md.
   ANDREW de ROETTH, M.D., New York
   BERNARD SCHWARTZ, M.D., Boston, Mass.

8:30 p.m.

Rudolf Virchow Medical Society
2 East 103rd Street

1. **The Present Impact of Sports Medicine**
   JAMES A. NICHOLAS, M.D.
   Lenox Hill Hospital
2. **Recent Advances in our Knowledge of Viral Hepatitis**
   ALFRED M. PRINCE, M.D.
   New York Blood Center

May 2 and 9, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

NEWER CONCEPTS IN MEDICINE SERIES

May 2
Thyroid Nodules
J. MESSINA, M.D. and Staff

May 9
Adrenal Gland
J. RUSSO, M.D.

Moderator: GEORGE POLLACK, M.D.

May 2 and 9, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Continuing Postgraduate Education
Family Practice Section

May 2
Obesity—Theory and Practice
RICHARD HOFFMAN, M.D.

May 9
Asthma and Allergy
NORMAN FASTMAN, M.D.

May 2 and 9, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

May 2
Iatrogenic Disease
ALFRED VOGL, M.D.
N.Y.U. Medical Center

May 9
Thyrotoxicosis and Heart Disease
EMANUEL BLUM, M.D.
N.Y.U. Medical Center

May 2 and 9, 1972
10:00 a.m., Tuesdays

Maimonides Medical Center
Main Building, 4th Floor Lecture Hall
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Program

May 2
The Nontoxic Ingestion
HOWARD C. MOFENSON, M.D.
President-Elect of the American
Association of Poison Control Centers

May 9
Uveitis in Childhood
THEODORE W. LIEBERMAN, M.D.
Mount Sinai School of Medicine

TUESDAY, MAY 2

2:00 p.m.

The Catholic Medical Center
Holy Family Hospital
Auditorium Building, Main Floor
167 Dean Street
Brooklyn

Department of Surgery—Division of Ophthalmology

1. **Fluorescein Angiography of Macular Diseases**
   J. DONALD M. GASS, M.D.
   University of Miami School of Medicine
2. **Ultrasonography**
   KARL C. OSSOINIG, M.D.
   Viennese Medical School, Austria
3. **Laser Photocoagulation of the Retina**
   FRANCIS L'ESPERANCE, M.D.
   Edward Harkness Eye Institute

Moderator:
HAROLD NAJAC, M.D.
Catholic Medical Center, Jamaica, New York

4:30 p.m.

"Diabetes Today"
Diabetes Center, New York Medical College
Cohn Research Building—Room R 114
Madison Avenue and 106th Street

STUDIES ON EXPERIMENTAL DIABETES AND SUBDIABETES

BRUNO VOLK, M.D.
Isaac Albert Research Institute

7:00 p.m.

The New York Academy of Medicine
Section on Dermatology and Syphilology
2 East 103rd Street

1. **Presentation of Cases**
   7:00–7:30 p.m., Members
   7:30–8:30 p.m., Non-Members

   From the Departments of Dermatology of:

   Bellevue Hospital, Bronx V.A. Hospital, Brooklyn V.A. Hospital, Columbia-Pres. Medical Center, Kings County Hospital, Manhattan V.A. Hospital, Metropolitan Hospital, Mount Sinai Hospital, New York Hospital, St. Luke's Hospital, University Hospital, U.S.P.H.S. Hospital, Staten Island
2. **Executive Session 7:45–8:15 p.m.**
3. **Presentations by Residents 8:15–10:00 p.m.**

May 3 and 10, 1972
11:00 a.m.–12:30 p.m., Wednesdays

Mental Retardation Institute
105 East 106th Street
Seventh Floor Auditorium

May 3
The Historical Development of Field Placement in Social Work as a Clinical Model
HELEN PINCUS, D.S.W.
Smith College for Social Work, Northampton, Mass.

May 10
Critical Comments on the A.A.M.D. Definition of 1961
JOHS. CLAUSEN, Ph.D., Chief Research Scientist
New York State Institute for Basic Research
in Mental Retardation, Staten Island

May 3 / June 7, 1972
2:30–4:00 p.m., Wednesdays

Downstate Medical Center
Third Floor Conference Room
B Building, Kings County Hospital
451 Clarkson Avenue
Brooklyn

Continuing Education Course

REHABILITATION MEDICINE
JOSEPH G. BENTON, M.D., with Drs. TURKAN G. ATAYALVAC, HERBERT I. J. BERNER, HAROLD H. FELDMAN, JULIUS FELDMAN, MELVIN J. GOLDBERG, CARL R. GOODMAN, GEORGE D. LAMBER, HERMAN E. MAUTNER, GIOVANNA RASILE, HARRY H. SAMBERG, BERNARD SANDLER, and ANDOR A. WEISS.

FEE: $20 CREDIT: 9 Elective AAGP hours

WEDNESDAY, MAY 3

4:00–5:30 p.m.

Westchester Square Hospital
Conference Room
1625 St. Peters Avenue
Bronx

PATHO-PHYSIOLOGY AND TREATMENT OF DISORDERS OF THE VENOUS SYSTEM

ROBERT H. GOETZ, M.D.
Albert Einstein College of Medicine

NO FEE CREDIT: AAGP $1^1/_2$ hours

May 3 and 10, 1972
8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

THE MANAGEMENT OF DRUG ABUSE, THE MANAGEMENT OF ALCOHOLISM IN MEDICAL PRACTICE

ROBERT L. SHAROFF, M.D.
BORIS HELLER, M.D.

NO FEE CREDIT: Elective AAGP $1^1/_2$

THURSDAY, MAY 4

9:00–11:00 a.m.

Albert Einstein College of Medicine
The Forchheimer Building, 1st Floor Lecture Hall
1300 Morris Park Avenue
Bronx

NEPHROLOGY

EDWARD WEINSTEIN, M.D.

Write or call Mrs. Frieda Fagin, above address, (212) 430-2822

May 4 and 11, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
2nd Floor Conference Room
757 Bushwick Avenue
Brooklyn

May 4
Shock
NAT SCHLOSSMAN, M.D.

May 11
Renal Disease
FRANCIS CAPONEGRO, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

THURSDAY, MAY 4

5:00 p.m.

***The Parkinson's Disease Foundation**
Alumni Auditorium
Columbia University P & S
630 West 168th Street

CEREBRO-CEREBELLAR INTERACTION IN THE CONTROL OF MOVEMENT

SIR JOHN ECCLES, Nobel Laureate

*Third Annual James Parkinson Lecture

FRIDAY, MAY 5

10:30–11:30 a.m.

Wyckoff Heights Hospital Department of Pediatrics
374 Stockholm Street
Brooklyn

RECENT ADVANCES IN CYSTIC FIBROSIS

CAROLINE DENNING, M.D.
Columbia University P & S

8:00 p.m.

Staten Island Family Service
25 Victory Boulevard
Staten Island

EXISTENTIAL ATTITUDE IN PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
Institute of Human Relations

NO FEE

Contact Sid Herling, MSW, Dir., above address

May 8, 1972 / May 12, 1972

Brooklyn Eye and Ear Hospital
29 Greene Avenue
Brooklyn

TYMPANOPLASTY COURSE

FEE: $300

For application, please write to Mr. Vernon E. Dressler, Administrator, above address.

May 8 / 22, 1972
3:30 p.m., Mondays

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

May 8
New Advances in Colonic Fiberoscopy
JERRY WAYE, M.D.

May 15
Marijuana: Chemistry and Physiology
ENOCH GORDIS, M.D.

May 22
Erythropoietic Inhibitors in Red Cell Aplasia
RALPH ZALUSKY, M.D.

Speakers are from Mount Sinai School of Medicine

MONDAY, MAY 8

8:30 p.m.

Beth Israel Medical Center
Dazian Pavilion, 12th Floor Conference Room
10 Nathan D. Perlman Place

Medical-Surgical-Thoracic Conference

PULMONARY EMBOLISM AND INFARCTION

EMANUEL SILVERSTEIN, M.D.
Downstate Medical Center

TUESDAY, MAY 9

1:00 p.m.

Downstate Medical Center
Basic Sciences Building
Continuing Education Conference Center
450 Clarkson Avenue
Brooklyn

GLUCAGON IN DIABETES MELLITUS AND OTHER CATABOLIC ILLNESS

ROGER H. UNGER, M.D.
The University of Texas Medical School, Dallas

May 10 / 12, 1972
Wednesday–Friday

Brooklyn Eye and Ear Hospital
29 Greene Avenue
Brooklyn

Three-Day Concentrated Course

SURGERY OF THE CORNEA

A. BENEDICT RIZZUTI, M.D.
and Staff

FEE: $175

Write Mr. Vernon Dressler, Adm., above address

May 10 / 12, 1972

Columbia University P & S
21 Audubon Avenue
Suite 305.

NEW TRENDS IN COMMUNITY HEALTH CARE

FEE: $105

Write Program of Continuation Education, above address

WEDNESDAY, MAY 10

Noon

Downstate Medical Center
Research Pediatric Seminar
4th Floor Library
450 Clarkson Avenue
Brooklyn

STUDIES IN LEAD POISONING

QUTUBUDDIN QAZI, M.D.

2:00 p.m.

The Catholic Medical Center
St. John's Hospital Auditorium
90-02 Queens Boulevard
Elmhurst

Department of Surgery-Division of Orthopedics

1. **Total Hip Replacement, Indications Techniques and Complications**
   FRANK STINCHFIELD, M.D.
   Columbia-Presbyterian Medical Center
2. **Clinical and Experimental Investigations of Legg Perthes' Disease**
   ROBERT B. SALTER, M.D.
   Hospital for Sick Children, Toronto, Ontario

WEDNESDAY, MAY 10

4:00–5:00 p.m.

Flushing Hospital and Medical Center
First Floor Conference Room
Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lecture

APPROACH TO THE DIAGNOSIS OF ANEMIA OF THE NEWBORN

PHILIP LANZKOWSKY, M.D.
Long Island Jewish Hospital

8:00 p.m.

New York Surgical Society
2 East 103rd Street

Case Report

Recurrent Gastrointestinal Bleeding from Vascular Malformations
THOMAS F. NEALON, JR., M.D.
WILLIAM F. MITTY, M.D.JR., M.D.
CARLO E. GROSSI, M.D.

Papers:

1. **Prognostic Significance of Post Shunt Arterial Augmentation**
   ALBERT R. BURCHELL and WILLIAM F. PANKE, M.D.'s
2. **Appendicitis in the First Two Years of Life**
   JAY L. GROSFELD, MALVIN WEINBERGER, H. WILLIAM CLATWORTHY, JR, DONALD A. DAVIS, M.D.'s
3. **The Significance of Hypomagnesemia in Acute Pancreatitis**
   EDUARDO M. GONZALEZ, VICTOR N. ORTIZ, M.D.'s
   ROBERT C. SPINA, B.S., THOMAS F. NEALON, JR., M.D.

THURSDAY, MAY 11

10:00 a.m.

*** New York Medical College**
Sixth Floor Auditorium
Metropolitan Hospital
97th Street at First Avenue

SHOCK LUNG

WATTS R. WEBB, M.D.
Syracuse University School of Medicine

*Fifth Annual Leo M. Taran Foundation Lecture

FRIDAY, MAY 12

8:30 p.m.

The Society for the Scientific Study of Sex
Barbizon Plaza Hotel
Central Park South

SEXUAL COUNSELLING

SALLIE SCHUMACHER, Ph.D.
Long Island Jewish Medical Center

SATURDAY, MAY 13

9:00 a.m.–1:00 p.m.

The Alumni Association of the Brooklyn Eye and Ear Hospital
International Hotel
Kennedy Airport
Jamaica

Eye Symposium

NEURO-OPHTHALMOLOGY

NOBLE J. DAVID, ROBERT B. DAROFF, ROBERT S. JAMPEL, MORRIS B. BENDER, FRANK D. CARROLL, MAX CHAMLIN, LARRY SCHNECK, VIRGINIA LUBKIN, A. BENEDICT RIZZUTI, MARTIN BODIAN, ARTHUR T. WOLINTZ, M.D.'s

ENT Session

INNER EAR—ANATOMY, PHYSIOLOGY AND DISEASES

VALDEMAR JORDAN, M.D.

FEE: $35 (Includes Luncheon)

Write: Mrs. R. Pattenden, Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn, N.Y. 11238

May 15 / 19, 1972

The Department of Radiology
Albert Einstein College of Medicine
1300 Morris Park Avenue
Bronx

IV NEURORADIOLOGY POSTGRADUATE COURSE

Contact: MANNIE M. SCHECHTER, M.D., Program Director, above address.

FUTURE EVENTS

June 1 / July 15, 1972
9:00 a.m.–4:00 p.m., Daily

French and Polyclinic Medical School and Health Center
345 West 50th Street

CLINICAL MEDICINE CURRICULUM

The course provides formal instruction in Medicine, Surgery, Pediatrics, Obstetrics-Gynecology and other specialties. The course content is based on the subject outline suggested by the Educational Council for Foreign Medical Graduates and is primarily intended for candidates for ECFMG, State Board and FLEX examinations.

Application must be made prior to May 15, 1972.
Write: The Dean, at the above address.

June 1 / 3, 1972

American Cancer Society and the National Cancer Institute
Waldorf-Astoria Hotel
Park Avenue and 50th Street

NATIONAL CONFERENCE ON CANCER CHEMOTHERAPY

For information, please write: SIDNEY L. ARJE, M.D., Coordinator, c/o American Cancer Society, 219 East 42nd Street, N.Y., N.Y. 10017.

June 2 / 4, 1972

New Jersey O & O Annual Meeting
Playboy Club Hotel
Great Gorge
McAfee, New Jersey

ANNUAL MEETING

June 17 / 24, 1972
9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

RHINOPLASTY AND OTOPLASTY

SIDNEY FEUERSTEIN, M.D.
Mount Sinai School of Medicine

FEE: $400

June 19 / 30, 1972

Massachusetts Institute of Technology
Cambridge, Massachusetts

Two-week Summer Course in

DESIGN AND ANALYSIS OF EXPERIMENTS IN THE PHYSICAL, MEDICAL, AND INDUSTRIAL SCIENCES

Conducted by Professors
HAROLD FREEMAN and PAUL BERGER

Write: Director of the Summer Session, Room E19-356, M.I.T., Cambridge, Mass. 02139.

July 5 / 10, 1972

International College of Surgeons
United States Section
Sagamore Hotel
Bolton Landing, Lake George

SYMPOSIUM IN GENERAL SURGERY, OB.GYN.

and all surgical specialties including radiology, pathology and Anesthesiology

Reservations should be made directly to Mr. James Feyco, General Manager, above address.

October 22 / 25, 1972

The New York Trudeau Society
Camelot Motel
Poughkeepsie

CLINICAL PULMONARY PHYSIOLOGY

FEE: $150

Write for Program: WALTER A. GUDZ, Exec. Secty., New York Trudeau Society, 105 East 22nd Street, New York, N.Y. 10010.

BROOME COUNTY

May 4 and 11, 1972
11:00 a.m., Thursdays

Charles S. Wilson Memorial Hospital
Redwood Room
Johnson City

Basic Science Seminars
Conducted by Upstate Medical Center at Syracuse

May 4
Allergic Skin Disorders
IRVING SWARTZ, M.D.

May 11
Diverticulitis
ROBERT A. LEVINE, M.D.

Medical Grand Rounds will be held at 10:00 a.m. preceding each of the above sessions.

BUFFALO AREA

May 4 and 5, 1972
8:15 a.m. Registration, Thursday

School of Medicine, State University of New York at Buffalo, Department of Surgery
The Parkway Ramada Inn
Niagara Falls

SURGICAL ASPECTS OF GASTROENTEROLOGY

FEE: $60

Apply: Continuing Medical Education, Main Street Division, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

May 4 and 11, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

May 4
- **Auscultation—The S1**
  - **The Aortic Ejection Sound**
  - **The Pulmonary Ejection Sound**
  - **S1 in Mitral Stenosis**
  - **S1 in Mitral Regurgitation**
- **Case Presentations**

May 11
- **Auscultation—Systolic Ejection Murmurs**
  - **Definition and Recognition**
  - **The Innocent Murmur**
  - **The ASD Murmur**
- **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

BUFFALO AREA FUTURE EVENTS

May 19 and 20, 1972
8:15 a.m. Registration

State University of New York at Buffalo School of Medicine, Department of Psychiatry
E. J. Meyer Memorial Hospital
Auditorium

MANAGEMENT OF ACUTE PSYCHIATRIC ILLNESS IN A GENERAL HOSPITAL (A Symposium in Continuing Medical Education)

Supported by The National Institute of Mental Health, Department of HEW

June 5 / 9, 1972

State University of New York at Buffalo School of Medicine

REFRESHER COURSE IN PEDIATRICS

Under the Supervision of JEAN A. CORTNER, MD

FEE: $5 (Registration)

Sponsored by the Bureau of Maternal and Child Health and Family Planning, New York State Department of Health.

CATSKILL MOUNTAIN AREA

May 9 / 11, 1972

New York State Academy of Family Physicians
Concord Hotel
Kiamesha Lake

24th ANNUAL SCIENTIFIC ASSEMBLY

NOTE: The program consists of a full day on all aspects of the narcotics problem, one-half day on ob/gyn and one-half day on pediatrics. Breakfast conferences are planned on hypertension, urology, arthritis and auto transfusion. A Workshop on Family Practice will be held with the directors of the Family Practice Departments participating in this workshop.

Write: Lawrence F. Kennedy, Ex. Dir., New York State Academy of Family Physicians, 84 Main Street, Binghamton, N.Y. 13905. Tel. (607) 722-2132.

NASSAU COUNTY

WEDNESDAY, MAY 3

1:00 p.m.

Long Beach Memorial Hospital
El Patio Beach Club
Atlantic Beach

ANNUAL TEACHING DAY

1. **Use of Antibiotics in Ambulatory Prophylaxis**
   MARK LEPPER, M.D.
   Rush Medical College, Chicago
2. **Pharmacology and Clinical Use of the Penicillins and Cephalosporins**
   WILLIAM M. M. KIRBY, M.D.
   University of Washington School of Medicine, Kansas
4. **Gram-Negative Septicemia**
   VINCENT ANDRIOLE, M.D.
   Yale University School of Medicine, Conn.

NO FEE CREDIT: Four hours AAGP applied for

Co-sponsors: South Shore Hospital and Peninsula General Hospital, Far Rockaway.

9:00 a.m.

Mercy Hospital
MacArthur Hall
Rockville Centre

Medical Conference

HYPERLIPOPROTEINEMIAS

RAUL FLEISCHMAJER, M.D.
Hahnemann Medical College and Hospital

May 3 and 10, 1972
4:00 p.m., Wednesdays

Department of Radiology
Nassau County Medical Center
Meadowbrook Hospital

May 3
Isotope Angiography—Current Status
PERRY MANDEL, M.D.

May 10—South Lounge, Nurses' Building

Application of Hypotonic Duodenography, Hepatic Angiography, and Percutaneous Cholangiography in Differential Diagnosis of Obstructive Jaundice
FRANCIS F. RUZICKA, JR., M.D.
St. Vincent's Hospital and Medical Center

May 4 and 11, 1972
11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lectures

May 4
The Treatment of Renal Failure in Children
IRA GREIFER, M.D.
Albert Einstein College of Medicine

May 11
Menstrual Disturbances in Adolescence
ALBERT ALTCHEK, M.D.
Mount Sinai School of Medicine

ROCHESTER AREA

THURSDAY, MAY 25

The Rochester Ophthalmological Society
The University Club

17th Annual Albert C. Snell
Memorial Lecture

DIAGNOSIS AND MANAGEMENT OF UVEITIS

MICHAEL J. HOGAN, M.D.
University of California

Note: There will be an afternoon clinical session at the University of Rochester Medical Center followed by an evening dinner prior to the Memorial Lecture. The Friday, May 26th session will include S. Arthur Boruchoff, M.D., George M. Howard, M.D. and David L. Knox as guest lecturers.

ROCKLAND COUNTY AREA

TUESDAY, MAY 16

9:00 a.m.

Good Samaritan Hospital
Suffern

Department of Pediatrics

SICKLE CELL DISEASE

AARON RAUSEN, M.D.
Elmhurst General Hospital

SYRACUSE AREA

June 16 and 17, 1972
8:30 a.m., Registration

Coronary Heart Disease Committee
New York State Heart Assembly
Syracuse University
Gifford Auditorium, H.B. Crouse Hall

THE PATIENT WITH A MYOCARDIAL INFARCTION AND PRE AND POST HOSPITAL PHASE OF MYOCARDIAL INFARCTION

Write for Program, New York State Heart Assembly, 3 West 29th Street, New York, N.Y. 10001.

UTICA AREA

WEDNESDAY, MAY 24

8:15 a.m.–3:15 p.m.

American Cancer Society, Oneida County Unit
New York State Department of Health, Bureau of Cancer Control
Harts Hill Inn
Whitesboro

LEUKEMIA TODAY

H. JAMES WALLACE, JR., M.D., Roswell Park Memorial Institute
JANET LOUISE LUNCEFORD, R.N., Clinical Center, National Cancer Institute
ANTOINETTE W. PIERIONI, A.C.S.W., Children's Cancer Research Foundation
PETER GREENWALD, M.D., Bureau of Cancer Control, NYSDH

Write: Mr. Joseph Coffey, Ex. Dir., American Cancer Society, Oneida County Unit, 800 Charlotte Street, Utica, N.Y. 13501

PHYSICIANS' PLACEMENT OPPORTUNITIES

HIGHLAND FALLS, N.Y., Orange County. Family Physician needed.

CONTACT: A. H. MARGOLIS, M.D., 22 Wyandotte Avenue, Highland Falls, N.Y. 10928. Tel. (914) 446-4066.

ITHACA, N.Y., Tompkins County. Internist needed. Immediate Hospital Privileges.

CONTACT: C. L. SPRINKLE, M.D., 304 N. Geneva Street, Ithaca, N.Y. 14850. Tel. (607) AR 2-1360.

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CONTACT: LEONARD J. COPPOLD, Dir., Contract Personnel, MEDICO, 660 First Avenue, New York, N.Y. 10016. Tel. (212) 683-3110.

WAVERLY, N.Y., Tioga County, needs a G.P., Internist and Pediatrician.

CONTACT: CHARLES F. RYAN, M.D., Tioga General Hospital, Waverly, N.Y. 14892.

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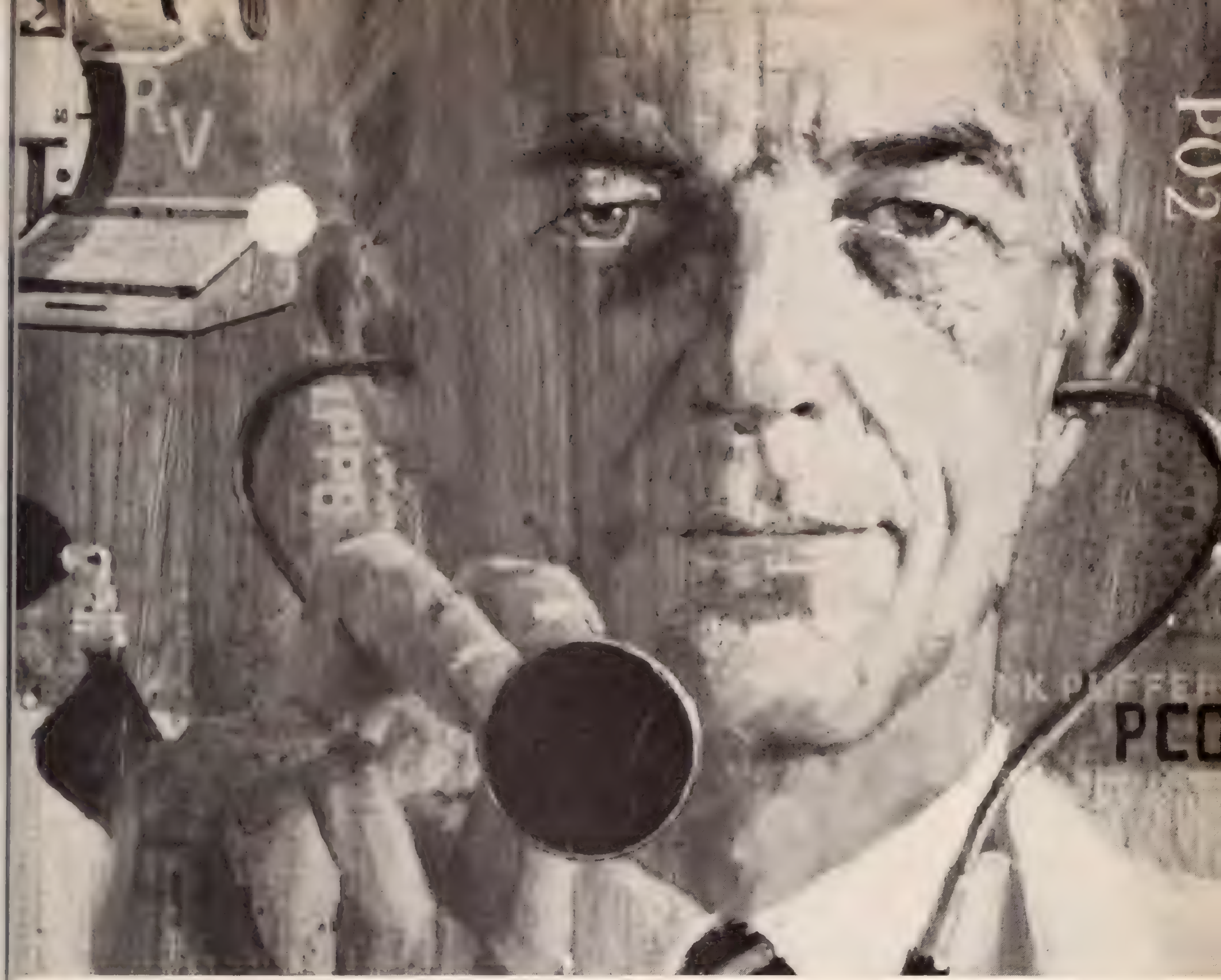
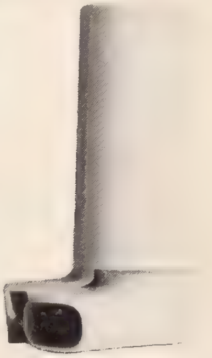


outlook in Emphysema



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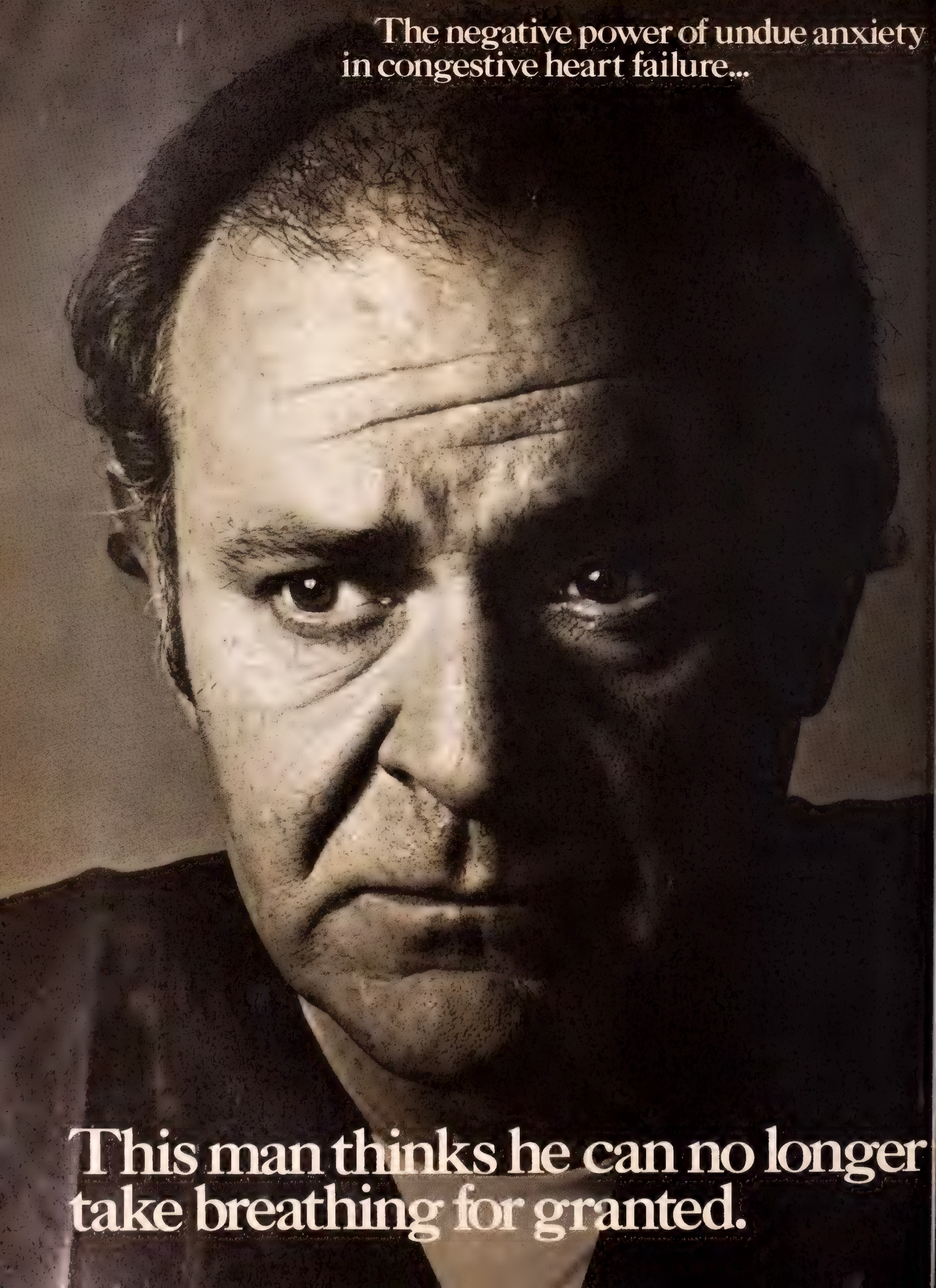
the right combination in chronic bronchitis/emphysema/asthma



The negative power of undue anxiety in congestive heart failure...

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Typical of many patients with congestive heart failure, he also suffers from severe anxiety, a psychic factor that may influence the character and degree of his symptoms, such as dyspnea. His apprehension may also deprive him of the emotional calm so important in maintenance therapy.

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The positive power of Libritabs (chlordiazepoxide)

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Indications: Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

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New York State Journal of Medicine

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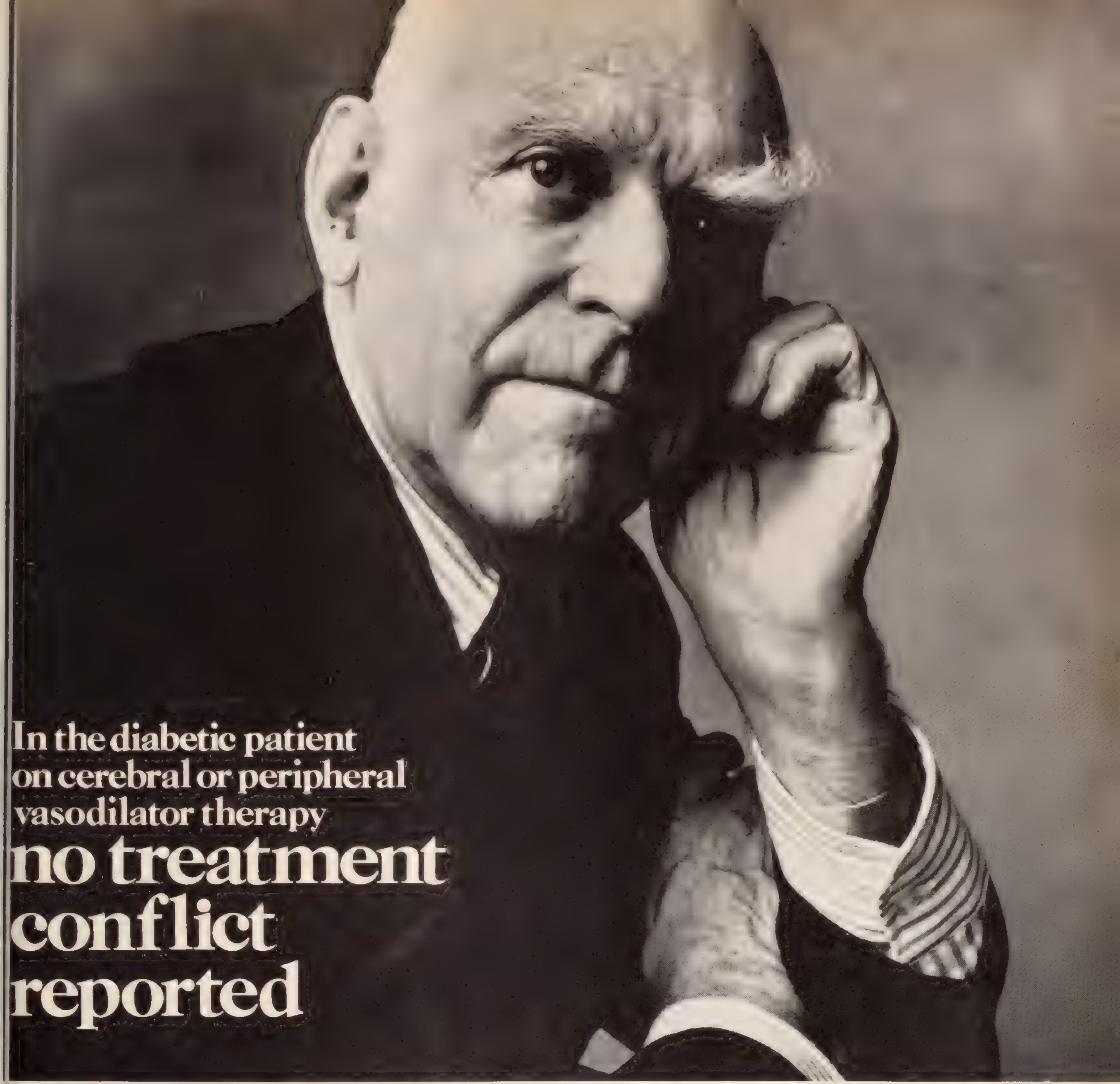

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Although not all clinicians agree on the value of vasodilators in vascular disease, several investigators[2-5] have reported favorably on the effects of isoxsuprine. Effects have been demonstrated both by objective measurement[3,5] and observation of clinical improvement.[2,4]

Indications: Cerebrovascular insufficiency, arteriosclerosis obliterans, diabetic vascular diseases, thromboangiitis obliterans (Buerger's disease), Raynaud's disease, postphlebitic conditions, acroparesthesia, frostbite syndrome and ulcers of the extremities (arteriosclerotic, diabetic, thrombotic). **Composition:** VASODĪLAN tablets, isoxsuprine HCl 10 mg. and 20 mg. **Dosage:** Oral—10 to 20 mg. t.i.d. or q.i.d. **Contraindications and Cautions:** There are no known contraindications to recommended oral dosage. Do not give immediately postpartum or in the presence of arterial bleeding. **Side Effects:** Occasional palpitation and dizziness can usually be controlled by dosage reduction. Complete details available in product brochure from Mead Johnson Laboratories. **References:** (1) Samuels, S. S., and Shaftel, H. E.: J. Indiana Med. Ass. *54*:1021-1023 (July) 1961. (2) Clarkson, I. S., and LePere, D. M.: Angiology *11*:190-192 (June) 1960. (3) Horton, G. E., and Johnson, P. C., Jr.: Angiology *15*:70-74 (Feb.) 1964. (4) Dhrymiotis, A. D., and Whittier, J. R.: Curr. Ther. Res. *4*:124-128 (April) 1962. (5) Whittier, J. R.: Angiology *15*:82-87 (Feb.) 1964.

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Warnings: Tolerance usually develops within a few weeks. When this occurs, the recommended dosage should not be exceeded in an attempt to increase anorectic effect.
Drug Dependence: Tolerance and extreme psychological dependence have occurred. Patients have been known to increase the dosage of drugs of this type to many times the recommended dosage. Abrupt cessation following prolonged high dosage results in extreme fatigue, mental depression, and reversible changes in the sleep EEG. Manifestations of this chronic intoxication include severe dermatoses, marked insomnia, irritability, hyperactivity and personality changes. The most severe manifestation is psychosis, often clinically indistinguishable from schizophrenia. Caution patients on the possibility of impaired ability to operate machinery or drive a motor vehicle or engage in other potentially hazardous activity.
Usage in Pregnancy: There have been clinical reports of congenital malformation associated with the use of this compound but a causal relationship has not been proved. Until more information is available, Preludin should not be used by women who are or may become pregnant, particularly in the first trimester, unless the physician feels potential benefits outweigh possible risks.
Usage in Children: Not recommended for use in children under 12 years of age.
Precautions: Use with caution in patients with mild hypertension. Insulin requirements in diabetes mellitus may be altered in association with anorectic agents and concomitant dietary regimen. Psychological disturbances may occur in some patients on a restrictive diet with or without concomitant use of an anorectic agent.
Adverse Reactions: Overstimulation, restlessness, insomnia, anxiety, headache, agitation, flushing, tremor, sweating, dizziness, dryness of the mouth or unpleasant taste, urticaria, gastrointestinal disturbances, nausea, diarrhea, palpitation, tachycardia, elevation of blood pressure, urinary frequency, dysuria, and changes in libido. Psychotic states at recommended dosage have been reported with related drugs.
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Abstracts

Schoonees, R., Palma, L. D., Gaeta, J. F., Moore, R. H., and Murphy, G. P.: Prostatic carcinoma treated at categorical center; Clinical and pathologic observations, ***New York State J. Med.* 72:** 1021 (May 1) 1972.

This study, which covered a ten-year period, was undertaken to determine the role of therapy and intercurrent disease on the survival of patients with prostatic carcinoma. The stage and grade of the tumor are correlated with the cause of death and sites of metastases. No significant correlation was found between the stage of the disease and the grade of the primary tumor. When metastasis occurred, it was detected primarily in the bony pelvis or spine. Treatment consisted of orchiectomy and regimens of estrogen administration. The percentage of survival was greater for patients given the combined therapy than for patients treated with either estrogen or orchiectomy alone. Estrogen therapy did not significantly increase the incidence of cardiovascular disease in this group of patients.

Rosner, S.: Problems of institutionalized, severely brain-damaged patients, ***New York State J. Med.* 72:** 1028 (May 1) 1972.

Causes of brain damage and daily-care problems of institutionalized, severely brain-damaged patients are discussed. In evaluating each patient, family history, metabolic aspects, traumatic incidents, infective diseases, and congenital aberrations must be considered. A large number of these patients have suffered cerebral trauma at birth. Obstetricians and pediatricians should be alerted to the fact that intracranial bleeding is present in 9 per cent of newborn infants. Undue delay in carrying out definitive diagnostic tests and treatment have overloaded our institutions with patients whose conditions may have been remediable.

Schub, H., and Maitinsky, S.: A multihandicapped children's center; Statistical trends in the population, ***New York State J. Med.* 72:** 1031 (May 1) 1972.

Prior to 1969, there were no facilities in Nassau or Suffolk County serving a multihandicapped child. This was a hardship on the families of these children, and many were not receiving proper care. In June, 1969, the Child Development Center was started to fulfill the needs of these children. The scheme of operation of the Center is outlined. During its first year of operation, the Center served 600 children. An attempt is made to define statistical trends of the patients as regards age, sex, diagnosis, source of referral, family size, parents' educational background, and the occurrence of birth complications and prematurity.

Cagin, N. A., Levitt, B., Kunstadt, D., Levine, A. D., and Grishman, A.: Unipolar subclavian and bipolar femoral catheter electrodes to pace heart; A comparison of effectiveness, ***New York State J. Med.* 72:** 1037 (May 1) 1972.

Twelve bipolar electrodes introduced through the femoral vein, and 13 unipolar semifloating catheter electrodes introduced through the subclavian vein, were compared in patients with proved myocardial infarction. There were few complications with either method. The bipolar electrode was effective for longer periods of time than was the unipolar electrode. Introduction of a semifloating catheter through the subclavian vein is ideal for emergency situations because cardiac pacing can be achieved easily and rapidly.

Ariel, I. M.: Systemic 5-fluorouracil in hepatic metastases from primary colon or rectal cancer, ***New York State J. Med* 72:** 1041 (May 1) 1972.

Thirty-five patients with metastases to the liver from primary colon and rectal cancers received intravenous administration of 5-fluorouracil, usually at the time of discovery of the metastases. The results of this therapy are thoroughly analyzed. Although there was no significant increase in life expectancy, during the early months of therapy a larger number of patients were kept alive for longer periods. About 10 per cent of the patients displayed tumor shrinkage of 50 per cent or more, and about 30 per cent displayed some subjective response. Several side effects of the 5-fluorouracil are noted.

Singh, S. P., Feldman, E. B., and Carter, A. C.: Desiccated thyroid and levothyroxine in hypothyroidism; Comparison in replacement therapy, ***New York State J. Med.* 72:** 1045 (May 1) 1972.

Serum lipids and thyroid function tests were performed serially in 10 hypothyroid patients given long-term replacement therapy with desiccated thyroid, preceded or followed by l-thyroxine. Each hormone preparation was given for at least one year. Average daily oral dose of desiccated thyroid and l-thyroxine required to maintain patients clinically euthyroid was 136 mg. and 205 micrograms, respectively. Circulating levels of serum total cholesterol, triglycerides, phospholipids, free fatty acids, and lipoproteins were similar with both hormones. Serum protein-bound iodine levels were significantly greater during l-thyroxine therapy in comparison with the values during desiccated thyroid therapy. I-131-1-triiodothyronine red cell-binding coefficient and thyroxine-binding globulin capacity were similar with both treatments. Similar comparisons were made in 3 hypothyroid patients each given beef- and pork-desiccated thyroid. The various parameters investigated were similar with both thyroid preparations.

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Each gram contains: Aerosporin® brand polymyxin B sulfate, 5000 units; zinc bacitracin, 400 units; neomycin sulfate 5 mg. (equivalent to 3.5 mg. neomycin base); special white petrolatum q. s.
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Complete literature available on request from Professional Services Dept. PML.

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North Carolina 27709

Abstracts in Interlingua

Schoonees, R., Palma, L. D., Gaeta, J. F., Moore, R. H., e Murphy, G. P.: Carcinoma prostatic tractate in un Centro de Categorisation; Observationes clinic e pathologic, ***New York State J. Med.*** **72:** 1021 (1 de Maio) 1972.

Iste studio que coperite un periodo de 10 annos esseva facite pro determinar le rolo del tractamento e le morbos intercurrente supra le superviventia del patientes con carcinoma prostatic. Le stadio e grado del tumor es correlate con le causa del morte e le sitos del metastases. Non significative correlation esseva trovate inter le stadio del morbo e le grado del tumor primari. Quando habeva metastasis, iste esseva discoperite primemente in le ossos pelvian o le spina dorsal. Le tractamento consisteva in orchiectomia e administration de estrogen. Le procentage de superviventia esseva plus grande in le patientes tractate combinatemente que in le tractate solmente con estrogen o orchiectomia. Le therapia estrogenic non augmentate significativemente le frequentia del morbo cardiovascular in iste gruppo de patientes.

Rosner, S.: Problemas del patientes hospitalisate, con grave damno cerebral, ***New York State J. Med.*** **72:** 1028 (1 de Maio) 1972.

Le causas del damno cerebral e le problemas del attention quotidian del patientes hospitalisate, con grave damno del cerebro, es commentate. Al evalutar cata patiente, debe esser considerate le historia familiar, le aspectos metabolic, le incidentes traumatic, le morbos infective, e le aberrationes congenital. Un grande numero de iste patientes ha sufferite un trauma cerebral in le nascentia. Le obstetricos e pediatricos debe esser allertate del facto que le hemorrhagia intracranial occurre in le 9 pro cento del neonatos. Le retardo non justificate in facer tests diagnostic definitive e initiar le tractamento ha essite le causa del supercarga de nostre institutiones con patientes cuje morbos poteva haber essite remediabile.

Schub, H., e Maitinsky, S.: Un centro pro pueros multidefective; Tendentias statistic in le population, ***New York State J. Med.*** **72:** 1031 (1 de Maio) 1972.

Ante de 1969 non habeva sitos in le Condados Nassau e Suffolk (Nove York) ubi assister le pueros multidefective. Isto esseva un grave problema pro le familias de iste pueros, e plure de illos non recipeva un attention proprie. In Junio de 1969, le Centro de Disveloppamento Infantile iniciava a satisfacer le necessitates de iste pueros. Le systema operatori de iste Centro es describite. Durante le prime anno de labor, le Centre attendite 600 pueros. Un intento es facite pro definir le tendentias statistic del patientes con respecto a etate, sexo, diagnose, origine del referentias, le grandor del familia, le fundo educational del parentes, e le occurrentia de complicationes del nascentia e prematuritate.

Cagin, N. A., Levitt, B., Kunstadt, D., Levine, A. D., e Grishman, A.: Electrodo-catheteres unipolar subclavian e bipolar femoral pro marcapaso cardiac; Comparation de su efficatia, ***New York State J. Med.*** **72:** 1037 (1 de Maio) 1972.

Dece-duo (12) electrodos bipolar introducite tra le vena femoral, e dece-tres (13) electrodo-catheteres unipolar semi-flottante tra le vena subclavia, esseva comparate con relation a su efficatia in patientes con infarcto myocardial probate. Con ambe methodos habeva pauc complicationes. Le electrodos bipolar esseva effective per periodos plus longe que le unipolar. Le introduction de un catheter semi-flottante tra le vena subclavia es ideal per situationes de emergentia perque le marcapaso cardiac pote esser complite facile e rapidemente.

Ariel, I. M.: Uso systemic del 5-fluorouracilo in le metastasis hepatic del cancer primari colonic e rectal, ***New York State J. Med.*** **72:** 1041 (1 de Maio) 1972.

Trenta-cinque (35) patientes con metastasis hepatic de cancer colonic e rectal esseva tractate con 5-fluorouracilo administrate intravenosemente, in general quando le metastasis esseva discoperite. Le resultatos de iste therapia es analysate in detalio. Ben que le prolongation del vita non esseva significative, un major numero de patientes manteneva se vive durante le prime menses del tractamento. In circa del 10 pro cento del patientes, le tumor esseva reducite in un 50 pro cento o plus; circa del 30 pro cento habeva un responsa subjective. Varie effectos secondari del 5-fluorouracilo esseva observate.

Singh, S. P., Feldman, E. B., e Carter, A. C.: Thyroide desiccate e levo-thyroxina in le hypothyroidismo; Comparation in le therapia de reimplaciamento, ***New York State J. Med.*** **72:** 1045 (1 de Maio) 1972.

Le lipidos seric e le tests de function thyroide esseva facite serialmente in 10 patientes hypothyroide infra tractamento per longe tempore con thyroide desiccate, precedite o seguite de levothyroxina. Cata preparate hormonal esseva administrate per, al minus, un anno. Le promedio del dose oral quotidian de thyroide desiccate e de 1-thyroxina requerite pro mantener le patientes clinicmente euthyroide esseva 136 mg. e 205 mcg., respectivemente. Le nivellos circulante del cholesterol seric total, triglyceridos, phospholipidos, acidos grasse libere, e lipoproteinas esseva similar infra ambe hormonas. Le nivellos del iodo-proteina seric esseva significativemente plus elevate durante le therapia con 1-thyroxina, comparate con le nivellos trovate durante le tractamento con thyroide desiccate. Le coefficiente I-131-1-triiodothryronina ligate al erythrocytos e le capacitate ligante del globulina al thyroxina esseva similar con ambe tractamentos. Comparationes similar esseva facite con tres pacientes hypothyroide tractate, cata uno, con thyroide desiccate procedente de bove e porco. Le diverse parametros investigate esseva similar con ambe preparates thyroide.

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> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
>
> *– George Sarton, from "The History of Medicine Versus the History of Art"*

Should nongovernment scientists and physicians play a role in drug regulation?

Opinion

Results of a questionnaire to 7000 physicians:

82.8%
Physicians should play a role

78.3%
Independent scientists should play a role

69.8%
Medical academicians should play a role

Opinion & Dialogue

Dialog

Should nongovernment scientists and physicians play a role in drug regulation?

Doctor of Medicine

Herbert L. Ley, Jr., M.D., M.P.H., Formerly Commissioner, F.D.A. (1968-1969) Currently Medical Consultant

In order for drug regulation to be effective, participation in the regulatory process from nongovernment physicians and scientists must be encouraged. Without such involvement, there will continue to be a high degree of controversy surrounding any regulations promulgated by the Food and Drug Administration.

There are two areas in which participation and communication by nongovernment physicians and scientists could significantly improve the process of regulation. First, scientists and physicians throughout the country could become involved in consulting relationships with the Food and Drug Administration in important scientific areas while regulatory policies are being evolved. If nongovernment professionals could bring their expertise and experience to bear early in the decision-making process, they would have less reason to criticize the final outcome.

Secondly, practicing physicians, academic physicians, and academic-based scientists could make it their business to comment on proposed regulations appearing in the Federal Register. Ideally, a system could be instituted whereby medical, scientific and technical people could see the Federal Register regularly, and provide the Food and Drug Administration with a body of opinion that has so far gone unheard. The FDA is caught among pressures from industry, Congress, the Presidential Administration and consumers. It should also feel pressures from practicing physicians and scientists.

In order to become more involved in these stages of the drug regulatory process, nongovernment physicians and scientists should begin to exercise their influence through their respective professional organizations, state and national medical societies, and specialty groups. Logically, a letter from these organizations representing a collective opinion has far greater weight in the regulatory process than individual letters. If the Food and Drug Administration receives opinions from these organizations early, before a regulation gets into the Federal Register, they are in a good position to respond with further study and review. Without such dissenting opinions, there is very little incentive to make changes in proposed regulations.

One instance in which practitioners did influence drug regulatory affairs in this way is the recent controversy that arose over the legitimacy of drug combinations. The strong opinion of practitioners on the value of such medication in clinical practice played a very prominent role in making the Food and Drug Administration modify its rather restrictive policy.

Another way in which practitioners can effectively influence drug regulations is by working with drug manufacturers conducting clinical trials of chemotherapeutic agents. When a drug is rated other than effective it may only mean that there is a lack of controlled clinical evidence as to efficacy. Thus, physicians might offer to conduct clinical studies that could help keep a truly effective drug in the marketplace. The treatment of diseases such as diabetes and angina are areas where the practitioner can aid in clinical studies because patients suffering from these diseases are rarely found in the conventional hospital setting.

By working with ethically and scientifically sound study designs in his everyday practice, the practitioner could begin to play an important part in determining official ratings on drug efficacy.

Nongovernment physicians and scientists and the FDA should also improve their lines of communication to the public. The medical community must develop a voice every bit as loud as that of the consumerists, the press, and others who sometimes criticize without complete information. If not, much of wha
the medical communit
and federal regulators d
will often be represented i
simplistic and somewha
misleading terms.

One illustration of th
misuse of the media in thi
regard is the recall of anti
coagulant drugs severa
years ago. This FDA actio
was given publicity by th
press and television tha
went far beyond its prob
able importance. The resul
was a very uncomfortabl
situation for the practi
tioner who had patient
taking these medication
Since the practitioner an
pharmacist had not bee
informed of the action b
the time it was publicize
in most states they wer
deluged with calls fro
worried patients.

The practitioner can a
tempt to solve these prob
lems of inadequate comm
nication in several way
One would be the creatio
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When drug regulation new
is to be announced, the s
ciety could immediatel
distribute a message to e
ery pharmacist in the stat
The pharmacist, in tur
could notify the physicia
in his local community
that he and the physicia
could be prepared to a
swer inquiries from p
tients. Another approac
would be to use profe
sional publications th
practitioner receives.

All of this leads back
my opening contention:
drug regulation is to be e
fective, timely, and relat
to the realities of clinic
practice, a better method
communication and fee
back must be developed b
tween the nongovernme
tal medical and scienti
communities and the reg
latory agency.

ue

Maker of Medicine

Henry W. Gadsden,
Chairman & Chief Executive Officer, Merck & Co., Inc.

In my opinion, it is the responsibility of all physicians and medical scientists o take whatever steps they hink are desirable in a law- and regulation-making process that can have far-reaching impact on the practice of medicine. Yet many events in the recent past indicate that this is not happening. For example, it is apparent from drug efficacy studies that the NAS/NRC panels gave little consideration to the evidence that could have been provided by practicing physicians.

There are several current developments that should increase the concern of practicing physicians about drug regulatory affairs. One is the proliferation of malpractice claims and litigation. Another is the effort by government to establish the relative efficacy of drugs. This implies that if a physician prescribes a drug other than the "established" drug of choice, he may be accused of practicing something less than first-class medicine. It would come perilously close to federal direction of how medicine should be practiced.

In order to minimize this kind of arbitrary federal action, a way must be found to give practitioners both voice and representation in government affairs. Government must be caused to recognize the essentiality of seeking their views. One of the difficulties today, however, is that there is no way for concerned practitioners to participate in the early stages of decision-making processes. They usually don't hear about regulations until a proposal appears in the Federal Register, if then. By that time a lot of concrete has been poured, and a lot of boots are in the concrete.

Physicians in private practice, and particularly clinicians, should press for representation on the advisory committees of the Food and Drug Administration, joining with academic and teaching hospital physicians and scientists who are already serving. Though practitioners may not have access to all available information, the value of their clinical experience should be recognized. Clinicians, for example, rightly remind us that difficulty in *proving* precise effects does not necessarily mean a drug is ineffective.

Unless practitioners are more involved in drug regulations, it will be increasingly difficult for the pharmaceutical industry and scientists elsewhere to make optimal progress in drug development. The benefit/risk ratio must be re-emphasized, and as part of this it must be acknowledged that benefit can come from the judgments of medical science as a whole. Even this concept, unfortunately, is not always accepted in drug regulatory processes. For example, if current medical opinion holds that an excess of total lipids and cholesterol in the blood is probably predisposing to atherosclerosis, and if a drug is discovered which reduces total lipids and cholesterol, the drug ought to be accepted *prima facie* as a contribution to medical science . . . until someone disproves the theory. The sponsor should not have to prove the theory as well as to develop and test the drug.

I feel a major new effort must also be made to erase the feeling of mistrust of medicine and of medicines that seems to be growing in the public consciousness. Triggered primarily by strident announcements in Washington, people are reading and hearing confidence-shaking things almost continuously. Although challenge and awareness are essential to medical advancement, our long-term goal is constructively to build, not destroy. This means strengthening patient-physician relationships based on mutual confidence and trust. And in matters of health policy, it means working toward participatory rather than adversary proceedings—where everyone with an interest and a capacity to contribute has an opportunity to be heard . . . and, if that opportunity is not spontaneously afforded him, he may seek it.

Opinion & Dialogue

What is your opinion, doctor?
We would welcome your comments.

P·M·A

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Medical News

Subspecialty examinations in rheumatology

The American Rheumatism Association Section of The Arthritis Foundation is offering a review session in rheumatology mainly for physicians wishing to take the subspecialty examinations for certification in Rheumatology being given for the first time this year by the American Board of Internal Medicine on October 17.

The review session will take place on June 10, at the Fairmont Hotel, Dallas, Texas, in conjunction with the annual meeting of the American Rheumatism Association. The session has been arranged by a subcommittee of the Arthritis Foundation, chaired by Charles M. Plotz, M.D., Downstate Medical Center, Brooklyn, New York.

Registration fee is $50 which includes luncheon. Checks are payable to The Arthritis Foundation and should be sent no later than May 25 to executive secretary, American Rheumatism Association Section, The Arthritis Foundation, 1212 Avenue of the Americas, New York, New York 10036.

Clinical Center to study malignant melanoma and sarcoma of soft tissue or bone

The cooperation of physicians is requested in the referral of patients with melanomas and sarcomas of soft tissue and bone for studies being conducted by the National Cancer Institute's Surgery Branch at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Needed are patients with primary tumors and those with limited metastases which are amenable to primary surgical treatment. Selected patients will be treated with combined surgery, chemotherapy, and immunotherapy.

Patients will receive adjuvant therapy according to criteria based on tumor anatomic location and histologic type. Immunologic studies will be performed preoperatively and at intervals postoperatively to monitor the effects of adjuvant therapy and provide sensitive means of followup for earlier detection of recurrent tumor.

On completion of their studies, patients will be returned to the care of the referring physician who will receive a summary of findings.

Physicians interested in having their patients considered for admission to these studies may write or telephone Alfred S. Ketcham, M.D., Clinical Center, Room 10-N-116, National Institutes of Health, Bethesda, Maryland 20014. The telephone number is 301-496-4164.

Clinical study of psoriasis

Physicians are requested to refer patients with psoriasis for a study which is being conducted by the Department of Dermatology, Roswell Park Memorial Institute, Buffalo.

The study includes clinical therapeutic trial with a new antipsoriasis medication which has shown good responses from patients with minimal or no adverse side effects in studies made during the past seven years.

Patients with severe or resistant disease and those with exfoliative dermatitis are specifically suited. If indicated, these patients may be admitted to the hospital for treatment. Follow-up will be carried out jointly with the referring physician if desired.

Physicians wishing to refer patients for this study should communicate by telephone (toll-free, direct-dial Watts number 1-800-462-1877) or send brief case reports of their patients to Edmund Klein, M.D., chief, Department of Dermatology, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, New York 14203.

Medical center laboratory has "English-speaking" computer

A new and somewhat unusual computer, Clin-Lab 12, is now at work in the clinical chemistry laboratory at Albany Medical Center Hospital.

While most computers require computer operators and punch cards, Clin-Lab 12 is operated by laboratory personnel who "talk to" the computer in English through teletypes or television-like terminals. Instead of being stuffed with punch cards to produce information, the new computer is tied directly to analytical instruments in the laboratory to capture and record test results as they are being generated.

Clin-Lab 12 enables the laboratory to keep up with an ever-increasing work load—currently the laboratory is doing almost a million tests a year, as compared with about 200,000 tests per year in 1966.

Clin-Lab 12 is making it easier for physicians and nurses to use laboratory information in the care of in- and outpatients. The computer reduces all analytical tests to useful data and compresses the information into a single "cumulative summary" report.

Under the old system, laboratory data were entered on numerous individual cards spread throughout the patient's chart. Now the results are printed on a single summary sheet and grouped together in terms of function. For example, all test results from adrenal function are together. This makes it easier for a physician to determine his patient's progress. Abnormal test results are flagged (with an asterisk) so they can be more readily spotted.

The output of the computer also can be displayed on a television screen in the laboratory. In this way, a physician can call the laboratory, and technical personnel can quickly provide him with sought-after information about one or several of his patients.

Personalities

Named. Donald P. Swartz, M.D., director of the Department of Obstetrics and Gynecology, Harlem Hospital, as chairman of the Department of Obstetrics and Gynecology, Albany Medical Center.

Elected. As officers of the New York Physicians Art Club: president, Stephen Nordlicht, M.D.; secretary-treasurer, Alfred A. Richman, M.D.

Material for inclusion in the medical news section must be received six weeks prior to publication date.

Medical Meetings

Symposium on pulmonary rehabilitation

A three-day symposium on "Pulmonary Rehabilitation for Physical Therapists and Nurses" will be offered by New York University Medical Center, Institute of Rehabilitation Medicine, on April 24 to 26.

The goal of the symposium is to provide physical therapists and nurses with an understanding of physiology and pathology of the lung. Focus will be on the therapeutic management of patients with chronic lung disease and postsurgical pulmonary complications.

The symposium will feature workshop sessions to enable participants to practice specific technics used in the treatment of patients with obstructive and restrictive lung disorders. Lectures and demonstrations, presented by faculty members of the New York University Medical Center, will include: the anatomy and physiology of the thorax and lungs, pulmonary function testing, the rationale of pulmonary physical therapy, and physical therapy technics.

A tuition fee of $100 is payable when submitting application. Registration is limited. For information and application contact Joseph Goodgold, M.D., director of research and training, Institute of Rehabilitation Medicine, New York University Medical Center, 400 East 34th Street, New York, New York 10016

Symposium on analgesics to be held

An international symposium on analgesics will be conducted by Alan Van Posnak, M.D., clinical professor of anesthesiology, Cornell Medical Center, on April 26 and 27, from 9:00 A.M. to 5:00 P.M., in the auditorium of the medical college, 1300 York Avenue, New York City.

There is no registration fee. For further information contact Alan Van Posnak, M.D., Department of Anesthesiology, New York Hospital-Cornell Medical Center, 525 East 68th Street, New York, New York 10021.

Refresher course for residents in radiation therapy and physics

A comprehensive review of the principles of radiation therapy and radiation physics offered by the Radiation Medicine Department of the Long Island Jewish-Hillside Medical Center, Queens Hospital Center Affiliation, will be given on May 1 through 5, from 9:00 A.M. to 5:00 P.M.

The course, designed for residents preparing for radiology board examinations, is under the chairmanship of James H. Davenport, M.D., physician in charge; and Gerald Shapiro, M.S., senior physicist, Radiation Medicine Department.

Registration fee is $100 which includes luncheon. For further information and registration contact Jan J. Smulewicz, M.D., director, Department of Radiology, The Long Island Jewish-Hillside Medical Center, Queens Hospital Center Affiliation, 82-68 164th Street Jamaica, New York.

Postgraduate course on arthritis offered

The Mount Sinai School of Medicine of the City University of New York and the Page and William Black Post-Graduate School of Medicine are sponsoring a postgraduate course in rehabilitation medicine, "Rehabilitation in Arthritis—The Back," on May 17, from 9:00 A.M. to 1:00 P.M., at The Mount Sinai Medical Center, Fifth Avenue and 100th Street, New York City.

The course will be given by Lawrence Wisham, M.D., Frances Dworecka, M.D., Beatrice Kaplan, M.D., and other members of the Mount Sinai faculty.

There is no registration fee, and the program is acceptable for four prescribed hours by the American Academy of General Practice.

For further information and registration contact registrar, The Page and William Black Post-Graduate School of Medicine, Fifth Avenue and 100th Street, New York, New York 10029.

Refresher course in pediatrics

An intensive refresher course in pediatrics is being offered at the State University of New York at Buffalo School of Medicine on June 5 through 9, sponsored by the Bureau of Maternal and Child Health and Family Planning, New York State Department of Health. It is intended primarily for general practitioners but pediatricians will also find the course of value.

The refresher course will include a review of principles and recent advances in diagnosis and treatment of pediatric disorders and in the care of the well child. All teaching will be done by the faculty of the school of medicine under the immediate supervision of Jean A. Cortner, M.D., head of the Department of Pediatrics.

Registration fee is $5.00 (check to be made payable to the State University of New York at Buffalo). Tuition for each physician enrolled in the course is paid by the New York State Department of Health. Application for enrollment must be made prior to April 30, through the offices of county or city departments of health or to district health officers. The registration fee should accompany the application.

Nutrition topic of seminar

Current developments and research in nutrition will be discussed at the biennial New York State Nutrition Institute at Cornell University, in Ithaca, on July 6 and 7.

The program is directed toward those professional workers who have an interest in nutrition education. Through the Institute current knowledge is brought to

continued on page 1012

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

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those with limited opportunities during the year to keep abreast with progress in nutrition research.

Ten Cornell researchers will present reports and Howard N. Jacobson, M.D., Harvard Medical School will speak at the banquet on July 6, on maternal nutrition and the outcome of pregnancy. Topics to be considered include policy and representative programs for improved nutrition; mineral requirements for man; and the interaction of early nutrition and environment in the determination of behavior development. Additional reports will be concerned with the role of diet in atherosclerosis and diabetes. Lactose intolerance and the pertinent subject of guidelines for nutrient fortification of foods will be explored.

The one and one-half day program is sponsored by the Graduate School of Nutrition in cooperation with the New York State Colleges of Human Ecology and Agriculture, Cornell University, and the New York State Nutrition Institute.

For further information and advance registration contact Nutrition Institute, Graduate School of Nutrition, Savage Hall, Cornell University, Ithaca, New York 14850.

International meeting on toxoplasmosis to be held in Paris

The Medical Women's International Association, the oldest international medical organization in the world, is holding its thirteenth International Congress in Paris, on September 3 to 7, at Nouvelle Faculte de Medicine.

The topic of the scientific session is "Toxoplasmosis." More than 40 reports on this subject will be given by physicians from all parts of the world.

For further information contact American Medical Women's Association, 1740 Broadway, New York, New York 10019.

American Association of Poison Control Centers to meet

The fifteenth annual meeting of the American Association of Poison Control Centers will be held in New York City on October 16 and 17, in conjunction with the meeting of the American Academy of Pediatrics.

Authors are invited to submit original articles on any subject related to poisoning. Abstracts should be 200 words or less (limited to ten to fifteen minutes) and submitted no later than July 15 to Robert G. Scherz, M.D., Box 361, Madigan General Hospital, Tacoma, Washington 98431.

Antibiotics and bone and joint infections

The treatment of chronic osteomyelitis and septic arthritis by adequate debridement and closed wound irrigation-suction, using a solution of antibiotic to which the offending organism is susceptible, can be efficacious, reports A. William Dunn in a recent article (Southern M. J. 63: 684 [June] 1970). Summarized case histories of 9 patients are presented to illustrate the point.

Books Received

*The following books were received during the month of February, 1972.**

Office Gynecology. Three Audio Cassettes and a Supporting Manual. Content and Narration by Alvin F. Goldfarb, M.D. Manual, Octavo of 54 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Plastic book-shaped cover with cassette holders and manual inside. $33.75.

Introduction to Neuroradiology. By Harold O. Peterson, M.D., and Stephen A. Kieffer, M.D. Quarto of 276 pages, illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1972. Cloth, $15.

The Cobalamins. A Glaxo Symposium. Edited by H. R. V. Arnstein, Ph.D., and R. J. Wrighton, M.B. Octavo of 207 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $12.50.

Cell Structure. An Introduction to Biological Electron Microscopy. Second edition. By Peter G. Toner, B.Sc., M.B., and Katharine E. Carr B.Sc., Ph.D. Quarto of 255 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $10.75.

A Primer of Electrocardiography. Sixth edition. By George E. Burch, M.D., and Travis Winsor, M.D. Quarto of 292 pages, illustrated. Philadelphia, Pa., Lea & Febiger, 1972. Cloth, $7.75.

Renal Transplantation. Theory and Practice. By Jean Hamburger, M.D., Jean Crosnier, M.D., Jean Dormont, M.D., and Jean-François Bach, M.D. Octavo of 326 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. No price listed.

*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

Chymopapain and disk disease

Results of tests on the effect of intradiskal injection of Chymopapain on patients with degenerative disk disease have recently been reported by Weiner and MacNab (Canad. M. A. J. **102:** 1252, 1970). They come to the following conclusions: (1) The procedure can be beneficial in carefully selected patients with lumbar disk disease, and (2) relief of leg symptoms apparently is more pronounced than relief of low back symptoms, but relief of both is evident. The mechanism of pain relief is obscure, but it is speculated that a "chemical mediator" is possible, since it appears doubtful that a mechanical reduction in disk volume sufficient to relieve pain could occur so abruptly.

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Editorial

Rating pollutants

Dr. Howard Reiquam, senior meteorologist at the Battelle Memorial Institute in Columbus, Ohio, has developed a rating scale for all the pollutants abroad in the world.

While complex and heavily weighted toward individual judgment the formula used to arrive at the index of pollution is comprehensive and makes sense.

Three scales enter into the formula—one, a *persistence scale* in which one point is given if the effect lasts for days, two if it lasts for months, three if it lasts for years, four if it lasts for decades, and five if it lasts for centuries. Two, a *range scale*—one point if the effects are felt only locally, two, if the effects are regional, three, if continental, four, if intercontinental, and five, if global. Three, *a complexity scale*—which is definitely abstract. A pollution problem in this scale is given one point for each of any of nine possible areas in which it may have an effect. These are, biologic, social, political, air, land, water, energy, nutrition, and materials.

After a pollutant has been weighed in these three scales, the results are multiplied one by another to arrive at the index of pollution.

Thus, taking pesticides as an example: *Persistence* is rated 4 because they can last for decades, *Range* is rated 5 because their use is global, and *Complexity* is rated 7 because they have biologic effects, social and political ramifications, involve air, land and water, and affect sources of nutrition—4 × 5 × 7 = 140.

According to this formula the ranking indices of pollutants is as follows:

1.	Pesticides	140
2.	Heavy metals such as mercury	90
3.	Carbon dioxide	75
4.	Sulfur dioxide	72
5.	Suspended particulates in air	72
6.	Oil spills	48
7.	Waterborne industrial wastes	48
8.	Solid waste	35
9.	Chemical fertilizer	30
10.	Organic sewage	24
11.	Oxides of nitrogen	24
12.	Storable radioactive wastes	20
13.	Tritium and krypton-85 (radioactive particles lost into air and water)	20
14.	Litter	16
15.	Photochemical oxidants (smog)	12
16.	Hydrocarbons in air	10
17.	Carbon monoxide	9
18.	Thermal pollution	5
19.	Community noise	4

This ranking will not remain static. Priorities can change drastically in the future. At least four pollutants are likely to move rapidly to the forefront. Because solid waste disposal problems will become more widespread it is possible they may move up from eighth to second place.

The threat of radioactive particles emitted into the air and water by nuclear power plants may rise from fourteenth place to third. Technology has so far been able to keep ahead of this. For the same reason waste heat from these plants could boost thermal pollution from eighteenth place to ninth. Pesticides, however, are expected to fall from first place to fifteenth as a result of eliminating the most persistent chemicals. This will leave in high priority the heavy metals of which mercury is the best known at the present time.

Pollution is a form of crime and crime is universal. Individuals, communities, states, nations, and continents are all involved. We are beginning to understand the problem at long last and that puts us in the path toward solutions.

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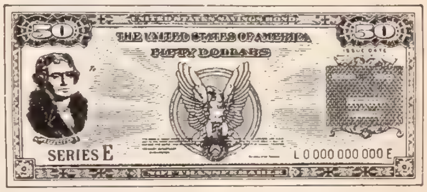

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Scientific Articles

PROSTATIC CARCINOMA TREATED AT CATEGORICAL CENTER

Clinical and pathologic observations

RIKUS SCHOONEES, M.D.
LORETO D. PALMA, M.D.
JOHN F. GAETA, M.D.
ROBERT H. MOORE, M.S.
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Buffalo, New York

Urology Fellows (Dr. Schoonees and Dr. Palma); Associate Pathologist (Dr. Gaeta); Statistician (Mr. Moore); and Institute Director (Dr. Murphy), Roswell Park Memorial Institute, New York State Department of Health and State University of New York at Buffalo School of Medicine

This study, which covered a ten-year period, was undertaken to determine the role of therapy and intercurrent disease on the survival of patients with prostatic carcinoma. The stage and grade of the tumor are correlated with the cause of death and sites of metastases. No significant correlation was found between the stage of the disease and the grade of the primary tumor. When metastasis occurred, it was detected primarily in the bony pelvis or spine. Treatment consisted of orchiectomy and regimens of estrogen administration. The percentage of survival was greater for patients given the combined therapy than for patients treated with either estrogen or orchiectomy alone. Estrogen therapy did not significantly increase the incidence of cardiovascular disease in this group of patients.

Prostatic carcinoma is a very common disease in aging man, the incidence being 500 cases per 100,000 persons per year for men seventy-five to seventy-nine years of age in the United States.[1] When first seen, many patients have distant metastases or regional disease which has extended beyond the capsule of the prostate. Approximately 5 per cent of all patients with prostate cancer may be candidates for curative radical prostatectomy.[2]

The natural history of prostatic carcinoma is uncertain. Furthermore, there is no firm proof that endocrine therapy actually increases longevity, primarily because no permissible concurrent control series of untreated patients exists today. Most observers have assumed that treated patients do live longer in view of the initial dramatic general improvement in the majority of patients following endocrine therapy. Early reports on endocrine treatment of prostatic carcinoma indicated that the per cent survival with time was significantly increased by castration and/or estrogen therapy.[3-5] Histologic grading and clinical staging of prostatic carcinoma are generally useful prognostic parameters.[6-8] However, many patients with prostatic carcinoma die from conditions not related to their prostatic disease.[9]

This study was undertaken to determine the role of therapy and intercurrent diseases on the survival of patients with prostatic carcinoma following treatment at a categorical disease institute. The stage and grade of the tumor are correlated with the cause of death and the sites of metastases.

Materials and methods

The records of the 412 patients admitted to the Roswell Park Memorial Institute in Buffalo, New York, for prostatic carcinoma during the ten-year period from 1950 to 1959 were reviewed. The diagnosis was histologically confirmed in 352 patients, and the data of these cases form the basis of this report. Most patients in this series were treated with orchiectomy and/or estrogens for a short period, for example, less than one year before admission to the Institute. All patients were followed up until death or for at least ten years after admission. In addition, the postmortem findings of 56 patients with unsuspected prostatic carcinoma who died in Roswell Park Memorial Institute during the same ten-year period were also studied.

All data relevant to the diagnosis of the disease, treatment of the patient, outcome of therapy, and the ultimate cause of death were recorded on specially prepared coding schedules which were then transcribed on IBM punch cards. Data were analyzed using an RCA Spectra 70/45 computer and standard statistical methodology.

On admission the clinical extent of the disease was classified in 344 patients according to a modified system advocated by Whitmore.[10]

> Stage A: Occult prostatic carcinoma (microscopic foci found on specimens of prostatectomy done for a benign condition or at autopsy)
>
> Stage B: Carcinoma confined within the prostatic capsule with no elevation of the serum acid phosphatase concentration
>
> Stage C: Cancer with extracapsular extension into surrounding structures or cancer confined within the capsule of the prostate with elevation of the serum acid phosphatase level
>
> Stage D: Carcinoma with demonstrable bony or extrapelvic involvement

At the Roswell Park Memorial Institute, prostatic carcinoma was histologically graded on a scale of 1 to 4 in increasing order of malignancy, after a consideration of both the overall histopathologic pattern and the cytologic features of the individual tumor cells. The cancer was satisfactorily graded in 248 of the 352 cases reviewed. Normal population survival rates from the U.S. Public Health Service for 1940 to 1960 (white, since the population was >95 per cent such), adjusted to an initial mean age of sixty-nine years, which was similar to our group of patients, were used for comparison of survival data.

Results

General study. The mean age of the patients on admission was 69.1 years. Urinary obstructive symptoms such as slow stream, urgency, hesitancy, frequency of micturition, and dysuria were the symptoms present in 74.4 per cent of our patients. Pain secondary to the primary or metastatic lesions was prominent in 38.1 per cent of the patients. Only 12.8 per cent of the total group suffered with hematuria.

The results of the clinical staging of the disease in 344 patients were as follows: stage A, 32 (9.3 per cent); stage B, 37 (10.8 per cent); stage C, 117 (34.0 per cent); and stage D, 158 (45.9 per cent).

Histologic grading of the primary prostatic tumor was carried out in 248 of 352 patients. The results were as follows: grade I, 52 (21.0 per cent); grade II, 137 (55.2 per cent); grade III, 54 (21.8 per cent); and grade IV, 5 (2.0 per cent).

In this study no significant correlation was found between the stage of the disease and the grade of the primary tumor.

TABLE I. Serum phosphatase concentrations in prostatic carcinoma

Stage of Prostatic Carcinoma and Number of Patients	Serum Acid Phosphatase*	Serum Alkaline Phosphatase†
A (32)	2.69 (0.19)	4.74 (0.39)
B (37)	3.57 (0.71)	13.66 (5.54)
C (117)	5.47 (1.13)	6.64 (1.11)
D (158)	14.84 (1.86)	19.30 (2.24)

* Babson-Read units, mean (± 1 standard error); normal range: 0.5 to 4 units per milliliter.

† Bessey-Lowry-Brock units, mean (± 1 standard error); normal range: 2 to 5 units per milliliter.

TABLE II. Serum phosphatase concentrations in prostatic carcinoma

Grade of Prostatic Carcinoma and Number of Patients	Serum Acid Phosphatase*	Serum Alkaline Phosphatase†
I (52)	6.07 (1.84)	7.85 (1.75)
II (137)	8.18 (1.38)	11.44 (1.95)
III (54)	9.87 (2.72)	14.98 (4.52)
IV (5)	3.12 (0.56)	9.50 (3.38)

* Babson-Read units, mean (± 1 standard error); normal range: 0.5 to 4 units per milliliter.

† Bessey-Lowry-Brock units, mean (± 1 standard error); normal range: 2 to 5 units per milliliter.

The serum acid phosphatase concentration on admission was elevated in 38.1 per cent of the patients. The mean serum acid phosphatase concentration was increased above normal in stages C and D (Table I). The serum alkaline phosphatase level was significantly higher ($p < 0.05$) in stages C and D than in stage A (Table I). The high mean serum alkaline phosphatase concentration in stage B patients was unexpected (Table I). None of the stage B patients had clinically detectable primary bone or liver disease. There was no significant correlation between the grade of the primary tumor and the serum acid and alkaline phosphatase concentrations (Table II).

Clinical correlations. Clinical evidence of metastatic disease was present in 158 of the patients reviewed. The bony pelvis or spine was the site of metastases in 88 per cent, and all other bones were involved in 55.7 per cent of cases. Metastases in soft tissues, such as lymph nodes, lungs, and liver, were detected in 38 per cent of the cases, and 2.5 per cent of the patients had signs of spinal cord or brain involvement. The incidence of metastases to the bony pelvis and spine was significantly higher ($p < 0.01$) in patients with grade III or IV (52.5 per cent) than in patients with grade I or II (29.6 per cent) prostatic carcinoma. No significant difference ($p > 0.05$) in the incidence of metastases to other bones or soft tissues was

TABLE III. Survival of prostatic carcinoma patients by grade primary tumor*

Grade of Primary Prostatic Carcinoma	Number of Patients	Survival in Years†
I	52	3.21 (0.58)
II	137	2.51 (0.26)
III	54	2.72 (0.41)
IV	5	1.80 (0.86)

* Based on all causes of death.
† Mean (± 1 standard error).

TABLE IV. Survival of prostatic carcinoma patients by clinical stage of the tumor*

Clinical Stage of Prostatic Carcinoma	Number of Patients	Survival in Years†
A	32	1.96 (0.68)
B	37	4.03 (0.71)
C	117	3.65 (0.32)
D	158	1.72 (0.19)

* Based on all causes of death.
† Mean (± 1 standard error).

TABLE V. Cause of death by primary treatment*

Cause of Death	Orchiectomy Alone (69 Patients) Per Cent	Estrogen ± Orchiectomy (256 Patients) Per Cent
Prostatic carcinoma	47.4	64.7
Other neoplasms	32.8	6.0
Cardiovascular diseases	13.2	22.9
Other, mainly respiratory diseases	6.6	6.4

* Excluding patients who are alive or have died from unknown causes.

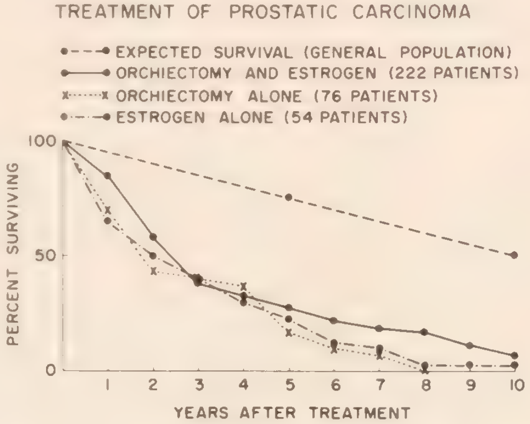

FIGURE 1. Treatment of prostatic carcinoma. Data based on all causes of death.

noted in grades I and II as compared with grades III and IV prostatic carcinoma.

All patients except 8 (2.3 per cent) were dead at completion of this study on December 31, 1970. The cause of death was firmly established in 325 patients (94.5 per cent). Prostatic carcinoma was the principal cause of death in 60.6 per cent. Other neoplasms (12.3 per cent), cardiovascular conditions mainly cerebral or coronary thrombosis (20.6 per cent), and other diseases, principally respiratory (6.5 per cent) were considered the most important factors contributing to death in 39.4 per cent of cases. Prostatic carcinoma was the principal cause of death in 14.3, 25.8, 48.6, and 84.0 per cent of patients with stage A, B, C, and D disease, respectively. The difference in death rates for prostatic carcinoma between stages B and C is statistically significant ($p < 0.05$). Death was attributed to prostatic carcinoma in 59.3 and 62.1 per cent of patients with grades I to II and grades III and IV prostatic carcinoma, respectively. All patients with stage A prostatic carcinoma who died of this disease had either grade III or IV primary prostatic carcinoma. The grade of the primary tumor had no significant effect on the death rate from prostatic cancer in patients with stage B, C, or D prostatic carcinoma.

The mean survival period for all patients (all causes of death) calculated from the date of admission or institution of therapy at this Institute was 2.61 years. The majority of patients (63.1 per cent) were treated with orchiectomy and various regimens of estrogen administration. Orchiectomy (21.6 per cent) or estrogen administration (15.3 per cent) was the sole therapeutic modality in 36.9 per cent of the patients. The grade of the primary prostatic tumor had no significant influence on survival (Table III). The mean survival of patients with stage D prostatic carcinoma was significantly shorter than that of patients with stage B ($p < 0.05$) or stage C ($p < 0.001$) disease (Table IV).

The causes of death in patients treated with estrogen versus no estrogen are shown in Table V. The incidence of prostatic cancer death was significantly higher in the estrogen than in nonestrogen-treated groups ($p < 0.02$). The incidence of neoplasms other than prostatic carcinoma as the cause of death was significantly higher ($p < 0.001$) in patients who received no estrogens. The incidence of fatal cardiovascular disease was not significantly different ($p > 0.05$) in estrogen versus nonestrogen treated groups (Table V).

The percentage of patients surviving one or two years following admission or the institution of therapy at Roswell Park Memorial Institute was greater in patients treated with orchiectomy and estrogens than in patients treated with either estrogen or orchiectomy alone. However, this difference in survival was statistically significant ($p < 0.05$) only at one year following admission or institution of therapy. At three years there was

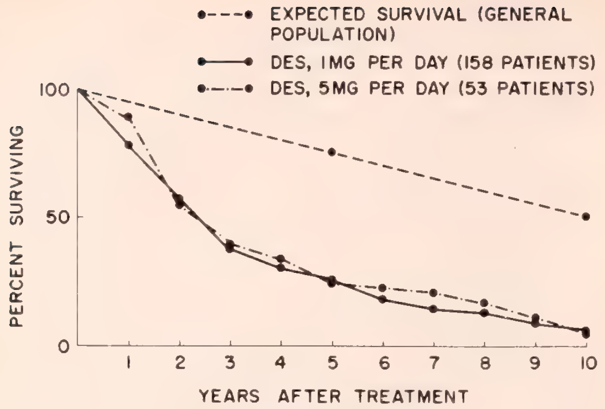

FIGURE 2. Diethylstilbestrol therapy for prostatic carcinoma.

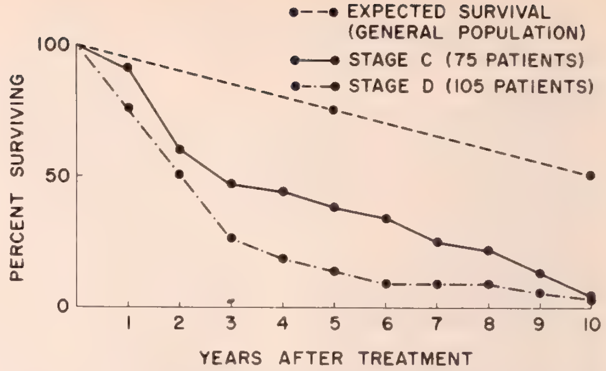

FIGURE 3. Percentage survival following orchiectomy plus estrogen therapy in patients with stage C or stage D disease.

virtually no difference in the percentage survival among the three treatment groups (Fig. 1). No significant difference in the survival of patients treated with 1 mg. or 5 mg. of diethylstilbestrol daily was detected (Fig. 2).

The survival percentage of patients with stage C or D prostatic carcinoma treated with orchiectomy and estrogens showed a markedly greater decline with time than that of age-matched men in the general population (Fig. 3). The difference in the survival of patients with stage C or D prostatic carcinoma was statistically significant ($p < 0.05$) at the end of the first year only. The number of patients with stage A or B prostatic carcinoma treated with orchiectomy and estrogens were too small to allow adequate statistical comparison. There was no significant difference ($p > 0.05$) in the survival of patients with grades I and II as compared with grades III and IV prostatic carcinoma treated with orchiectomy and estrogen (Fig. 4).

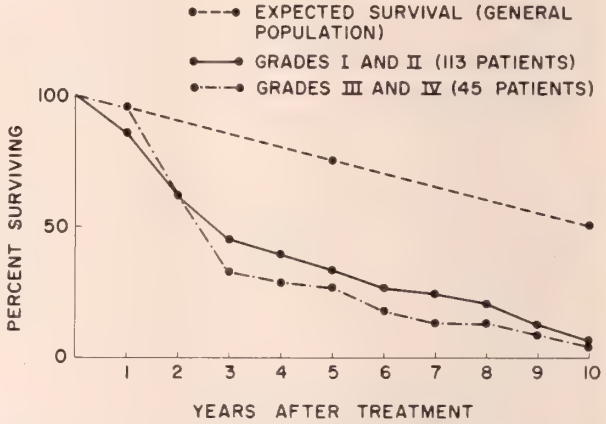

FIGURE 4. Histologic grade of primary prostatic tumor has no significant influence on percentage survival in patients treated with orchiectomy plus estrogens. Data based on all causes of death.

Concurrent postmortem study. A second, but concurrently observed group of patients had prostatic carcinoma discovered at autopsy at this center. They are separately considered from the clinical group to test various anatomic and clinical observations.

The mean age at death of the 56 patients who had a complete postmortem examination was seventy-two years. The pathologic stage of the disease at death was: stage A, 14 (25.0 per cent); stage B, 3 (5.4 per cent); stage C, 12 (21.4 per cent); and stage D, 27 (48.2 per cent). The highest tumor grade in the prostate or metastases was recorded. In 76.8 per cent of the patients the highest tumor grade was I or II. The direct cause of death as determined at postmortem was prostatic carcinoma in 25 (44.6 per cent), other neoplasms 17 (30.4 per cent), cardiovascular conditions 5 (8.9 per cent), other conditions (mainly respiratory ailments) 8 (14.3 per cent), and unknown 1 (1.8 per cent). Metastatic prostatic carcinoma was the cause of death in 32.6 per cent and 84.6 per cent of the postmortem cases with grade I or II and grade III or IV disease, respectively. This difference is highly significant ($p < 0.001$). All patients with stage A or B lesions at postmortem died of causes other than prostatic carcinoma. Prostatic carcinoma was the cause of death in 41.7 and 74.1 per cent of patients with pathologically stage C and D disease, respectively. Bony metastases were found in 22 (81.5 per cent) of the 27 stage D cases. The specific sites of metastases were: pelvis and spine 19 (70.4 per cent), all other bones 14 (51.9 per cent), lungs 13 (48.1 per cent), liver 9 (33.3 per cent), adrenal glands 8 (29.6 per cent), lymph nodes 16 (59.3 per cent), bladder and seminal vesicles 4 (14.8 per cent), brain and spinal cord 4 (14.8 per cent), and pituitary gland 2 (7.4 per cent). Metastases to bones, adrenal glands, pituitary gland, and lymph nodes were significantly ($p < 0.05$) more common in grades III and IV as compared with grades I and II prostatic carcinoma.

Comment

Urinary obstructive symptoms such as dysuria, slow stream, urinary frequency, and complete retention occurred in 74.4 per cent of the patients in this series. Back, hip, perineal, or suprapubic pain was experienced by 38.1 per cent of the patients whereas hematuria was present in only 12.8 per cent. These findings conform to those reported by Barnes in 1940[11] on 664 cases of prostatic cancer. Early prostatic cancer is per se usually asymptomatic, and coexistent benign prostatic hyperplasia may be the chief cause of the obstructive symptoms and hematuria. In fact, prostatic carcinoma and benign prostatic hyperplasia may coexist in the same patient and possibly share some etiologic factors.[12] However, benign prostatic hyperplasia is not generally regarded as a precancerous condition.[13]

The proportion of patients with stage A or B prostatic cancer (20.1 per cent) admitted to this Institute is substantially higher than in most other series. The mean age of patients with stage A and B prostatic carcinoma was 72.8 and 67.5 years, respectively. None of these patients was treated with radical prostatectomy mainly because of advanced age and poor general condition. The pronounced discrepancy between the incidence of stage A prostatic cancer and the mortality rate from prostatic cancer clearly indicates that the natural history of latent prostatic cancer is usually sufficiently long to permit the patient to die of some other cause.[10] The life expectancy of patients with untreated stage A prostatic carcinoma is almost normal.[8,14,15] Bauer, McGovran, and Carlin[16] showed that the survival of patients with poorly differentiated stage A prostatic carcinoma was significantly shorter than that of patients with well-differentiated cancers. In the present study prostatic carcinoma was the cause of death in 14.3 per cent of patients with stage A disease when first seen, and all these patients had either grade III or IV primary tumors. This finding suggests that patients with reasonably well-differentiated stage A prostatic carcinoma may require no specific treatment and that additional therapy may be indicated only for patients with grades III or IV prostatic carcinoma (stage A). The value of radical prostatectomy in the treatment of stage B prostatic carcinoma is widely accepted today.[7,17,18] In the present study it was shown that diseases unrelated to prostatic cancer were the cause of death in 74.2 per cent of stage B patients. This finding emphasizes the importance of careful selection of patients submitted to radical prostatectomy.

More than 55 per cent of the primary prostatic cancers in this series were considered grade II lesions, whereas only 2 per cent were classified as grade IV. The distribution of the 248 cases of prostatic carcinoma according to grade correlates well with that of the Mayo Clinic series.[19]

We found no significant correlation between the clinical stage of the disease and the pathologic grade of the primary prostatic tumor. The grade of the primary prostatic carcinoma had no statistically significant effect on survival (Table III). The percentage of prostatic cancer deaths is almost identical among patients with grades I to II as compared to grades III to IV primary tumors. Furthermore, no significant difference was detected in the per cent survival with time of patients with grades I and II as compared to grades III and IV primary prostatic carcinoma (Fig. 4). Grading of the tumor was based on the morphology of the primary prostatic lesion in most cases prior to therapy. Franks, Fergusson, and Murnaghan[20] similarly found no correlation between tumor grade and survival. The lack of significant correlation between the grade and the stage or the prognosis may be related to the fact that the grade of the primary and metastatic tumor growths frequently show considerable disparity.[21] However, in the present study it was found that the incidence of metastases to the bones of the pelvis and spine was significantly higher in patients with grades III to IV than with grades I to II prostatic carcinoma. Furthermore, in the concurrent postmortem study, metastatic prostatic carcinoma was the cause of death in a significantly higher proportion of patients with poorly differentiated (grades III and IV) than patients with moderate to well-differentiated (grades I and II) metastatic lesions. Reports of several large series of patients with prostatic carcinoma indicate a definite correlation between the grade of "the lesion" and the incidence of metastases and the prognosis.[18,19,22] The results of the present study indicate that the tumor grade of the metastatic lesions may provide a more reliable prognostic index than the grade of the primary tumor.

The clinical stage of prostatic carcinoma appears to be a satisfactory index of the neoplastic potential of this diverse tumor. The mean survival period was significantly shorter in patients with stage D than stages B or C prostatic carcinoma (Table IV). The difference in the per cent survival of patients with clinically stage C or D prostatic carcinoma was statistically significant at the end of one year after orchiectomy plus estrogen therapy (Fig. 3). There was furthermore a direct correlation between the clinical extent of the disease when first seen and the percentage of prostatic cancer deaths.

The bones of the pelvis and spine were the site of metastases in 88.0 and 70.4 per cent of stage D cases in the clinical and postmortem studies, respectively. There is a direct correlation between the grade of the primary tumor and the incidence of metastases to the bony pelvis and spine. Metastases to the liver, lungs, and lymph nodes were detected in 38 per cent of clinically stage D cases. In the postmortem study these soft tissues—liver, lungs, and lymph nodes—showed metastatic lesions in 74.1 per cent of the pathologically stage D cases. Although this series of 27 postmortem cases of stage D prostatic carcinoma is relatively small, it indicates that soft-tissue metastases can be as common as bony metastases in the advanced stages of this disease. Direct invasion of the seminal vesicles and the bladder base resulting in urinary obstruction was a significant cause of death. Five patients (41.7 per cent) of stage C postmortem cases died of essentially "localized" prostatic carcinoma without distant metastases. Extensive dissemination of prostatic carcinoma was frequently associated with a relatively small and essentially localized primary prostatic lesion. The bladder base and/or seminal vesicles were pathologically involved in only 14.8 per cent of the 22 stage D postmortem cases.

Orchiectomy and/or estrogen therapy was instituted as soon as the diagnosis of prostatic carcinoma was histologically confirmed at this institution. Combined orchiectomy and estrogen therapy were the treatment of choice. Several recent reviews suggest that there may be little choice between orchiectomy alone, estrogens alone, or combined orchiectomy-estrogen therapy in terms of clinical benefit to the patient.[23-25] The findings of the present study generally support this concept. Patients treated with combined orchiectomy-estrogen therapy did marginally better in terms of the percentage survival than patients treated with either orchiectomy or estrogens. This difference was statistically significant at one year following the start of therapy (Fig. 1).

Death from unrelated causes is an important factor determining the prognosis of patients with prostatic carcinoma. The overall incidence of death due to causes unrelated to prostatic carcinoma was 39.4 and 55.4 per cent in the clinical and postmortem studies, respectively. The incidence of death from intercurrent diseases was inversely related to the stage of the prostatic carcinoma and the grade of the metastases. The work of the Veterans' Administration Cooperative Urological Research Group indicated that estrogen therapy (5 mg. of diethylstilbestrol daily) for prostatic carcinoma carried a substantially increased risk of death from cardiovascular disease.[9,24] In the present study it was shown that although the incidence of death from cardiovascular disease was markedly higher in estrogen than in nonestrogen-treated patients, this difference was statistically insignificant (Table V). There was also no significant difference in the percentage survival among patients treated with 1 mg. as compared with 5 mg. of diethylstilbestrol daily (Fig. 2). This study indicates that estrogen therapy does not significantly increase the mortality rate from cardiovascular disease. The high incidence of death from unrelated cancers among the patients treated with orchiectomy alone is unexpected and may require further evaluation. It most likely reflects patient referral patterns to this center. The survival rates and clinical patterns in this group of patients are in part different from other individual reports. The patient population at this categorical center, dependent on physician referral, may account for this feature to an unknown degree. Variable treatment for brief periods prior to admission at this center may also have influenced these observations. Nevertheless the completeness of follow-up (all save 8 dead) and duration of observation (ten years) in a concurrent group of patients provides a valuable standard to evaluate other concurrent results. Similar studies elsewhere may provide additional insight into these results.

Summary

Three hundred fifty-two patients with histologically proved prostatic carcinoma were investigated and treated at Roswell Park Memorial Institute during the ten-year period 1950 to 1959. All patients were followed until death or at least ten years after admission. In addition, the autopsy findings of 56 other patients with unsuspected prostatic carcinoma who died in the Institute during the same ten-year period were analyzed. The majority of patients had symptoms of urinary obstruction. The bones of the pelvis and spine, the frequent sites of metastases, were more often involved in high- rather than low-grade primary prostatic carcinoma. However, metastases to soft tissue (lymph nodes, liver, and lungs) can be as common as bony metastases in the advanced stages of the disease. Death from causes unrelated to prostatic carcinoma was an important factor determining the prognosis and was a significantly greater threat to patients with localized than with advanced prostatic carcinoma. The tumor grade of the metastatic lesions appeared to be of greater prognostic significance than the grade of the primary tumor. Combined castration-estrogen therapy produced a slightly better one- and two-year survival rate than treatment with either castration or estrogens. Estrogen therapy did not significantly increase the incidence of fatal cardiovascular diseases in this group of patients.

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PROBLEMS OF INSTITUTIONALIZED, SEVERELY BRAIN-DAMAGED PATIENTS

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Problems associated with diagnosis and care of institutionalized, severely brain-damaged patients are somewhat specialized. In evaluating each patient, family history, metabolic aspects, traumatic incidents, infective diseases, and congenital aberrations must be considered.

In this institution, we service 183 patients. It was found that the greatest incidence of brain damage was due to trauma, at or before birth. This agreed with the findings of Sharpe and Sharpe,[1] who found that in a consecutive series of 500 newborn infants, each of whom had a lumbar puncture in the first twenty-four hours of life, "9 per cent showed some evidence of intracranial bleeding." This also confirmed the work of Cruveilhier,[2] who described intracranial hemorrhage at birth with the later development of cerebral spastic paralysis.

Little,[3,4] MacNutt,[5] and others have contributed valuable postmortem observations concerning the frequent association of severe brain damage and neonatal intracranial bleeding.

Fischer[6] wrote that his postmortem observations have convinced him that, "10 per cent of deaths during the first month of life are chiefly due to cerebral birth injury."

Huenekens in 1923,[7] maintained that: "Recognition of cerebral hemorrhage of the newborn is the most neglected finding in their care and is the most important one."

In evaluating approximately 200 patients in an institution that deals only with severely brain-damaged children or young adults, the neurologic findings confirmed that trauma at or before birth, causing intracranial hemorrhage is a major cause of severe damage to the central nervous system.[8,9] In congenital causes, the family history of mental defect, psychosis, and incest were found to be valid factors. In metabolic causes, the abnormal protein, lipid, and carbohydrate factors were found to be present in a small percentage of cases.[10-12] In a number of cases, the children were normal at birth and developed an illness associated with rise in temperature and symptoms of disease in the central nervous system. These children, thereafter, showed evidence of severe brain damage, which was progressive in most cases. It is likely that these changes were due to encephalitis.

In our patient population, the majority of children have no insight and no understanding of even the most elementary means of communication. A moderate number have diminished sight or hearing, or both. A few patients are totally blind or deaf, or both. The greatest number of patients are unable to sit up or to feed themselves and are not capable of being trained to make their toilet needs known to the staff. Spasm in arms and legs is usual, but in the children who have had birth trauma, impaired motor function and spasticity are more marked on one side. Attempts at rehabilitation by physiotherapy do not give satisfactory results because an adequate number of trained personnel is lacking, and the nature of the defect is so severe that response is minimal. Skeletal defects seen in the limbs are osteoporosis and diminished growth and development. With severe spasticity the effect on the spinal column often results in kyphoscoliosis.

Nervous system signs are severe mental defect, strabismus, muscle spasm, absence of purposive movements, uncontrolled movements, difficulty in swallowing and breathing, autonomic defects resulting in severe constipation, bed sores, hypothermia, and diminished or excessive perspiration.

Endocrine deficiencies are prevalent in the women; breast formation is minimal, and menstruation may not take place at all or may be markedly deficient. In men, most patients will show undescended testicles, usually unilateral but sometimes bilateral. In the adult male secondary sex characteristics are deficient or absent.

Daily-care problems

The problems that are associated with a large group of institutionalized children are those due to abnormal function or absence of function associated with the patient's pathologic state. However, in addition to the foregoing, there are certain prevalent illnesses that seem to occur in the institutionalized, severely brain-damaged child: (1) infestation of the scalp, usually a fungus; and (2) upper respiratory infections, which may occasionally develop into pneumonia. The pneumonia is usually of two varieties, infective, either viral or bacterial, or aspiration, which is not uncommon owing to the patient's inability to breathe and swallow properly. This is a difficult problem to overcome in that the abnormality associated with breathing and swallowing is due to central nervous system dysfunction. Pneumonia is the most common cause of death in the severely brain-damaged patient.

Bowel dysfunction is another common problem and includes constipation. This may be caused by difficulty in vagal tone or lack of activity. Constipation is a constant problem and has to be treated both prophylactically and therapeutically.

Diarrhea is usually due to bowel infection due to Shigella or amoeba but occasionally may be due to diet.

Hepatitis, usually infective, is a frequent illness in this type of patient.

Allergies are manifested in skin eruptions or asthmatic attacks and are fairly frequent.

Dermatologic infections are occasionally found and become less frequent when adequate nursing care is available.

Pressure sores, caused by spasm of the limbs and restricted voluntary movements, are fairly frequent. The prevalance depends on the trained nursing care that is available.

Penile infections are occasionally found in the children who are old enough to carry out movements of masturbation.

Self abuse is a frequent occurrence in our patient population.

Limb fractures and dislocations will occasionally occur because of bone weakness, excessive spasticity, and poor technic in lifting and handling patients.

Epilepsy and status epilepticus: the majority of brain-damaged children suffer from epileptic attacks. These attacks may become so frequent and uncontrollable as to develop into status epilepticus.

Hypertrophic gingivitis is usually a result of diphenylhydantoin sodium (Dilantin) therapy for epilepsy. This is a common occurrence and may necessitate gingivectomy.

Anemia is prevalent in this type of institutionalized child because of feeding and swallowing difficulties and is of the hypochromic type.

Contagious diseases are possibly more prevalent in the institutionalized patient because of propinquity.

The care of each problem is a matter of good medical practice and personal experience and is not in any way an esoteric field.

Causes of brain damage and daily-care problems of institutionalized, severely brain-damaged patients are discussed. In evaluating each patient, family history, metabolic aspects, traumatic incidents, infective diseases, and congenital aberrations must be considered. A large number of these patients have suffered cerebral trauma at birth. Obstetricians and pediatricians should be alerted to the fact that intracranial bleeding is present in 9 per cent of newborn infants. Undue delay in carrying out definitive diagnostic tests and treatment have overloaded our institutions with patients whose conditions may have been remediable.

Conclusions

The causes of brain damage have been briefly discussed, and the daily care problems have been enumerated. A large percentage of institutionalized, brain-damaged patients have suffered cerebral trauma at birth. Obstetricians and pediatricians should be alerted to the fact that intracranial bleeding is present in 9 per cent of newborns. Any newborn infant who shows any suspicious signs or symptoms should be promptly seen by a pediatrician, or neurologist, or both, or a neurosurgeon should be called in if his services are needed. Undue delay in carrying out definitive diagnostic tests and treatment have overloaded our institutions with patients whose conditions may have been remediable.

Special centers are being built in Europe where expeditious diagnosis and treatment are being carried out. It would be remiss that the United States should be slow in implementing ideas that were initiated in this country by individual neurologic and neurosurgical specialists.

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MULTI-HANDICAPPED CHILDREN'S CENTER

Statistical trends in population

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Prior to 1969, there were no facilities in Nassau or Suffolk County serving a multihandicapped child. This was a hardship on the families of these children, and many were not receiving proper care. In June, 1969, the Child Development Center was started to fulfill the needs of these children. The scheme of operation of the Center is outlined. During its first year of operation, the Center served 600 children. An attempt is made to define statistical trends of the patients as regards age, sex, diagnosis, source of referral, family size, parents' educational background, and the occurrence of birth complications and prematurity.

The Nassau County Medical Center initiated a new service in June, 1969, aiming to serve the multihandicapped child with diagnostic and treatment facilities grouped under one roof. The aim was to provide better care by eliminating physical hardships resulting from fragmented services and multiple appointments. The specialized services incorporated in the project needed a closely coordinated team approach for the wide-ranging medical, psychological, and educational problems encountered. Children with a wide variety of neurologic problems were accepted, ranging from severe, uneducable invalids to mild forms of organic learning disabilities. Referral agencies were private physicians of the area, clinics, school psychologists, and social agencies.

Background

Nassau County has a population of 1,429,000 on a 298 square mile area.[1] The county contains a diversity of population groups, ranging from middle class, affluent communities to urban-type pockets of poverty. A 1968 estimate tabulated 20,000 families with an annual income of under $3,000. The age profile of the county is exceptional, with 45 per cent of the population under twenty-five years of age.

In its first year of existence, the Child Development Center saw almost 600 children. By tabulating some of the data obtained, certain trends were observed. It was felt that by examing such aspects as age, sex, diagnosis, sources of referrals, family background, and diagnostic considerations, a contribution could be made toward the better understanding of badly needed community health facilities.

Prior to the formation of the Child Development Center, no comprehensive services for the multihandicapped child existed in Nassau or Suffolk counties. Such a child, needing diagnostic and therapeutic services, had to travel from service to service and from agency to agency, with little or no coordination or cooperation existing between them. This resulted in inadequate, and often conflicting, diagnostic and therapeutic procedures for the patient. In addition, there was physical hardship for the parents and their families in getting from one service to another.

Nassau County's 56 school districts have a combined kindergarten to twelfth grade enrollment of approximately 331,000 students. In addition there are approximately 61,000 children in private and parochial schools of the county. Some handicapped children are educated in their local school districts. However, shared services have been developed in Nassau County to provide special education services to handicapped children. The special services schools of the Board of Cooperative Educational Services provides classes for 687 educable and trainable mentally retarded, 823 emotionally disturbed, and 813 brain-injured children.

In addition, there are voluntary agencies concerned with specific handicapping conditions. The Association for the Help of Retarded Children maintains a school for the education of mentally retarded children over the age of two-and-a-half and provides supporting services consisting of genetic studies, counseling for parents, and physiotherapy. The United Cerebral Palsy Association maintains a school for children between the ages of five and twenty-one, and evaluates and tests 1,000 cerebral palsied children each year. They also counsel parents. The Epilepsy Foundation provides counseling and guidance, and limited clinical and diagnostic services to epileptic children. The Nassau Center for Emotionally Disturbed Children provides residential treatment for 25 and day treatment for 75 severely emotionally disturbed children. All of these agencies provide services for specific handicapping problems. However, no agency is equipped to deal with a multiply handicapped child. Such children are viewed only from the individual agency's main concern and are referred elsewhere if other conditions exist.

Meadowbrook Hospital is the Nassau County public general hospital. It currently houses 607 beds and is constructing a new facility which will increase the bed capacity to 771. It maintains 55 outpatient clinics. In 1968, 16,248 patients were admitted and 69,405 patients were treated in the outpatient department.

The Nassau County Board of Cooperative Educational Services, having to cope with proper educational placement of large numbers of handicapped children, appreciates the pressing need for such a multidisciplined diagnostic service for the multihandicapped child. They have shown complete cooperation and, to assist the Child Development Center, have assigned and supported 3 professionals: coordinator, a psychologist, and an educational consultant to the Center staff, as part of the diagnostic team. The Board of Cooperative Educational Services administration anticipates using the Child Development Center as its diagnostic center.

Suffolk County, with a population of 1 million, has no public general hospital. It purchases services for its medically indigent from its 17 voluntary and proprietary hospitals, and from Nassau County facilities when necessary. There were, for example, 505 inpatients admitted to Meadowbrook Hospital from Suffolk County in 1968. Since the need for a diagnostic treatment center for multihandicapped children is equally great in Suffolk, the services of the Child Development Center have been called on to serve Suffolk residents as well.

The Nassau County Medical Center has reorganized its services for the delivery of care for the multihandicapped child. With the creation of the Child Development Center, there now exists a multiunit medical center with a multidisciplined developmental medicine approach. Within this center, the multihandicapped child no longer has to travel between services; all services and equipment necessary are offered in one facility in a fixed location. In addition, fixed personnel are available without rotation so that the program can be viewed as an overlapping diagnostic field, and one in which everyone learns everyone else's discipline. All specialists involved are viewed as a team, and team conferences are held regularly. Such an approach allows the hospital to develop new and better therapeutic programs. In addition, the center serves as a consultation center for the many voluntary child care centers in the community.

At present, the program includes the newborn child to the fifteen-year-old. It is hoped eventually to include vocational guidance, to utilize all existing community resources, and to coordinate the available services, adding those not provided.

The Child Development Center functions according to the following scheme of operation:

I. Referral sources
  A. Clinics (hospital, well baby, mental health)
  B. Private physicians, psychologists, and so on
  C. Schools
    1. Public, parochial, private
    2. Headstart programs
    3. Board of Cooperative Educational Services
  D. Agencies, public and voluntary
    1. Department of Social Services
    2. Health department public health nurses
    3. New York Association for Brain Injured Children
    4. Epilepsy Foundation, and so on
  E. Patients (families and friends)

II. Diagnostic evaluation
  A. Intake (by staff social worker)
    1. Complete family history and survey
    2. Records from schools, previous medical, psychological examinations, and so on.
  B. Complete medical history and physical examination by staff pediatrician
  C. Diagnostic evaluations by appropriate specialists
    1. Neurologist
    2. Audiologist
    3. Speech-language therapist
    4. Ophthalmologist
    5. Psychologist
    6. Psychiatrist
    7. Physiatrist
      a. Occupational therapist
      b. Physical therapist
    8. Educational consultant
    9. Nursery school teacher (diagnostic nursery school)
  D. Laboratory studies (on all patients)
    1. Complete blood count
    2. Urinalysis
    3. Tine test
    4. X-ray films
    5. Electroencephalograms
    6. Special metabolic and chromosome studies ordered as indicated

- E. Team conferences
    - 1. Diagnosis
    - 2. Establish therapeutic program
    - 3. Determine disposition
        - a. Follow-up care in Child Development Center
        - b. Referral to other existing agency
    - 4. Send report and recommendation to source of referral
- III. Therapeutic procedures: on-going therapy and follow-up care to include
    - A. Physical and occupational therapy
    - B. Perceptual motor training
    - C. Visual motor training
    - D. Seizure control
    - E. Speech and language therapy
    - F. Psychiatric therapy
    - G. Medication program
- IV. Parent counseling, individual or group (as provided by physicians, psychologist, social worker)
    - A. Interpret diagnosis and therapeutic recommendations.
    - B. Set up adjunct home programs of management.
    - C. Manage secondary behavioral problems.

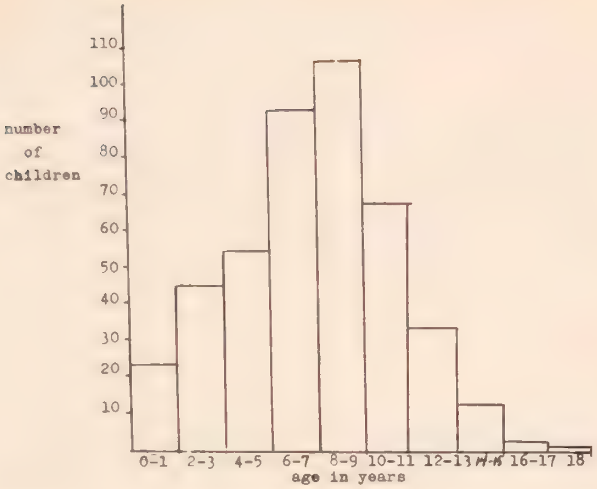

FIGURE 1. Age distribution of children treated during the first year of operation of Child Development Center.

In the next five years the Child Development Center hopes to establish itself as a comprehensive unit for the diagnostic evaluation and therapeutic management of children and adolescents in Nassau County who are handicapped by physical, mental, or educational disabilities. It is attempting to provide opportunities for education and training of paramedical personnel to work with these patients and to establish a community education program for medical and paramedical personnel in conjunction with existing agencies so that they may more easily recognize and refer such patients. In addition, the center hopes to develop research programs aimed at clarifying and expanding methods of diagnosing and treating handicapped youngsters.

In its first year of existence, the Child Development Center saw almost 600 children who have been referred from schools, pediatricians, Meadowbrook Hospital, Board of Cooperative Educational Services, or social agencies for a variety of reasons. In this review we are attempting to define the patterns of that first year. This statistical[2] review examines such aspects as age, sex, diagnosis, sources of referral and other agencies, family size, parents' educational background, and complications of birth and prematurity.

Age

The average age of all patients was 7.83 years. The breakdown of patients by age is shown in Figure 1. The average age of children with specific problems was: emotional disturbance, 8.54 years; minimal cerebral dysfunction, 8.62 years; mental retardation, 8.19 years; multihandicaps. 8.50 years; and physical handicap, 3.95 years. The cases of children with emotional disturbance, mental retardation, minimal cerebral dysfunction, and multihandicaps are very close in average age. The relatively late age at which the center is seeing these problems is significant when the following two factors are considered: (1) These children are, on the average, three to three-and-a-half years past the starting school age, and many problems can develop in this time. For example, while 22 per cent of preschoolers at the Child Development Center have emotional problems, this figure increases to 44.9 per cent among all patients, and 65 per cent of all patients are in the six- to twelve-year-old group. (2) By the age of eight, the superego has already become fixed, and it is difficult for the therapist to effect a change in personality in those cases in which such an approach would be useful.

The cases of physically handicapped children are significantly younger than the others; these problems are easier to recognize and treat at an earlier age.

The average ages of children when their handicaps are first recognized and diagnosed are given in Table I.

Sex

Of all patients seen, 131 were females (29.9 per cent) and 307 were males (70.1 per cent). It is significant that among patients with minimal cerebral dysfunction and emotional disturbance, the percentage of males is even higher than the average for all patients: 84 per cent of minimal cerebral dysfunction patients were male, and 76 per cent of emotionally disturbed patients were male.

Among children with physical handicap and mental retardation, the percentages indicate no significant deviation from chance: 53 per cent of physically handicapped children were male, and 51 per cent of mentally retarded children were male.

TABLE I. Average age at time of first recognition and first diagnosis of handicap

Problem	Age (Years)
First recognized minimal cerebral dysfunction	5.36
First diagnosed minimal cerebral dysfunction	7.10
First recognized emotional disturbance	5.90
First diagnosed emotional disturbance	7.00
First recognized physical handicap	0.62
First diagnosed physical handicap	1.10

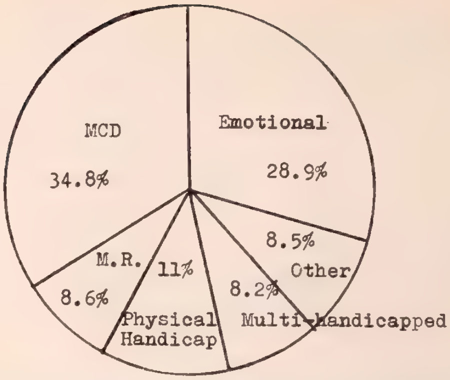

FIGURE 2. Diagnosis of children seen during first year of Child Development Center.

Diagnosis

An analysis of cases in which diagnosis is the primary problem is given in Figure 2. The cases in which diagnosis is involved at all are given in Figure 3. Analysis showed that (1) The degree of emotional involvement is significantly greater in cases from the Board of Cooperative Educational Services than it is overall; (2) the percentage of cases of minimal cerebral dysfunction referred from school psychologists is significantly greater than the overall percentage of minimal cerebral dysfunction cases; (3) the percentages of the types of cases referred from physicians and private psychologists are not significantly different from the overall distribution; and (4) the percentage of cases of mental retardation and physical handicap referred from Meadowbrook Hospital is significantly greater than the overall percentage of such cases.

Referrals

Figure 4 shows the percentage of cases referred to the Child Development Center by the major sources already mentioned. Figure 5 shows the percentages of cases of the handicap categories referred by the major sources. Analysis revealed that (1) A majority of the cases of minimal cerebral dysfunction are referred by school psychologists; (2) the percentage of emotionally disturbed cases from Meadowbrook Hospital is significantly less than the overall percentage referred from the hospital; (3) a significant majority of the cases of physical handicap are referred from Meadowbrook Hospital; and (4) a majority of the cases of mental retardation are referred from Meadowbrook Hospital.

Figure 6 shows the percentages of cases that had been seen by agencies other than the referral agency.

Family size

Figure 7 shows a breakdown of family size among families from the patient pool of the Child Development Center. The average size of family among all patients was 3.47 children per family. Families of patients with minimal cerebral dysfunction averaged 3.66; emotionally disturbed patients, 3.10; and physically handicapped patients, 2.69. The Nassau County norm is 2.27 children

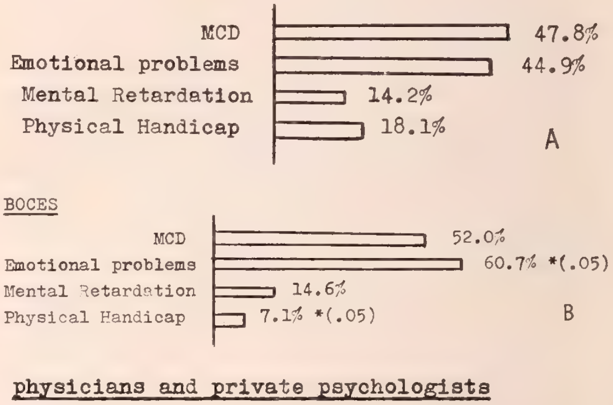

FIGURE 3. Frequency distribution of diagnoses from referral sources. (A) Overall, (B) from Board of Cooperative Educational Services, (C) from physicians and private psychologists, (D) from school psychologists, and (E) from Meadowbrook Hospital.

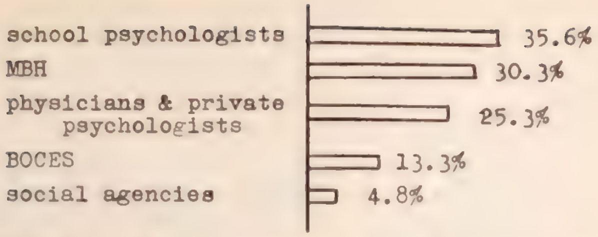

FIGURE 4. Referral sources of most of patients seen in first year of operation of Child Development Center

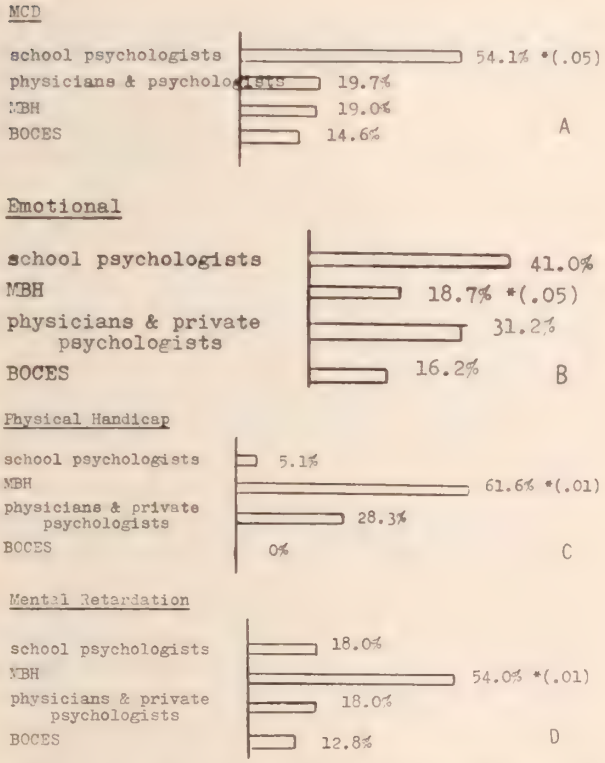

FIGURE 5. Sources of referral of each type of handicap. (A) Minimal cerebral dysfunction, (B) emotional disturbance, (C) physical handicap, and (D) mental retardation.

per family (from the 1960 U.S. census[3]).* The number of children per family among the Child Development Center population is significantly greater than that of Nassau County as a whole.

Education

The average number of school years completed by the parents of Child Development Center patients was 12.4 years, and the median number of years completed was 12. The median number of years completed for Nassau County as a whole was 12.2, according to the 1960 U.S. census.[3] These figures are based on the scale of 1–6 is equal to elementary school, 7–9 is equal to junior high, 10–12 is equal to high school and 13 plus is equal to college. Figure 8 compares the education of Child Development Center families with that of Nassau County as a whole. Analysis shows that the parents of Child Development Center patients represent a fairly good educational distribution,

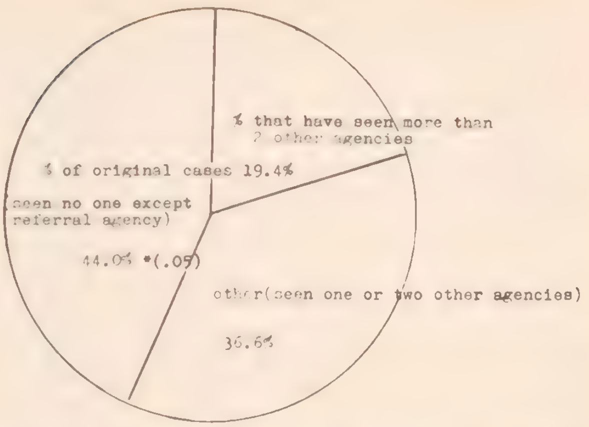

FIGURE 6. Percentage of cases seen by agencies other than referral agency.

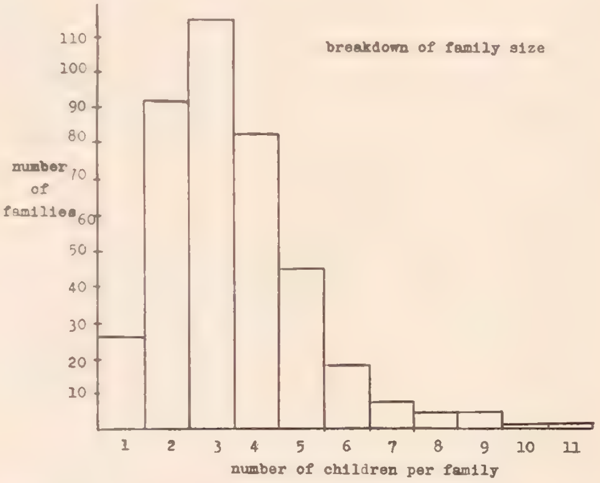

FIGURE 7. Size of families in patient pool of Child Development Center.

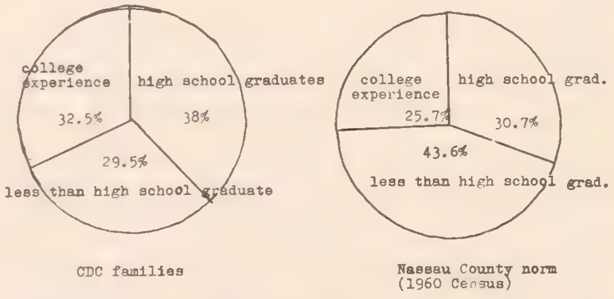

FIGURE 8. Education achieved by families of patient pool of Child Development Center compared to Nassau County as a whole.

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*This statistic is based on figures which compare the number of children under eighteen years old with the number of families with children under eighteen.

TABLE II. Educational level achieved and family size among families of Child Development Center patients

Education of Parents	Number Children Per Family
College experience	3.05
High school graduates	3.39
Less than high school graduate	3.69

and that parents of Child Development Center patients seem to be somewhat more educated than the norm. Two factors, however, should be kept in mind with this guarded observation. First, children whose parents are in a young-age bracket comprise the majority of the Child Development Center population. Second, some people could not be reached because they had no telephones or their service was discontinued. It is reasonable to assume that such people were of lower social and educational status and would have brought down the average educational level. Table II compares family size and educational level of families of Child Development Center patients.

Prematurity and birth complications

The frequency of premature births in the Child Development Center population is 11.6 per cent, of 346 patients. The Nassau County norm for 1968 was 7.4 per cent.[4] Thus, there is a significantly greater percentage of premature births among Child Development Center patients than in Nassau County as a whole.

Table III shows the most common problems encountered during pregnancy, delivery, and the neonatal period.

TABLE III. Most common complications of pregnancy in a sample of 365 cases

Complication	Number	Per Cent
Toxemia	10	2.7
Neonatal jaundice*	15	4.1
Maternal convulsion	9	2.5
Rubella†	3	. . .
Placenta previa	3	. . .
Breech delivery	12	3.3
Low forceps delivery	27	7.4

* Exchange transfusions were performed in 2 of these cases.

† Two of these occurred in the first trimester of pregnancy, and 1 in the third trimester.

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UNIPOLAR SUBCLAVIAN AND BIPOLAR FEMORAL CATHETER ELECTRODES TO PACE HEART

Comparison of effectiveness

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Twelve bipolar electrodes introduced through the femoral vein, and thirteen unipolar semifloating catheter electrodes introduced through the subclavian vein, were compared in patients with proved myocardial infarction. There were few complications with either method. The bipolar electrode was effective for longer periods of time than was the unipolar electrode. Introduction of a semifloating catheter through the subclavian vein is ideal for emergency situations because cardiac pacing can be achieved easily and rapidly.

The use of temporary intracardiac pacing electrodes has become widely accepted in the treatment of atrioventricular conduction disturbances and severe cardiac rhythm disorders associated with an acute myocardial infarction.[1] The standard method of pacing catheter insertion requires the use of fluoroscopy. The ease with which a floating electrode catheter can be introduced via the subclavian vein using electrocardiographic monitoring makes this an attractive alternative method. This study was undertaken to compare (1) the reliability of ventricular capture in the two methods during the first seventy-two hours after catheter insertion, and (2) the rate of complications of the two methods.

Method

The protocol of the coronary intensive care unit at our institution called for the insertion of a pacemaker catheter in every patient with proved myocardial infarction after the written consent of the patient had been obtained. The procedure was routinely performed by members of the house staff.

For purposes of this study, patients were randomly assigned to two groups. In one group, a unipolar Elecath S-F electrode catheter was introduced percutaneously through the subclavian vein and positioned in the right ventricle under electrocardiographic control, using the methods of Mobin-Uddin *et al.*[2] In the other group, a bipolar Goetz pacing catheter was introduced percutaneously through the femoral vein, according to the method described by Seldinger,[3] and advanced to the right ventricular apex under fluoroscopic control. Patients with chronic obstructive pulmonary diseases were routinely included in the second group. The treatment of patients in both groups was not influenced by the method of catheter introduction. All patients were anticoagulated with intravenous heparin. At the time of pacemaker catheter insertion by either method, optimal position was established in the following ways:

I By obtaining intraventricular electrocardiogram showing
  A. Large ventricular complexes recorded from the catheter tip (Fig. 1).
  B. Slight trace elevation, the so-called current of injury, signifying that the catheter tip was adjacent to the endocardium.
II. Capture of the ventricle with minimal current (Fig. 2).

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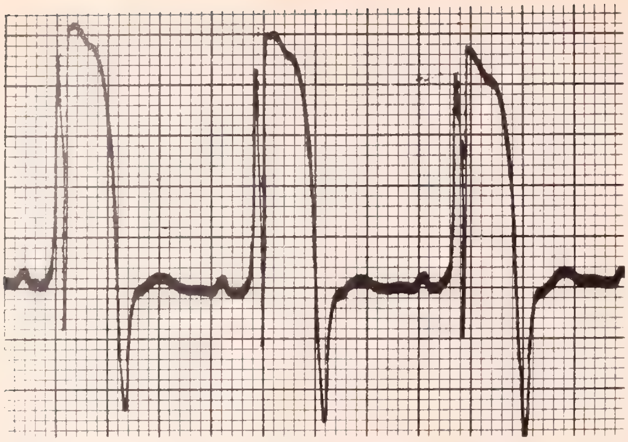

FIGURE 1. Electrocardiogram recorded from tip of pacing catheter showing intraventricular position demonstrated by large QRS complexes and "current of injury."

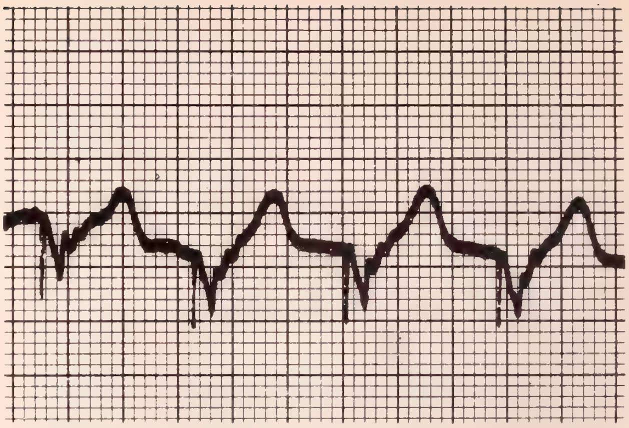

FIGURE 2. Surface electrocardiogram showing capture of the right ventricle.

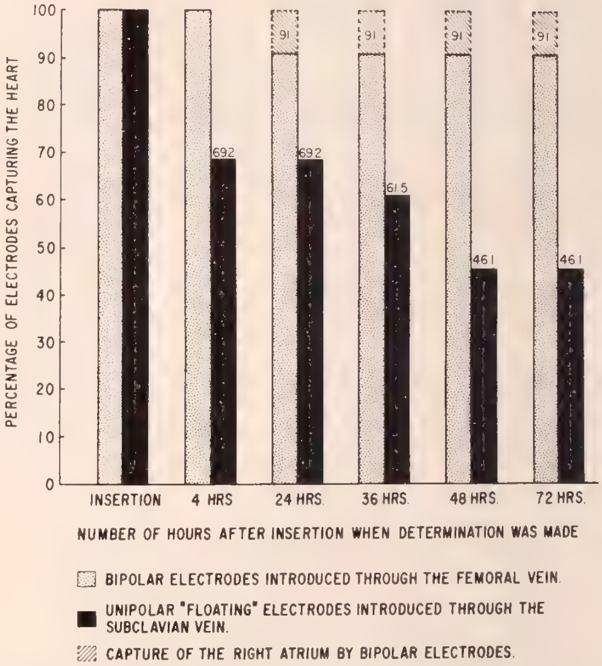

FIGURE 3. Percentage of electrodes of each type able to capture the heart at varying times after insertion. Number at the top of each ventricle bar signifies the percentage of electrodes capturing right ventricle. At all times 100 per cent of bipolar electrodes could capture heart; 91 per cent were able to capture right ventricle; and 9 per cent, the right atrium.

Once proper position was obtained, the catheter was secured to the skin by a suture near the site of entry into the vein, and the terminal connected to a Medtronic dual pacemaker, model number 5840. In the case of the unipolar electrode, a steel suture inserted several centimeters from the catheter was used as the indifferent electrode. Subsequently, at two-hour intervals for six hours, thereafter at twelve-hour intervals for twenty-four hours, and then daily for a total of three days; intracardiac electrograms were obtained and the capacity to pace was tested.

In cases where the catheter electrode failed to capture the ventricle, an electrocardiogram was recorded from the catheter tip to determine the position of the catheter. If the catheter was found to be in the ventricle, the intensity of stimulation was increased to attempt capture. If the ventricle could not be captured at the maximum acceptable stimulus intensity, an attempt was made to reposition the electrode to effect capture. If the electrode could not be repositioned under sterile conditions, then the system was considered to be nonfunctioning.

Results

Twelve bipolar electrodes were introduced through the femoral vein under fluoroscopic control. All 12 of the electrodes were able to capture the ventricle at the time of insertion (Fig. 3). At the end of six hours, 1 bipolar electrode was displaced into the right atrium where it captured consistently. It was elected not to reposition the electrode. At the end of forty-eight hours, 1 functioning right ventricular bipolar electrode was withdrawn electively at the request of the patient, who signed out of the coronary care unit against advice. Although the bipolar electrodes could consistently capture the heart for the entire seventy-two-hour period during which they were in place, only 11 of the 12 positioned in the ventricle were capturing that chamber at the end of seventy-two hours. Two bipolar electrodes had to be repositioned during the study. One was repositioned at four hours because it slipped into the right atrium. The second also slipped into the right atrium and was repositioned after twelve hours because the patient was in third-degree heart block.

Thirteen unipolar semifloating catheter electrodes were introduced through the subclavian vein. All captured the right ventricle at the time of insertion (Fig. 3). After four hours, 4 electrodes failed to capture the heart; after thirty-six hours a fifth electrode failed to capture, and after forty-eight hours a sixth and seventh electrode failed to capture. All except 1 of the electrodes that failed to capture the heart were still located in the right ventricle. Two other unipolar subclavian electrodes were successfully repositioned into a portion of the right ventricle where cardiac capture was effected.

Complications

Few complications secondary to the introduction of these electrode catheters were observed in the course of this study. One patient, in whom a bipolar catheter was introduced, developed atrial fibrillation which spontaneously reverted. Some patients in both groups developed transient, premature, ventricular contractions at the time of insertion, which either subsided spontaneously or were suppressed by lidocaine. One patient who had a prophylactic unipolar electrode in place developed atrioventricular dissociation four hours following electrode introduction. At that time the electrode was found to be unable to capture the ventricle. The patient soon thereafter developed a ventricular tachyarrhythmia which did not respond to therapy, and the patient expired before another electrode could be introduced.

A single patient developed a hematoma with persistent leak of blood over a period of twelve hours following the percutaneous femoral vein insertion of a bipolar electrode catheter. The bleeding was finally controlled with the use of sandbags and a pressure dressing on the groin. In this patient heparin therapy was discontinued until twelve hours after the bleeding stopped, at which time it was restarted without complication.

Of the 25 catheter electrodes inserted during the study, pacing was used for third-degree atrioventricular block in 1, for 2:1 atrioventricular block in 2, for severe sinus bradycardia in 3, and in another for atrial fibrillation with a slow ventricular response. Thus, 7 of the 25 catheters introduced were used clinically during the first seventy-two hours of their insertion following the acute myocardial infarction.

Comment

There are several procedures for introducing pacing catheters into the right ventricle for temporary cardiac pacing. Two of these, subclavian "unipolar" and femoral "bipolar," are described here.

The subclavian route is faster, can be used without moving the patient, and requires little equipment.[2] The femoral route takes longer; requires more equipment, including a fluoroscope with image intensifier; and usually involves moving the patient.[3] The femoral route can be made less cumbersome if a room with the necessary equipment, ready for immediate use, is set aside next to the coronary intensive care unit for this purpose.[4] This is the case in our institutions.

There are complications common to both methods: catheter-induced arrhythmias[5,6]; perforation of the myocardium[5,6]; bleeding at the site of venipuncture; inadvertent arterial puncture, either femoral or subclavian[7]; pulmonary embolism[8]; catheter breakage; phlebitis; and infection.[4,9] An additional danger with the subclavian route is that of pneumothorax[7] and air embolism. Except for one episode of atrial fibrillation, occasional premature ventricular contractions on insertion, and one episode of bleeding in the course of introduction of a femoral vein bipolar catheter, we have not met any of the previously described complications in our hospitals in this small series, even though the procedure was carried out by members of the house staff after an initial period of supervision.

A previous study utilizing the Elecath S-F catheter introduced via the subclavian vein showed that in 54 of the 83 patients, the catheters passed were able to capture the heart after seventy-two hours.[7] However, 12 of these catheters were passed under fluoroscopic control, which affords better placement of the catheter in the apex of the right ventricle. These investigators state that 96 per cent of their electrodes were functioning at the time of removal. However, the previous study is not comparable to our own, since a large number of the electrodes were removed electively prior to seventy-two hours and their reliability could not be established.

On the basis of the data presented, it appears that, in the hands of house officers, the bipolar femoral technic can be depended on to be in the proper position to effect pacing more often than can the unipolar electrode, and that the reliability of the former over a seventy-two hour period approaches 100 per cent. Thus at the present time, bipolar femoral pacing electrodes are routinely used when reliable temporary intracardiac pacing is required, except when the patient's condition requires rapid placement of an electrode into the right ventricle or when there is an obstruction of the inferior vena cava.

Summary

The reliability and ease with which pacing could be achieved by bipolar pacemaker catheters introduced through the femoral vein and positioned by fluoroscopy was compared with that achieved by unipolar electrode catheters introduced via the subclavian vein using electrocardiographic monitoring only. It was found that (1) there were minimal complications with either method in the hands of the house staff, (2) the bipolar electrode introduced under fluoroscopy

was effective for longer periods of time than the subclavian unipolar electrode, and (3) the method of introducing a semifloating catheter through the subclavian vein is ideal for emergency situations because of the ease and speed with which cardiac pacing can be achieved.

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SYSTEMIC 5-FLUOROURACIL IN HEPATIC METASTASES FROM PRIMARY COLON OR RECTAL CANCER*

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Thirty-five patients with metastases to the liver from primary colon and rectal cancers received intravenous administration of 5-fluorouracil, usually at the time of discovery of the metastases. The results of this therapy are thoroughly analyzed. Although there was no significant increase in life expectancy, during the early months of therapy a larger number of patients were kept alive for longer periods. About 10 per cent of the patients displayed tumor shrinkage of 50 per cent or more, and about 30 per cent displayed some subjective response. Several side effects of the 5-fluorouracil are noted.

The problems regarding the treatment of metastases to the liver from primary cancer of the colon and rectum are great. They become particularly perplexing when one discovers an asymptomatic metastasis in the liver at the time of an exploratory laparotomy for the primary cancer. Should definitive therapy be instituted immediately? The majority of metastases to the liver not discovered at the time of the primary operation, but which manifest themselves at a later date, are symptomatic.

Many surgeons, stimulated to "do something" when a metastatic deposit is discovered in the liver during an operation for a cancer of the colon or rectum, have instituted various forms of treatment in an effort to control the metastases in the liver.[1-13] One method frequently utilized is the administration of a course of pyrimidine antagonist fluorouracil.[11-13] The route most frequently utilized, as judged by reports in the literature, is the intravenous one. Other routes which have been utilized have been the umbilical vein, hepatic artery, and the oral route. We have treated patients with metastases to the liver by each of these methods. This report consists of our experience in the treatment of 35 patients with metastases to the liver treated by the intravenous administration of 5-fluorouracil.

Materials and methods

Of 192 patients with metastases to the liver from primary colon and rectal cancers treated by various modalities at the Pack Medical Group and Foundation, 35 received a course of therapy consisting of the intravenous administration of 5-fluorouracil. The treatment was usually instituted as a hospital procedure for those patients in whom the metastases were discovered at the time of the operation for the primary cancer. Therapy for the metastases was usually instituted from five to seven days after the operative procedure. For those patients who presented themselves at a later date, after the treatment of the primary cancer, because of symptomatic hepatic metastases, treatment was instituted as soon as the diagnosis was established. The usual course of treatment consisted of 500 mg. of 5-fluorouracil given in 1 L. of intravenous solution daily for a total dose of between 50 and 90 mg. per kilogram. This was usually followed by a maintenance dose consisting of weekly or bi-weekly intravenous injection of 500 mg. of 5-fluorouracil as an office procedure.

Of the 35 patients, 20 were males and 15 were females. The age of the males averaged sixty years and varied between thirty and seventy-eight years. The females were slightly younger; their ages averaged fifty-five years and varied between thirty-five and seventy-six years.

The location of the primary cancer evaluated according to the stage of hepatic involvement is shown in Table I. The staging is one which we

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* Aided by grants from the Janet Hetherington Cancer Fund and the Martin Farber Fund for Cancer Research.

TABLE I. Number of patients, location of primary cancer, and stage of hepatic involvement

Location of Primary Cancer	Stage I	Stage II	Stage III	Stage IV
Rectum	6	3	2	2
Sigmoid	4	2	3	1
Descending colon	2	1	2	1
Transverse colon and splenic flexure	1	1	0	0
Cecum, ascending colon, and hepatic flexure	2	1	1	0
TOTAL	15	8	8	4

TABLE II. Survival of untreated patients with metastases to the liver from colon and rectal carcinoma

Author	Number of Patients	Method of Treatment	Average Duration of Life (Months)
Stearns and Binkley[9]	32	Palliative resection of primary cancer	11
	28	Biopsy and diversion	8
Pestana *et al.*[14]	353	None	9
Swinton, Samann, and Rosenthal[15]	41	Not recorded	8.5
Jaffe, Donegan, Watson, and Spratt[16]	177	None	5
Bengmark and Hafstrom[17]	38	None	5.7
Young and Golbey[18]	25	None	10

have arbitrarily determined to aid in evaluating the results of the different forms of therapy: stage I, less than 10 per cent of the liver is involved by cancer; stage II, from 20 to 30 per cent of the liver is involved by cancer; stage III, from 30 to 50 per cent of the liver is involved by cancer; and stage IV, more than 50 per cent of the liver is involved by cancer. A plus sign after the stage indicates extrahepatic metastases.

In this group, approximately one third of the patients had their cancers discovered at the time of laparotomy, and two-thirds developed metachromous metastases. It will be noted that there were 13 patients with primary cancers of the rectum, 10 with primary cancers of the sigmoid, 6 whose initial cancers existed in the descending colon, 2 with primary cancers of the transverse colon and splenic flexure, and 4 with cancers arising in the cecum, ascending colon, or hepatic flexure. Table I also demonstrates that 15 patients were classified as stage I, 8 as stage II, 8 as stage III, and 4 patients as stage IV.

Results

As a means of aiding the evaluation of the overall results of different modalities of treatment, we have utilized an empiric formula.

$$\text{Result} = \frac{\text{Longevity} + \text{Response (Subjective, Objective)}}{\text{Risk} + \text{Trauma} + \text{Expense}}$$

The longevity, which is the most important accomplishment, plus the response (objective and/or subjective) are placed in the numerator. In the denominator are the risk to the patient, the trauma, and the expense. In the United States, where certain centers may develop a reputation for treating a certain form of cancer, patients will travel great distances with their families and be subjected to tremendous expense.

The systemic administration of 5-fluorouracil, when analyzed according to the factors shown in the denominator of this formula, is worthwhile in that it carries with it very little risk, there is practically no trauma, and the expense is minimal, in contrast to a major hepatic lobectomy where the risk, trauma, and expense are high.

As a basis for evaluating the effects of 5-fluorouracil given systemically, comparison is made with a number of reports in the literature which present the survival of patients who have had metastases to the liver from colon and rectal cancers, but whose metastases were not treated (Table II).[9,14–18] It may be noted that the values extend from five months as reported by Jaffe *et al.*[16] to eleven months as reported by Stearns and Binkley.[9] The patients reported by Stearns and Binkley were treated by palliative resection, which suggests the metastases were not extensive. The average survival of the entire group equals 8.5 months.

TABLE III. Survival of patients with metastases to the liver from primary rectal or colon cancer treated by intravenous 5-fluorouracil (per cent)

Author	Survival in Months After Diagnosis of Metastases to Liver									
	3	6	9	12	15	18	21	24	27	30
Ariel: systemic intravenous 5-fluorouracil (35 Patients)	90	70	45	40	35	30	20	15	10	0
Jaffe *et al.*:[16] no treatment (177 Patients)	76	40	25	20	...	...	...	...	...	...

Survival of patients treated by intravenous 5-fluorouracil. The average duration of life of the 35 patients equalled nine months. All are dead with the exception of 2 males, 1 who survived thirty-two months and 1 who survived twenty-five months. The average survival in months after the diagnosis of metastases in the liver is shown in Table III. For comparative purposes, the 177 patients reported by Jaffe *et al.*[16] who received no treatment, are also presented in this table. An analysis of Table III reveals a somewhat increased

TABLE IV. Survival of patients treated with 5-fluorouracil analyzed according to stage of hepatic involvement

Stage	Number of Patients	Average Duration of Life (Months)
I	15	10
II	8	4
III	8	2
IV	4	1

TABLE V. Survival of patients with metastases to liver treated by systemic 5-fluorouracil

Author	Number of Patients	Average Duration of Life (Months)
Young and Golbey[18]	15	14
Rapoport and Burleson[13]	61	8.5
Ariel*	35	9

* Present report.

prolongation of life during the earlier months, following intravenous 5-fluorouracil treatment, compared with those who received no therapy. Thus, at three months in our series, 90 per cent of the patients were alive, whereas of those patients who received no treatment, 76 per cent were alive. At nine months, the patients who received no therapy yielded a 25 per cent survival rate, whereas those patients who received 5-fluorouracil manifested a 45 per cent survival rate. At the end of one year, 45 per cent of our patients were alive, whereas in the series by Jaffe, *et al.*,[16] only 25 per cent were alive. The overall survival is not significantly greater in those patients who received the 5-fluorouracil when compared with those who received no treatment; there was, however, a larger number of patients alive for longer periods during the early months after therapy.

Table IV reveals the average survival in months when the data are analyzed according to the stage of the hepatic involvement. Of 15 patients with stage I the average survival was ten months, whereas those classified as stage III survived on the average for only two months. Of the 4 patients classified as stage IV, the average survival was one month. We have abandoned treating patients in stage IV because of the results which have been uniformly poor.

Analysis of our data regarding the influence of the location of the primary tumor and the prognosis revealed no difference. The figures are small, but this finding compares with those of other authors. The effect of sex on survival revealed no significant difference. Rapoport and Burleson[13] noted a somewhat improved survival of males over females.

Of the 12 patients whose metastases were discovered at laparotomy the average survival was twelve months. Of 23 patients who were treated after symptoms had developed, the average survival was 6.5 months.

Objective and subjective responses. Approximately 10 per cent of the patients manifested a distinct objective response by tumor shrinkage of approximately 50 per cent or more. In 2 of these patients, hepatic gammascans revealed this shrinkage.

It was more difficult to evaluate the subjective response. It was estimated that approximately 30 per cent of these patients manifested some subjective response. One cannot be certain whether the subjective response was the result of 5-fluorouracil therapy or whether good nursing care and the administration of crystalloids, fluids, and blood contributed to the subjective improvement.

Toxicity. Ten per cent of the patients developed a leukopenia below 3,000 cells per cubic millimeter. In 1 patient, it was believed that the 5-fluorouracil produced an anemia, and 5 patients developed ulceration of the mouth and throat. One patient developed melena and hematemesis which was believed to result from the effect of the 5-fluorouracil on the gastrointestinal tract. This latter patient had been treated previously with other chemotherapeutic agents, and he expired. It is believed that the 5-fluorouracil contributed to the expiration.

Comment

The patterns of behavior of patients who have metastatic cancer of the liver are extremely variable and unpredictable. Thus, some patients live for prolonged periods with no therapy whatsoever. Swinton, Samann, and Rosenthal[15] reported 5 patients who lived thirty months or longer with no therapy. It is necessary to distinguish whether the neoplasms are asymptomatic and are discovered inadvertently during an exploratory procedure, or whether a cancer has grown and spread to such a degree that it produces symptoms, when one determines the survival of patients with metastatic cancer to the liver. The latter group would be expected to have a much lower survival rate than the former.

The results of analysis of the survival in months of two other reported series of patients with metastases from primary colon or rectal cancer and treated by the intravenous administration of 5-fluorouracil are presented in Table V. Young and Golbey,[18] who reported on 15 patients, yielded an average survival of fourteen months. Rapoport and Burleson,[13] who reported on 61 patients treated with 5-fluorouracil, demonstrated an average survival of 8.5 months. Our figure of nine months for 35 patients so treated, is not significantly different from the other reports in the literature.

This slight, rather insignificant survival in life after 5-fluorouracil treatment would focus on certain treatment policies. As a result of these observations, it has become our policy not to treat by systemic chemotherapy a patient who is asymptomatic but harboring cancer which has metastasized to the liver from a primary cancer of the colon or rectum. On the other hand, a patient who does have symptoms such as pain, anorexia, and a feeling of bloating which has been produced as the result of the large size of the cancer, are treated by systemic 5-fluorouracil with an objective response of 10 per cent and a subjective response of 30 per cent in order in their series. Rapoport and Burleson[13] reported that 5 of their 44 patients available for follow-up were considered to have an objective response which they define as "tumor shrinkage within 50% or greater." They make no mention of subjective response.

Although other metastases in addition to the hepatic metastases may occur with primary colon or rectal cancer, such as local recurrence or metastases to lymph nodes, many cases are observed in which metastases are limited to the liver. An average survival of nine months of patients with metastases to the liver has influenced our conduct of treating the primary cancer. When possible, a palliative segmental excision of the primary cancer is performed. For cancer of the rectum, we do not believe that an abdominal perineal resection should be performed, because of the difficulty of adjusting to a colostomy, especially in the older-age group and particularly when the life span is rather short. Colostomies are not performed unless obstruction exists. The poor results obtained by systemic 5-fluorouracil administration have stimulated our investigation of the use of other methods of administering anticancer agents. These have consisted of the umbilical administration of 5-fluorouracil, the administration of the drug via the hepatic artery, and efforts to consolidate the gains obtained by chemotherapy by the intrahepatic-arterial administration of radioactive isotopes in the form of Yttrium-90 microspheres as a means of administering internal irradiation. These results will be reported in subsequent communications.

Summary

Thirty-five patients with metastases to the liver from primary colon or rectal cancer were treated by the intravenous administration of 5-fluorouracil. The average duration of life was not significantly increased from those patients who received no treatment. A large number of patients survived longer periods during their period of survival. Twelve patients whose metastases were discovered at the time of operation for the primary cancer survived an average of twelve months. Twenty-three patients who were referred for treatment after symptoms developed survived an average of 6.5 months.

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DESICCATED THYROID AND LEVOTHYROXINE IN HYPOTHYROIDISM

Comparison in replacement therapy*

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Serum lipids and thyroid function tests were performed serially in 10 hypothyroid patients given long-term replacement therapy with desiccated thyroid, preceded or followed by l-thyroxine. Each hormone preparation was given for at least one year. Average daily oral dose of desiccated thyroid and l-thyroxine required to maintain patients clinically euthyroid was 136 mg. and 205 micrograms, respectively. Circulating levels of serum total cholesterol, triglycerides, phospholipids, free fatty acids, and lipoproteins were similar with both hormones. Serum protein-bound iodine levels were significantly greater during l-thyroxine therapy in comparison with the values during desiccated thyroid therapy. I-131-1-triiodothyronine red cell-binding coefficient and thyroxine-binding globulin capacity were similar with both treatments. Similar comparisons were made in 3 hypothyroid patients each given beef- and pork-desiccated thyroid. The various parameters investigated were similar with both thyroid preparations.

Various thyroid hormone preparations, synthetic and of animal origin, alone and in combination, are available for the treatment of hypothyroidism. The effects of many preparations on levels of circulating cholesterol have been described.[1] Less information is available about their effects on other serum lipid fractions such as triglycerides, phospholipids, free fatty acids, and lipoproteins. The present study was designed to compare the effects of desiccated thyroid and monosodium l-thyroxine, administered daily by mouth, on serum lipids in a group of hypothyroid patients maintained in a steady clinical euthyroid state. Thyroid function indices were also compared in the same patients. The effects of beef- and pork-desiccated thyroid were compared in 3 patients. The study revealed identical metabolic effects during the administration of all hormonal preparations.

Material and methods

Eight women and 2 men with primary hypothyroidism were selected for the comparative study of l-thyroxine and desiccated thyroid. All patients had unequivocal signs and symptoms of hypothyroidism; initial laboratory data supporting the diagnosis are shown in Table I.

Each patient was maintained in a clinical euthyroid condition by one of the hormone preparations. Desiccated thyroid was given as the first treatment in 6 patients, and l-thyroxine was the initial drug in 4 patients. Patients were seen at monthly intervals for clinical evaluation of hormonal effects. The replacement therapy was adjusted as required to maintain the patients clinically euthyroid. Laboratory studies were obtained at intervals of four to six weeks. After treatment for one year or more with one preparation, the medications were interchanged without any hiatus. Mean durations of treatment were desiccated thyroid fifty-eight weeks and l-thyroxine fifty-five weeks.

Laboratory measurements

Blood samples were obtained in the morning after a fourteen-hour fast. Serum lipid determinations included total cholesterol,[2] triglycerides (TG),[3] phospholipids (PL),[4] free fatty acids (FFA),[5] and lipoproteins (alpha and beta, or high density, HDL and low density, LDL).[6,7] Thyroid function tests included serum protein-bound iodine (PBI),[8] thyroxine-binding globulin (TBG) capacity, and I^{131}-l-triiodothyronine-binding coefficient (K).[9]

Values presented for each patient are the means of several determinations. Statistical analysis was done by Student's "t" test.

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TABLE I. Features characterizing 10 patients with hypothyroidism

Patient Number	Age and Sex	Cause of Hypothyroidism	Serum Protein-bound Iodine (micrograms per 100 ml.)	Serum Cholesterol (mg. per 100 ml.)	Radioactive Iodine Uptake (per cent in 24 hours)
1	58, F	Spontaneous	1.9	542	1.7
2	30, M	Post thyroidectomy	1.8	349	13.0
3	46, F	Spontaneous	1.3	430	9.2
4	45, F	Post radioactive iodine	2.0	233	8.2
5	51, M	Spontaneous	1.7	410	14.0
6	63, F	Post thyroidectomy	1.4	482	6.9
7	46, F	Spontaneous	1.9	405	. . .
8	37, F	Post thyroidectomy	2.7	204	. . .
9	74, F	Post thyroidectomy	0.7	370	11.0
10	65, F	Spontaneous	1.0	339	5.7
Mean	51		1.6	376	9.0
Range	30 to 74		0.7 to 2.7	204 to 542	1.7 to 14.0

TABLE II. Serum lipids* during therapy with desiccated thyroid or l-thyroxine

Patient Number	Desiccated Thyroid						l-Thyroxine					
		Cholesterol						Cholesterol				
	Total	(HDL)	(LDL)	TG	PL	FFA	Total	(HDL)	(LDL)	TG	PL	FFA
1	361	70	282	123	385	613	295	97	205	67	328	575
2	306	38	210	104	271	. . .	268	44	210	122	258	357
3	220	52	164	100	246	511	203	52	140	133	282	623
4	177	97	196	66	285	923	168	69	110	70	213	1189
5	266	36	210	140	233	576	270	47	184	195	277	600
6	288	72	207	78	285	832	329	. . .	. . .	66	. . .	722
7	224	35	217	123	239	675	235	40	165	123	221	827
8	190	72	103	34	218	712†	175	70	93	31	200	389†
9	273	58	210	116	274	483	322	58	237	104	318	589
10	285	86	185	119	330	942	272	92	184	143	343	620
Mean	258	61	198	99	276	696	253	63	169	105	271	648
S.D.	61	17	59	34	55	150	53	19	49	54	49	264

* All values are given in milligrams per 100 ml. except for free fatty acids. FFA values given in mEq. per L.

† $p < 0.01$ in individual patient as calculated by Student's "t" test. Each figure represents the mean of the several values for individual patient. No statistically significant differences in response in any serum lipid fraction except in free fatty acid levels in patient 8 was observed.

Results

The average daily replacement dose for desiccated thyroid was 136 mg. (range from 90 to 240 mg.) and for sodium l-thyroxine 205 micrograms (range from 100 to 300 micrograms).

Effects on serum lipids

Hypercholesterolemia was observed in 8 of 10 untreated patients. Normal cholesterol levels were restored with either hormone preparation (Table II). The mean decrease of serum cholesterol was 31.4 per cent with desiccated thyroid treatments; with l-thyroxine therapy, mean serum cholesterol decreased 32.7 per cent from the pretreatment values. There was no statistically significant difference in the values of total cholesterol obtained in patients with either therapy. Values of phospholipids, triglycerides, and alpha and beta lipoprotein cholesterol were also identical with both drugs.

In patient 8, serum free fatty acids were significantly lower during treatment with desiccated thyroid as compared with the value during treatment with l-thyroxine ($p < 0.01$). In the other patients serum free fatty acids responded similarly to both drugs, and the mean free fatty acid values on both drugs were the same.

Effects on thyroid function indices

Thyroid function indices during treatment of hypothyroid patients with desiccated thyroid and l-thyroxine are shown in Table III. Serum protein-bound iodine was greater in all patients treated with 1-thyroxine than in patients given desiccated thyroid. The mean protein-bound iodine value for the group was 1.7 micrograms per 100 ml. greater with l-thyroxine compared with desiccated thyroid. The difference between the mean values in the two drug groups was statistically significant ($p < 0.02$).

TABLE III. Effects of desiccated thyroid and l-thyroxine treatment on thyroid function tests

Preparation	Daily Optimal Dose	Serum PBI (micrograms per 100 ml.)	TBG Capacity (micrograms per 100 ml.)	K
Desiccated thyroid, milligrams per day				
Range	90 to 240	2.8 to 6.3	12.0 to 22.9	5.1 to 13.4
Mean ± S.D.	136 ± 51	4.6 ± 1.1	18.1 ± 4.9	8.3 ± 2.8
l-Thyroxine, micrograms per day				
Range	100 to 300	4.1 to 8.2	12.0 to 25.9	7.1 to 12.7
Mean ± S.D.	205 ± 66	6.3 ± 1.3	18.8 ± 4.3	8.1 ± 2.2
p*	...	0.02	NS	NS

* p = significance of difference between two groups calculated by Student's "t" test.

TABLE IV. Metabolic effects of pork- and beef-desiccated thyroid therapy in hypothyroidism*

Preparation	Serum Cholesterol (mg. per 100 ml.)			Phospholipids (mg. per 100 ml.)	FFA (mEq. per L.)	Serum Protein-bound Iodine (micrograms per 100 ml.)	K
	Total	(HDL)	(LDL)				
Pork-desiccated thyroid	238 ± 59	75 ± 34	136 ± 97	244 ± 20	748 ± 175	4.6 ± 0.9	8.1 ± 1.5
Beef-desiccated thyroid	211 ± 58	57 ± 33	156 ± 92	228 ± 5	902 ± 319	4.5 ± 1.6	8.5 ± 1.7

* Each value represents the mean ± SD of several individual tests for each patient. No statistically significant differences were observed in any metabolic effects investigated.

The I^{131}-l-triiodothyronine-binding coefficient during treatment with desiccated thyroid was the same as during l-thyroxine treatment. Thyroxine-binding globulin capacity values were also equal.

Metabolic effects of beef- and pork-desiccated thyroid

Similar laboratory studies were preformed nine times, while 3 patients (Cases 4, 5, and 7) were given beef-desiccated thyroid and six times when these patients were ingesting pork-desiccated thyroid. Mean results are shown in Table IV. There was no statistically significant difference in serum lipids or in thyroid function tests in the two groups.

Comment

Thyroid hormone administration to hypothyroid patients results in a decrease of circulating total and beta lipoprotein cholesterol, presumably due to enhancement of cholesterol catabolism which is greater than the effects of the hormone to increase cholesterol synthesis.[10] Some investigators have reported that thyroid hormone affects the entire lipoprotein spectrum,[11] while others found no significant change in alpha lipoproteins after adequate treatment of hypothyroidism.[12]

In the present study, a cholesterol-lowering effect was manifested by the time of first testing after the institution of desiccated thyroid or l-thyroxine treatment. The decreases in serum lipids were maintained throughout the study. Others have reported that euthyroid subjects tend to become refractory to the lipid-lowering effects of l-thyroxine.[10] The magnitude of the hypolipidemic effects were similar when desiccated thyroid and l-thyroxine were given orally in therapeutic equivalent doses.

Despite the difficulty of defining optimal clinical response to treatment of hypothyroidism, the data support other studies indicating the approximate equivalence of 65 mg. desiccated thyroid to 0.1 mg. of l-thyroxine.[13] The significant increment in serum protein-bound iodine during l-thyroxine therapy compared with desiccated thyroid treatment was also consistent with the observations of other investigators.[13] The transport of circulating thyroid hormones appeared to be equal with the two regimens as shown indirectly by similar values of I^{131}-l-triiodothyronine-binding coefficient and thyroxine-binding globulin capacity determinations with both therapies. Beef- and pork-desiccated thyroid influenced circulating lipids and thyroid functions to an equal extent in the present study. Using antigoitrogenic assays in rats, Stasilli and Kroc[14] demonstrated that beef-desiccated thyroid exhibited half the potency of pork-desiccated thyroid. Our data suggest that either preparation, given orally to patients with hypothyroidism, is effective clinically to maintain euthyroidism and have similar hypolipidemic effects.

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Electrocardiograms of the Month

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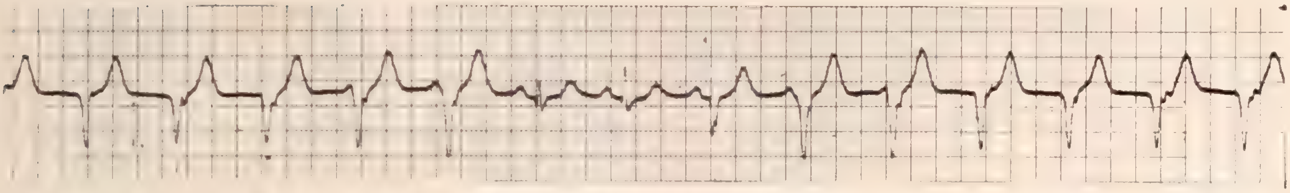
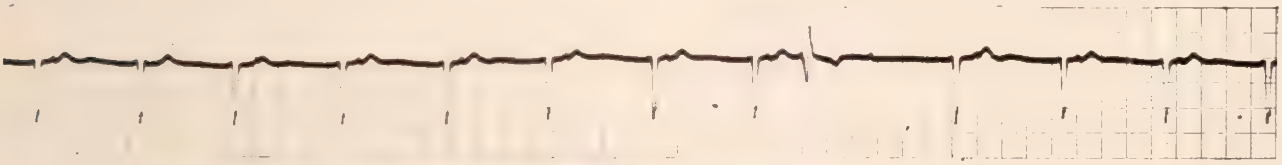


QUESTION 105. What is the rhythm? The patient has not been receiving any cardiac drugs. The electrocardiogram was obtained during the course of monitoring this patient with an acute myocardial infarction.



QUESTION 106. What is the rhythm? (lead V_1).

ELUCIDATION

Question 105. P waves are visible preceding QRS complexes 6, 7, and 8. The P wave is not so clearly seen but is visible preceding beats numbers 5 and 9 and then becomes buried in the other QRS complexes. The initial 5 QRS complexes are wide and aberrant but are not at a rapid rate (80 per minute). These idioventricular beats are termed accelerated idioventricular rhythm. The rhythm has been called isorhythmic dissociation; it is usually benign and does not require therapy. Beat number 8 is preceded by a P wave with a short P-R interval and has a configuration different from both beats numbers 7 and 9. It is a fusion beat, confirming the presence of a parasystolic focus.

Question 106. The ventricular rate is approximately 75 per minute but is slightly irregular. Note that the P wave is buried in the S-T segment. It is upright and occurs at varying distances from the preceding QRS. Possibly it is a retrograde P wave. An alternate explanation is that the P wave is antegrade and conducts to the succeeding QRS, with a P-R interval of 0.68 second. Proof that the latter is indeed the case is obtained by observing beat number 2, in which there is no P wave in the S-T segment, but the P wave is superimposed on the terminal portion of the QRS. If one measures this P-R interval, it is precisely the same as the usual P-R interval. Note that the R-R interval encompassing this P wave is appropriately shortened. Second, following the ventricular premature contraction seen after beat number 8, the P wave is now clearly visible, is obviously not retrograde, and has precisely the same P-R interval as the previous P-R intervals. The interpretation, therefore, is regular sinus rhythm, first-degree heart block with a P-R interval of 0.68 second, and occasional ventricular premature contractions. The P wave following beat number 8 is not conducted because it is blocked by the ventricular premature contraction.

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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ANESTHETIC PROBLEMS IN HEREDITARY MUSCULAR ABNORMALITIES

Muscular dystrophy is an uncommon condition. Most patients suffering from this disease need corrective orthopedic surgery, which may present serious problems in the choice of anesthesia. Complications are frequent as the following reports illustrate.

Case reports

Case 1. A ten-year-old boy was admitted to the hospital for triple arthrodesis of the left ankle. A similar operative procedure was performed uneventfully on his right foot at the age of seven. His history revealed generalized weakness since infancy. At the age of three years, a muscle biopsy and electromyogram entertained the diagnosis of muscular dystrophy of unclassified type. Kugelberg-Welander disease was also considered four years later. An older sibling is afflicted with the same condition, and an aunt with this condition secondary to muscular weakness died at thirty years of age.

Physical examination revealed a thin, wasted-looking boy, weighing 22 Kg., and of normal intelligence. There were scars from previous surgical procedures for muscle biopsy and arthrodesis of the right ankle. He had bilateral pes equinus and weakness and wasting of the proximal and distal musculature of both upper and lower extremities. He walked with a waddling gait. An electrocardiogram showed sinus tachycardia (115 beats per minute) with nonspecific S-T depression in leads III, aVf, V_5, and V_6.

Results of blood count, urinalysis, serum and creatine phosphakinase, glutamic oxaloacetic transaminase, and lactate dehydrogenase tests, and a recent muscle biopsy were within normal limits.

Preoperative sedation consisted of pentobarbital 50 mg., meperidine 30 mg., and scopolamine 0.1 mg. given intramuscularly. In the operating room the patient appeared to be well sedated without signs of depression. Blood pressure, pulse, and respiratory rate were 100/70 torr, 96 beats per minute, and 16 breaths per minute, respectively. Anesthesia was induced and maintained with a mixture of nitrous oxide, oxygen, and halothane. The percentage concentration of nitrous oxide was 65 and that of halothane from 0.2 to 2. Blood pressure ranged between 100/70 and 130/90 torr, heart rate 80 to 118 beats per minute, and respirations were assisted at 16 to 20 breaths per minute.

Ninety-five minutes after the induction of anesthesia the pulse became irregular, and multifocal premature ventricular contractions appeared on the electrocardioscope. Halothane concentration was lowered to 0.2 per cent, and ten minutes later regular sinus rhythm was reestablished. The surgical procedure was completed one hundred fifty minutes after induction of anesthesia. The patient had an uneventful postoperative course and was discharged on the eighth postoperative day.

Case 2. A five-year-old-male child was admitted to the hospital for a muscle biopsy. The patient had had a problem with his gait since he started walking, having difficulty getting up from the sitting position. His past history was unremarkable, and the only pertinent datum in his physical examination was his gait which was waddling and flat-footed. His muscle tone was slightly less than normal with moderately bulky calf muscles and some weakness in the lower portion of his legs.

Laboratory data were within normal limits. Two days after admission, the patient was taken to the operating room and a muscle biopsy was performed under general anesthesia.

The patient was given pentobarbital 50 mg. and atropine 0.3 mg. one hour prior to induction. In the operating room his blood pressure, pulse, respiratory

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rate, and temperature was 110/68, 98, 24, and 97° F., respectively.

Anesthesia was smoothly induced by mask with halothane-oxygen which was continued for maintenance. The surgical procedure began ten minutes later and lasted twenty-five minutes. Vital signs remained stable throughout.

The patient tolerated the procedure well and was taken to the recovery room awake and reacting. There he continued to be alert and active for twenty-five minutes when suddenly he developed a cardiorespiratory arrest. External cardiac message was begun, an endotracheal tube was inserted, and respirations were controlled with an "Ambu" bag. The pupils were fully dilated. An electrocardiographic tracing at this time was flat, and the patient was given intracardiac epinephrine. Within fifteen minutes, electric tracing revealed high peaked T-waves in comparison with a normal preoperative electrocardiogram reading. Electrolytes drawn at the time of the cardiac arrest showed sodium content to be 156 and potassium 7.1 mEq. per liter. During the day, the patient excreted dark red urine which on spectrophotometric testing revealed myoglobin. Myoglobin continued to be present in the urine during the following four days. The patient had a stormy postoperative course. Muscle biopsy confirmed the diagnosis of muscular dystrophy. Three weeks later he was discharged from the hospital, seemingly no worse than when he entered.

Comment

Muscular dystrophy is a progressive weakness with wasting of striated muscles, occurring usually in the first three decades of life. The currently accepted classification recognizes four different types of this condition, namely[1]:

1. Duchenne dystrophy, which afflicts young men in the first decade of life. The muscle fibers of the heart and gastrointestinal tract may also be involved. Steady progression of the disease is the rule, and most patients die in the third decade of life due to respiratory infection or cardiac failure. The electrocardiogram result is abnormal in almost every patient, although cardiac failure is usually not present, probably due to the sedentary life of these youngsters.[2]
2. Facioscapulohumeral dystrophy.
3. Limb-girdle dystrophy.
4. Myotonic dystrophy in which cranial muscles are often affected, and limb weakness is initially marked in distal muscles. Myotonia or difficulty of relaxation may be symptomatic, and after a firm grip the patient may have difficulty in letting go.

Kugelberg-Welander disease, the other diagnosis contemplated in Case 1, is a heredofamilial juvenile muscular atrophy, which is characterized by degeneration of anterior horn cells.

Myotonia congenita (Thomsen's disease) is characterized by difficulty in relaxation of skeletal muscle after forceful contraction, present from early childhood. It is a rare disease and usually is inherited in a pattern corresponding to an autosomal dominant trait.

Case 1 was difficult to fit into any of the classical disease entities; in Case 2, the diagnosis of progressive muscular dystrophy was confirmed. Both were handicapped by muscular weakness and wasting, and the electrocardiogram finding was abnormal in Case 1.

The hazard of anesthesia is similar in patients with wasted muscles, and the choice of anesthesia and management should be based on the same related principles.

Prolonged respiratory depression has been noted after small doses of barbiturates and narcotics were given to patients suffering from myotonia congenita.[3,4] It was believed that the muscles of patients with myotonia congenita are exceptionally sensitive to thiopentone.[3] Later reports, however, dispelled the belief that thiopentone has a peripheral action on muscles.[5] The suggestion was made that muscle wasting causes decreased ventilation. The addition of drugs, such as barbiturates and narcotics, which depress the respiratory center in usual clinical doses is sufficient to result in prolonged respiratory depression. Therefore, if any of these drugs are used on patients who have wasted muscles, careful titration to the amount should be carried out which will give the desired anesthesia, without serious side effect.

Many patients with progressive muscular dystrophy show abnormal findings on electrocardiogram, and some have cardiac decompensation.[2] Cases of severe tachycardia and 2 fatal complications due to cardiac failure occurring in the immediate postoperative period in children suffering from muscular dystrophy after halothane anesthesia, have been reported.[6,7] Anesthetic agents which increase the irritability of the conducting systems, such as halothane cyclopropane, are best avoided. Both our patients also developed circulatory complications. Case 1 developed multifocal premature contractions during anesthesia and Case 2 cardiac arrest twenty-five minutes after halothane anesthesia.

Another cause for circulatory complications may be the serum potassium level. It has been found that extra- and intracellular potassium levels are decreased in progressive muscular dystrophy, but the serum levels may be higher from the breakdown of muscle cells. Because of the progressive nature of the disease and the minor trauma associated with the muscle biopsy, it is easily understood that the level of serum potassium in Case 2 might have been much higher than the preoperative value, rising rapidly until the cardiac arrest occurred. It is advisable, therefore, to determine serum potassium levels preoperatively and to monitor the electrical activity of the heart in all cases of muscular dystrophy.

There is no evidence that muscle relaxants are contraindicated. In contrast to myasthenia gravis, these diseases are not due to abnormality at the myoneural junction. Since fewer muscle fibers have to be paralyzed, the usual clinical dose of muscle relaxants should be reduced. Succinylcholine, which can raise the serum potassium level, should be avoided in patients with elevated preoperative values.

Regional anesthesia is well tolerated and is the anesthesia of choice whenever the surgical procedure permits. Additional sedation with droperidol or diazepam may be useful to avoid anxiety and restlessness. In addition, muscular function is dependent on electrolytes, pH, temperature, and blood flow. Careful monitoring of these parameters and immediate correction of abnormalities is of the utmost importance.

Ketamine may well be a drug suitable for anesthesia in these conditions, but more extensive clinical trial is needed before it can be recommended. Gastric dilatation may be a complication, and intragastric suction should be immediately instituted if this complication is suspected.[6]

Most of these patients will have a favorable postoperative prognosis if meticulous care is taken with every detail.

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PSEUDOLEUKEMIA DURING RECOVERY FROM METHOTREXATE TOXICITY IN PSORIASIS

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The antifol, methotrexate, is one of the most commonly used drugs in the treatment of human neoplastic diseases. The compound also has been found to be effective in ameliorating psoriasis, a skin disease characterized by an excessive proliferation of the cells of the epidermis.[1,2] In some patients, psoriasis may be so severe and extensive as to be incapacitating, fully justifying the use of methotrexate; however, in most patients the disease is not that severe. The present communication is a case report of a woman with mild psoriasis who was treated with methotrexate. She developed severe toxicity and during the recovery from the toxicity displayed blood findings mimicking leukemia.

Case report

A twenty-seven-year-old housewife was referred to the institute with a diagnosis of leukemia. On December 4, 1967, she had delivered her second child. Both pregnancy and delivery were normal. She took no vitamin pills during or after the pregnancy, and did not nurse the infant. When she visited her physician for a routine postnatal checkup, she was given a prescription for the contraceptive pill, norethylnodrel with mestranol (Enovic), and methotrexate. The methotrexate was prescribed for psoriasis which she had since the age of fifteen. The psoriatic lesions were always confined to her knees, elbows, and legs. On January 15, 1968, she took one tablet of methotrexate (2.5 mg.) and thereafter she took one tablet twice daily. She noticed canker sores in her mouth on January 22, followed shortly by vulvar and perianal itching. On the night of January 27, she developed crampy lower abdominal pain and diarrhea. The stools were soft and bloody. The bloody diarrhea persisted, and the next day she was admitted to a local hospital. The methotrexate was discontinued; she had received a total of 65 mg. over a thirteen-day period.

While in the hospital, the patient developed epigastric pain and had coffee-ground vomiting. The diarrhea and vomiting lasted for five days. An upper gastrointestinal series gave normal findings. She was treated with milk and magnesium aluminum hydroxide (Maalox), but this regimen seemed to accentuate the vomiting and was discontinued after five days. A hemoglobin of 10.6 Gm. per 100 ml. was found on the second hospital day. She was transfused with 2 units of blood, and the hemoglobin concentration rose to 12.4 Gm. per 100 ml. Fever developed on the second day after admission and continued for a week. Febrile agglutinin results were negative. Treatment with penicillin injections was started, but big bruise marks appeared on the buttocks and deltoid regions at the injection sites. Vaginal bleeding appeared and lasted four days. Plasma fibrinogen was 400 mg. per 100 ml., and partial thromboplastin time was seventy seconds (normal is less than one hundred seconds). The lowest white cell count was 4,000 per cubic millimeter, and it was repeatedly reported that the number of platelets in the peripheral smears was decreased. A platelet count on the fourth day of hospitalization was 150,000 per cubic millimeter. The white cell count during the first four days of hospitalization ranged from 4,000 to 6,700 per cubic millimeter and rose to 31,200 per cubic millimeter on the fifth day. At this time metamyelocytes, myelocytes, and promyelocytes appeared in the peripheral blood. These abnormalities increased while the patient's condition started to improve.

She was transferred to our institution ten days after termination of the methotrexate treatment with a tentative diagnosis of leukemia. Her only complaint was some itching in the vulvar and perianal regions. Physical examination results were normal except for resolving bruises in the deltoid regions and the buttocks; faded psoriatic lesions on the legs, knees, and elbows; and evidence of folliculitis in the vulvar and perianal regions. Sigmoidoscopy revealed nothing unusual. Clini-

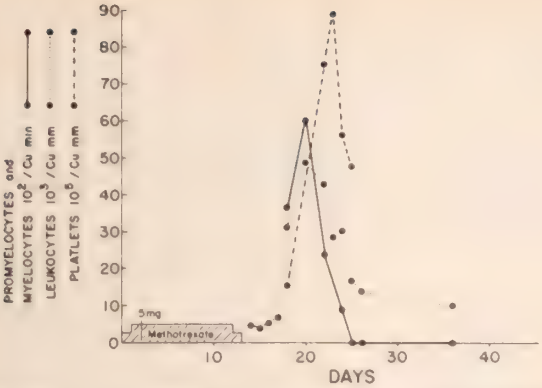

FIGURE 1. Leukocyte, myelocyte, and promyelocyte counts after treatment with methotrexate

cal laboratory results including serum creatinine were normal. The hemoglobin on admission was 11.6 Gm. per 100 ml., reticulocyte count, 1.2 per cent; platelet count, 750,000 per cubic millimeter; and leukocyte count, 42,500 per cubic millimeter with 9 per cent metamyelocytes, 12 per cent stabs, 64 per cent segmented neutrophils, 4 per cent lymphocytes, 3 per cent monocytes, 7 per cent myelocytes, and 1 per cent promyelocytes. The bone marrow aspirate was hypercellular, with an increase in megakaryocytes and platelets. It contained 0.6 per cent myeloblasts, 2.6 per cent promyelocytes, 17.8 per cent myelocytes, 15.4 per cent metamyelocytes, 22.2 per cent stabs, 26.4 per cent segmented neutrophils, 1 per cent lymphocytes, 0.4 per cent monocytes, 0.4 per cent plasma cells, 0.4 per cent histiocytes, and 12.8 per cent of the erythroid series with a myeloid:erythroid ratio of more than 6.3 per cent. Red cell indices were as follows: mean corpuscular volume, 81 cubic micra; mean corpuscular hemoglobin 25.9 micromicrograms, and mean corpuscular hemoglobin concentration, 31.9 per cent. Formiminoglutamic acid exertion after 15 Gm. histidine load on February 12 was 3.2 mg. per twenty-four hours (normal is below 3 mg. per twenty-four hours).

There was a rapid drop in the white cell and platelet counts with a rapid disappearance of immature cells from the peripheral blood (Fig. 1). Chromosome studies of bone marrow showed normal diploid cells, and alkaline phosphatase stain of the marrow showed normal alkaline phosphatase in the cells of the myelocytic series. The patient was discharged on the seventh day and continues to be in good health to the present time.

Comment

The patient gave a long history of relatively mild psoriasis localized to the elbows, knees, and legs. Methotrexate was prescribed for its treatment without an explanation to the patient about the potential toxic side effects of such a treatment. Thus, when oral ulcerations developed on the seventh day of the treatment, the patient continued to take the medication without notifying her physician. In fact, even when a full fledged clinical picture of methotrexate toxicity appeared—bloody diarrhea, vomiting, and good circumstantial evidence of bone-marrow depression, that is, low platelet counts on smear and bruising at injection sites—the patient was investigated and treated for possible bleeding peptic ulcer and infection. Eventually, the possibility of leukemia was considered, without suspecting methotrexate toxicity as the possible cause of the patient's illness.

One of the objectives of this report is to draw attention to the potential risks of unsupervised treatment with methotrexate. It is well known that the total tolerated dose of methotrexate varies according to the dose schedule employed. Thus, one can give a much larger total dose when the compound is administered twice weekly than when it is given daily.[3] The relative intoler-

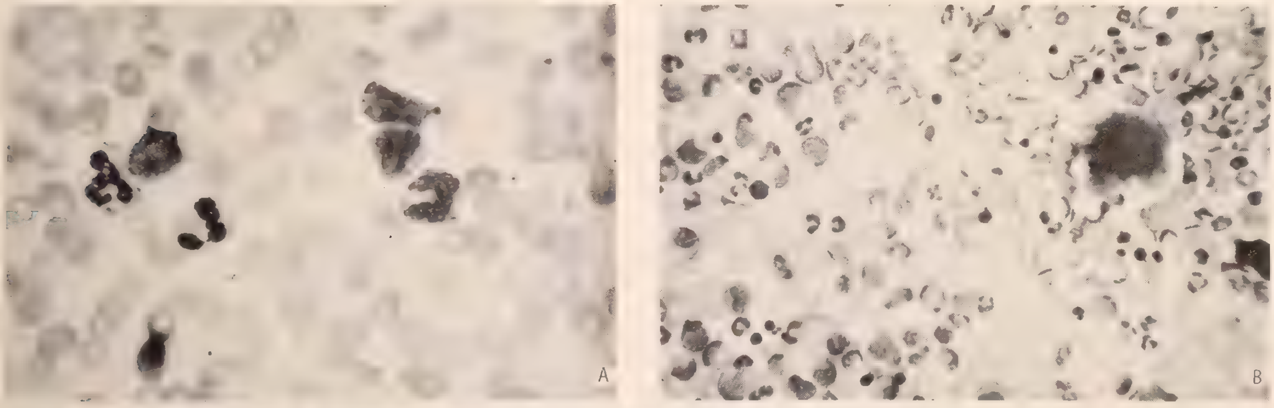

FIGURE 2. (A) Peripheral blood smear showing immature cells of myelocytic series seven days after discontinuation of methotrexate (Wright-Giemsa stain × 650). (B) Bone marrow aspirate showing increased myelopoiesis seven days after discontinuation of methotrexate (Wright-Giemsa stain × 265).

ance of this patient to the treatment might be due, in part, to the dose schedule employed (twice daily in divided doses). Another possible contributing factor to the intolerance was the patient's recent pregnancy. Pregnancy is known to constitute a drain on the folate body reserve, due to an increased demand by the fetus, in addition to possible impairment of folate absorption and metabolism during pregnancy.[4]

The occurrence of a marked rise in leukocyte counts with a marked shift to the left and the appearance of myelocytes and promyelocytes in the peripheral blood suggested the possibility of leukemia. On admission to our institution, the blood picture and the marrow findings were reminiscent of those of chronic myelocytic leukemia (Fig. 2). The rapid return of hematologic abnormalities to normal, together with the absence of Philadelphia chromosomes in the marrow cells, the normal alkaline phosphatase contents of neutrophils, and the absence of organomegaly, excluded the diagnosis of chronic myelocytic leukemia. The phenomenon of marrow overshoot with leukocytosis, thrombocytosis, and the appearance of young cells in the peripheral blood is occasionally seen in the recovery phase of agranulocytosis.[5] The recently reported case of pseudoleukemia following recovery from dapsone-induced agranulocytosis is another example of this phenomenon.[6] Control of leukopoiesis and thrombocytopoiesis is complex and not fully understood. One might envision marrow overshoot as the counterpart of increased erythropoiesis that is seen after acute hemorrhage or hemolysis.

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KARTAGENER'S SYNDROME

Immunologic studies

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In 1933, Kartagener[1] emphasized the simultaneous occurrence of situs inversus, bronchiectasis, and sinusitis. This triad is now popularly known as Kartagener's syndrome. To date, over 350 cases have been published in the literature. The incidence of situs inversus is about 1 per 10,000 in the general population, and roughly 25 per cent of those with situs inversus also have bronchiectasis and/or sinusitis.[2]

There has been a considerable amount of discussion concerning the etiology of this syndrome. Siewart[3] postulated a congenital etiology. Whereas most of the American authorities believe that in most instances bronchiectasis is acquired,[4–7] Olsen[8] contends that both congenital and acquired factors play a role in the development of Kartagener's syndrome.

In the present study, we have assessed the immunologic competence of 2 Puerto Rican sisters with complete Kartagener's syndrome by examining their: (1) ability to respond to selected antigens with delayed-type hypersensitivity, (2) ability to respond to selected antigens with circulating antibodies, and (3) levels of serum proteins and each of the immunoglobulins (IgG, IgA, and IgM).

Material and methods

Two adult, Puerto Rican, female siblings, attending the chest clinic at Bronx Municipal Hospital Center, were investigated for recurrent pulmonary infections since early childhood. They were twenty-five and thirty-three years in age, respectively, and both had immigrated to New York four years before this study was undertaken. Clinical diagnosis of Kartagener's syndrome was confirmed by electrocardiogram, x-ray films of the chest and sinuses, and bronchogram together with the barium meal studies of the stomach and upper intestines. Both patients had dextrocardia, sinusitis, bronchiectasis, and situs inversus. Immunologic deficiency for delayed-type hypersensitivity was tested by intradermal tuberculin, histoplasmin, coccidioidin, and oidiomycin; and also by 2:4 dinitrofluorobenzene sensitization. Humoral antibody formation was assessed by challenging the patients with antigens including typhoid-paratyphoid vaccine, poliomyelitis vaccine, and bacteriophage phi × 174. Serum complement levels and isohemagglutinins were also measured. Serum protein, immunoelectrophoresis, and immunoglobulin quantitation were carried out to determine if selective immunoglobulin deficiency was present. Thus, the following different tests were carried out on both patients.

Tuberculin test. The tuberculin test was performed by the intradermal inoculation of 0.1 ml. (5 toxic units or 0.001 mg.) of intermediate strength purified protein derivative* in the forearm. The test site was read at two days for the presence of induration exceeding 10 mm. in diameter. Erythema without induration was not accepted as evidence of hypersensitivity. If the test result was negative with intermediate strength, second strength purified protein derivative* was inoculated and results were read in similar fashion.

Histoplasmin skin test. The histoplasmin skin test was carried out by injecting 0.1 ml. of histoplasmin antigen* in the forearm and results were read at forty-eight hours.

Coccidioidin skin test. The coccidioidin skin test was performed by injecting 0.1 ml. of 1:100 coccidioidin antigen† intradermally in the forearm. Results were read similarly to those of the histoplasmin and tuberculin skin tests.

Oidiomycin skin test. To perform the oidiomycin skin test, 0.1 ml. of 1:100 antigen (Hollister-Steer) was injected into the forearm. Induration at the test site was read at forty-eight hours.

Dinitrofluorobenzene sensitization test. The dinitrofluorobenzene test was carried out by applying 0.1 ml. of a 5 per cent solution of 2:4 DNFB (dinitrofluorobenzene) in acetone on the unabraded skin of the forearm within the area of an aluminum ring 3 cm. in diameter. The acetone was evaporated under a stream of air by blowing a jet of cool air on the skin. The area was then covered by a Bandaid for four to five days. The patient was instructed not to scratch the site and to avoid contact with other parts of the body as far as possible. The skin usually becomes erythematous in two to three days. Sensitization to DNFB was tested four weeks later by applying 0.1 ml. of a 0.1 per cent solution of DNFB in acetone to the

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TABLE I. Results of cutaneous test for delayed-type hypersensitivity in 2 patients with Kartagener's syndrome

Skin test	Patient 1	Patient 2
Intermediate purified protein derivative (5 toxic units)	Negative	Negative
Second strength purified protein derivative (250 toxic units)	Negative	Negative
Histoplasmin	Negative	Negative
Coccidioidin, 1:100	Negative	Negative
Oidiomycin, 1:100	Negative	Negative
2:4 Dinitrofluorobenzene, 5 per cent	Positive	Positive

opposite forearm in a similar fashion. The test was read at two, four, and seven-day intervals for a vesicular indurated reaction; erythema alone was regarded as a negative reaction.

Serum protein and immunoglobulin studies. The serum proteins were studied by paper electrophoresis, using a barbitone buffer of ionic strength 0.05 and pH 8.6. After electrophoresis, the filter-paper strips were stained with bromophenol-blue and quantitated by eluting each protein band. The concentration of eluted dye was measured in a colorimeter. Total protein was estimated by the biuret method. Immunoelectrophoresis was carried out by using specific antiserum against each of the immunoglobulin classes. To detect any selective immunoglobulin deficiency, quantitative studies of the serum immunoglobulins were performed.

TABLE II. Serum proteins, paper electrophoresis, immunoelectrophoresis, and immunoglobulin quantitation in Kartagener's syndrome

	Serum Proteins		Electrophoresis		Immunoglobulin	
Patient	Albumin*	Globulin†	Paper	Immuno	A**	M††
1	4.0	3.8	Normal	Normal	420	165
2	3.8	3.0	Normal	Normal	280	130

* Normal = 3.5–4.5 Gm. per 100 ml.
† Normal = 3.0–4.0 Gm. per 100 ml.
** Normal = 100–450 mgs. per 100 ml.
†† Normal = 50–160 mgs. per 100 ml.

Bacteriophage phi × 174 immunization. Bacteriophage phi × 174 immunization was carried out by injecting 0.2 ml. of phi × 174 (5×10^{11} plaque forming units) in the deltoid muscle of the patient. Blood was collected before, two, and four weeks after the injection to obtain peak titers of primary 19 S and 7 S responses. Secondary 7 S responses were estimated two weeks after secondary immunization with 0.1 ml. of bacteriophage. Antibodies to the bacteriophage were determined by the phage neutralizing assay technic of Uhr, Finkelstein, and Baumann.[9]

Circulating antibody formation to miscellaneous antigens. Both patients were challenged with typhoid-paratyphoid vaccine, a phenol-killed suspension of salmonella-typhosa and paratyphi,* and poliomyelitis (Salk) vaccine. Serum complement levels and isohemagglutinins were also measured.

Results

Although both patients yielded negative reactions to intradermal tuberculin, oidiomycin, histoplasmin, and coccidioidin skin tests; they were able to develop sensitivity to 5 per cent dinitrofluorobenzene solution (Table I). This indicates that delayed-type hypersensitivity responses were normal in both patients.

Serum paper electrophoresis and immunoelectrophoresis were normal. Immunoglobulins A and M both were in the normal range (Table II). Thus, there was no evidence of hypo- or agammaglobulinemia.

Response to bacteriophage phi × 174 was normal, indicating the capacity to develop primary and secondary antibody responses (Table III). Antibody response to poliomyelitis and typhoid antigen was rather low and unexplainable, but the response to bacteriophage phi × 174 is more advantageous and reliable (Table IV). Serum complement level and isohemagglutinins, which are sometimes reduced in patients with hypogammaglobulinemia, were normal in both of our patients (Table V).

Comment

There has been a considerable amount of discussion concerning the etiology of Kartagener's syndrome. Siewart,[3] in his original report, pointed out the possibility of congenital etiology because of the presence of bronchiectasis in a patient who also had congenital transposition of the viscera. The undeveloped paranasal sinuses and the onset of

TABLE III. Antibody response to bacteriophage phi × 174 (Serum K) in Kartagener's syndrome

Patient	Before Injection (Initial Level)	Weeks after Injection 2	4
1	<0.001	4	40
2	<0.001	1.2	5.6

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*Wyeth Laboratories, Philadelphia, Pennsylvania.

TABLE IV. Circulating antibody response to antigen stimulation in Kartagener's syndrome

		Patient			
		1		2	
Antigen	Antibody Tested	Before Stimulation	After Stimulation	Before Stimulation	After Stimulation
	Complement fixing				
Poliomyelitis vaccine (Salk)	Polio 1	Neg. 1:4	Pos. 1:16	Neg. 1:4	Neg. 1:4
Poliomyelitis vaccine	Polio 2	Neg. 1:4	Pos. 1:16	Neg. 1:4	Neg. 1:4
Poliomyelitis vaccine	Polio 3	Neg. 1:4	Pos. 1:16	Neg. 1:4	Neg. 1:4
Salmonella A	. . .	Neg.	Neg.	Neg.	Neg.
Salmonella B	. . .	Neg.	Neg.	Neg.	Neg.
Salmonella C	. . .	1:80	1:80	1:80	1:80
Typhoid O	. . .	Neg.	1:160	Neg.	Neg.
Typhoid H	. . .	1:40	1:160	1:40	1:40

TABLE V. Serum complement and isohemagglutinin levels in 2 patients with Kartagener's syndrome

Patient	Serum Complement (Normal = 1.2-3.0 Units)	Isohemagglutinins Anti A	Anti B
1	2.4 units	1:320	1:80
2	2 units	1:160	1:160

signs and symptoms of bronchiectasis and sinusitis in a five-day-old infant most certainly indicate the congenital etiology.[10] Frequent association of skeletal anomalies and a variety of ophthalmologic defects including retinal pigmentary degeneration with Kartagener's triad lends some support to this theory.[11] Ingraham[12] reported a patient who had bilateral lobectomies. The histologic examination revealed the persistence of peribronchial connective tissue and poor development of alveolar structure.[12]

The familial incidence of the syndrome, with partial or complete expression in siblings, has been documented by Olsen[8]; Knox, Murrary, and Strang[13]; and Aarons and Powell.[14] Cockayne[15] favors the idea of a single recessive autosomal gene being responsible for the inheritance of situs inversus and bronchiectasis. The occurrence of the disease in identical twins, in offspring of consanguinous marriages, and the absence of second-generation transmission supports this hypothesis. The horizontal pattern of family occurrence favors the role of environmental factors, since one might expect to see this syndrome in more than one generation if a genetic factor was at fault. Adams and Churchill[16] feel that bronchiectasis in association with dextrocardia represents a stigma of maldevelopment influenced both by embryologic and environmental factors. It is of some interest to note that Kartagener's triad is rare in the Negro race.

Most authorities believe that in the majority of instances bronchiectasis is acquired.[4-7] Overholt and Bauman[17] reported a normal bronchogram in a patient at the age of six who was shown to have bronchiectasis at the age of fourteen. Bronchiectasis in a still-born child with dextrocardia has not been reported. A significant number of individuals with Kartagener's syndrome do not develop symptoms until late childhood or early adulthood. Perhaps the truth lies between these two extremes. There may be an elastic tissue defect or an altered secretory activity of the respiratory tissue which renders these individuals susceptible to recurrent infection.[18,19] Olsen[20] concluded that both congenital and acquired factors play a role in the etiology of Kartagener's syndrome.

Brown and Smith[21] demonstrated elevated sweat chloride levels in a patient with Kartagener's syndrome who also had steatorrhea consistent with fibrocystic disease. Other investigators failed to demonstrate any relationship between these two disorders.[22]

The occurrence of respiratory tract infections—including bronchitis, pneumonia, lung abscess, bronchiectasis, and empyema—in patients with various immune-deficiency syndromes is well known. These patients are also prone to recurrent sinusitis, otitis, and pharyngitis.[23,24] Pittman[23] reported a patient who had agammaglobulinemia and bronchiectasis. Patients with agammaglobulinemia are deficient in all three major immunoglobulins, that is, immunoglobulins G, A, and M, and have an impaired immune response after antigenic stimulation.[24-27] Isolated deficiency of one or more immunoglobulins can give rise to a clinical picture similar to that of agammaglobulinemia.[28-42]

We became interested in the possibility of an altered immune mechanism responsible for the development of bronchiectasis and sinusitis in these patients. Two types of immune systems exist in the body. The first one is "thymus-dependent lymphoid tissue," derived and influenced by the thymus, and responsible for the mediation of delayed-type hypersensitivity reactions.[43-45] In animals lacking a thymus and a thymus-dependent system, there is depression of the delayed-type hypersensitivity reactions evidenced by a negative tuberculin test result and inability to be sensitized by dinitrofluorobenzene.[45-50] The other immune system is the "immunoglobulin producing system." In chickens it is derived from the bursa of Fabricius. The bursa-dependent peripheral lymphoid tissue is considered to be the principal producer of the circulating antibodies.[51,52] It has been suggested that in human beings the palatine tonsil or Peyer's patches in the intestine may be the structure most closely resembling the bursa of chickens.[53,54] The immunologic deficiency syndome might be caused by developmental block in either of the two distinct types of specialized lymphoid tissue in man.

Both of our patients were "anergic" to the tuberculin test. This probably was due to "primary tuberculin anergy," seen in individuals who have never come in contact with tuberculosis or were never vaccinated with Bacillus Calmette-Guérin. This does not represent the immune deficit. The true depression of delayed-type hypersensitivity is not restricted to tuberculin, but is also evident when tests are made with candida antigen and DNFB. The DNFB is a potent, chemical sensitizer and is more reliable than either tuberculin or oidiomycin. Positive DNFB test results in both patients confirm their ability to develop and maintain a delayed-type hypersensitivity response.

Both patients showed the presence of relatively normal serum proteins by standard electrophoresis. Innumoelectrophoresis with antihuman serum antiserum was also normal. To be certain that there was not a selective decrease in the immunoglobulin A and immunoglobulin M, levels were measured independently and were found to be within normal limits.

Since the presence of normal innumoglobulin levels does not rule out the possibility that a patient may not be able to form specific antibodies in response to antigenic stimulation, patients were stimulated with a variety of antigens. Their response to bacteriophage phi × 174 indicated that both patients could produce the appropriate antibody on primary stimulation. Both sisters had normal isohemagglutinin and serum complement levels. They had detectable levels of complement-fixing antibodies against all three types of poliomyelitis, and one patient showed a small but definite rise in response to immunization, while the other patient showed no amanestic response. When tested with salmonella antigens A and B, neither patient showed preexisting antibodies or any response to immunization. Both had detectable levels against salmonella antigen C, but did not respond with an amanestic response.

Summary

The immunologic competence of 2 siblings with Kartagener's syndrome was assessed by examining their delayed-type hypersensitivity responses and their ability to produce humoral antibodies in response to antigenic challenge. Serum immunoglobulins, serum complement, and isohemagglutinin levels were also estimated. No immunologic deficit was noted in the 2 patients.

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UNUSUAL MANIFESTATIONS OF SYPHILIS OF LONG DURATION

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In recent years, venereal disease has been making a comeback. The global outbreak of syphilis and gonorrhea during World War II came as no surprise. Whether the Indochina conflict or the indifferent attitudes of patient or physician toward venereal disease is particularly responsible for the nondeclared national emergency for venereal disease is a question that remains to be answered.

According to a report by the Committee of Public Health,[1] the incidence of syphilis in the United States population has increased markedly since 1957. Reported cases of syphilis in 1969 rose 55 per cent in New Jersey and 30 per cent in New York City. This is particularly alarming in view of the fact that effective therapy for syphilis has been available for many years.

In spite of an obvious current upsweep of venereal disease, it appears that the occurrence of syphilis is not generally anticipated and often not suspected. Therefore, many cases in the primary stage are mismanaged or misdiagnosed and may continue to remain infectious.[2,3] A description of the following cases will clarify this statement.

Case reports

Case 1. A forty-three year old Negro male had an ulcerous lesion of the glans penis that had been present for about two years and was progressively increasing in size. It bled easily and was painless. The patient was seen by local physicians on two occasions and apparently was treated with an antibiotic, but no adequate record is available. This patient claimed that he was unaware of his disease.

Physical examination at the time of admission showed a penile lesion approximately 1.5 cm. in diameter. The lesion had a central crater and necrotic, fungating borders of soft consistency (Fig. 1). Bilateral inguinal lymphadenopathy was present.

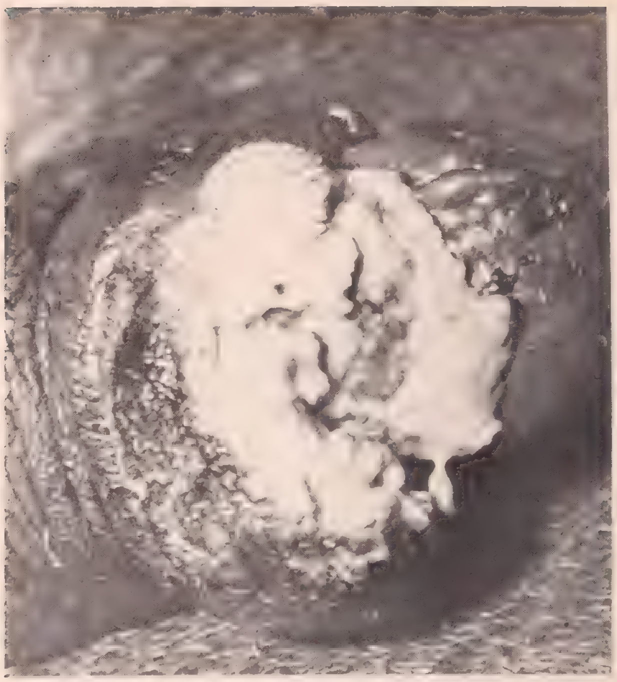

FIGURE 1. Lesion of the glans penis, Case 1.

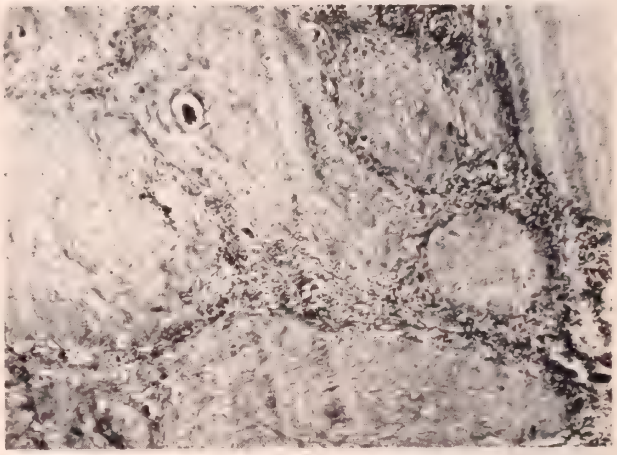

FIGURE 2. Photomicrograph of epidermoid carcinoma, Case 1.

Chest x-ray and intravenous pyelogram revealed normal findings. Microscopic examination of the urine showed 40 to 50 white cells per high-power field. Urine culture was negative. The hemoglobin was 15, the hematocrit 48, and the white blood cell count 9,300 with a normal differential.

A smear from the ulcerative lesion revealed Treponema pallidum on dark-field examination. The VDRL test gave a low-titer reaction.

Biopsy of the lesion revealed noninvasive epidermoid carcinoma associated with marked inflammatory reaction (Fig. 2). Biopsies of the lymph nodes were interpreted as unremarkable.

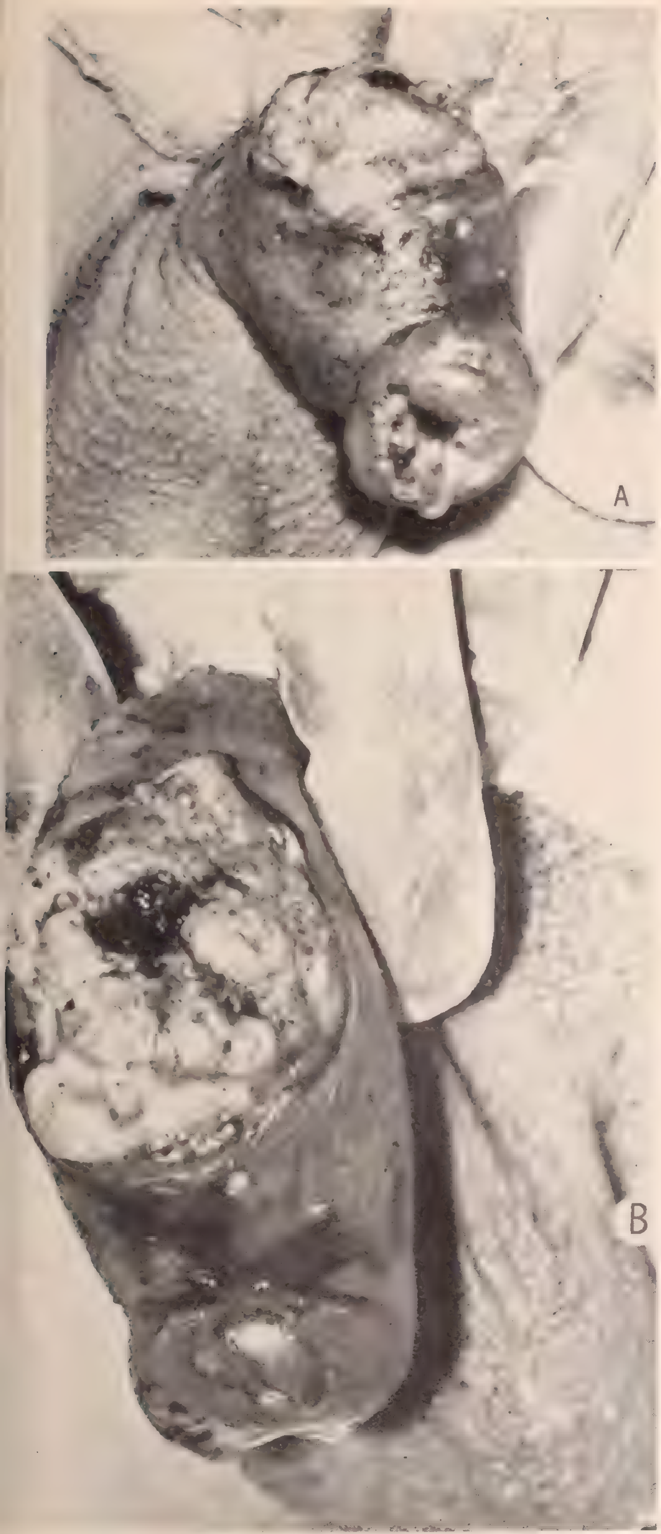

FIGURE 3. Lesion of glans penis, Case 2. (A) lateral view, (B) frontal view.

Six million units of benzathine penicillin G were given during the patient's stay in the hospital. A partial penectomy was done, since the patient refused radical surgery. The patient was discharged ten days after surgery. Follow-up until the present shows that the patient is in good general condition. There is no evidence of local recurrence or distal metastasis. The VDRL findings remain negative.

Case 2. A twenty-four-year-old white male was transferred to this hospital with an ulcerating and granulating lesion involving the glans penis which had been present for eight months (Fig. 3). The penis was uncircumcised. This lesion, about 2 cm. in diameter, was present over the glans corona. It had been treated unsuccessfully with local ointment and small doses of tetracycline prior to his admission. A severe balanoposthitis developed causing scarring of the urethral meatus and induration along the distal portion of the urethra. The patient consequently went into acute urinary retention and suprapubic cystostomy was done in another hospital because of inability to insert a Foley catheter.

Physical examination showed the patient to be essentially normal except for the penile lesion and bilateral inguinal lymphadenopathy. Chest x-ray and intravenous pyelogram were within normal limits, complete blood count was normal, urine culture grew Staphylococcus albus, and urinalysis showed many white cells.

A smear of the lesion was positive for Treponema pallidum on dark-field examination. The Frei test result was negative. The VDRL test showed a low-titer reaction. The patient was unaware of this syphilitic lesion.

Treatment included the administration of 5 million units of benzathine penicillin G, and circumcision with removal of the ulcerous lesions and part of the ulcerated glans. The pathology report showed chronic inflammatory process. Postoperatively, the suprapubic cystostomy was removed. The patient was discharged five days after surgery with adequate voiding and has been followed in our clinic since. Repeated VDRL testing produced negative results.

Comment

Both patients had been examined and treated by different physicians, one for two years, the other for eight months. Unfortunately, penile carcinoma in the first case and syphilis in both instances, were unrecognized.

In Case 1, syphilitic lesion and epidermoid carcinoma appeared to be coincidental. It should be remembered that in Stage I of syphilis, occasionally the classic primary chancre may not be located in the penile region. Extragenital chancres, perianal, intraurethral, and even buccal, have been described, and should be looked for.[4,5]

It is most probable that the changing manifestations of syphilis are due to a masking of the lesion by the improper use of antibiotics, hygiene, or particularly inadequate examination of patients due to overlooking the lesion. Therefore, any patient with an ulcerating lesion of the penis should have a smear taken for dark-field examination and biopsy of the lesion performed besides routine serology.

Summary

Two undetected cases of syphilis of long duration, one associated with epidermoid carcinoma of the penis, are described.

Acknowledgment. Thanks are extended to Mr. M. A. Anthony, our hospital photographer.

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SQUAMOUS-CELL CARCINOMA OF NAIL BED IN HEREDITARY ECTODERMAL DYSPLASIA

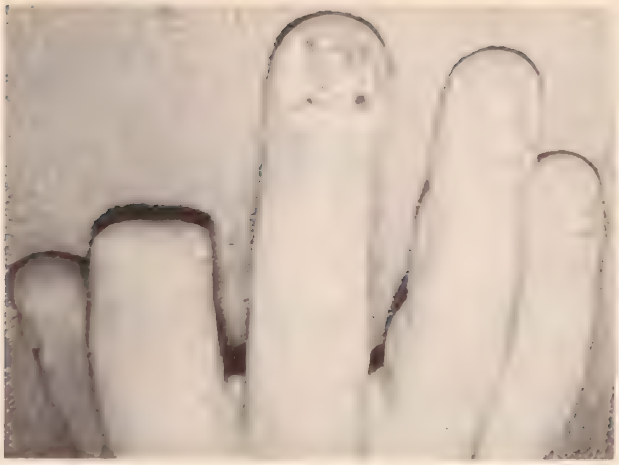

FIGURE 1. Patient's right hand showing granular, bleeding lesion of nail bed of third finger and partial amputation of index finger; nails are thickened and atrophic with coarse, furrowed hyperkeratosis of fingertips.

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Hereditary ectodermal dysplasia is a congenital ectodermal defect which was classified as anhidrotic or hidrotic by Weech in 1929.[1] The anhidrotic form, often called major ectodermal dysplasia, is the more severe. This variant involves lack of sweating and is disabling because it fails to regulate temperature. This defect is transmitted as a sex-linked recessive trait.

The hidrotic form, minor ectodermal dysplasia, is transmitted as an autosomal dominant trait. The dominant form is less disabling, with atrophy of the nails, coarse furrowed nail beds, thickened skin of palms and soles, and brownish pigmentation of the skin. Dental manifestations vary from none to anodontia. Body and scalp hair may be normal or sparse. The nail-bed manifestations may be occasionally difficult to distinguish from onychodystrophy, onychomycosis, or chronic paronychia.

History

Clouston in 1939[2] described a family in Canada in which 40 members in four generations were affected by hidrotic ectodermal dysplasia. The family was again reviewed in 1967 by Williams and Fraser,[3] at which time 453 offspring were investigated. These included an American family near Montreal in whom 105 members were affected through the autosomal dominant mode of transmission.

Primary carcinoma of the nail bed arising in preexisting hereditary ectodermal dysplasia has been reported only once, by Campbell and Keo-Karn,[4] and differed from previously reported cases of carcinoma of the nail bed (Levine and Lisa,[5] Gelmann,[6] and Eichenholtz and DeAngelis[7]) in that it occurred in two fingers of a young man, age twenty-seven. Moreover, although axillary dissection, interscapulothoracic amputation, and partial resection of the chest were performed, the patient died of widespread metastasis a few months later. In the earlier cases of squamous-cell carcinoma of the nail bed, the malignancy was of low order, and no deaths from the lesion were reported.

Case report

A thirty-one-year-old white man was seen in January, 1967, with a granular, bleeding lesion of the nail bed of the third finger, right hand (Fig. 1). The index finger had been partially amputated one year previously at another hospital, and pathologic diagnosis was squamous-cell carcinoma of the nail bed. Biopsy of the third finger indicated another primary squamous-cell carcinoma. Preoperative roentgenographs and pathologic examination of the finger after amputation exhibited bone involvement of the terminal phalanx. The result of follow-up after one year was negative for recurrence or new primary sites.

The patient exhibited sparse scalp and body hair, atrophic nails of the fingers and toes, keratosis of the palms, and slight hypoplasia of the teeth (Fig. 1).

A pedigree of this patient is presented in Figure 2. It is consistent with the mode of autosomal dominant inheritance. In this family, the features

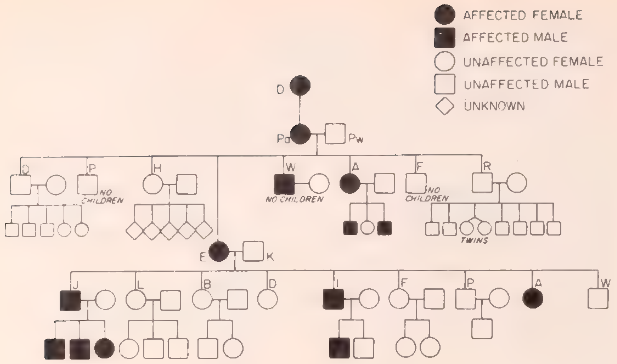

FIGURE 2. Chart showing hereditary line of disease in patient's family.

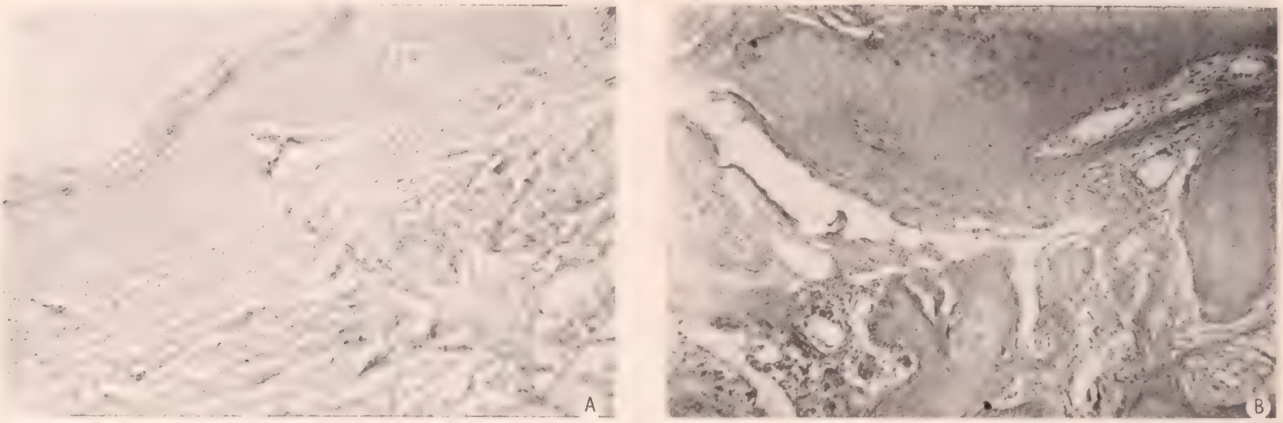

FIGURE 3. Photomicrographs showing (A) nail bed with slight irregularity of epidermal layers and formation of amorphous keratinized material, and (B) well-differentiated infiltrating epidermoid carcinoma. (Hematoxylin and Eosin Stain)

involve consistent atrophy of the nails, sparse hair, and hyperkeratosis of the palms and soles.

Discussion

In epidermal dysplasia there is an irregular pattern of development of the strata germinativum and malpighii. These layers are thinned and irregular. Instead of a well-formed nail, amorphous keratinized material is produced.[1] This histologic appearance was present in Campbell and KeoKarn's[4] case and in ours (Fig. 3).

On inquiry Campbell and KeoKarn's[4] case was found to have originated in an Upstate New York city.[8] Many members of the same family were said to have the stigmata of hereditary ectodermal dysplasia. The family described by Clouston[2] is from the vicinity of Montreal.[9] Our case involved a family from another city in New York State. These three cities are within a radius of 30 miles, lending credence to the possibility of a relationship between these families.

Clouston[2] mentions the occurrence of carcinoma of "the working surface of the hands" in 2 of his cases but does not elaborate. The anhidrotic form of this disease, also called dyskeratosis congenita, has been reported by Cole and Cole[10] and Costello and Buncke[11] to be associated with squamous-cell carcinoma arising in leukoplakia. These cases include poikiloderma-vasculare-atrophicans changes and leukoplakia oris.

Campbell and KeoKarn's[4] case and our case are the only reported cases of double primary squamous-cell carcinoma of the nail bed. Also, both of these cases are unlike the previously reported cases because they occured in young men without preexisting chronic inflammation and in nails affected by hereditary ectodermal dysplasia.

Summary

A case of double primary squamous-cell carcinoma of the nail bed in hereditary ectodermal dysplasia is reported.

A brief review of the literature is presented.

The pedigree of the family was reviewed. This family may be related to the family with hereditary ectodermal dysplasia mentioned by Clouston.[2]

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Medical Arts and Letters

WILLIAM B. OBER, M.D., Editor

BÉLA SCHICK, M.D.

[1877-1967]

Founder with von Pirquet of the specialty of allergy

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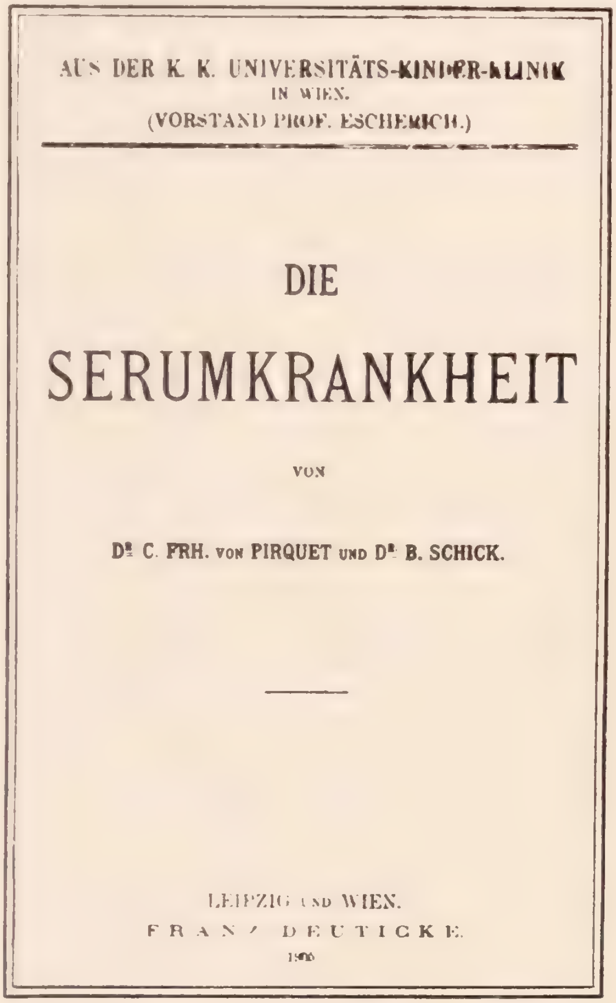
Throughout the early part of this century, there were attempts to explain the phenomenon of hypersensitivity. However, it was actually von Pirquet and Schick who, by clinical observations, carefully planned experiments, and studies of the clinical phenomena in vaccination and tuberculosis, really founded the specialty of "allergy." The clinical observations were made on patients who had received one or more injections of antiserum for diphtheria, scarlet fever, and tetanus. Von Pirquet and Schick[1] wrote the classic *Die Serumkrankheit* from which clinical allergy developed. In 1906 von Pirquet coined the word "allergy" from the Greek, "altered capacity to react."

Association with von Pirquet

Béla Schick was born on July 16, 1877, in Hungary of Austrian-Jewish parents at the home of his maternal granduncle, a physician in general practice. Schick was a premature infant; and since his condition was precarious, requiring the constant attention of the granduncle, a strong bond was forged between the two. Guided and influenced by the physician, Schick entered the Karl Franz University in Graz, Austria, to study medicine and was graduated in 1900. Following an obligatory six-month period in the army, he began work with the great Escherich whom he followed to the University of Vienna. Clemens von Pirquet, M.D., three years Schick's senior, also left Graz at the same time to become Escherich's assistant, and a firm friendship developed at once between the two young physicians. Schick worked long hours and led a life of privation and hardship.[2] He worked with von Pirquet from 1902 to 1909; this "marriage of minds" resulted in many innovations including the famous work, *Die Serumkrankheit*, published in 1905 (Fig. 1).[1]



AUS DER K. K. UNIVERSITÄTS-KINDER-KLINIK
IN WIEN.
(VORSTAND PROF. ESCHERICH.)

DIE

SERUMKRANKHEIT

VON

D^R^ C. FRH. VON PIRQUET UND D^R^ B. SCHICK.

LEIPZIG UND WIEN.
FRANZ DEUTICKE.
1905

FIGURE 1. Title page of the work on serum sickness by von Pirquet and Schick.

Von Pirquet and Schick explained the occurrence of serum sickness following the primary injection of serum as follows: Injection of foreign serum causes the production of antibodies to the serum which takes from eight to twelve days. When the antibodies are formed they react with the remainder of the serum and produce the symptoms of serum sickness. Thus serum sickness is an antigen-antibody reaction. On the second injection of serum, an immediate reaction occurs near the site of the injection, and there is an accelerated development of serum sickness, because the antibodies are already formed or are capable of being formed rapidly.[1]

The close association with von Pirquet was all the more remarkable because of their differences, both in appearance and personality. Von Pirquet was brilliant, restless, and inclined to pass on to a new problem as soon as possible, while Schick was analytical, persistent, and tended to stick with a problem until he exhausted all attempts at solution.

Edwards A. Park, M.D.,[3] professor emeritus of pediatrics at Johns Hopkins University stated:

> Although it is impossible to analyze the "marriage of true minds" which existed between them, the importance of their combined contributions to medical science is clear enough. In my opinion, at least, their studies of immunity represent the finest contributions to medicine ever made by pediatricians. They perceived and defined the general principles of immunity, as developed in the investigations of serum sickness, then of vaccination against smallpox and finally tuberculosis. I do happen to know that Schick was the one to perceive the accelerated reaction in immunity, a concept difficult to grasp and of obvious basic importance. I doubt if knowledge in this field has advanced much farther, except in details, than when Schick and von Pirquet left it, and it will never make great further progress until it is possible to understand the chemical nature of the factors involved in immune reactions and to substitute in our thinking chemical reactions for the unknown quantities of algebra. How Escherich's heart must have glowed with pride when he saw these two boys, for they were scarcely more than that, penetrate step by step into the terra incognita and return, laden with rich spoils.

Horace L. Hodes, M.D.,[4] the eminent pediatrician, made the interesting observation that the researches of von Pirquet and Schick were so interwoven that with a little different arrangement of circumstances, we might have had the Schick tuberculin test and the von Pirquet test for immunity to diphtheria.

Schick test

In the scarlet fever pavilion of the Saint Anna Kinderspital Schick gathered the material for the study, *Die Nachkrankheiten des Scharlachs,* in which be believed that many of the delayed manifestations of scarlet fever were possibly the result of delayed allergy to the infection. In 1906 Schick transferred to the diphtheria pavilion at St. Anna's and here he developed the Schick test which proved to be so important in the conquest of diphtheria.[5] The discovery of the Schick test was not accidental; he knew immediately that the test was not of the same nature as the skin reaction to tuberculin.

In 1918 Schick was appointed extraordinary professor of children's diseases at the University of Vienna.[5] One must explain that only a baptized physician could become a full professor in the Germany and Austria of those years, and the term "extraordinary professor" was a euphemism to explain the lowered rank of the unbaptized.

The history of the development of the tuberculin test is interesting because this cutaneous test is the forerunner of all the skin tests for allergy that are done today. In 1905 Koch found that if 0.01 cc. of tuberculin was given subcutaneously to a patient with tuberculosis, fever would develop, but fever would not develop if the patient did not have symptoms of tuberculosis. Schick noted that invariably the "normal" patient at autopsy would have an arrested focus of tuberculosis. At first von Pirquet would not accept the tuberculin reaction of Koch as an allergic reaction in spite of Schick's insistence. Schick went to Graz to check the charts of children with tuberculosis treated by Koch's method called the stich reaction. Schick found that the positive stich reaction was a specific reaction proving the existence of active tuberculosis. Convinced, von Pirquet used his vaccination borer to get a reproducible scratch with concentrated tuberculin.[6]

Menstrual toxins

Schick's deep interest in all natural phenomena led to his discovery of the menstrual toxins in 1920, when he noticed that a bouquet of flowers had wilted after being handled by a girl who was menstruating.[7] There is a common belief among nearly all peoples in the ancient, medieval, and modern world that women are "unclean" at the time of menstruation and that they impart something detrimental to the environment during the period. It is believed in some cultures that a menstruating woman may cause flowers that she touches to wither and foods that she is carrying to spoil. In the French perfumery industry menstruating women are not allowed to work during this time. Likewise the writers of chapter fifteen in Leviticus stated that a menstruating woman is unclean for seven days, that anyone touching her during this time is unclean, and every object that she touches or sits on is also unclean and has to be cleansed (Lev. 15: 19–28).

Is there any scientific evidence for restricting the menstruating woman in this fashion? Schick was the first scientist to investigate the problem. He found that a small amount of venous blood from a menstruating woman prevented the growth of a culture of yeast cells, while the venous blood of the same woman when not menstruating did not have this growth-retarding effect. Schick showed that a menstruating woman's skin secretion could actually cause flowers to wilt easily, and that this could be prevented by the wearing of a sterile glove. In the article, Schick[7] stated characteristically that the priority belonged to folklore.

Several years later Schick's findings were fully confirmed by others. Using a test model involving the growth of lupinus albus seedlings, Macht and Lubin[8] proved that blood from a menstruating woman is more toxic than blood from a woman at any other time and therefore could be said to contain a menotoxin or a menstrual toxin. They also proved that the growth of the seedlings was inhibited by perspiration on the skin of a menstruating woman, while even the breath of a menstruating woman was toxic to these seeds. A blighting effect was also found by these authors on many types of cut flowers by the skin secretion of the menstruating subjects. There is widespread belief among various peoples that bread dough kneaded by menstruating women does not rise well. Macht and Lubin showed that yeast rubbed in the hands of a menstruating woman produced less gas in a fermentation tube containing sugar, thus furnishing an experimental basis for the superstition.

Problem of tuberculosis

Dr. Schick emigrated to New York in 1923, to become chief of the department of pediatrics at New York's prestigious Mount Sinai Hospital, where he was warmly welcomed, and he immediately established new friendships. Among the problems which occupied his time were allergic reactions and tuberculosis in children. All of Schick's biographers stress his love for children and his kindness to children.[2,5,9-11] If I may be permitted to insert a personal note, these statements are true. My daughter, then aged four, had a persistent cough which had lasted for several months and was unresponsive to treatment. On the basis of a shadow on x-ray film (primary complex of Ghon), she was diagnosed as having tuberculosis, and we had decided to move to Arizona. Dr. Shick spent more than an hour examining her, some of the time being spent playing with her and putting her at ease. He found that she had an allergy to foods and that the roentgenogram could be considered normal. The cough cleared completely after dietary adjustment. Subsequent visits were eagerly awaited by the child.

Increasingly throughout the years, problem cases of tuberculosis occupied more and more of Schick's time. In a roundtable discussion on tuberculosis, held at the Waldorf-Astoria Hotel in New York City, the chairman, Chester B. Stewart, M.D., of Minneapolis, stated categorically that allergy does not lead to immunity.[12] Schick believed that this attitude was a misrepresentation of von Pirquet's definition, which was essentially that allergy was an altered reactivity of the organism to reintroduction of a pathologic substance. As in serum sickness and smallpox revaccination, altered reactivity is marked by three different parameters: (1) change in time (immediate and accelerated reactions), (2) change in quality, and (3) change in quantity. An allergic individual produces antibodies rapidly. Hypersensitivity does not interfere with immunity. A hyperergic reaction is deleterious if large numbers of tubercle bacilli invade the system. In mild infections chance favors the allergic individual, that is, one who has already been infected with the tubercle bacillus and has developed the primary complex.

Thus patients who have primary infection with tubercle bacilli do have a certain resistance to tuberculosis. He cited the observation that 95 per cent of the children in Vienna were infected with tuberculosis as determined by tuberculin testing, yet the mortality rate and incidence of active tuberculosis was extremely low. Dr. Stewart stated that a primary complex is always dangerous, and on this matter Schick was in complete disagreement with him. Schick noted that injection of BCG (Bacillus Calmette-Guérin) vaccine produces allergy, in that a negative tuberculin reaction becomes positive, yet this allergy improves the resistance of the child to later infection. Heimbock, of Norway, vaccinated tuberculin-negative nurses with BCG vaccine, and these individuals showed a markedly reduced tuberculosis incidence compared with unvaccinated controls.

Since Schick believed that the development of a primary complex also reduces the incidence of tuberculosis, this term should be defined carefully. After initial entry into the organism and bacilli are first phagocytized by neutrophils; these neutrophils are then phagocytized in turn by monocytes, and later these monocytes are converted into epithelioid cells which combine to form the tubercle. Before cutaneous allergy develops, a slight fever develops which is the first reaction to tuberculoprotein. The primary complex is usually found subpleurally and is frequently so small that it is often not seen on the x-ray film. This very important fact was proved by Ghon.

Some authors, notably Rich,[13,14] believed that as far as tuberculosis was concerned, the phenomena of immunity and allergy were independent states. In his words, allergy refers only to the acquired hypersensitiveness of the skin. It must be stated that infection with tuberculosis is a special circumstance depending on whether large or small doses are injected into either a tuberculous or normal guinea pig. If large doses of bacilli are injected intravenously into a tuberculous guinea pig, death in anaphylaxis occurs; whereas if small doses are given subcutaneously to a tuberculous guinea pig, there is no change in the condition; and if given to a normal guinea pig, the primary complex of tuberculosis appears after two or three weeks, evidently a form of immunity.[15] Schick firmly believed this.

In 1942 Schick reached the mandatory age of retirement as chief of the department of pediatrics at Mount Sinai Hospital. In 1950 he became pediatrician-in-chief at the Beth-El Hospital. Lest one think that this position was honorary, Gronwicz[2] describes a "day of work" during these years. Punctually at 8:00 A.M. he would enter the Lexington Avenue subway at 86th Street; at about 8:30 A.M. he would be at Utica Avenue, Brooklyn, where a colleague would pick him up and drive him to the Beth-El Hospital (now Brookdale Hospital). He would visit in order, the premature nursery, the well-baby nursery, and make ward rounds with the residents and staff members, and then go to the laboratory to talk over mutual problems with the pathologist. Following a quick lunch, he would hurry off to a lecture or discussion period at one of the New York hospitals. Usually this was on the subject of tuberculosis.[12]

It is an oft-repeated truism that the science of medicine has had centuries of ebb and then periods of flood with many tidal waves. In the flood of the nineteenth and early twentieth centuries, in addition to the wave crests made by Pasteur, Lister, and Koch, the additional wave of von Pirquet and Schick must also be noted.

All the great discoveries by von Pirquet and Schick were made when they were working together under great adversity in the early days of their partnership.

Béla Schick died on December 6, 1967, at the age of ninety, having lived a full and interesting life.

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ROBERT MUSIL
[1880–1942]

What price homosexual sadism?

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In a recent article I commented that neither Somerset Maugham nor D. H. Lawrence, nor James Joyce, each of whom wrote an autobiographic novel on the eve of World War I, proved in later life to have been successful in exorcising his personal devils by literary autocatharsis.[1] Their subsequent careers were characterized by a variety of neurotic maladjustments, and literary biographers have made capital of them ever since. To this list might be added the case of Robert Musil (1880–1942), the Austrian novelist, whose work is less familiar to English readers because it has been translated only in recent years and, even now, not completely.

His reputation, that of a German Proust manqué, rests chiefly upon his labyrinthine stream of consciousness novel *Der Mann ohne Eigenschaften* (*The Man Without Qualities*), a study of characters inhabiting the ambience of decadent Viennese society during the declining days of the Austro-Hungarian Empire. In that respect it resembles Proust's study of Parisian salons under the Troisième République before World War I, but unlike Proust's achievement Musil's novel was left unfinished at its author's death and has not yet been completely translated into English. But Musil's first novel, an experiment in autobiography, was finished and published in 1906, a few years before the public self-exposures of Maugham, Lawrence, and Joyce. It bears the title *Die Verwirrungen des Zöglings Törless*, that is, the perplexities (or confusions, or aberrations) of the military-school student Törless, and has been published in English translation under the simpler, but less accurate, less defining title, *Young Törless*.[2]

A writer who publishes an autobiographic novel in his twenties, when his career is just beginning, runs the risk of having the events of his earlier life reinterpreted in the light of his subsequent career. Such postmortem examinations are not carried out under the high bright spirit of young promise but in the chillier atmosphere of the dissecting room where the most frequent questions are: What is the nature of the disease? How did it begin? What were the symptoms? What course did it pursue? What finally happened to the patient? In such circumstances, purely literary values are modified by historical and biographic ones, and the argument is less concerned with letters qua literature than the relation between letters and life.

Novel or autobiography

Like so many novels of its genre, a few precursors but many more since, *Young Törless* deals with the sexual and intellectual awakening of an adolescent hero who is modeled on its author and recapitulates, how accurately one cannot be certain, many of its author's actual experiences. That these experiences include a complex episode of homosexual sadism is not, by the standards of 1970, a novelty. But by the standards of 1906, the subject was daring, not to say unconventional. That it should have been related in such explicit detail and yet not have been subjected to censorship is, in the light of American and British experience, quite surprising, all the more so because *Reigen* by Arthur Schnitzler, which deals with so banal a subject as heterosexual promiscuity, had been interdicted in 1900. *Young Törless* may have scandalized a few readers, but its erotic contents do not whet the reader's prurience nor, clearly, was it designed to. For a first novel it met with fair success, and the generally favorable notices decided Musil on adopting a writer's career.

Author's early life

Available biographic data about Musil, especially his childhood years, are scanty; the details of his life have not been subjected to the businesslike scrutiny of American literary scholars. But the general outline is clear, and some specific anecdotes are telling. In his Afterword to the American edition of *Young Törless* John Simon tells us that Musil was born in 1880, the only son and surviving child of an engineer who rose to a high position in the Austro-Hungarian civil service, whose later career included a major teaching position, and who was eventually knighted. The father is described as "essentially scholarly, mild and pliable." Musil's mother, we are told, was "a tempestuous woman, presumably frustrated by marriage to the point of not even showing particular love for her son who, nonetheless, cared more for her than for the meek father who carefully softened the rod with which, at his wife's insistence, he would give the boy a caning." Given a family constellation with such a configuration to its interpersonal relations, the question is not so much why the son developed psychopathic tendencies but what form they took. Added to this information is the datum that before Musil was born his parents had had a daughter who died before she was a year old. Simon concludes that the image of what this sister might have been, added to what the mother should have been, was to haunt his work and thought forever. The ambiguous figure of a sister, lost before his own birth, might well be part of the reason why Musil was never able to finish *A Man without Qualities*, unable to resolve the consummation of the love between two of its chief characters, Ulrich and his twin sister, Agathe, into either overt incest or into "some abstinent otherworldly rapture." The lack of a real sister, coupled with his mother's lack of affection, or overt rejection, may have been the unconscious motive for Musil's innocent "abduction" of a very young schoolgirl some time in early puberty.

Shortly thereafter his parents sent him to the military school in which the events of *Young Törless* are set.

Confronted by an autobiographic novel, the reader is faced with the problem stated by Coleridge when he tried to distinguish between poems of fancy versus poems of imagination. Is it a rearrangement of experience rather than a transformation of it? We can never be sure of the historical accuracy of some of the incidents Musil relates nor of the specific behavior of some of his characters, but there is no doubt that Musil attended a military school where upper-class Austrians sent their sons to prepare them for a career in the army, that he was a student there from circa 1893 to circa 1896, and that he did participate in an affair which involved homosexual behavior and sadism. Of equal importance is the fact that in these years his inquiring mind developed; he became proficient at physics and mathematics, and he developed an interest in metaphysics, epistemology, and psychology. The transition from a boy's home to boarding school marks the change from being exposed and subject to his parents' values and judgments, and the emotions they invest, to the values and judgments of society, in this case as in so many, a societal hierarchy based on command and status, coupled with the inevitable comparison to and by his peers. The rhetorical framework of such an environment, artificial and set apart from the real world outside, affords the novelist considerable advantage in setting his stage and controlling the movements of his characters.

Many novelists have created such environments from imagination for the sake of their fiction, but in Musil's case it was real, and he drew on direct personal experience.

Plot of the novel

The action in *Young Törless* centers around four boys: Törless, modeled after Musil himself; two slightly older boys, Beineberg, who represents a mystical view of life, and Reiting, who embodies ruthless activism and an aptitude for intrigue; and Basini, of an age with Törless, the victim. John Simon conjectures that Reiting may represent a transformation of the name Reiter, a constant companion of Musil's parents, a man Musil hated because he suspected him, rightly or wrongly, of being his mother's lover. Whether Musil's belief had a foundation in fact or was a fantasied projection of an unresolved oedipal situation is not clear; what was decisive, however, was that his belief in his mother's unchastity determined his conduct.

The novel opens with a scene in which Törless, still homesick after three years at the military school, says goodby to his parents at the railway station. They have paid him a two-day visit and entertained his friends Beineberg and Reiting, who are also at the station to bid them adieu. After the train leaves, Törless, somewhat disconsolate, walks back to the school with his two friends. They stop off at a cake shop or tavern where a rather coarse barmaid named Božena, apparently sexually available to some of the military cadets, teases Törless unpleasantly and makes crude innuendos about his mother's sexual promiscuity, claiming to have been in service with the boy's aunt. In this scene we are introduced indirectly to Basini; Božena describes him as a youngster who boasts of love affairs he pretends to have had at home but whose advances she, with the intuition of her class and occupation, readily identifies as those of a lad who is with a woman for the first time.

An abrupt transition from this shabby scene initiates the plot. Reiting has identified Basini as the person who has been stealing from other cadets' lockers. He and Beineberg lay plans to deal with Basini according to their whim, and they persuade Törless to join the fun. Previously, Reiting and Beineberg have found a "secret chamber," a small room under the eaves in the attic of an unused wing of the school building. They have furnished it with a variety of juvenile mementos and accoutrements. One senses that Törless is privy to the arrangement and has been there before. In this chamber Reiting and Beineberg subject Basini to a series of humiliations including conventional beatings, tying up, and sexual abuse. This continues for a period of several weeks. At first, Törless is merely an onlooker. Musil interposes a number of metaphysical and psychologic digressions but finally makes the point that during one of these seances Törless experiences sexual excitement.

Again, another abrupt transition, and we are confronted with the device Musil used to symbolize Törless's *Verwirrungen*, his adolescent perplexities, confusions, and doubts. He falls afoul of the mathematical convention of irrational numbers. At first he discusses the problem with Beinberg.

> But that's just it, I mean, there's no such thing. . . there can't be any real number that could be the square root of a minus quantity.

Beinberg cannot help him resolve his doubts, so he takes them up with the mathematics master, an equally unproductive discussion, but the master lends Törless a volume of Kant. That Kantian metaphysics and epistemology may prove more dangerous to a confused adolescent than hard-core pornography appears never to have occurred to German schoolmasters. Törless's perplexities increase.

The consolations of philosophy lead easily into psychopathology. Törless has a nightmare, a scene involving Beineberg and the mathematics master. The master, who is carrying the book, says:

> If that is really so, we shall find the right answer on page twelve, page twelve refers us then to page fifty-two, but then we must bear in mind what is pointed out on page thirty-one, and on this supposition. . .

The dream sequence rapidly switches to the sensation of sexual excitement Törless had felt when he watched Basini being used sadistically, and intermingled with this is a recollection from early childhood of his feeling himself to be a girl. He wakes up. Later that day he has hallucinatory experiences in which Basini figures prominently.

A two-day public holiday occurs, and the school is almost emptied of cadets and masters. Törless and Basini are left more or less alone together. That night the inevitable occurs: Törless consummates a homosexual act on Basini who has, in effect, solicited it. Musil describes Basini's body as "lacking almost any sign of male development. . . chaste, slender willowyness, like that of a young girl." To a medical eye this suggests a form of hypogonadism without obesity. In a note dating from 1906, the year the novel was published, ten years after the events took place, Musil wrote that Basini could just as easily have been replaced by a woman and that instead of "bisexuality" (sic) there could have been any other perversion. Musil's "abduction" of a little girl a few years before might indicate that he had not yet fixed on a sexual object-choice, but given the deliberate setting of the novel in a military school, his later comment appears like a hasty attempt at rationalization by displacement and sex reversal. By endowing Basini with a female habitus, Musil fused both male and female object-choices into one partner, his own literary pseudohermaphrodite. Following this epicene epiphany of ephebic eroticism, he experienced a profound guilt reaction. The sense of guilt is made explicit in the next few paragraphs when Törless abruptly rejects further sexual advances from Basini.

The denouement follows swiftly. The other students return from their brief holiday. Another episode is presented in which Reiting and Beineberg torture Basini by sticking pins into his naked body while Törless watches, unhappy and lacking in grace. Basini finally becomes terrified and seeks Törless's advice. Törless advises him to confess what has been going on to the masters. Guilt and anxiety press so heavily on him that he makes only a feeble effort to exculpate himself. Reiting and Beineberg manage to put most of the blame on Basini, who is so thoroughly frightened that he is almost mute. Their task is made easier because Törless has made a maladroit effort to run away.

> In short, it was a well-rehearsed farce, brilliantly state-managed by Reiting, and the highest possible moral tone was assumed in putting forward excuses that would find favor in the masters' eyes. . . Then Törless was brought in. He had been picked up, dead tired and very hungry, in the next town.

When interrogated in the headmaster's chambers, Törless is agitated, unintelligible, and unable to give a coherent account. He mumbles something about imaginary numbers, then delivers himself of the following speech:

> No, I wasn't wrong when I talked about things having a second, secret life that nobody takes any notice of. . . ! it was more as if I had a sort of second sight and saw all this not with the eyes of reason. Just as I can feel an idea coming to life in my mind, in the same way I feel something alive in me when I look at things and stop thinking. There's something dark in me, deep under all my thought, something I can't measure out with thoughts, a sort of life which can't be expressed in words and which is my life, all the same. . . The silent life oppressed me, harassed me. . . I was tormented by the fear that our whole life might be like that and that I was only finding it out here and there in bits and pieces . . . Oh, I was dreadfully afraid! I was out of my mind. . . Now it's all over. I know I was wrong after all. I'm not afraid of anything any more. I know that things are just things and will probably always be so. And I shall probably go on forever seeing them sometimes this way and sometimes that, sometimes with the eyes of reason, sometimes with those other eyes. . . And I shan't ever try to compare one with the other. . . .

Musil has put into the mouth of his fictive alter ego the speech of a person recovering from a psychotic episode, but it was his own self divided. Basini was, of course, expelled; Reiting and Beineberg stayed on. Törless-Musil was withdrawn from the school by mutual consent. His mother came to fetch him. She expected to find an overwrought and desperately perplexed boy but was astonished by his cool composure. The last lines of the novel are:

> "What is it, my dear boy?"
> "Nothing, Mama, I was just thinking." And, drawing a deep breath, he considered the faint whiff of scent that rose from his mother's corseted waist.

In real life Musil never received more than vicarious affection from his punitive, dominating mother.

Author's image of himself

But Musil tipped his hand long before that. Just after describing the homosexual scene between Törless and Basini he interpolated a sententious passage:

> Later, when he had got over his adolescent experiences, Törless became a young man whose mind was both subtle and sensitive. By that time he was one of those aesthetically inclined intellectuals who find there is something soothing in a regard for law and indeed. . . for public morals too, since it frees them from the necessity of ever thinking about anything coarse. . . For the only real interest they feel is concentrated on the growth of their own soul, or personality, or whatever one may call the thing within us that every now and then increases by the addition of some idea picked up between the lines of a book, or which speaks to us in the silent language of a painting—the thing that every now and then awakes when some solitary, wayward tune floats past us and away, away into the distance, whence with alien movements tugs at the thin scarlet thread of our blood—the thing that is never there when we are writing minutes, building machines, or following any of hundreds of other similar occupations.

Gauchely written though the passage is, it merely represents a form of retreat from reality, a retreat into a solipsistic world in which illumination or growth occur only intermittently, and then in response to random aesthetic stimuli. However, this is Musil's image of himself as of 1906, now that he had purged himself of guilt.

It appears to be time to return from Musil's ramblings, first as the guilt-stricken Törless, later as the novelist trying to relieve that guilt. What actually happened in the ten years between 1896 when he left the military academy and 1906 when *Young Törless* was published? The decade covers Musil's years from sixteen to twenty-six, a decisive period in most men's lives. The objective record tells us that he floundered a bit. At first, possibly spurred by the scent of his mother's corseted waist, he considered following in his father's footsteps, and he studied civil engineering. His nimble mind served him well; he even invented a chromatometer which was known by his name. But engineering did not satisfy him, so he went off to the University of Berlin to study philosophy and experimental psychology. It was probably at this time that he became aware that his intrapsychic conflict still persisted, partly digested but unresolved. Accordingly, concomitant with his work toward his degree, he began writing *Young Törless.* When it was published, he felt a sense of relief for a time, but he had yet to establish a firm, mature, heterosexual relationship. At that time homosexuality was "the love that dare not speak its name," even though today it appears to be the love that will not shut up.

Neurotic maladjustments

In 1907 Musil met Martha Marcovaldi whom John Simon describes as "a Jewish woman seven years older than himself, estranged from her husband, mother of two children, unattractive, freethinking, highly intelligent, and a talented painter." Viewed in terms of the standards of the outside world, his parents' world, this was just another example of a neurotic young man making an unsuitable choice of mate. From Musil's point of view, unconscious though it may have been, she combined the attributes of mother-sister-friend and fellow-artist. Unable to elicit an affectionate response from his mother, Musil found a substitute in an older, experienced woman. His marriage rather than his novel appeared to resolve some but not all of his problems. Simon informs us that when they were able to marry a few years later, Martha gave up painting to become a "dedicated helpmate-hand-maiden to the impractical genius she had married, and the two remained happy with each other to the end." Probably not a bad compromise for both of them, but what about the objective record?

Musil received his doctorate from the University of Berlin in 1908. Presumably backed up by Martha Marcovaldi, he decided not to pursue an academic career. He took a position as librarian at the Technische Hochschule in Vienna. In 1913 he returned to Berlin to become one of the editors of *Die neue Rundschau,* an avant-garde literary magazine. During World War I he served as an officer in the Austrian army. After the war he worked as a liaison official in the War Ministry of the newly formed Austrian republic. From 1922 on he supported himself as a free-lance writer so that he could have time to work on *The Man without Qualities.* He left Germany in 1933 for obvious reasons and returned to Vienna where a "Musil society" was formed to provide him with financial support. After the Anschluss of 1938 he moved to Switzerland where he died four years later.

During these years attempts to interest American organizations to sponsor his emigration to the United States failed, despite support by men of such reputation as Albert Einstein and Thomas Mann.

Apart from *Young Törless* (1906) and *The Man Without Qualities* (unfinished at his death, 1942) Robert Musil's publications, excluding journalistic ephemera, include the two longish short stories or contes titled "The Perfecting of a Love" and "The Temptation of Quiet Veronica," published together as *Unions* in 1913, three comparable stories, "Grigia," "Tonka," and "The Lady from Portugal," published as *Three Women* in 1924, an expressionist drama, *Die Schwärmer* (The Enthusiasts) performed once only in 1921 and published that year, and a farce titled *Vinzens* (1924). The short stories have in common what Kermode[3] calls "a nervous obliquity, a mystique of the erotic, a deep interest in the borders of the human mind, those uneasy frontiers with the human body and with inhuman reality." This sensibility is more fully explored and exploited in *The Man Without Qualities* which numbers among its themes nymphomania, incest, and sex murder, "Not at all for their prurient interest but as indices of the reaches of consciousness." To these works, most of which are available in English, one must add the amusing sketches called *Posthumous Papers of a Living Man* and the light-textured, quasisatirical fictions called *Stories Which Aren't Stories*, neither of which, so far as I can determine, has appeared in English translation. It is not exactly a voluminous output for a writing career of four decades.

One begins to question whether Musil suffered from neurotic work inhibition. If so, it might well be interpreted as the expression in later life of the same forces which determined his indecision regarding a choice of career during the decade after leaving school. He began *The Man Without Qualities* in 1922 and left 2,000 pages of it twenty years later at his death in 1942, a production rate of 100 pages a year. Granted that during this period he wrote many ephemeral pieces merely to earn a living, granted that he took enormous pains, polishing and rewriting continually, it is not surprising that even a critic disposed in his favor such as John Simon should write, "Though these works contributed to making him famous among a small elite, they achieved scarcely more than a succès d'éstime, and the larger public has remained to this day, even his own Vienna, ignorant of Musil." Small wonder! he had but little to say to that "larger public." Kermode[4] epitomizes Musil as "the interesting limiting case" and decides that *The Man Without Qualities* as a novel "turns into something else: a metaphysician's miscellany, interspersed with subtle exempla."

Musil's doctoral thesis had been an analysis of the ideas of Ernst Mach (1838–1916), the physicist-psychologist-philosopher who developed the epistemologic notion that knowledge is based primarily on experience and that the individual is united with the external world only through sensory impressions. Musil puts much of this ideation into the mouth of Ulrich, the hero of *The Man Without Qualities*, another fictive alter ego. Immobilized and impotent, torn like Musil by conflicts between his intellect and emotions, Ulrich can only maintain his façade of being in complete control of his life situation by withdrawing from the crises engendered by irrational elements (Törless's anxiety over irrational numbers) both in his own psyche and in society. In terms of Musil's relation to his parents, it is significant that Ulrich rejects the values of his father, a character who bears a partial resemblance to Musil's own father, and there is no mention of Ulrich's mother at all. In Elliott's[5] apt phrase, "Like Schoenberg's Moses, he is condemned to know the word of God but to be unable to communicate it."

Other evidence of neurotic maladjustment can be found. We learn that Musil was an effective editor of military newspapers during World War I, that he was demobilized as a captain with many citations and decorations, and that "something military remained in him, consolidating an anterior aristocratic-snobbish streak," hardly surprising in view of his family's status and his own education at military school. But then "However poor the Musils were. . . [his] clothes had to be expensive and immaculate. . . the sight of an unpolished pair of shoes hurt him physically." That is not merely an aristocratic-snobbish streak; it is overt narcissism, prefigured in the passage from *Young Törless* in which Musil preens himself on the subtlety and sensitivity of his mind. Musil chose this image of himself to defend his ego and keep it from crumbling. In effect, he suppressed his homosexual and sadistic tendencies, substituting a private cult of self-adoration for them.

Perhaps nothing became him so fittingly as his death. Always vain of his slim, athletic figure and fine physical condition, he kept in trim by strenuous gymnastic exercises, continuing them even after his physicians had warned him that his heart was weak. He died of a heart attack incurred at his daily calisthenics, carrying his body beautiful with him to the grave. Writing *Young Törless* did not resolve his underlying psychopathologic characteristics; it merely drove his idiosyncratic sexual drives into narcissism, work-inhibition, a marriage tailor-made for his convenience, and a role of dependency on his wife and their friends not only for the psychologic energy to carry on but for the basic necessities of life. In return he offered desultory work on a novel which he could not bring himself to complete, for had he done so, his raison d'être would have been extinguished. All the more so because Ulrich, the man without any definable qualities, was another projection of Musil's own character into a fictional setting. The perplexities of the youthful Törless matured into the indecisions of Ulrich in parallel with Musil's own development.

Conclusion

Had Musil concentrated his self-analysis not on the incident of his military school career, in which his effort at self-understanding was equivocal and his self-dramatization ignominious, but on the intrafamilial polarities which preceded it and were in large measure its cause, he might have become better adjusted and more productive. As matters developed, having deceived himself into thinking he had solved his problems by writing about them in *Young Törless,* having propitiated his private Eumenides by exposing his guilt publicly, he had to devote the major portion of his psychologic energies into maintaining the façade he had created. He managed this role with fair success for a number of years, and doubtless his wife's sympathetic support was of inestimable value, but one speculates whether at the end of his career he came to recognize that the chief victim of his aborted homosexual sadism was himself.

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ROSEBUSH SCRATCH

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Fever, fever, burning bright!

Not uncommon on a medical service, of concern on a surgical service, but often anticipated and explainable, the reporting of a febrile patient on a maternity service may be like the distant reverberations of a storm—noted, observed as a deviation from the routine, corrective steps anticipated; but usually of no great consequence. Still, the occurrence of a temperature elevation in a maternity patient differs significantly in its implications from the same condition in a medical or surgical patient. Fever is not intrinsic to parturition. The magnificient physiologic exercise characterizing normal labor is not usually associated with the bodily processes that produce significant temperature elevation.

Normal labor has predictable physiologic patterns. It is a physical exercise like respiration, ambulation, micturition, and is as normal as these, differing only in the organ systems involved, the ergs of energy expended, and the anatomic changes that occur in associated and allied parts. Repeated breathing does not greatly change the lungs; a succession of deliveries always alters pelvic architecture.

The fever begins

At 3:00 P.M. on the afternoon of April 24, 1965, Mrs. A, fourteen hours following delivery, had a charted temperature of 101.2°F. She was then residing in the maternity division of the Boston Lying-In Hospital. She had been delivered by a physician, and the occurrence of the elevation was reported to him.

The Boston Lying-In Hospital is situated on Longwood Avenue in Boston, Massachusetts. In the late afternoon sun it is literally in the penumbra of Harvard Medical School, and is one of the numerous excellent teaching institutions associated with that school. In the body medical that comprises this teaching complex, the Lying-In is the finely wrought obstetric arm. It is a hospital of 120 obstetric beds, 54 gynecologic beds, and 120 bassinets. Its hall, classrooms, and delivery theaters are trodden by every professional rank, often in shoes conspicuous for lack of polish. There seems to be an inverse relationship between lack of elegance in dress and degree of professional eminence. Shabby may be great. There are exceptions to this sartorial implication, but there are no exceptions to the pedagogic, intellectual, and laboratory accomplishments of this institution.

The Lying-In has pioneered in 2,001 ramifications of obstetric progress, including embryology, toxemia, Rh studies, and bacterial sepsis. In 1847, it was the first American maternity hospital to administer anesthesia to patients in labor. It was one of the first to open community maternal care clinics, establish a maternity cardiac clinic, and initiate prenatal diabetic care. The development of the contraceptive pill first began in this locale, and, in conjunction with the Children's Medical Center, the lifesaving exchange transfusion for babies with Rh problems was perfected here. The isolation of the natural estrogenic hormones of the human ovary was accomplished in its laboratories, and the research efforts of its investigators led to a remarkable growth of knowledge in human embryology and placental function. It is, quite possibly, the prime obstetric center of the world, and for seven generations has superbly served the laboring woman and her newborn.

On the evening of April 25, 1965, Mrs. A's temperature had risen to 103.5°F. At this point, continued thoughtful consideration was given to the possible causes of the altered temperature course. Laboratory studies had already been performed. The patient had been examined in detail. The differential diagnoses included the variables of respiratory disease, pathologic changes occurring in the breasts, genitourinary tract sepsis, the various modalities of phlebitis in the lower extremities, and the possible occurrence of pelvic infection. No definite diagnosis was immediately apparent, and an interval was required before laboratory test results were available. Mrs. A felt feverish. She felt vague pelvic discomfort and chilly sensations; there was a loss of appetite and a general malaise. At least to herself, her illness seemed systemic.

On April 26, Mrs. B and Mrs. C showed temperature elevations. On April 27, Mrs. D, Mrs. E, and Mrs. F became clinically ill. On April 28, Mrs. G joined the problem group, and on April 29, explosively, 7 additional newly delivered mothers began to exhibit a septic postpartum course. On April 30, an additional mother raised the tabulation to a total of 15. The sum total of fevers approached a conflagration. There is no statistic to characterize an epidemic; at the very least, this was the beginning of one.

Crisis

It became imperative to establish the following points: (1) the identification of the causative organism producing the fever; (2) the degree of sensitivity of this organism to a variety of antibiotics; and (3) the source of the organism and its means of dissemination.

The uterine cavity following delivery is a large open wound, and, excluding errors of technic and delivery, is not directly subject to bacteriologic invasion. There are no errors of technic or delivery at the Lying-In. The babies of all the mothers concerned in this Odyssey were born in normal fashion. None had required delivery by cesarean section.

On April 29, quarantine procedures were instituted. Cry alarum! The entire staff was mobilized and detailed stratagems were planned. The atmosphere in the hospital was tense, the activities at a feverish pitch. It is not so written, but I suppose that even gods may panic.

To avoid exposing any new patients to the risk of sepsis all elective surgery was cancelled. Also deleted were elective inductions of labor and performance of circumcision. One complete floor was set aside for isolation. Except for brief visits from husbands, properly gowned and masked, the patients on this floor received no visitors. A resident physician was assigned to this floor on twenty-four hour duty.

Resident physicians are young, dutiful, and dedicated. They are zealous, eager, and almost indefatigable. They belong to no unions, except possibly marriages of their own, and a twenty-four hour stint, particularly in a time of crisis, is hardly noticed.

Their neglected wives may mourn them, their disenfranchised children may not be aware of their fathers' existence, but what is this compared to saving lives?

Watchmen, watchmen, what of the night?

It was, in fact, a great opportunity, and the residents performing this task undoubtedly learned more about this disease entity than an unexposed generation of physicians trained at the Lying-In. Just before quarantine was established, the career of each patient with sepsis was charted, tabulating her location, exposure to other patients, geographic course in the building, and the identity of personnel in contact with her. The recovery room was closed, and newly delivered patients were returned directly to postpartum beds elsewhere with special duty nurses.

About twelve hours after quarantine was begun, 3 more patients became clinically ill. For the next forty-eight hours no further fevers were reported, and for two anxious days it seemed that the epidemic had been stopped. However, early on the morning of May 4, 2 more disheartening fevers occurred, despite the extraordinarily rigid, aseptic precautions and the most strenuous efforts.

The incidence of the disease progressed despite the intervention and consultation of Carl W. Walter, M.D., clinical professor of surgery, Harvard Medical School, Boston; Louis Weinstein, M.D., associate professor of medicine, Boston University Medical School, and professor of medicine, Tufts University Medical School, Boston; A. Daniel Rubenstein, M.D., director of the Bureau of Hospital Facilities, Massachusetts Department of Public Health, Boston; and Alexander Langmuir, M.D., chief, epidemiology branch, Communicable Disease Service, Public Health Service, Atlanta, Georgia. A mighty fortress is our God!

By May 4, 20 mothers were involved in the septic course. Most of the patients were extremely ill. Their composite picture was one of chills, fever, flushed cheekbones, glassy eyes, euphoria, distended tympanitic abdomens, absent bowel signs, failure of the uterus to decrease in size, and exquisite pelvic tenderness. The vaginal discharge was serosanguineous and virtually free from odor, with a pronounced diminution in the volume of lochia.

The plan to curb the epidemic was detailed and thorough. The zeal of the staff was impressive; the therapy, in keeping with the reputation of the institution, was superb. For purposes of prophylaxis, at the time of admission, patients received 1.2 million units of procaine penicillin G intramuscularly every twelve hours until able to take medication by mouth; then 400,000 units of phenoxymethyl penicillin potassium four times a day orally for four days. To exclude the remote chance that carriers might have been overlooked, all residents and attending physicians received 400,000 units of the same agent, three times daily by mouth for five days, with a substitution of other antibiotics for the few who were sensitive to penicillin.

During the outbreak all stock bottles, common containers, lubricant tubes, bedpans, delivery tables, stools, overhead lights, storage cabinets—in short, all paraphernalia of the delivery room—were cultured. No offending organism was identified from these sources.

A total of 800 hospital personnel had throat cultures performed. Cultures of any skin lesions that were considered suspect were also performed.

Detailed bacteriologic studies were carried out on each patient clinically ill, with particular attention directed to the study of the uterine lochia and blood cultures in those patients involved.

Sick, infected patients received 2 million units of potassium penicillin G in 50 cc. of 5 per cent dextrose and water intravenously, administered over a thirty-minute period every six hours. If other organisms were suspected, 0.5 Gm. of streptomycin sulfate was administered intramuscularly every six hours. After a patient had been afebrile for ninety-six hours, the antibiotic was changed to lincomycin hydrochloride monohydrate (Lincocin), 0.5 Gm. orally every six hours for ten days. Erythromycin (0.5 Gm. orally every six hours) and sodium cephalothin (Keflin, 1 Gm. intramuscularly every three hours) could be used in place of lincomycin. Two patients with positive blood cultures were treated intravenously on the penicillin schedule listed for ten days, following which they received penicillin orally for three additional weeks.

For personnel with positive throat or skin cultures, penicillin was given orally, four times a day for a total of ten days; on the third day the lesion was recultured and, if negative, the individual was returned to duty. These throats were then recultured on the seventh day.

Epidemiology is an exact and precise science. The mills of the epidemiologic gods grind slowly, but they grind exceeding small. From the mass of data evaluated, three common factors became manifest: (1) every patient had been in the recovery room; (2) most of them had had the same anesthetist; (3) among the 20 clinically ill patients, 16 were found to have an identical organism. It is written on university walls, "What is past is prologue." So it was in this circumstance. Louis Pasteur, in Paris in 1889, had identified the same organism in similar problem states.

Puerperal fever in history

Puerperal infection is described in the works of Hippocrates and Galen. In the seventeenth century, Willis wrote on the subject of febris puerperarum, although the English term, "puerperal fever," was probably first employed by Strother in 1716. In the year 1773, Charles White M.D., in Manchester, England, laid down the rules for the prevention of puerperal sepsis in hospitals. In 1795, Alexander Gordon, M.D., published a lecture on "Epidemic Puerperal Fever of Aberdeen, Scotland." His observations were made not in hospitals but on patients delivered in their homes by many different physicians and nurses. He came to the conclusion that "the cause of the disease was a specific infection--for the disease seized only such women as were visited or delivered by a practitioner, or taken care of by a nurse who had previously attended patients affected by the disease." He concluded, "it is a disagreeable declaration for me to make, that I, myself, was the means of carrying the infection to a great number of women."

The classic treatises on the subject were those of *The Autocrat of the Breakfast Table*, by Oliver Wendell Holmes of Boston, in 1843, and a study by Semmelweis in Austria, in 1847. Eleven years after the Boston Lying-In Hospital was founded, Holmes wrote in his report, "patients involved in this type of septic course begin to have their symptoms early—within twenty-four to seventy-two hours." This fact was verified in the 1965 epidemic at the Lying-In.

The culprit

The epidemiologic finding that all affected patients in our group had resided in the recovery room was indeed profound. Almost all patients go to the recovery room. One wag of a house officer at the Lying-In remarked that he had an equally pertinent conclusion; "All patients involved had recently been delivered." Both evaluations were correct; both were of no significance.

The ubiquitous and omnipresent anesthetist who had attended the majority of those subsequently ill terminated his tour of duty on April 29; on April 30 and May 1, 2 additional patients became involved, both not cared for by this anesthetist.

Among the 20 clinically ill patients, 16 were found to have beta hemolytic streptococci, and 2 patients had positive blood cultures of this same organism. Beta hemolytic streptococci are thought to have been a factor in the past epidemics of puerperal infection. The reservoir of such organisms is considered to have been reduced during the years of widespread antibiotic therapy. The results of the survey of the 800 Lying-In personnel studied on this occasion revealed hemolytic streptococci in 40 persons, an incidence of about 5 per cent. This compares favorably with a study of school children and their families, where the asymptomatic carrier rate varied between 10 and 15 per cent.

Further epidemiologic study at the Lying-In revealed 4 hospital individuals, 2 physicians and 2 dieticians, with positive throat cultures for beta hemolytic streptococci, group A. Through the mediation of the state and federal health agencies, cultures which were positive for this group were typed by the Lancefield technic, which identifies specific proteins within each bacterium. About half of the group A hemolytic streptococci can ordinarily be classified into different strains of M groups. This technic narrowed down the search among patients and contacts, but half were "nontypable." The Public Health Service utilized an additional method of typing, identifying the T type protein, which segregates a much larger proportion of strains.

Among the 20 clinically ill patients, 16 were found to have beta hemolytic streptococci, group A. Twelve of these harbored an identical organism labeled as T type 28. In addition, a single infant, the offspring of one of the affected women, was found to have this organism also.

With these data available, the search now narrowed. Among the 5 hospital personnel in whom beta hemolytic streptococci, group A, were found, only 1 was also found to have this specific organism, T type 28—a physician anesthetist. He had attended 11 of the patients who subsequently became ill. Only 2 patients who eventually proved to be afflicted with the T type 28 organism were not exposed to him during their hospital stay.

The organism isolated from this physician anesthetist came from beneath a small scab on the back of one hand and another scab on his shin. These unimpressive lesions had been the result of small scratches sustained several days earlier in pruning bushes—a rosebush scratch. These were so insignificant that they escaped his attention until the survey was made. The organism had not been found in his throat.

This physician anesthetist had performed no rectal or pelvic examinations. He had always remained at the head of the table, even when he helped to move the patient to her bed. However, when utilizing spinal anesthesia at delivery, the anesthetist commonly holds the patient's hands for reassurance and to prevent her from touching the sterile drapes. If a patient's hands were to become contaminated, early infection could readily occur in the recovery room from this source.

The mode of transmission of the organism in the 2 patients not attended by this anesthetist, who subsequently became puerperally septic, cannot be elucidated. With no further cases occurring, it must be assumed that prophylactic measures had interrupted this unknown route of contamination.

Closing comment

Causes fade and so do fevers. Victories are always intermingled with defeats. There were no fatalities in the patients involved; all recovered, although some suffered a protracted course in their illness.

We are all flawed, at the very least inherently; but many times the defect is thrust on us inadvertently and unintentionally. Perhaps somewhere in the constant regeneration and alteration that comprises birth we may evolve and abandon in some distant aeon our natural fault, but never shall we be excluded from ordinary error. More likely still, as long as we are human—and this is what we are—we shall be forever flawed. It is not human to be eternally vigilant. Even in Gethsemane, there were those who "could not watch throughout the night." Flaws make failures; flaws make fevers.

One prior epidemic of puerperal sepsis was reported, in New York City by Watson in 1928. This was in a pre-antibiotic era. Of a total of 163 patients that delivered at the New York institution, streptococcal infection developed in 24, and 8 of them died. The low rate of infection at the Lying-In in 1965 might possibly be attributed to the fact that a physician anesthetist can administer only so many anesthesias before time off is permitted him. More accurately, the low rate of infection is related to the promptness of diagnosis, the exhaustive and intensive investigations and studies, and the remarkably effective therapy.

Magnificent institutions are, like Caesar's wife, beyond reproach and never suspect. Magnificent institutions can be frank and candid. Their mea culpa, mea maxima culpa can take the form of a clinical report published in a national journal. Joseph DeLee, M.D., commenting on an article on puerperal sepsis published in 1934, told of collecting evidence on some 21 outbreaks of puerperal sepsis in the country at large. At that time, he remarked that only one institution had the scientific courage to report the epidemic; this was the Sloane Hospital in New York, then under the directorship of Benjamin P. Watson, M.D. Equally frank in its reporting was the Boston Lying-In. In the *Journal of the American Medical Association*, volume 206, number 2, October 7, 1968, this institution published a report entitled "Childbed Fever—a Continuing Entity." In a philosophic journal, this report might have had a different title; "Human Flaws—a Continuing Entity," or, more succinctly, "The Rosebush Scratch."

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Necrology

Paul M. Ajosa, M.D., of New York City, died on December 9, 1961. Dr. Ajosa graduated in 1924 from General Medical College, Chicago. He had been an assistant attending physician at Metropolitan Hospital.

Joseph Michael Balzano, M.D., of Brooklyn, died on January 2 at the age of forty-one. Dr. Balzano received his medical degree from the University of Bologna in 1958. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

F. Duncan Barnes, M.D., of New Rochelle, died on March 30 at the age of seventy-four. Dr. Barnes graduated in 1924 from Columbia University College of Physicians and Surgeons. He was former director of pediatrics at New Rochelle and Grasslands Hospitals and at the time of his death was a consulting pediatrician at both hospitals. Dr. Barnes was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Morris Bronson, M.D., of The Bronx, died on March 22 at the age of fifty-nine. Dr. Bronson guaduated in 1938 from New York University College of Medicine. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Michael Paul Calvacca, M.D., of Brooklyn, died on March 3 at the age of seventy. Dr. Calvacca graduated in 1928 from Tufts University School of Medicine. He was an associate attending physician at Swedish Hospital in Brooklyn. Dr. Calvacca was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Roy Demarest Duckworth, M.D., of White Plains, died on March 20 at the age of eighty-one. Dr. Duckworth graduated in 1915 from New York Homeopathic Medical College and Flower Hospital. He was director emeritus of radiology at White Plains Hospital Association, a consulting roentgenologist at New York Hospital-Cornell Medical Center (Westchester Division), and an honorary member of the radiology staff at Grasslands Hospital. Dr. Duckworth was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Radiology, and a member of the Radiological Society of North America, Inc., the American Roentgen Ray Society, the New York Roentgen Society, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

S. Paul Geraci, M.D., of Buffalo, died on August 20, 1971, at the age of seventy-one. Dr. Geraci graduated in 1923 from the University of Buffalo School of Medicine. He was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Irwin Hutner, M.D., of New York City, died on March 16 at the age of forty-four. Dr. Hutner graduated in 1951 from State University of New York Downstate Medical Center College of Medicine. He was an attending radiologist at Roosevelt Hospital and an assistant clinical professor of radiology at Columbia University College of Physicians and Surgeons. Dr. Hutner was a Diplomate of the American Board of Radiology and a member of the Society of Nuclear Medicine, the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George James, M.D., of New York City, died on March 19 at the age of fifty-six. Dr. James graduated in 1941 from Yale University School of Medicine. He was dean of the Mount Sinai School of Medicine, president of The Mount Sinai Medical Center, and a former New York City health commissioner. Dr. James was a Diplomate of the American Board of Preventive Medicine, Inc., (Public Health), a Fellow of the American College of Preventive Medicine, and a member of the American Geriatrics Society, the American Public Health Association, the American Thoracic Society, the New York Academy of Medicine, the New York Academy of Preventive Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clyde Marion Longstreth, M.D., of Carson, Iowa, formerly of New York City, died on February 22 at the age of seventy-three. Dr. Longstreth graduated in 1926 from State University of Iowa College of Medicine. He was a Fellow of the American College of Surgeons and a member of the American Geriatrics Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans L. Mannheim, M.D., of New York City, died on March 12 at the age of seventy-one. Dr. Mannheim received his medical degree from the University of Berlin in 1923. He was an attending surgeon at Medical Arts Center and Wadsworth Hospitals. Dr. Mannheim was a Fellow of the International College of Surgeons and a member of the American Geriatrics Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Italo Americus Palmieri, M.D., of Brooklyn, died on January 23 at the age of seventy-eight. Dr. Palmieri graduated in 1922 from Tulane University School of Medicine. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Byron G. Shults, M.D., of Herkimer, died on March 11 at the age of eighty-one. Dr. Shults graduated in 1915 from Albany Medical College. He was a member of the Herkimer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ethan Lee Welch, M.D., of Hornell, died on March 16 at the age of seventy. Dr. Welch graduated in 1925 from the University of Buffalo School of Medicine. He was a consulting general practitioner at Bethesda Community Hospital, North Hornell, and an honorary surgeon at St. James Mercy Hospital. Dr. Welch was a member of the Steuben County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Simon I. Wenkart, M.D., of New York City, died on January 11 at the age of seventy-six. Dr. Wenkart received his medical degree from the University of Vienna in 1922.

Purpura and acetylsalicylic acid therapy

Casteels-Van Daele and De Gaitano have recently reported (Acta Paedit. scandinav. **60:** 203 [March] 1971) that three children who developed purpuric spots on the face, neck, and upper trunk, had taken acetylsalicylic acid in conventional doses for a few days. After elimination of the most obvious potential causes, it was assumed that in these 3 patients the purpura might be due to a defect in the platelet aggregation following aspirin therapy. In 2 of the 3 patients available for follow-up study, initial studies of platelet function showed an impaired platelet aggregation by inhibition of adenosine-5′-diphosphate release. It was concluded that this mechanism was responsible for the clinical findings. Acetylsalicylic acid therapy should always be considered in the differential diagnosis of non-thrombocytopenic purpura. This complication of aspirin administration should not be unexpected in view of independent findings in 1968 by several other investigators that acetylsalicylic acid affected aggregation of blood platelets both in vitro and in vivo, mainly by an inhibition of the release of adenosine-5′-diphosphate.

Letters to the Editor

Liver toxicity and muscular dystonia associated with prochlorperazine

To the Editor: Prochlorperazine (Compazine) can occasionally induce dyskinetic side effects. However rarely, severe liver toxicity can occur in association with dystonia, as illustrated in the following case report.

Case report

A fourteen-year-old white girl was examined on October 6, 1971, at 9:00 P.M. as an emergency patient because of severe "muscular spasms." Her illness had started approximately six days earlier with an upper respiratory infection for which her family physician prescribed antibiotics, probably penicillin. On the day prior to this acute illness, she vomited, and her physician gave her an injection of 5 mg. of prochlorperazine. He also prescribed prochlorperazine suppositories, 25 mg., twice a day, as necessary. Because of severe nausea, she used 2 suppositories at twenty-four hours and twelve hours, respectively, before this episode. Approximately seven hours before her examination, she developed severe spasms in the jaw and neck muscles, which occurred episodically and lasted approximately ten minutes. She also complained of severe difficulty in closing her mouth and talking.

She was rushed to the emergency room of a general hospital where she was examined by a physician who felt that she suffered with muscular spasms. He administered a subcutaneous injection and discharged her to her home. After being at home for four or five hours, she became worse. The severity and frequency of these "spasmotic episodes" increased, and she was brought in for consultation at 9:00 P.M. Her history revealed that she was suffering from recurrent attacks of muscular weakness of the tongue, including distortion of its movements, weakness of the anterior neck muscles, inability to close her mouth, and difficulty in speaking.

I witnessed three such attacks at five- to seven-minute intervals, each one lasting for three to four minutes. A prominent feature was the tendency of the head to be thrown backward. Fear and excessive anxiety accompanied these attacks.

The patient was admitted to a hospital where she was treated with diphenhydramine hydrochloride (Benadryl). On admission, her pulse was 120 per minute with regular sinus rhythm; her respirations were 24 per minute and not labored. These recurrent attacks of dystonia slowly improved over twenty-four hours. The most important, unexpected finding was the presence of liver toxicity. The serum glutamic oxaloacetic transaminase was elevated to 1,400 units one day after admission and rose to 1,640 units one day later. It slowly dropped to 520 units five days after. The lactic acid dehydrogenase was elevated to 1,652 units the day after admission and progressively dropped to 355 units five days later. The alkaline phosphatase was also elevated with a peak of 233 units. The bilirubin was slightly elevated at 1.3 mg. per 100 ml. The cholesterol was below normal, 115 mg.; uric acid was elevated at 9.2 mg. per 100 ml. Leukocytes were 14,000 per centimeter, with a normal differential. The serum glutamic pyruvic transaminase was slightly elevated at 510 units. A creatine phosphokinase was also performed, which was found to be normal, at 12 units. She was discharged six days after in an improved condition.

Three weeks after her initial illness, additional blood studies were performed. The serum glutamic oxaloacetic transaminase was barely above the normal 52 units; lactic acid dehydrogenase was above normal at 215 units; and serum glutamic pyruvic transaminase was 54 units. Clinically, she made an uneventful recovery.

Comment

The available prescribing information specifies that 25 mg. of prochlorperazine can be prescribed two-times-a-day.[1,2] The investigation of this case revealed that prochlorperazine was prescribed during an acute illness when dehydration was more likely to exist. Also, it was prescribed for a fourteen-year-old adolescent girl, whose age is close enough to childhood where the reported incidence of neuromuscular reactions is higher. The family physician used a maximum effective dosage which could have produced a higher than expected blood level, due to uneven absorption.

The long list of reported complications includes jaundice and/or biliary stasis, as examples of liver damage. I could not find any mention in the literature of a dual reaction involving the muscular system and the liver, which occur simultaneously. Most muscular dyskinetic reactions are transitory and are not diagnosed; however, a severe dystonic episode can easily be confused with an hysteric reaction, an alcoholic intoxication, and tetany or even tetanus. Liver toxicity is less documented—mostly because it is unsuspected in the first place.

It was calculated that this patient, whose weight was normal, received probably no more than 55 to 60 mg. of prochlorperazine within twenty-four hours. The severity of the liver toxicity cannot be easily explained, except to say that prochlorperazine might be more toxic to the liver than is acknowledged.

The Food and Drug Administration was notified of this reaction, two remaining specimens were collected by an inspector, and a chemical analysis was performed. The results of this analysis show that the amount of prochlorperazine was within 95 to 100 per cent of the 25 mg. dosage.

Whether the severity of the muscular dystonia was related to dosage or individual hypersensitivity, or mediated by the "temporary" severe liver toxicity, one might never learn. What one does learn is that prochlorperazine can be prescribed in the minimal effective dosage, not during an acute illness when dehydration is more likely to be present, preferably not in adolescents, and that liver toxicity should always be suspected and tested for, whenever neuromuscular reactions occur.

REUBEN TIZES, M.D., M.P.H.
Nassau County Department of Health
240 Old Country Road
Mineola, New York 11501

References

1. Physicians' Desk Reference: 25th ed., Oradell, New Jersey, Medical Economics, Inc., 1971, p. 1220.
2. AMA Drug Evaluations: 1st ed., Chicago, Illinois, American Medical Association, 1971, pp. 231, 617.

Incompatibility of certain antihypertensive drugs

To the Editor: The wide variety of antihypertensive drugs available today does not belie the fact that hypertension is still with us as a disease, not only in new cases but in those being treated for the condition. In prescribing reserpine-hydralazine hydrochloride tablets (Ser-Ap-Es) and low-salt diet as the regimen of choice, a reduction of blood pressure from 25 to 50 points is achieved, reaching normal or near-normal levels. A reduction in dosage or switching to a milder antihypertensive agent can then be contemplated. Chlorthalidone-reserpine tablets (Regroton) has been used successfully in low dosage to maintain normal blood pressure levels.

In 5 patients seen by another physician who favored rauwolfia serpentina tablets (Raudixin) as his drug of choice, subsequent rise in the blood pressure from normotensive levels achieved by reserpine-hydralazine hydrochloride tablets was observed in the subsequent use of rauwolfia serpentina tablets, raising the blood pressure 30 to 40 points. This secondary rise in blood pressure proved to be refractory to further therapy. While rauwolfia serpentina tablets, when used alone, can lower the blood pressure about 20 to 30 points, following the use of reserpine-hydralazine hydrochloride tablets, it appears to have a blocking effect which raises the blood pressure again.

This observation has frustrated our therapeutic efforts and strongly suggests that consistent management of hypertensive patients be urged.

HOWARD S. ZUCKER, M.D.
302 Avenue N
Brooklyn, New York 11230

Basis for health-care delivery system

To the Editor: In a local medical society newsletter, an attempt was made recently to find some basis from which we might derive our conduct in the delivery of health care.

A grasp was made to show us that ". . . the role of the physician has always been dictated by the society of which he is a part. . . ."

While this sounds like a good basis, many of us have personally seen the product of human experiments by Nazi physicians and realize that the current vagaries of a political system cannot, must not, be the basis of our professional conduct nor our basic value as human beings.

An attempt was also made to show us that "the basic tenets of our society are being challenged, and there is no reason to expect that the practice of medicine is in anyway exempt." The implication was that the challenge was by a better system and, therefore, seemed to forego the historical perspective that many times the wisdom evolved by man has been challenged by new, but unfortunately unwise, ways, and that it has been humanity's progress that it overcame these challenges. Also a mature wisdom has evolved that, although the old seems fixed, rigid, outdated, and irrelevant and all new things seem to be exciting with a challenging freshness, this reaction of ours is the residue of our adolescence, when everything old was old-fashioned and everything new was emancipation.

At sixteen the adolescent looks at his father's ways and says how stupid he is. At twenty-one, he marvels at how much his father has learned in five years. It is more fitting that we should act like twenty-one and evaluate any challenge for what it is. And if we do have an automatic reaction to challenge, rather than fall into the adolescent's pit of ingesting LSD (lysergic acid diethylamide) because we were challenged and it is new and exciting, that we automatically hold to those cherished values we have actually already experienced, gradually improving on them only after long, studied, and experiential considerations. Other challenges to the proved tenets of our society cannot, must not, be the standard for our professional conduct nor must it automatically set aside the cherished basic values under which we have been operating.

In the previous search for a basis for the delivery of health care, an attempt was made to reach for "the Christian ethic." While this entire search for a basis of conduct is wholesome, we must consider that at times we can fool ourselves and rationalize in our wisdom some other unknown motivation. At such times we may say it is enough to change because someone is challenging our basic tenets and in the next breath look to our unchanging Christian ethic—even when that ethic is being challenged. Whether or not such verbal somersaults reflect human rationalization cannot be ascertained by anyone else, but only by a search of our own hearts. This self-probing might benefit from noting that after calling on our basic Christian ethic, we, ourselves, would set it aside ". . . as modified by social thinking. . . ."

In this worthwhile search for a basis for our conduct, that which has appeared in those pages so far, appears, at the very least, to be human floundering. To advance in this worthwhile endeavor, it is herein presented for your consideration that the Christian ethic in these matters derived from "nature and nature's God" has called for the ". . . inalienable right to life, liberty, and the pursuit of happiness . . ." and has spelled out the role of government in its promotion as "the securing of Liberty."

It is submitted for your consideration that no German physician adhering to this basis of human conduct could have raised a scalpel for those human experiments. Any challenge to this ethically derived concept of this function of government, a concept that has withstood a two-hundred-year test during which it produced the finest society man has been able to create to date, any suggestion that it be set aside should be met with long, studied, and experimental preliminaries. It is also submitted for your consideration that the Christian ethic itself that promotes these freedoms would be set aside by some of the systems suggested in which the conduct of patients and physicians would be dictated by government.

As with so many other questions from time immemorial, we are again being asked to consider and to choose whether or not we will be dictated to by some momentary, benignly dressed tyranny which we, in our humanity, keep perpetrating on ourselves, or whether we will be dictated to by our continual refinement of the ways of nature and nature's God.

Thank God, the choice is still ours, in this country.

GORDON R. MEYERHOFF, M.D.
19 Hillside Avenue
Roslyn Heights, New York 11577

Prevention of birth defects

Obtaining specimens of amniotic fluid for tissue culture, genetic study of cells, or biochemical analysis makes possible, in indicated cases, the diagnosis of congenital defects before birth.

Richard H. Heller, director of the recently established Prenatal Birth Defects Prevention Center at the Johns Hopkins Hospital, has recently analyzed early experience with the amniotic fluid study in predicting the presence or absence of defects in fetuses where there is reason to suspect that such anomalies might occur (Maryland M. J. **20:** 59 [May] 1971). While available technics and knowledge have opened the door to this emerging field of preventive medicine, Heller points out that probably only about 5 per cent of all known birth defects can be detected in the fetus at the present time. Among failures of existing methods are prenatal identification of structural anomalies including meningocele, hydrocephalus, phocomelia, and cardiac malformations. While efforts are being made in these conditions, they are still largely experimental. Amniocentesis is a relatively painless procedure preferably carried out during the fifteenth or sixteenth week of pregnancy.

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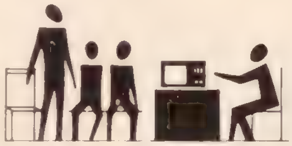

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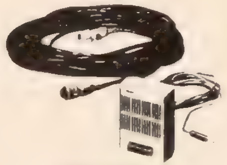

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Compiled by the
Division of Scientific Activities
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Please send information to the Editor, WHAT GOES ON,
420 Lakeville Road, Lake Success, New York 11040.
Telephone 516-488-6100.

WGO-1

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Meeting Dates	*Deadline Dates*
July 1–31	May 10
August 1–31	June 10
September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25

NEW YORK CITY AREA

May 15 / 19, 1972
Monday–Friday

Albert Einstein College of Medicine
Department of Radiology
1300 Morris Park Avenue
Bronx

IV NEURORADIOLOGY POSTGRADUATE COURSE

Please contact Dr. Mannie Schechter, Program Director, above address.

May 15 and 22, 1972
3:30 p.m., Mondays

Mount Sinai Hospital Services
City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

May 15
Marijuana: Chemistry and Physiology
ENOCH GORDIS, M.D.

May 22
Erythropoietic Inhibitors in Red Cell Aplasia
RALPH ZALUSKY, M.D.

Speakers are from Mount Sinai School of Medicine

May 16 and 23, 1972
8:00–9:00 a.m., Tuesdays

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Continuing Medical Education
Family Practice Section

May 16
Recognition of the Drug Addict
THOMAS G. McGINN, M.D.

May 23
Hepatitis—Antigens and Antibiotics
VINCENT SOTTILE, M.D.

May 16 / May 30, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

Newer Concepts in Medicine

May 16
Pituitary Gland
J. RUSSO, M.D.

May 23
Review Highlights of Previous Lectures
G. POLLACK, M.D.

May 30
Hematuria and Dysuria
T. GUALTIERI, M.D.

May 16 and 30, 1972
8:30 p.m., Tuesdays

The New York Psychoanalytic Society
247 East 82nd Street

May 16
The Infantile Fetish
HERMAN ROIPHE, M.D.
ELEANOR GALENSON, M.D.

May 30
Early Ego Development and the Deja Vu
BERNARD L. PACELLA, M.D.

May 17 / 19, 1972

Columbia University P & S
Department of Pharmacology
Alumni Auditorium
630 West 168th Street

THE USE OF PSYCHOTHERAPEUTIC DRUGS IN THE TREATMENT OF MENTAL ILLNESS

FEE: $150

Information and registration: LANCE L. SIMPSON, M.D., Dir., Psychpharmacology Training Program, above address.

WEDNESDAY, MAY 17

9:00 a.m.–1:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

REHABILITATION IN ARTHRITIS

LAWRENCE WISHAM, FRANCES DWORECKA,
BEATRICE KAPLAN, M.D.'s and the
Members of the Mount Sinai Faculty

NO FEE

4:00–5:30 p.m.

Westchester Square Hospital in collaboration with Albert Einstein College of Medicine
Conference Room
1625 St. Peters Avenue
Bronx

DRUG ABUSE IN ADOLESCENCE

IRIS F. LITT, M.D.
Montefiore Hospital

NO FEE CREDIT: 1 1/2 AAGP

May 17 and 24, 1972
8:30 p.m., Wednesdays

American Institute for Psychoanalysis
329 East 62nd Street

1. **Psychiatric Hospitalization Procedures and Medico-Legal Problems in Medical Practice**
   ANDREW K. BERNATH, M.D.
2. **Summation**
   JASON MILLER, M.D.

THURSDAY, MAY 18

New York Diabetes Association
104 East 40th Street

NINTH ANNUAL PRIZE ESSAY CONTEST IN THE FIELD OF DIABETES MELLITUS

Entries must be submitted before April 1, 1972. An original and four copies should be sent to Research Committee, Clinical Society above address. Telephone OX 7-7760.

May 18 and 25, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
2nd Floor Conference Room
757 Bushwick Avenue
Brooklyn

May 18
Clinico Pathological Conference
Known—JAMES CARLEO, M.D.
Unknown—MICHAEL MALKO, M.D.
AARON COBLENZ, M.D.

May 25
Mortality Conference
SOL GLOTZER, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

THURSDAY, MAY 18

4:30–6:30 p.m.

Manhattan Eye, Ear and Throat Hospital
Conference Room
210 East 64th Street

ORBITAL FRACTURES AND AVULSIONS

ALLISON BERLIN, M.D., Cleveland

Discussion: TOM REES, M.D.

FRIDAY, MAY 19

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center

PRACTICAL ASPECTS OF THE TREATMENT OF DIABETES AND ITS COMPLICATIONS

HENRY DOLGER, M.D. and the
Members of the Mount Sinai Faculty

FEE: $25

SATURDAY, MAY 20

9:00–10:15 a.m.

The Page and William Black Post-Graduate School of Medicine and the Division of Cardiothoracic Surgery of the Mount Sinai School of Medicine
The Clinical Amphitheatre
Fifth Avenue at 100th Street

The Lilienthal Memorial Lecture

PERFORMANCE ANALYSIS OF THE O$_2$ TRANSPORT SYSTEM

ERNEST O. ATTINGER, M.D.
University of Virginia

New York Medical College
Department of Ophthalmology
Fifth Avenue at 106th Street

RESIDENT'S DAY

NO FEE (Pre-registration required)

Please contact Mrs. Ruth Green, Dept. of Ophthalmology, 1249 Fifth Avenue, N.Y., N.Y. 10029. Telephone 212-876-5500, ext. 117

May 22 / 26, 1972
9:00 a.m.–5:00 p.m., Monday / Friday

Columbia University P & S
Columbia-Presbyterian Medical Center
630 West 168th Street

PEDIATRIC NEUROLOGY

PROFESSOR S. CARTER and STAFF

Fee: $200

May 22 / 26, 1972
Monday / Friday

Columbia University School of Public Health and Administrative Medicine
Room 305
21 Audubon Avenue

DRUG ABUSE AND DEPENDENCE

FEE: $175 (9:00 a.m. Registration)

May 23 and 30, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

May 23
Post-Obstructive Diuresis
SAUL J. FARBER, M.D.

May 30
Subarachnoid Hemorrhage: Etiology and Treatment
ABRAHAM LIEBERMAN, M.D.

Speakers are from N.Y.U. School of Medicine

WEDNESDAY, MAY 24

11:00 a.m.

Jewish Memorial Hospital
Broadway and 196th Street

Pediatric Lecture

TREATMENT OF DIABETIC KETO-ACIDOSIS IN CHILDREN

HAROLD COLE, M.D.
New York Medical College

Noon

Downstate Medical Center
Fourth Floor Pediatric Library
Room B4-462, State University Hospital
445 Lenox Road
Brooklyn

RELATIONSHIP BETWEEN DIABETIC CONTROL AND PSYCHOLOGICAL FACTORS IN LOW INCOME POPULATION

DORIS MILMAN, M.D.

5:00 p.m.

New York Medical College
Department of Ophthalmology
Room R-113, Cohen Research Building
Fifth Avenue at 106th Street

PRESS-ON PRISMS: THEIR ROLE IN THE TREATMENT OF AMBLYOPIA

ROBERT D. REINECKE, M.D.
Albany Medical College of Union University

8:30 p.m.

Association for the Advancement of Psychoanalysis
Karen Horney Clinic Building
329 East 62nd Street

SELF ESTEEM, DIGNITY OR THE SENSE OF WELL BEING

LOUIS E. DEROSIS, M.D.
Karen Horney Clinic
LESLIE H. FARBER, M.D.
Association of Existential Psychology and Psychiatry
THEODORE I. RUBIN, M.D.
American Institute for Psychoanalysis

THURSDAY, MAY 25

9:00 a.m.–5:45 p.m.

New York Allergy Society and the N.Y.U. Post-Graduate Medical School
Alumni Hall
N.Y.U. Medical Center
550 First Avenue

BASIC AND CLINICAL ASPECTS OF MODERN ALLERGY

The lectures will include the following topics:

1. **Perspectives in Pediatric Allergy**
2. **Dermatologic Allergy**
3. **New Developments in Asthma**

FEE: $35

Apply: Office of the Recorder, Room 158 MSB, above address.

TUESDAY, MAY 30

8:00 p.m.

New York Diabetes Association
Einhorn Auditorium, Lenox Hill Hospital
76th Street between Park and Lexington Avenues

DIET AND OBESITY

MORTON GLENN, M.D.

WEDNESDAY, MAY 31

5:30 p.m.

New York State Society of Industrial Medicine with The New York Academy of Medicine
Section on Occupational Medicine
2 East 103rd Street

1. **Worker and Company Doctor A Crisis in Confidence**
   SHELDON W. SAMUELS
   Occupational Health, Safety and Environmental Affairs
   Industrial Union Department AFL-CIO
   Washington, D.C.
2. **Discussion**

FUTURE EVENTS

June 1 / July 15, 1972
9:00 a.m.–4:00 p.m., Daily

French and Polyclinic Medical School and Health Center
345 West 50th Street

CLINICAL MEDICINE CURRICULUM

The course provides formal instruction in Medicine, Surgery, Pediatrics, Obstetrics-Gynecology and other specialties. The course content is based on the subject outline suggested by the Educational Council for Foreign Medical Graduates and is primarily intended for candidates for ECFMG, State Board and FLEX examinations.

Application must be made prior to May 15, 1972.
Write: The Dean, at the above address.

June 1 / 3, 1972

American Cancer Society and the National Cancer Institute
Waldorf-Astoria Hotel
Park Avenue and 50th Street

NATIONAL CONFERENCE ON CANCER CHEMOTHERAPY

For information, please write: SIDNEY L. ARJE, M.D., Coordinator, c/o American Cancer Society, 219 East 42nd Street, N.Y., N.Y. 10017.

THURSDAY, JUNE 8

8:30 p.m.

American Analgesic Society
Barbizon Plaza Hotel
106 Central Park South

1. **Nitrous Oxide Oxygen Analgesia in Office Gastroenterology**
   LEON SASSON, M.D.
2. **Preoperative, Postoperative and Comedications**
   MARVIN SNIDERMAN, S.S. Phar.

Write: Dr. Philip E. Shipper, 9 West 67th Street, New York. N.Y. 10023.

June 17 / 24, 1972
9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

RHINOPLASTY AND OTOPLASTY

SIDNEY FEUERSTEIN, M.D.
Mount Sinai School of Medicine

FEE: $400

July 5 / 10, 1972

International College of Surgeons
United States Section
Sagamore Hotel
Bolton Landing, Lake George

SYMPOSIUM IN GENERAL SURGERY, OB.GYN., AND ALL SURGICAL SPECIALITIES INCLUDING RADIOLOGY, PATHOLOGY AND ANESTHESIOLOGY

Reservations should be made directly to Mr. James Feyco, General Manager, above address.

October 22 / 25, 1972

The New York Trudeau Society
Camelot Motel
Poughkeepsie

CLINICAL PULMONARY PHYSIOLOGY

FEE: $150

Write for Program: WALTER A. GUDZ, Exec. Secty., New York Trudeau Society, 105 East 22nd Street, New York, N.Y. 10010.

BROOME COUNTY

May 18 and 25, 1972
11:00 a.m., Thursdays

Charles S. Wilson Memorial Hospital
Redwood Room
Johnson City

Basic Science Seminars
Conducted by Upstate Medical Center

May 18
Endocrine Related Skin Problems
IRVING SWARTZ, M.D.

May 25
Atrial Stimulation—Clinical Applications
ROBERT EICH, M.D.

CREDIT: Approved for Category I AAGP

Medical Grand Rounds will be held at 10:00 a.m., preceding each of the above sessions

BUFFALO AREA

WEDNESDAY, May 17
8:15 a.m. Registration

State University of New York at Buffalo School of Medicine, Department of Pediatrics
Children's Hospital
Kinch Auditorium

PEDIATRIC CARDIOLOGY

EDWARD C. LAMBERT, M.D., Program Chairman

FEE: $30 CREDIT: 7 hours

Apply: Continuing Medical Education, Main Street Office, 2211 Main Street, Buffalo, N.Y. 14214
Tel. (716) 831-5526

May 18
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

May 18
- **Auscultation—Systolic Ejection Murmurs**
  - **The Aortic Systolic Murmur in the Elderly**
  - **The Aortic Stenosis Murmur**
    - **Valvular**
    - **Hypertrophic Subaortic Stenosis**
    - **The Tetralogy of Fallot Murmur (Effect of Amyl Nitrite)**
  - **Case Presentations**

May 25
- **Auscultation—Systolic Regurgitant Murmur**
  - **Definition**
  - **Recognition**
  - **Rheumatic Mitral Regurgitation Murmur**
  - **Papillary Muscle Dysfunction Murmur**
  - **Ruptured Chordae Murmurs**
  - **The Delayed Systolic Murmur**
- **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

May 19 and 20, 1972
8:15 a.m. Registration

State University of New York at Buffalo School of Medicine, Department of Psychiatry
E. J. Meyer Memorial Hospital
Auditorium

MANAGEMENT OF ACUTE PSYCHIATRIC ILLNESS IN A GENERAL HOSPITAL (A Symposium in Continuing Medical Education)

Supported by The National Institute of Mental Health, Department of HEW

BUFFALO AREA FUTURE EVENTS

June 5 / 9, 1972

State University of New York at Buffalo School of Medicine

REFRESHER COURSE IN PEDIATRICS

Under the Supervision of JEAN A. CORTNER, M.D.

Fee: $5

Sponsored by the Bureau of Maternal and Child Health and Family Planning, New York State Department of Health.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

DUTCHESS COUNTY

WEDNESDAY, MAY 24

8:30 a.m.–5:00 p.m.

St. Francis Hospital
Poughkeepsie

A TEACHING DAY IN HEMATOLOGY

1. **Identification and Treatment of Hemoglobinopathies with Emphasis on Sickle Cell Anemia (Case presentation of a patient with Liver Disease)**
   RALPH ZALUSKY, M.D.
2. **Recognition and Management of Coagulation Disorders (Case presentation of a patient with Liver Diseases)**
   MARTIN SANDERS, M.D.
3. **Hepatitis Detection (A discussion which will include recent information on the Australian Antigen)**
   LEON N. SUSSMAN, M.D.
4. **Recent Advances in the Treatment of Leukemia (Case presentation with a patient with Acute Lymphoblastic Leukemia in childhood)**
   JAMES M. VOGEL, M.D.
5. **Transfusions of Blood Components (A discussion involving the administration of platelets, plasma products, and possibly white cells)**
   SHELLY BROWN, M.D.

Contact Sister M. Ann Elizabeth, President, above address

NASSAU COUNTY

WEDNESDAY, MAY 17

8:00 a.m.–10:00 a.m.

Mercy Hospital
MacArthur Hall Auditorium
Rockville Centre

Combined Medical-Surgical Conference

PRESENT CONCEPTS IN PORTACAVAL SHUNTING

ARTHUR B. VOORHEES, JR., M.D.
Columbia Presbyterian Medical Center

May 17 and 24, 1972

4:00 p.m., Wednesdays

Nassau County Medical Center
Meadowbrook Hospital
South Lounge, Nurses Building

Radiology Lectures

May 17
Diseases of the Small Bowel
RICHARD H. MARSHAK, M.D.
The Mount Sinai Medical Center

May 24 (Main Hospital Building)
Cancer Teaching Day
Multi-Disciplinary Approach to Breast Carcinoma
Department of Radiology·Staff

THURSDAY, MAY 18

11:30 a.m.–12:30 p.m.

Nassau County Medical Center
Recreation Activities Building
East Meadow

Pediatric Postgraduate Lecture

TRENDS IN MEDICAL CARE AND TRAINING

EDMUND D. PELLEGRINO, M.D., Dean of Medicine
State University of New York at Stony Brook

Guests: Mercy Hospital

ROCHESTER AREA

THURSDAY, MAY 25

The Rochester Ophthalmological Society
The University Club

17th Annual Albert C. Snell Memorial Lecture

DIAGNOSIS AND MANAGEMENT OF UVEITIS

MICHAEL J. HOGAN, M.D.
University of California

Note: There will be an afternoon clinical session at the University of Rochester Medical Center followed by an evening dinner prior to the Memorial Lecture. The Friday, May 26th session will include S. Arthur Boruchoff, M.D., George M. Howard, M.D. and David L. Knox as guest lecturers.

ROCKLAND COUNTY AREA

TUESDAY, MAY 16

9:00 a.m.

Good Samaritan Hospital
Suffern

Department of Pediatrics

SICKLE CELL DISEASE

AARON RAUSEN, M.D.
Elmhurst General Hospital

SYRACUSE AREA

June 16 and 17, 1972
8:30 a.m., Registration

Coronary Heart Disease Committee
New York State Heart Assembly
Syracuse University
Gifford Auditorium, H.B. Crouse Hall

THE PATIENT WITH A MYOCARDIAL INFARCTION AND PRE AND POST HOSPITAL PHASE OF MYOCARDIAL INFARCTION

Write for Program, New York State Heart Assembly, 3 West 29th Street, New York, N.Y. 10001.

UTICA AREA

WEDNESDAY, MAY 24

8:15 a.m.–3:15 p.m.

American Cancer Society, Oneida County Unit
New York State Department of Health, Bureau of Cancer Control
Harts Hill Inn
Whitesboro

LEUKEMIA TODAY

H. JAMES WALLACE, JR., M.D., Roswell Park Memorial Institute
JANET LOUISE LUNCEFORD, R.N., Clinical Center, National Cancer Institute
ANTOINETTE W. PIERIONI, A.C.S.W., Children's Cancer Research Foundation

PETER GREENWALD, M.D., Bureau of Cancer Control, NYSDH
Write: Mr. Joseph Coffey, Ex. Dir., American Cancer Society, Oneida County Unit, 800 Charlotte Street, Utica, N.Y. 13501

OTHER STATES

TUESDAY, MAY 9

9:00 a.m.–4:00 p.m.

Wainwright Tumor Clinic Association
Patterson Education Building
Robert Packer Hospital
Sayre, Pennsylvania

THE FUTURE IN THE MANAGEMENT OF THE CANCER PATIENT

For further information: WILLIAM C. BECK, M.D., President, Guthrie Clinic Ltd., Guthrie Square, Sayre, Pa. 18840. Tel. 717/888-6666

May 29 / 31, 1972

Center for the Study of Aging and Human Development, Duke University
Durham, North Carolina

PSYCHOPHARMACOLOGY AND THE AGING PATIENT

For information, please write Mrs. Dorothy Heyman, Box 3003, Duke University Medical Center, Durham, North Carolina 27710.

June 2 / 4, 1972

New Jersey O & O Annual Meeting
Playboy Club Hotel
Great Gorge
McAfee, New Jersey

ANNUAL MEETING

June 19 / 30, 1972

Massachusetts Institute of Technology
Cambridge, Massachusetts

Two-week Summer Course in

DESIGN AND ANALYSIS OF EXPERIMENTS IN THE PHYSICAL, MEDICAL, AND INDUSTRIAL SCIENCES

Conducted by Professors
HAROLD FREEMAN and PAUL BERGER

Write: Director of the Summer Session, Room E19-356, M.I.T., Cambridge, Mass. 02139.

PHYSICIANS' PLACEMENT OPPORTUNITIES

CHATEAUGAY, N.Y., Franklin County, needs at least 3 or 4 physicians to give adequate care to the area.

CONTACT: DONALD A. RICHTER, M.D., President, Medical Society of the County of Franklin, 59 Kiwassa Road, Saranac Lake, N.Y. 12983.

CLINTON, N.Y., Oneida County. G.P.

CONTACT: MRS. LINDA COCKS, Doctor's Committee, Village of Clinton, N.Y. 13323.

COLTON, N.Y., St. Lawrence County. G.P.

CONTACT: MR. GEORGE TIFFANY, P.O. Box 116, Colton, N.Y. 13625.

CORNING, N.Y., Steuben County. G.P. and Internist.

CONTACT: Professional Development Committee, Corning Hospital Medical Staff, Corning, N.Y. 14830. Tel. (607) XF 6-4611.

WAVERLY, N.Y., Tioga County. G.P. needed to assume private practice. Near Finger Lakes Region. Affiliate with progressive medical staff and 100 bed accredited acute hospital with 80 bed extended care unit.

CONTACT: Administrator, Tioga General Hospital, Waverly, N.Y. 14892. Tel. (607) 565-2861.

EVENTS RECEIVED AFTER DEADLINE

May 4 and 18, 1972
4:30–6:30 p.m., Alternate Thursdays

Manhattan Eye, Ear and Throat Hospital
Conference Room
210 East 64th Street

MANHATTAN OCULOPLASTIC CONFERENCE

May 4
New Implants and Entropion Surgery
GERARD SHANNON, M.D., Philadelphia

Discussion: GORDON COLE, M.D.

May 18
Orbital Fractures and Avulsions
ALLISON BERLIN, M.D., Cleveland

Discussion: TOM REES, M.D.

SATURDAY, MAY 6

9:00 a.m.–5:00 p.m.

New York Cardiology Society
Waldorf-Astoria Hotel
Park Avenue and 50th Street

44th ANNUAL SCIENTIFIC SESSION

CHANGING CONCEPTS IN CARDIOLOGICAL DISEASES

FEES: $ 5 members
$10 non-members
$ 5 house officers

Write: New York Cardiology Society, 47 East 67th Street, New York, N.Y. 10021

May 12 / 14, 1972
$2^1/_2$ Days—Full time

Lenox Hill Hospital
Einhorn Auditorium
131 East 76th Street

Post Graduate Program

PEDIATRIC AND ADOLESCENT GYNECOLOGY

Under the direction of
ALBERT ALTCHEK, M.D.
HUGH R. K. BARBER, M.D. and
EDWARD A. GRABER, M.D.

FEE: $75

Write for program: WILLIAM SICHER, M.D., Lenox Hill Hospital, 100 East 77th Street, New York, N.Y. 10021

FRIDAY, MAY 12

8:30 p.m.

American Hungarian Medical Association
2 East 103rd Street

1. **Psychosis After Prolonged Steroid Therapy A case Presentation**
   LASZLO KADAR, M.D.
2. **An Unusual Case of Low Back Ache**
   OTTO C. KESTLER, M.D.
3. **Important Parameters in the Treatment of Cardiogenic Shock**
   PAUL A. RADNAY, M.D.
4. **Lymphoid Papulosis A Recently Recognized Clinical Entity**
   FREDERICK REISS, M.D.

May 16 / 30, 1972
9:00–10:30 a.m., Tuesdays

Queens Hospital Center
Triboro Hospital
Parsons Boulevard and 82nd Drive
Jamaica

May 16
Respiratory Burns—A Review of the Results of Treatment in our Respiratory Intensive Care Unit
R. CHITKARA, M.D.

May 23
Fatal Corpulmonale Due to Undiagnosed Recurrent Pulmonary Emboli
F. KHAN, M.D.

May 30
Some Examples of Unusual Medical and Surgical Pediatric Pulmonary Problems Seen at Queens Hospital Center
A. ABALLI, H. ACS, V. AZUETA, M.D.'s
Departments of Pediatrics and Pathology

WEDNESDAY, MAY 17

8:00 p.m.

The New York Allergy Society
Hotel Commodore
42nd Street

IMMUNOLOGY AND CANCER

Marc E. Weksler, M.D.
Cornell University Medical College

Trobicin®

sterile spectinomycin dihydrochloride pentahydrate, Upjohn

single-dose intramuscular treatment

High cure rate:* 96% of 571 males, 95% of 294 females
(Dosages, sites of infection, and criteria for diagnosis and cure are defined below.)**

Assurance of a single-dose, physician-controlled treatment schedule

No allergic reactions occurred in patients with an alleged history of penicillin sensitivity when treated with Trobicin, although penicillin antibody studies were not performed

Active against most strains of Neisseria gonorrhoeae in vitro (M.I.C. 7.5-20 mcg/ml)

A single two-gram injection produces peak serum concentrations averaging about 100 mcg/ml in one hour (average serum concentrations of 15 mcg/ml present 8 hours after dosing)

Note: Antibiotics used in high doses for short periods of time to treat gonorrhea may mask or delay the symptoms of incubating syphilis. Since the treatment of syphilis demands prolonged therapy with any effective antibiotic, and since Trobicin is not indicated in the treatment of syphilis, patients being treated for gonorrhea should be closely observed clinically. Monthly serological follow-up for at least 3 months should be instituted if the diagnosis of syphilis is suspected. Trobicin is contraindicated in patients previously found hypersensitive to it.

*Data compiled from reports of 14 investigators. **Diagnosis was confirmed by cultural identification of *N. gonorrhoeae* on Thayer-Martin media in all patients. Criteria for cure: negative culture after at least 2 days post-treatment in males and at least 7 days post-treatment in females. Any positive culture obtained post-treatment was considered evidence of treatment failure even though the follow-up period might have been less than the periods cited above under "criteria for cure" except when the investigator determined that reinfection through additional sexual contacts was likely. Such cases were judged to be reinfections rather than relapses or failures. These cases were regarded as non-evaluatable and were not included. JA72 1848-6

globin, hematocrit and creatinine clearance; elevation of alkaline phosphatase, BUN and SGPT. In single and multiple-dose studies in normal volunteers, a reduction in urine output was noted. Extensive renal function studies demonstrated no consistent changes indicative of renal toxicity.

Dosage and administration: Keep at 25°C and use within 24 hours after reconstitution with diluent.
Male—single 2 gram dose (5 ml) intramuscularly. Patients with gonorrheal proctitis and patients being re-treated after failure of previous antibiotic therapy should receive 4 grams (10 ml). In geographic areas where antibiotic resistance is known to be prevalent, initial treatment with 4 grams (10 ml) intramuscularly is preferred.
Female—single 4 gram dose (10 ml) intramuscularly.

How supplied: *Vials, 2 and 4 grams—with ampoule of Bacteriostatic Water for Injection with Benzyl Alcohol 0.9% w/v.* Reconstitution yields 5 and 10 ml respectively with a concentration of spectinomycin dihydrochloride pentahydrate equivalent to 400 mg spectinomycin per ml. For intramuscular use only.
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Human pharmacology: Rapidly absorbed after intramuscular injection. A two-gram injection produces peak serum concentrations averaging about 100 mcg/ml at one hour with 15 mcg/ml at 8 hours. A four-gram injection produces peak serum concentrations averaging 160 mcg/ml at two hours with 31 mcg/ml at 8 hours.
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BRIEF SUMMARY. *(For full prescribing information, see package circular)*
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Indications: PREMARIN provides specific replacement therapy in the management of estrogen deficiency states, notably in the menopause and postmenopause.

Precautions: *In the female:* To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.

Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

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References: 1. Kupperman, H.S.: Medical Aspects of Human Sexuality *1*:64 (Sept.) 1967. 2. Rhoades, F.P.: J. Amer. Geriat. Soc. *15*:346 (Apr.) 1967. 3. Kerr, M.D.: Mod. Treatm. *5*:587 (May) 1968. 4. Greenblatt, R.B., in Conn, H.F. (Ed.): Current Therapy 1970. Philadelphia, W.B. Saunders Company, 1970, p. 757. 5. Astwood, E.B., in Goodman, L.S., and Gilman, A. (Eds.): The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970, Chap. 69 p. 1538. 6. Tramont, C.B.: Geriatrics *21*:212 (Nov.) 1966.

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Books Received

*The following books were received during the month of March, 1972.**

Hermaphroditism, Genital Anomalies and Related Endocrine Disorders. Second edition. By Howard W. Jones, Jr., M.D., and William Wallace Scott, M.D., Ph.D. Quarto of 564 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $33.50.

Trophoblastic Neoplasia. Its Basic and Clinical Aspects. By Toshio Hasegawa, M.D. Quarto of 395 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $26.50.

Golden's Diagnostic Radiology. Edited by Laurence L. Robbins, M.D. **Section 18: Selective Angiography.** By William N. Hanafee, M.D., (Section Editor), E. W. L. Fletcher, M.D., John P. Gartland, M.D., Julius H. Grollman, M.D., James W. Lecky, M.D., Josef Rösch, M.D., Richard J. Steckel, M.D., Gabriel H. Wilson, M.D.: Quarto of 332 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $25.

An Atlas of Anatomy. Sixth edition. By J. C. Boileau Grant, M.C., M.B. Quarto, 665 illustrations depicting the structures of the human body. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $23.50.

Pharmacognosy. Tenth edition. By George Edward Trease, B.Pharm., and William Charles Evans, B.Pharm. Octavo of 795 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $23.

Cellular Biology and Toxicity of Anesthetics. Edited by B. Raymond Fink, M.D. **Proceedings of a Research Symposium held in Seattle, May 11–12, 1970.** Octavo of 328 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $20.50.

Textbook of Orthopaedic Medicine. Volume Two. **Treatment by Manipulation, Massage and Injection.** Eighth edition. By James Cyriax, M.D. Octavo of 432 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.50.

The Human Nervous System. An Anatomical Viewpoint. By Murray L. Barr, M.D. Quarto of 413 pages, illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1972. Cloth, $17.50.

Strategy of the Viral Genome. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Octavo of 406 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $15.75.

ECG Diagnosis. Self Assessment. By Edward K. Chung, M.D., and Donald K. Chung, M.D. Octavo of 221 pages, illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1972. Paperback, $12.95.

Identification of Asthma. Ciba Foundation Study Group No. 38. Edited by Ruth Porter and Joan Birch. Duodecimo of 179 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $8.25.

Radiology. For General Practitioners and Medical Students. Second edition. By David Sutton, M.D. Octavo of 101 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $6.50.

Clinical Obstetrics and Gynecology. Vol. 14 Number 3, September, 1971. Perinatal Biology. Guest Editor, Leo Stern, M.D. Octavo, illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1971. Published quarterly (four numbers a year). Cloth, $22. per year.

Neuropsychologie de la Douleur. By Cornelia Quarti and Jacqueline Renaud. Quarto of 199 pages, illustrated. Paris, France, Hermann, Editeurs des Sciences et des Arts, 1972. Paper, Fr.29 ($5.70).

Fundamentals of Athletic Training. A Joint Project of the National Athletic Trainers Association, the Athletic Institute, and the Medical Aspects of Sports' Committee of the American Medical Association. Octavo of 128 pages, illustrated. Chicago, Illinois, American Medical Association, 1971. Paper, $2.00.

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*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

Bio-Science Reports

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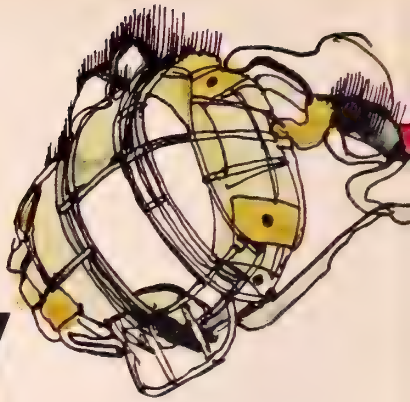

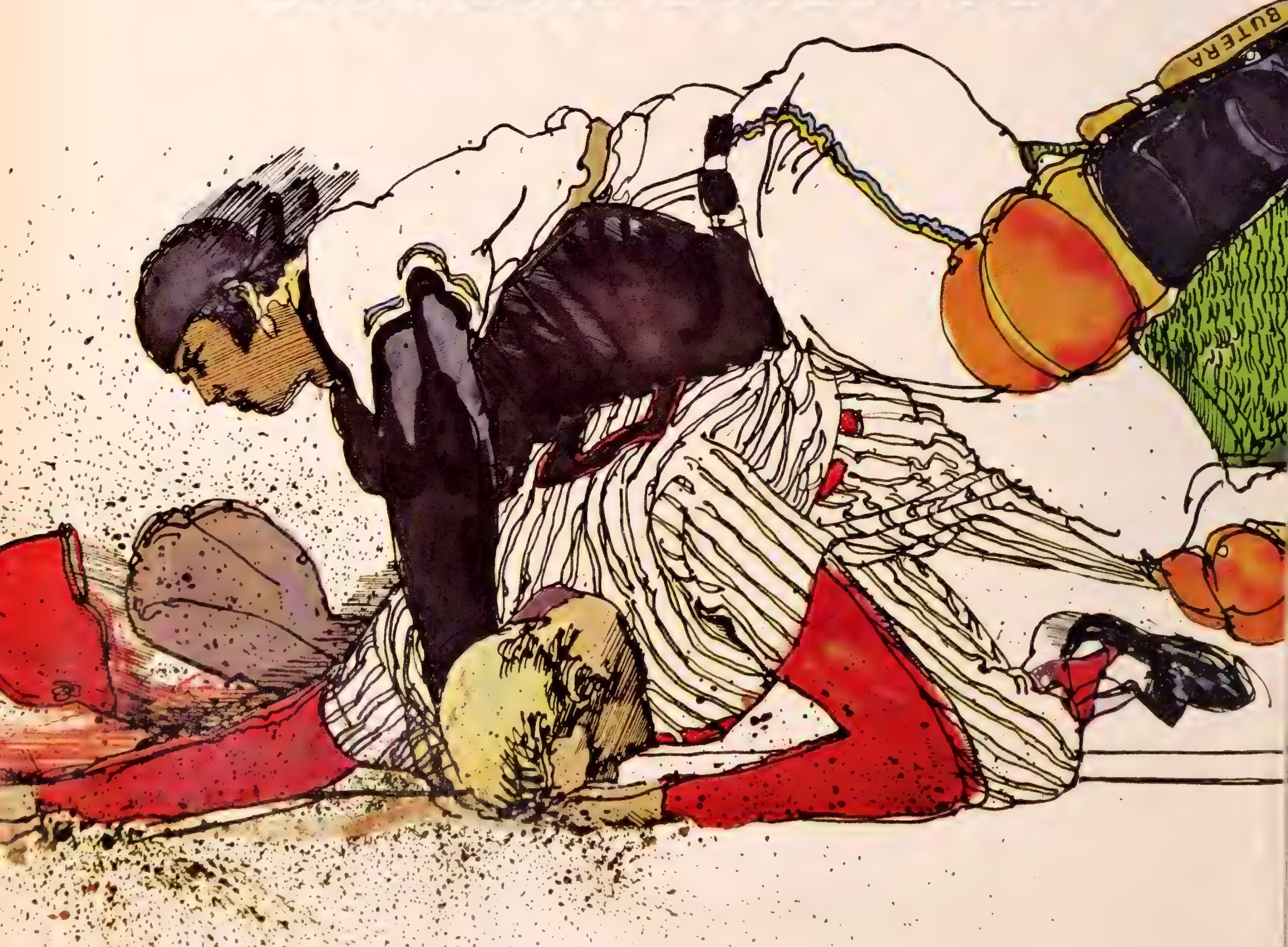

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Month in Washington

The American Medical Association protested again to the Federal Price Commission that the Administration's economic stablization program is discriminatory as it applies to physicians.

A detailed statement outlining the AMA's position was sent to the Price Commission March 27 by Max H. Parrott, M.D., chairman of the AMA Board of Trustees, in response to the commission's announcement in the *Federal Register* that it was seeking a general review of its policies.

The AMA statement emphasized that the Association supports President Nixon's efforts to curb inflation. But, the AMA said, physicians are "very much concerned that the economic restrictions imposed upon them do not have equal application to all segments of the economy."

The AMA recommended that the Price Commission establish a health industry council or committee with representatives of the AMA and other health associations as members.

"Such a committee could provide a direct conduit to the Price Commission of the resources, expertise, and experience of its members," the AMA said. Through such a committee the Price Commission would have access to indepth information accumulated by professional associations in the health care field. Furthermore, a direct channel of communication between the staffs of these organizations and the staff of the Price Commission would provide the Price Commission with assistance not otherwise obtainable.

The AMA expressed confidence that its statement reflected the concern of all physicians regarding the operation of the price control program as it applied to their services. The statement concluded:

> We believe that the comments and suggestions made in this statement reflect the concern of all physicians regarding the present operation of the price control program as it relates to their services. Accordingly, we urge the Price Commission to eliminate the discriminatory rules which single out physicians and other noninstitutional providers of health care. We also call upon the Price Commission to foster a simpler, more equitable system for the enforcement of price controls and the processing of applications for exceptions. An application for an exception not processed within twenty days should be deemed to be approved.

The AMA statement pointed out that professional fees, such as lawyers, outside the health profession were not subject to limitations and that "manufacturers, retailers, and sellers of services generally are entitled to full pass-through of their increased costs."

The AMA statement continued:

> Of all sellers of commodities and services, only physicians (and other noninstitutional providers of health care) are restricted to an aggregate price increase of 2.5 per cent a year in passing through increased costs. We do not believe that this discriminatory restriction is necessary to curb the rate of inflation. If indeed such a restriction were needed, the most effective application would be in those segments of the economy which command the bulk of the consumer's dollar—food, clothing, and housing.

The regulations divide health care providers into institutional providers and noninstitutional providers for price control purposes. This is an artificial and irrational distinction which should be abolished. The plain fact of the matter is that institutional providers frequently provide all, and always provide some, of the kind of services which noninstitutional providers sell.

We are convinced that the special restrictions in the regulations applicable to physicians (and other noninstitutional providers) will make no meaningful contribution to the goals of the Price Commission and as a matter of principle should be eliminated. Physicians should be encouraged to invest in new facilities and technology which will elevate the quality of medical care. The 2.5 per cent limitation on the pass-through of additional costs discourages such investments.

The Economic Stabilization Act requires that the President issue standards to serve as a guide for determining prices, such standards to be generally fair and equitable. The regulations provide for an application for an exception or exemption if the economic stabilization regulations and guidelines will result in serious hardship or gross inequity. However, the regulations do not provide any criteria or standards to be applied when a physician seeks an exception because of "serious hardship or gross inequity." We believe that serious hardship or gross inequity is involved where a physician has not increased his fees to keep pace with those charged by his colleagues. Many physicians have held the line on fees despite rising costs. They have delayed raising their fees, and in some instances physicians have not increased their fees for several years. We believe that these physicians should not be penalized by being frozen to a substandard level of fees.

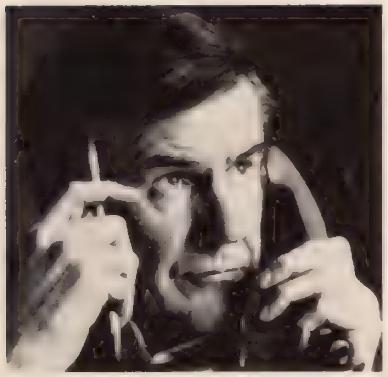
Standards for exceptions to the price regulations should include provisions for physicians to raise their fees under circumstances such as the following:

1. Where the price charged for a particular service or services is significantly lower than that most commonly charged in the same community by the same class of providers of health services. Example: A physician specializing in internal medicine whose charge for a routine office visit is significantly less than that most commonly charged by other physicians specializing in internal medicine in the same community.

continued on page 1114

Prepared by the Washington, D.C., Office of the American Medical Association.

Last week he got three new clients, four rush orders, and constipation.



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2. Where the price charged for a particular service or services is significantly lower than that most commonly charged in similar nearby communities by the same class of providers of health services and the applicant is the only one or one of a few in the same class of providers of health services in the same community. Example: The only ophthalmologist in a community whose charge for an eye examination for prescription glasses is significantly less than that most commonly charged by ophthalomologists in similar nearby communities.

3. Where the price charged by the applicant is the price most commonly charged in the community, or less, for a particular service or services and is substantially less than that most commonly charged in nearby communities because of substandard sociological or economic conditions that exist in the applicant's comunity. Example: A physician practicing medicine in a ghetto area in which the increase in fees during the past four or five years has not kept pace with increases that have generally taken place in nearby communities which have not been subject to such substandard conditions.

* * *

More than 80 members of the House of Representatives and Senate introduced legislation that would establish a separate department of health, a proposal advocated by the American Medical Association for a century.

Chief cosponsors were former secretary of Health, Education, and Welfare, Sen. Abraham A. Ribicoff (Democrat, Connecticut), and the chairmen of two key health subcommittees, Sen. Edward M. Kennedy (Democrat, Massachusetts) and Rep. Paul G. Rogers (Democrat, Florida). Twenty-four Democratic senators and 60 representatives, 54 Democrats and 6 Republicans, had signed the bill when it was introduced. Additional sponsors were expected to be added later.

The legislation, which would break up HEW into three departments ran counter to President Nixon's plan for government reorganization. His plan calls for merger of HEW into a new, even larger Department of Human Resources. Introduction of the separate health department legislation coincided with Nixon's sending of a second special message to Congress urging action on his reorganization proposal.

Some sponsors of the health department bill indicated they might compromise on two departments—one for health and welfare and one for education.

The AMA House of Delegates in 1873 adopted a resolution calling for a separate Federal department "as a means of promoting sanitary science and the protection of the public health." In 1891, the delegates approved appointment of a committee "to memorialize Congress at its next session on the subject of creating a cabinet officer to be known as the medical secretary of public health."

Through the years, the House of Delegates has reaffirmed this position, the most recent such action having been in December, 1970, when the following resolution was adopted:

> *Resolved,* That the American Medical Association, in the public interest, continue its efforts to bring about the creation of a separate Federal Department of Health, whose chief officer would be a physician of cabinet rank.

"HEW, as presently structured, is unwieldy, unmanageable, and therefore unresponsive to both the executive and legislative branches," Ribicoff said in a Senate speech.

> No secretary can know what is going on in such a huge department, much less maintain control of the operation and policy-making apparatus of such a bureaucracy.
>
> As a former secretary of HEW, I am convinced that health policy can be more rationally developed and the health programs of our nation better handled if they are placed under the jurisdiction of one agency of manageable size, a department of health.

Ribicoff pointed out that HEW, since its establishment in 1953, has "grown into a bureaucracy of 108,000 employes" with an annual budget of nearly $79 billion, one third of the entire Federal budget. It allocates $18 billion of the $25 billion the government spends each year on health programs that are scattered among 23 other agencies as well as HEW, he said.

His proposal, if enacted, would transfer all health responsibilities of HEW—including administration of Medicare and Medicaid—to the new department immediately. The President would be authorized to transfer health-care functions of other agencies to the department within one hundred eighty days of enactment.

The Ribicoff Bill also would set up a 19-member National Advisory Commission on Health Planning to aid in establishment of the department and to undertake a two-year study leading to recommendations for a ten-year national health policy.

* * *

The American Medical Association supports legislation that would amend the Medicare law to expand the circumstances under which payment could be made for services rendered by physician's assistants.

Payment now is permitted only when the assistant performs the services in the physician's presence. Under an amendment offered in the Senate to H.R.1, such payment would be allowed where the assistant performs the services without the physician being present. However, an assistant would not be allowed to practice medicine autonomously or without supervision of his physician employer.

H.R.1 provides for revisions of the Social Security Law, including Medicare and Medicaid.

In a letter to Sen. Gaylord Nelson (Democrat, Wisconsin), sponsor of the physician's assistant amendment, Ernest B. Howard, M.D., AMA executive vice-president, said:

> We believe the amendment to be salutary. As you know, the AMA is fostering the development of appropriate programs to increase the number of physicians' assistants. It is anticipated that such assistants will serve in various ways, and their role can be a valuable one in helping to meet our health manpower needs. In rural settings, for instance, the assistants may serve in communities or areas removed from the physician's office. The Medex program is one example of the assistant serving to extend the physician's services into adjoining areas. While deli-

continued on page 1118

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Zinc (from Zinc Oxide)	0.25 mg.
Iodine (from Potassium Iodide)	0.075 mg.
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Use in mild asymptomatic diabetic patients with abnormal glucose tolerance tests not responding to diet therapy may result in improvement of the glucose tolerance test.

Use in conjunction with phenformin is indicated when optimal control is not obtained with Orinase or phenformin alone.

Contraindications: Orinase alone is not effective in juvenile or growth-onset diabetes nor in unstable brittle diabetes where insulin therapy is required.

Orinase should not be used: when diabetes is complicated by acidosis, ketosis, or coma, or when a history of repeated bouts of acidosis or coma is obtained; in the presence of other acute complications such as fever, severe trauma, or infections; and in patients with severe renal insufficiency. Insulin is indicated in these circumstances.

Pregnancy Warning: The safety and usefulness of Orinase during pregnancy has not been established either from the standpoint of the mother or the fetus. Animal studies have demonstrated feticidal and teratogenic effects of doses of 1,000-2,500 mg./kg./day, but application to human subjects unknown. Therefore, Orinase is not recommended for the pregnant diabetic, and when administering Orinase to women of childbearing age, these facts should be borne in mind.

Precautions: Diagnostic and therapeutic measures necessary for optimal control with insulin are also necessary with Orinase. The patient on Orinase must be fully instructed: about the nature of his disease; how to prevent and detect complications; how to control his condition; not to neglect dietary restrictions, develop a careless attitude or disregard instructions relative to body weight, exercise, personal hygiene, and avoidance of infection; how to recognize and counteract impending hypoglycemia; how and when to test for glycosuria and ketonuria; how to use insulin; and to report to the physician immediately if he does not feel as well as usual.

Caution, very close observation, and careful adjustment of dose are necessary when: insulin is withdrawn during the trial period in order to avoid ketosis, acidosis, and coma; thiazide diuretics are administered which may result in aggravation of diabetic state and increased tolbutamide requirement, temporary loss of control, or even secondary failure; treating patients with impaired hepatic and/or renal function and debilitated, malnourished, or semistarved patients in order to avoid severe hypoglycemia which may require corrective therapy over several days; and treating patients with severe trauma, infection, or surgical procedures where temporary return to insulin or addition of insulin may be necessary. Response to tolbutamide is diminished in patients receiving therapy with beta blocking agents.

As some diabetics are not suitable candidates, it is essential that the physician familiarize himself with the indications, limits of application, and selection of patients for therapy.

Patients must be under continuous medical supervision, and during the initial test period should communicate with the physi-

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cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

Although usually not serious, gastrointestinal disturbances (nausea, epigastric fullness, and heartburn) and headache appear to be dose related and frequently disappear with reduction of dose or administration with meals. Allergic skin reactions (pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions) are transient, usually not serious, and frequently disappear with continued administration. Orinase should be discontinued if skin reactions persist. Recent reports indicate that long-term use of Orinase has no appreciable effect on body weight.

Orinase appears to be remarkably free from gross clinical toxicity: crystalluria or other renal abnormalities have not been observed; incidence of liver dysfunction is remarkably low and jaundice has been rare and cleared readily on discontinuation of drug (carcinoma of the pancreas or other biliary obstruction should be ruled out in persistent jaundice); leukopenia; agranulocytosis; thrombocytopenia; hemolytic anemia; aplastic anemia; pancytopenia; and hepatic porphyria and porphyria cutanea tarda have been reported.

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continued from page 1114

neation of the appropriate role of the physician's assistant, as well as appropriate criteria for certification, are now under formulation, and many programs are in the development stage, we believe your amendment will provide stimulus to the expanding acceptance of these programs.

* * *

The American Medical Association urged that the Lead-Based Paint Poisoning Prevention Act be continued and expanded.

> A substantial percentage of lead poisoning can be traced to the ingestion of chips of lead-based paint by infants. We believe that every reasonable means must be used to reduce this tragic affliction.

The AMA position was outlined in a letter from Ernest B. Howard, M.D., AMA executive vice-president, to Sen. Edward M. Kennedy (Democrat, Massachusetts) chairman of the Senate Health Subcommittee which was considering the extension legislation (S. 3080).

> S. 3080 also adds a new subsection which authorizes the Secretary of Health, Education, and Welfare to make grants to state agencies for the purpose of establishing centralized laboratory facilities for analyzing biological and environmental lead specimens obtained from local lead-based paint poisoning detection programs.
>
> This is a proper and important expansion of the program and will provide needed financial support and encouragement to local programs. We would urge that this provision be supported by the committee.
>
> Other provisions of this legislation are concerned with a revision of the definition of lead-based paints and with increasing the funds authorized to carry on the programs of the Lead-Based Paint Poisoning Prevention Act. The lead content of paint should be kept at the lowest level possible, and we believe that the proposed revision in the definition will materially strengthen the desired objectives of reducing the incidence of this disease. The increased authorizations should also be beneficial in aiding the program to reach a higher degree of effectiveness.

Liver friction rub

A liver friction rub is a particularly valuable adjunct in bedside diagnosis of patients with hepatic metastases who first come to the clinician with symptoms referrable to the liver. The friction rub may also be heard in gonococcal perihepatitis, cirrhosis, and primary hepatoma. Simpson (Am. J. Digest. Dis. 16: 39 [Jan.] 1971) has recently described 2 patients in whom the liver friction rub proved to be a valuable aid in the bedside diagnosis of liver metastasis. Each of these patients manifested early problems in the differential diagnosis of right upper quadrant abdominal pain.

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Abstracts

Giliberty, R. P.: Tetanus toxoid boosters and human immune globulin for tetanus prophylaxis, ***New York State J. Med.*** 72: 1131 (May 15) 1972.

Tetanus toxoid provides long-lasting active immunization, but reliance on tetanus toxoid for obtaining early protective levels in severe crush injuries is hazardous. For the nonimmunized patient an excellent prophylactic antitoxin derived from human serum is highly recommended. It has distinct advantages over tetanus antitoxin of equine or bovine origin and ultimately will replace the latter. In addition, attention is called to the apathy on the part of the population to heed the value of active immunization. This indifference must be overcome with a greater effort on the part of the medical profession.

Krauss, A. N., Caliendo, T. J., and Kannan, M. M.: Bacteremia in newborn infants; Following umbilical catheterization, ***New York State J. Med.*** 72: 1136 (May 15) 1972.

In 27 newborn infants with umbilical catheters in place 40 blood cultures were obtained while catheterized and 10 blood cultures immediately after removal of the catheters. One infant with a sterile catheter showed a positive blood culture for Escherichia coli. This incidence of positive blood cultures was not significantly different from that found in a group of healthy uncatheterized infants in the same nursery.

Gulotta, S. J., and Aronson, A. L.: New pacemaker pulse counter; Simple method for determining pacemaker activity, ***New York State J. Med.*** 72: 1138 (May 15) 1972.

Patients requiring temporary transvenous demand pacemakers were studied prior to removal of the pacing electrode to determine if pacing impulses were being initiated. Rigorous observation of the monitored electrocardiogram was compared with a new pacemaker pulse counting device to determine the reliability of the device as a means of automatically detecting pacemaker activity. The device was accurate, safe, and convenient, and offers advantages over other means of estimating pacing activity currently employed. The need for documenting whether temporary pacing may be safely discontinued exists in a large group of patients undergoing temporary pacing. The methods employed in this study permit such documentation simply and inexpensively.

Quattromani, F., and Finby, N.: Roentgenographic double-contrast examination of stomach and duodenum, ***New York State J. Med.*** 72: 1140 (May 15) 1972.

Double-contrast roentgenographic study of the stomach and duodenum has proved to be a useful technic in the detection and evaluation of subtle mucosal abnormalities. The technic is enhanced by administering carbon dioxide granules along with barium. Several cases are used to illustrate the advantages of the technic.

Ambrosino, S. V.: Community psychiatry in a children's center, ***New York State J. Med.*** 72: 1144 (May 15) 1972.

Today, community psychiatry is a delivery system, not a theory. In a children's center, the most obvious problem is providing comprehensive multidisciplinary evaluation and treatment on a continuous basis. Collaborative efforts among the disciplines are crucial. In light of the shortage of professional personnel, volunteers are trained in our psychoeducational methodology. In a pluralistic society, unitary theories are difficult to sustain; an open hierarchal transactional model is therefore proposed in an attempt to establish a reliable teleology. In the last analysis, the parents must become an active part of the therapeutic effort, and supply feed-back and feed-forward experiences among the children, staff, and community.

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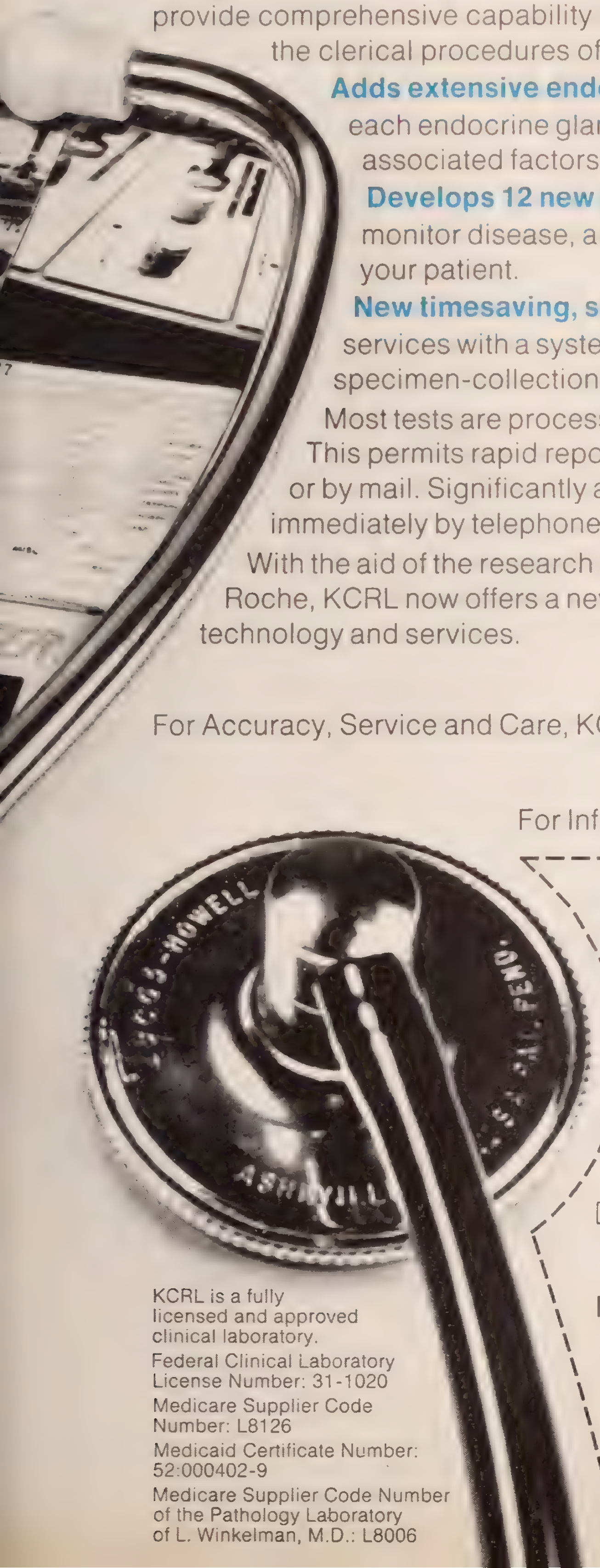

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Abstracts in Interlingua

Giliberty, R. P.: Injectiones de reinfortiamento de toxoide tetanic e le immunoglobulina human pro le prophylaxis del tetanus, ***New York State J. Med.* 72:** 1131 (15 de Maio) 1972.

Le toxoide tetanic provide un immunisation active de longe duration, mais es periculose confider in iste composto pro obtener un protection temprane in casos de grave injurias traumatic. Pro le patiente non immunisate es altemente recommendate un excellente antitoxina prophylactic derivate del serum human. Iste producto ha distincte avantages supra le antitoxina tetanic de origine equine o bovin e, ultimemente, potera reimplaciar le antitoxina bovin. De plus, appella se le attention supra le apathia del population pro valutar le immunization active. Iste indifferentia pote esser surmontate mediante un major effortio de parte del profession medical.

Krauss, A. N., Caliendo, T. J., e Kannan, M. M.: Bacteriemia del neonatos depost le catheterisation umbilical, ***New York State J. Med.* 72:** 1136 (15 de Maio) 1972.

Quaranta (40) culturas del sanguine esseva obtenite in 27 neonatos con catheteres umbilical, e 10 culturas immediatemente depost le extration del catheter. In un infante con catheterisation sterile, un cultura del sanguine esseva positive pro le Escherichia coli. Le frequentia de culturas positive del sanguine non esseva significativemente differente del trovato in un gruppo de pueros san, non catheterisate in le mesme nurseria.

Gulotta, S. J., e Aronson, A. L.: Nove contador del pulso ab marcapaso; Methodo simple pro determinar le activitate de marcapasos, ***New York State J. Med.* 72:** 1138 (15 de Maio) 1972.

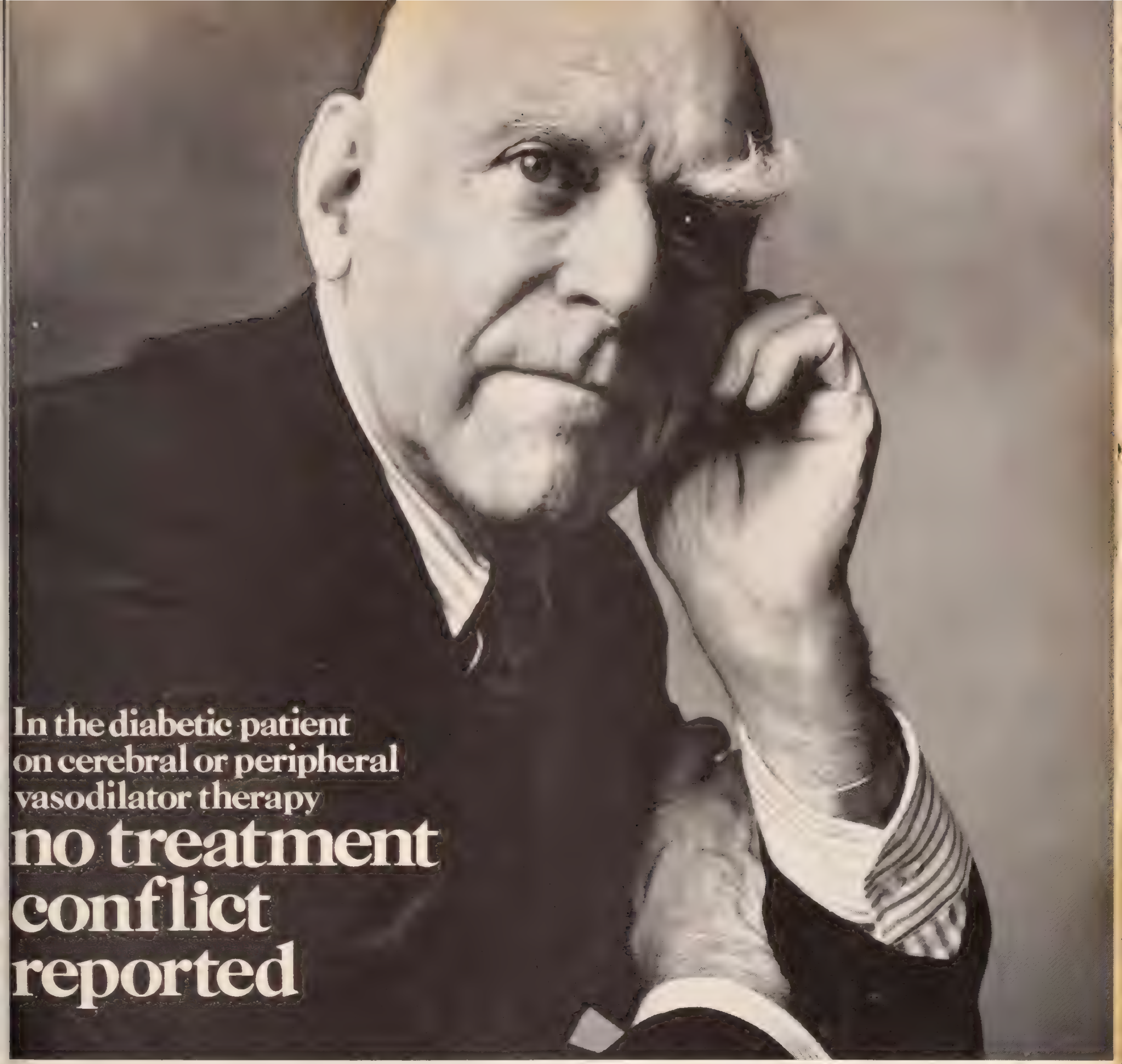
Le patientes que necessita marcapasos de demanda temporari e transvenose esseva studiate pre le extraction del electrodo del marcapaso pro determinar si le impulsos provenente del marcapaso esseva initiate. Le rigorose observation del electrocardiogramma seriate esseva comparate con le de un nove dispositivo pro contar le pulso producite per un marcapaso pro determinar le grado de confiabilitate del instrumento como medio de detectar, automaticmente, le activitate del marcapaso. Le dispositivo esseva precise, secur e conveniente, e offere avantages supra le altere medios actualmente usate pro estimar le activitate del marcapasos. Le necessitate de documentar se si le marcapasos temporari pote esser securmente eliminate existe in un gruppo grande de patientes que require iste typo de marcapaso. Le methodos usate in iste studio permite obtener tal documentation de maniera simple e non costose.

Quattromani, F., e Finby, N.: Examination roentgenographic ab contrasto duple del stomacho e duodeno, ***New York State J. Med.* 72:** 1140 (15 de Maio) 1972.

Le studio roentgenographic ab contrasto duple del stomacho e duodeno ha resultate un technica utile pro detectar e evalutar le abnormalitates tenue del mucosa. Le technica es meliorate con le administration de granulos de CO_2 juncto con le barium. Varie casos esseva usate pro illustrar le avantages de iste technica.

Ambrosino, S. V.: Psychiatria communitari in un centro infantile, ***New York State J. Med.* 72:** 1144 (15 de Maio) 1972.

Hodie, le psychiatria communitari es un systema de delivrantia, non un theoria. In un centro infantile, le problemas plus obvie consiste in proporcionar un evalutation comprensive e multidisciplinari, e un tractamento continuo. Le effortios collaborative inter le disciplinas es crucial. In vista del pauc personal professional, le voluntarios es inseniate in nostra methodologia psychoeducational. In un societate pluraliste, es difficile sustener theorias unitari; in consequentia, es proposte un modelo transactional hierarchic aperte in un effortio pro establir un teleologia (causa final) confiabile. In un ultime analyse, le parentes debe devenir un parte active del effortio therapeutic, e suministrar experientias previe e pro uso futur inter les pueros, le personal e le communitate.



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There are no known contraindications in recommended oral doses other than it should not be given in the presence of frank arterial bleeding or immediately postpartum.

Although not all clinicians agree on the value of vasodilators in vascular disease, several investigators[2-5] have reported favorably on the effects of isoxsuprine. Effects have been demonstrated both by objective measurement[3,5] and observation of clinical improvement.[2,4]
Indications: Cerebrovascular insufficiency, arteriosclerosis obliterans, diabetic vascular diseases, thromboangiitis obliterans (Buerger's disease), Raynaud's disease, postphlebitic conditions, acroparesthesia, frostbite syndrome and ulcers of the extremities (arteriosclerotic, diabetic, thrombotic). **Composition:** VASODĪLAN tablets, isoxsuprine HCl 10 mg. and 20 mg. **Dosage:** Oral—10 to 20 mg. t.i.d. or q.i.d. **Contraindications and Cautions:** There are no known contraindications to recommended oral dosage. Do not give immediately postpartum or in the presence of arterial bleeding. **Side Effects:** Occasional palpitation and dizziness can usually be controlled by dosage reduction. Complete details available in product brochure from Mead Johnson Laboratories. **References:** (1) Samuels, S. S., and Shaftel, H. E.: J. Indiana Med. Ass. *54*:1021-1023 (July) 1961. (2) Clarkson, I. S., and LePere, D. M.: Angiology *11*:190-192 (June) 1960. (3) Horton, G. E., and Johnson, P. C., Jr.: Angiology *15*:70-74 (Feb.) 1964. (4) Dhrymiotis, A. D., and Whittier, J. R.: Curr. Ther. Res. *4*:124-128 (April) 1962. (5) Whittier, J. R.: Angiology *15*:82-87 (Feb.) 1964.

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Editorials

Automobile safety

Three things are involved in automobile safety—the machine itself, the road it runs on, and the ability of the driver. The last is the most important of the three.

Our children are far better drivers because they have learned the theory and practice of driving while in secondary school. There is an opportunity for the parents to catch up in the "Defensive Driving Courses" being given by police or fire officials in many communities of the State. This course is an eye-opener. It tones down aggressiveness, responsible for many an accident, and it emphasizes alertness and anticipation of what the proximal driver may do. Signal lights may not be functioning or the driver ahead may have misapplied them. Awareness of such possibilities becomes second nature to the defensive driver. Passing on the open road requires cool calculation of the speed of the car you intend to pass, your own horse power, and the estimated speed of any car coming in the opposite direction. Bus and truck drivers do this automatically and you can learn to do it.

Modern motor vehicles are remarkably efficient and modern highways are excellently engineered but all is of little avail if the driver is not up to the mark.

If there is a "Defensive Driving Course" in your neighborhood take it by all means. It could be life saving for yourself and for others. You will be surprised to learn that what you think you know about driving is not enough.

Exposure to radiation decreases

The Bureau of Radiological Health of the F.D.A. reports a sharp decrease in genetically significant x-ray exposure despite a large increase in the number of people exposed as a result of increased population.

In 1964 to 1965 an estimated 67 million patients received medical x-ray examinations and their mean annual genetically significant x-ray dose was 55 millirads per person.

In 1970, 76 million took medical x-ray examinations of one kind or another but the mean annual genetically significant dose that year was 36 millirads—a drop of 35 per cent.

Many factors were involved in this success within a five-year period. More efficient film, better methods of screening to reduce scatter, better technics, and better equipment played a part but we like to think that physicians themselves had a large part in it. They have become aware of iatrogenic effects and recommend the potent diagnostic tool of x-ray judiciously. The active educational campaigns of the radiology societies, the work of public health officers in education, and inspection seem to be paying off.

Though the national exposure of an individual from soil, rocks, and cosmic rays is 120 millirads, we must continue to strive toward minimal additional exposure. A decrease of 35 per cent in added medical exposure is good—might we try for 50 per cent?

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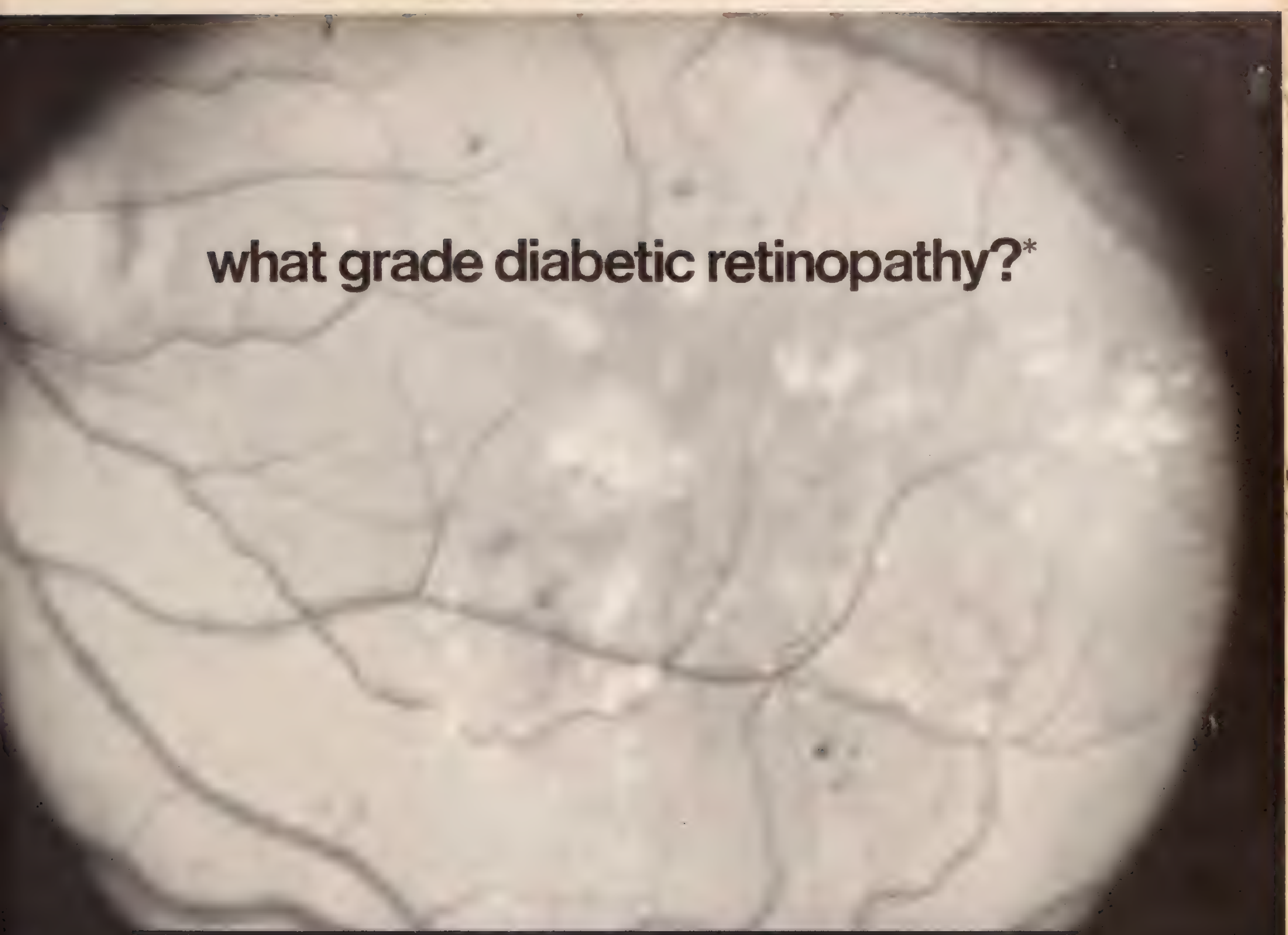

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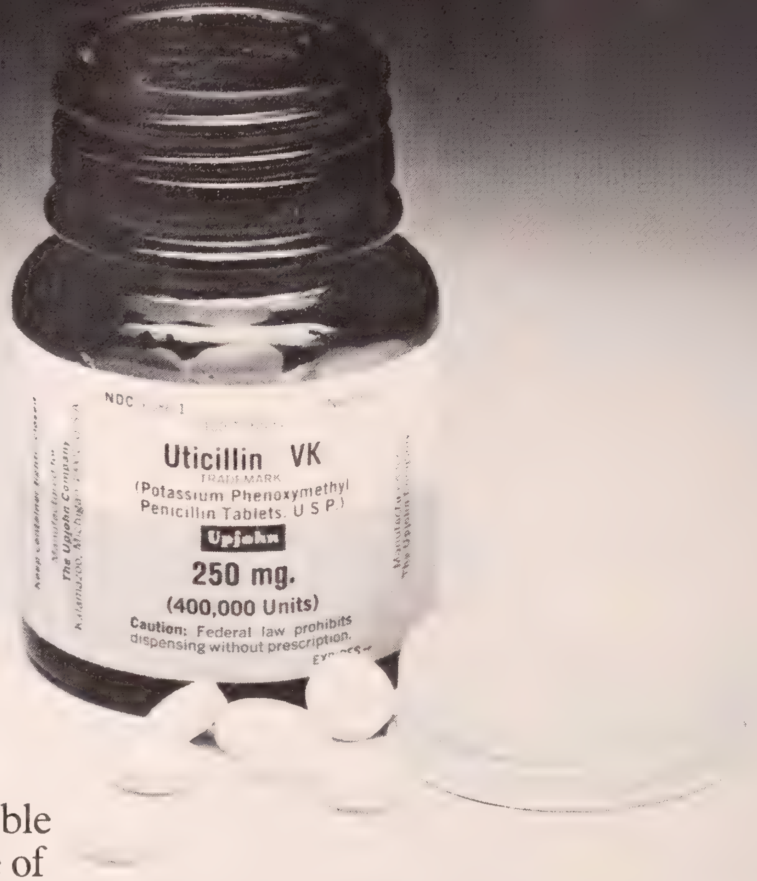
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TETANUS TOXOID BOOSTERS AND HUMAN IMMUNE GLOBULIN FOR TETANUS PROPHYLAXIS

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Manhasset, New York

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Tetanus toxoid provides long-lasting active immunization, but reliance on tetanus toxoid for obtaining early protective levels in severe crush injuries is hazardous. For the nonimmunized patient an excellent prophylactic antitoxin derived from human serum is highly recommended. It has distinct advantages over tetanus antitoxin of equine or bovine origin and ultimately will replace the latter. In addition, attention is called to the apathy on the part of the population to heed the value of active immunization. This indifference must be overcome with a greater effort on the part of the medical profession.

Tetanus is the cruelest of all diseases, and the mortality rate remains high in spite of all efforts of modern therapy. A statistical study by Bytchenko[1] reveals that a total of 50,000 deaths resulted from tetanus each year all over the world. Environmental factors play a part in the incidence of the disease, it being higher in warmer climates. In India the risk of tetanus varies from 10 to 26.6 per 100,000 population.[2] It is highest among the underprivileged countries of the world.

Incidence

Between 1965 and 1966, there were 535 cases of tetanus reported in the United States, with 363 fatalities.[3] During the years 1968 and 1969, a total of 37 cases of tetanus were reported in New York State. Of the total, 81 per cent were from New York City. In the month of September, 1970, 2 cases of tetanus were reported in New York State, exclusive of New York City.

During World War II, only 14 cases of tetanus were reported in the U.S. Armed Forces, reflecting an almost perfect immunization program which had been instituted by our military command. This also substantiated the efficacy of active tetanus immunization with tetanus toxoid.

The mortality rate from tetanus in Canada has decreased from 1 per million population in the five-year period 1945 to 1949, just prior to the widespread use of tetanus toxoid immunization, to 0.35 per million in a period from 1960 to 1964, a decrease of 65 per cent.[4]

Rubbo[5] expresses the viewpoint that a wound which has been surgically cleansed and debrided, irrespective of its nature or severity, is not tetanus prone and therefore does not necessarily require an antitoxin cover. He refers to a statistical study he conducted in Victoria in which 50,000 injuries were treated by physicians without benefit of tetanus antitoxin or previous immunization with toxoid. Tetanus developed in none of the patients. Reliance on surgical debridement of the wound alone would be precarious in most instances, especially when tetanus prophylaxis is almost 100 per cent effective when properly instituted.

Immunization with toxoid

Active immunization is accomplished by administering two doses of tetanus toxoid, adsorbed, (contains aluminum salts), 0.5 cc. intramuscularly, with an interval of four to six weeks between injections, followed by a reenforcing dose at the end of one year. This produces a reliable active immunization.[6]

Subsequent reinforcing boosters were recommended at intervals of four years in 1962.[7] More recently, ten years have been accepted as also being adequate for the administration of a booster.[8-11] An immune response will occur as late as eighteen to twenty years after adequate immunization.[4,12,13]

Edsall *et al.*[8] and Scheibel, Bentson, and Christensen[14] found that in patients who have been actively immunized with tetanus toxoid, 96 per cent will have measurable antitoxin levels at the end of twelve years. McComb and Levine[15] noted that frequent boosters may cause reaction to the toxoid in adults because of existing high-titer levels. Most authorities agree that a protective level is present for a full year after a booster injection. Filler and Ellerbeck[16] prepared a graph which showed that following tetanus immunization with toxoid, a protective level was maintained at the end of a year following a booster dose.

Tetanus toxoid is produced by detoxifying tetanus toxin with formaldehyde and then concentrating it. The toxoid is supplied as a fluid or an adsorbed product. Adsorbed toxoid is preferable for active immunization; it will produce an adequate immunization with only two doses at four- to six-week intervals if a reinforcing dose is given as noted previously.

The fluid toxoid presumably produces more rapid antitoxin levels in a previously immunized patient. It can also be used for active immunization, but three doses are required at four- to six-week intervals.

Tetanus toxoid reactions generally are benign because of the availability of highly purified toxoid. When reactions do occur, they are characterized by local erythema and tenderness.

Immunization with tetanus antitoxin

Tetanus antitoxin is administered to patients who have not been previously actively immunized against tetanus. It has a specific affinity for the toxin produced by the tetanus bacillus only if the two agents are brought into contact prior to fixation of the toxin to nervous tissue.

The accepted minimal protective serum antitoxin level, measured in units per milliliter is a titer level of 0.01 u. per milliliter. Looney *et al.*[10] using the mean of 0.1 u. per milliliter concluded that a routine booster at any time up to ten years may be relied on in any fully immunized patient.

Goldsmith, Rosenberg, and Pollaczek[12] accepted the range of 0.01 to 0.1 u. per milliliter to be protective. Data which they accumulated on a survey of veterans of World War II showed a prompt response to a booster injection of tetanus toxoid at any time up to eighteen years from the last booster date, and also that there is good residual immunity even without a booster injection for as long as fourteen to eighteen years.

In interpreting the laboratory results, it must be remembered that the protective levels are usually measured on the seventh and fourteenth day after the booster. From a clinical viewpoint, it must be emphasized that the incubation period of tetanus is from three to thirty days. Thus the time of the last booster is most important. A booster after ten years may give a protective level on the seventh day, whereas a booster after twenty years may give a protective level on the fourteenth day.[4,8,9,11-13,15] Patients with extensive wounds, namely, crush injuries, compound fractures, and so on, should have early protective levels. They all should be given tetanus immune globulin human in doses of 250 to 500 u. depending on the judgment of the physician. In addition, they should be given a tetanus toxoid booster.

Tetanus antitoxin of equine or bovine origin does not always give complete protection.[17] It produces adequate serum levels for relatively short duration, and it is neutralized very rapidly in sensitive individuals. It was found that in spite of careful skin testing and desensitization whenever the result of the skin test was positive, serum reactions frequently occurred. Some were quite severe and required hospitalization. Reactions occurred with negative findings on skin tests. Even if the individual is not sensitive prior to the injection, repeating the dose will produce sensitivity with associated decrease in the efficacy of the antitoxin and cause more rapid elimination of the antitoxin.

Tetanus antitoxin of human origin is prepared from plasma of people who have been hyperimmunized with tetanus toxoid. It has very distinct advantages to tetanus antitoxin of equine or bovine origin and will ultimately replace it completely. It produces adequate levels at much lower doses; its half life is approximately four weeks in contrast to tetanus antitoxin of equine or bovine origin which is in the range of seven days. Serum sickness, sensitization, and anaphylactic reactions no longer pose a major problem. Repeated doses are not likely to produce sensitivity or rapid neutralization.

This is in marked contrast to tetanus antitoxin of equine or bovine origin which always presented the physician with an enigma. In treating minor wounds, should a therapeutic agent be administered which in itself could precipitate a pathologic condition which neither the patient nor the physician bargained for? It is difficult to conceive of a valid reason to continue the use of heterologous animal serum prophylactically. Prior to the use of tetanus immune globulin of human origin serum reactions to tetanus antitoxin of equine or bovine origin were common and in many instances severe. This prompted the medical board at Nassau Hospital to discontinue the use of this antitoxin in May, 1964, even though the cost of human immune globulin was many times higher. Since that time, greater use and productivity of tetanus immune globulin of human origin has lessened the cost, and many other hospitals are discontinuing the use of heterologous animal serum.

Tetanus prophylaxis in emergency room

For treating patients requiring tetanus prophylaxis in the emergency room at Nassau Hospital, Mineola, New York, prior to May, 1964, five years was used as the cut off date from the last booster in a previously immunized patient. The interval of ten years was accepted on this date after careful review of the literature. There was ample laboratory evidence of this interval of time being adequate in producing a protective titer level. Our action appears to have been completely justified as subsequently in December, 1966, the U.S. Public Health Service recommended that the interval between boosters of tetanus toxoid be increased to ten years.[11-18] Trica[19] believes that a booster dose of tetanus toxoid will induce adequate antibody response in an actively immunized patient up to a period of twenty years after the date of the last booster.

Erroneous use of tetanus toxoid alone in a patient who was not previously immunized will result in inadequate protection. In a nonimmunized patient, a dose of 0.5 cc. of tetanus toxoid is totally inadequate.

Reliability on the previous history of active immunization without written documentation can be hazardous. We can only assume that all children who have been to a pediatrician or all veterans of the U.S. Armed Services were immunized. To nullify this assumption Ildirim, Meira, and Furcolow,[20] using indirect hemagglutination tests for tetanus antitoxin, found that 17 per cent of six-year-old children had below protective levels; however, in vitro tests are not always reliable indicators. All of the patients supposedly had been immunized. Because of the excellent proved response to tetanus antigen the probabilities are that human error on the part of the parents or misunderstanding were more significant. This reinforces the need for issuing an immunization card at the completion of the series by the attending physician.

The author is aware of 2 cases of tetanus which developed following trauma involving the phalanges. Neither patient had a history of previous tetanus immunization. Following surgical debridement of wounds, both patients were given tetanus toxoid but not tetanus antitoxin. In each instance tetanus developed on the ninth day after injury and proved fatal in spite of intensive therapy. Wessler and Avioli[21] also reported a case of tetanus developing following a puncture wound of the calf in a sixty-seven-year-old female. The wound was treated and the patient given tetanus toxoid but not tetanus antitoxin. Clinical tetanus developed on the eleventh day following the injury. All 3 of these patients were in the sixth and seventh decades of life, and they represented our senior citizens who are the least likely to have been immunized.

Apathy on the part of the population to heed the value of active immunization must be overcome with a greater effort by the medical profession. The lowest rate of immunization is found in women over thirty-five years of age and in our senior citizens of both sexes. This difference is a result of the routine immunization of newborn infants for the past three decades and the mass immunization of servicemen in World War II and the Korean war.

During the period of fourteen consecutive months 5,455 ambulatory patients were treated for injuries requiring tetanus immunization in the emergency room at Nassau Hospital. Of the total of 1,175 successive cases, 426 were females and 749 were males. Of the females between the ages of one to forty, 76 per cent had a history of previous immunization against tetanus; of the males in this same category, 87 per cent gave a history of having been previously immunized. In the age group between forty and sixty years, 28 per cent of the females and 59 per cent of the males had a history of previous active immunization. Within the age group of sixty years and over, only 9 per cent of the females and 30 per cent of the males gave a reliable history of immunization.

These figures reflect the benefit of routine immunization of infants for the past three decades and the mass immunization of military personnel since 1940. They also emphasize the apparent neglect of providing adequate immunization for our senior citizens.

In addition to administering tetanus prophylaxis to these patients, all of the wounds were treated surgically to reduce the potential of infection. No tetanus antitoxin of equine or bovine origin was administered. As stated previously, the use of heterologous animal serum was discontinued at Nassau Hospital in 1964 because of the availability of tetanus immune globulin human.

Tetanus toxoid boosters were given when a definite history of active immunization with tetanus toxoid was obtained and the date of the last booster was no longer than ten years. If a booster had been given within one year of the injury, it was omitted. Antibiotics were not used prophylactically.

For the nonimmunized patients or those previously immunized patients who had not received a booster of tetanus toxoid in less than a ten-year period from the date of the original immunization, tetanus antitoxin of human origin was given intramuscularly. In addition to the antitoxin, they were all given the first dose (0.5 cc.) of tetanus toxoid to start an active immunization program. The toxoid was administered intramuscularly in the opposite extremity to that in which tetanus antitoxin was given.

Of the 5,455 ambulatory patients treated in the emergency room at Nassau Hospital, 60 per cent or 3,273 required and received tetanus immune globulin human, and no reactions were observed from the serum other than slight soreness at the site of injection. Levine, Wyman, and McComb[22] found that tetanus antitoxin of human origin was superior with almost no risk of immediate or delayed sensitivity reactions in contrast to tetanus antitoxin of equine origin. The following schedule of doses was used:

Units, intramuscularly*:
Ten years or older, 250
Five to ten years, 125
Under five years, 75

This dosage schedule applied only to patients who sustained wounds that could be treated on an ambulatory basis in the emergency room and would apply to office treatment of similar injuries. Extensive wounds or crush injuries, which by their very nature were tetanus prone, required hospitalization in most instances. These patients were given tetanus antitoxin of human origin in addition to tetanus toxoid.

If the patient gave an unreliable history of having had active tetanus immunization (which was not unusual), rather than subject the patient to a risk, tetanus immune globulin human was administered in addition to tetanus toxoid.

A similar program was instituted at Nassau County Medical Center, East Meadow, New York; however, the accepted time from the last booster was six years instead of ten. This is a county hospital and maintains an active emergency room with an average of 600 emergency patients each month who require tetanus immunization.

Only patients who could be treated on an ambulatory basis were included in this series. Protective levels between the seventh and fourteenth days could be acceptable to most physicians in treating similar wounds.

At Nassau Hospital an average of 356 patients were treated each month. The Nassau County Medical Center averages 600 patients treated monthly. By projection, this makes a combined approximate total of 65,000 patients treated from April 1, 1964, to January 1, 1971. Tetanus developed in none of the patients. Reactions to tetanus toxoid were minimal, and we encountered no reactions other than some mild local discomfort. All of the patients at Nassau Hospital who were not previously immunized were given tetanus toxoid in addition to tetanus antitoxin of human origin. They were all instructed to consult a physician to complete the immunization. In the six-year period this would be about 10,000, since only 60 per cent, on the average, were previously immunized. Wherever possible, all drug addicts were also started on an immunization program.

If enough clinical data can be accumulated to validate the use of tetanus toxoid alone in treating previously immunized ambulatory patients, by correlation with laboratory findings the cutoff date could possibly be extended to twenty years instead of ten. This would eliminate the need of passive prophylaxis in veterans of the Korean war and the general population over twenty years of age. Both of these groups have the highest percentage of active immunization and in most instances have not had a stimulating booster within ten years. Most physicians would hesitate to take it on themselves to accept a longer duration without good statistical backing.

To ascertain a more accurate knowledge of the existing titer levels, a test which shows some promise is available and can be performed within a three-hour period. This is a latex toxoid test (L-T) described by Alexander and Moncrief.[23]

Where the history of active immunization is not reliable, physicians should not hesitate to give tetanus immune globulin human in addition to tetanus toxoid. The contraindications to its use are listed as follows in the official package circular by the manufacturer of a tetanus immune globulin of human origin† in compliance with The National Institutes of Health, Division of Biological Standards:

> (a) Do not inject intravenously.
>
> Sensitivity to Tetanus Immune Globulin (Human) or other gamma globulin products have been reported as extremely rare. The parenteral administration of any biological material should be attended by every known precaution for the prevention and arrest of untoward reactions. Side effects: Slight soreness at the site of injection. Systemic reactions to human gamma globulin are extremely rare. Sensitivity to repeated injection is extremely unusual.

Our experience at Nassau Hospital and the Nassau County Medical Center over the past seven years substantiates these findings.

This is in marked contrast to the package circulars for tetanus antitoxin of equine or bovine origin which warn of the probability of grave serum reactions. Occasional use of tetanus antitoxin of human origin, when it may not actually have been necessary, is justifiable to any physician who in so doing may prevent a case of tetanus. The minimal hazard to its use makes it a welcome addition to every physician's armamentarium.

Summary

Tetanus is still a common disease in spite of the availability of a highly effective tetanus toxoid which provides a long-lasting active immuniza-

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*Tetanus immune globulin human should not be given intravenously.

†Pro-Tet, a product of Lederle Laboratories, Pearl River, New York.

tion. For the nonimmunized patient, an excellent prophylactic antitoxin derived from human serum (tetanus immune globulin human) is also available.

Actively immunized patients respond to booster doses of toxoid up to ten years and perhaps longer after the initial series. Frequent use of boosters is not necessary and may even be harmful. Ten years between boosters is adequate provided the patient is given a tetanus toxoid booster. This will adequately protect the ambulatory patient who presents a minor wound.

In the absence of a positive history, the physician should not hesitate to administer 250 u. of tetanus antitoxin of human origin in addition to tetanus toxoid. He should not be deterred by the cost or inconvenience to the patient.

A greater effort should be made by the medical profession to stimulate mass active immunization programs, especially among our senior citizens, and also to provide the patient with documentation on which a sound judgment can be made by the attending physician.

Further statistical studies should be made of tetanus immunization levels to determine if fifteen or twenty years could be acceptable in treating the previously immunized ambulatory patient.

Reliance on tetanus toxoid for obtaining early protective levels in the severe crush injuries is hazardous, and these patients should be given tetanus immune globulin human in addition to the toxoid.

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BACTEREMIA IN NEWBORN INFANTS*

Following umbilical catheterization

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In a previous report it was noted that 57 per cent of umbilical catheters demonstrated bacterial contamination when cultured after removal.[1] Bacteria were demonstrated within the lumens of the catheters. Because of these findings, the present study was undertaken to determine prospectively the incidence of bacteremia in infants with umbilical catheters.

Patients and methods

The patients were 27 newborn infants admitted to the neonatal intensive care unit of the U.S. Naval Hospital, Portsmouth, Virginia, between April and November, 1970. Birth weights ranged from 1 pound 11 ounces to 8 pounds 8 ounces. All were catheterized within four hours of birth except 2 infants catheterized at forty-eight hours of age. Catheters were inserted for diagnostic or therapeutic purposes. Four infants received both arterial and venous catheters, 22 infants received venous catheters only, and 1 received an arterial catheter only.

The catheters were in place for an average of seventy-four hours with a range of from eight to one hundred ninety-two hours. Argyle number 5 French polyethylene feeding tubes were used. The catheters were inserted aseptically by the nursery house staff members after triply washing the skin first with hexachlorophene soap and then povidone iodine. All patients received daily topical applications of an ointment containing 400 units of zinc bacitracin, 3 mg. of neomycin sulfate, and 8,000 units of polymyxin (Neo-polycin); all infants received aqueous penicillin 100,000 units per kilogram per day and kanamycin 15 mg. per kilogram per day, intramuscularly, in two divided doses.

All blood cultures were obtained from the femoral vessels. After washing the skin three times with povidone iodine, 1 cc. of blood was obtained and inoculated in thioglycollate broth. These cultures were checked daily for two weeks for growth. All blood cultures were obtained by one of the principal investigators.

Catheters were removed aseptically from 18 infants and cultured on thioglycollate broth. The 1-inch segment nearest the tip was cultured separately by dividing the catheter with a sterile scissors and dropping the tip into a bottle of thioglycollate broth. These cultures were checked daily for two weeks for bacterial growth. At the end of this period, the bottles were tapped and plated onto MacConkey's bile salt agar and blood agar plates. These plates were read at twenty-four and forty-eight hours. If growth occurred, standard methods of bacterial identification were used.

Results

A total of 50 blood cultures was performed on 27 infants. All infants received at least 1 blood culture while catheterized. Ten infants also received 1 additional culture within one hour after removal of the umbilical catheter. Of these 50 blood cultures, only 1 showed growth of Escherichia coli.

This infant was the product of a forty-two-week gestation of a thirty-three-year-old mother, gravida 7, abortion 2. The child weighed 3 pounds 9 ounces at birth. Labor lasted two hours and forty minutes. The umbilical cord was wrapped around the infant's neck. Apgar score was 7. Physical examination revealed a meconium stained, jittery infant with a rectal temperature of 95° F. A reagent strip test for blood glucose (Dextrostix) of under 45 mg. glucose was obtained at forty-five minutes of age, and umbilical catheterization was performed for administration of intravenous glucose. All subsequent blood glucose determinations were over 50 mg. per 100 cc.

Blood cultures were performed on the first and third days of life while the infant was catheterized and within 1 hour of removal of the catheter at four and one-half days of age. Antibiotic therapy (penicillin 15,000 units, and kanamycin 8 mg. every twelve hours intramuscularly) was begun at twelve hours of age. On the third day of life, the infant was noted to feed poorly and vomit. The temperature was normal at this time. Blood culture on this day grew out E. coli. Antibiotics were continued for one week. The remainder of the infant's hospital stay was uneventful. Culture of the umbilical catheter was sterile.

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* The views expressed herein are those of the authors and do not reflect the views of the Navy Department or the Naval Service at large.

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Catheters from 7 infants showed some bacterial growth. Staphylococcus albus was recovered three times, Staphylococcus aureus twice, and E. coli and Bacillus species once each. All 9 blood cultures from these 7 infants were sterile.

During a concurrent study on the incidence of bacteremia following prolonged rupture of the amniotic membrane, blood cultures of 143 infants with no history of maternal infection or prolonged rupture of the fetal membranes were made before twelve hours of age, with their mothers' permission.[2] In this control group 1 blood culture was positive for E. coli. This infant was delivered to a twenty-one-year-old primigravida after six hours and fifty-five minutes of labor. Apgar score was 8, temperature taken rectally on admission to the nursery, was 96° F. and birth weight was 7 pounds 7 ounces. Physical examination results were normal, and the infant was discharged in good condition at four days of age. Blood culture taken at three hours of age grew out E. coli, as did cultures of the nose, cord, and placenta.

Comment

The present study reveals a 3.7 per cent incidence of infants with positive blood cultures in a group of high-risk infants undergoing umbilical catheterization. The infant in this group who had a positive blood culture may well have been septic. This compares with an 0.7 per cent incidence of infants with positive blood cultures in a group of healthy "normal-risk" infants in the same institution.[2] This difference is not statistically significant ($X^2 = 1.94$; $p > 0.1$).

Similar incidences of positive blood cultures have been reported in adults undergoing percutaneous catheterization with polyethylene catheters. Bolsany, Shepard, and Scott[3] reported 2 cases of bacteremia in 105 patients. Corso, Agostinelli, and Brandriss[4] reported 2 cases of bacteremia in 505 patients with percutaneous catheters, one of whom died.[4] Banks and colleagues[5] obtained 4 cases of bacteremia in 118 patients and made the observation that this was not related to type of catheter, time of catheterization, or type of fluid given. Systemic antibiotics apparently do not prevent septicemia. Darrell and Garrod[6] reported 2 cases of Candida and one of Staph. aureus in patients with intravenous cannulae receiving systemic antibiotics.

In 27 newborn infants with umbilical catheters in place 40 blood cultures were obtained while catheterized and 10 blood cultures immediately after removal of the catheters. One infant with a sterile catheter showed a positive blood culture for Escherichia coli. This incidence of positive blood cultures was not significantly different from that found in a group of healthy uncatheterized infants in the same nursery.

The present study confirms the possibility that bacteremia may occur in high-risk, newborn infants with umbilical catheters receiving appropriate doses of systemic antibiotics.

The incidence of bacteremia in these infants does not appear to be significantly higher than in a control group of healthy, normal newborn infants. As in other studies, systemic antibiotics in appropriate doses failed to prevent bacterial contamination of the umbilical catheters or bacteremia.[1-6] The incidence of bacteremia in the newborn infant with an umbilical catheter appears to be similar to those of the adult with an indwelling percutaneous polyethylene catheter.[3-5] These factors should be considered in making the decision as to which route to use when providing fluid or sampling blood in the distressed newborn infant.

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NEW PACEMAKER PULSE COUNTER

Simple method for determining pacemaker activity

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A small device* is now available for counting the number of pacing impulses delivered by an external R-inhibited demand pacemaker, over any suitable period of observation. Since the device appears to have significant clinical value, we have studied its safety, reliability, and efficacy in a group of patients who required temporary, transvenous, external demand pacemaker therapy.

The usual indications for employment of temporary and permanent cardiac pacing are well established,† and patients with temporary electrodes will routinely undergo subsequent implantation of a permanent pacemaker in the presence of established complete or intermittent trifascicular block, recurrent or persistent sinus pacing failure, sinus bradycardia associated with low output or frequent escape tachycardias, and tachycardias which require overdrive suppression. However, there is a group of patients in whom the indications for continued or permanent pacing is uncertain because their dependency on pacemaker activity is not known. In these patients, with temporary transvenous pacing electrodes, it is essential to establish, over a suitable observation period, whether the intrinsic heart rate persists at a level adequate to maintain output and prevent tachycardias, or whether the heart rate is maintained by virtue of intermittent pacemaker activity. When it can be demonstrated that a satisfactory intrinsic pacemaker has been restored, or that potentially dangerous atrioventricular conduction disorders are no longer present, then temporary demand pacing may be discontinued and permanent pacing avoided.

Two methods of detecting intermittent pacemaker activity are presently in clinical use. One employs eight- to twenty-four-hour tape recordings of the electrocardiogram and evaluation of the taped record with a tape scanning device. Although this method is clearly suitable for these patients, the considerable expense of such instruments has precluded their use in the vast majority of hospitals. The second method uses standard electrocardiographic monitors, with high to low alarms and nurse observation of the oscilloscope. This method has several disadvantages. Unless a telemetry unit is available, the patient must be wired to the monitor and restricted in his activities. The paced beat will trigger an alarm, so the monitor leads must be so placed that a normal R wave will be sensed, but not a paced beat. Such lead placement often is not possible or is frequently unreliable. Also, most alarm systems use built-in time delays, and intermittent paced beats will not trigger an alarm unless several beats occur successively. Dependence must be placed, therefore, on accurate, continuous nurse or technician observation of the monitoring oscilloscope, which in most institutions is either unavailable or inefficient over a full twenty-four-hour period. Thus, the present methods of detecting and documenting intermittent pacemaker activity are either unavailable or unreliable in most institutions. Consequently, the decision to discontinue demand pacing or to institute permanent pacing often rests on tenuous grounds. The new pacemaker pulse counter appears to provide a simple, inexpensive, and reliable means for detecting pacemaker activity.

Description of device

The pacemaker pulse counter is a small, portable, lightweight, battery-powered instrument designed to sense and count every impulse discharged by an external demand pacemaker (Fig. 1). Battery life is sufficient for at least two weeks of continuous use. Each pacing impulse is registered as a 1-unit increment on a 5-column digital counter. Periodic notation of the numerical total displayed on the counter provides an accurate measure of the pacemaker activity during the time period chosen.

The device was used with every type of external-demand pulse generator currently marketed in the United States, and successfully counted every pacemaker stimulus through a range of frequencies from 0 through 150 per minute. Proper sensing is possible over the entire range of stimulus durations currently employed (minimum, 0.4 milliseconds), and over the range of stimulus amplitudes in clinical use (minimum, 1.4 milliamperes across a 500-ohm resistance). The device operates at a threshold (0.7 volts) sufficient to reject any R wave sensed by the intracardiac electrode

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*Pacemaker Pulse Counter, Model 1400A, Mednetics, Inc., New York City.

†Lown, B., and Kosowsky, B. D.: Artificial cardiac pacemakers, New England J. Med. **283**: 907 (Oct. 22); 971 (Oct. 29); 1023 (Nov. 5) 1970.

Patients requiring temporary transvenous demand pacemakers were studied prior to removal of the pacing electrode to determine if pacing impulses were being initiated. Rigorous observation of the monitored electrocardiogram was compared with a new pacemaker pulse counting device to determine the reliability of the device as a means of automatically detecting pacemaker activity. The device was accurate, safe, and convenient, and offers advantages over other means of estimating pacing activity currently employed. The need for documenting whether temporary pacing may be safely discontinued exists in a large group of patients undergoing temporary pacing. The methods employed in this study permit such documentation simply and inexpensively.

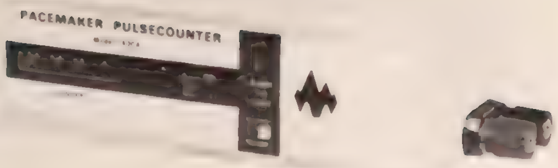

FIGURE 1. Frontal view of portable pacemaker pulse counter. Dimensions are 5 by 2 8 by 1 5 inches

and yet accept each signal generated by the pacemaker.

In use, the pacemaker pulse counter requires only the connection of two terminals to the positive and negative output poles of the demand generator in parallel with the terminals of the pacing electrode. The device may then be strapped or taped to the patient's arm or leg. It is of watertight construction. A high impedence output stage provides isolation between the pulse counter and the pacing electrodes, and patient, of all signals above 2 microamperes, thus ensuring patient safety. A blocking capacitor prevents passage of any continuous direct current in either direction. The pulse counter cannot affect operation of the pacemaker, since it neither draws current from, nor sends current through, the pacemaker. Each pacing impulse detected is amplified and conditioned to enable registration on the pulse counter.

Patient study

Of a total of 54 patients who required cardiac pacing with a temporary transvenous electrode in the one-year period ending March 1, 1971, 20 were selected for initial evaluation of the device. Ten patients exhibited transient, second-degree atrioventricular block with a 2:1 response and occasional Wenkebach periods. Six patients had first-degree atrioventricular block and left bundle branch block, with no evidence of dropped beats. Three patients had right bundle-branch block and superior (left) QRS axis deviation, without any documented dropped beats. In this entire group, a normal sinus mechanism was present when the study period commenced. Continuous observation of the electrocardiogram as displayed on the monitor (lead V_1) was performed for three separate eight-hour periods by 2 trained nurses, alternating for one-hour periods each. In only 2 patients was evidence of pacemaker activity detected. In both, transient Wenkebach periods appeared, with pauses sufficient to initiate demand pacemaker beats. In both cases, the number of paced beats observed was exactly equal to the number of pulses registered by the counter. In the remaining 18 cases, both nurse observation and the pacing counter indicated no pacemaker impulse activity.

Two additional patients were studied utilizing a statistical data analyzer* which compiled an R-R interval histogram over a twenty-four-hour period. In 1 patient, with sinus bradycardia, the demand pacemaker initiated a paced rhythm whenever the heart rate slowed to 51 beats per minute. The histogram indicated approximately 1,450 beats had occurred with an interval equal to that rate. The pulse counter registered 1,446 paced beats during the period of observation. In a second patient, with intermittent sinus arrest, the histogram indicated approximately 750 paced beats during the twenty-four-hour observation period. The pulse counter registered 753 beats.

In all 22 patients studied, there was no evidence of any pacemaker malfunction in either the sensing or pacing modes. No nursing difficulties were encountered, and the absence of a digital counter reset mechanism in the device prevented any inadvertent loss of data.

Comment

In our institution, 60 patients of a total of 118 who required temporary transvenous pacing over a two-year period were discharged without the need for permanent pacemakers. In this group of patients, it is clearly necessary to document the integrity of the pacing and conduction systems prior to removal of the temporary pacing electrode. The convenience, reliability, and safety of the pacemaker pulse counter appears established, and it offers a means of documenting the indications for removal or continuation of pacing in an automatic and inexpensive fashion.

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ROENTGENOGRAPHIC DOUBLE-CONTRAST EXAMINATION OF STOMACH AND DUODENUM

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Double contrast roentgenographic study of the stomach and duodenum was developed and refined in Japan, where it is now the routine method for examination of the upper gastrointestinal tract.[1] It has proved most useful in detecting and evaluating subtle mucosal abnormalities, particularly in early gastric carcinoma where conventional technics are often unrewarding. In more advanced lesions, the mucosal changes are more sharply delineated, thus helping to differentiate between the benign and the malignant lesion.

Practical aspects of the technic have been introduced into the American literature by Gelfand and Hachiya,[2] who emphasize its value in lesions of the proximal third of the stomach, and conclude that it is an elegant and convenient method of examining the stomach.

The value of the examination is enhanced by the use of carbon dioxide-producing granules, especially developed in Japan* for administration with barium. The granules contain sodium bicarbonate, tartaric acid, and a silicon antifoaming resin. They are supplied in individually packaged doses which can release several hundred milliliters of carbon dioxide in the stomach when washed down with a barium suspension. The granules are convenient and work well, but any large amount of nonfoaming gas will satisfy the need for gas-barium contrast study of the stomach.

The other important variations from standard technics of upper gastrointestinal roentgen study of the stomach are the use of a very dense barium suspension of the consistency of melted ice cream, and special projections to fully utilize the mass of gas against the barium-coated wall of the stomach.

Examination technic

A technically satisfactory examination facilitates future interpretation. The examination begins with the patient upright. After briefly surveying the chest and abdomen the fluoroscopist centers his attention on the area of the esophago-

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* Zoru granules, Maruishi Pharmaceutical Company, Osaka, Japan.

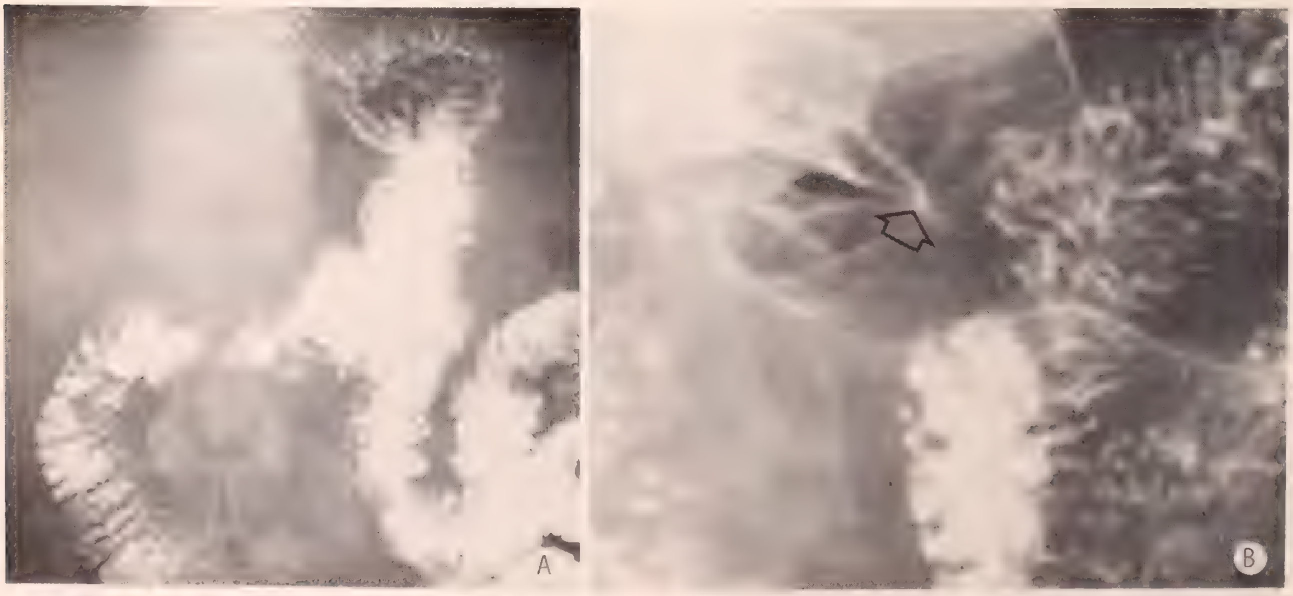

FIGURE 1. (A) Roentgenogram of barium-filled stomach demonstrates deformity of antrum with suggestive evidence of ulcer crater. (B) Ulcer crater (arrow) in gastric antrum is sharply defined on double-contrast study with smooth and regularly converging mucosal folds.

gastric junction. Holding the cup in his left hand, the patient is instructed to drink a single swallow of barium. As the barium arrives at the distal esophagus a spot film is taken in the right anterooblique projection. The patient's left epigastrium is then massaged to coat the gastric rugae with barium. A spot film of the barium-coated gastric rugae is taken in the right anterior oblique position. After studying the esophagus, gas-producing granules are placed on the patient's tongue and washed down with barium under fluoroscopic observation. The esophagus often appears distended with gas generated by the granules.

After the stomach has been adequately filled with barium, the patient is placed in the supine position with his right side slightly elevated, allowing gas to collect in the antrum. A double-contrast exposure of the antrum is then made. In a more steep, oblique position air will pass into the bulb and duodenal loop allowing double-contrast spot films of these areas.

To evaluate the gastric fundus, the table is elevated to 45 degrees and the patient rotated to the left anterior oblique position. Gas from the antrum now rises to fill out the barium-coated gastric fundus. Ideally, mucosal folds can be seen radiating from the cardia into the stomach. With the table horizontal, the patient is then placed prone with his left side slightly elevated. Spot films of the barium-filled bulb are taken as desired. In this same position, with the head of the table lowered, the possibility of hiatus hernia can be evaluated.

Case reports

Case 1. *Benign gastric ulcer.* A fifty-eight year old white bartender was admitted because of dull epigastric pain. One year prior to admission he had experienced increasing epigastric pain and, at another hospital, underwent hiatal herniorrhaphy, vagotomy, and pyloroplasty.

Double-contrast roentgenographic study of the stomach and duodenum has proved to be a useful technic in the detection and evaluation of subtle mucosal abnormalities. The technic is enhanced by administering carbon dioxide granules along with barium. Several cases are used to illustrate the advantages of the technic.

Physical examination revealed a well-developed and well-nourished white man in moderate abdominal distress. No abdominal masses were palpable and there was no organomegaly. His stool was positive for occult blood. An upper gastrointestinal x-ray study showed a recurrent hiatus hernia as well as an antral ulcer. Figure 1 contrasts routine study (1A) with double-contrast study (1B). At gastroscopy a 1-cm. benign-appearing ulcer was noted in the antrum. Ulcer biopsy disclosed inflammatory cells.

On intensive ulcer regimen in the hospital, the ulcer pain rapidly subsided. Approximately six months later the patient was again admitted because of recurrent, epigastric pain. At surgery, a partial gastrectomy and Billroth I anastomosis were performed after confirmation of the diagnosis.

Comment. The fine mucosal network of a small antral ulcer with its converging mucosal folds is often difficult to demonstrate using conventional methods (Fig. 1A). With the use of a denser barium mixture, double-contrast spots of a desired area will often be as rewarding as that seen in Figure 1B.

Case 2. *Ulcerated lesser curvature gastric carcinoma.* A seventy-seven-year-old man was admitted because of abdominal pain, anorexia, and bright red blood per rectum. An upper gas-

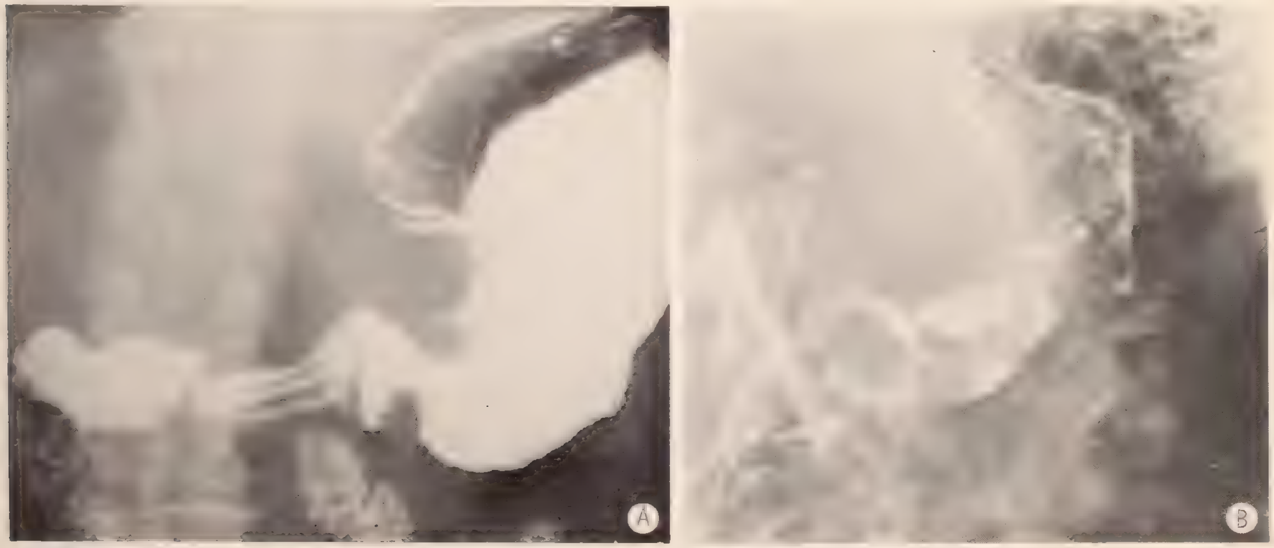

FIGURE 2. (A) Roentgenogram of filled stomach demonstrates deformity and ulceration of lesser curvature of stomach. (B) Double contrast study. Film of the gas-distended antrum demonstrates in fine detail extent and depth of malignant mass along lesser curvature of stomach.

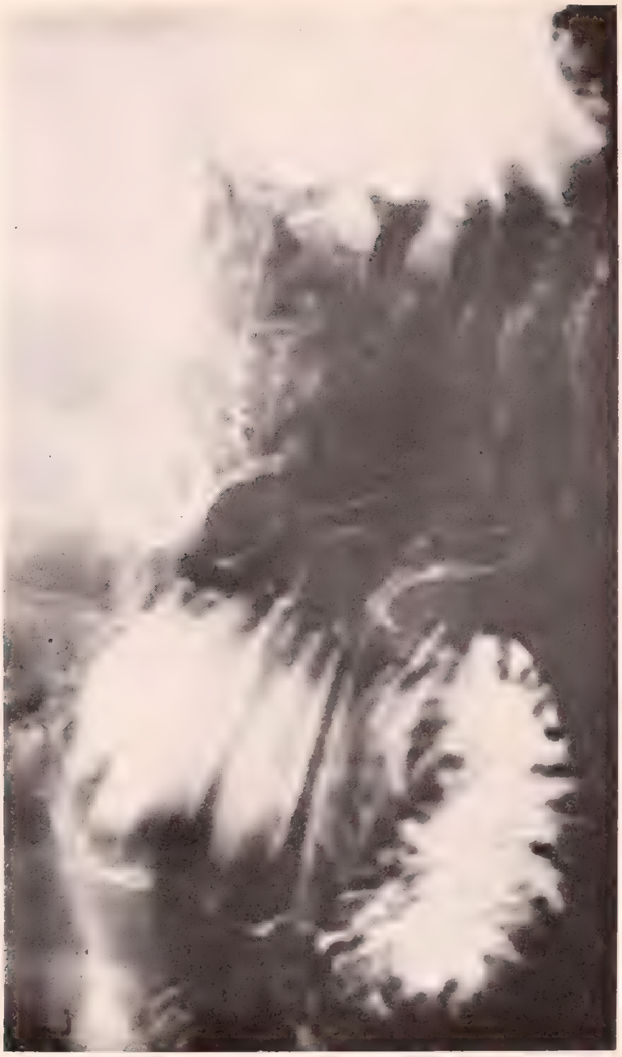

FIGURE 3. Mucosal pattern of gastric remnant and anastomosed jejunum are beautifully outlined.

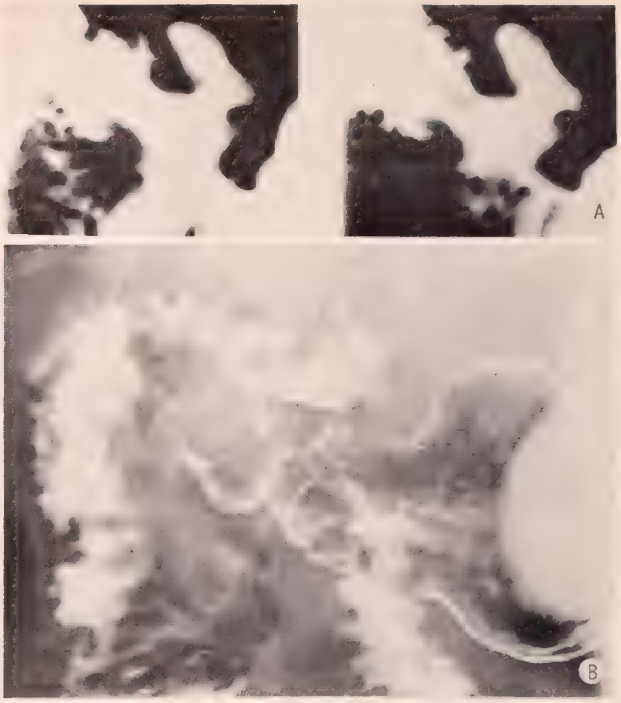

FIGURE 4. (A) Conventional spot films of barium-filled duodenal bulb demonstrate deformity without definite evidence of ulcer crater. (B) Spot roentgenogram taken in supine position with patient's right side elevated to approximately 45 degrees shows double-contrast study of duodenum. In mid bulb region, barium-filled ulcer crater seen in sharp contrast to markedly deformed bulb.

trointestinal x-ray study performed five months earlier, revealed an ulcerated mass on the lesser curvature of the stomach (Fig. 2). The patient refused admission at that time, and returned because of progressing symptomatology.

Physical examination revealed a poorly nourished and dehydrated man with a palpable mass deep in the epigastric region. Laboratory studies revealed a hemoglobin of 8.9 Gm. per 100 ml. and a hematocrit of 28. An upper gastrointestinal x-ray study at this time revealed an annular, constricting mass in the gastric antrum. The enlarging carcinoma of the stomach was confirmed at surgery.

Comment. The double-contrast technic has added a new and important dimension to the evaluation of lesions found in the stomach; finer, mucosal detail and clear definition of mass add diagnostic information about the character and extent of a lesion.

Case 3. *Normal Billroth II anastomosis.* A forty-nine year old Negro male alcoholic was admitted because of progressive ankle swelling. Five years earlier, surgery disclosed common bile duct obstruction due to chronic pancreatitis with multiple pancreatic cysts. The common bile duct was filled with stones. A subtotal gastrectomy, Billroth II procedure, and cholecystojejunostomy were performed.

Physical examination on this admission revealed a thin, Negro male with prominent edema of both lower extremities. Laboratory studies showed a normal hemoglobin and hematocrit. His total serum protein was 5 Gm. per 100 ml. with 1.7 Gm. per 100 ml. albumin. Roentgenographic examination of the stomach using gas-producing granules revealed a normal Billroth II anastomosis (Fig. 3). The anastomosis is clearly defined.

Comment. The radiologist is often confronted with the problem of evaluating the upper gastrointestinal tract following surgery. Since the gastric remnant and anastomosed jejunum are under the rib cage, pressure films of this region are often not possible. Distended by gas and coated with a dense mixture of barium, the site of the Billroth II anastomosis can be readily evaluated for marginal ulceration or recurrent malignancy.

Case 4. *Benign duodenal ulcer.* A fifty-one-year-old Negro woman was admitted because of recurrent, right upper quadrant pain of ten years' duration. The pain was brought on by fatty foods,

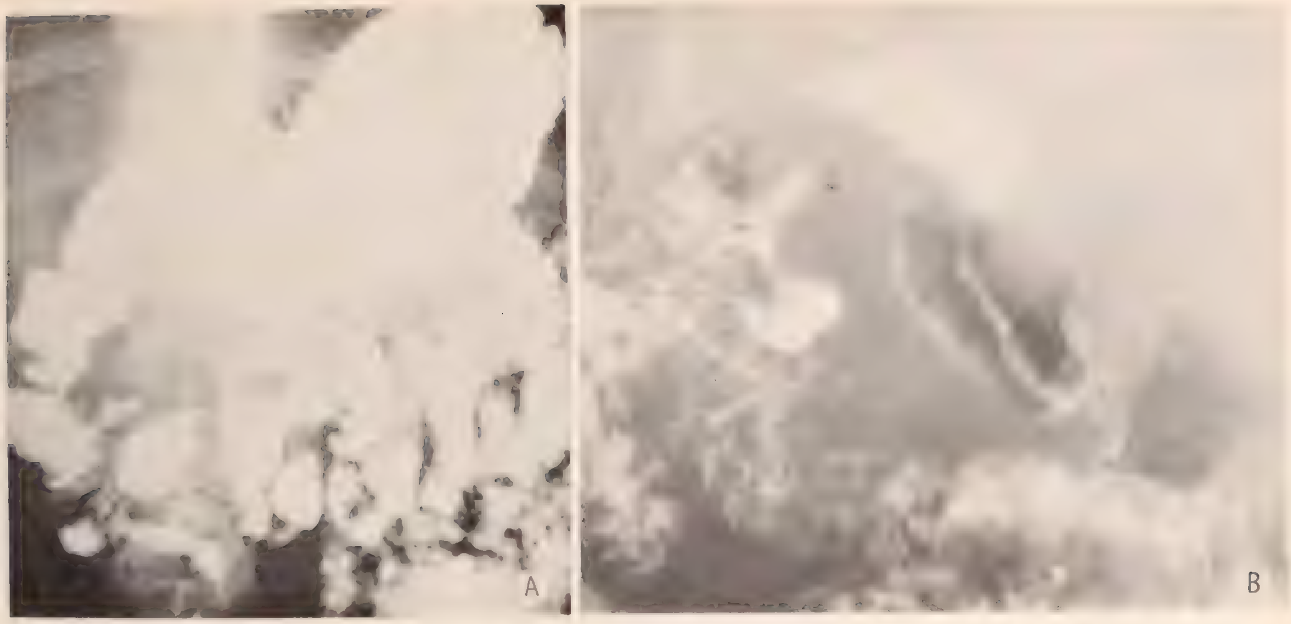

FIGURE 5. (A) Overhead roentgenogram of barium-filled stomach and duodenum with patient in supine position reveals deformity of second portion of duodenum. (B) Air generated in stomach by gas-producing granules has passed into duodenal sweep. Air contrast spot roentgenogram of duodenum reveals large ulcer crater in second portion of duodenum. Remaining portions of duodenal sweep are well outlined by air and barium.

relieved by antacids, and radiated to the right subscapular and right shoulder areas.

Physical examination showed a well-developed and well-nourished female in no acute distress. Abdominal examination and laboratory studies were normal. An oral cholecystogram was normal, but an upper gastrointestinal series revealed a duodenal ulcer (Fig. 4).

The patient's symptoms subsided on an ulcer regimen.

Comment. An ulcer crater is well-visualized with the double-contrast technic.

Case 5. *Benign giant duodenal ulcer.* A forty-one-year-old man was admitted because of severe right upper quadrant pain associated with nausea and vomiting.

Physical examination revealed definite right upper quadrant tenderness. Urinalysis and liver profile chemistries were within normal limits. An oral cholecystogram was normal, but a double-contrast study of the upper gastrointestinal tract, followed by hypotonic duodenography, revealed a large ulcer crater in the second portion of the duodenum (Fig. 5).

At surgery, a giant ulcer was present in the second portion of the duodenum, just distal to the common duct. Hemigastrectomy, Billroth II anastomosis, and vagotomy were performed.

Comment. "Because of the large amount of gas generated in the stomach, an effective double-contrast study of the duodenal loop is often possible. Barium is allowed to traverse the duodenum, and the patient's right side is then elevated. Large quantities of gas leave the stomach and intermittently distend most of the duodenal loop, simulating hypotonic duodenography. If necessary, a spasmolytic drug may be used."[2]

Conclusion

Our experience leads us to agree with Gelfand and Hachiya[2] that the double contrast examination of the stomach and duodenum using gas producing granules "is an elegant and convenient method of examining the stomach and duodenum."

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COMMUNITY PSYCHIATRY IN CHILDREN'S CENTER

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In 1919 Southard[1] concluded that the patient was no longer the separate individual. Meyer in 1928[2] stressed the need to go "beyond the asylum walls." With the passage of the Mental Retardation Facilities and Community Mental Health Centers Construction Act in 1963, massive government funding became a part of the American mental health scene. With its introduction, real force was lent to the promotion of community psychiatry. Social structure had already been demonstrated to have an effect on psychologic functioning and its treatment.[3-5] In its ideal form, community psychiatry has to do with the planning, organization, and delivery of comprehensive service to a discrete population in the catchment area. The delivery of service to a discrete population had been suggested by Meyer.[6]

The purpose of this report is to emphasize that community psychiatry as an untested methodology of delivery harbors a number of problems. Solutions to these problems are offered. If the promises of community psychiatry are going to experience an embarrassing encounter, this confrontation could be presumed to be in the delivery of comprehensive care to children on a continuous and multidisciplinary basis. Excellent organization, planning, experience, and devotion among professionals is necessary to weave a comprehensive approach to resolve their psychologic, social, and educative problems. Since mental health is now considered to be "an inalienable right," the risk of devising a superficial eclecticism of delivery systems relying on "shot-gun therapy" exists. Such a pragmatic paradigm may eventuate in the dehumanization of the program.

Over the past six years, 300 children from all social, racial, and religious groups have been treated at our center which is partly funded by a private charitable organization and the State. For five years this center has operated on Saturdays, rent free, first in the outpatient department of a hospital and then in a parochial school. At the outset, our aim had been to evaluate and treat children with emotional and behavioral disorders, but as our experience became more extensive, unanticipated realities confronted us. Among the unexpected problems were the many learning dysfunctions associated with emotional and behavioral disorders, and the many crises confronting parents as their children were threatened with suspension from school. With these confrontations, readjustments had to be made.

Goals and problems

Prevention. The primary goal of a children's psychiatric center should be prevention. This must begin with preschool and kindergarten children. For this reason the core problem of our center has been the development of a multidisciplinary developmental evaluation. This evaluation should chronicle the different aspects of the ego apparatus in well-kept records. A neurodevelopmental history and examination are important. Early detection of auditory-linguistic and visual-linguistic dysfunctions, perceptual-cognitive dysfunctions, and of regressed ego mechanisms is crucial.[7]

Education. Diagnosis and educative treatment are becoming much more closely related than ever before.[8] Since all evaluations must be measured against developmental-maturational curves, the need for the educator becomes increasingly clear. In the total evaluation and treatment of the child, to ignore his learning dysfunctions and the disparity which exists between his real achievements and his expectations is to blind oneself to a great segment of the child's real problem. However, philosophic principles of education are not those of psychiatry, psychology, or sociology, and must therefore be accorded an independent, autonomous role.[9] The final evaluation must often include educational testing as well as the psychiatric interview, psychologic testing, a neurodevelopmental profile, and a social history.

Catchment area. The selection of the patient population presents a number of problems. Can a clinic offering such specialized care accept the moral and ethical responsibility imposed by the catchment area?[10] Pepper[11] agrees with us that at times a service cannot be exclusive to catchment area residents. Our aim is to examine and prepare a child for treatment within one month of referral, regardless of the geographic location of his home. Despite the absence of a fee schedule, the dropout rate during the early years of the center was considerable. Over the past two years this rate has been reduced almost to zero. Now once a child is seen at the center the expectations of the parents and staff are explored. This procedure appears to have reduced the high dropout rate. The catchment area problem did not prove to be our biggest difficulty. We worked around the concept.

Treatment. The secondary goal of a children's center should be treatment in its broadest sense. This is a complicated problem because treatment must be comprehensive, continuous, adjustable to new situations and changes, and addressed to definite goals. What one attempts to accomplish will be dictated by the staff available, the social structure of the family, the resources of the child, the budget, and the delivery system selected.

The model. All goals of treatment must be mediated through a delivery system emanating from a theoretic model. The major theoretic orientations are the intrapsychic, the interpersonal, the behavioristic, the neurologic, and the humanistic. The delivery systems of these models have much in common, a fact which is often overlooked. Whatever model or combination of models is chosen, the reality that children's problems must first be understood at the descriptive and sociopsychodynamic levels is inescapable. This must be done before any social manipulation or psychotherapeutic plan can be evolved.

Multiple means. Our experience with children is that multiple means of psychiatric treatment may be necessary. The possible goals from the psychiatric point of view are symptomatic relief, improved coping styles, and structural changes in the personality with an expansion of the child's self-system. These goals can overlap and frequently do. Nevertheless, the constant difficulty in community psychiatry will continue to be to differentiate psychiatric disability from social impairment. The fact that psychiatric change has to do with restoration of wholeness to the person and social change has to do with the learning and experience of being human in an obstinate attempt to be an active, responsible member of society should be emphasized.

Educational disruption often goes hand in hand with social and psychiatric impairments. When poor developmental conditions exist very early in a child's life, the resultant dysfunctions could appear to be constitutional in nature. This shocking and overwhelming reality complicates the delivery of comprehensive care to the child, particularly within a clinic setting.

Psychiatric disturbances are not associated with learning dysfunctions initially, but secondary neurotic, behavioral, and personality disorders are common in children who experience word cutoff from the world, chronic school failure, and increasing social isolation. Affective disorders such as helplessness, apathy, negativism, and depression are also often noted. The point that reading dysfunctions, for example, can produce secondary affective and behavioral disturbances must be stressed. For this reason, educative treatment with reliance on a strong, nonambivalent bond between the tutor and child, has been used to treat some of these secondary disturbances. Emphasis should also be placed on the fact that some emotionally disturbed children can be outstanding readers.[12] Authorities should pause in their clinical evaluations before they quickly ascribe a child's learning problems to his being "emotionally disturbed."

Today, community psychiatry is a delivery system, not a theory. In a children's center, the most obvious problem is providing comprehensive multidisciplinary evaluation and treatment on a continuous basis. Collaborative efforts among the disciplines are crucial. In light of the shortage of professional personnel, volunteers are trained in our psychoeducational methodology. In a pluralistic society, unitary theories are difficult to sustain; an open hierarchal transactional model is therefore proposed in an attempt to establish a reliable teleology. In the last analysis, the parents must become an active part of the therapeutic effort, and supply feed-back and feed-forward experiences among the children, staff, and community.

Volunteer help. To deliver a comprehensive program for corrective reading and arithmetic to a hyperkinetic fifth grade child who has no father with whom to identify becomes an overwhelming problem. Such problems are legion in a community clinic. To cope with them, it becomes necessary to establish criteria for the type of treatment children need at various levels of development, and to pinpoint the type of therapeutic involvement necessary in light of their social, psychologic, and cognitive resources. Two great limiting problems impeding the progress of our program were (1) the difficulty in obtaining the necessary staff and (2) the intransigence of the parents in bringing the children to the sessions on a regular basis. The former problem was solved by the use of carefully selected volunteers, and the latter by holding group sessions for the parents with our social workers who attempted to maintain the goals of treatment alive in the parents' minds, and offered them support during the discouraging periods of treatment.

With the use of volunteer tutors, immediate educative help is available. A child is almost immediately integrated into the center and a liaison is made with his school. We are also able, with the help of the volunteers, to observe and treat the children with less obvious "therapeutic" methods, such as art and dance therapies. One tutor usually cares for 1 child; there are never more than 3 children to 1 tutor. These tutors are not only important in their use as aides to the educators. Since they do come to the clinic consistently over a long period of time (years!), affective ties are encouraged. These affective bonds, it is thought, facilitate learning and foster improved identification patterns.

The scarcity of trained personnel will prove to be a knotty problem in community psychiatry and will not be easily resolved. Our volunteer personnel are professionals in the educational, social, and pharmacologic fields, and paraprofessionals who are eager to learn and to do something meaningful with their lives. These volunteers are trained by us in our psychoeducational methodology.[13] Budgetary limitations mitigate against having most of them on salary, and they understand and accept this fact. Their devotion and dedication over the years have graced the community as well as the center. They have played a large role in maintaining the center as an open system. Many times the tutors can be seen speaking to the parents in the waiting room, while the professional staff is involved in other necessary work. This type of involvement relieves the professional staff of "being there" all the time.

Reintegration. Through our educator, our center has been able to fulfill its tertiary goal, social reintegration of the child in the school and at home, by maintaining a close liaison with the school and the child's teacher. In the future, we hope to accelerate this social reintegration by linking our center to another center which would be oriented primarily to developmental evaluation. This evaluation center would service a number of schools. Once the evaluation has been completed, specific recommendations would be made to the schools, and the progress of the child would be followed. In many situations, all that might be required would be the initial comprehensive evaluation with continued liaison to maintain a corrective feedback for necessary readjustments. The children with extensive problems would be referred to the psychoeducational center for treatment. To complete such a program, affiliation with a university school of education would be desirable to expose student teachers to the experience of what is clinical and what is educative.

These innovative ideas require much more detailed elaboration. They could be stunted by politics[14] as well as by realities imposed by the high professional dropout rate,[15] and by physicians who have already begun to "retreat from patients."[16]

Comment

In working with the problems of diverse social and ethnic backgrounds, evolving a unitary theory of personality has been difficult. At this time, the existence of a pluralistic society with so many pragmatic needs would seem to mitigate against such a development. The need for a unitary theory is much more than heuristic. It is hard to understand how future assessment programs will take place without a theory to test. How many programs can substantiate their enthusiastic claims with well-controlled studies?[17]

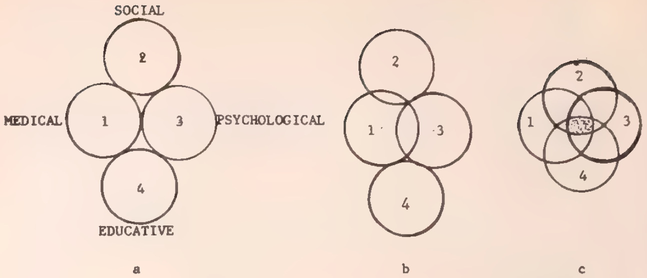

FIGURE 1. Transactional systems. (a) No interaction between models. (b) Some interaction of models, but not including educative model. (c) Interaction of all models. Stippled area represents convergence of all models.

Little attention has been given to the fact that "the community" is not synonymous with social structure and, as a model, community psychiatry has not yet presented itself with those criteria necessary to fulfill a model notion, namely that it should be a logical, coherent, and necessary system with explanatory power from which verifiable deductions can be made. To deliver therapeutic service, a battle of models cannot be permitted. Secure and mature professionals should not fear role diffusion, although they may function under one roof at the same time. There should not be an insistence that the medical model supplant the psychologic one, and then in turn be supplanted by the educative one.[18,19]

The development of a child's wholeness knows no model. Disciplines exist as bright examples of man's limited abilities, but in the living state they are interwoven. These models are in fact transactional, with each having an influence on the others, and being influenced by them (Fig. 1). Each model with its own stochastic variables may manifest an influence, larger or smaller, over any or all of the others (Fig. 1b and c). Stochastic variables of each model constantly supply crucial input information and in this way keep the system open. Such a transactional system should also be regarded as hierarchal: each system at one level subsumes those below (Fig. 2). With a multidisciplinary methodology, the simpler cause and effect interactional model is displaced. Indeed, the consideration of overlapping variables in the transactional-hierarchal model has made the evaluation of results extremely precarious. What is hoped for is to achieve a transactional experience

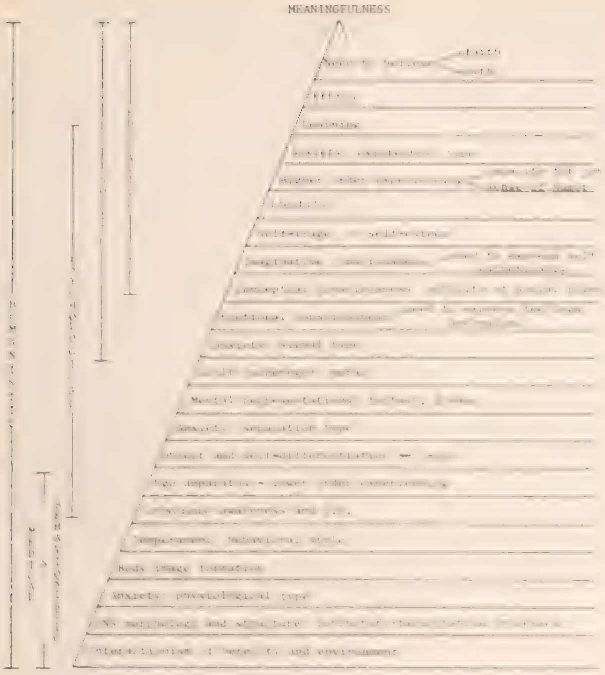
MEANINGFULNESS
Body image formation
Anxiety: physiological type
Interactionism of heredity and environment

FIGURE 2. Hierarchal systems among the models.

of open hierarchal systems among the disciplines to converge at a point wherein a reliable teleology could be had (Fig. 1c, stippled area). Such a teleology would have to emanate from an appropriate design manifesting organization and meaning, and could help to evolve good assessment technics.

Critical evaluation must remain prepotent over wishful needs and popular demands. In light of these considerations, community psychiatry, especially with children, must pinion itself on solid building blocks. For this reason, classical psychiatry must remain as one of its keystones. Without scholastic anchoring, community psychiatry with children will degenerate into a plebian kind of popularism, constantly promising great miracles and exposing itself, at the same time, to the truculence of a disenchanted population. All professionals should remind themselves of this reality.[20,21]

One last word must be reserved for those factors which give the center its heart and its pulse. The psychiatrist must furnish leadership by being with the people and their problems. At times this leadership may have to be given by one other than a psychiatrist. Whatever the case, the leadership must be rooted in a long, intensive clinical experience with all reaction types, especially in the dyadic experience of individual and group work. The leader must have a clear idea of his own personal and professional identity to be able to withstand endless frustrations and disappointments from within the center setting as well as from the community. The leader must be an administrator, with an excellent executive secretary, who knows his basic philosophies and goals; he must be a teacher drawing from his own clinical experiences; and he must be a gadfly. That he must know the politics of group dynamics and that he must be responsive to the sensitivities of a community is most important! The answer to a technocratic and electronic society appears to be a pluralistic one. Consequently, a physician groomed in a sophisticated, academic institution will have to make adjustments so that he may remain comfortable in the temporary absence of a unitary theory of personality or of social structure. The temptation to slide into a slipshod kind of professional involvement is always great, and although the leader may find it necessary to get out of his office to be with the people and to activate them into commitment, he must also have the courage and the discipline to preserve his scholastic and professional attitudes. With community involvement, a physician does not have to surrender his search for truth and excellence, for the quest for knowledge in medicine is secondary only to alleviating the patient's anguish and pain.

Surprisingly, when sincere attempts were made at the center to help the children and to reach the parents, many good, loyal friends were made. When our center was threatened with financial extinction despite five years of agonizing work, it was not our devotion or dedication to our work, or the excellence of cost efficiency which preserved its existence. Rather it was the parents, rising up to pique the community's conscience concerning the welfare of 50 children. To prove our sincere intentions to our funders, for example, a dinner-dance, a souvenir journal, and a raffle offering donated prizes were sponsored. The money earned from these projects was offered to one of our benefactors. These projects were not just attempts at self-help. They were also attempts to activate the parents to move out of the waiting room and to go out into the community, to seek help for their own children in an active way. The author's feeling always had been that the real treatment of children had to take place in the waiting room, and that the waiting room itself could be welded into a therapeutic community. This goal was achieved, and the involvement with raffles and dance tickets did not cause our professional staff to lose any of its professional luster.

A community psychiatric center for children must be maintained as an open system, and this is accomplished by defining the problems of organization, planning, and delivery honestly to the parents and to the tutors. In an open system, one is always reminded of its defects and weaknesses, and these defects and weaknesses should always remain bothersome.

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Correlation Conferences in Radiology and Pathology

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ENLARGING CALCIFIED PELVIC MASS

Case history

John Marangola, M.D.*: A thirteen-year-old white female was admitted to the hospital with a history of intermittent lower abdominal pain of eight months' duration. The pain recurred at monthly intervals and was generally of short duration. She experienced no gastrointestinal or urinary tract symptoms. She had not attained menarche although some breast development occurred during the past year. Nine months prior to her present hospital admission she underwent therapeutic splenectomy for idiopathic thrombocytopenic purpura.

On physical examination, a firm, smooth, orange-sized mass was felt in the pelvis. It was somewhat mobile and slightly tender to palpation. The remainder of the examination was noncontributory.

A complete blood count and urinalysis were within normal limits.

David Mahon, M.D.†: Plain roentgenograms of the abdomen show a liver and spleen of normal size. The psoas and renal shadows are normal. The gas pattern is unremarkable. An orange-sized mass is seen in the pelvis (Fig. 1A). Within it there are several calcific densities which were not present on a previous film made nine months before. The earlier film does suggest a mass above the left side of the bladder, but it is now much larger. The appearance of at least two of the densities suggests that they may represent phalanges. There is, however, no lucency to suggest that the mass has a fatty component. I see no destructive changes in the sacrum or other pelvic bones. An intravenous urogram shows that the bladder is compressed from above, and the lower portion of the left ureter appears to be displaced somewhat laterally (Fig. 1B). Was a pregnancy test done?

Dr. Marangola: Yes. The result was negative.

Dr. Mahon: The patient is not pregnant; she

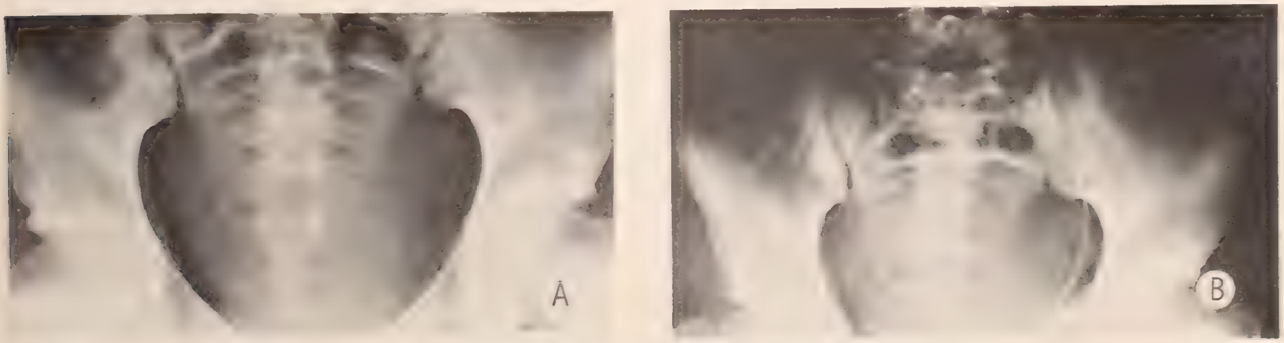

FIGURE 1. (A) Roentgenogram of pelvis shows soft-tissue mass with calcified densities. No involvement of bony pelvis. (B) Intravenous pyelogram shows calcified densities in pelvic mass with deviation laterally of both ureters and compression defect on superior margin of bladder.

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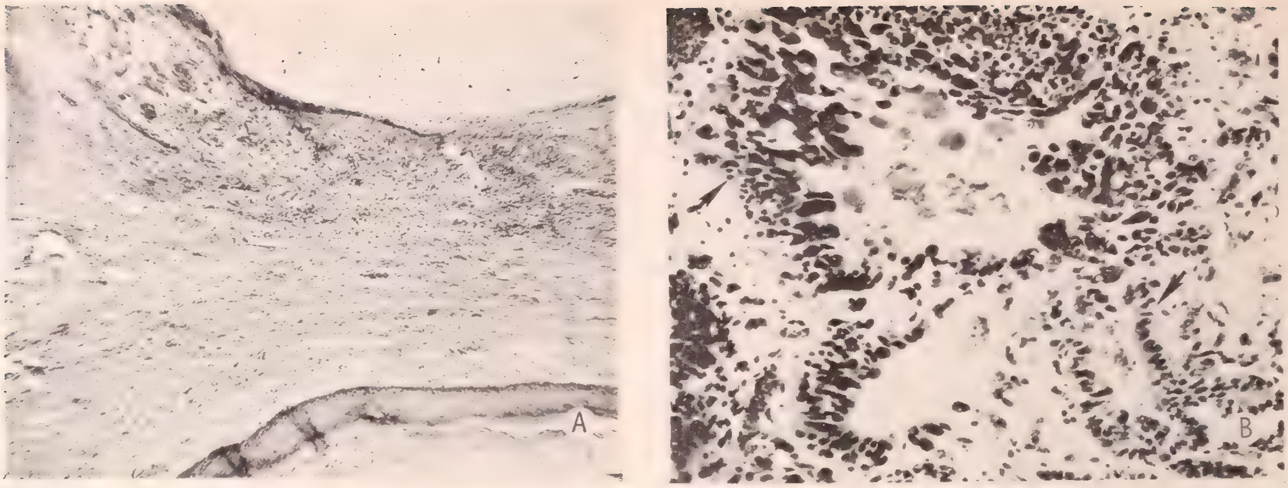

FIGURE 2. (A) Rim of squamous epithelium and filamentous keratin debris on one side. Opposite side has pale, moderately cellular fragment of cartilage. (B) Pleomorphic trophoblastic island of cells (upward arrow) surrounded by pale, edematous collar. In lower right (downward arrow) is associated focus of adenocarcinoma. (Hematoxylin and Eosin Stain)

is not in the age group for ovarian carcinoma, and none of the pelvic bones suggest tumor of skeletal origin. Although there are no teeth seen and there is apparently no fatty component, the linear bony densities suggestive of phalanges make the possibility of an ovarian dermoid cyst or teratoma an attractive consideration.

E. Robert Heitzman, M.D.*: Does the change in the size of soft-tissue density in the pelvis over the nine-month period influence your thinking?

Dr. Mahon: Yes. The mass has increased considerably and in view of this, I suppose that a teratoma, possibly a malignant one, is a more reasonable first choice than a dermoid.

Dr. Mahon's diagnosis

Ovarian teratoma, ? malignant

Dr. Marangola: At surgery a large, firm mass arising to the right of an infantile uterus was found. The mass, which filled the pelvis, was removed, and a hysterectomy and bilateral oophorectomy were performed.

Bedros Markarian, M.D.†: We received the uterus, tubes, and ovaries as surgical specimens. The uterus measured 6 by 2.5 by 2.5 cm. and appeared to be grossly normal. The small uninvolved ovary measured 3.2 by 1.5 by 1.5 cm. and grossly contained multiple small cystic spaces. The ovarian mass measured 8 by 6 by 6 cm. and weighed 255 Gm. The cut surface was irregularly pale gray with red color and contained multiple cystic spaces.

Microscopic examination of the ovarian mass revealed many areas with benign epithelial structures, but the major portion was a mixture of malignant patterns of many tissue types (Fig. 2A). One focus had an island of pleomorphic embryonal cells (Fig. 2B). Histologic examination of the uterus, the uninvolved ovary, and the fallopian tubes revealed nothing abnormal except for physiologic cysts of the ovary. These findings confirm the diagnosis of malignant teratoma of the ovary. This is a relatively rare tumor which occurs in the younger-age group and is associated with a very poor prognosis.

Theodore J. de Groot, M.D.:** This case is a rather unusual one of malignant teratoma of the ovary.

Histologically, teratomas are composed of elements of all three germ layers: ectoderm, entoderm, and mesoderm. There are various theories concerning the origin and pathogenesis of teratomas. Askanazy[1] postulated that they arise from abnormal tissue primordia in early embryonic life and undergo chaotic differentiation into various tissue types. Budde[2] postulated that teratomas originate as a result of disturbance of the primitive streak. Others have theorized that teratomas are a defect of the urogenital ridge, the mesonephros, or of the degenerating wolffian or muellerian systems.[3] Teratomas usually occur before the age of two years.[3,4]

Malignant teratomas of the ovary are rare lesions. In fact, ovarian tumors of all types in girls under fifteen years constitute only 1 per cent of all tumors in children.[5] Ein, Darte, and Stephens[6] recently reviewed 75 ovarian tumors in children seen over a forty-four-year period. Twelve were malignant, and only 3 of these were malignant teratomas. In this same series, 35 benign dermoids occurred. Costin and Kennedy[5] reported 1 malignant teratoma in a series of 22 ovarian tumors in infants and children. In Dargeon's[7] series of 12 ovarian tumors in childhood, 3 were malignant teratomas. Most malignant teratomas have a very poor prognosis; some, if localized when found, have a more favorable outlook.[6]

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Radiographically these lesions appear as pelvic masses, sometimes containing calcified material or teeth. The malignant character of the tumor cannot be suggested from x-ray studies unless, as in our case, there is evidence that the mass is enlarging.

Most teratomas in infants and children are extragenital. Although teratomas may occur anywhere in a line extending from the occiput to the sacrococcygeal region, they usually occur near the lower extremity of this line. For example, all the cases described by Macpherson and Young[4] were related to the sacrococcygeal area. The sex ratio in their series favored females 5 to 1.

Radiographically, sacrococcygeal teratomas usually appear as median or paramedian soft-tissue masses and tend to present posteriorly and inferiorly to the sacrum.[4] The soft-tissue masses also are often present in the pelvis and show displacement of the rectum and/or the bladder on the contrast studies. The outline of the mass is usually slightly lobulated when the gross specimen is examined; however, this lobulation may not be apparent roentgenographically. None of Macpherson and Young's[4] cases demonstrated bony erosion or destruction in association with the soft-tissue mass.

The mass may or may not contain recognizable calcified elements. In the Macpherson and Young[4] series, 4 teratomas were calcified; in 2 the lesion was benign, and in 2 it was malignant, therefore, calcifications are not indicative of a malignant or benign growth.

Final diagnosis

Malignant teratoma of the ovary

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Urologic–Radiologic Reviews

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ENDOMETRIOSIS

Urologic manifestations

Endometriosis results from uterine mucous membrane occurring aberrantly in various locations in the pelvic cavity. Sampson[1] suggested that various groups of this entity may result, depending on the manner in which the tissue reaches its ectopic situation.

Heredity may be a factor in some cases of endometriosis. Ranney[2] reported that 88 out of 350 women undergoing surgery for this condition were closely related to others in this group, or had blood relatives who also had had operations for endometriosis.

Endometrial implants are dependent on ovarian function, and develop only in women during the menstrual age, regressing when menstruation ceases. It occurs in all parts of the female genitalia, pelvic peritoneal surfaces, rectovesical septum, ovarian and uterine ligaments, umbilicus, pelvic lymph nodes, laparotomy scars, appendix, and unusually in the urologic tract, namely, the kidney, bladder, and ureter.

Symptoms vary with the location and number of the lesions. Pain and bleeding predominate. Therapy is excision of the major growth. If the lesion is too extensive, sterilization by radiation, hormonal, or surgical means is required.

Endometriosis of the kidney was first reported by Marshall in 1943.[3] Recently, Hajdu and Koss[4] reported the seventh case. All cases had hematuria, and all were premenopausal. Five cases had abnormal pyelogram findings, and 4 had flank pain. Nephrectomy was performed for cure.

In 1921 Judd[5] described the first case of urinary bladder endometriosis. Invasion may occur by embryologic remnants, direct extension, lymphatic invasion, or injury. Cyclic painful urination, frequency, and hematuria are present. A localized bluish lesion occurs in the bladder. Treatment is removal of the localized lesion or castration.[6,7]

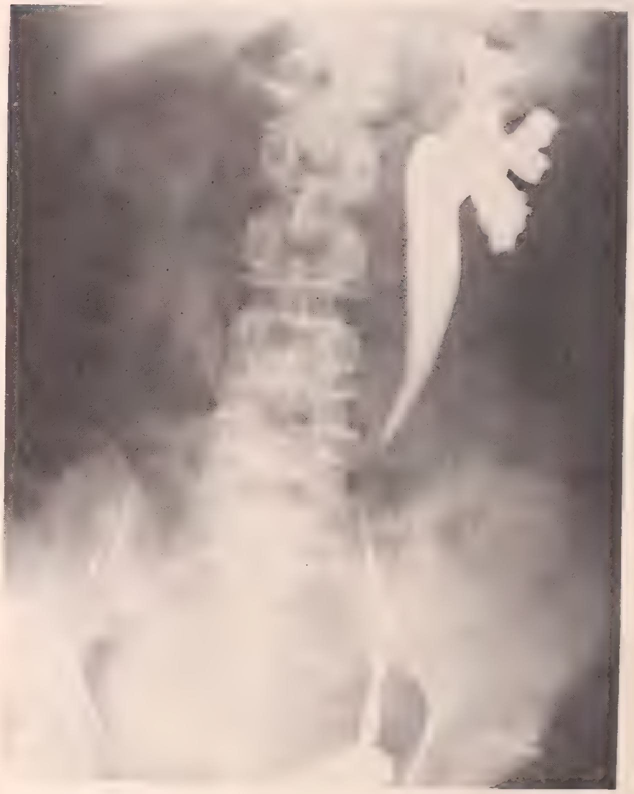

FIGURE 1. Case 1. Urogram showing left hydronephrosis.

The ureter is involved by endometriosis in two different forms: (1) extrinsic, in which the ureter is secondarily involved by external pressure, and scarring from pelvic endometriosis, and (2) intrinsic, in which the ureter itself shows changes of endometriosis even without other manifestations of the disease.[8] Symptoms are due either to the primary lesion or to ureteric obstruction.[9-11] Usually the lesion involves the lower third of the ureter. Therapy is local excision of the lesion with reconstitution of the ureter, or castration.

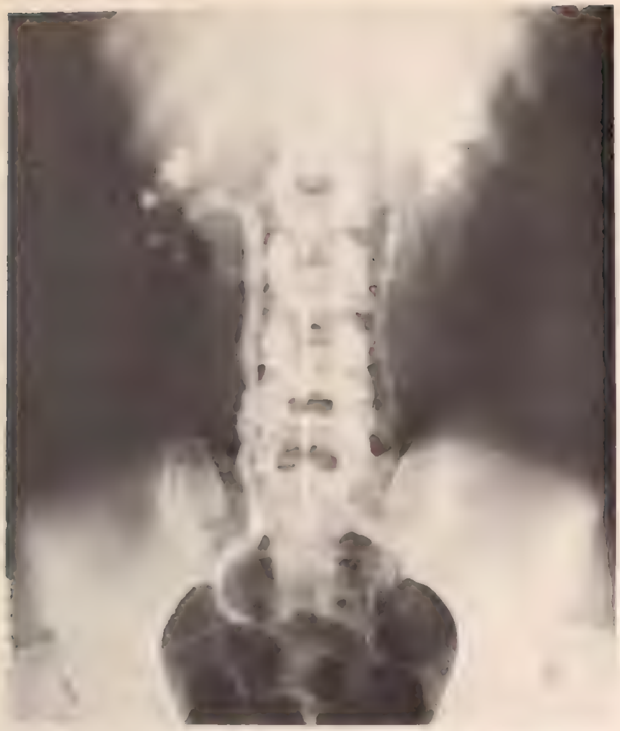

FIGURE 2. Case 2. Bilateral retrograde pyelogram showing marked hydronephrosis on left side.

Case reports

Case 1. A forty-three-year-old female was admitted with severe vaginal bleeding. The urogram revealed severe left hydronephrosis arising from a large area of extensive obstruction in the left ureter (Fig. 1). At surgery, diffuse pelvic endometriosis with obstruction of the left ureter by endometrial tissue adhering to it, was found.

Case 2. A thirty-seven-year-old female was admitted with dysuria, gross hematuria, and right lower quadrant pain. Pelvic endometriosis had been diagnosed previously at hysterectomy for uterine fibroids. An intravenous pyelogram had revealed right hydronephrosis and nonfunctioning left kidney. Bilateral retrograde pyelograms revealed hydronephrosis more marked on the left side, due to bilateral endometrial obstruction of both pelvic ureters (Fig. 2).[9]

Case 3. A forty-three-year-old female was admitted with pain in the right flank following radical left mastectomy for breast carcinoma, nine months previously. A mass, the size of a peach, felt in the area of right ovary, was clinically diagnosed as metastatic carcinoma of the right ovary from the breast neoplasm. Right retrograde pyelogram revealed right hydroureter and hydronephrosis due to obstruction just above the right ureterovesical area (Fig. 3A).

At surgery, an inoperable mass was found in the right lower quadrant, and a biopsy was taken. Both ovaries, found to be normal, were fortuitously removed because of the breast carcinoma. Biopsy revealed endometriosis. Intravenous pyelogram showed the return of the right side to normal three months postoophorectomy (Fig. 3B).

Summary

Endometriosis is a condition widespread among the female population. It may be hereditary. The urologic tract can be involved by embryologic implants, direct extension, or invasion, as by

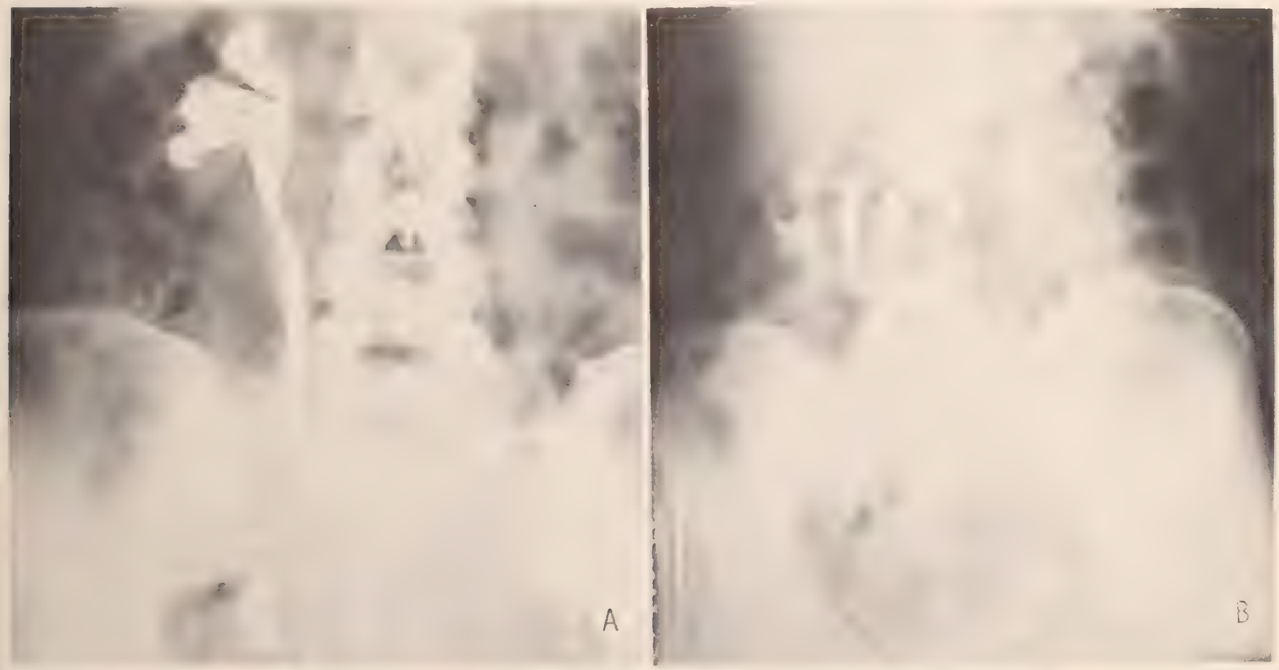

FIGURE 3. Case 3. (A) Retrograde pyelogram showing right hydroureter and hydronephrosis. (B) Intravenous pyelogram three months postoophorectomy. Note normal right side.

injuries. Local lesions should be excised. If the lesions are extensive, castration by surgery, radiation, or hormonal therapy is advised.

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Clinical Anesthesia Conference

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CONDUCT OF ANESTHESIA FOR DELIVERY WITH GROSSLY RAISED CEREBROSPINAL FLUID PRESSURE

The cerebrospinal fluid pressure is within normal limits in uncomplicated gestation.[1] It is uncommon to be presented with the problem of the anesthetic management of labor and delivery in a woman with grossly raised cerebrospinal fluid pressure. The course of such a patient is exemplified by the following case report.

Case report

A twenty-year-old woman, para 1, who had an uneventful first pregnancy and delivery, experienced from the first trimester of the present pregnancy severe headaches, diplopia, blurring of vision, and ataxia. These symptoms gradually worsened, and by the seventh month of pregnancy she had incomplete loss of vision, occasional syncopal attacks, a right hemiparesis, and diabetes insipidus. She drank about 6 L. of fluid in twenty-four hours and achieved a urinary output of roughly the same volume, with a specific gravity of 1.002 to 1.005. On a previous admission to the hospital, a lumbar puncture revealed an opening pressure of 600 mm. of water and pinkish, cloudy cerebrospinal fluid.

The patient was admitted to the hospital with a pregnancy of an estimated thirty-one weeks' duration and a presumptive neurologic diagnosis of suprasellar tumor, cerebral edema, and diabetes insipidus. At the time of this admission, she had moderately dilated pupils which reacted to light, paresis of the rectus muscles, a right homonymous hemianopia, and much restricted vision, more pronounced on the left side. Examination of the optic fundi revealed blurred disk margins and choked disks, the changes being more marked on the left side.

Initial treatment was directed toward reducing the cerebral edema with steroids, intravenous urea, and mannitol. The initial plan was that when her neurologic status had become stable, delivery would be effected by cesarean section. It was decided that if normal labor was permitted, the risk of sudden coning of the brain, as the result of the raised venous and cerebrospinal fluid pressure consequent on expulsive efforts, might result in the sudden death of the mother.

Some form of regional anesthesia, which at first seemed to be most appropriate, was rejected for the following reasons: the patient was not sufficiently cooperative to permit a cesarean section to be performed under infiltration analgesia; spinal anesthesia, because of the dural puncture involved, was absolutely contraindicated; lumbar epidural anesthesia carries with it the risk of a small percentage of inadvertent dural punctures; and caudal epidural anesthesia suffers from the uncertainty of the level of analgesia. Accordingly, in full awareness of the changes of cerebrospinal fluid pressure and regional cerebral blood flow consequent to general anesthesia, this form of anesthesia was chosen. This decision was also taken because the prognosis for the mother was poor, the child was viable, and the operative procedure was undertaken primarily in the interest of the child.

However, before these plans could be carried out, the patient went into spontaneous labor four days after admission. With labor well established, relief of pain and abolition of straining was provided by continuous caudal anesthesia which required 42 ml. of 3 per cent chloroprocaine. Labor lasted three hours. A 1,500-Gm. baby was delivered with Apgar scores of 9 at one minute and 10 at five minutes. The baby made satisfactory progress in spite of its prematurity.

The mother's neurologic status continued to deteriorate and some eighteen hours after delivery on the evening of the same day an Ommaya reservoir was inserted through a burr hole. During the following few days, the reservoir was repeatedly tapped; while the patient improved, paresis of the third and sixth nerves and right hemiparesis still persisted. Five days

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after delivery, a ventriculogram demonstrated a large suprasellar tumor, and two days later a ventriculoperitoneal shunt was performed. As a result of this, there was a marked improvement in her general condition, and craniotomy was undertaken six days later. However, a large tumor mass was found on the superior aspect of the sella turcica surrounding the optic chiasma. Resection of the tumor proved to be impossible, and biopsy showed this to be malignant glioma. Following craniotomy a full course of radiotherapy was administered without significant improvement, and on the insistence of her family, she was discharged six weeks later.

Comment

Effective uterine contractions produce only a mild "primary" rise in cerebrospinal fluid pressure (34 mm. of water) secondary to the increase in central venous and arterial blood pressure, elicited by the extrusion of blood from the uterus. The "secondary" rise of cerebrospinal fluid is much higher (110 to 710 mm. of water) as a result of skeletal muscle activity occurring in response to pain or bearing-down sensation. This "secondary" rise of cerebrospinal fluid pressure must be prevented in patients with a pathologically increased cerebrospinal fluid pressure. This is accomplished by general anesthesia or regional anesthesia with a sensory level above the tenth thoracic segment.[1]

General anesthesia can be dangerous in a patient who has a high cerebrospinal fluid pressure since it is known to rise during induction and emergence from anesthesia. It has also been shown that if the intracranial pressure rises about 450 mm. of water, the usual compensatory adjustment of the cerebral blood flow to overcome the increased cerebral vascular resistance does not take place.[2] The result is a reduction of cerebral blood flow to a level below the critical 40 ml. of blood per 100 Gm. of brain needed per minute. The patient gradually enters the ischemic viscious cycle of restriction of blood flow leading to hypoxia, slow respiration, carbon dioxide retention, and further increase in cerebrospinal fluid pressure.[3]

Spinal anesthesia, or accidental perforation of the dura during lumbar epidural anesthesia, has to be avoided if tonsillar herniation and medullary coning is to be prevented. Cesarean section under infiltration anesthesia is ideal in a cooperative patient. This was not the case in this patient.

After prolonged discussions weighing the risks of general and regional anesthesia, always with the thought in mind that in this instance the infant was of the utmost importance, general anesthesia was chosen for the cesarean section. These decisions taken, nature intervened, and an uneventful vaginal delivery was well managed under continuous caudal anesthesia. The premature infant was probably given a better chance of life by the spontaneous delivery than by being subjected to the risk of being delivered by cesarean section when so premature and in an environment so critically balanced by the illness of the mother.

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PREGNANCY WITH SHEEHAN'S SYNDROME AFTER REPLACEMENT THERAPY

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The incidence of postpartum pituitary necrosis (Sheehan's syndrome) is estimated to be 100 to 200 per 1 million women.[1] Pregnancy in this disorder is stated to be an extremely rare phenomenon.[2] The following report describes a successful pregnancy after ten years of amenorrhea due to Sheehan's syndrome. The variable manifestations of Sheehan's syndrome are discussed and the modes of therapy associated with successful pregnancies are reviewed.

Case report

A thirty-three-year-old female was admitted to the medical service at Metropolitan Hospital in November, 1966, with diarrhea, fever of 102.4°F., and a blood pressure of 75/55. Obstetric history revealed that the patient, gravida 6 para 3, had delivered a premature, stillborn infant eight years previously. This was associated with severe hemorrhage necessitating multiple transfusions. Following the pregnancy, lactation and menstrual function failed to occur. In addition, there were a loss of libido, hot flashes, weakness, anorexia with significant decrease in weight (10 Kg.), and loss of pubic and axillary hair.

TABLE I. Endocrine studies

Test	Year	
	1966	1969
Protein-bound iodine (micrograms per 100 ml.)	6.0	6.0
Thyroxine (micrograms per 100 ml.)	8.5	. . .
Radioactive iodine (per cent uptake at twenty-four hours)	33	29
Radioactive iodine (per cent after thyroid-stimulating hormone stimulation)	59	. . .
Plasma cortisol (micrograms per 100 ml.)		
Base line	. . .	9
Adrenocorticotrophic hormone	. . .	50
Insulin hypoglycemia	. . .	7
Urinary 17-hydroxycorticoids (milligrams per twenty-four hours)		
Base line	1.5	4.3
Adrenocorticotrophic hormone	6.9	18.5
Metyrapone	2.0	. . .
Urinary 17-ketosteroids (milligrams per 100 ml.)		
Base line	3.98	4.45
Adrenocorticotrophic hormone	7.96	6.43
Metyrapone	4.31	. . .
Growth hormone (micrograms per milliliter)		
Base line	0.5	0.25
Insulin hypoglycemia	1.5	0.25
Urinary follicle-stimulating hormone (mouse units per twenty-four hours)	. . .	Pos. at 5, Neg. at 20

Physical examination revealed an extremely thin woman (36 Kg.), looking chronically ill, with little pubic and no axillary hair. The breasts were atrophic. Pelvic examination revealed a small uterus with no adnexal masses. A vaginal smear showed absence of cornified epithelium consistent with severe estrogen deficiency.

Laboratory studies done at the time of admission showed hemoglobin 9.3 Gm.; blood sugar 62 mg. per 100 ml.; and serum sodium 129 mEq., potassium 3.9 mEq., chloride 100 mEq., and carbon dioxide 19.5 mEq. per liter.

Endocrine evaluation included a protein bound iodine test, twenty-four-hour I^{131} uptake (radioactive iodine) and scan, followed by a thyroid-stimulating hormone stimulation test, all of which were in the normal range (Table I). Base line urinary excretions of 17-hydroxycorticoids and 17-ketosteroids were abnormally low. A urinary follicle-stimulating hormone titer was not measured at this time. An adrenocorticotrophic hormone stimulation test produced a significant rise in plasma cortisol and urinary 17-hydroxysteroids. The administration of metyrapone, 750 mg. by mouth every four hours for 6 doses, failed to increase the urinary 17-hydroxycorticoids. An insulin stimulation test (0.2 units of regular insulin per Kg., total of 8 units) produced a marked hypoglycemic response but failed to increase serum growth hormone levels.

In view of the clinical picture and laboratory studies, a diagnosis of Sheehan's syndrome was made. The syndrome was considered to be incomplete, since thyroid function was intact. The patient was placed on a maintenance dose of 12.5 mg. of cortisone acetate twice daily. In addition, sex steroid replacement therapy was begun, using a sequential oral contraceptive containing ethinyl estradiol and dimethisterone (Oracon tablets). She was discharged from the hospital, to be followed in the endocrine clinic.

The patient discontinued the oral contraceptives in the fall of 1967, and promptly became pregnant. In May, 1968, she delivered a 1,870-Gm. premature male infant. The patient tolerated the delivery well, and her general condition was described as good. Following the delivery, the patient did not lactate and menstrual function did not return over a three-month period. At this time, the oral contraceptive therapy was reinstituted.

In August, 1969, fifteen months postpartum, the patient was admitted to Metropolitan Hospital for reevaluation. At that time, she complained of weakness and occasional hot flashes, but otherwise she felt well. Blood pressure on admission was 110/70. Her weight was 45 Kg., and there was no significant regrowth of pubic or axillary hair. The hemoglobin and serum electrolytes were normal.

The endocrine studies on this admission are summarized in Table I. Thyroid function tests were again normal. Base line urinary excretions of 17-hydroxycorticoids and 17-ketosteroids were within the lower limits of normal. An adrenocorticotrophic hormone stimulation test produced a sharp increase in the plasma level of cortisol and in the urinary excretion of 17-hydroxycorticoids. Administration of insulin was not associated with an increase in growth hormone levels despite an adequate hypoglycemic response. A urinary follicle-stimulating hormone titer was positive at 5 and negative at 20 mouse uterine units. X-ray films of the sella turcica were not remarkable.

Comment

The diagnosis of postpartum pituitary necrosis seems clear. The ten-year history of amenorrhea, loss of axillary and pubic hair, absence of lactation, decreased libido, weakness, and hot flashes following a postpartum hemorrhage, are characteristic of Sheehan's syndrome. The loss of pituitary function, however, was incomplete since thyroid function was intact.

The usual sequence of loss of trophic hormone function in Sheehan's syndrome is gonadotrophins and/or somatotrophins followed by thyroid-stimulating hormone and adrenocorticotrophic hormone. However, in some cases, including our own, the pattern is variable. Smith and Howard[3] have documented 3 cases of a typical Sheehan's syndrome characterized by virtually normal thyroid function, variable degrees of adrenocortical insufficiency, and normal urinary excretion of gonadotrophin with or without the resumption of menses after delivery. Schneeberg *et al.*[4] and Schneeberg, Perloff, and Israel[5] have also stressed the variability of Sheehan's syndrome. Only 1 of 4 of their cases exhibited panhypopituitarism.[5] Two cases showed a loss of urinary gonadotrophins with partial absence of adrenocortical function. (In addition, 1 patient showed only loss of gonadotrophin function.) Martin, MacDonald, and Kaplan[6] have reported an atypical case of Sheehan's syndrome, with preservation of gonadotrophic but loss of all other trophic hormone function, who subsequently became pregnant. Netter, Netter-Lambert, and Clauvel[7] have suggested that many atypical forms of postpartum pituitary necrosis are due to peculiarities of the vascular supply of the anterior pituitary gland.

In the present case, the negative responses to metyrapone and insulin hypoglycemia provide evidence for deficiencies in adrenocorticotrophic hormone and somatotrophin release.[8] It is difficult to determine, with the present data, the chronology of the resumption of ovarian ovulatory function. However, the occurrence of pregnancy indicates that gonadotrophin function returned, although briefly.

Gemzell and Kjessler[9] have demonstrated that ovarian ovulatory function can be reactivated with the use of human pituitary gonadotrophins even after three years of sustained panhypopituitarism with ovarian failure. Some investigators have suggested that normal pituitary function is not necessary for maintenance of pregnancy,[10-12] while others, as demonstrated by the present case, have reported placental insufficiency, abortion, or premature birth in pregnancies associated with Sheehan's syndrome.[5,12,13]

The mechanism of ovulation in this and other cases of Sheehan's syndrome is not clear. It may be due to isolated temporary outpourings or fluctuating levels of gonadotrophins, partial trophic hormone loss, or to hormone therapy.

The first pregnancy in a case of Sheehan's syndrome following hormonal therapy was reported by Sheehan and Murdoch in 1939.[14] In that report, a thirty-three-year-old woman was given gonadotrophins and estrogens approximately four years after a postpartum hemorrhage. Six months following the initiation of treatment, pregnancy occurred and a normal infant was delivered.

Jackson, Whyte, and Garrey[2] reported 2 cases of pregnancy in Sheehan's syndrome. They suggested that the inadequate, or perhaps intermittent, gonadotrophin secretion may have been potentiated by estrogens in 1 case and adrenocortical steroids in the other. Brown, Bradbury, and Jungck[15] have shown that even small quantities of estrogen can cause release of pituitary gonadotrophins. Similarly Stevens and Vorys[16] have noted that doses of synthetic estrogens in the range of 0.01 mg. per day can stimulate follicle-stimulating hormone excretion while larger doses suppressed excretion. These same workers found that estrogen in large and small doses stimulated luteinizing hormone release.

The role of progesterone in pituitary function has also been studied. In animal studies, Docke and Dörner[17] have shown that progesterone facilitates the induction of ovulation by estrogen. Caligaris, Astrada, and Taleisnik[18] have shown that estrogen followed by progesterone in an exact time sequence stimulated an increase in luteinizing hormone. In still other animal studies, several authors have suggested that progesterone facilitates the discharge of the hypothalamic gonadotrophin-releasing factor.[19,20] In human studies, Stevens and Vorys[16] have shown that progesterone is able to stimulate follicle-stimulating hormone excretion. In studies by both Taymor[21] and Stevens and Vorys[16] progesterone was noted to suppress luteinizing hormone excretion.

Engstrom[22] has reported the resumption of menses and the appearance of gonadotrophins in a case of Sheehan's syndrome after treatment with cortisone and thyroid. When treatment was withdrawn, menses ceased. With the resumption of treatment, menses reappeared and gonadotrophin levels were found to be in the normal range. Polishuk *et al.*[12] describe the use of human pregnancy urine gonadotrophin and human menopausal gonadotrophin with success in inducing pregnancy in a case of Sheehan's syndrome. Röpke[13] has also reported a successful pregnancy with the use of chorionic gonadotrophin.

To relate hormonal therapy and pregnancy in our case, we must hypothesize that the sequential use of estrogen and progestogen, in a dosage and time schedule formulated to suppress gonadotrophins, was able to influence the pituitary in such a way as to cause a surge of gonadotrophin after cessation of the pill.

Although we cannot disregard the possible influence of estrogens and/or progestogens in stimulating gonadotrophin secretion, in this case, it is possible that secretion would have occurred spontaneously without steroid therapy.

Summary

A case report of a patient with Sheehan's syndrome, who became pregnant on replacement therapy, is presented. A review of the pertinent literature is made.

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SCHOOL PHOBIA

Diagnosis, emotional genesis, and management

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Any physician or nurse who deals with young school-age children has had to contend with children who experience leg pains, abdominal pains, nausea, headaches, nonspecific malaise, or combinations of these symptoms, and do not go to school. One begins to see certain patterns; these symptoms occur on school day mornings and only rarely on weekends. Physical examination reveals no detectable illness, and the child recovers daily when the time for school passes.

One might be inclined at first to be amused by the child's often fairly transparent efforts to avoid going to school by a symptom or sickness, particularly when we remember we have all been tempted at one time or another to get out of a difficult task in this way. As the symptom persists, as it inevitably will, our tempers are raised, and the family is advised to pack off the child forthwith. Astonishingly, nothing happens and the physician is faced with a family crisis. The physician or the school may conclude that they are dealing with a "sensitive" child and advise a six-month medical or psychiatric "exemption" and home tutoring. Inevitably, this is followed by even more problems when it is time to resume school. The physician discovers that what was thought to be a convalescent period has made the condition worse. The child has passed from a transient avoidance phenomenon to a psychologic disorder termed "school phobia."

This term for the condition is misleading. It describes only the overt symptom. Actually, the child is suffering acute separation anxiety about leaving home and parents, usually the mother. This condition is a child psychiatric emergency, which frequently yields to early intervention. When correctly understood by school health personnel, family physicians, and pediatricians, it is largely preventable. It is of considerable importance that the pathognomonic signs, the various masking and overt symptoms, and the typical, underlying family dynamics be understood, so that treatment can be rapidly instituted. Medical mismanagement and delay will often allow an acute, usually reversible problem to become a hardened, crippling, nearly irreversible disorder.

Understanding the school phobia syndrome also provides a clear model for other neurotic disorders of childhood, since it illustrates a conflict in one of the important developmental tasks of childhood. The task is the development of satisfactory individuation. The conflict is between the wish to individuate and the wish to remain dependent.

Differential diagnosis

The school-phobic youngster typically demonstrates a severe dread of going to school, which appears most sharply in the mornings of school just following days of vacation, on Mondays, or soon after the onset of a new school year. If articulate, the child may complain about an aspect of school: the principal, the teacher, a bully classmate, or fear of failing an examination. These are only apparent causes, and shifting classes, manipulating examinations, and so on do not alleviate the problem. Typically, the child will have somatic complaints: nausea, headache, fear of vomiting, stomachache, leg pains, malaise, even unexplained low-grade fever. Sometimes the covert fear is masked by the somatic symptoms and can only be inferred because the symptoms do not occur on weekends, holidays, or in summer recess. What the child really fears is leaving the safety of home and mother, and all the things he imagines could happen while he is not directly on the scene at home.

The complexity of this syndrome makes it important that we differentiate it from a number of others with which it might be confused. Above all, it must be differentiated from truancy. Although the truant does not go to school, truancy has an altogether different pattern. The truant has no trouble leaving home or separating. He "hates" school, usually has a poor record, and stays away from home and school during school hours. The phobic child usually wishes to be in school, often has an excellent academic record, and is often quite ambitious, but he clings to home during school hours. He is frequently ashamed of his nonperformance. In many of these children, the phobias either begin to spread or are already present in other areas. The children are afraid to be anywhere without a parent, to be left with baby sitters, to stay overnight with friends or relatives, or to go to camp. If they visit a relative overnight, there are often agonized homesick calls

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requesting to go home. Mother goes and brings the child home, and the symptom is reinforced.

Since there are often many somatic symptoms, rapid physical work-up and appropriate laboratory procedures should be performed to reassure the physician he is not dealing with an underlying somatic disease. The somatic work-up must be accomplished rapidly because a physician who feels insecure about firm, positive, unambivalent advice supporting parents in sending the child to school, will find that parents seize on his indecision. This adds a complicating iatrogenic factor.

Case 1. A nine-year-old boy, the third of 4 closely spaced children, had a history of reluctance to stay with sitters and to part from his mother, and had demonstrated periodic reluctance to return to school following brief illnesses since nursery school. In the late fall, his mother had allowed him to remain home for three weeks on crutches for a mild ankle sprain. The physician had advised crutches for five days only. In January, he had an upper respiratory infection with mild fever followed by a streptococcal throat. His mother overlooked the sore throat, and the boy had to be hospitalized for scarlet fever. Proper treatment was begun, and all symptoms cleared. However, the boy claimed his legs were paralyzed, and he would not walk, demanding constant attention from mother and nurses. Neurologic examination revealed no disease state, and, from appropriate testing, hysteric conversion paralysis was diagnosed. Instead of beginning immediate rehabilitation with psychiatric intervention, he was sent home for bed rest in the hope that he would recover quickly. He had now been out of school for twelve weeks and was a bedridden tyrant.

Clinical features

In contradistinction to most psychiatric disorders of childhood, which affect boys more commonly than girls until the adolescent age, school phobia is equally distributed.[1] Some authors, in fact, report a slightly higher frequency in girls.[2] Almost always, these children are high achievers and have excellent academic records. This does not mean that a child of low intellectual ability could not have the same neurotic family pattern, but in his case it is more likely that he is misplaced in school and has a real dread of being in a constant failing situation. When the school situation is diagnosed and changed, improvement in attitude usually follows.

When the phobic condition is suspected, the child should always be interviewed apart from the parent who brought him to the office or clinic. Important information is gained by paying close attention to how he reacts to leaving his mother and how soon his anxiety quiets after the door is closed. Often, if the physician uses an affect-reflecting technic of interviewing, the child will admit to many typical fears of disasters happening to his mother and his home if he is not in constant, immediate touch with the situation. On separation from mother, the following example is fairly typical:

Case 2. A boy, age eight, is sitting in the waiting room, fearful, timid, and plastered against his mother who also appears worried. His physician states positively, "All right, Sonny, we will go into the office now." The boy stiffens, averts his eyes to his mother, who states anxiously, "I think it is all right, dear. The doctor probably won't hurt you too much." The physician takes the boy's hand to march off purposefully, and finds mother still clutching his other hand, saying, 'Doctor, it is all right, isn't it?"

In other words, difficulty in separation is not confined to the child alone.

Waldfogel[3] and Coloidge *et al.*[1] have pointed out the clinical usefulness of dividing the children with school phobia into 2 groups: The first group is younger, usually nursery and elementary school age, and is generally neurotically based. The second group is older, junior high age and over, and has severe characterologic problems. Generally, the older group is best referred for psychiatric treatment immediately after the syndrome is detected, because of the more severe nature of the underlying problems. The treatment involves much work with both parents and child to effect successful change. The syndrome even occurs in college students, as reported by Hodgman and Braiman.[4]

It is the purpose of this report to concentrate on the nursery and elementary school child. The best efforts of the general physician, pediatrician, and school personnel can prove to be extremely effective in this age group.

To explain the "young neurotic group" further, we can divide the school phobic syndrome into acute situational reaction types and the chronic learned types.[5] The former type results from some traumatic event in the child's life to which he reacts by regression and clinging to home. Precipitating events may be a move to a new home and school, the death of an extended family member, an acute illness in the child or a parent, and so on.

Case 3. A girl was six, and had successfully completed kindergarten with only slight hesitation about leaving home the first few days. Just prior to starting first grade, her executive father was transferred to a new city, and the family moved, with little time to prepare the children. The girl was to start school the next day. She showed moderately severe anxiety and spoke of fear of going to school. Her mother immediately consulted a pediatrician. The history revealed no evidence of pathologic anxiety in the mother-child relationship. Past separations had been sensibly handled. The mother rapidly responded to reassurance that she could take the child to school the first few days, and the principal and teacher agreed to help the child to be introduced to her peers rapidly. Symptoms disappeared in three days. The family was encouraged to talk openly about the sadness they felt in leaving their old home and friends to encourage the girl to work through her grief feelings so she could accept her new home.

Symptom formation dynamics

To understand the struggle behind the school phobic syndrome better, it is necessary to understand the developmental progression of the task of separation-individuation throughout childhood and its critical importance in helping to produce a healthy adult. All human beings pass through four stages in the development of their perceptions of themselves as distinct individuals. In early infancy, there is little or no capacity to differentiate self from mother or others. At about eight months of age, the infant first recognizes "mother" and can distinguish her from adults who are not mother. Thus a baby, formerly happy with strangers and grandparents, cries, fusses, or does not readily "make up" to these people when in contact with them.

It is during this period that all professionals who deal with parents and children can do important preventive work and effective education. Many mothers need to be taught that this is a normal developmental phase, and they should begin having the infant experience brief separations by having trusted baby sitters care for the child at times. The child's memory is actually stimulated by mother's going away and coming back repeatedly. The anxious mother's tendency is to stay home so baby won't be upset. If this is allowed to continue, when the child is five he is totally unprepared to separate himself from her. The capacity to tolerate a school day at ages five or six and be secure in the "memory" that everything at home is safe, depends on this training which has begun in the first year of life. There is also a dosage factor. A mother, if at all possible, should not leave her child in the first two years for extended periods of time (like a one- to two-month European vacation) with the infant in charge of a relative; the separations should begin by hours away, days away, and so on.

The second phase occurs in the second and third years of life, when the child has mastered locomotion and is in the toilet-training phase. In this time, the child is using the important word, "No," often to excess, and is frequently willful, having "tempers," and verbally protesting separations from parents. The anxious parents, to avoid "hurting" the child's feelings, may stop exposing him to separation experience. Parents must be taught to use sitters, encourage visits alone to neighbors and friends with like-age children, library story hours with mother absenting herself for an hour, Sunday school, nursery groups, and similar experiences. The parent who only leaves the child with an extended family member or grandparent across the street is really not helping her child operate on his own with other relatively unfamiliar persons. What she implies by her overprotective attitude is that "strangers" are dangerous, and that the world without parents immediately physically present is very hazardous.

The third phase, around four or five years of age, is the stage of marked concern about the body and potential injuries to it. This is the stage of accelerated questioning about sex, the origin of babies, and the beginning of working out the differences between boys and girls. The anxious parent may be overprotective and not teach adequate safety and self-reliance or encourage healthy degrees of physical activity, again subtly implying to the child that the world is very dangerous. It may again be implied that safety depends on the parental presence.

From the ages of seven to twelve, the true conscience develops in the child. This is the period when parental rules and injunctions begin to be viewed by the child as being his own instead of being imposed from the outside. Here again, the anxious parent can cause problems by being hesitant in his or her role about where duty lies, even while being empathic with a child's feelings. For example, the child is urged to leave his mother's side, while she is simultaneously holding his hand. Which message will the child hear, her action or her words? Or the father takes the child to school with a great show of strength, then at the door, in a quavering voice, says, "If you really don't want to go in, I can't make you!" Or the parent says to the physician who has just elaborated the next step in getting a child to school, "But doctor, what do I do when that doesn't work?" All these are indications of the intense bind the parent feels about firm, positive action, and the double feelings of the child which the parent understands poorly and cannot cope with effectively.

Typical family environment

Certain similar recurrent themes in the family environment are usually found and need to be understood. There is no significant relationship to socioeconomic class, religion, or ethnic origin. The parent most often involved is the mother. There is usually a defect in the marital relationship. A mother who has a meaningful, mature, satisfying marital relationship does not need to bind her young children to her in an intense, overprotective relationship. We do not overlook fathers, but immediate leverage comes from helping the mother strengthen her resolve to separate from the child. A striking finding is how often these mothers have an overly close, dependent relationship to their own mothers who often live with them, adjacent to them, or just down the street. These grandmothers make a career of helping their daughters by making daily, repetitive phone calls, giving advice on every aspect of their lives, and constant interference, against which the mother is powerless to fight. This kind of grandmother constantly implies, by her abundance of help, that her own grownup daughter is totally inept and incapable, thus doing her continual harm in her mothering role. School phobia is a three-generation problem. Since the mother was never taught to trust herself, she cannot teach this to her child. The mother is overprotective and intrusively does too many things for the child. As he develops, she begins to be hostile to him because she realizes he is not performing as maturely as other children. She feels powerless to extricate herself from a relationship which both she and the child find increasingly suffocating. Eisenberg[6] beautifully charts the unstable neurotic pattern of mother-child interaction that now ensues. The vicious circle is as follows:

Overprotective, overpermissive
maternal attitudes
↓
Dependent, demanding, clinging child
↓
Maternal hostility immediately repressed as bad,
unworthy (instead of "Yes, now I will take action")
↓
Periodic outbursts of disproportionate anger
↓
Maternal guilt

Exactly the same pattern can happen on the masculine side of the family, but this is much rarer.

Case 4. Mr. X was reared by a very indulgent businessman who had become wealthy during the late depression and vowed never to have his son suffer any deprivation or humiliation such as he himself had experienced. His mother was a wheelchair-bound, 500-pound, obese, carping woman who had never walked again after delivering her one and only child. Mr. X took over his father's business. For years, his father helped him learn it and made every decision behind the scenes, which Mr. X was powerless to prevent. Mr. X would lapse into frequent "heart attacks," diagnosed as hyperventilation episodes, at home. He and his much more sensible wife had one son, age nine, who was finally sent to camp, his first separation from the extended family, for one summer month. During this period, the grandfather died suddenly. Mr. X made his first executive decision (wrong) not to tell the boy and to leave him in camp so as not to spoil his summer. An aunt was dispatched to camp to visit the boy during the parents' weekend, while the funeral was conducted at home. The boy returned four days before school, learned of his grandfather's death, and was disconsolate. He would not leave his parents' side and developed acute school phobic symptoms. He would not leave home. He was brought to me after three weeks of school absence. The principal problem was "When I leave home, terrible things happen, so I won't leave home."

Most commonly, the fathers are remote, hard-working, and are difficult to engage. They state that the problem is "the wife's and child's." This forces the child to turn more toward the mother for "reassurance," the price of which is further dependent submission. Mother sides with the child, and father storms out of the situation instead of dealing with it. He may share his wife's anxieties and respond with bewildered helplessness, further reinforcing the child's difficulties. With firm, but sympathetic guidance from the physician, he often is more readily able to begin the necessary cycle of firmness and definitive support than is his wife.

Treatment strategy and tactics

Of paramount importance in treatment of the neurotic group is early precise diagnosis and then early return to school. This may seem obvious, but all too often the physician gets trapped by the parental anxieties and finds himself allowing the child to escape dealing with the current reality of mastering separation from his parents and going to school. The longer the child remains away from school, the more he falls behind and the more guilty he becomes in failing what he intrinsically knows to be his responsibility. What easily could have been made up becomes actually harder and harder.

Let us presume we are confronted with a newly diagnosed case of an acute school phobia in an elementary school child. From the foregoing discussion, one has learned how to work with the overanxious mother and to possibly prevent numbers of these cases from ever happening by early preventive intervention from infancy onward. This, however, is a new case. First, permission is obtained from the parents to go directly to the school to interview the three or four key people who, with the physician, will make up the treatment team. In this disorder, if all the significant adults are not on the same team, the task is hopeless. A word about schools is called for here. As in any organization, there is a structure within which one must work to achieve satisfactory results. The organizational structure must be understood. Since we are dealing with elementary schools, the principal is called and the problem is briefly outlined. The physician then asks to visit the school, usually early in the morning or at lunch time, to meet with the principal, the teacher, the school psychologist or social worker (if these are part of the school's personnel), and the school nurse. The school nurse will be a key back-up person for the physician. She must be on his side or the case will be lost. The first move at school for the physician is to state very briefly that he has been given permission by the family to work with Johnny who is showing problems of separation and to encourage them to tell him their observations of Johnny. School people want to provide successful educational experiences for children and will, at this stage, feel upset about Johnny's behavior. They will first need a chance to share their concerns and then begin to reorder their thinking with the physician's help. All too often, the physician is tempted to feel he must order people about rather than develop a team approach to what is going to happen next to Johnny and his family. The physician, in quietly listening, will begin to see that the teacher usually is very concerned, the nurse very puzzled and uncertain, and the principal caught between losing state aid money and wanting sincerely to create a healthy educational climate, but baffled by the child's irrational behavior.

Now the physician begins to explain how this displacement of the phobia to the school is not their doing. He explains the mechanisms of a phobic symptom and the problems the parents are having in setting precise limits, without revealing the actual confidential intrafamily dynamics, which are privileged communication. His role is to plan a way to get the child to the school door; their role is keeping the child in school with the physician's support. Almost always, once the elementary child is in his classroom, no more than five to ten minutes of fussing is followed by a successful day with no more problems. This must be understood by the teacher. If the child develops symptoms, headache, nausea, or other symptoms described previously, and the teacher is puzzled, she is instructed to send the child to the nurse. The nurse, now part of the team, is encouraged to use her clinical judgment to see if the child is sick, or if he needs a few minutes for reassurance and then be returned to class. The nurse has to be in close contact with the physician and have his support as backstop, particularly in the early stage of frequent phone consultation. From the school's point of view, the nurse's job is to send sick children home. For treatment of the phobic child, her job is to recognize the symptoms, rule out disease— which a phobic child could have— reassure the child, and return him to class. This aids the teacher in helping the child master his separation anxiety. The principal oversees this responsibility and backs up his personnel with the physician's cooperation. Further reason for the school visit is demonstrated by the distortions in a typical family history given to the physician by the anxious parents.

Case 5. Mr. and Mrs. Y came to the Child Study Center on referral from their pediatrician because their daughter, age nine, would not go to school following an uneventful recovery from a brief upper respiratory infection over the Christmas recess. She was in the third grade and had just been transferred from her old elementary school to an adjacent one in September because of a suburban school reorganization plan. She now had to ride a school bus. The mother was an intense, overconcerned, fretful woman who hovered and worried about every ache and pain of the girl and her thirteen-year-old brother. The brother had a history of school phobia every September since kindergarten. The girl dropped a remark that her teacher this year had once told her she could do better in spelling. The mother seized on this remark and informed the physician that the teacher was an old, vindictive woman who gave the children too much work and never praised their achievements. She could understand how her child would not want to go to school and wished for us to either give her an exemption or get a better teacher. The resident in the clinic was inclined to take this history at face value. The supervisor wisely suggested a school consultation.

The principal arranged a team meeting. The resident, with his supervisor, went to school during the course of the diagnostic work-up. The principal was a young, intelligent, sensitive, perceptive man who was very appreciative of the physicians' interest in a case with which they had struggled for two years. The teacher was twenty-three, an attractive, bright, articulate, able young woman, gifted and sensitive, who was very concerned about the child's fear of what would happen at home. She had repeatedly asked the mother to come in for parent-teacher counseling, but was baffled by the mother's refusal to come to school. The school nurse told a poignant tale of how she would watch the mother bring the child to the door of the school, then begin to waver indecisively about whether she would be able to go in or not. The nurse felt uncomfortable being inside and not knowing whether she should bring the girl in or wait until the mother had persuaded her child to enter the door (up to one hour a day) when the nurse could take over. Obviously we gave her explicit authority to act, and, with the team effort, the mother was vastly relieved. With the firm support of her physician, the problem rapidly resolved.

The next step is for the physician to outline the return to school and set the date, usually the following Monday. For the first few days, the stronger parent is strongly encouraged to take the child to school, where nurse, teacher, or principal will take over. As success is gained, more conditions can be added, such as getting on the bus, walking only part way, and so on, until normal patterns are enforced. It is important to follow through with the anxious parent, with daily phone calls before school to bolster flagging courage, and to give firm steady reassurance during the re-entry phase. Longer follow-up in working with these mothers about firm, clear limit-setting and handling childhood fears should continue. This is to help the mothers gain a better sense of their own effectiveness.

Obviously, the cases that do not soon yield to this planning are ready for child psychiatric referral.

Summary

The diagnosis, genesis, and dynamic background of the condition of school phobia have been reviewed. The critical importance of the physician, the school principal, the school nurse, and the teacher as a cooperative treatment team has been stressed. The support of parents in helping the child to master separation anxiety effectively can then lead to resolution of the school phobia syndrome.

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Oral hypoglycemic drugs

Results of a University Group Diabetes Program study (Graber, A. L.: Use and misuse of oral hypoglycemic drugs, *J. Tennessee M. A.* **64:** 584 [July] 1971) indicated that patients getting tolbutamide showed a somewhat higher mortality from cardiovascular disease. Even before the study raised questions about the long-term safety of oral hypoglycemic drugs, it was evident that these drugs were being misused in many patients. It appears that some physicians, in prescribing oral hypoglycemic drugs, have disregarded the fundamental principles of diet and patient education, using the oral hypoglycemic drugs as an easy way to treat diabetes. Some patients are being inadequately treated and actually require insulin; in other cases, diet alone would be adequate. In a small minority, symptomatic diabetes can be treated with oral hypoglycemic agents, but, even then, the relative long-term advantages and disadvantages should be weighed against those of insulin.

BACKGROUND OF CLINICAL CARDIAC ELECTROSTIMULATION

VII. Modern era of artificial cardiac pacemakers

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An incalculable debt of gratitude is owed to Paul M. Zoll, M.D., for his monumental contributions, which led to the electrical treatment of Morgagni-Adams-Stokes disease becoming firmly entrenched in medical practice. Besides its own heuristic value, this admirable achievement was further beneficial in having for by-product the promotion and installation of electronic monitoring and resuscitation equipment in hospitals throughout the civilized world.

The mainspring of all of this outstanding work was an article published in November, 1952. Zoll[1] reported on 2 patients with complete heart block who had been tided over crises of cardiac standstill by ventricular electrostimulation without thoracotomy. One patient died from lacerations of the heart consequent to prior intracardiac injections of epinephrine. The other was subjected intermittently during five days to external ventricular pacing, following which he resumed a normal heart beat. The background of this dramatic enterprise was alluded to very briefly:

> In previous experiments on dogs, it was observed that the ventricles could be stimulated by externally applied electric shocks. After a survey of the literature and some preliminary exploratory experiments, a thyratron physiologic stimulator was used to generate periodic impulses of direct current. These were monophasic currents of low voltage, with rectangular shape, 2 to 20 milliseconds in duration and of variable intensity and frequency.
>
> In dogs, with the external electric pulse generator acting as an ectopic ventricular pacemaker, regular, effective ventricular beats were produced when the frequency of stimulation was higher than the spontaneous ventricular rate. When the external electric stimulation was less frequent than the normal cardiac pacemaker, occasional scattered ventricular extrasystoles occurred as the stimuli intermittently reached excitable heart muscle.
>
> Direct application of the stimulating electrodes on ventricular epicardium required minimal current for effective stimulation. However, the necessity for direct cardiac contact of the electrodes has made previous efforts at electric stimulation impractical for clinical purposes. In the early experiments in this laboratory thoracotomy was avoided by the placing of one metal-tipped, insulated electrode in the esophagus at a high ventricular level and the other electrode on or under the skin over the cardiac apex. The position of the electrode in the esophagus was determined by observation of the shape of the auricular and ventricular deflections in esophageal-lead electrocardiograms. In subsequent experiments, stimulating electrodes were attached to needles placed subcutaneously in the chest wall at points in a line traversing the ventricles. The two latter locations of the electrodes permitted quick and easy stimulation of the ventricles with somewhat more intense currents than was necessary with direct contact, but local charring of the tissues did not occur. In several animal experiments, the ease, speed and safety of applying electric shocks of this type to subcutaneous needle electrodes and their effectiveness in stimulating the ventricles to beat were repeatedly demonstrated. It was therefore decided to apply this method to the treatment of ventricular standstill in patients (Fig. 1).

Reminiscences by Dr. Zoll

The impact of this development was not felt at once by the profession. This only came about after a much larger series of cases had been assembled through the impressive perseverance and diligence of Zoll and his associates, Norman, Linenthal, Paul, Frank, Gibson, and Belgard.[2-7] Looking back on the road traveled in almost twenty years, Zoll[8] comments in a letter,

> The idea for electric stimulation to resuscitate patients from cardiac arrest came to me during the War, when I observed Dwight Harken doing surgical removal of foreign bodies from the cardiac chambers and walls. At that time I was impressed with the responsiveness of the heart to mechanical stimulation, and the close apposition of the posterior part of the left ventricle to the esophagus. It had also been known since Galvani, I believe, that electric currents applied directly to the heart can produce effective cardiac contractions. Therefore I thought it altogether too bad that patients with ventricular stand-

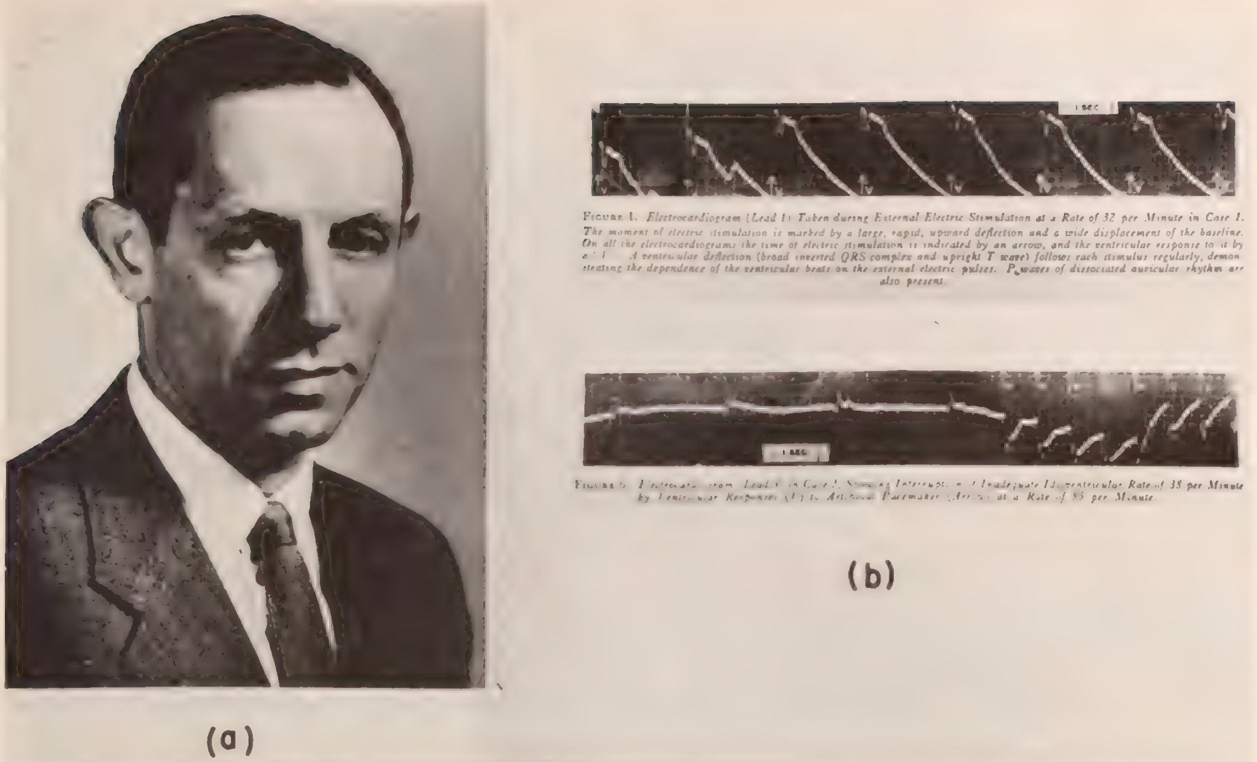
1 SEC
FIGURE 1. Electrocardiogram (Lead I) Taken during External Electric Stimulation at a Rate of 32 per Minute in Case 1. The moment of electric stimulation is marked by a large, rapid, upward deflection and a wide displacement of the baseline. On all the electrocardiograms the time of electric stimulation is indicated by an arrow, and the ventricular response to it by [illegible]. A ventricular deflection (broad inverted QRS complex and upright T wave) follows each stimulus regularly, demonstrating the dependence of the ventricular beats on the external electric pulses. P waves of dissociated auricular rhythm are also present.
1 SEC
FIGURE 2. [illegible] in Case 2, [illegible] Rate of 38 per Minute by [illegible] Responses [illegible] Pacemaker [illegible] at a Rate of 55 per Minute.
(a)
(b)

FIGURE 1. (a) Paul Zoll, M.D., moving spirit behind the contemporary treatment of Morgagni-Adams-Stokes by electricity. (b) Electrocardiograms from Zoll's classic paper in 1952 of 2 cases in which total control of heart beat was achieved by plate electrodes placed on chest.[1]

still, whether caused by Stokes-Adams disease or unexpected cardiac arrest, should die for want of an appropriate stimulus to the heart. You will recall that, in those days, the accepted teaching was that prompt thoracotomy and direct massage of the heart should be undertaken in instances of cardiac arrest. If the heart was fibrillating, direct countershock was to be applied, as first done successfully by Beck, Pritchard, and Feil in 1947.

My initial idea was to supply electric stimuli from some external locus to resuscitate from ventricular standstill by a method that would be clinically easy and avoid the need for thoracotomy and direct cardiac massage. I knew that stimulation of the heart could be effected with electrodes placed on or in the myocardium, and with very small currents (in the order of 0.1 to 1.0 milliampere). I thought of passing one electrode into the esophagus until it lay behind the left ventricle, and of placing another anteriorly over the precordium. Because of my poor background in electronics I did not know what type of stimulus to use nor how to provide it.

Finally, in 1950 or 1951, I heard John Callaghan, then from Toronto, speak at a surgical meeting in Boston, at which he described stimulating the sinoatrial node with an electrode passed as a catheter by way of the jugular vein. I recognized that this technique was not suitable for the purposes I had in mind, since it only stimulated the atria and would not be useful in atrioventricular block. Furthermore, I saw no reason to try so hard merely to stimulate the sino-atrial node itself. Nevertheless, I asked him after the meeting what type of pulse generator he used, and he suggested a Grass Physiologic Stimulator.

Shortly thereafter I borrowed an old Grass Stimulator from Dr. Krayer, Head of the Department of Pharmacology at the Harvard Medical School. Saturday mornings, in my own free time, I did some experiments on dogs in my laboratory. Dr. Leona Norman Zarsky was my most able and helpful research associate at the time. A major problem then was registering the electrocardiogram in the presence of the large stimulus artifacts. We eventually learned to use a photographic Sanborn ECG machine, and observed the electrocardiogram on a rotating fluorescent drum that the Sanborn company called "an electrocardioscope."

I think that the high spot of the whole project was when, one morning, we applied electric stimuli across the esophageal and precordial electrodes in a dog under nembutal anesthesia and observed normal sinus tachycardia interrupted by an extrasystole produced by the pacemaker. It was immediately clear to me that the problem of cardiac arrest was solved, at least in theory. There remained but to work out all of the details implicit in this observation. That is what we did over the next few years.

We soon found that stimulation across electrodes on two sides of the chest was as effective as the esophageal one. Indeed, even electrode needles inserted deep into the chest wall provided efficacious stimulation at the same, relatively high thresholds until they actually touched the myocardium. When an electrode did touch the heart, then stimulation could be accomplished with the very low threshold of direct stimulation; anything separated by millimeters from the direct contact required large current densities similar to externally applied electrodes. We recognized that the emergency situations of external stimulation could be handled better by electrodes on the chest wall, so we gave up any effort at esophageal placement of electrodes in patients after these early exploratory studies in dogs.

We investigated a number of other associated problems. We stimulated the heart of normal dogs for long intervals, even hours on end, day after day, to observe the effect of competition between electric stimulation and intrinsic ventricular activity with respect to repetitive response and cardiac output. We were aware, of course, of the phenomenon of repetitive response and the risk of ventricular fibrillation, from the work of Wégria and Wiggers. We explored this possibility repeatedly in the dog and found no repetitive responses with external stimulation at any available currents up to 150 volts.

The question arose of the ability to produce effective ventricular contractions in cardiac arrest after anoxia of varying durations and after drug toxicity. We demonstrated that we could in fact arouse effective beats in dogs with severe quinidine toxicity to the point of cardiac standstill and in the course of anoxia of several minutes' duration. Observations like these led us to try external stimulation in patients with cardiac arrest even though they did not have atrioventricular block initially. The possible objection that external stimulation might not be effectual except in patients with Stokes-Adams disease was therefore discarded by these experiments before any clinical application was attempted.

It was two years after our first (1950) laboratory demonstration of external stimulation before we had the opportunity to try it in man. In those days, patients with Stokes-Adams disease seemed to be very uncommon—or at least they did not survive long enough to remain much under clinical observation. In August 1952 we finally were called to try our new, admittedly experimental procedure in a patient with repeated Stokes-Adams attacks of several hours' duration. He had already received multiple injections of epinephrine and been subjected to successive cardiac punctures for resuscitation from ventricular standstill. External stimulation elicited effective beats for some 20 minutes until the patient died. Necropsy disclosed that death had been due to pericardial hemorrhage and cardiac tamponade from one of the previous punctures.

One month later we had a second trial, and this time the patient survived. External stimulation restored effective contractions; but standstill recurred every time that stimulation was stopped. We were then faced with the problem of persistent absence of intrinsic ventricular activity, and the necessity for continuing external stimulation. . . apparently indefinitely. Fortunately, the strong electric stimuli did not disturb the patient very much, and he was able to eat, sleep, and carry on normally, despite continued stimulation. The case evoked great interest in the hospital, and many of the staff came to see the treatment and confirm the relation of the pulse to the electric stimulus. After 48 hours, however, there was a growing concern about what to do with a patient whose life depended on this artificial modality. There were even some religious objections raised (including a few voiced by physicians themselves) that the latter was ethically improper and against the Divine Will. Happily, not long thereafter an article in the local Catholic weekly newspaper (*The Pilot*) endorsed these endeavors at prolonging life, and suggested that it was the Divine Wish for them to be made and perhaps be successful.

Over the next few years our experience grew considerably with external stimulation for resuscitation from cardiac standstill of patients with Stokes-Adams attacks and all other kinds of circumstances. Again and again we encountered the dilemma of successful emergency resuscitation only to have the patient die subsequently when the pacemaker was not reapplied in time. These situations forcibly made it clear that a necessary concomitant of emergency resuscitation was continuous cardiac monitoring, with an unmistakable alarm system providing prompt alert to and recognition of the mechanism of arrest. Consequently, the combined pacemaker-monitor was developed, tried clinically, and then presented in the *New England Journal of Medicine* article, "Unexpected Cardiac Arrest," in 1955.

External electric countershock for termination of ventricular fibrillation was a natural outgrowth of these experiences. The technique of direct countershock with electrodes across opposite sides of the exposed heart had been developed in the laboratory by Wiggers in the 1940's, applied clinically by Beck, Pritchard, and Feil in 1947, and was a generally accepted approach. Our trials with external stimulation made it evident that countershock should be successful if applied externally with large voltages and current flows, so that an adequate concentration would traverse the heart and depolarize all the muscle fibers. We applied the same type of countershock that had been developed for direct defibrillation, but used a stepup transformer (loaned by the Cambridge Electric Light Company) to furnish adequate power. We considered, but soon discarded, the idea of using direct current capacitator discharges for countershock, because in those days capacitators appropriate for providing the relatively high power needed would have been too bulky and unreliable for practical use in a clinical instrument (Fig. 2).

In dog experiments we applied external countershock currents with varying characteristics to ascertain the type of discharge which would be most likely to incite ventricular fibrillation in the subject under anesthesia and normal sinus rhythm. We employed the principle, previously evolved by Wiggers, and by Mackay, Mooslin, and Leeds in 1949, that a defibrillating current was only slightly stronger than one causing fibrillation. After several experiments we selected 60 cycle current, shocks of 0.15 second duration, and 250 to 270 volts. Countershocks shorter than 0.10 second were less effective, and those lasting more than 0.20 second had a greater tendency to produce ventricular fibrillation.

Subsequent to numerous observations attesting to the efficacy and dependability of defibrillation, we

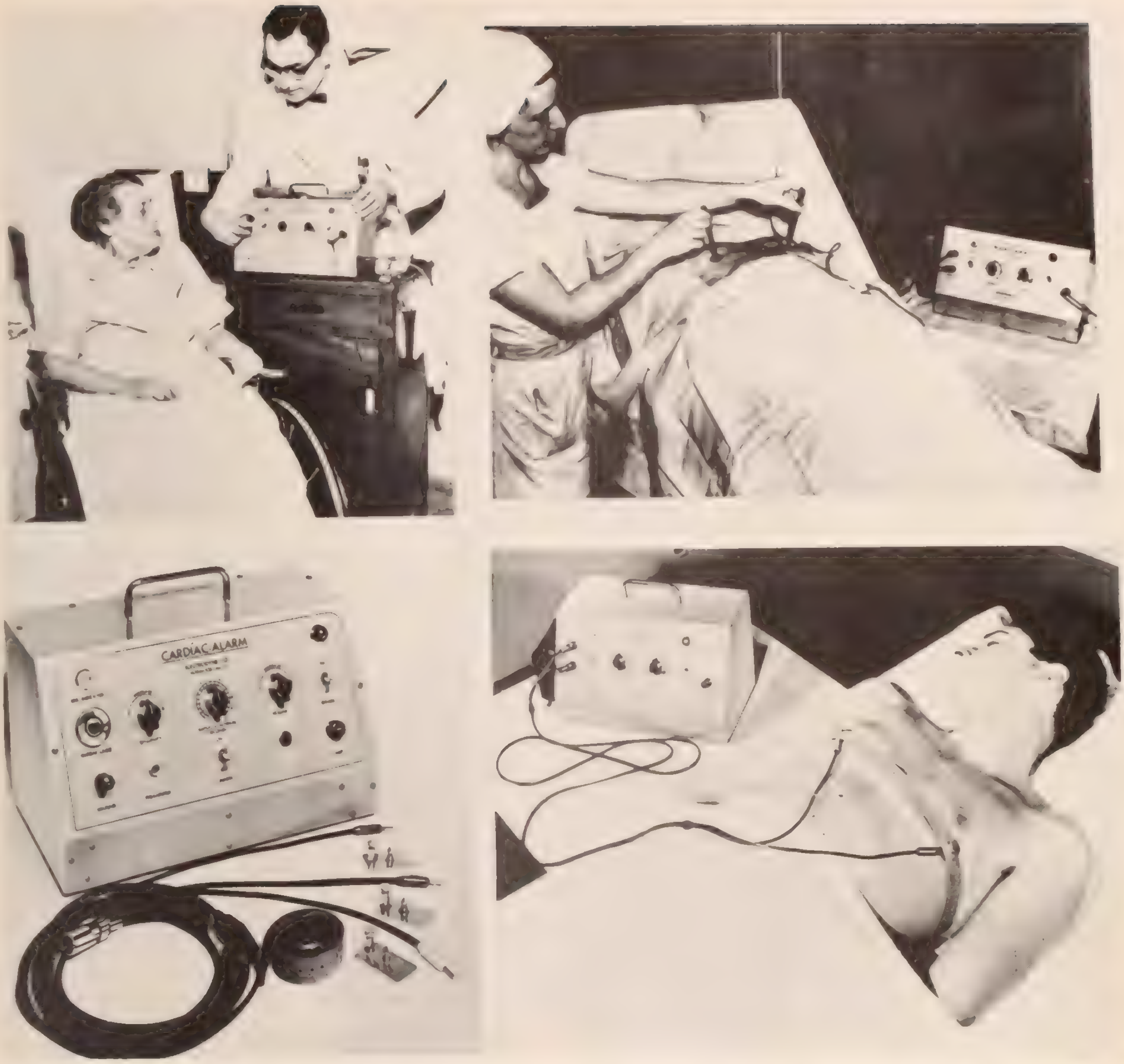

FIGURE 2. Clinical scenes and pacing-monitoring apparatus pertaining to management of complete heart block by electrostimulation almost twenty years ago. (Courtesy of Dr. Zoll.)

turned to the study of countershock for abolishing other varieties of arrhythmias. The initial problem was to develop means of provoking tachycardias other than ventricular fibrillation. We succeeded in doing so by rapid external stimulation (about 600 per minute) in dogs or pigs, especially animals with previous narrowing or occlusion of a branch of a coronary artery. We showed that this same countershock was capable of halting a spectrum of arrhythmias—from paroxysmal atrial tachycardia, atrial flutter, atrial fibrillation. . .to ventricular tachycardia.

We were visited at about this time (1954) by Professor William Kouwenhoven, Dean of the School of Engineering at Johns Hopkins University, who was engaged in work on external countershock defibrillation in dogs. He told us that Clayton, the physiologist at the University of Mississippi, likewise was conducting research along the same lines. It was a great thrill for me to meet Kouwenhoven, who had made very important contributions many years earlier in the field of direct cardiac defibrillation. We had the good fortune of being first (in 1955), after the extended trials in our laboratory, to apply this technique clinically in patients with ventricular fibrillation. The original paper reporting this case of successful defibrillation and recovery was published in 1956 (New England J. Med. **254:** 727, 1956).

Although we had demonstrated experimentally the efficacy of the technique for terminating arrhythmias, we hesitated to apply it clinically except when circumstances were extenuating or patients were in truly dire straits. We did stop an episode of paroxysmal atrial tachycardia in a moribund patient, and reported this incident in 1957. On a few other occasions, as we prepared to apply countershock for other desperate tachycardias, we gave somewhat larger than usual doses of antiarrhythmic drugs, and found with a mixture of relief and disappointment that cessation of the arrhythmia ensued from pharmacologic manipulations rather than from this new investigational method. Our hesitation in using it did not derive from fear about producing ventricular fibrillation, since repeated laboratory observations had made plain that a sufficiently large alternating-current countershock would halt any arrhythmia and not excite fibrillation. We knew that were fibrillation to arise, there would be no difficulty in applying another, perhaps greater shock, and end it.

Nevertheless, it remained for Lown in 1961 to exploit the technique of external countershock for the termination of lesser tachycardias. His utilization of synchronized D-C shock gave the profession confidence in the avoidance of ventricular fibrillation. I believe D-C shock to be useful in that it allows countershock with somewhat less energy than the longer A-C shock. However, it still appears rather questionable to me, and to several other workers in this field, whether synchronization of the shock actually provides very meaningful protection against the possibility of ventricular fibrillation. A high enough shock, whether D-C or A-C, will not produce fibrillation, no matter when it falls in the cardiac cycle. Some instances of fibrillation have occurred even with properly synchronized D-C shocks, and I believe this risk is more likely when the shock is smaller rather than larger. These kind of results should have been anticipated from the work of Mackay, Mooslin, and Leeds in 1949.

These techniques of external electric stimulation, continuous cardiac monitoring, and external countershock assured satisfactory resuscitation—at least theoretically—of all patients with cardiac arrest, regardless of the genesis of the arrest. We considered that great strides had been made in the treatment of ventricular standstill. The development of external cardiac massage by Kouwenhoven and his group was a further, major, epochal advance that furnished time for the application of definitive life-saving measures.

Nevertheless, the management of Stokes-Adams disease remained difficult and unsatisfactory. It was clear that long-term continuous pacemakers were necessary to prevent Stokes-Adams attacks so that resuscitative procedures might not be necessary. A number of laboratories were preoccupied with developing techniques of direct electric stimulation whereby relatively low voltages would be required, and therefore would be imperceptible to the conscious patient. Our laboratory efforts in that connection began around 1955.

We ran into difficult problem of rising thresholds of stimulation. It took us over four years of experimentation to work out the reasons for these difficulties and to solve them. By then, other investigators were well ahead of us. In fact, Samuel Hunter, of St. Paul, was the first to implant an electrode that worked for a long time in a patient. By 1960, when we started our series of direct electrode and pacemaker implants, William Chardack was already on his way. Indeed, even earlier, in 1958, Seymour Furman had successfully used an endocardial catheter electrode for temporary, direct electric stimulation; later, this technique was extended to prolonged cardiac electrostimulation.

An additional note, regarding Dr. Albert Hyman. Of course I was familiar with Hyman's papers of 1930 and 1932 on an artificial pacemaker for cardiac arrest. I viewed his idea as interesting and a brave effort, but the concept seemed to me to be inadequate. I hope I gave him proper credit in my initial papers in 1952. The trouble was that he attempted to stimulate the atria, which would be physiologically unsatisfactory in view of the high incidence of atrio-ventricular block in patients with ventricular standstill, irrespective of whether atrio-ventricular block existed before the arrest. Moreover, placement of an electrode into the atrium by needle puncture seemed to me to be unduly hazardous, uncertain, and limiting insofar as it could not be frequently repeated nor kept in place very long.

In this regard I had heard over the years numerous comments by many physicians that they had made unfruitful efforts in the direction of emergency external electric stimulation in one way or another for resuscitation from cardiac arrest. I could never fathom why these attempts had not succeeded. I was indeed surprised, when I first started, not to find effective techniques already described in the literature. The basic idea behind the technique was, I thought, rather simple, entirely obvious, and an inescapable easy step from all the facts that were generally well known.

The same kind of delay in acceptance of the application of ideas appeared later regarding the logical extension of the techniques of continuous cardiac monitoring to the development of Coronary Care Units. The fundamental concept of an appropriate cardiac monitor was put forth in 1956 in our paper on "Unexpected Cardiac Arrest" in the *New England Journal of Medicine*. But it was not until Hughes Day presented his data in 1960 that the obvious extrapolation to patients with acute myocardial infarction was widely accepted. We were hindered from making this application ourselves by some reluctance of the administration in our own hospital to burden patients and the nursing service with our complicated, noisy, and tiresome equipment. Day visited me in 1958 or thereabouts, and asked why I hadn't made that sort of study and whether I would mind if he did. It has been a source of great gratification to me to see the extensive utilization of this technique, with the consequent great improvement in salvage rates.

By the same token, it was a matter of considerable distress to have to wait and observe the continued neglect of what I considered to be an obvious lifesaving approach. In this connection I view it still as a matter of grievous concern that continuous cardiac monitoring is not undertaken in every single patient under anesthesia in the operating room. I believe that all patients under anesthesia, however trivial the reason for it may seem, should be monitored continuously. Only in this way will the relatively high mortality of unexpected cardiac arrest in the operating room be properly reduced. I remain perplexed by the apathy which prevents this logical extension of a technique that is available and of obvious merit.

When I chafed audibly about this situation, I was told by one of my friends about the great furor and opposition that arose many years ago (about 1905) when Harvey Cushing suggested the practice of observing and recording every five minutes the pulse and blood pressure of anesthetized patients, the better to control their condition. It was argued that this mechanical, quantitative approach would occupy the anesthetist with the pursuit of tedious details, interfere with his clinical appraisal of the patient's state, and destroy the "art" of anesthesia.

From the ranks of physiologists who appraised the cardiodynamics of pacing[9-21] a few voices questioned its safety or dependability for surmounting heart block.[22,23] But these were stifled by mounting reports of the method being used profitably in the clinical setting.[24-38]

Testing feasibility of needle electrodes

As I referred to in a previous article, cardiac electropuncture for resuscitation was practiced during the last century.[39] Zoll shunned the method as impractical and fraught with danger, no doubt because the first patient that he was called on to treat with electricity died from lacerations caused by needles previously shoved blindly into the heart. Likewise, to avoid breakage of needle electrodes in the skin of the chest wall, he switched to plates held securely in place by an encircling rubber strap. This disposition of stimulating electrodes was to remain conventional for just a few years. Its principal disadvantages were the provocation of jactitations of the trunk, or more localized spasmodic contractions of the thoracic musculature, and erythema or tenderness beneath the electrodes.

Chandler and Rosenbaum[25] and Rosenbaum and Hansen in 1954[24] used a technic of ventricular stimulation through a needle inserted percutaneously to lie on the pericardium, similar to what Smith[40] had proposed fifty years before. They combined electrostimulation with an intravenous injection of isoproterenol.

> Two electrode systems were used in this clinical case: an emergency and an indwelling combination. The emergency electrodes consist of a standard 21 gauge needle, a 14 gauge trochar about 3 cm. long, and an 18 gauge blunted needle about 9 cm. long. The indwelling set consists of a flexible insulated wire about 15 to 20 cm. long. The 21 gauge needle is inserted subcutaneously just below the inferior angle of the left scapula parallel to the skin. The 14 gauge trochar is inserted through the fourth left intercostal space in the midclavicular line, and the 18 gauge blunted needle is threaded through the trochar until it rests on the pericardium. It should not be forced into the myocardium since this is not necessary to maintain stimulation. Once the emergency set has been put into place and the pacemaker is maintaining the rate, the insulated wire can be substituted for the 18 gauge needle. The trochar can then be withdrawn, and the dangers of abrasions or extracardiac stimulation can be avoided.
>
> The intravenous infusion of Isuprel was prepared by adding 1 mg. of the drug to 200 c.c. of 5 per cent glucose in water to make a concentration of 5μg per ml. The rate of flow was controlled between 9 to 20 drops per minute, to supply from 3.5 to 6.5 μg per minute.

Coincidentally, in their investigations on experimental heart block, Starzl, Gaertner, and Webb[22] modified for purposes of direct electrostimulation the exploratory intramural electrodes used in research by some cardiologists.[41,42] They used bipolar concentric electrodes consisting of insulated stainless steel syringe tubing which enclosed an insulated stainless steel wire. The stimulating electrode was placed in position like a dart, so that both poles were in the myocardium. This device may be viewed to have been a progenitor of intramyocardial electrodes soon to be developed for permanent intracorporeal placement of artificial pacemakers.

Premier cases of electrotreatment of postcardiotomy heart block

It has been known since 1904 that Morgagni-Adams-Stokes disease could ensue from trauma, but such an event used to be exceedingly rare.[43,44] As the fledgling specialty of cardiac surgery began to mature, operators sometimes faced the disconcerting situation of accidentally creating heart block during the procedure. It is not generally appreciated that the earliest accounts of this calamity did not have to do with the repair of ventricular septal defect but rather with valvotomy. In fact the first victim, a seventeen-year-old girl, died following pulmonic commissurotomy.[45] After a similar accident elsewhere, external cardiac pacing resulted in a happier issue. This experience in November, 1953, of J. Francis Dammann, M.D., Marvin Darsie, M.D., and Chester Smith, M.D., was not published but was reported by them the next year at meetings of the Society of Western Anesthesiologists in Los Angeles and the Second World Congress of Cardiology in Washington.[46] Their cardiac stimulator was of the square-wave variety, triggered by the QRS complex (Fig. 3).

> The patient was a 29 year old man with combined mitral and aortic stenosis. At surgery the mitral valve was opened easily, but following the fracture of the aortic valve in idioventricular rhythm of 40 to 50 beats per minute developed. Surgery was completed and the patient awoke from anesthesia, but about eight hours later the heart rate had dropped gradually to 20 and the systolic blood pressure below 70. He was comatose, and considered to be in a terminal state. We applied chest electrodes, and thereafter used Zoll's pacemaker and our own square-wave stimulator at alternate periods to compare them. With pacing there occurred almost at once an effective beat with a rate of 60 per minute, producing a blood pressure of 130/70. The patient became conscious and rational within two or three minutes, re-

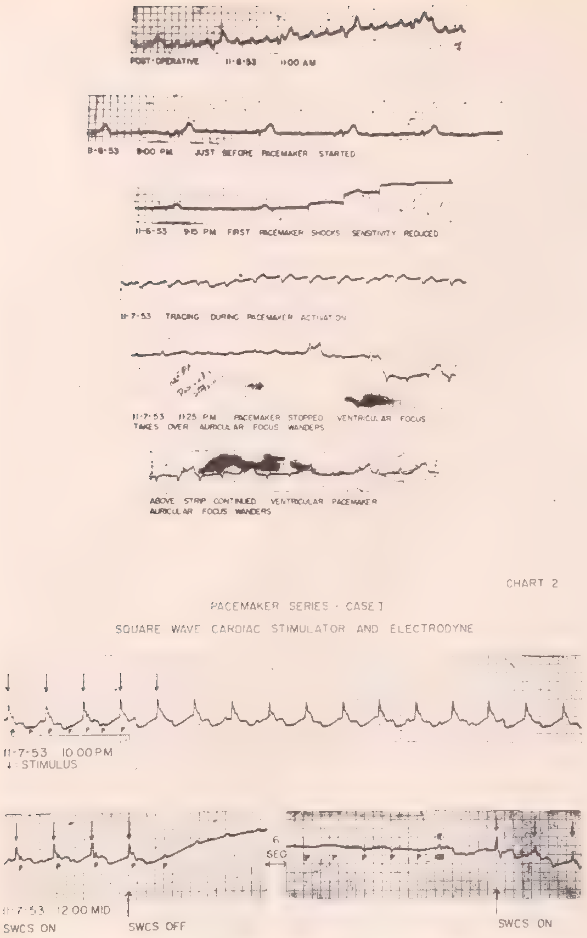
POST-OPERATIVE 11-8-53 11:00 AM
8-8-53 9:00 PM JUST BEFORE PACEMAKER STARTED
11-6-53 9:15 PM FIRST PACEMAKER SHOCKS SENSITIVITY REDUCED
11-7-53 TRACING DURING PACEMAKER ACTIVATION
11-7-53 11:25 PM PACEMAKER STOPPED VENTRICULAR FOCUS TAKES OVER AURICULAR FOCUS WANDERS
ABOVE STRIP CONTINUED VENTRICULAR PACEMAKER AURICULAR FOCUS WANDERS
CHART 2
PACEMAKER SERIES · CASE 1
SQUARE WAVE CARDIAC STIMULATOR AND ELECTRODYNE
11-7-53 10.00 PM
↓ : STIMULUS
6 SEC
11-7-53 12.00 MID
SWCS ON
SWCS OFF
SWCS ON

FIGURE 3. In 1953 Dammann, Darsie, and Smith used external, square-wave stimulator on patient who developed complete heart block after aortic valvotomy, probably earliest case of successful recourse to temporary pacing after traumatic heart block. (Courtesy of Dr. Dammann.)

maining so except for brief intervals when it was necessary to turn off the machine. On several occasions when this was done, for periods of 14 to 17 seconds the heart was found to be in complete arrest; the patient became rigid, eyes rolled up, his color turned dusky, and convulsive twitchings appeared. On restarting the machine, an effective rhythm and blood pressure were restored after about four impulses, and the patient again regained consciousness.

This man was maintained continuously for 62 hours with either the Electrodyne or our square-wave cardiac stimulator. At the end of that time an effective intrinsic rhythm returned; and after several very precarious days the patient recovered without any apparent neurological sequelae. In fact, the only ill-effect of this experience seemed to be several slow-healing electrode burns on the chest. He otherwise did very well, and went back to work.

Both Zoll's instrument and ours were equally effective for controlling heart rate and blood pressure. The patient noted less muscle twitch and discomfort with our instrument, which we believe may be due to the purity of the square-wave stimulus. Electrical burns at the point of application of the electrode occurred at first, but later were avoided by using saline dressings between the plate and the skin. Furthermore, it was found that spreading the contact over a larger area decreased the discomfort of the patient. Needle electrodes were quite uncomfortable because of the concentration of the stimulus.

Parenthetically, although attempts have been made to drive an ineffective, slow heart through the open thorax in the operating room at the time of surgery, and although on several occasions this was possible for periods of four to 15 minutes, we must report no real success in this endeavor to date. Technical details, such as the type of electrodes to be used and the exact positioning of these are yet to be worked out. When these problems have been mastered, it should be possible to maintain an effective beat, using electrodes on the sino-auricular node, and at the same time allow the surgeons to complete the operation. During closure of the chest the electrodes could be applied to the inside of the auricle with a cardiac catheter introduced through a peripheral vein. After the chest is closed, continued stimulation for an indefinite period could be maintained using external electrodes, thus allowing the heart time to establish an effective intrinsic rhythm.

The premonitory ring of this last paragraph made itself heard a couple of years later in a case of intractable heart block anteceding corrective cardiac surgery.[35] The patient, who was operated on by Francis Byron, M.D., and J. Fields, M.D., had complete atrioventricular dissociation that was refractory to medication. An electronic pacemaker, previously employed intermittently, had to be left in place continuously. Sixteen days later, with the pacemaker in constant use, a Hufnagel prosthesis was interposed in the ascending aorta. A spontaneous idioventricular rhythm at a rate of 70 evolved after the procedure. Death from sudden, irremediable cardiac standstill occurred three days postoperatively.

Marring the bold surgical onslaught against congenital cardiopathies in the mid-1950s was a heavy toll from the complication of heart block. If this grave aftermath was dreaded in adults, how much more so when its sufferers were children. Unlike the garden variety of complete heart block, characterized by remissions between spells of ventricular indolence, iatrogenic heart block often tended to persist either indeterminately or irrevocably. A patient so afflicted could not be expected to remain tethered to and confined by a bulky machine until cardiac autonomy was regained, or for the remainder of his days if the atrioventricular bundle wounding was irreversible. Of lesser importance, but annoying nevertheless, were the muscle tremors and skin irritation produced by plate electrodes, especially when they lay over recent incisions. Finally, the omnipresent hazard of electrocution from faulty circuitry of the large generator or its accidental dislodgment could not be discounted. Evidently what an ideal pacemaker unit entailed was a light-

FIGURE 4. C. Walton Lillehei, M.D., and team established cardiac pacing as standard feature of management for heart block provoked accidentally during cardiac surgery. They also popularized technic of percutaneous insertion of myocardial electrode wires for emergency treatment of Morgagni-Adams-Stokes attacks.

weight generator, requiring infrequent battery recharging or replacement, connected to slenderer electrodes more proximate to the heart, and the whole unit preferably amenable to intracorporeal deposition for long durations. All but the last of these requisites were attained by the end of 1956 and at once brought about a radical amelioration in the prognosis of cardiotomy-associated heart block. The last requisite was fulfilled in 1959.

In the winter of 1956 Brockman, Webb, and Bahnson[47] paced with a wire cathode the heart of an infant in whom atrioventricular dissociation developed after closure of a ventricular septal defect. Unfortunately, the child died despite ten hours of uninterrupted effective pacing.

The popularization of a carriable electronic stimulator and technics of intramyocardial electrode insertion and attachment stemmed from the collaborative efforts of a group headed by C. Walton Lillehei, M.D., and consisting of Peter Allen, M.D., William Weirich, M.D., Vincent Gott, M.D., Paul Hodges, M.D., André Thevenet, M.D., Matthias Paneth, M.D., David Long, M.D., Earl Bakken, M.D., Robert Sellers, M.D., Morris Levy, M.D., Raymond Bonnabeau, M.D., and Randolph Ferlic, M.D.[48-56] (Fig. 4).

The pacemaker was constructed with transistors and a self-contained mercury battery. The electrodes consisted of silver-plated copper wire insulated by a sheath of polyethylene or Teflon, save at the tips. The clinical inauguration of the device took place on January 30, 1957. In the first few patients one electrode was anchored into the right ventricular myocardium, and the indifferent electrode was fastened to the skin. In one tragic mishap a youngster disengaged the indifferent electrode and died from cerebral damage. Thereafter, this lead was routinely buried in subcutaneous tissue overlying the apex of the left ventricle. On occasions when the chest was not open, the stimulating electrode was introduced percutaneously through a large-bore needle (Fig. 5).

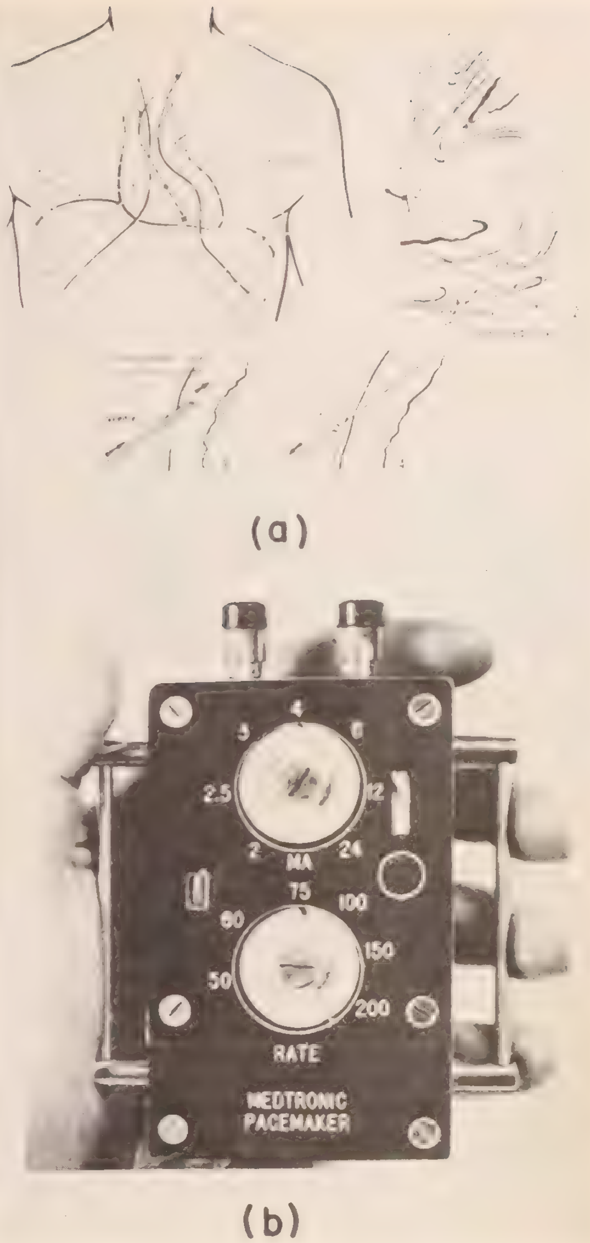

FIGURE 5. (a) Schematic representation by Thevenet, Hodges, and Lillehei of percutaneous insertion of myocardial electrode. Directions bear striking resemblance to those stipulated in 1871 by F. Steiner for effective cardiac electropuncture. (b) External mercury battery-driven pacer used by authors, with knobs for intramyocardial and dispersive electrodes.[50]

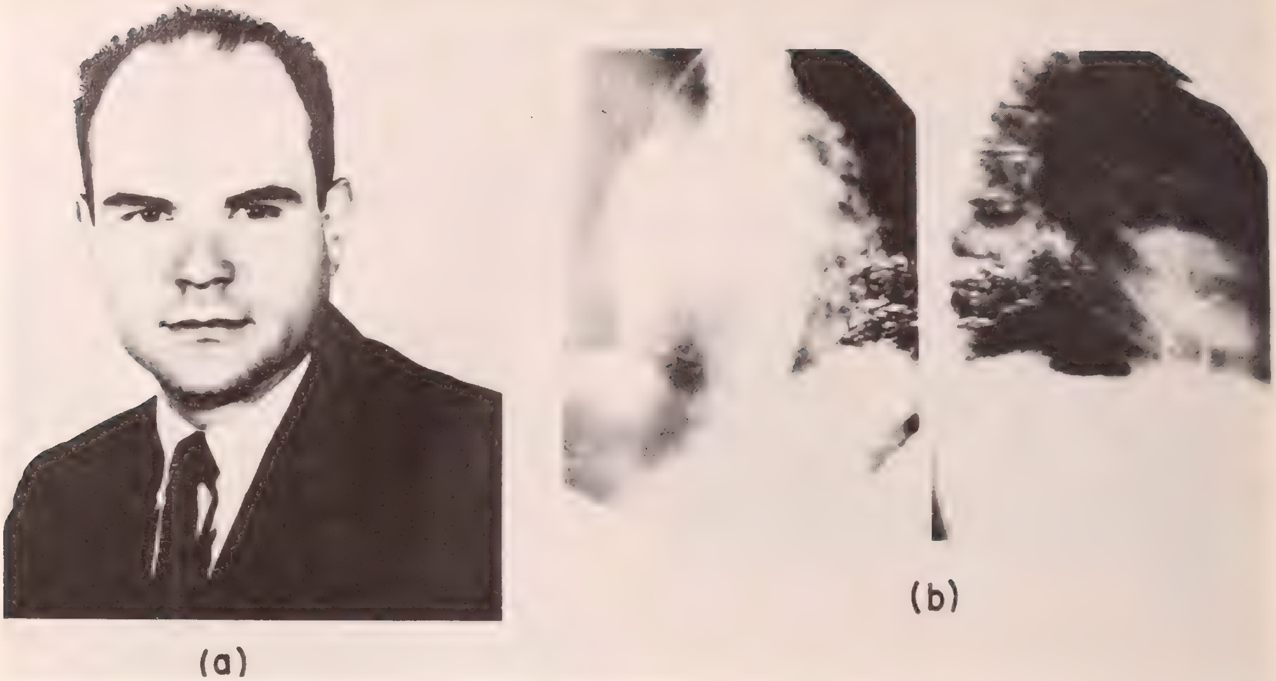

FIGURE 6. (a) Seymour Furman, M.D., played dominant role in popularizing endocardial route for both short-term and prolonged pacing. (b) Original roentgenograms of patient with recurrent Morgagni-Adams-Stokes seizures in whom unipolar endocavitary catheter was inserted in August, 1958.[78]

By mid-1958 this team had inserted myocardial wire electrodes in 18 patients, with 1 death. By the end of the year the series had quadrupled. The patients were ambulant, wore the pacemaker generator on a holster, and their hearts were paced uninterruptedly by a current of which they were nonsentient. The most protracted pacing lasted almost two months.

In that same year Olmsted, Kolff, and Effler[57] recommended that both electrodes be sutured to the heart, and told of a case in which this precautionary step had been taken.

Introduction of endocardial electrostimulation

By now the boon which pacemakers provided was greeted everywhere. Newer monitor-pacer designs were offered, and both the intramural wire and external electrostimulation technics were practiced, with favor growing for the former.[58-74] However, neither method was irreproachable. External electrostimulation was bearable only for relatively short durations. Rising excitation thresholds limited also the usefulness of the monopolar myocardial wire technic.

Of great moment was the demonstration that protracted cardiac pacing with low voltages could be accomplished by an inlying right ventricular electrode catheter.[75-77] In August, 1958, Furman and Schwedel[78] had occasion to pace, with a unipolar endocavitary catheter of that sort, the heart of a seventy-six-year-old man suffering from recurrent Morgagni-Adams-Stokes seizures (Fig. 6). The indifferent electrode was imbedded subcutaneously in the chest wall. Pacing was maintained for ninety-six days, with survival and no untoward reactions (Fig. 7). These authors and their associates enjoyed many more such triumphs, which encouraged espousal of that method.[79-91]

Eventually, monopolar endocavitary electrodes were superseded by bipolar catheters developed by Battye and Weale,[82] by Parsonnet *et al.*,[83-87] and by Goetz.[88] Thereby, the need for a dispersive electrode on the surface of the body was dispensed with. The delay in appearance of bipolar electrode catheters was odd, since in 1950 just such a tool had been designed by Callaghan, Bigelow, and Hopps.[89-91]

External pacemakers, however compact, were a bit of a nuisance. The generator might become dislodged; and the connecting cables might break, become a conduit for sepsis, or interfere with bathing and other social activities. Clearly, it was most desirable to construct self-contained units that could be sheltered entirely within the body. The hunt was on for devices of that kind, later to be known variously as "internal," "indwelling," "imbeddable," "intracorporeal," or "implantable" pacemakers.

Inception of intracorporeal artificial pacers

In 1958 Rune Elmqvist, M.D., and Åke Sen-

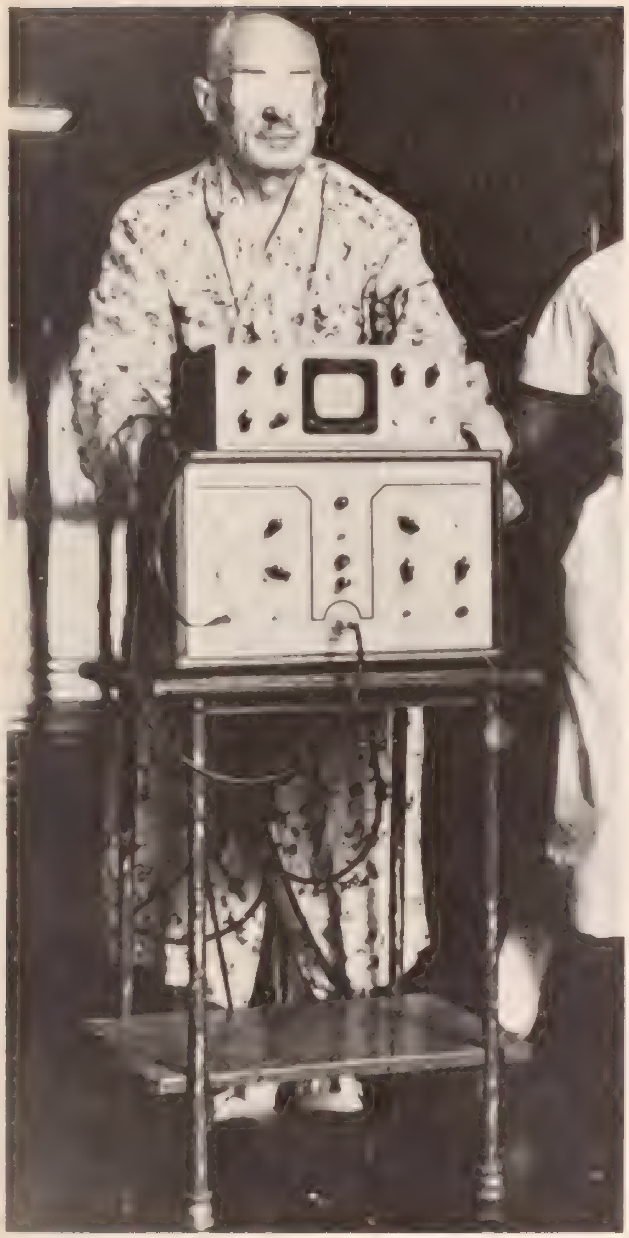

FIGURE 7. Feasibility of prolonged cardiac stimulation by means of endocavitary electrode. Uncomplicated pacing was maintained for 96 days in 1958 with unipolar catheter attached to depicted battery by long cable to allow for unimpeded movement. (From: Furman, S., and Escher, D. J. W.: Principles and Techniques of Cardiac Pacing, New York, Harper & Row, 1970).

ning, M.D., developed a miniature pacer battery which could be left in an epigastric pocket, with electrodes trailing subcutaneously to the heart.[92-96]

> The pulse generator consists of a repetitive blocking oscillator with a silicon transistor. The pulses are fed to the base-circuit of a second silicon transistor. The collector circuit of the second transistor is connected to the electrode over an RG-network. The pulse height is about 2 V, and the pulse duration is about 1.5 msec. The pulse frequency is constant and about 80 pulses/sec.
>
> The source of energy is a small nickel-cadium accumulator consisting of two series-connected cells of 60 mA each. The apparatus also contains a coil and a silicon diode, which form the secondary circuit of an inductive charging device. The primary circuit of this device consists of a 150 kc/s generator feeding a large diameter coil. This coil is placed over the pacemaker outside the skin, when the accumulator is charged.
>
> The electrode cable had to be specially developed in order to withstand the movements in the body (about 10^5 bends every day) (Fig. 8).

In the first patient with the device, the voltage had to be raised steadily over a period of four to five weeks (soaring to 20 volts) to compensate for mounting electrical impedance at the intramyocardial wire tip. Senning[97] writes that this state of affairs made the patient, who happened to be an electronics engineer, think of his physicians as dilettanti in matters electrical.

> . . . We started with the experiments on total implant of pacemakers in 1956 on dogs, and we made our first implantation in man in October 1958. The first patient was a 40 year old electronic ingenieur with his own firm specialized in electronic measuring instruments, and he had an extremely beautiful wife. He told me, when he looked at the electronic circuit of the pacemaker, that we "have no idea about electronics." In spite of the fact that I have taken a course on electronics at the Technical High School, I think he was right. In any case he is still living, having, I think, the sixth pacemaker; the first one with a rechargeable accumulator as energy source, the other ones with Mallory batteries. . . .

Starting in the 1930s, a number of investigators showed that the central nervous system could be excited by hertzian beams.[98-107] The feasibility of stimulating the heart in the same way was demonstrated in 1958 by Verzeano, Webb, and Kelly[108] (Fig. 9). As in quondam radiofrequency transmission arrangements, there was limitation of movement of their dogs by enclosure in a cage. This drawback was overcome by Glenn *et al.*[109] who placed the loop antenna in close proximity to the buried resonant receiver. On January 29, 1959, they used this ingenious technic to stimulate a human heart. Pacing was carried out for three weeks, when it stopped abruptly because of a crack in one of the wires. The patient died after dismissal from the hospital. Successful long-term stimulation of the heart and other viscera with the same method was subsequently performed by that team (Fig. 10).[110-114]

Glenn[115] relates how the decision to try radiofrequency transmission came about:

> I do not know of anything in particular that is personal about the development of this unit. I remember when it first occurred to us that we might do this

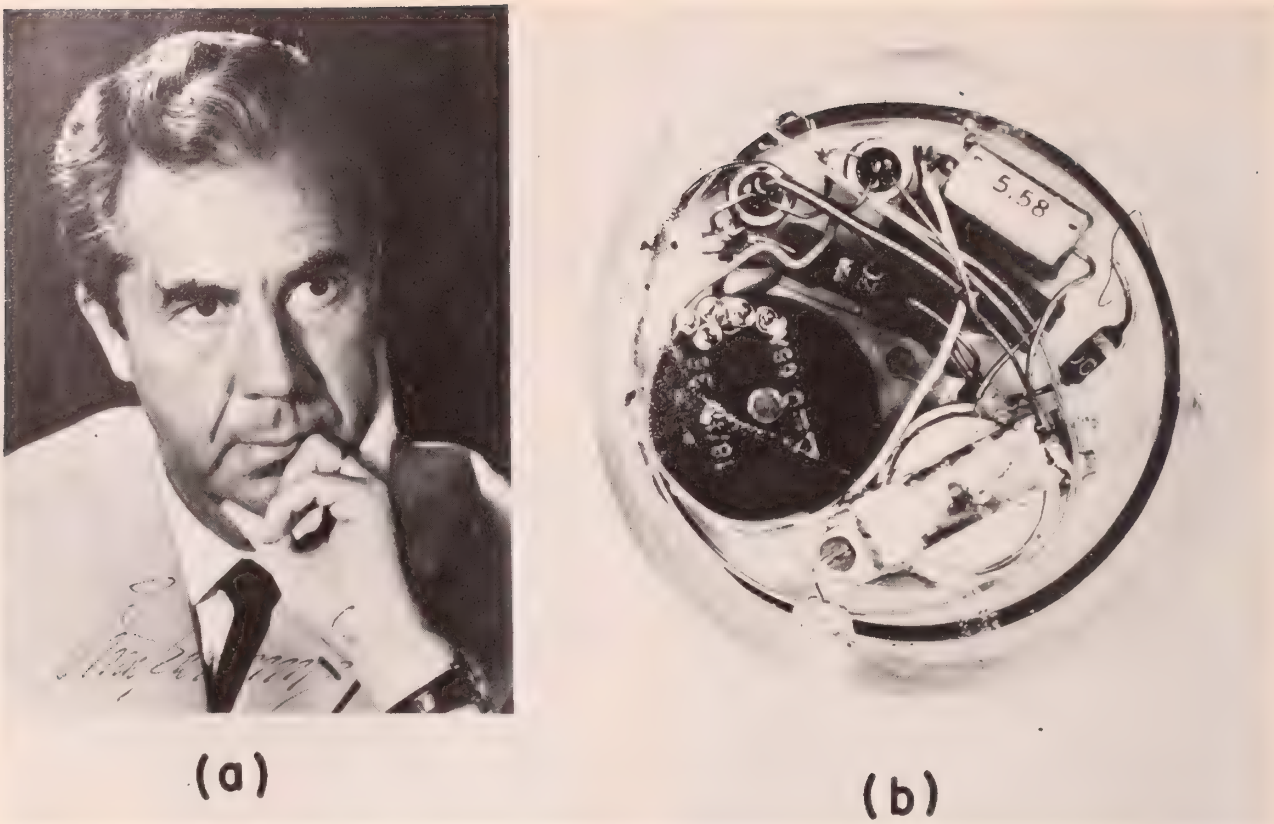

FIGURE 8. (a) Åke Senning, M.D., who implanted "permanent" self-contained cardiac pacemaker. (b) Original twin cell accumulator, chargeable from outside. (Courtesy of Dr. Senning.)

> by radiofrequency. We did not think that a battery was feasible, because of its short life and the need to replace it in a short time. It was our great good fortune that Alex Mauro was in our medical school then, and was making his rounds to the laboratory when we came across this problem in one of the dogs in which we were producing intraventricular septal defects. We asked Alex if it were possible to stimulate the heart by broadcasting through the skin; he said certainly so, that they had done it many times to the brain, and there was no reason why it could not be done with the heart. This is the way it began. . . .

Mauro,[116] together with Lawrence Eisenberg, Ph.D., of the same group, is currently at the Rockefeller University and still engrossed in investigations on radiofrequency stimulation of biologic tissues (Fig. 11). He writes,

> My collaborative efforts with Dr. William Glenn were very gratifying to me especially since I had developed the technique of an implanted "radiofrequency" receiver back in 1948 for colleagues of Dr. Fulton in the Physiology Department, and here indeed in 1958 an occasion arose for its serious application in patients. We had discussed the negative aspects of wires penetrating the chest wall, a technique which had been introduced in recent years to treat heart block resulting from surgical procedures. Thus, to circumvent the presence of externalized wires to the myocardium in the fall of 1958 we proceeded to resurrect the technique of 1948 by building several receivers and a power-line energized transmitter operating at 6 megacycles. After completing several experiments with dogs to prove the worthiness of the technique the pressing need for artificial pacing soon presented itself in a patient with Stokes-Adams disease. On January 29, 1959 Dr. Glenn installed a unit in this patient with successful results.[116]

Refinement of intramyocardial electrode design

The quandary of machinery component breakdown, with accompanying current cessation, plagued all available pacemakers. Aside from the predicament of battery drain were the dilemmas of fracture of other mechanical malfunction of electrodes.

Also, there was the need to expand the output of the current to stave off augmenting polarization from gradual encasement of the electrode tip by scar.

Hunter *et al.*[117–119] constructed a "platform" bipolar myocardial electrode, with which myocardial resistance was shown to stabilize to a plateau after an initial rise in threshold. This permitted pacing for many months. The platform bipolar electrode, attached to an external battery, was

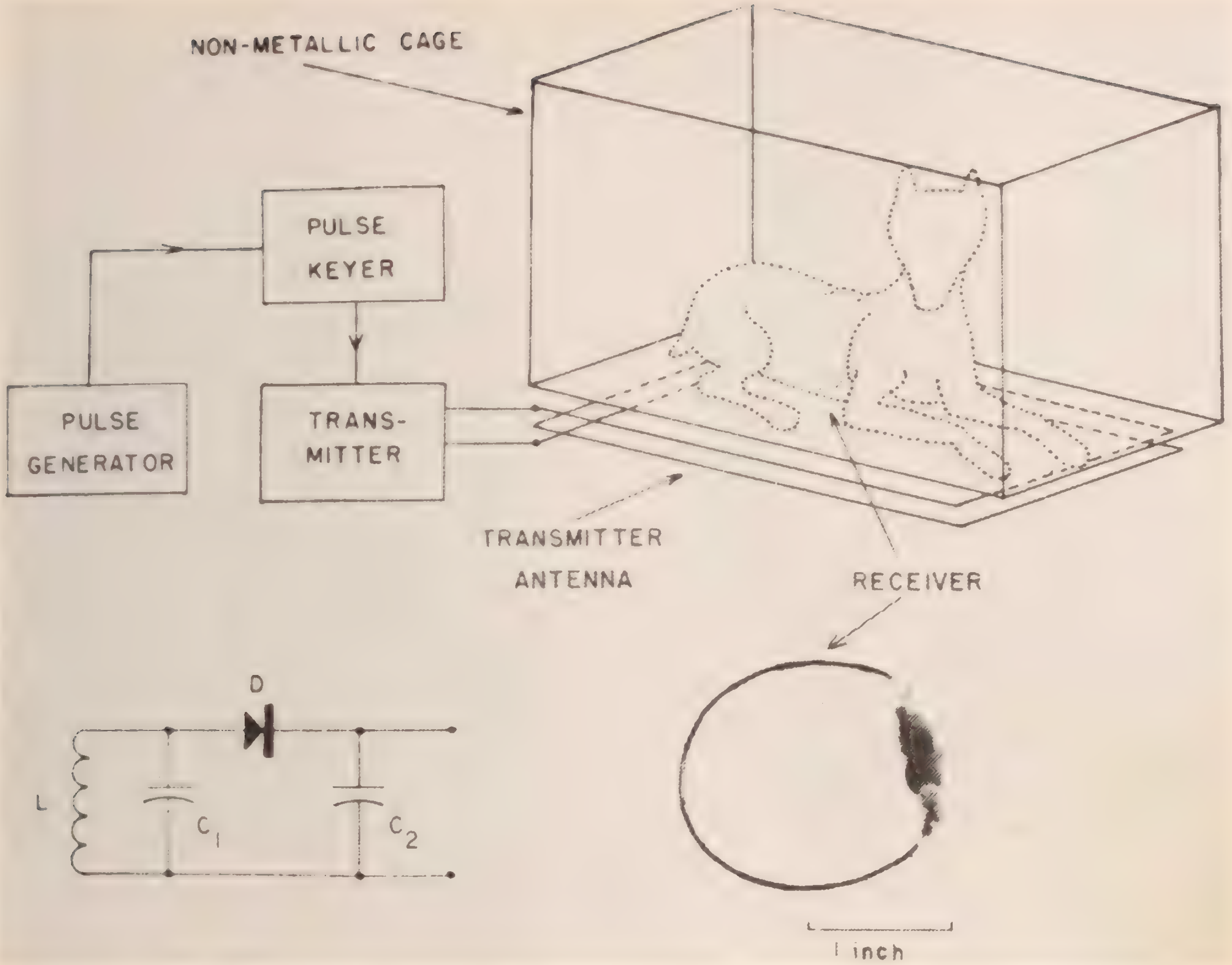

FIGURE 9. Cardiac stimulation by radiofrequency transmission. Enclosure of subject is reminiscent of technique used in last century of total body electrification by means of "solenoid cage."[108]

first used clinically by Hunter on April 4, 1959 (Figs. 12 and 13).

Hunter[120] graciously furnishes these reminiscences about this most meaningful contribution:

> I can still recall my introduction to pacemaking as a cardiac surgery resident in 1956 under Dr. C. Walton Lillehei (now at Cornell University Medical Center). I was assisting him as he repaired an interventricular septal defect in a 12-year-old boy. During the closing moments of the procedure we encountered a severe bradycardia of about 30 beats per minute. Dr. William Weirich was summoned and appeared shortly with a device that resembled a large table radio. Two stainless-steel, Teflon-coated wires connected to this device were immediately sutured to the right ventricle and subcutaneous tissue, respectively, by Dr. Lillehei. The patient's rate immediately jumped from 30 to 85 beats per minute. Dr. Weirich then demonstrated capture of the heart by slightly adjusting the stimulating rate above and below 85 beats per minute. This particular pacemaker was AC powered but, like our battery-powered instruments of today, delivered biphasic output-stimulating pulses.
>
> Pacemaking was continued until the patient's rate reverted to normal sinus rhythm. At that time the electrode wires were pulled out. During the time that we paced the patient, the heart always responded; however, because of the subcutaneous placement of one of the electrodes, the chest wall jumped each time a stimulus was delivered. Not until two years later, in 1958, were we able to alleviate the twitching of the chest wall. Mr. Norman Roth, then with Medtronic, Inc., suggested attaching both electrodes directly to the myocardium. He produced a relatively crude, bipolar stainless-steel electrode which we attached to the right ventricular wall of several dogs. The dogs would not tolerate the surgery; either the electrodes would become infected, or the dog managed to chew out the electrode.
>
> Having been unsuccessful in producing a long-term experiment by severing the bundle of His just above the tricuspid valve, we eventually decided to suture the electrodes to the right ventricular wall, with the bundle intact, and overdrive the intrinsic rate through increased rate and output-current amplitude. We felt that if we could overdrive the intrinsic rate in the normal dog heart, then, certainly, in the blocked heart of the dog the response should be similar in terms of milliamperage required. We

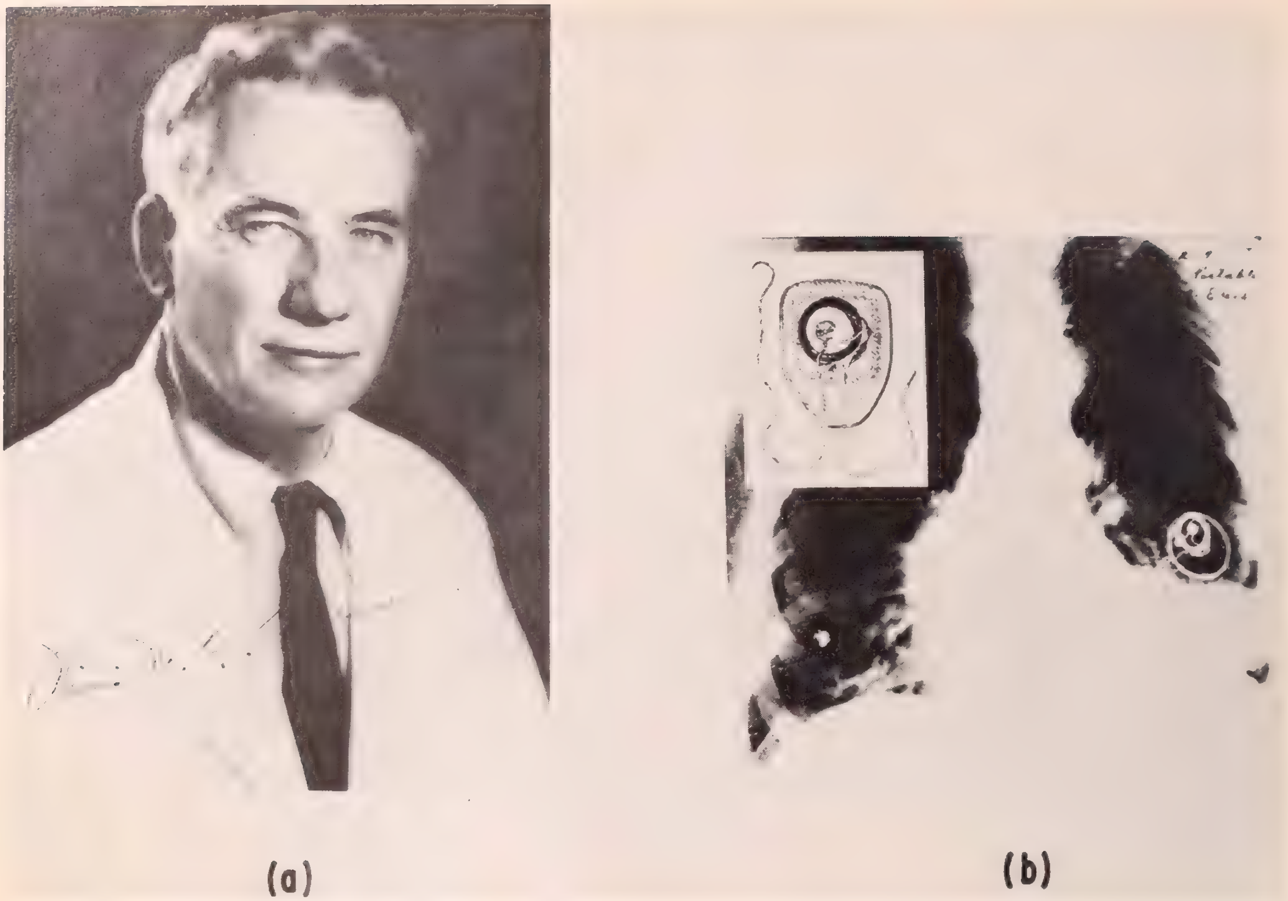

FIGURE 10. (a) William Glenn, M.D., who with Mauro, Longo, Lavietes, and Mackay, designed method for cardiac stimulation by radiofrequency transmission. (b) Roentgenogram of patient operated on January 29, 1959, showing resonant receiver in its subcutaneous location with electrodes to heart.[109]

were pleased to find that the dog heart would respond to as little as 1½ milliamperes.

In early 1959 we received a call from a neighboring hospital in St. Paul (Bethesda Hospital) regarding a 72-year-old patient. . . who was near death with total heart block. He had survived the previous 24 hours only through the concerted effort of three interns who had used external cardiac message, intracardiac injections of epinephrine, isoproterenol, and every other medical modality at their means. When we arrived, (the patient) was more dead than alive.

We accepted the case and elected to use the same bipolar Roth electrode which we had used for our dog experiments. The team consisted of the cardiac surgeon, the referring physician, two of the young interns, Mr. Roth, Sister Victorine Long, and Mr. Ed Berger, a technician. The surgery took place at Bethesda Hospital on April 4, 1959. We used general anesthesia and approached from the right thorax. We didn't challenge the use of the right thorax because we had used it repeatedly for the dogs. The operation lasted about five hours. I vividly remember that, initially the color of the heart was a cyanotic yellow which changed dramatically after the electrode was placed and pacing started. Mr. Roth set the patient's rate at 64 to 70 beats, with the output set somewhere between 14 and 15 milliamperes.

This high stimulation requirement bothered us, and we worried that perhaps we would need a greater amount of electrical energy than anticipated to drive these hearts. During the next several hours, however, the requirement dropped to 1 or 2 milliamperes. We are not quite sure why the requirement decreased; but, having studied the patient many times since, we consistently found that the stimulation requirement remained in the area of 1½ to 3 milliamperes.

The Roth electrode served this patient for almost seven years. During the last two years of his life he survived with a transvenous endocardial electrode in the right ventricle, but the same external pulse generator was used. The patient adamantly refused to accept the totally implanted system which we use today. In retrospect, this may have been fortuitous because there always remained a draining sinus from the fistula of the original electrode wires. The patient lived for nine years, totally dependent on the pacemaker system.

In April 1960, the one-year anniversary of the first bipolar pacemaker, Dr. Arthur Linenthal of Dr. Paul Zoll's heart team visited us in St. Paul. He brought his own ECG equipment and the patient agreed to come back to the hospital for a few days while Dr. Linenthal studied him and ran lengthy ECG studies, some of which he graciously sent to me at a later date.

In 1961, Dr. Linenthal returned again and repeated

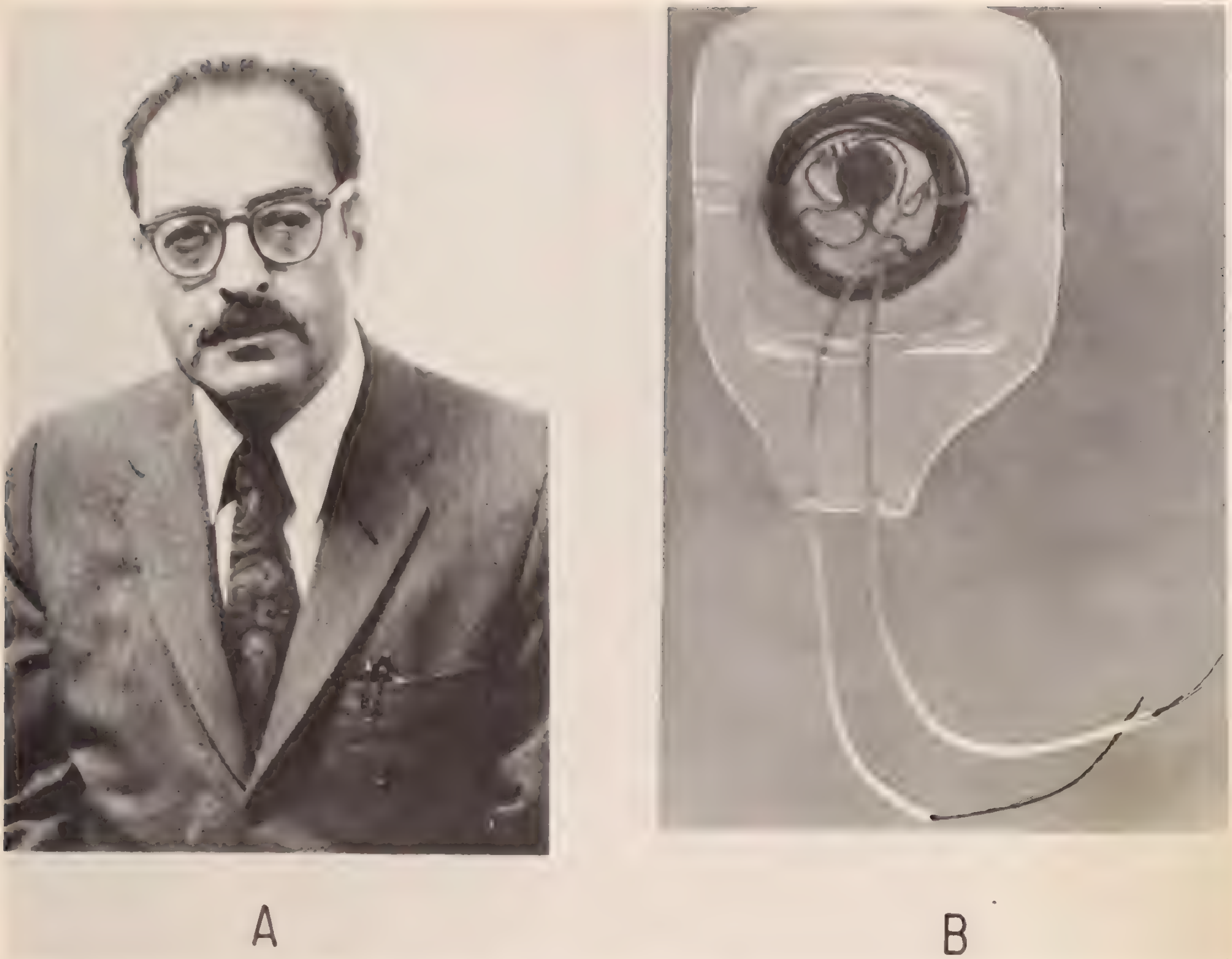

FIGURE 11. (a) Alexander Mauro, Ph.D., who devised practical radiofrequency receiver for stimulation of biologic tissue in 1948. (b) Apparatus shown is one fabricated by Mauro and used clinically by Glenn one decade later for cardiac pacing. (Courtesy of Dr. Mauro.)

the studies. Sometime during this interval Dr. Howard Frank in Boston commenced the same operative procedure which we had used.... The right thoracic approach was used for our second case, but as we were tying down the last suture on the electrode platform, the right ventricular myocardium literally exploded, and that patient died. This catastrophe dictated that we return to the laboratory. We repeated all of the studies, this time using the left ventricle for electrode placement. We found left ventricular stimulation to be as effective as right ventricular stimulation.

For the first three to six months of our patient's pacemaker life, we received weekly calls from Dr. William Chardack in Buffalo. He was most interested in the stimulation values that we were obtaining from our patient's pacemaker system. These values were given to Dr. Chardack who, at that time, as producing the now-famous Chardack-Greatbatch bipolar, totally implantable pacemaker system. When the Chardack-Greatbatch pacemaker system became available, we immediately switched to this new technique, and we have continued to use it, with great success.

After we had carried out several of the original Roth electrode implants, we were contacted by a surgeon, Dr. Bernard Gariepy of Royal Oak, Michigan, who suffered with total heart block. He asked if we would be willing to treat him. Keeping in mind that our medical colleagues are the ones most apt to have complications, we were somewhat reluctant. Since the doctor's need was urgent we conceded. He arrived by plane soon afterwards. During the flight from Detroit, his wife, an RN, had used intramuscular injections of isoproterenol every half hour to keep the doctor alive. The doctor was careful not to tell Northwest Airlines of the cardiac problem or he would have been banned from the flight. Nevertheless, the doctor and his wife did get to Minnesota, and we implanted a Hunter-Roth electrode the day he arrived.

Dr. Gariepy is alive to this day though he has had every complication peculiar to the pacemaker surgery (fractured electrodes; a fracture of the leads, themselves; pulse generator complications; infections of the sinus, requiring unroofing; and a second thoracotomy in which we placed the Chardack-Greatbatch system, only to be thwarted by the original smoldering infection). We eventually resorted to an endocardial transvenous system, but although Dr. Gari-

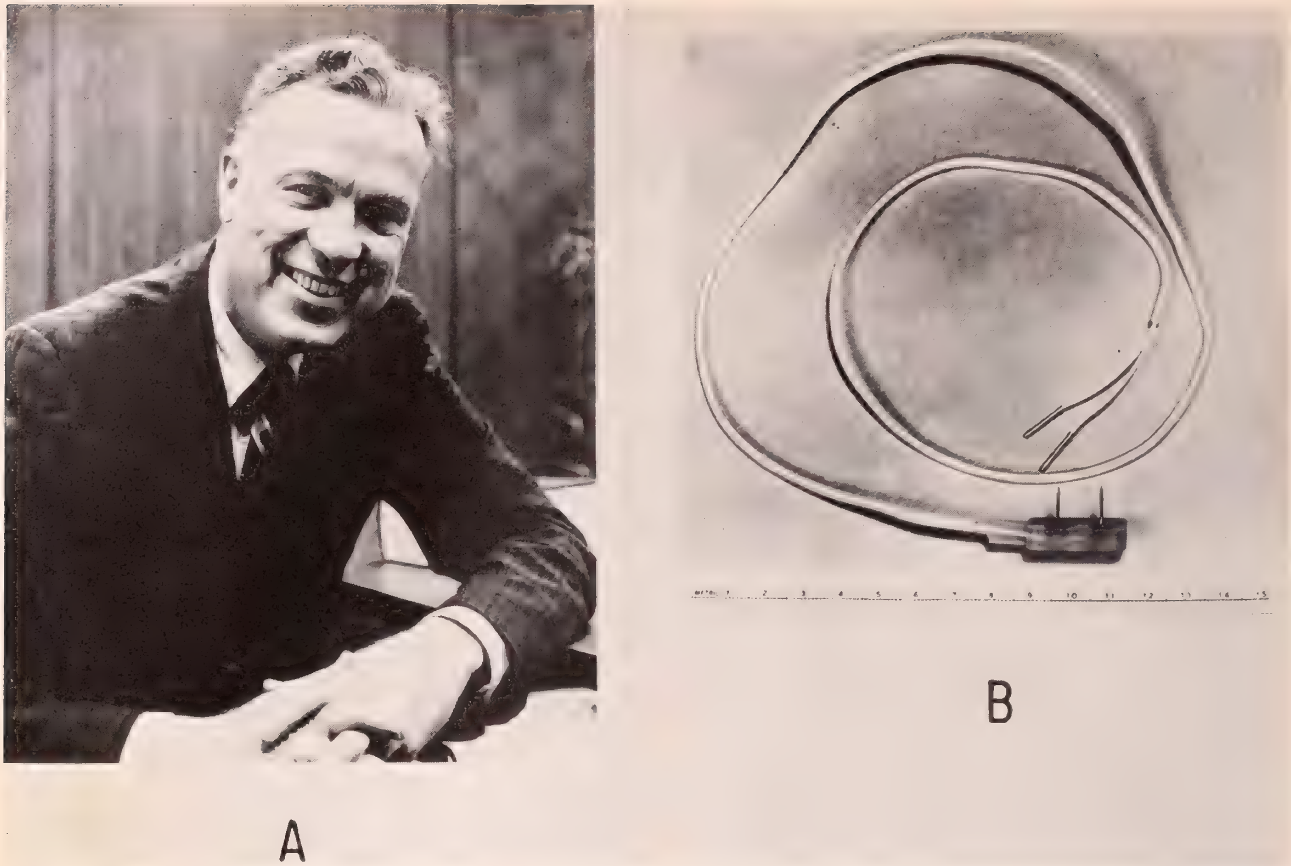

FIGURE 12. (A) Samuel Hunter, M.D., who with Roth, Bernardez, and Noble, made protracted epicardial stimulation possible by inventing bipolar electrode which eliminated need for dispersive electrode, and hence disagreeable chest jactitations caused by latter, and overcame drawback of polarization. (B) Early model of Hunter-Roth "platform" bipolar myocardial electrode. (Courtesy of Dr. Hunter.)

epy still has one or two chronic fistulas, he is up and about, working as a physician in a small town outside Detroit.

Since the initial transthoracic approach, we have adopted the transvenous endocardial approach after its description by the Montefiore group in New York. We have not accepted the edict that the transvenous technique is the only way to carry out this procedure. We felt that the transvenous technique should be used for specific indications such as intractable heart failure, azotemia, pulmonary complications, or for previous transthoracic failures. There is no question about the usefulness of the transvenous approach. Its obvious advantage is that thoracotomy is not necessary. Nevertheless, the transvenous technique has its own problems, viz., a 5 to 10 percent chance of penetration of the right ventricle and sudden dislodgment of the electrode.

Recently one of us (SWH) adopted the midline transmediastinal technique, which was described some time ago at a meeting of the American Thoracic Association in San Francisco. This technique has great potential. Capture of the heart can be obtained in a matter of minutes, and the entire procedure can be finished in 45 minutes. It is conceivable that local anesthesia could be used.

We do not feel that temporary transvenous electrodes are required for all patients undergoing permanent electrode implantation. We feel that pacemaker surgery has been refined to the extent that cardiac capture is usually possible within a few minutes. We also feel that the use of intravenous isoproterenol is a safe way of conducting the patient through the definitive procedure in the elective case. We do subscribe to the rule that any patient who is drastically ill, such as the person who has had a recent infarct or other complicating medical problems, should have the temporary pacemaker for several days until the implantable pacemaker which suits his particular cardiac problem can be determined. We also maintain that there are many patients in whom the fixed-rate pacemaker should not be implanted without several days of temporary, transvenous endocardial electrode pacing in order to determine whether or not this patient will need the permanent pacemaker. For example, we have had several patients who, after three or four weeks of fixed-rate pacing, have returned to normal sinus rhythm. We are then faced with the problem of removing the pacemaker because it causes premature ventricular contractions which distress the patient. Thus, our group frequently uses the demand pacemaker. To date, we have been satisfied with the function of the demand pacemaker, only one of which had to be replaced because of malfunction.

During the early operations, the operating room was filled with curious spectators, nurses, electronic engineers, house staff, and doctors on the medical staff. Today's operations require one hour or less; the personnel in the room include the same nursing

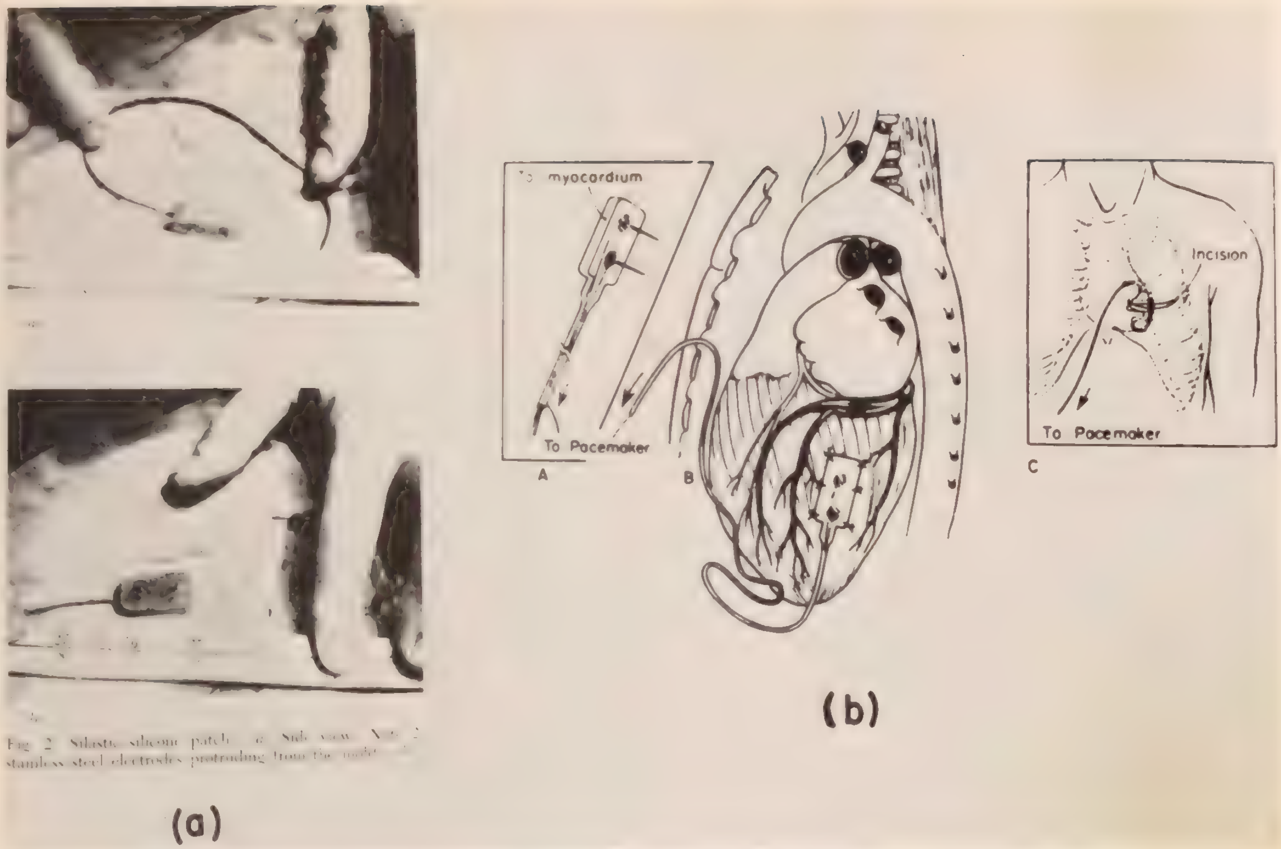

FIGURE 13 (a) Original "platform bipolar myocardial electrode." (b) Technique of insertion of electrode.[118]

staff as for any other thoracic surgical operation, the anesthesiologist, and two surgeons. Following the operation the patient is sent back to the coronary care unit for 24 hours of observation and is then sent to the hospital proper for recovery. The patient often leaves the hospital within three or four days of the pacemaker implant.

The advent of pacemaking is responsible for demonstrating the vast number of adults who suffer from heart block. Were it not for the pacemaker, these people would have gone unnoticed. When we contemplated the use of this gadgetry in the research laboratory, my colleagues and I felt that this would be a device useful for research, the control of heart rate, the study of cardiotonic drugs, and for use after cardiac surgery. It never occurred to us, in our wildest dreams, that there was a sizable population of treatable, total heart blocks or other cardiac arrhythmias amenable to pacemaker control.

The tremendous strides taken in the science of pacemaking make one wonder what the future holds for the physician. If other disciplines within medicine can advance as far and as quickly as pacemaking, then one can rest assured that the physician is well on his way toward the effective and permanent restoration of health. I am pleased and gratified to have played a role in the development of pacemaking as we know it today. It has been a rewarding experience.

Era of fixed-rate pacemakers

Meanwhile, also in 1959, Greatbach and Chardack[121] described an implantable battery-driven pacemaker generator combined with electrodes modeled after the Hunter-Roth type. Its clinical use by them and Gage was straightaway crowned with success (Figs. 14 and 15).[122-126]

The pacemaker, including batteries, measures 6 cm. in diameter and 1.5 cm. in thickness. The circuit, transistorized, contains only 8 components. It is a blocking oscillator, generating a very low-power pulse which in turn triggers a second transistor. The latter acts as a switch, draining a capacitor charged from the power supply. The capacitor then delivers a 1 msec. pulse to the electrodes. The wave shape of the pulse is biphasic, with a positive and a negative peak. The peaks of opposing polarity are not symmetrical, but the areas under both curves are of equal size. Thus, there is no net transfer of electrons from the electrode into the tissue and this may be of importance in the prevention of injury to the tissues from long-continued stimulation.

The unit delivers 8 v., but up to 15 v. could be obtained without an undue increase in dimensions. The mercury cell batteries, are rated at a minimum of 450 Ma. hours and have a shelf life of 10 years. Since the current drain of the unit is only 11 μa, 5 years is a conservative estimate of its period of usability. Exhaustion of the battery supply is signaled by a slow rise in the pulse rate taking place over a period of weeks so that ample warning is given. The pulse rate is fixed once the unit has been assembled

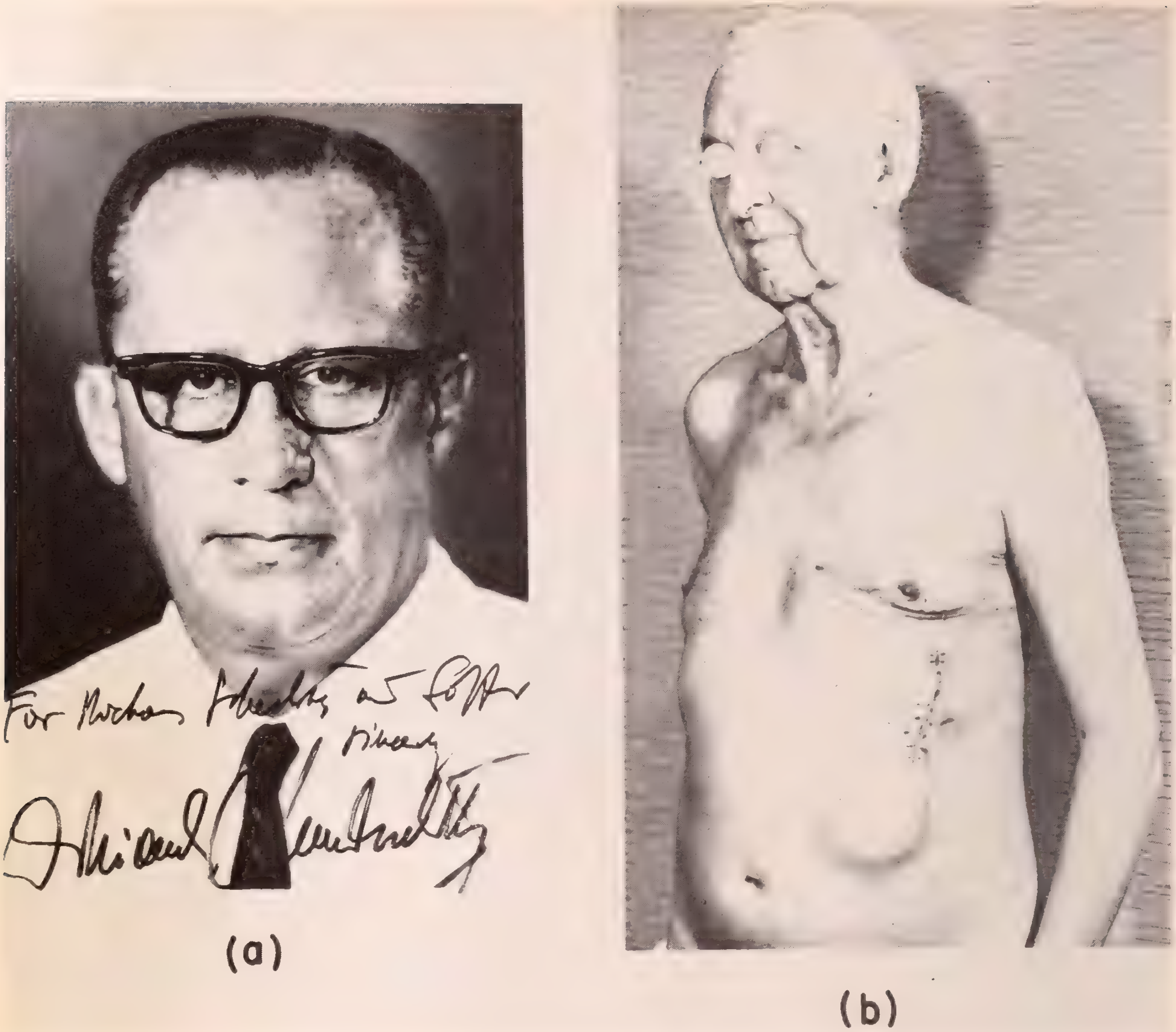

FIGURE 14. (a) William Chardack, M.D., who with Greatbach constructed battery-powered implantable pacemaker that did not require charging from outside. (b) First patient in whom Chardack, Gage, and Greatbach imbedded unit. Incisions point to operative approach. (Courtesy of Dr. Chardack.)

and it is set for each device by selection of an appropriate value for the 3.9 megohm resistor.

The entire assembly, including the batteries, is potted in epoxy resin in order to eliminate motion between components and breakage of wires and solder points, as well as shorting in the circuit due to seepage of body fluids. The unit is then encapsulated in a second thin shell of Dow-Corning silicone rubber. . . .

The active and indifferent electrodes are 2 stainless steel prongs, 0.5 cm. in length, emerging from the surface of a small, flat silicone rubber patch. The patch is placed on the right ventricular surface and the 2 prongs, 1 cm. distant from each other, penetrate the myocardium. . . .

A clinical trial of the method in selected cases of chronic and symptomatic atrioventricular block appears justified and might best be carried out in 2 stages.

During the first stage, a bipolar patch is placed onto the right ventricular myocardium. An approach through the bed of the fifth costal cartilage is adequate for this. The electrode wires are brought out through the chest wall and the heartbeat is paced with an external device, the rate and amplitude of which can be controlled. Thresholds are then determined at intervals and a period of observation of from 4 to 6 weeks should be sufficient to ascertain their stability. At the second stage, an implantable pacemaker, the power of which exceeds the minimum requirements by a wide margin, is substituted. This is accomplished by soldering the 2 electrode wires to the terminals of the implantable device and by covering the area of this junction with silicone rubber. This compound sets within minutes, cures at room temperature, and provides a firm bond between the silicone rubber capsule of the pacemaker and the silicone sleeve surrounding the 2 Teflon wires. The entire assembly is then sterilized on the outside of the body. A variety of skin antiseptics have been found to be suitable for this purpose. Implantation into a subcutaneous pocket can then be

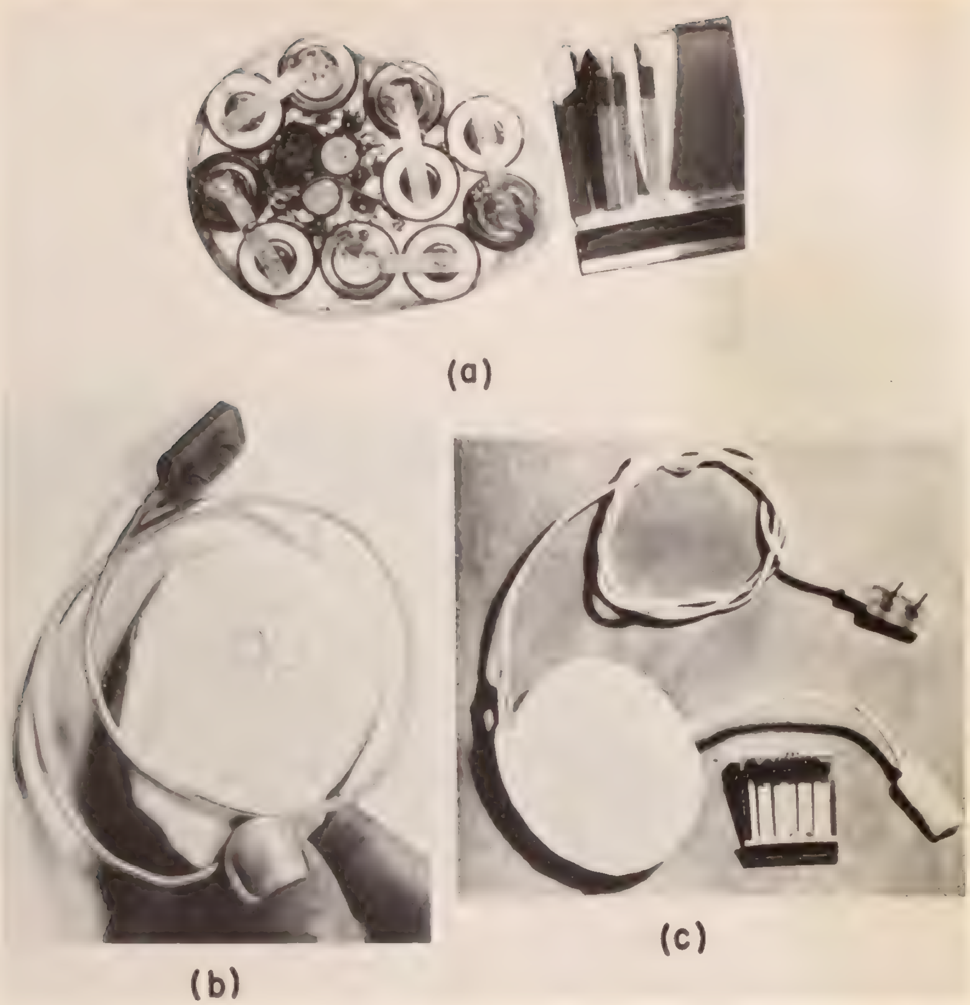

FIGURE 15. (a) Circuitry of original 10-cell Greatbach-Chardack generator. (b) Pacemaker insulated in silicone rubber capsule, with attached Hunter-Roth platform electrode. (c) Model with "subcutaneous safety extension" to assist in differentiating between electrode and battery malfunction. (Courtesy of Dr. Chardack.)

> carried out with local anesthesia.
>
> If, after several years, exhaustion of the batteries is heralded by a slow rise in the pulse rate, the pacemaker can be replaced in the subcutaneous location without disruption of the myocardial electrode. . . .
>
> An objection may be raised to the fixed rate of the implanted pacemaker and, on purely theoretical grounds, it may appear to be preferable to have a device in which the rate is controlled by the auricular pacemaker. . . . However, this would require fairly elaborate monitoring and control mechanisms to prevent the artificial pacemaker from following the auricular rhythm if it ever became abnormal. The deleterious effects of various arrhythmias upon coronary hemodynamics are well known. Also, since clinical evidence suggests that subnormal rates are quite well tolerated provided they do not fall to levels at which an adequate diastolic pressure cannot be maintained, it seems that the simplicity of an implantable device with a fixed pace outweighs the theoretical disadvantages resulting from the loss of adjustability of the rate.

Regarding the first case, Chardack[127] writes,

> Patient . . . was operated upon on April 18, 1960. He was then 77 years of age and had been in complete heart block for a number of years. Because of Stokes-Adams attacks, he had sustained many falls, one of which caused a skull fracture. He is the first patient to receive a completely implanted and self-contained pacemaker. His course was uneventful, and he lived for several years.

Revisions of this pacemaker followed in rapid succession.[128] They culminated in sophisticated models that were insertable at a single sitting, were rate- and/or amplitude-adjustable, were equipped with a novel, exteriorizable resistor appendage allowing for differentiation between battery and electrode flaws, and featured for conducting element a helical platinum-alloy coil in a flexible plastic envelope. These instruments were destined to enjoy abiding and deserved popularity everywhere, since they offset the inconveniences of other units. However, the duration of battery life fell far short of what Chardack had confidently predicted.

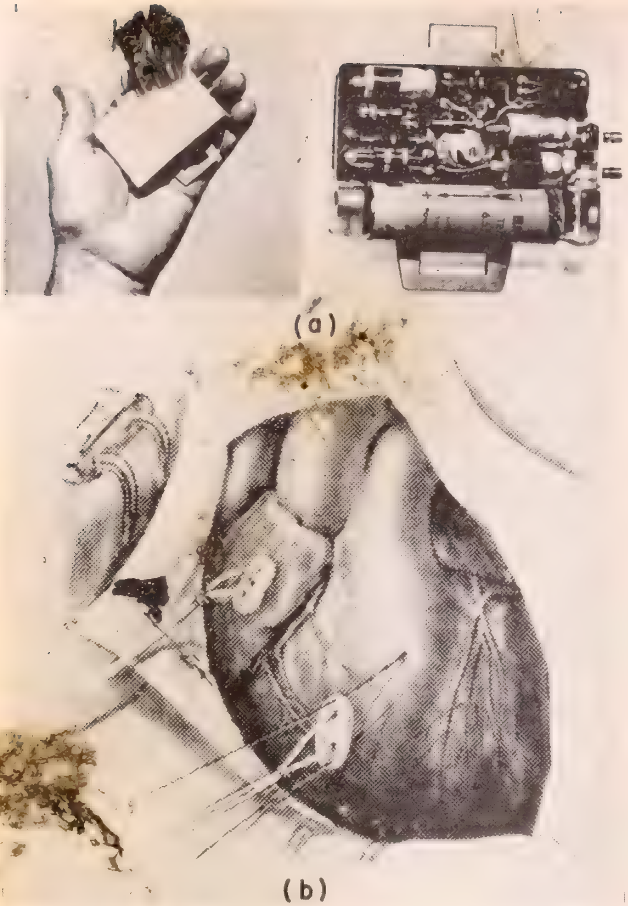

FIGURE 16. (a) Atrial-triggered transistor-amplifier. Worn in holster, it allowed for short-term pacing in dogs with complete heart block. (b) Appearance of electrodes and technique of attachment.[154]

With the development of other self-contained apparatus by Kantrowitz *et al.*[129,130] and Zoll's group,[131-134] the quest for implantable pacemakers of greater versatility surged onward.

Gott, Sellers, and Lillehei[54] improvised a button-shaped bipolar electrode: one prong was for epicardial fixation and the other for intracameral contact. This last feature, involving the unattractive requirement of cardiotomy for proper placement, dissuaded most clinicians from using that particular electrode.

In 1960 Abrams, Hudson, and Lightwood[135] successfully inserted inductive coupled units in 3 patients. They favored this version because "pacemaking is optional, and . . . the rate and intensity of the electrical pulse is controllable." This view was echoed by other proponents of devices rechargeable from the outisde.[136-138] It was made even more appealing by the invention of receiving micromodule chips which could be sutured to the epicardium, thereby doing away altogether with wire electrodes.[139-147]

In March, 1961, Abelson *et al.*[148] treated a very ill patient with Morgagni-Adams-Stokes disease by interim external pacing with an endocardial electrode prior to insertion of a permanent myocardial unit. The great value of this dual approach, soon corroborated by others, has made of it a standard feature of cardiologic practice.[83,84,88,149,150]

Pacing "on demand"

During this decade of intensive investigation on electrostimulation of the heart by artificial means, there was always the nagging thought that the ideal system for pacing should consist of some controlled form of self-excitation by the heart. The most logical approach appeared to be that of sidestepping the His bundle by electronically capturing the P-wave and cuing ventricular systole to it. This alluring prospect had already been shown to be feasible by Butterworth and Poindexter[151,152] in 1942, and by Hellerstein, Shaw, and Liebow in 1950.[153] However, the subject was not reexplored until several years later.

In 1957 Folkman, Watkins, and Vanderschmidt[154-156] designed a transistor pacemaker powered by batteries which lasted about one month (Fig. 16). It weighed less than 2 ounces and amplified the atrial impulse forty-five fold. The apparatus was shown to be effective in dogs with chronic heart block, but its application in clinical situations was not reported. Shortly after, both a table model and portable "physiologic P-wave cardiac stimulator" were fabricated by Stephenson *et al.*[157-162] These devices were suitable for stimulation for only a few days (Fig. 17). Stephenson[163] recalls some of the frustrations that the group faced:

> Through a U. S. Public Health Service grant we were utilizing a national electronics company to build an implantable P-wave pacemaker. At the same time, the engineer from Cordis Corporation spent a couple of weeks with Mr. L. H. Montgomery, who developed the electronics of the unit, and returned to Miami. Though we had an implantable model (you have a photograph of the rough copy) before a case, we found much to our chagrin that the battery life was exactly two weeks under full function. Accordingly, back to the drawing board; and before a suitable implantable model was developed, Cordis Corporation had come out with the P-wave or synchronous pacer, the Atricor. Implantation was then begun, and we found nothing wrong with the unit that would be improved on by individual development.

Of the various other proposals for atrial-synchronized ventricular stimulators,[82,164-169] the device used by Battye and Weale[82] is of especial interest. It was a shielded twin electrode catheter, with one pick-up electrode in the atrium and the transmitting tip in the ventricle. It looks, from a structural standpoint, like a sophisticated replica of the endocardial electrical sound used in 1905 by

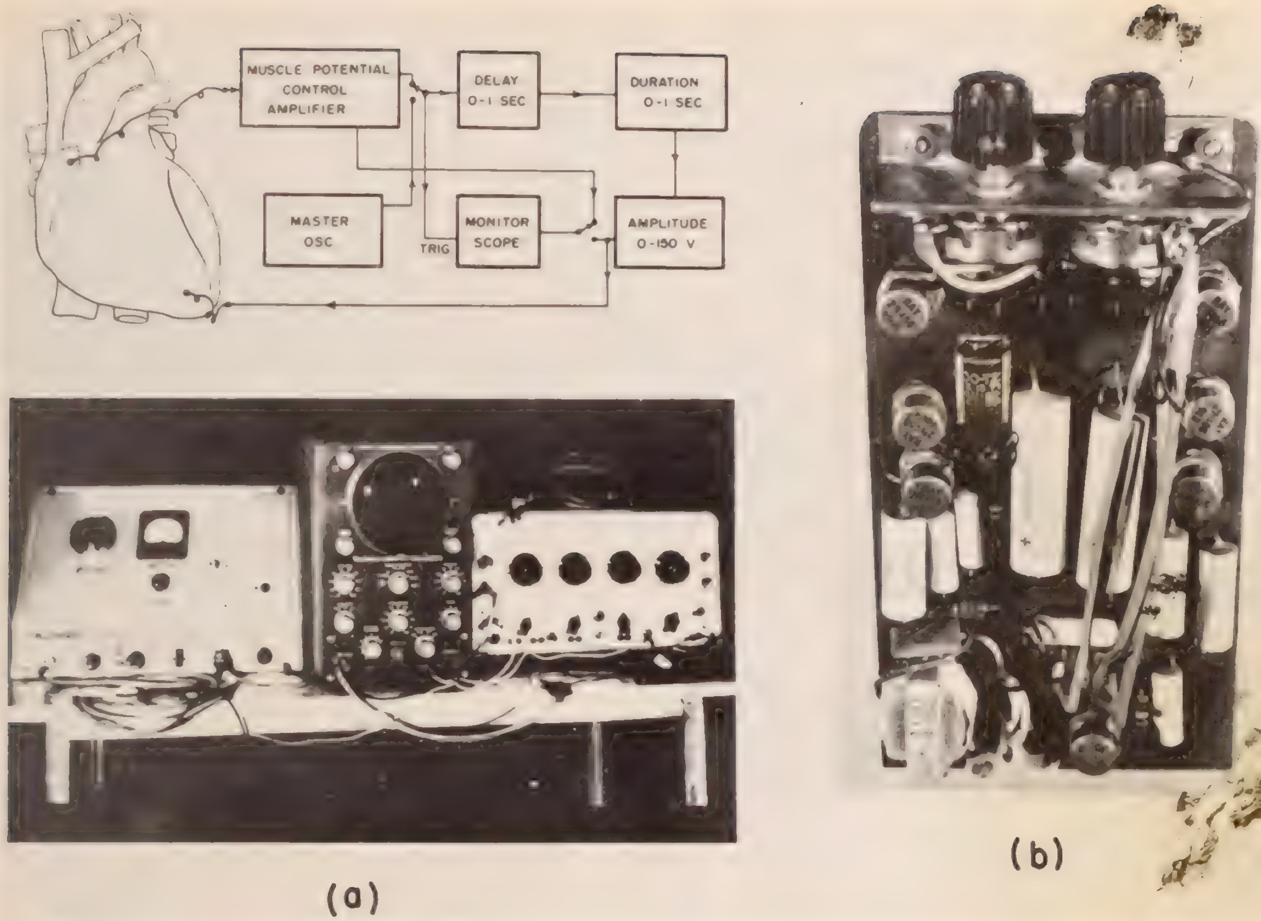

FIGURE 17. (a) Table model of "physiologic P-wave cardiac stimulator. (b) Circuitry of miniaturized version intended for clinical application was found to possess function for barely two weeks. (Courtesy of Dr. Stephenson.)

Floresco[170,171] and is very similar to the "two-point focal electrode catheter" of Callaghan, Bigelow, and Hopps.[89,91]

A totally implantable atrial-triggered cardiac pacer was described in 1962 by Keller, Nathan, and Center[172] and used clinically in July of that year.[173-177]

In an experimental variant of this family of pacers the P-wave signal is captured from the ventricular endocardium, so that the atrial electrode becomes superfluous.[178,179]

In yet another class of cardiac pacemakers self-activated by the heart, any spontaneous activity of the ventricle is automatically detected but no stimulus is delivered until a preset pause has elapsed. They are known as "demand," "standby," "ventricular-inhibited," "R-stop," or "ventricular-triggered" pacers.

Mention has been made earlier of the "square-wave pulser" used in 1953 by Dammann, Darsie, Muller, Smith, Whalen, and Nolan. In 1955 Ead and Graham[180] engineered a QRS-triggered stimulator for producing extrasystoles experimentally:

> An electronic rectangular wave stimulator has been constructed to allow the delivery of QRS-triggered stimuli. The electrocardiogram of one of the standard leads is amplified and the QRS complex is relayed to a trigger circuit. The output of the trigger circuit is applied to a variable delay circuit, the output of which can be delayed for a preset period of 30–3000 msec. This delayed trigger pulse is then fed into a circuit which produces positive going pulses of 1, 2, 5, 10 or 20 msec. duration. These are applied to a cathode follower constant voltage output circuit. This delivers the output pulse which has an amplitude variable between 0–100 V. A switch is provided for the delivery of singly or successively triggered stimuli.
>
> The circuit (of which a detailed diagram will be shown) has been arranged for use in a variety of experimental conditions (e.g., testing of cardiovascular functions in various arrhythmias; measurement of ventricular thresholds; determination of "vulnerable period" in the onset of ventricular fibrillation). The apparatus will be demonstrated in its use for determining ventricular fibrillation thresholds at varying temperatures.

In 1956 Leathem, Cook, and Davies[32] published an account of demand pacing with an external stimulator. Several others have followed suit, and ventricular demand pacing is now an established practice, applied for both temporary and

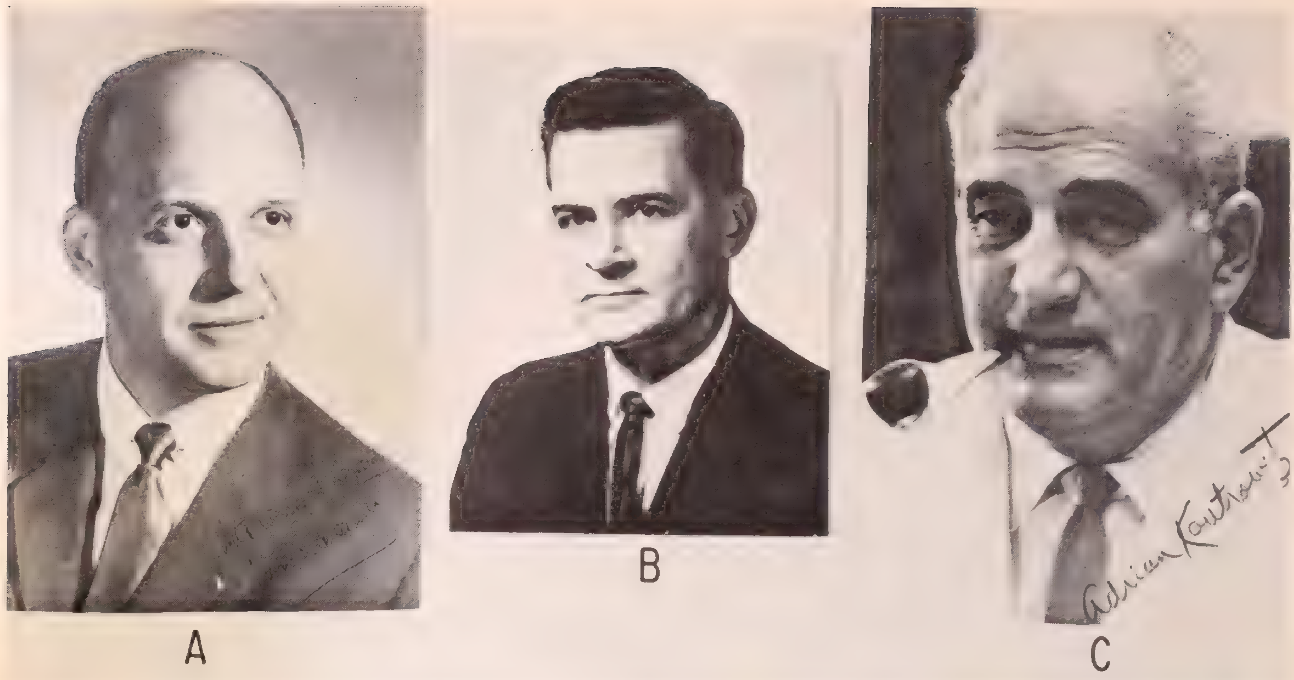

FIGURE 18. (A) Victor Parsonnet, M.D., and associates developed reliable bipolar catheter which eliminated need for dispersive electrode on surface of body, greatly advancing method of endocavitary cardiac stimulation and also forefront in organizing pacemaker clinics ensuring conscientious follow-up and detecting impending instrument malfunction. (B) Sam Stephenson, M.D., and colleagues did fundamental research on atrial-synchronized ventricular stimulation. (C) Adrian Kantrowitz, M.D., pioneer in application of electronics to wide variety of cardiovascular problems, designed dependable pacemaker units intended for long-term stimulation.

permanent systems.[181–192] A recent refinement of the principle is "bifocal" or sequential atrioventricular demand pacing, ideally geared for coexisting sinoatrial and atrioventricular block, but adaptable as well when only the latter is present, for deriving the benefit of an enhanced ventricular filling from stronger atrial contraction.[193–197]

Other categories of pacemakers

The last category of pacers self-actuated by the heart are fueled by biologic energy. The deformation of piezoelectric ceramics attached to the myocardium, pericardium, aortic wall, or diaphragm is converted into a current which then impels the heart. Alternately, the electrical output is from body fluids. None of the experimental models has yet reached the stage of clinical practicability.[198–209] The electromotive force of most biogalvanic cells is too low to power cardiac pacemakers reliably, making necessary the use of transformers. However, this difficulty may be on the verge of being resolved. Satinsky[210] and John Cassel, M.D., have lately obtained potentials greater than 1.3 volts (ordinarily quite adequate for cardiac stimulation) with a battery pack composed of platinum oxygen depolarization cathodes and magnesium anodes.

As with all therapeutic modalities, cardiac pacemaking has occasionally entrained inadvertent complications, some of them calamitous. Nevertheless, these are vastly outweighed by the rich harvest of benefits reaped from pacing. Indeed, a random sampling from the gargantuan literature on the subject, dealing with heterogeneous methods and apparatus, reflects how gratifying this medical tool has been. The principal disaffection has to do with instruments which eventually wear out electrically, a perverse tendency manifest in mechanical objects that are used continuously for a few years. The ultimate aspiration is for an artificial pacemaker which will have the property of outliving the patient without the necessity for frequent replacement of its generator (Fig. 18).

Nuclear-powered pacemaker prototypes are being investigated here and in Europe.[211–216] Radioactive plutonium (Pu^{238}) is the isotope favored universally for that purpose because it is nonfissionable, has a long half-life, and the high-energy but slow-helium particle which it emits has very low penetrating capacity, so that heavy insulation is not required. Heat from the decaying radioisotope is channeled into a converter and transformed to electrical energy, which is then fed into transistors that release it as impulses to the heart. The nuclear thermopile is contained in an evacuated, hermetically sealed, triple-alloy case joined to an epicardial-type unipolar electrode catheter. Units are expected to function for ten years.

On May 26, 1969, a fixed rate nuclear-powered pacer was installed by Sidney Levitsky, of the National Institutes of Health, in the chest of a foxhound bitch named Brunhilde. Nine days later, at the Veterinary School on the outskirts of Paris, Paul Laurens placed a demand-type nuclear pacemaker in a deerhound named Popeye. The following April, at the Broussais Hospital, Armand Piwnica and Laurens inserted a similar device in a fifty-eight-year-old woman suffering from Morgagni-Adams-Stokes syndrome. The Bethesda experience, amounting thus far to about one dozen animals, has encountered failure in one-half the attempts. Unfortunately, then, the millennium of absolutely foolproof artificial cardiac pacemakers has yet to be sighted.

Addendum

As of this month, nuclear-driven pacemakers have been placed in 4 patients, all in Paris, without ill-effects reported. Each costs approximately $4,000. The French Ministry of Public Health has authorized the clinical application of those devices, but in the United States their medical use is restricted by the Atomic Energy Act of 1954 and has not yet been cleared by the Atomic Energy Commission.

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MEDICAL EDUCATION

A forward look

CALVIN H. PLIMPTON, M.D.
Brooklyn, New York

President, Downstate Medical Center

Like a mountain climber setting out to find the peak while calling over his shoulder, "you come too," Calvin H. Plimpton, M.D., outlined some of the goals of his administration in a convocation of students and faculty at Downstate Medical Center, Brooklyn.

The man who was scheduled to take over the presidency of the nation's third largest medical school on September 1 but got so eager that he arrived on August 1 imparted some of his enthusiasm in his convocation speech.

Dr. Plimpton said he was so convinced that Downstate Medical Center was a great opportunity that when he was interviewed for the presidency, "I didn't want to hear about the problems; I wanted to meet them." Accordingly, he had decided to forgo the pomp of the traditional inaugural ceremony. "I didn't think you and I could afford a honeymoon," he told his audience. "We have to start moving immediately."

Noting that Downstate Medical Center was one of the most obvious objects on the horizon of Brooklyn, Dr. Plimpton said that the Medical Center had "the foundations for greatness that would knock the pants off any other group" and should not waste time with self-deprecation. He expressed shock at the attitude of some who had asked him if he "minded" having to come to Brooklyn.

In fact, he was dissatisfied with the euphony of the name "Downstate" Medical Center. "I do think we should give our attention to finding a real name for ourselves. I would be much happier with a name which symbolized Brooklyn and could live with pride under the name Flatbush." Asserting that to achieve, one must have a vision or goal to work for, Dr. Plimpton said he hoped that the vision he was seeing would become "ours" and not just "mine."

> My own vision is that we can be a symbol of hope—an enlightened symbol of enlightened hope—we can become a vehicle for caring—changing a dream into a reality—moving what is done in the University Center into the streets—improving statistics and changing favorable statistics into individual application.

However, a vision of hope and caring was not enough.

> You don't climb a mountain by looking at the peak. You climb by taking little steps—sometimes in moments of great fatigue you have to concentrate on those little steps—counting up to 100—and then over and over again.
>
> The little steps are everywhere around us—begging to be taken. Every time we can recognize the dignity and appreciate the intrinsic worth of a fellow human we have encouraged his humanity and enlarged our own. And it is the combination of those little steps and the larger vision which will bring us on our way.

A major problem of the Medical Center is in its educating efforts.

> It has been said that people go on in education because they care about learning. Here we have a chance to help them learn about caring: caring for people as physicians, as nurses, and in all the health-related professions. We have a chance to encourage them to learn to care about science, about investigation, about research in science, and most importantly, research in health care delivery.

The new president said that he foresaw abbreviated programs of three years instead of four in medical school, but also the opposite possibility of longer programs encompassing five or six years for those with special interest and those who need a little longer.

Student participation

With reference to the desire of students to participate in decisions affecting their education, Dr. Plimpton said he recognized a need in himself

> to be compelled to do things or I wouldn't do them. How much to require will always be a difficult balanced decision. We all feel the problem of what is the minimum our graduates must know and how we can stimulate them to learn the maximum.
>
> The degree of participation by students, by faculty, by administration, by parents, alumni, and community will also be hard to determine and will surely vary from time to time. At the moment the level of distrust among these segments is running high, and there is so much participation that in some institu-

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Presented at the convocation of students and faculty at Downstate Medical Center, Brooklyn, New York, September, 1971.

tions little teaching, patient care, or research is being done. Life becomes nothing but committees. I hope we can rebuild a spirit of trust—recreate a climate of confidence so that professors can profess; administrators, administer; students, study; and patients get well.

Dr. Plimpton added that this would depend on complete candor, and he hoped to find a degree of participation by one and all in the procedures and decisions of the Medical Center without wasting everyone's time.

Problems

Last, he listed some concrete, practical problems at the Medical Center which would require attention.

State University Hospital. Our hospital should be a model of how a hospital should be run. It is really, however, not a hospital since it largely closes down on weekends. We will have to find ways to keep it open.

Staffing. In the month of August we were unable to process 337 new patients in our outpatient department because of a shortage of personnel. On September 1, it was resolved by the operating room committee that only emergency cases would be treated. Clearly there is a crisis here.

Salaries. Our residents at State University Hospital, working alongside those at Kings County Hospital Center, are paid less. Our starting nurses' salaries are still $200 behind Kings County Hospital levels and were it not for the freeze would be $1,500 behind some other Brooklyn hospitals.

Patient load. Our 350-bed capacity is neither academically nor economically sound. A capacity of 450 to 500 is what I would hope to have and believe could justify economically.

Space. We need more square feet for so many things. As an example, I will simply mention the needs of the library. We are meant to be, thanks to the Brooklyn Academy of Medicine, one of the largest medical libraries in the United States. But 50,000 of our volumes are still in packing cases in the basement. That just will not do.

Kings County Hospital Center, Downstate's teaching affiliate. It is of great concern to us that the hospital in New York City which carries 18 per cent of the patient load for the Health and Hospitals Corporation should have its share in the budget reduced from 10.5 to 9.7 per cent.

Professional community. I get the impression that not enough of the local physicians look on Downstate as a great reserve—a place to which they can send their most difficult cases. I also fear that we have not made the most of our valuable relationships with the affiliated hospitals.

Residential community. One of our professors, and only one, rather startled me by saying we should have a lot more security people and should become an enclave if we wanted to attract staff. I disagree and think rather than shut ourselves off we need to open ourselves up to the community. We ought to go out; in the little that I have gone out, I have been very heartened by the attitude of the people in "Bed-Stuy." They don't seem to want to be given things. They seem to me to want to be treated like adults—and hence to share and participate in decisions.

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HEALTH-HOSPITAL APPROACH TO DRUG ABUSE

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Ten years ago, Robert H. Felix, M.D., then director of the National Institute of Mental Health, noted that drug addiction is:

> A chronic disease... both from the medical and communities standpoint.[1]
>
> As a chronic disease, it had to "wait upon events," so to speak, before it could begin to receive the attention it is now receiving and will receive in increasing volume in the coming years. By this, I mean it had to wait until the concept of controlling any chronic disease in the community was firmly established....
>
> Now, I am convinced, its time has come.

The occasion for those observations was the White House Conference on Narcotics and Drug Abuse.[1] In opening the conference, President John F. Kennedy charged:

> You who represent our most skilled and experienced authorities in this field can suggest new solutions to old problems, and let strong light dispel the appearances of controversy that surrounded these problems. Let us proceed with this important task....

Thirteen months later the final report was delivered to President Kennedy, only days before his death.[2]

Today the "script" would not have to be changed much—but the statistics might have to be tripled. President Richard M. Nixon in his Proclamation of Drug Abuse Prevention Week, 1970, noted: "The past decade has seen the abuse of drugs grow from essentially a local police problem into a serious threat to the health and safety of millions of Americans."[3]

Drug abuse and addiction represents the most epidemic of all health problems in this country. Statistics, although only an approximation, suggest more than 50 per cent of youths have experimented with drugs (approximately 100 million persons in the United States are below age twenty-one). Perhaps only 20 per cent abuse them. But in New York City drug abuse remains the single largest cause of death of those between the ages of fifteen and thirty-five.[4] The problem is not restricted to youths. Industry recognizes its increasing use among adult employes, up to and including the executive level. The military, perhaps, feels the effect of the epidemic most acutely. Significantly, drug abuse is not limited to illicit drugs but, perhaps more importantly, includes the abuse of legitimate drugs, most often legally obtained.

Across the nation, in response to this burgeoning problem, there are now collective guidelines of experience against which plans and programs at Federal, state, and city levels can be measured and directed. At each instance, where there is clarity of purpose and evidence of progress, the health profession is emerging in the leadership role.

Representative approaches

Therapeutic communities and residential centers have proliferated throughout the United States. Emphasis has been placed on communal organization with the ex-addict serving as the successful role model. Professional personnel have been adjunctive to these programs. Residential experiences usually range from eighteen to twenty-four months.

Authoritarian programs have been employed particularly when dealing with probationary and parole situations and when responding to court pressures. These programs have taken many forms, including residential centers. Such efforts have attempted to instill self-motivation in the addict whose entry into the program was initially based on legal factors.

Half-way houses, frequently adjuncts to residential programs, have served as an intermediary facility allowing the rehabilitated addict to assume increasing positions of responsibility within the community.

Rehabilitative efforts of day centers have been primarily directed to the somewhat lesser involved drug abuser by providing a structured environment during the day, yet allowing the person to continue to function on a limited basis in his family and community structure.

Storefront programs have been developed primarily as frontline facilities making programs readily accessible to the youths of a given community. Individual programs have evolved in response to local drug patterns. Ex-addicts frequently function as executive directors, often using formats learned in their own residential experience. Professional participation has been extremely variable.

Religious groups have used the approach that addiction represents a human failing and a lack of spiritual involvement. Consequently, therapeutic endeavors are based on the development of an intensive religious commitment.

"Hotlines" and crisis-intervention centers have increased at a rapid rate in an effort to deal with youths' "crisis situations" frequently, but not necessarily, drug related.

Educational efforts have been extensive and varied, all recognizing the interrelationship between education and prevention. Frequently, these efforts have unwittingly isolated the subject of drug abuse from related subject material. Efforts in this area have included special training programs for teachers and the development of new curricula.

Educational film producers have created a variety of films emphasizing various aspects of drug abuse. These have supplemented school programs and in many cases have been the sum total of efforts made by some schools.

Independent profit-making organizations, frequently staffed by professionals, have been formed for the purpose of providing counseling and educational services to school districts.

Law-enforcement programs, in great measure, have been attempts to humanize the image of law-enforcement personnel in their relationship with youths. Their positions have been subject to tremendous flux, reflecting legislative pressures and interpretation of law.

Pharmaceutical firms have made available information regarding drugs and drug abuse. Their programs have been directed toward youths, physicians, law-enforcement agencies, and educators.

Public relations approaches have increasingly utilized the media in attempts to discourage drug abuse.

Civic and fraternal organizations have responded to this epidemic with a variety of programs geared primarily toward dissemination of information.

A number of approaches have been initiated by the medical profession. Most notable among these have been the methadone maintenance programs, the establishment of free clinics, and the development of hospital-based or medical society-sponsored programs as exemplified by Maricopa Medical Society, Phoenix, Arizona.

Methadone programs. Methadone maintenance based on the work of Vincent P. Dole, M.D., and Marie E. Nyswander, M.D., has become a widely accepted method for treating heroin addicts by substituting a synthetic narcotic which is orally effective, nontoxic, and for which stabilizing doses can easily be achieved. Efforts can then be made toward rehabilitating the addict into a law-abiding, productive member of society. Methadone maintenance programs have been directed primarily toward hardcore narcotic addicts who have been addicted for many years and who have not responded to other treatment approaches.

The use of narcotic antagonists, such as naloxone and cyclazocine, has increased. Unlike methadone they do not satisfy "narcotic hunger," but like methadone they provide a blockade against the effects of heroin.

Free clinics. Free clinics have increasingly appeared, particularly in certain areas of the country, in response to the needs of persons who have shunned more traditional help because of economic and social factors. Many of these clinics have had close relationships with hospitals, and others have been primarily the result of individual enterprise.

Hospital-based. Hospitals have responded to the problems associated with drug abuse with varying degrees of resourcefulness. Programs have ranged from providing care for the acutely ill to merely providing some informational services. The major thrust has been developed primarily to deal with the immediacy of the current problem. In some sections of the country, medical societies have tried to coordinate the efforts of multiple hospitals, with each hospital providing specific kinds of services for which it is best geared.

Hospital in leadership role

Drug experimentation, abuse, and addiction reflect and lead to a multitude of intertwined psychologic, medical, and social problems. Awareness of the interplay of such variables in producing symptom complexes is an integral part of the discipline of medicine. Effective management and therapy, at least in part, must reflect an understanding of these interactions at the individual person's level, as well as taking into consideration epidemiologic patterns. The health profession, therefore, has a major responsibility.

Up to the present time the medical profession has primarily been charged with the responsibility of dealing with the failures of the system: patients with overdoses, with drug related critical illness, and with addiction. The medical profession has been remiss for too long; it has failed to assume a leadership role in the preventive and educational aspects that would reflect its deep concern that this is, in fact, a major health problem. Its capabilities for research, education, and treatment, if properly used, could reverse this epidemic.

With more than 7,000 hospitals in the United States, essentially every community has a hospital with which it identifies. Because of the distribution of these hospitals they are in a unique position to assume leadership for the health profession to develop meaningful programs with appropriate emphasis on health.

In addition to its leadership role in drug abuse, hospitals also have the concurrent responsibility of assuming leadership roles in the related problems of alcoholism and suicide. The structures developed to deal with one problem could be equally adapted to others. Combinations of the three problems are not infrequent, and certainly combinations of two out of three are frequent. Thus, it is artificial to separate them, as have many existing programs.

The practice of medicine is increasingly hospital centered. This is reflected by increased utilization of emergency rooms and outpatient departments as well as by the increased utilization of specialized procedures, equipment, and personnel on an ambulatory basis.

The family physician, the first line of defense in any health problem, looks primarily to his affiliated hospital for his continuing medical education. A consequence of this continuing education is the development of new attitudes by physicians, and, in part, this is directly applicable to the subject of drug abuse.

The hospital is a neutral, nonthreatening agency and traditionally has served as a source of solace and help, with a long tradition of helping people in moments of need and crisis. Anonymity and the absence of stigma, so important to the young drug abuser, are certainly in keeping with this medical tradition.

Hospitals provide care for patients with drug-related acute illnesses. This has been and continues to be a major area of responsibility for hospitals. With rising hospital costs, it is economically sound to obviate the need for such hospitalization by undertaking programs of prevention.

Hospitals are increasingly involved in public health and preventive medicine. This has been evidenced by the appearance of well-baby clinics and of satellite clinics, particularly in relation to mental health. With increasing concern for environmental hazards to health, it can be safely anticipated that hospitals will develop new programs which reflect this concern.

Hospitals have laboratory facilities which can be an important adjunct in the evaluation and subsequent management of the drug-involved patient.

Hospitals have the potential capacity of relating effectively to community agencies, particularly to the school systems within their catchment areas. The hospital has both facilities and personnel to cooperate with school districts in developing and implementing new school health programs.

Hospitals can provide technical and professional assistance to nonprofessional, community-based, and community-sponsored programs. The plethora of community programs in the last few years serves to emphasize the concern and commitment on the part of a large, well-meaning sector of the public. However well meaning, it may nevertheless be potentially harmful if the program structure is weak, and there is an absence of adequate professional staffing patterns.

From its central role, the hospital could develop the capacity, expertise, and experience to best evaluate comparative approaches being attempted in this field. Consequently, the hospital would be in a position to develop effective new approaches to this burgeoning problem which will reflect the epidemiologic patterns and specific needs of the communities being served. Those programs which might be appropriate and effective in ghetto areas might be inappropriate for those communities with drug usage patterns that are entirely different, as are the economic and social factors involved.

The funds which must be appropriated to create and staff new physical facilities specifically for drug programs can be more effectively used for meeting personnel demands. Additionally, community pressures have limited the number of special facilities which could be built. This problem, and the emotionalism resulting therefrom, could be eliminated by utilizing the hospital facility which is accepted by the community and which could serve as a coordinating unit for drug-abuse programs. By establishing the hospital as the primary center for drug-abuse programs with emphasis on health, the emotionalism, glamor, and hysteria associated with drug abuse and drug addiction would be minimized.

Elements of hospital programs

Physician education and attitudes. The enormously expansive found of medical information with which the practicing physician must cope requires that he be somewhat elective in his continuing medical education. Although seminars, lectures, symposia, and medical journals serve as sources for this acquisition of knowledge, a major thrust of his education results from his interactions in his affiliated hospital. It is here that important attitudinal changes occur, and it is in the area of drug abuse where this is of prime importance. This not only includes changes in attitudes toward the drug abuser but should include the development of a more restrained attitude toward prescribing drugs.

With estimates of between 1 out of 3 or 4 adults using psychotropic drugs, most often legally obtained as prescription or over-the-counter drugs, this is becoming a problem of extreme proportions.[5] Restraint by the practicing physician and ultimately by the consumer must be encouraged, despite social trends, pressure by patients, and marketing technics of pharmaceutical firms. This restraint must not only be based on factual knowledge of the immediate effect of drugs but also, perhaps more importantly, on an awareness of the long-term implications of excessive drug use. The dimensions of the problem are illustrated by the annual production figures for amphetamines in the United States. "It has been estimated that about 8 billion amphetamine tablets (40 tons) are produced in a year, enough to provide each man, woman, and child in the United States with 35 doses."[6]

Hospitals with house-staff training programs and also those which serve as teaching hospitals associated with medical schools can and must effect such attitudinal changes in the student and young physician during the training period while prescribing attitudes are being developed.

Much of the apathy, and at times hostility, of the physician toward the drug abuser and addict reflects, in addition to his cultural bias toward self-inflicted illness, his own frustration in his inability to provide meaningful help. This frequently can be traced to his own insecurity in this area and, importantly, to a lack of awareness of resources and therapeutic modalities which are available. With the development of a hospital-centered program both of these stumbling blocks could be minimized.

Allied health service. With the increasing awareness and acceptance that total health care frequently requires more than the traditional physician-patient relationship, particularly in drug abuse, the hospital's allied health service personnel are particularly well suited to deal with many of the multifactorial causes and effects of drug abuse. Importantly, these service units, as component parts of a hospital, can be available on a collective rather than an isolated basis.

Abuser and/or addict as patient. The acutely ill drug abuser, of necessity, is being treated continuously and increasingly by hospitals throughout the country. The consequent result is the development of expertise in the pharmacology of drug misuse and in the complex pharmacology of drug interaction.

With the appearance of countless "therapeutic" programs, there is an ever-increasing need for sound evaluation of the individual drug abuser or addict. The potential harm which may result by indiscriminately placing the casual experimenter in a complex nonprofessional program has been underemphasized. Professional expertise is required so that, for example, the emotionally disturbed, the psychotic, and the addicted persons may be identified and directed to the appropriate therapeutic program. All too often, chance selection on the part of the abuser or addict dictates the modality he potentially may seek. Currently the selection of detoxification method with subsequent long-term residential living, as opposed to life-long methadone maintenance, all too frequently, can be attributed to chance rather than to professional, objective evaluation. The professional staff members of the hospital, particularly the psychiatric department in conjunction with the department of social services, have the training and, perhaps more significantly, the objectivity to help in the selection of the appropriate program for a particular person.

Community-based and community-sponsored programs. The hospital, by interacting with multiple programs within its catchment area, can provide technical and professional guidance and assistance while concurrently selecting those approaches which appear to be most productive. The number of ex-addict workers participating in community programs is rapidly increasing. It is recognized that their participation in programs serves as reinforcement for their own abstinence, which is valuable to them. Additionally, their participation potentially allows an empathetic relationship to develop with the drug abuser, which forms the largest part of therapeutic endeavors. However, much of the methodology utilized by the ex-addict is derived from his residential experience which was primarily geared toward the long-standing heroin addict. Consequently, the potential of applying these rather selective methods may at times be inappropriate for the lesser-involved drug abuser. By providing professional assistance and guidance to the ex-addict worker, modification of program formats can be developed to best meet the needs of the particular drug abuse patterns in a given program. Additionally, these interactions will allow for continuing education of the ex-addict worker in methodologies different from his primary experience.

School programs. American educators have had to assume increasingly greater responsibility in meeting the social and economic changes and technical advances of the past half century. The launching of Sputnik saw the "child-centered" concepts of Deweyism replaced by the "academic-oriented" approach of the sixties. The past decade has witnessed increasing concern on the part of educators regarding health, although programs designed to reflect this concern have not always been warmly received, to wit, sex education.

Most recently, numerous efforts have been launched to deal with the vague concept of "drug education." However, it is clear that any effort must be an integral part of a well-structured health education curriculum. To achieve the much sought-after "relevancy," curricula must be concerned not only with abstract national health problems; the peculiar health concerns of the students' own community must also be incorporated into such curricula.

Whether it be drugs, alcohol, sex education, venereal disease, abortion, human ecology, mental health, or tuberculosis, no more appropriate facility exists than the teaching hospital to provide guidance and assistance to the public, private, and parochial schools in health education.

In youth's quest for honesty and relevancy, what more appropriate representatives are there than those persons who are daily confronted with these vital health concerns? Physicians, nurses, social workers, psychologists, vocational counselors, and training specialists can lend authenticity and maturity to current health education efforts.

Epidemiology. Although many factors have been appropriately considered and identified as responsible for the growth of drug abuse, they have often been generalizations. From its central vantage point, the hospital is particularly well suited to define more specifically the causes, motivational factors, and dynamics associated with drug abuse and addiction within its catchment area. By identifying the epidemiologic patterns of drug abuse within its area, the hospital could then implement new and modify old preventive and therapeutic concepts and programs.

Summary

The health professions have a major responsibility in attempting to prevent and control, if not to eradicate, the disease of drug abuse, which has a clinical spectrum range from inapparent to instantly lethal. Outstanding and imaginative efforts, particularly in treatment programs, have all too often been isolated phenomena. A major national commitment on the part of the health profession to reverse this epidemic is long overdue. With over 7,000 hospitals in this country, most with large staffs of concerned health professional personnel, there already exists the necessary framework to launch this effort. As President Kennedy stated in his opening address to the White House Conference on Drug Abuse in 1962:

> For more than a half century this nation has faced persistent and difficult problems arising out of the abuse of narcotics and non-narcotic drugs. It is especially tragic and upsetting that this great loss to our society in the form of human suffering and misery and lost productivity, flows directly from agents which possess the capacity to relieve pain and suffering.[1]

That is the true challenge of the "epidemic" of drug abuse and addiction to American medicine.

North Shore Hospital
Community Drive
Manhasset, New York 11030
(DR. WADLER)

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ARCHIVES OF UNIVERSITY HOSPITALS OF CLEVELAND, OHIO*

A prototype

EUGENIA KUCHERENKO
Cleveland, Ohio

Archivist, University Hospitals of Cleveland

Archives have a manifold purpose in any institution. They are a repository for official and vital records of any organization or institution. Archives are not only a memory of the past, but also serve present and future activities in the development and expansion of an institution. An archival agency is a center of information, both on institutional and individual levels. All significant activities within the complex of organizations should be documented in archives. Archives are not just shabby folders with dusty papers. Archives illustrate an institution: its organizational structure; its function; its events; its personnel, both professional and nonprofessional; and its buildings. All in all, archives are the image of operations in your institution.

The Archives of University Hospitals of Cleveland were officially established on January 31, 1969, as a full-time operating department (Fig. 1). Three months prior to this date, the archives existed on a part-time basis. Let me tell you briefly of this "historical" development.

Development of archives

For our centennial, in 1965, the public relations department prepared a history of our hospitals. The material used was scattered in different locations: in departmental libraries, offices of department heads, and in the office of the executive director. There was a lot of material, but it was haphazardly stored and not organized. For a period of four years after the centennial celebration, the public relations department staff had the custody of archival materials. There was even more material after the centennial celebration, since many of the retired and active staff members were very receptive to the idea of recalling the past and started bringing photographs, scrapbooks, back issues of our previous newspapers and journals, and letters of interest. In June, 1968, our public relations director proposed to the executive director that a program be developed for centralizing the materials, thus facilitating the retrieval of pertinent data. One of his proposals was to have

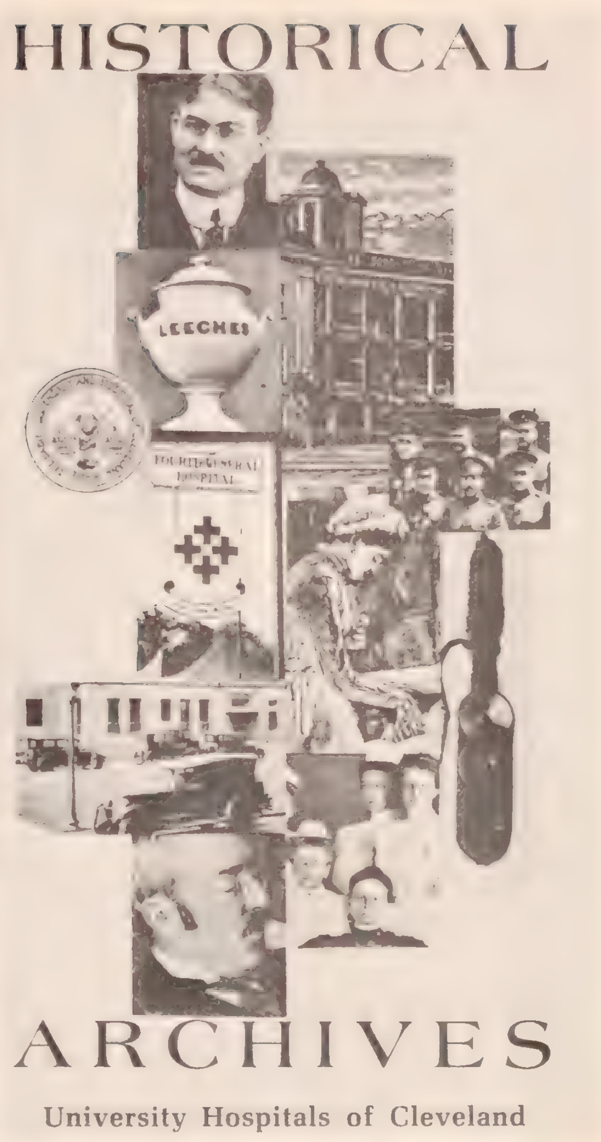

FIGURE 1. Cover of brochure of Archives of University Hospitals of Cleveland.

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*Presented at the second meeting on the Preservation of Hospital Archives, at the New York Academy of Medicine, November 18, 1970. This was a combined meeting of the archive committee of the Medical Society of the State of New York, the Medical Society of the County of New York, the archive subcommittee of the New York Academy of Medicine, and the Medical Archivists of New York State: Joseph A. Tamerin, M.D. president, Louise Heinze, secretary. The United Hospital Fund of New York has been cooperating agency.

volunteers assist in such a project. He also indicated that the public relations department staff had been taking care of the archival materials for the last four years and that something needed to be done to have these materials sorted and classified.

As a reaction to this proposal, our executive director asked the assistant secretary of our Board of Trustees to investigate the possibility of establishing archives. Mr. Charles H. Pimlott, our assistant secretary, has a tenure of over thirty-seven years with the hospitals and his familiarity with the institution is extraordinary. This was essential for such a project. After making a thorough investigation, Mr. Pimlott submitted his recommendations on September 11, 1968. I would like to quote some excerpts from his memorandum to the executive director:

> I think we are all in agreement that Archives should be established. The problem is how to go about it. The primary function of the Archives would be the preservation of records, papers, photographs, etc. which document the development of the hospital and the contribution which many individuals have made to its growth. This includes not only the preservation of old records and documents but it includes an ongoing program for the preservation of the most useful of our current records. A secondary function of the Archives would be to answer questions from, and to supply information to, the hospital administration and department heads and those outside the hospital who have a legitimate use for the information.
>
> There is no standard method of classifying and coding. Since each organization or institution is different, the material preserved is unique and the classifying and coding must be developed to meet the needs of the particular organization or institution. For that reason it seems desirable to secure some trained help, at least to get the system started. A person with some training in this field could review the material we have already accumulated and develop the proper coding system. . . . It is felt that it would be a mistake, and perhaps a costly one, to use inexperienced help or volunteers to get the program going.

So, as you already know, an archivist was appointed, first on a part-time basis. Very shortly after, it was a full-time operating department. Our first archivist was a young man with a major in American history, who stayed with the hospitals twelve months, not counting the first three months on a part-time basis. I was appointed on January 26, 1970 as his successor.

Administration

Our archives are part of the administration, and for a number of reasons this seems to be an ideal situation. One is responsible to, or under the direction of, the main administrative body of the institution. It could either be the administrator, the director himself, or, as in my case, the assistant secretary of the Board of Trustees. The situation is ideal not only because one is a part of the management group and thus has direct contact with people who create the vital and official records of an institution, but also because one is part of their expense budget! In a situation like mine, and if one is reasonable in one's requests, one's blood pressure will hardly ever go up in connection with financial worries. The immediate director, secretary-treasurer, or administrator will advise if it is feasible, acceptable, or ". . . can you wait until the end of the fiscal year. . ." without too much red tape. The latter comment may be received if a large amount is requested and the project is of no immediate importance. In situations where archives are part of a library budget, a rare book collection budget, or a public relations budget, they are a "poor second cousin that comes to town once in five years." I was in the latter situation for a number of years and, believe me, I felt it!

Our annual equipment budget, not including redecorations or installation of air conditioning, or remodeling of our quarters, comes to $1,000 to $1,200 each year. Our supplies are ordered as the needs arise, and as you know, most of them come from the Hollinger Corporation in Arlington, Virginia. In addition, we have an excellent general store where I can obtain any regular office supply just by providing a requisition form with the items listed that I need.

Hopefully, very soon we will have an archival committee consisting of 4 to 6 members, with our assistant secretary acting as chairman and the archivist as secretary of the committee. This group will consist of members from the administration and at least 2 members from the professional staff—one from medicine, one from nursing, and perhaps one member from surgery—who will meet briefly once a month or as needed. An archival committee can be very useful in collecting materials and providing contacts and introductions to distinguished past and present members of the staff. Their interest will be very helpful in planning an oral history program. Their suggestions may provide an entrée to staff members who are unique sources of information and ideal subjects for interviews. These interviews are great "blocks" which close small and large gaps in the path of institutional history. Most of these people are memorable in their own right, not to say anything of their excellent contributions to archives.

Physical plant

The physical location of the archives is as important as their location in the table of organization. They should be easily accessible, but not in the heart of public traffic. Air conditioning and humidity control are necessary, but can wait if the archives are just beginning. I would like to emphasize that the most important factor in the physical location of the archives is fire-proof and fire-protected quarters. The load factor is also very important. Investigate the load capacity, per square foot, and arrange the shelf installations accordingly.

Our archives are housed on the third floor of a reinforced concrete structure, built in 1931. Originally, Lowman House was a nurses' dormitory. The rooms consisted of small apartments with full baths or individual small bedrooms. They are located on both sides of a corridor. Each room has plenty of light. After considerable remodeling, the archives, consisting of six such rooms, now occupy the east side of the floor. The whole section was redecorated, and doors were cut through for easy access. In the stacks area, one wall was completely removed and the blinds are kept shut to cut off ultraviolet rays. Only recently the protective service department installed additional fire extinguishers in the stacks. We have some extinguishers on the floor, but the additional ones were placed for more security. Still pending is the removal of the small kitchenette, which will be done in the near future. I am sorry to lose such a nice large sink which I use for soaking purposes.

At present, we have approximately 530 linear feet of archives. In addition, we are responsible for the administrative library, a collection of textbooks and journals geared to administration and personnel.

The first room is the archivist's office which also houses our most vital collection of documents—minutes of the Board of Trustees of different hospitals, our financial records, the annual reports from 1872, quick reference file (biographic and subject), and a vertical file of all our publications (pamphlets, brochures, flyers, and so on). These documents occupy four 5-drawer filing cabinets with locks. Two closets available in the office contain part of the unbound and bound journal collection. A desk for our readers is located against the west wall, with reference tools such as institutional histories, directories, abstracts, and the hospital literature index. Next is the administrative library with approximately 50 linear feet of textbooks and bound journals. A cabinet with microfilm masters is also located here. The closet in this room is our "supply cabinet." Next are the stacks. Here we have the better part of our archives in Hollinger boxes on shelves. Here also we have two additional cabinets with microfilm masters. The collection of microfilm consists of medical case histories from 1865 up to 1942. We are now in the process of microfilming the last twenty-five years of medical histories; again the masters will be preserved in the archives. Ten filing cabinets are also here in the stacks which carry the files of our executive director, house staff coordinator, and administrator. These files are entitled "Middle Ages." The value of these papers is limited and part of them will be scheduled for destruction. However, they are needed now for referrals in connection with unfinished projects. Adjacent to the office and to the right, is a full bath, and next to it a smaller stack area. Here reside all our autopsy reports ($2\frac{1}{2}$ tons) on shelves in double rows. Across the hall, we have a walk-in linen closet with built-in shelves. Here are surgical autopsies, our monthly and quarterly journals, and some surgical journals. This stack area has approximately 65 linear feet of archives.

The archives

Our archives are mainly documents pertaining to the administrative organization of University Hospitals of Cleveland and date back to our beginning. A number of biographic sketches of our medical and nursing staff are also available. We have manuscript material of our first pediatric intern at Babies Dispensary (1911). Now this distinguished pediatrician is eighty-seven years old with an outstanding career behind him. We have other medicohistoric papers and manuscripts which illustrate the lives and labors of our surgical, medical, and nursing staff, as well as our outstanding administrators. We collect reprints of all our professional staff reports. Just recently we acquired reprints from our department of medicine for the last forty years. Our nursing papers date back to the beginning of the first school year of the nursing school, 1898.

Photographs are in abundance, and we are trying to catalog them into three categories: buildings, individuals, and subject. By subject I mean illustrations of professional teaching programs, departmental activities and services, personnel clubs, events, tours, blood mobiles, and so on.

University Hospitals of Cleveland publishes two institutional publications; one a monthly, the other a quarterly periodical. These journals illustrate our daily lives in the hospitals. The monthly provides a general picture, whereas the quarterly covers specific areas of diverse professions in each issue. Newspaper clippings on local medicine, hospitals, and individuals on our staff are also preserved. We have established an obituary file and a current activities file on our staff.

Archival material is usually received via a department head. If the donor is an outsider, he or she, in most cases, contacts the archivist first by telephone and arrangements are made for transfer of materials. All new acquisitions are accessioned. Processing begins by sorting, weeding, and selecting material of permanent nature. Vital records of each department or division are kept together as a unit. At present, we do not have a classification scheme, but we plan to have a scheme set up by departments and/or hospitals. There are various hospitals in the complex. Lakeside Hospital is the oldest of the group and its scheme will be separate; that is, its governing bodies throughout the years, boards of trustees, administration, professional departments, nonprofessional departments, and so on. University Hospitals of Cleveland, since 1931, has been the main artery of the whole organization, and this will have the main classification scheme. In addition, Hanna Pavilion, our psychiatric unit; Rainbow Hospital for Convalescent and Crippled Children; Babies and Children's Hospital; MacDonald House, our maternity hospital; Benjamin Rose Hospital (now Abington House) for geriatric and chronically ill patients; and so on; will each have an individual classification structure. Each of these hospital units has its own administrative and professional structure. For this reason the individual scheme will facilitate access to the materials and simplify its processing.

The most rewarding of all functions in the archives, I think, is the reference service. Certainly it is a pleasure to realize that people trust you and facilitate your collecting by sending in archival materials. However, the ability to find the requested document or to answer immediately, over the telephone, questions about people or events, provides a feeling of deep satisfaction. This is the reward for your labors. From the beginning of this year to November 1, we have answered 306 questions and requests for archival materials. We have a file which we call "historical chronology," on 3 by 5 cards. This file represents events, appointments, buildings, constructions and additions of wings to old buildings, research projects, and so forth. It also includes positions individuals are holding or have held in the past, names of our benefactors, names of people who created some of our programs, trustees of our boards, department heads, and so on. This file is an aid of great value to the archivist as well as to people who are searching for specific data.

Our oral history program has been very pleasant. I have been very fortunate to deal with cooperative, understanding, and pleasant people. One physician, for example, participated with our Lakeside Unit in the South Pacific during World War II, and I left my tape recorder with him. At his leisure, he recalled his experiences during that time and talked about several colleagues, now deceased, who were great contributors to the development of University Hospitals. Another case in point was a young pediatrician who was leaving town for private practice, but who had been closely associated with one of our most distinguished directors of pediatrics, now deceased. This young physician, on my plea, dictated 2 forty-five minute tapes of his recollections. We have transcripts of interviews with secretaries of long standing who served directors of departments; physicians, now retired, who made numerous contributions to our institution; and past administrators who served University Hospitals for several decades.

I have to say that our active staff members are just as interested in archives, and only recently I was very pleasantly surprised when I received a manila envelope from one of our housekeepers. It contained an annual report of the laundry for 1934. The attached note said "found this in a wastepaper basket, thought you may want it for Archives. . . ." The recollections of the past staff members and the cooperation of the active members bridge the gaps we have in our archival materials. For the first nine months of this year we recorded 167 accessions. These range from large contributions of several dozens of cartons to a manila envelope.

Conclusion

It is difficult to say what each and every one in our profession should or could do. I find that one has to be an individual. I believe that I have a most challenging, pleasant, and satisfying profession. It is not only that we, as archivists in hospitals around the country, perform our duties to preserve materials, but also we deal with an outstanding group of people. These people, even in this day and age, have not lost the humane touch, and the majority of them are dedicated and outstanding individuals. They are often unaware, in their preoccupation with research and concern for patients, that their activities are materials of history. Their insight and perception help in our relationships and contacts and facilitate our communication. This, in turn, makes our archives active and informative, and the collection of materials as complete as possible.

330 Lowman House
University Hospitals of Cleveland
University Circle
Cleveland, Ohio 44106

Necrology

Jose Apellaniz, M.D., of Freeport, died on January 20 at the age of seventy. Dr. Apellaniz graduated in 1923 from the University of Pennsylvania School of Medicine. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Genevieve Mary Bader, M.D., of New York City, died on March 19 at the age of fifty-three. Dr. Bader graduated in 1943 from New York University College of Medicine. She was an associate attending obstetrician and gynecologist at St. Clare's Hospital. Dr. Bader was a member of the American Medical Women's Association, the James Ewing Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Solomon Aaron Berson, M.D., of New York City, died on April 11 at the age of fifty-three. Dr. Berson graduated in 1945 from New York University College of Medicine. He was chairman of medicine at The Mount Sinai Hospital and chief of the Radioisotope Service at the Veterans Administration Hospital, The Bronx, as well as the Murray M. Rosenberg Professor of Medicine at Mount Sinai School of Medicine. Dr. Berson was a Diplomate of the American Board of Internal Medicine and a member of the American Society for Clinical Investigation, the American Physiological Society, and the New York Academy of Medicine.

Robert L. Bowerhan, M.D., of Copake, died on April 4 at the age of sixty-eight. Dr. Bowerhan graduated in 1930 from Jefferson Medical College of Philadelphia. He was a member of the Columbia County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gustav Bychowski, M.D., of New York City, died on April 3 at the age of seventy-six. Dr. Bychowski received his medical degree from the University of Zurich in 1919. He was a preceptor in psychiatry at The Mount Sinai Hospital and an assistant attending psychiatrist (affiliate staff) at Kings County Hospital Center. Dr. Bychowski was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the American Psychoanalytic Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Anthony Cerulli, M.D., of Rochester, died on March 13 at the age of sixty-one. Dr. Cerulli graduated in 1940 from Hahnemann Medical College of Philadelphia. He was an associate attending surgeon at Park Avenue Hospital. Dr Cerulli was a member of the American Academy of General Practice, the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Francis D'Amico, M.D., of Brooklyn, died on March 27 at the age of sixty-two. Dr. D'Amico graduated in 1938 from Eclectic Medical College, Cincinnati. He was a member of the American Geriatrics Society, the American Academy of General Practice, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Manuel de Diego, M.D., of Binghamton, died on April 6 at the age of sixty-three. Dr. de Diego graduated in 1934 from Jefferson Medical College of Philadelphia. He was a member of the Binghamton Academy of Medicine, the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

C. Dary Dunham, M.D., of New York City, died on April 12 at the age of sixty-one. Dr. Dunham graduated in 1935 from Columbia University College of Physicians and Surgeons. He was an assistant attending physician at The Presbyterian Hospital and medical director at the Morgan Guaranty Trust Company of New York. Dr. Dunham was a Diplomate of the American Board of Internal Medicine and a member of the Industrial Medical Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Albert Essex, M.D., of Ridgewood and Garden City, died on April 6 at the age of sixty-two. Dr. Essex graduated in 1937 from New York University College of Medicine. He was an assistant attending physician at St. John's Hospital (Queens) and an attending physician in allergy at Wyckoff Heights Hospital (Brooklyn). Dr. Essex was a member of the American Academy of Allergy, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Simon Frucht, M.D., of Brooklyn, died on March 23 at the age of ninety-two. Dr. Frucht graduated in 1905 from Columbia University College of Physicians and Surgeons. He was a senior cardiologist (off ward service) at Brookdale Hospital Center. Dr. Frucht was a member of the New York Cardiological Society, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Thomas Quincy Garvey, Jr., M.D., of New York City, died on April 5 at the age of sixty-nine. Dr. Garvey graduated in 1927 from University and Bellevue Hospital Medical College. He was an associate neurosurgeon at University Hospital, a senior assistant neurosurgeon at St. Vincent's Hospital and Medical Center of New York, an attending neurosurgeon at Knickerbocker Hospital, a consulting neurosurgeon at Misericordia, Bellevue, New York Polyclinic, and St. John's

(Queens) Hospitals, a senior associate neurosurgeon at St. Clare's Hospital, and an emeritus neurosurgeon at French Hospital. Dr. Garvey was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York Neurological Society, the New York Society of Neurosurgery, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gordon Alfred Holden, M.D., of Utica, died on April 11 at the age of seventy-four. Dr. Holden graduated in 1921 from Syracuse University College of Medicine. He was a consulting surgeon at Utica State Hospital. Dr. Holden was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Industrial Medical Association, the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Jackson, M.D., of New York City and Jamaica, died on March 16 at the age of sixty-one. Dr. Jackson graduated in 1936 from Indiana University School of Medicine. He was an attending anesthesiologist at Beekman-Downtown Hospital. Dr. Jackson was a Diplomate of the American Board of Anesthesiology and a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Edmund Kapise, M.D., of New York City, died on January 23 at the age of seventy-two. Dr. Kapise received his medical degree from the University of Vienna in 1927. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard Everett Lee, M.D., of Douglaston and New York City, died on April 13 at the age of fifty-seven. Dr. Lee graduated in 1947 from Columbia University College of Physicians and Surgeons. He was an associate attending physician at The New York Hospital. Dr. Lee was a Diplomate of the American Board of Internal Medicine and a member of the American Physiological Society, the American Public Health Association, the Society for Experimental Biology and Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joshua Harry Leiner, M.D., of Long Beach, died on April 5 at the age of eighty-nine. Dr. Leiner graduated in 1908 from University and Bellevue Hospital Medical College. He was a consulting neuropsychiatrist at Fordham Hospital and a consulting neurologist at Bronx-Lebanon Hospital Center. Dr. Leiner was a Diplomate of the American Board of Psychiatry and Neurology and a member of the American Academy of Neurology, the American Psychiatric Association, the New York Neurological Society, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Kurt Heinz Meyerhoff, M.D., of Schenectady, died on December 8, 1971, at the age of sixty-nine. Dr. Meyerhoff received his medical degree from the University of Giessen in 1926. He was a consulting obstetrician and gynecologist at Ellis and St. Clare's Hospitals. Dr. Meyerhoff was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists, and a member of the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Hilton Paine, M.D., of Aiken, South Carolina, formerly of Rochester, died on March 3 at the age of eighty-seven. Dr. Paine graduated in 1905 from the University of Pennsylvania School of Medicine. He was a consulting urologist at Genesee Hospital. Dr. Paine was a Diplomate of the American Board of Urology and a member of the American Urological Association, the American Association of Genito-Urinary Surgeons, the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Cosmo Passalacqua, M.D., of Brooklyn, died on April 4 at the age of sixty-six. Dr. Passalacqua graduated in 1931 from Marquette University School of Medicine. He was a senior clinical assistant ophthalmologist at Brooklyn Eye and Ear Hospital and an associate ophthalmologist at St. Mary's Hospital. Dr. Passalacqua was a member of the American Geriatrics Society and the New York Academy of Medicine.

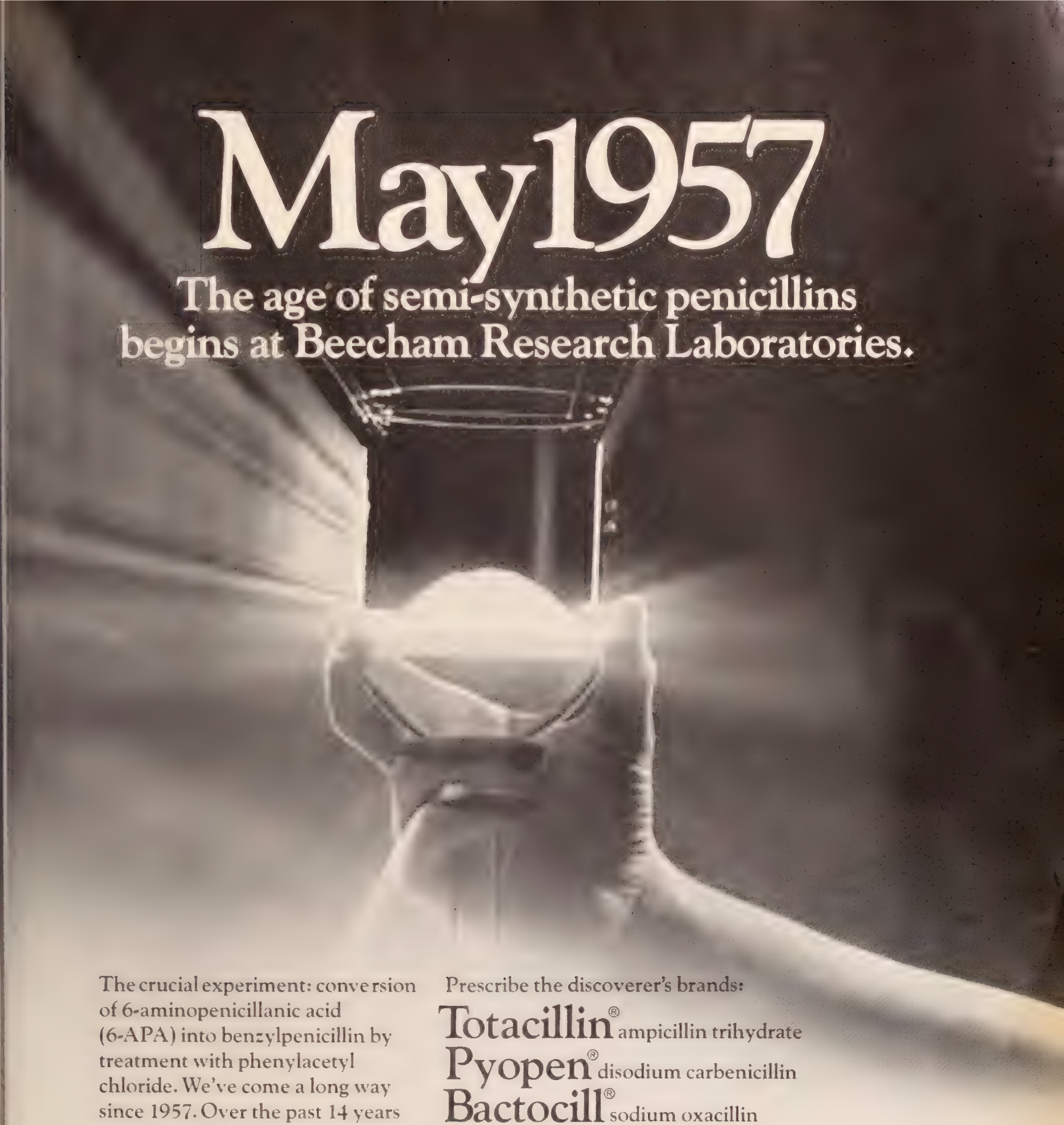
Vincent Martin Recktenwalt, M.D., of North Tonawanda, died on March 22 at the age of forty-five. Dr. Recktenwalt graduated in 1948 from the University of Buffalo School of Medicine. He was an attending physician in internal medicine at Kenmore Mercy Hospital. Dr. Recktenwalt was a Diplomate of the American Board of Internal Medicine and a member of the New York State Society of Internal Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Benjamin Rice, M.D., of New York City, died on March 6 at the age of seventy-four. Dr. Rice graduated in 1922 from Boston University School of Medicine. He was a Diplomate of the American Board of Otolaryngology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Schonholtz, M.D., of New York City, died on February 15 at the age of sixty-four. Dr. Schonholtz graduated in 1931 from University and Bellevue Hospital Medical College. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Deso Arthur Weiss, M.D., of New York City, died on November 19, 1971, at the age of seventy. Dr. Weiss received his medical degree from the University of Vienna in 1932. He was deputy chief of psychiatry at Creedmoor State Hospital. Dr. Weiss was a member of the Association for Research in Nervous and Mental Disease, the American Psychiatric Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Dolphus Williams, M.D., of New York City, died on February 15. Dr. Williams graduated in 1927 from Howard University College of Medicine.



May 1957

The age of semi-synthetic penicillins begins at Beecham Research Laboratories.

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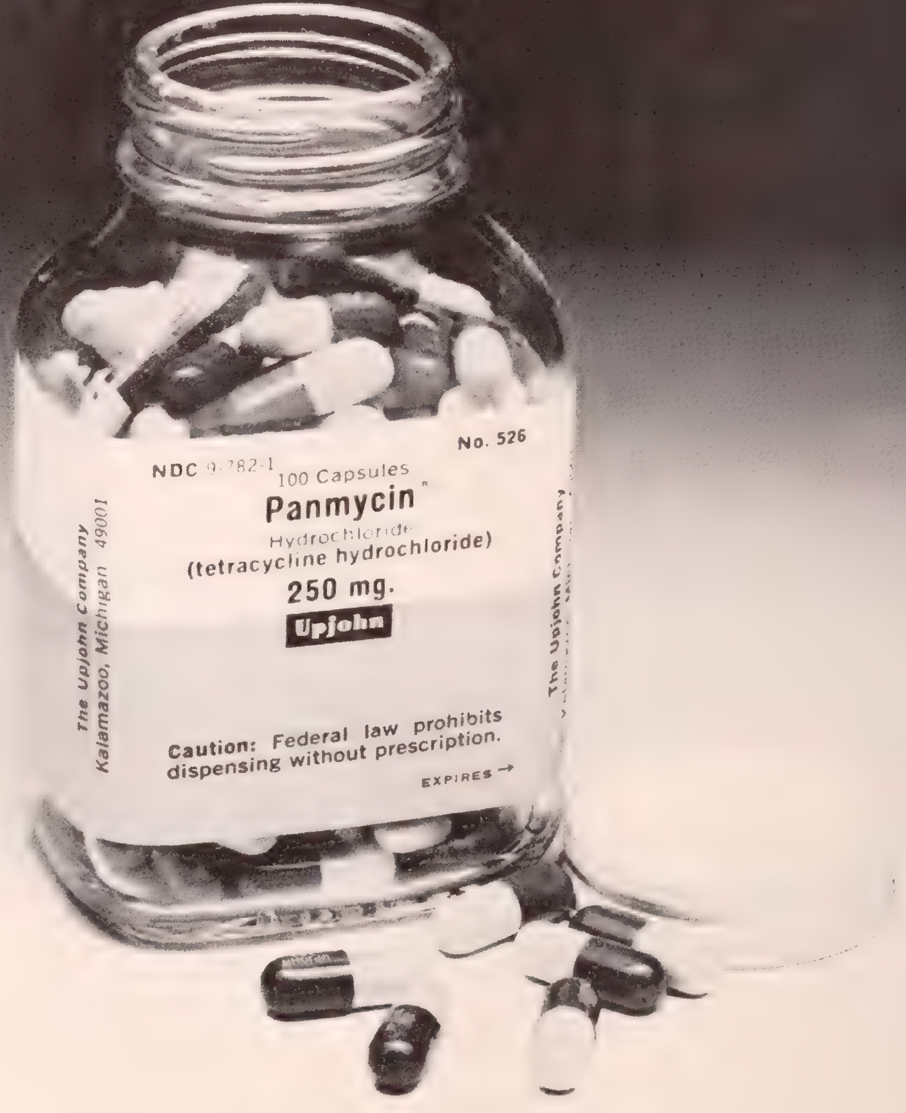
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WHAT GOES ON in medicine

NEW YORK STATE **June 1–15, 1972**

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CORRECTION—The Meeting on "Sickle Cell Disease" at the Good Samaritan Hospital in Suffern, N.Y. Rockland County, will be Tuesday, May 16, at 9 p.m.

Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

WGO-1

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The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
July 1–31	May 10
August 1–31	June 10
September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25

NEW YORK CITY AREA

June 1 / 3, 1972

American Cancer Society and the National Cancer Institute
Waldorf-Astoria Hotel
Park Avenue and 50th Street

NATIONAL CONFERENCE ON CANCER CHEMOTHERAPY

For information, please write: SIDNEY L. ARJE, M.D., Coordinator, c/o American Cancer Society, 219 East 42nd Street, N.Y., N.Y. 10017.

June 1 / July 15, 1972
9:00 a.m.–4:00 p.m., Daily

French and Polyclinic Medical School and Health Center
345 West 50th Street

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The course provides formal instruction in Medicine, Surgery, Pediatrics, Obstetrics-Gynecology and other specialties. The course content is based on the subject outline suggested by the Educational Council for Foreign Medical Graduates and is primarily intended for candidates for ECFMG, State Board and FLEX examinations.

Write: The Dean, at the above address.

June 1 / 22, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
757 Bushwick Avenue
Brooklyn

Lecture Schedule

June 1
Psychiatric Aspects of Medical Practice for the General Physician
LEON OLINGER, M.D.

June 8
Pulmonary Embolism
SYLVESTER CORT, M.D.

June 15
Pelvic Inflamation Disease
BERNARD SICURANZA, M.D.

June 22
Mortality Conference
SOL GLOTZER, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

June 1 and 15, 1972
4:30–6:30 p.m., Alternate Thursdays

Manhattan Eye, Ear and Throat Hospital
Conference Room
210 East 64th Street

June 1
Oculoplastic Panorama
EUGENE WIGGS, M.D., Denver

Discussion: MARGARET OBEAR, M.D.

June 15
Complicated Entropion and Ectropion
RICHARD TENZEL, M.D., Miami

Discussion: SIDNEY FOX, M.D.

FRIDAY, JUNE 2

10:30–11:30 a.m.

Wyckoff Heights Hospital
Department of Pediatrics
374 Stockholm Street
Brooklyn

TREATMENT OF ACUTE LEUKEMIA IN CHILDREN

AARON RAUSEN, M.D.
Mount Sinai School of Medicine

June 3 and 4, 1972
8:00 a.m.–10:00 p.m., Saturday and Sunday

Institute for Comprehensive Medicine
Commodore Hotel
42nd Street and Lexington Avenue

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20 hours AMA Continuing Category B

MONDAY, JUNE 5

8:30 p.m.

Rudolf Virchow Medical Society
2 East 103rd Street

CASE PRESENTATIONS BY MEMBERS OF THE SOCIETY

June 6 / 27, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

Newer Concepts in Medicine Lectures

June 6
Reproduction
W. FRITZ, M.D.

June 13
Renal Function Tests
N. MITCHELL, M.D.

June 20
Review Highlights of Previous Lectures
G. POLLACK, M.D.

June 27
Anemias—Primary and Secondary
M. HIRSCHHORN, M.D.

Moderator: GEORGE POLLACK, M.D.

June 6 and 13, 1972
9:00 a.m., Tuesdays

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

June 6
Treatment of Recurrent Melanoma
FREDERICK M. GOLOMB, M.D.
N.Y.U. Medical Center

June 13
Diabetes in Pregnancy
ARTHUR HECHT, M.D.

June 6 / 20, 1972
9:00 a.m., Tuesdays

Queens Hospital Center Affiliation
Long Island Jewish-Hillside Medical Center
9th Floor Auditorium, Triboro Hospital
Parsons Boulevard and 82nd Street
Queens

Division of Pulmonary Medicine

June 6
The Tuberculosis Alcoholism Clinic in the Division of Pulmonary Medicine—An Evaluation
ALAN SHAPIRO, M.D.

June 13
Non-Pulmonary Problems in the Management of Acute Respiratory Failure in Guillain-Barre Syndrome—A Study of Three Cases
R. CHITKARA, M.D.

June 20
Massive Hemoptysis in TB Treated with Extra-Pleural Pneumothorax Therapy
W. PHILLIPS, M.D.

Acute Hydrocarbon (Gasoline) Aspiration Pneumonia
D. COHEN, M.D.

TUESDAY, JUNE 6

2:00 p.m.

The Catholic Medical Center
Department of Surgery—Division of Ophthalmology
Holy Family Hospital—Auditorium Building, Main Floor
167 Dean Street
Brooklyn

1. **Helpful Hints for Glaucoma**
   BERNARD SCHWARTZ, M.D.
   New England Medical Center Hospital
2. **Pharmacological Treatment of Glaucoma**
   CHARLES NICHOLS, M.D.
   University of Pennsylvania Medical Center
3. **Glaucoma in Relation to Ocular and Orbital Malignancies**
   ARTHUR KEENEY, M.D.
   Willis Eye Hospital, Philadelphia, Pa.

Moderator: JOSEPH PARISI, M.D., Catholic Medical Center, Jamaica, N.Y.

8:30 p.m.

The New York Psychoanalytic Society
247 East 82nd Street

Panel Discussion

THE ROLE OF PSYCHOANALYSIS IN PSYCHIATRIC MEDICAL EDUCATION

MORTON REISER, M.D., Chairman
LAWRENCE C. KOLB, M.D.
MARVIN STEIN, M.D.
MILTON HOROWITZ, M.D.

June 7 and 21, 1972
Noon, Wednesdays

Downstate Medical Center
4th Floor Pediatric Library
Room B4-462, State University Hospital
445 Lenox Road
Brooklyn

Research Pediatric Seminars

June 7
Detection of Factor VIII Deficiency
MARGARET G. ROBINSON, M.D.

June 21
Effectiveness of Hb, Hct and MCHC in the Detection of Iron Deficiency Anemia
SOLOMON V. RAJKUMAR, M.D.

WEDNESDAY, JUNE 7

4:00–5:30 p.m.

Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine
Conference Room
1625 St. Peters Avenue
Bronx

LIVER AND SPLEEN SCANNING IN CLINICAL MEDICINE

LEONARD FREEMAN, M.D.
Albert Einstein College of Medicine

NO FEE CREDIT: $1^1/_2$ hours AAFP

THURSDAY, JUNE 8

9:00–11:00 p.m.

Albert Einstein College of Medicine
1300 Morris Park Avenue
Bronx

ENDOCRINOLOGY

RUTH FREEMAN, M.D.

NO FEE CREDIT: Category 1 AAFP

Contact: Mrs. Frieda Fagin, at the above address.

8:30 p.m.

American Analgesic Society
Barbizon Plaza Hotel
106 Central Park South

1. **Nitrous Oxide Oxygen Analgesia in Office Gastroenterology**
   LEON SASSON, M.D.
2. **Preoperative, Postoperative and Comedications**
   MARVIN SNIDERMAN, S.S. Phar.

Write: Dr. Philip E. Shipper, 9 West 67th Street, New York, N.Y. 10023.

FUTURE EVENTS

June 17 / 24, 1972
9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

RHINOPLASTY AND OTOPLASTY

SIDNEY FEUERSTEIN, M.D.
Mount Sinai School of Medicine

FEE: $400

June 26 / 29, 1972
9:00 a.m.–5:00 p.m., Monday–Thursday

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

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FEE: $20 CREDIT: 28 Elective hours AAFP

To register, please contact CHARLES M. PLOTZ., M.D., Dir., Continuing Education, above address.

BUFFALO AREA

June 1 / 15, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

June 1
- **Auscultation—Systolic Regurgitant Murmur**
  - **The SSD Murmur**
    - **Usual**
    - **Muscular**
    - **Differentiation from Aortic Stenosis Murmur**
    - **The Tricuspid Regurgitation Murmur**
  - **Continuous Murmurs**
    - **PDA**
    - **Venous Hums**
    - **Mammary Souffle**
- **Case Presentations**

June 8
- **Auscultation—Diastolic A-V Valve Murmurs**
  - **The Mitral Stenosis Murmur**
    - **Timing, Shape, Pitch, Loudness and Transmission**
  - **The Mitral and Tricuspid Diastolic Flow Murmur**
  - **The Tricuspid Stenosis Murmur**
  - **Case Presentations**

June 15
- **Auscultation—Diastolic A-V Valve Murmurs**
  - **Aortic Regurgitation Murmur and Austin Flint Murmur**
  - **Pulmonary Regurgitation Murmur with High Pressure in Pulmonary Artery (Graham Steell)**
  - **With Normal Pressure in Pulmonary Artery**
- **Case Presentations**

FEE: $25 for full course

WHAT GOES ON will publish workshops in chronological order throughout the course.

June 5 / 9, 1972

State University of New York at Buffalo School of Medicine

REFRESHER COURSE IN PEDIATRICS

Under the Supervision of JEAN A. CORTNER, M.D.

Fee: $5

Sponsored by the Bureau of Maternal and Child Health and Family Planning, New York State Department of Health.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

BROOME COUNTY

June 1 and 8, 1972
11:00 a.m., Thursdays

Charles S. Wilson Memorial Hospital
Redwood Room
Johnson City

Basic Science Seminars

June 1

Use of Steroids in Common Non-Allergic Skin Problems

IRVING SWARTZ, M.D.

June 8

Acquired Cardiac Valvular Lesions—Surgical Management

WATTS R. WEBB, M.D.

Medical Grand Rounds will be held at 10:00 a.m., preceding each of the above sessions.

Approved for Category I Credit AAFP

NASSAU COUNTY

WEDNESDAY, JUNE 7
4:00 p.m.

Nassau County Medical Center
Department of Radiology
Meadowbrook Hospital
East Meadow

RADIOLOGY OF EXTRACEREBRAL HEMATOMAS

MANNIE SCHECTER, M.D.
Albert Einstein College of Medicine

WEDNESDAY, JUNE 14
8:00–10:00 a.m.

Mercy Hospital
MacArthur Hall Auditorium
Rockville Centre

SEPTIC SHOCK

WILLIAM C. SHOEMAKER, M.D.
Mount Sinai School of Medicine

Combined Medical-Surgical Conference

SYRACUSE AREA

June 16 and 17, 1972
8:30 a.m., Registration

Coronary Heart Disease Committee
New York State Heart Assembly
Syracuse University
Gifford Auditorium, H.B. Crouse Hall

THE PATIENT WITH A MYOCARDIAL INFARCTION AND PRE AND POST HOSPITAL PHASE OF MYOCARDIAL INFARCTION

Write for Program, New York State Heart Assembly, 3 West 29th Street, New York, N.Y. 10001.

OTHER STATES

June 2 / 4, 1972

New Jersey O & O Annual Meeting
Playboy Club Hotel
Great Gorge
McAfee, New Jersey

ANNUAL MEETING

June 19 / 30, 1972

Massachusetts Institute of Technology
Cambridge, Massachusetts

Two-week Summer Course in

DESIGN AND ANALYSIS OF EXPERIMENTS IN THE PHYSICAL, MEDICAL, AND INDUSTRIAL SCIENCES

Conducted by Professors
HAROLD FREEMAN and PAUL BERGER

Write: Director of the Summer Session, Room E19-356, M.I.T., Cambridge, Mass. 02139.

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CONTACT: MRS. JOHN H. THODEN, Secretary, Adirondack Health Building, Inc., 402 Main Street, Boonville, N.Y. 13309. Tel. (315) 942-2053.

PORT JERVIS, N.Y., Orange County. G.P. and Surgeon wanted.

CONTACT: DANIEL P. SCHULTZ, M.D., Doctors Sunnyside Hospital, 140–160 Hammond St., Port Jervis, N.Y. 12771. Tel. (914) 856-5121.

ALBION, N.Y., Orleans County, needs three G.P.'s.

CONTACT: EDWARD A. BARRETT, M.D., 28 Meadowbrook Drive, Albion, N.Y. 14411. Tel. (716) 589-7117.

ALFRED, N.Y., Allegany County. G.P. Opportunity to serve growing community with two rapidly expanding colleges.

CONTACT: ALEX SPYRALATOS, Alfred Business Assn., Inc., 16 N. Main Street, Alfred, N.Y. 14802. Tel. (607) 587-8286.

BINGHAMTON, N.Y., Broome County. G.P.'s, Internists, Ophthalmologists, Dermatologists.

CONTACT: MR. CHARLES E. ROBBINS, Broome County Medical Society, 4500 Old Vestal Road, Box 987, Binghamton, N.Y. 13902. Tel. (607) 729-9261.

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CONTACT: MR. JAMES MERCER, Sunset Drive, Boonville, N.Y. 13309. Tel. (315) 942-4691.

BROADALBIN, N.Y., Fulton County. G.P.

CONTACT: MR. ROBERT H. LESLIE, Chm. Citizens' Committee to Obtain a Doctor, R.D. #1, Broadalbin, N.Y. 14025.

BROCTON, N.Y., Chautauqua County. G.P.

CONTACT: MR. ALFRED F. SUNDAY, 24 Park Street, Brocton, N.Y. 14716.

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CONTACT: GERALD M. BLUM, M.D., Chief, Division of Pediatric Psychiatry, Jewish Hospital and Medical Center, 555 Prospect Place, Brooklyn, N.Y. 11238. Tel. (212) 240-1701.

BUFFALO, N.Y., Erie County. One Anesthesiologist to join six-man corporate anesthesia group, including nurse anesthetists.

CONTACT: NIALL P. MacALLISTER, M.D., Deaconess Hospital, Buffalo, N.Y. 14208. Tel (716) 886-4400.

CALLICOON, N.Y., Sullivan County. G.P., Internist, Pediatrician.

CONTACT: MR. HOWARD STEWART, Grover M. Hermann Hospital, Callicoon, N.Y. 12723. Tel. (914) 887-5490.

CARTHAGE, N.Y., Jefferson County, needs Orthopedic Surgeon, General Surgeon, Internist, Ophthalmologist, Pediatrician, Family or General Practitioner; also specialist in Obstetrics/Gynecology.

CONTACT: MR. CLARK A. JOHNSON, 277 State St., Carthage, N.Y. 12847. Tel. Mrs. Thomas Lamos (518) 624-3441.

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CONTACT: JOHN BERTRAND, M.D., Crouse Irving Memorial Hospital, 736 Irving Avenue, Syracuse, N.Y. 13210. Tel. (315) 478-6611.

CATO, N.Y., Cayuga County. G.P.

CONTACT: FLORENCE WILKES, Secty., Northern Cayuga Health Services, Cato, N.Y. 13033. Tel. (315) 626-6401.

CHATEAUGAY, N.Y., Franklin County, needs at least 3 or 4 physicians to give adequate care to the area.

CONTACT: DONALD A. RICHTER, M.D., President, Medical Society of the County of Franklin, 59 Kiwassa Road, Saranac Lake, N.Y. 12983.

CHATEAUGAY, N.Y., Franklin County. G.P.

CONTACT: MR. JOHN D. LYONS, Box #68, Chateaugay, N.Y. 12920. Tel. (518) 497-2661.

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CONTACT: MRS. LINDA COCKS, Doctor's Committee, Village of Clinton, N.Y. 13323.

EVENTS RECEIVED AFTER DEADLINE

TUESDAY, MAY 23

8:00 p.m.

Psychoanalytic Clinic for Training and Research, Columbia University
2 East 103rd Street

THE PRIMAL SCENE AND THE SENSE OF REALITY

PHYLLIS GREENACRE, M.D.

16th Annual Sandor Rado Lecturer

FRIDAY, JUNE 2

8:00 p.m.

Staten Island Family Service
25 Victory Boulevard
Staten Island

USE OF HYPNOSIS IN PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
Institute of Human Relations

For information: Sid Herling, MSW, Director, above address.

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9:30 a.m.–12 noon, Sundays

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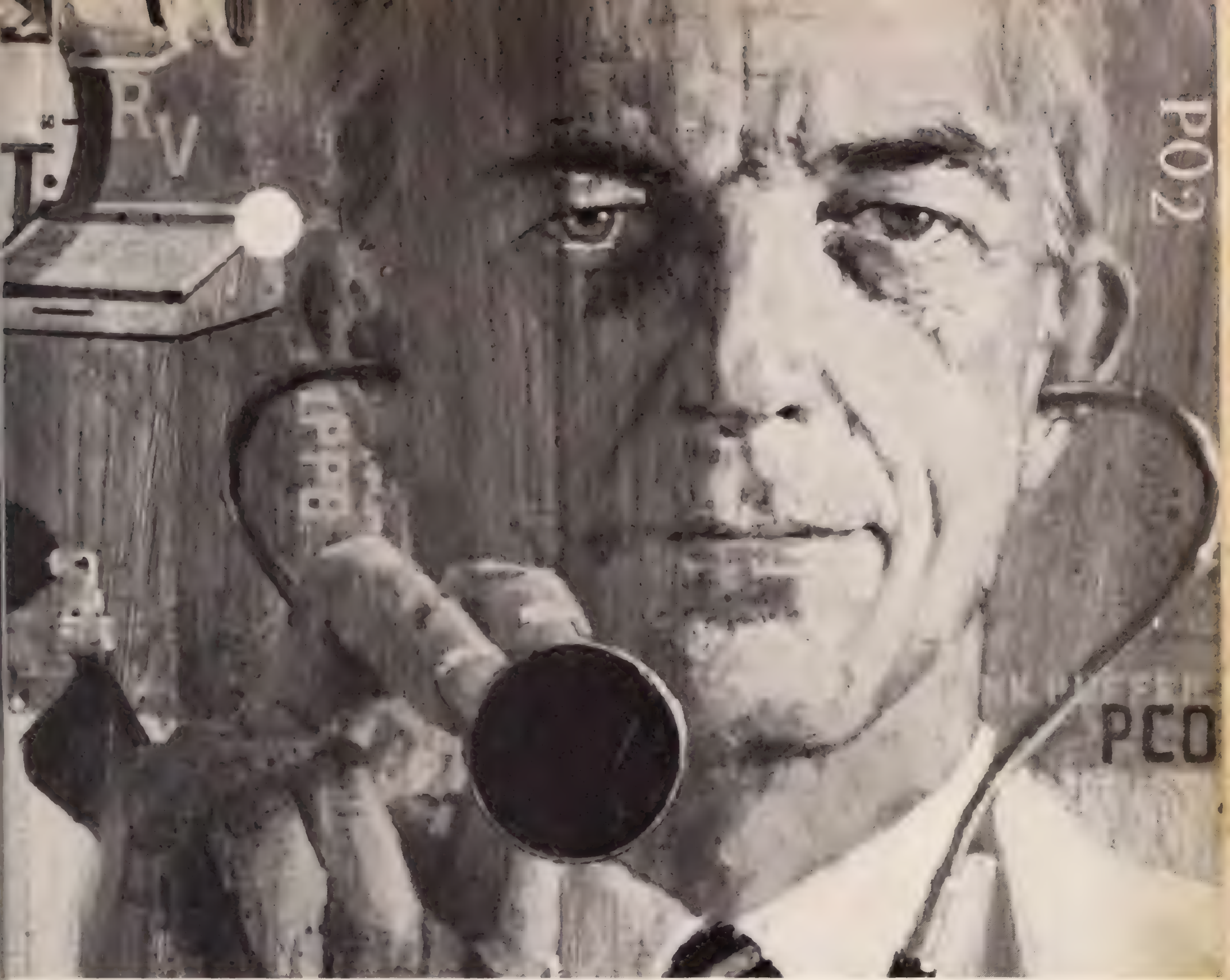

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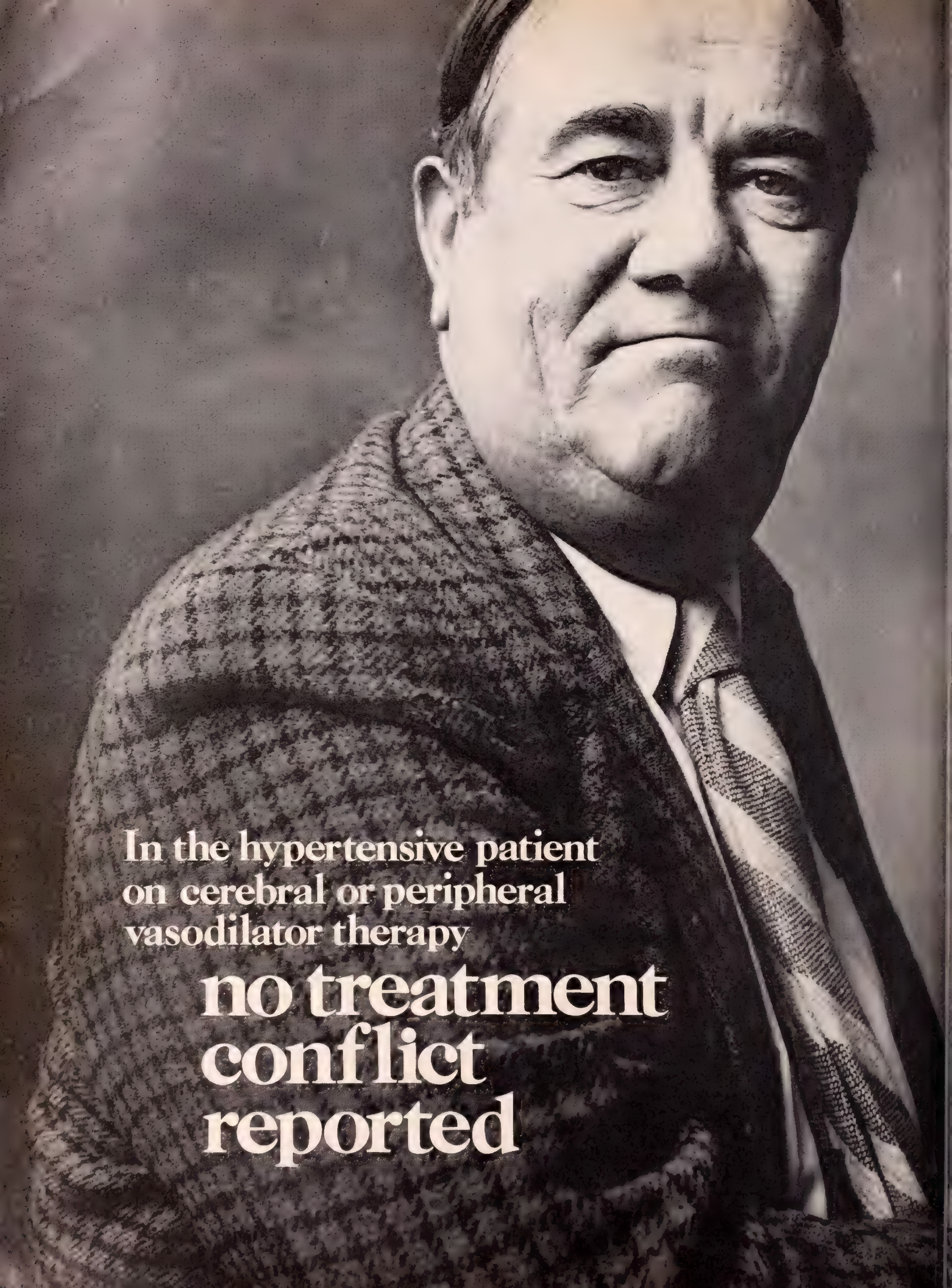
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New York State Journal of Medicine

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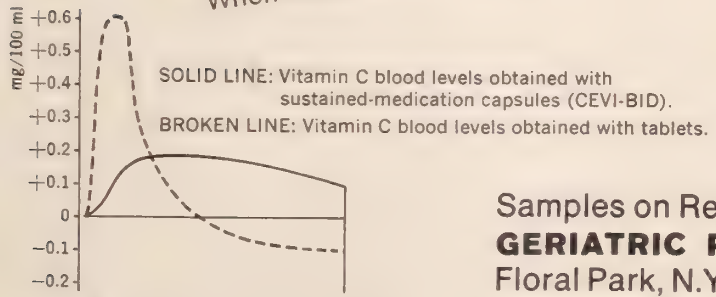

*Comparison of ascorbic acid blood levels after administration of 1 gram of ascorbic acid in effervescent tablet form and 1 gram of CEVI-BID (2 capsules). *Adaptation

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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1543 WHAT GOES ON

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Abstracts

Lynfield, Y. L., Ostroff, G., and Abraham, J.: Bacteria, skin sterilization, and wound healing in psoriasis, ***New York State J. Med.* 72:** 1247 (June 1) 1972.

Surgeons are often reluctant to perform elective operations on patients with psoriasis because of fear of passing a needle through, or making an incision through, a psoriatic plaque. Ten psoriatic males were studied during their stay in a dermatology ward to see if these fears were justified. It was found that bacterial colonies were more numerous on a psoriatic plaque than on normal skin, the number of colonies declined with depth, there were no differences between the surface flora of a psoriatic plaque and the adjacent normal skin, standard presurgical skin preparation sterilized the plaques as well as the normal skin, and psoriatic sites healed as fast as normal sites.

Reynoso, G., Chu, T. M., Aungst, W. C., and Priore, R. L.: Automated multiphasic laboratory screening in cancer population, ***New York State J. Med.* 72:** 1251 (June 1) 1972.

Automated laboratory multiphasic health screening was performed on 158 patients admitted to Roswell Park Memorial Institute with presumptive diagnosis of cancer for the purpose of evaluating the value of screening in predicting the final diagnosis. Correlation was found between the initial serum lactic dehydrogenase activity and the final diagnosis in 114 patients. The serum lactic dehydrogenase was above 126 mIU per milliliter in those patients in whom the diagnosis of cancer was confirmed and below 125 units in those in whom the admission diagnosis of cancer was eventually ruled out. It is concluded that a long-term study along similar lines may be necessary to elucidate further the predictive ability of laboratory screening in the patient with cancer.

Cushman, P., Jr.: Sexual behavior in heroin addiction and methadone maintenance; Correlation with plasma luteinizing hormone, ***New York State J. Med.* 72:** 1261 (June 1) 1972.

Disturbances in sexual appetite and performance in heroin addiction were investigated by interviewing four groups; controls, active heroin addicts, abstinent former addicts, and methadone-maintained former narcotic addicts. Interviews disclosed a high incidence of libido, potency, and ejaculation difficulties accompanying heroin use in the currently addicted and formerly addicted groups. All patients described normal sexuality before addiction. Rapid return to normal usually accompanied enforced withdrawal from heroin in all the addicted groups. At the time of the study, all abstinent patients reported normal sexuality, and most methadone-maintained patients reported improved or normal sexual performance and libido. Measurements of plasma luteinizing hormone (LH) were normal in all groups. The inhibitory effects of heroin use in sexuality are usually rapidly reversible and do not appear to involve resting levels of plasma LH. The sedative or euphoric effects of heroin itself may play a contributory role in what may be primarily a psychologic disturbance.

Wolberg, L. R.: Psychiatric technics in crisis therapy, ***New York State J. Med.* 72:** 1266 (June 1) 1972.

Crisis therapy is oriented toward two goals: the modification or removal of the crisis or symptom complaint, and the initiation of a corrective influence on the patient's adjustments to life and other people. Once the adaptive equation has been unbalanced, the procedure used in the unbalancing should institute character changes over a long period of time after the termination of therapy. Any of several methods may be employed; manipulation of the environment, drug therapy, hypnosis, group therapy, family therapy, behavior therapy, or psychoanalytic probing; the method depends on both the individual needs of the patient and on the aptitude of the patient for working with the selected method. The technics employed usually reveal the patients resistances and defenses, which are then examined to provide the patient with insights essential to his understanding of his problems. Patient reactions to the technics and to the therapist can become important foci for dealing with obstructive transference and other resistances to change.

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> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
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> *—George Sarton, from "The History of Medicine Versus the History of Art"*

Would it be useful in clinical practice to have government predetermine drugs of choice?

Opinion

Results of a survey of physicians:

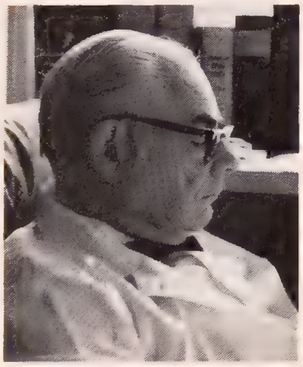
13.3%
Yes, it would be useful.

86.7%
No, it would not be useful.

Would it be useful in clinical practice to have government predetermine drugs of choice?

Doctor of Medicine

Walter Modell, M.D.,
Professor of Pharmacology,
Cornell University
Medical College,
Editor,
Clinical Pharmacology
& Therapeutics,
Drugs of Choice,
Rational Drug Therapy



The proposition that government should determine one or two "drugs of choice" within a given therapeutic class reflects the belief that a similarity in molecular structure insures a close similarity in pharmacologic effect. But this is by no means the rule. An obvious example would be in the field of diuretics, where a small change in chemical structure accounts for substantial differences in concomitant effects such as potassium excretion.

Any attempt to dictate the "drug of choice" would be complicated by the fact that some populations demonstrate a bimodal distribution in their reaction to drugs. If the data on drug response are mixed for the total population, one drug will appear to be as useful as the other. But if drug response is reported separately for different segments of the population, drug A will be found to be better for one group and drug B for the other.

It may, of course, be possible to determine drugs of choice in particular categories on a broad statistical basis. But there are always certain patients in whom a drug produces odd, unpredictable or idiosyncratic reactions. So, though a drug might statistically be the most useful one in a given situation, individual variations in response might make it the *incorrect* one.

The point I wish to make is that if two, three, four or more drugs in one class are of approximately equal merit, that in itself is justification for their availability. Exceptional cases do arise in which one drug would be useful to a certain segment of the population and another drug would be of no use at all. In the practice of medicine, the physician must be prepared to treat the routine as well as the unusual case.

Another objection to the determination of a drug of choice is that precise statements of *relative* efficacy are very difficult to make—much more difficult than statements of efficacy. For example, in testing drug efficacy, it is easy to determine the difference between a drug that is effective in treating a condition and one that is not at all effective. Thus, it is fairly easy to determine whether a drug is more effective than a placebo. But if you compare one drug that is effective with another drug that is also effective, and the relative differences between them are very slight, statements of relative efficacy may be very difficult to make with assurance.

I do not mean to imply that relative efficacy statements are not useful or can never be made. With some groups of drugs (e.g., analgesics), extensive study and precise methodology have yielded useful information on relative efficacy. But in most situations, such information can be acquired only through studies encompassing three to five years of use in many more patients than are used to compare drugs with a placebo for the introduction of a drug into commerce. It is really only after practitioners use a drug extensively that relative safety and efficacy in practice can really be determined.

The Bureau of Drugs has suggested the package insert as a possible means of communicating information on relative efficacy of drugs to the physician. I find this objectionable, since I do not believe the physician should have to rely on this source for final scientific truth. There is also a practical objection: Since few physicians actually dispense drugs, they seldom see the package insert. In any event, I would maintain that the physician should know what drug he wants and why without depending on the government or the manufacturer to tell him.

Undoubtedly, physicians are swamped by excessive numbers of drugs in some therapeutic categories. And I am well aware that many drugs within such categories could be eliminated without any loss, or perhaps even some profit, to the practice of medicine. But, in my opinion, neither the FDA nor any other single group has the expertise and the wisdom necessary to determine the one "drug of choice" in all areas of medical practice.

Maker of Medicine

Kenneth G. Kohlstaedt, M.D.,
Vice President,
Medical Research,
Eli Lilly and Company

In my opinion, it is not the function of any government or private regulatory agency to designate a "drug of choice." This determination should be made by the physician after he has received full information on the properties of a drug, and then it will be based on his experience with this drug and his knowledge of the individual patient who is seeking treatment.

If an evaluation of comparative efficacy were to be made, particularly by government, at the time a new drug is being approved for marketing, it would be a great disservice to medicine and thus to the patient—the consumer. For example, when a new therapeutic agent is introduced, on the basis of limited knowledge, it may be considered to be more potent, more effective, or safer than products already on the market. Conceivably, at this time the new drug could be labeled "the drug of choice." But as additional clinical experience is accumulated, new evidence may become available. Later, it may be apparent that the established products should not be so easily dismissed.

Variation in patient response to drugs constitutes one of the major obstacles to the determination of "drugs of choice." We are just beginning to open the door on pharmacogenetics, but it is evident that genetic differences cause wide variations in the way drugs are absorbed, metabolized, etc. This fact alone is sufficient to make unrealistic the idea that there is one drug in each class to be used for every human being.

The problem of determining relative drug efficacy is an extremely complicated one. Comparison with other drugs of the same class should not be a prerequisite for marketing a new substance. In some therapeutic areas, it may be difficult to make accurate comparisons. For example, in the treatment of infections it is not possible to conduct crossover studies. Recovery may be influenced by factors which cannot be controlled or measured, i.e., natural host resistance and virulence of infective agents. A drug's acceptability must often be judged on the basis of its own performance, and this may be limited to experience in a relatively small patient population. If the introduction of a new drug must await the adequate establishment of relative efficacy, the duration of clinical trial and extent of studies would be greatly prolonged, particularly for rare or unusual conditions. The availability of a new drug would be delayed. Many patients might suffer needlessly and lives might be lost.

Relative efficacy can best be established by experience in a general patient population through regular channels of clinical practice. The physician considers the patient as a whole, which means the patient often has multiple problems and drugs must be selected with this in mind. Hence, a "drug of choice" in an uncomplicated case may not be the best drug for a patient with associated problems. Publication of well-controlled studies in medical journals may provide comparative evidence; discussions at medical meetings, presentations at postgraduate courses, and the new audio-visual technology may bring evidence to physicians on comparative therapy. In a free medical marketplace, a drug that does not measure up will fall into disuse. For example, broad clinical experience has established vitamin B_{12} as the "drug of choice" for the treatment of primary pernicious anemia. No amount of advertising or promotional effort by the manufacturer could increase the use of liver extract for this anemia. However, a physician may wish to employ parenteral liver preparations for a special purpose.

In the field of surgery, peer review in the hospital has brought significant improvement in the use of new techniques and procedures. Something of this nature would be useful in the area of drug therapy. However, it should be developed by the medical profession itself and would necessitate, for its proper function, an improvement in the dissemination of reliable data on clinical pharmacology of drugs under consideration.

Ideally, information on the relative efficacy of drugs should be gathered and assessed by the physicians who actually administer the specific agents to a specific patient population. To do this, they will need even more information on the drugs they use—information that the pharmaceutical manufacturers must begin to provide if government regulation of *"drugs of choice"* is to be avoided.

Opinion & Dialogue

What is your opinion, doctor?
Send us your comments on the above issue.

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Abstracts in Interlingua

Lynfield, Y. L., Ostroff, G., e Abraham, J.: Bacterios, sterilisation del pelle, e cicatrisation del ferimentos in psoriasis, ***New York State J. Med.*** **72:** 1247 (1 de Junio) 1972.

Le chirurgos es frequentemente reluctante a facer operationes elective in patientes con psoriasis per timor de facer penetrar un agulia o facer un incision in un placa psoriatic. Dece (10) homines psoriatic esseva studiate durante su permanentia in un sala de dermatologia pro vider si iste timores esseva justificate. Esseva trovate que le colonias bacterial esseva plus numerose in un placa psoriatic que in pelle normal. Le numero de colonias declinava con le profunditate; non habeva differentias inter le flora superficial del placa psoriatic e le pelle normal adjacente. Le preparation prechirurgic standard del pelle sterilisave le placas e etiam le pelle normal, e le sitos psoriatic cicatrisava tan rapide como le sitos normal.

Reynoso, G., Chu, T. M., Aungst, W. C., e Priore, R. L.: Laboratorio selective, automatisate, multiphasic in population con cancer, ***New York State J. Med.*** **72:** 1251 (1 de Junio) 1972.

Un studio selective de sanitate esseva facite in un laboratorio automatisate, multiphasic in 158 patientes hospitalisate in le Instituto Roswell Park Memorial con le diagnose presumptive de cancer, con le proposito de evalutar le selection pro predicer le diagnose final. Un correlation esseva trovate inter le activitate initial del dehydrogenasa lactic seric initial e le diagnose final in 114 patientes. Le dehydrogenasa lactic seric esseva supra 126 mUI per ml. in le patientes in que le diagnose de cancer esseva confirmate, e inferior a 125 unitates in le que le diagnose de cancer al hospitalisation esseva, ulteriormente, eliminate. Es concludite que un studio prolongate infra similar base pote esser necessari pro elucidar melior le capacitate predictive del laboratorio selective in patientes con cancer.

Cushman, P., Jr.: Comportamento sexual in addictos al heroina e illos infra mantenimento con methadona; Correlation con le hormona luteinisante plasmatic ("LH"), ***New York State J. Med.*** **72:** 1261 (1 de Junio) 1972.

Le disturbamentos del appetito e le activitate sexual in addictos al heroina esseva investigate mediante intervistas con quatro gruppos de personas: controles, addictos active al heroina, ex-addictos e ex-addictos al narcoticos e mantenite con methadona. Le intervistas discoperiva un elevate incidentia de difficultates del libido, potentia e ejaculation accompaniante al uso del heroina in le gruppos del addictos actual e passate. Omne patientes habeva un sexualitate normal pre-addictive. Le rapide retorno al stato normal del sexualitate esseva generalmente relationate con le suppression obligate del heroina in omne le gruppos de addictos. Al tempore del studio, omne patientes abstinente reporteva un sexualitate normal, e le majoritate del patientes mantenite con methadona reporteva un melioramento o normalitate del performance sexual o del libido. Le mensuras del LH plasmatic esseva normal in omne gruppos. Le effectos inhibitori del uso del heroina super le sexualitate in general es rapidemente reversibile e non pare compromitter le nivellos de reposo del LH plasmatic. Le effectos sedative e euphoric del heroina mesme pote haber parte contributori in le que pote esser primarimente un disturbamento psychologic.

Wolberg, L. R.: Technicas psychiatric in le therapia de crisis, ***New York State J. Med.*** **72:** 1266 (1 de Junio) 1972.

Le therapia del crisis es orientate verso duo objectivos: le modification o elimination del crisis o del symptoma reportate, e le initiation de un influentia corrective super le adjustamento al vita del patiente e altere personas. Quando le equation adaptative ha essite non equilibrate, le procedimento usate in le disequilibrio debe provocar cambios del character per un periodo longe depost le termination del therapia. Qualunque de plure methodos pote esser usate: manipulation del ambiente, chimotherapia, hypnosis, therapia de gruppos, therapia familial, therapia de comportamento, o sondage psychoanalytic. Le methodo depende tanto del necessitates individual del patiente como de su aptitude de travaliar con le methodo selectionate. Le technica usate generalmente discopere le resistentias e defensas del patientes que, depost, es examinate pro provider le patiente con le apperceptiones essential al comprension del sue problemas. Le reactiones del patientes al technicas e al therapista pote devenir importante focos pro tratar con transferentias obstructive e altere resistentias al cambios.

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Books Reviewed

The Retinal Circulation. By George N. Wise, M.D., Colin T. Dollery, M.B., and Paul Henkind, M.D. Quarto of 574 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $35.

The authors are eminently qualified on the basis of years of clinical practice and the experimental approach to focus our attention on the retinal and choroidal blood vessels. The book is all embracing, covering almost every conceivable aspect of the subject, starting with chapters on embryology, human and comparative anatomy, vascular dynamics, the technic and interpretation of fluorescein angiography, and ending with a chapter on records of experimental vascular disturbances induced in animals to mimic those in the human eye. Among others there are excellent chapters fully covering hypertensive and diabetic retinopathy and diskiform macular diseases. The authors succeed in making the reader understand, by text and illustrations, what is happening in the fundi, insofar as is known, by correlating the ophthalmoscopy with the angiographic appearances and microcirculatory pathology. Not only ophthalmologists but all physicians and researchers interested in the vascular system will benefit by reading this book. **Jesse M. Levitt, M.D.**

Retinal Diseases in Children. Edited by William Tasman, M.D. Octavo of 260 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $15.

W. Tasman, M.D., Editor and Contributor, together with a group of ophthalmologists have just published a monograph of *Retinal Diseases in Children.* Ophthalmology has been greatly enriched by this endeavor.

The research data, with clinical material provides the pediatrician and for that matter also the general practitioner a solid foundation of pathogenic consideration, diagnostic studies and therapeutic measures. The photographs and fluorescein photography illustrate the various changes in clinical cases. Rare and intracranial ocular manifestations are well documented.

The metabolic and enzymatic discussions of retinal disorders are discussed in detail and worthy of note—particularly the lipoproteins and the effects of cholesterol and fatty acids on night blindness.

On the subject of ocular inflammations, and the mention of Still's disease as a cause of uveal inflammation, surprisingly the older clinicians Barker, Still, Piske, or Osler and McCrae—never mentioned same in their observation of Still's disease, perhaps this was a new or rare finding.

Of great interest to the pediatrician are the sections on (retrolental) fibroplasia, "the pediatrician's nightmare," Tay Sachs, Gaucher's, rubella, and other retinal disorders.

The book can be recommended to the pediatrician as office reference for its elaborate study of genetics, clinical course, diagnoses, and treatment.

The authors are to be commended for their thoroughness and in depth coverage of so difficult a subject. **Harry R. Litchfield, M.D., F.A.A.P.**

A Primer of Clinical Diagnosis. By William B. Buckingham, M.D., Marshall Sparberg, M.D., and Martin Brandfonbrener, M.D. Octavo of 356 pages, illustrated. New York, N.Y., Harper & Row, Publishers, Inc., 1971. Cloth, $12.75.

This practical book on "how to examine" fulfills the needs of the novice in his early medical curriculum. The details of all types of physical examination and especially cardiac diagnosis are well done. The use of all the senses in examination is the essential method of instruction. The simpler instrumental technics: the blade, the glove, tuning fork, and percussion hammer are explained. However, chapters by specialists in eye, ear, nose, and throat are additional features. Its authors have used a manual of this discipline at Northwestern University Medical School for several years.

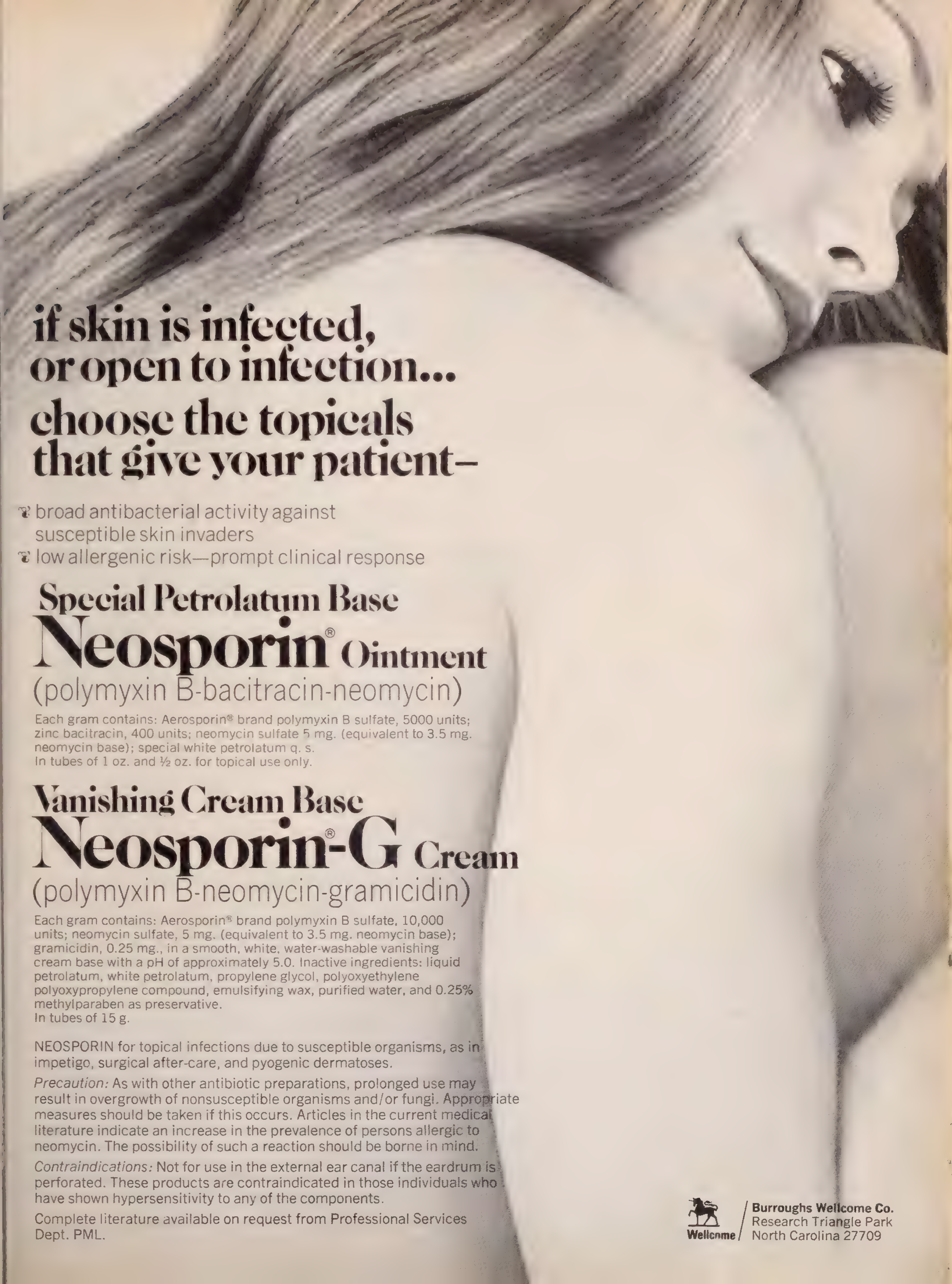
Abundant photographs and three dimensional drawings add to the skill of the authors in their portrayal of physical diagnostic measures. The technic of history taking is also included. It was underwritten by a grant from the National Institutes of Health. It is a "road map to guide the course of the medical student through his maturing clinical diagnostic journey." Practitioners of medicine who employ the methods advised are truly dedicated. If one has no such book in his library, it is a must. **Bernard Seligman, M.D.**

American Medicine in Crisis. Its Language and Philosophy. By Edward P. Luongo, M.D. Octavo of 194 pages, illustrated. New York, Philosophical Library, Inc., 1971. Cloth, $9.95.

This is a well written fruity volume with emphasis on the humanities, philosophy, psychology, and on orientation in ideation and semantics. Care of the total population is the expressed goal. Historical narration includes that of Hippocrates whose classical thesis Airs, Waters, and Places was written for aristocrats while he advocated the care of all including the "cursed slaves" whom Socrates called friends. The various phases of medical care are discussed even as a purchasable commodity, a term that he suggests. Medical care is partially subsidized for the wealthy by the United States government.

There are several serious criticisms. The lack of popular response to preventive health measures is not included. He does not discuss the overly request by elderly Medicare and all Medicaid patients. He should also ponder on the myriads of measures and treatments suggested for all the complicated and intricate potentialities, disorders, and suffering of mankind. The trivia of examining all skin lesions for malignancy would be a colossal undertaking. Multiphasic screening and its

continued on page 1234



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continued from page 1232

inroads into further tremendous costly, and many times futile avenues of search, is the antithesis of a Gordian knot. In this vein, it would be wise to consider the recent need of the Chinese for involvement of every citizen in medical care service. The book is well worth reading and having as a reference book in all colleges. It is especially useful for the potential medical student and those who select them for admission into medical school. **Bernard Seligman, M.D.**

Social Aspects of Clinical Medicine. By Jessie Garrad, B.A., B.Sc., and Professor Sir Max Rosenheim, M.A., M.D. Octavo of 174 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1970. Paper, $6.50.

This book correlates the medical and paramedical efforts that are coming to surface in many hospital units for better total care of individual patients. Social service, nurse, physician, and all welfare agents vital to the complexities involved in the etiology and treatment of the individual patient and his community are discussed. This book is divided into sections: social history and its effect on patients or relatives; illustrative case history; free medical and social communication. The final section summarizes the medical and social services available. It is written in a clear concise fashion. It is primarily written for medical students and should be made the basis of his approach to the further practice of medicine.

Of course this is the English approach at its best. **Bernard Seligman, M.D.**

Human Anatomy—A Visual Synopsis. By F. Donald Napolitani, M.D. Octavo of 233 pages, illustrated. Philadelphia, Pa., J. B. Lippincott Company, 1970. Paper, $2.95.

It is an excellent book for the hospital residents and interns, covering the field of anatomy in its various sections of the body. The drawings in black and white are excellent in concept; many are schematic in origin.

Due to J. B. Lippincott's demand for accuracy, the drawings took about eight years to complete to avoid technical errors. The book also lends itself to the specialties, the most important drawings of each section being most commonly in demand for the subject. To correlate the drawings, there are various state, and board questions in each section, also examples of true and false questions. Being labeled on each side of the drawing, the English words lend themselves to having the foreign student place his own anatomic language beneath it, so that he may get to recognize the English words quickly.

The author has correctly stated, "It is important for the foreign students to know the human body and the anatomical relationships, since this is the most important thing they are dealing with before a specialty is considered." For those residents preparing for examinations, the blank page opposite each drawing lends itself to putting in notes for review. The book is pocket size, easy to carry, and is excellent for hospital workers. Many of the metropolitan city hospitals have put this book in their gift shop or book store.

Nurses and doctors in the hospital have been buying this book for $3.

Medical students can also use the book in lectures, especially those students who cannot draw well, the drawings being excellent for the lecture that they are attending. It has a section on anatomic terms and those for examinations. The latest terminology is employed. The drawings, being very simple, contain much material, and help develop that photographic memory which is the essence of anatomic learning and retention. In our division, we have used it for boards, the drawings in our section being the most commonly used. **Jeevan Mathura, M.D.**

Insulin adjustment

Adjustment of insulin dosage by the sliding scale method has been discontinued in leading centers, but there has been little criticism of the method in the literature, states D. R. MacMillan in a recent article (J. Kentucky M. A. 68: 577 [Sept.] 1970). He reports on a study to evaluate the efficacy of the sliding scale method, which dictates a specified number of units of insulin for each "plus" of the Ames reaction, so that current glycosuria is the sole determining factor in dose calculation. After comparative observations on two groups of young patients, one group getting regular insulin therapy according to the sliding scale and the other treated early with modified insulin, the conclusion was made that the shortcomings of the sliding scale method of regular insulin dose adjustment were obvious, as control was infrequently established using this method. A major defect in the method is the omission of insulin when glycosuria ceases. In general, the size of the dose is out of phase with the insulin needs of the patient.

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TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

The following chart was adapted by the Suffolk County Medical Society from one prepared by the Suffolk County District Attorney's Office

Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana ("Pot," "Grass")	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines ("Pep Pills," "Ups")	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates ("Goof Balls," "Downs")	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

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Medical News

Grant for cancer detection given to N.Y.U.

The New York University Medical Center has received a $30,000 grant from the American Cancer Society's New York City Division for an educational program that includes cancer detection and cancer care.

The funds will help support 6 public and professional education programs which will be centered at University Hospital, Bellevue Hospital Center, the Manhattan Veterans Administration Hospital, New York University School of Medicine, and the College of Dentistry, and the Strang clinic of the Preventive Medicine Institute, an institution affiliated with N.Y.U. Medical Center, which is concerned with the early diagnosis of cancer.

Supported by the grant are programs for:

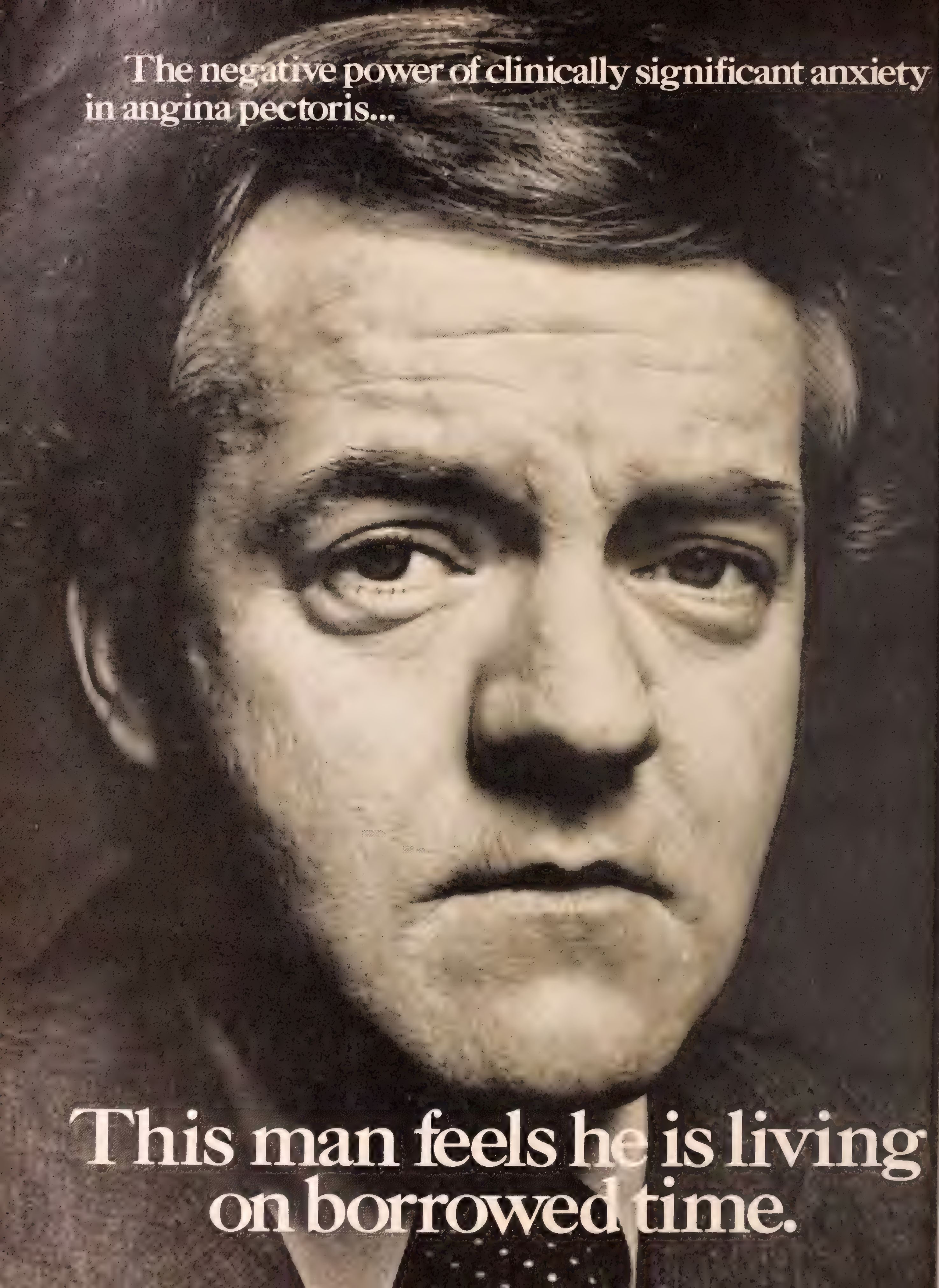
1. Development of a cancer nursing curriculum for registered and practical nurses.
2. Development of interdisciplinary teaching sessions and seminars on oral cancer for medical and dental graduate and undergraduate students.
3. Introduction of high school and college students to careers in cancer detection, research, and education.
4. Assignment of medical students and house-staff officers to the regular cancer detection sessions at Strang Clinic-Preventive Medicine Institute.
5. Undergraduate and graduate teaching of problems in the early recognition, diagnosis, and treatment of malignant melanomas.
6. Teaching effective technics for the early recognition and treatment of breast cancer.

Launch sickle-cell testing at high school

A new front in the battle against sickle-cell disease has been opened at Julia Richman High School in New York City, where Cornell University's black medical and nursing students have launched a screening program for the more than 4,000 teenagers enrolled there. Supported by a $10,000 grant from the National Foundation-March of Dimes for the first year of operation, the program is aimed at identifying and providing counseling for those youngsters who have the disease or who carry the inherited sickle-cell trait which can be passed on to succeeding generations.

Physicians estimate that 8 to 11 per cent of the black population has the inherited abnormality, with one out of every 40 people in this group having the anemia. This means that out of 20 million black Americans, approximately 2.3 million are carriers, and 56,490 suffer from the actual disease. If two carriers marry and have a child, the chances are one in four that the child will inherit the disease.

Material for inclusion in the medical news section must be received six weeks prior to publication date.


The negative power of clinically significant anxiety in angina pectoris...
This man feels he is living on borrowed time.

During anginal attacks, patients may suffer intense apprehension. More frequently, however, they experience a continuing sense of less severe but nonetheless disproportionate anxiety.

Reduction of such clinically significant anxiety is important, since undue emotional stress may precipitate further anginal episodes.

Adjunctive Librium (chlordiazepoxide HCl) may be especially suitable for relief of clinically significant anxiety and emotional tension in anginal patients because of its generally prompt therapeutic effectiveness and wide margin of safety. In a recent double-blind randomized study,* Librium (chlordiazepoxide HCl) was administered for relief of moderate anxiety in 20 anginal patients seen in office practice over a 20-week period. Symptoms of emotional distress related to anxiety were rated at base-line, one week, two weeks and monthly thereafter. Relief was obtained notably early in therapy. The clinical results demonstrated that Librium offers the coronary patient an antianxiety drug that, in the author's opinion, is both effective and safe. In general use, the most common side effects reported have been drowsiness, ataxia and confusion, particularly in the elderly and debilitated. (See summary of prescribing information.)

Librium (chlordiazepoxide HCl) is used concomitantly with certain specific medications of other classes of drugs, such as cardiac glycosides, diuretics and antihypertensive agents, whenever anxiety is clinically significant. The drug should be discontinued after anxiety has been reduced to appropriate levels.

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Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido – all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

*Levine, S.: "Angina Pectoris and Emotional Overlay," Scientific Exhibit presented at the Annual Meeting of the Maine Medical Association, Kennebunkport, Me., June 13-15, 1971.

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Editorial

How not to read the June 1st Issue

For many years the June 1st issue of the ***JOURNAL*** has published the edited minutes of the transactions of the House of Delegates at its Annual Meeting in mid-February. Originally two volumes were gotten out for the readers on September 1st, a regular issue and a supplemental issue covering the transactions.

In the interest of economy it was decided several years ago to combine the regular issue of June 1st with the transactions. The regular issue has been refined to a limited number of scientific papers and the transactions have been hoved down to full coverage with the least possible amount of wordage. This is a monumental task each year involving the work of many people in the State Medical Society.

The transactions mint your attentions. If you are tempted to pass it over—don't.

A reading of the Reference Committees' reports alone will fill you in on the wide and complex activities of your Society.

You will surely come away with the feeling that your elected representatives are abreast of the times and contending with giants.

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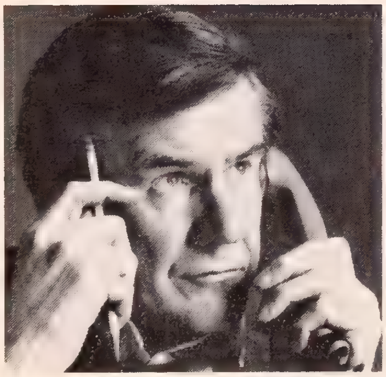

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BACTERIA, SKIN STERILIZATION, AND WOUND HEALING IN PSORIASIS

Surgeons are often reluctant to perform elective operations on patients with psoriasis because of fear of passing a needle through, or making an incision through, a psoriatic plaque. Ten psoriatic males were studied during their stay in a dermatology ward to see if these fears were justified. It was found that bacterial colonies were more numerous on a psoriatic plaque than on normal skin, the number of colonies declined with depth, there were no differences between the surface flora of a psoriatic plaque and the adjacent normal skin, standard presurgical skin preparation sterilized the plaques as well as the normal skin, and psoriatic sites healed as fast as normal sites.

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Psoriasis affects at least 1 out of every 100 Americans. When patients with this chronic skin disease require emergency surgery, such as an appendectomy, they heal as quickly as, and with no more complications than, nonpsoriatic patients, according to many experienced clinicians. However, they are often denied elective surgery or spinal anesthesia because of fear of making an incision or passing a needle through a psoriatic plaque. Psoriatic skin supports a higher bacterial population than normal skin. The bacterial population sometimes includes pathogens, such as Staphylococcus aureus, yet the patient may be without any clinical evidence of infection.[1] This study was designed to determine whether a standard presurgical skin preparation could effectively sterilize psoriatic plaques. Its purpose was to convince surgeons and anesthetists that psoriasis should not be a contraindication to any procedure.

Presented at the 165th Annual Convention of the Medical Society of the State of New York, New York City, Section on Dermatology, February 15, 1971.

Materials and methods

Ten white men with chronic, widespread psoriasis were studied during hospitalization on the dermatology ward of the Brooklyn Veterans Administration Hospital. Various topical treatments were used, including petrolatum, tar, and steroid creams with and without occlusion. None received systemic steroids or methotrexate. Most skin sites studied were on the trunk; a few were on the upper and lower extremities. Intertriginous sites were not included.

Surface skin sampling was performed using Rodac contact plates with tryptone glucose extract agar medium.[2] Surface and deeper layers were studied by the skin-stripping method of Updegraff.[3] With aseptic technic, 2-inch squares of Scotch brand 850 tape were used to strip off successive layers of stratum corneum until the Auspitz sign (minute bleeding points) appeared; usually 10 to 20 layers were stripped. Each tape was then laid face up in the bottom of a Petri dish, and melted tryptone glucose agar enriched with yeast extract was poured over it. The plates were incubated at 37°C., some aerobically and some anaerobically, for forty-eight hours.

For both the Rodac and Updegraff methods, colonies were counted in the central 2 by 2-cm. square of the plate. Colonies were then identified by standard bacteriologic technics.

The depth to which tape stripping removed the superficial layers of skin was estimated histologically in 1 patient by examining sections from nor-

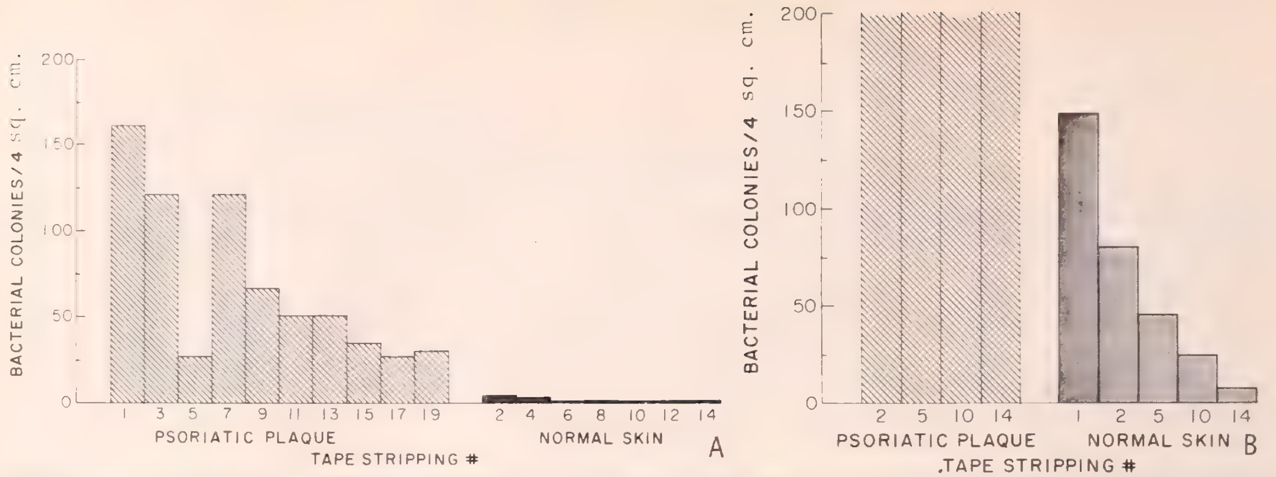

FIGURE 1. Comparison of bacterial density on psoriatic plaque with that on normal skin. (A) Anterior chest. (B) Forearm of patient.

mal skin and from a psoriatic plaque on the abdomen, which were biopsied after 20 tape strippings. The stripped sections revealed 0 to 2 layers of stratum corneum cells adherent to an intact granular layer. Adjacent unstripped normal skin revealed 9 distinct horny cell layers, while adjacent psoriatic plaque revealed 18 to 30 layers of parakeratotic horny cells.

Wound healing was studied in 2 psoriatic patients. In 1, 4-mm. punch biopsies of a plaque and of normal skin in a symmetric site on the upper back were performed. In the other, an ellipse of skin including part of an abdominal plaque and the adjacent normal skin was excised and sutured.

Results

In each of 7 cases studied, bacterial colonies were more numerous on a psoriatic plaque than on normal skin in a symmetric site on the opposite side of the body. This was seen not only on the surface, but also throughout the deeper layers of stratum corneum (Fig. 1).

Bacterial colonies were most numerous on the surface, and declined with depth. No difference was seen between pour plates incubated aerobically and anaerobically (Fig. 2).

There were no differences, quantitative or qualitative, between the surface flora of a psoriatic plaque and its adjacent normal skin, as determined by applying a Rodac plate to a small plaque and its surrounding skin or the edge of a large plaque so that half the plate touched psoriatic and half touched normal skin.

Identification of bacteria from the nose, throat, and skin of 6 psoriatic patients is shown in Table I. Case 3, who was not carrying Staphylococcus aureus on his skin at the time of admission to the hospital, was restudied after a week of hospitalization along with therapy with pHisohex showers twice daily and flurandrenolide (Cordran) cream without occlusive dressings, and had picked up Staphylococcus aureus. Case 5, after a week of inhospital treatment with pHisohex showers twice daily and fluocinolone acetonide (Synalar) cream and plastic wraps, carried mainly Proteus and Micrococci on his skin; after another week of this treatment, his lesions had almost disappeared but his skin grew a pure culture of Klebsiella.

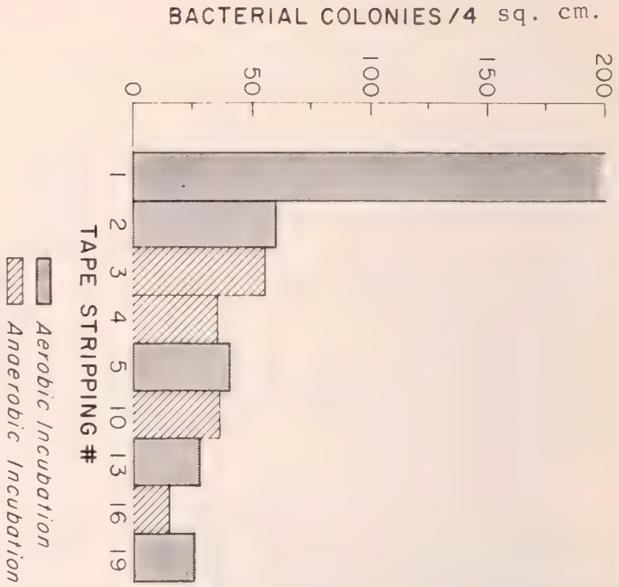

FIGURE 2. Number of bacterial colonies isolated from a psoriatic plaque by aerobic and anaerobic incubation. Case 4, abdomen.

The presurgical skin preparation which is standard in our hospital was applied to plaques of 7 psoriatic patients. This consisted of alternate wiping with 0.05 per cent iodine in 70 per cent alcohol and plain 70 per cent alcohol, three times

TABLE I. Comparison of nose, throat, and skin cultures in psoriatic patients

Patient	Nose	Throat	Plaque	Normal Skin
1	Staphylococcus aureus	. . .	Staphylococcus aureus	. . .
1	Staphylococcus epidermidis	. . .	. . .	. . .
2	Staphylococcus aureus	Beta hemolytic streptococcus	Staphylococcus aureus	. . .
2	. . .	Neisseria	Diphtheroids	. . .
2	. . .	. .	Proteus	. . .
3	. . .	Neisseria	Micrococcus	Micrococcus
3	. . .	. . .	Diphtheroids (few)	Diphtheroids
3	. . .	. . .	Hemophilus (few)	. . .
3*	. . .	. . .	Staphylococcus aureus	. . .
4	Staphylococcus aureus	Micrococcus	Staphylococcus aureus	Staphylococcus aureus
4	. . .	Streptococcus viridans	Staphylococcus epidermidis	Staphylococcus epidermidis
5	Staphylococcus aureus	Beta hemolytic streptococcus	Staphylococcus epidermidis	Staphylococcus aureus
5	Micrococcus	Streptococcus viridans	Diphtheroids	. . .
5	Streptococcus viridans	. . .	. . .	. . .
5	Escherichia coli	. . .	. . .	. . .
5*	. . .	. . .	Micrococcus	. . .
5*	. . .	. . .	Proteus	. . .
5†	. . .	. . .	Klebsiella	. . .
6	Staphylococcus epidermidis	Streptococcus viridans	Serratia marcescens	Serratia marcescens
6*	. .	. . .	Staphylococcus epidermidis	Staphylococcus epidermidis

* After one week in the hospital.
† After two weeks in the hospital.

each. Tape stripping performed ten minutes after application of the tinctures showed that all the plaques were sterilized, from the surface down to the level of the Auspitz sign, while control plaques from these patients grew the usual abundant psoriatic flora.

Mechanical removal of scales from the surface may contribute to sterilization. The first two plaques sterilized were scrubbed with the tinctures, but the following five had the tinctures dabbed on gently, with equally good sterilization. One plaque was scrubbed with six successive saline-soaked sponges, removing most of the scales. Tape stripping of this area revealed dispersion of the bacteria on the surface so that growth was confluent, and there were considerably fewer bacterial colonies in the deeper layers than were present on a control plaque.

In Case 4, a skin carrier of Staphylococcus aureus, stripping was done of a control plaque, a plaque ten minutes after alcohol-iodine preparation, and another plaque three hours after alcohol-iodine preparation. The tincture-treated plaque remained sterile after three hours. Alternate strips from it were smeared with a suspension of Staphylococcus aureus; melted agar was poured over these, and the plates were incubated together with the others. The growth of the applied staphylococci on tape strips from all levels of the plaque indicated that persistent traces of iodine on the tape were not sufficient to inhibit bacterial growth, and that viable bacteria in the skin would have been detected by our technic if they were still present.

Case 6, a skin carrier of Serratia marcescens, had abdominal psoriatic plaques covered by sterile dressings after alcohol-iodine preparation. The plaques remained sterile at all levels of the stratum corneum twenty-two hours after application of the tinctures. His control plaque grew almost confluent colonies.

The punch biopsies of a psoriatic plaque and of symmetrical normal skin healed equally fast, but psoriasis appeared in the previously normal site before healing was complete. The linear incision through the edge of a plaque healed without any detectable difference between plaque and previously uninvolved skin, but the plaque extended out to include the entire scar by the time the incision healed.

Comment

The presence of Staphylococcus aureus on psoriatic skin without clinical evidence of infection was previously documented by Noble,[1] who isolated Staphylococcus aureus from the skin of 9 out of 34 psoriatic patients. He found staphylococci in 7 of 16 inpatients, but in only 2 of 18 outpatients. In the present study, pathogenic staphylococci were isolated from the deeper layers of the stratum corneum as well as the skin surface of 6 out of 7 psoriatics in whom subculture from the colonies grown by the Updegraff technic was performed. Since all these patients had been hospitalized on previous occasions for treatment of their psoriasis, this probably reflects the ease with which a psoriatic skin can pick up pathogens from the environment and carry them persistently, rather than any intrinsic association between staphylococci and psoriasis. A study of the flora of psoriatics who have never been treated or hospitalized would be helpful in testing this hypothesis.

Histologic, electron microscopic, and serial scrubbing technics have shown that bacteria in normal skin are usually limited to the horny layer and to the superficial part of the hair follicles.[4-6] The exception is the type of follicle found on the face and upper trunk, which consists of a large sebaceous gland and a rudimentary hair, in which diphtheroids, mainly Corynebacterium acnes, can be found in the deeper layers.[5] The hyperkeratosis in psoriasis seems to encourage proliferation of bacteria in the thick, parakeratotic stratum corneum. The rarity of clinical evidence of infection in psoriasis despite the profusion of pathogens in the horny layer, in contrast to the frequent suppuration in eczematous lesions, indicates an intact cutaneous barrier to deeper invasion. When psoriatic skin is macerated by occlusive dressings, disrupting this barrier, pustules and boils are common complications.

Because of the constant shedding of scales, psoriatic plaques carrying pathogens contaminate the environment, and suitable precautions against this should be taken.[7] Payne[8] described a severe epidemic of resistant staphylococcal wound sepsis, in which the postoperative infection of 33 patients was traced to a psoriatic anesthetist who was carrying the Staphylococcus on his skin. Although he had been a known nasal carrier of staphylococci for three years, and a known psoriatic for eight years, no trouble ensued until his skin lesions became colonized by the Staphylococcus.

The demonstration that a standard presurgical skin preparation can sterilize psoriatic plaques should encourage surgeons to schedule elective surgery on patients with psoriasis soon after admission to the hospital. If the psoriatic patients are not already carriers of pathogens, a prolonged presurgical hospital stay to clear up the psoriasis will probably lead to skin colonization with the hospital flora. If they are already skin carriers of pathogens, they are a menace to the other surgical patients and should be discharged as soon as possible.

Preoperative preparation of patients with skin diseases is sometimes modified because of fear of using strong substances on sensitive skin. This should not be a consideration in the preoperative preparation of psoriatics. Their contaminated skin should get the full benefit of antiseptics and scrubbing. Of the 7 psoriatic patients treated with alcohol and iodine in this study, none developed any cutaneous irritation.

Comparison of wound healing in a psoriatic plaque with wound healing in noninvolved skin of the same patient is difficult because of the Koebner phenomenon. This is the tendency for certain skin diseases to appear in sites of previous skin injury. The Koebner phenomenon is commonly seen in psoriasis. Incision through the full thickness of skin is a type of trauma which is especially prone to produce the Koebner phenomenon. This should not cause concern, because the wound heals at a normal rate, and after complete healing the psoriasis can be treated with the usual dermatologic methods.

Summary

Quantitative and qualitative bacterial studies were performed on 10 hospitalized psoriatic men. Bacterial colonies were more numerous on plaques than on symmetric, normal-appearing skin, although the species isolated from both sites were usually identical. Bacteria isolated from plaques included Staphylococcus aureus, Staphylococcus epidermidis, Micrococcus, Corynebacterium, Proteus, Klebsiella, and Serratia marcescens. Psoriatic plaques were completely sterilized by application of tincture of iodine and 70 per cent ethanol alternately, three times each. In planning surgical procedures, the presence of psoriasis should not alter decisions regarding the skin incision, or standard anesthetic and surgical practice.

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AUTOMATED MULTIPHASIC LABORATORY SCREENING IN CANCER POPULATION

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Automated laboratory multiphasic health screening was performed on 158 patients admitted to Roswell Park Memorial Institute with presumptive diagnosis of cancer for the purpose of evaluating the value of screening in predicting the final diagnosis. Correlation was found between the initial serum lactic dehydrogenase activity and the final diagnosis in 114 patients. The serum lactic dehydrogenase was above 126 mIU per milliliter in those patients in whom the diagnosis of cancer was confirmed and below 125 units in those in whom the admission diagnosis of cancer was eventually ruled out. It is concluded that a long-term study along similar lines may be necessary to elucidate further the predictive ability of laboratory screening in the patient with cancer.

With the introduction of sequential multiple analyzers to the clinical laboratory it has become technically possible to analyze a large number of serum samples for a multitude of components at a relatively modest cost. The multiple analyzers together with the recently reawakened interest in multiphasic health screening have stimulated the development of automated screening laboratories in many medical centers.[1-3] Most current programs, however, are concerned only with the identification of unsuspected abnormalities in the presumably normal population.[4] Results to date appear to indicate that the prevalence of abnormal results depends in large part on the specific population studied, but there have been few reports concerned with the results of automatic screening in particular populations at risk.[5]

In addition, other problems remain, such as the difficulty to analyze and interpret the data properly[6] and the inability to integrate the laboratory findings with the management and follow-up of the patients.[7] Furthermore, the cost to identify an abnormal result must be considered in relation to the overall benefit for the target population.[8]

In the case of the cancer patient, studies have demonstrated the importance of periodic physical examinations in early diagnosis, but there are few comparable reports regarding laboratory findings.[9] The purpose of the present pilot study was to determine whether, in a largely prediagnosed population, the introduction of automatic laboratory screening would result in additional diagnostic projections or in improvement of the prognostic accuracy of the laboratory tests.

Data

The laboratory tests studied were calcium, phosphorus, reducing sugar, urea nitrogen, uric acid, cholesterol, total protein, albumin, total bilirubin, alkaline phosphatase, lactic dehydrogenase, transaminase, sodium, potassium, total carbon dioxide, chloride, hemoglobin, hematocrit, red and white blood cell counts, mean corpuscular volume, mean corpuscular hemoglobin, and mean corpuscular hemoglobin concentration. The referral diagnosis, working diagnosis, and final diagnosis were recorded, and these were coded according to the S.N.O.P. (Systematic Nomenclature of Pathology) system, using the two-digit topology code, the four-digit morphology code, the four-digit etiology code, and the four-digit function code.

The records collected extend from patient number 129270 admitted Monday, January 4, 1971, to patient number 129361 admitted Friday, February 26, 1971. Of the 362 possible cases within this range, screening study forms were filled out for 240.

Of these 240 cases, a total of 82 did not have blood samples drawn for the following reasons: 6 were too ill; 5 were admitted on holidays, evenings or, weekends; 3 were kidney donors; 16 were pediatric patients; and 11 were excluded for other reasons. The remaining 158 cases comprise the study population that served as the basis for the analyses that were performed.

Grouping diagnoses for analysis

In most cases the working diagnosis and final diagnosis were primarily refinements on the referral diagnosis. At this level of preciseness, each case was essentially unique. Therefore, it was necessary to group the diagnoses to study the predictive power which the laboratory tests could add to the information in the referral diagnosis. The first factor on which diagnoses were grouped related to whether or not there were any malignant conditions among the diagnoses. The categories on this factor were "malignancy," "uncertain," "no malignancy," and "no diagnosis." The second factor on which diagnoses were grouped related to additional neoplastic observations. The categories on this factor were "no additional masses," "mass of questionable origin," "metastases," "other primaries," and "no diagnosis." The third factor on which diagnoses were grouped was the first two digits of the S.N.O.P. morphology code. Each unique code from 80 to 99 constituted a category, and there were two additional categories designated "other" and "no diagnosis."

Results

For only 5 cases were there any changes in diagnosis among the S.N.O.P. morphology codes 80 to 99. All of these began with a diagnosis coded 80 which generally indicates a carcinoma in which the morphologic structure is not further specified. For all 5 cases, the further diagnosis represented a refinement of the morphologic diagnosis, and 2 had the same final two-digit morphology code. The number of cases for which there were changes among these categories of diagnosis was thus not large enough to do a statistical analysis of the screening power of the laboratory tests to predict these changes.

For only 4 cases were there any changes in categories describing masses other than the primary. For no case was a second primary reported at any point in the diagnostic work-up. For 1 case, the referral diagnosis indicated a mass of questionable origin, as did the working diagnosis, while the final diagnosis was that this mass was metastatic. For 2 cases, metastases were first noted in the working diagnosis, and for 1 case, metastases were first noted in the final diagnosis. Again, the number of cases for which there were changes among these categories of diagnosis was not large enough to do a statistical analysis of the screening power of the laboratory tests to predict these changes.

TABLE I. Results of laboratory tests

Serum LDH*	Final Diagnoses Cancer	 No Cancer	Total
<125 mIU/ml.	41	7	48
>126 mIU/ml.	64	2	66
TOTALS	105	9	114

* Lactic dehydrogenase, normal up to 120 units per milliliter.

In regard to the overall summary of presence or absence of malignant conditions, the number of cases whose diagnosis changed was somewhat greater, permitting at least a limited statistical analysis. There were 7 cases in which the referral diagnosis indicated the presence of cancer as uncertain, and the final diagnosis indicated no malignant condition. There were 9 cases in which the referral diagnosis indicated the presence of cancer as uncertain, and the final diagnosis indicated there was a malignant lesion. There were 2 cases in which the referral diagnosis indicated that there was a malignant condition, and the final diagnosis indicated that there was not. There were 5 cases in which the referral diagnosis indicated that there was no cancer, and the final diagnosis indicated that there was a malignant neoplasm.

Of the 23 laboratory tests studied, only one (lactic dehydrogenase) showed, with statistical significance, that it was able to add to the predictive power of the referral diagnosis in predicting the final diagnosis, and that this was only in the case in which the referral diagnosis indicated that cancer was either present or uncertain. The results are shown in Table I.

The chi-square test for this table gives a value of 5.10. Thus, among those whose referral diagnosis indicates the presence or uncertainty of cancer, a significantly higher proportion of those whose lactic dehydrogenase value is 125 or less end up with their final diagnosis indicating no malignant lesion.

Comment

For none of the laboratory tests were there sufficient data to show with statistical significance that it was possible to predict changes in the detailed diagnosis, the presence of previously undetected metastatic masses, or of a previously unconfirmed malignant condition. There was indication that low lactic dehydrogenase values could predict with statistical significance the absence of cancer among patients whose referral diagnosis had indicated the presence of cancer.

With the small number of cases whose diagnosis changes markedly during the diagnostic work-up, a fairly large study population would be required to make a fair investigation of the screening power of laboratory tests in this sort of prediagnosed population. From our pilot project, it would appear that three to four years of patient intake would be required to obtain sufficient data to answer the basic question of whether or not multiphasic laboratory screening will eventually play a role in the diagnosis and management of the patient with cancer.

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DIAGNOSTIC IMPORTANCE OF LATERAL POSITIONS OF GAZE

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Routine evaluation of patients with strabismus has classically included prism and cover test measurements for distance and near and, more recently, in gaze up and gaze down positions for the A and V patterns. It is the purpose of this report to stress, in addition, the importance of measurements in the gaze right and gaze left positions, most notably, in the presence of a vertical deviation. Several authors have discussed the diagnostic features of vertical strabismus.[1,2] Emphasis here is placed on the diagnostic value of measurements in the lateral positions of gaze. These measurements will identify two distinct types of vertical problems and indicate the preferred method of treatment.

Apart from the mechanical anomalies, problems of vertical deviation may be divided into those with alternating sursumduction and those with vertical deviations in which there is a hyperhypotropia relationship. In the former, the alternate cover test will reveal a downward movement of each eye when the cover is removed, whereas in the latter, one eye will move up and the other eye will move down on alternate cover test. The importance of alternating sursumduction is merely to identify it, since it is not customarily treated surgically. The vertical deviation in which the alternate cover test shows one eye higher than the other may then be divided into two categories depending on the measurements in the gaze right and gaze left positions.

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Types of deviation

Type 1. The vertical deviation will gradually increase from one lateral position through the primary position to the opposite lateral position of gaze.

Case report. An eight-year-old female had a history of intermittent exotropia of several years' duration. Prism cover test measurements showed 25X(T) 14LH(T) for distance and 7X(T) 6LH(T) for near. Measurement in the lateral positions of gaze show 3X in gaze left and 5X(T) 16LH(T) in gaze right. Subsequent measurement in nine positions of gaze identified the presence of a paretic muscle.

This case demonstrates the classic paretic incomitant squint. If one measures the deviation in nine positions of gaze, one may frequently identify the paretic muscle. The two important considerations with regard to therapy are (1) the size of the deviation in the primary position which must be treated totally if possible, and (2) the size of the deviation in the right and left gaze positions which is relevant to possible overcorrection. Surgery in this group will be directed toward the muscles which act in the field of action of the greatest deviation. Cases in this group differ only in the amount of vertical deviation. The case presented demonstrated a small vertical deviation, and, therefore, surgery of only one vertically acting muscle was necessary. As the deviation increases, surgery will include first the four vertically acting muscles in the field of action of the maximum deviation and subsequently additional vertical rotaters.

Type 2. The vertical deviation reverses from gaze right to gaze left with a variable vertical deviation in the primary position. This configuration almost invariably indicates a symmetric anomaly consistent with bilateral over- or underaction of the oblique muscles and usually the appropriate A or V pattern. The error to be avoided is asymmetric surgery, that is, operating on one oblique which then results in postoperative dysfunction of the opposite oblique.

The lateral position measurements will clearly indicate the bilateral character of the problem. Versions, however, may erroneously simulate asymmetry. For example, in cases with bilateral inferior oblique overaction with the patient fixing constantly with the right eye, marked upshoot of the left eye in gaze up and right will make the overaction of the left inferior oblique obvious. In gaze up and left, however, the right eye will not "shoot up" since it is the fixing eye. If one then covers the right eye, forcing the patient to fixate with the left eye, the upshoot of the right eye and the diagnosis of the inferior oblique overaction may then be quite obvious. This is confirmed by the measurement of left hypertropia in right lateral gaze and right hypertropia in left lateral gaze. The treatment of the oblique muscles in this group will then be determined by the general consideration in managing the A and V patterns.

Double hypertropia

Double hypertropia which may be differentiated from alternating sursumduction or occlusion hypertropia has been mentioned by Brown.[3] This variation is an extreme form of type 2. In this type of case, a right hypertropia is measured when fixing with the left eye, and a left hypertropia is measured when fixing with the right eye in the primary position. This situation will be present in cases with marked oblique dysfunction in combination with a significantly large horizontal deviation. For example, with a large A pattern exotropia and underaction of both inferior obliques, a right hypertropia when fixing with the left eye and a left hypertropia when fixing with the right eye will be found. Conversely in cases with a large esotropia and bilateral inferior oblique overaction, the nonfixing eye will be elevated, since it is in adduction and therefore in a position to demonstrate more readily the inferior oblique overaction. The oblique muscles in this type of case must be treated symmetrically.

Summary

Prism and cover-test measurements in the lateral position of gaze should be included as part of the full set of routine measurements. It is especially important in differentiating the symmetric vertical problems associated with the A and V patterns from the incomitant vertical anomalies. Where indicated, measurement in nine positions of gaze should be performed.

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SURGICAL RESULTS OF THIRD CRANIAL NERVE PALSIES

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This report is confined to congenital third-nerve palsies and omits a discussion of acquired third-nerve palsies. The latter, although relatively common, often have regeneration which is aberrant but seldom need surgery.

Cogan[1] regards congenital third-nerve palsies as rare. I have found them to be sufficiently common and have operated on 10 such eyes over the past three years (Table I). The success prompts this report.

Background

After seeing several cases of congenital third-nerve palsy abandoned after surgical attempts had proved useless, including the use of stay suture, I decided the object of surgery should be to attach a viable muscle to the medial side of the globe. The only such muscle available in a congenital nerve palsy is the superior oblique. Callahan[2] alleges that advancement of the superior oblique to the lateral rectus attachment keeps the eye straight. Fink advocates transplantation of the superior oblique to the medial rectus as originally described by Peter[3] in 1 case and detailed here. No success rate was given.

The cosmetic handicap for these patients warranted further surgery, and the transplantation of the superior oblique was done. Coincident with the procedure is a definitive weakening procedure of the lateral rectus. Even if the lateral rectus has allegedly been recessed previously, it is again explored and reattached as far posteriorly as possible.

The pull of the superior oblique is weak at best, thus the lateral rectus must be weakened. No further shortening of the medial rectus is actually necessary, since shortening a paretic muscle does not increase the strength of the muscle when there is no innervation.

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TABLE I. Results of surgery on 10 patients with congenital third-nerve palsy

Case Numbers	Age (Years)	Sex	Eye Involved	Associated Findings	Results
1	3	F	Left	Microphthalmus; ptosis	10 Prism diopters X T
2 and 3	12	M	Both	Nystagmus; ptosis	15 Prism diopters X T (both eyes)
4	4	M	Left	Ptosis	Hypertropia, 10 prism diopters
5	8	M	Right	Ptosis	Hypertropia, 15 prism diopters
6 and 7	8	M	Both	Ptosis	15 Prism diopters X T (both eyes)
8	7	M	Right	Ptosis	12 Prism diopters X T
9	6	M	Right	Ptosis	15 Prism diopters X T
10	48	F	Right	Ptosis	18 Prism diopters X T

Testing procedure to qualify for surgery

To qualify for surgery, the patient must report having a third-nerve palsy since birth. The palsy may be monocular or binocular. The lid usually moves a small amount, although it is definitely ptotic. The vision must be tested. If the eye is amblyopic, patching is deferred until the eye is straightened and some of the ptosis is relieved.

The function of the superior oblique should be established. By having the patient attempt downward gazes, the superior oblique's functions can be ascertained by noting an intortion of the globe. This will work even in the bilateral congenital third-nerve palsies.

The lateral rectus muscle is usually functioning and accounts for the severe exotropia. Its function can be ascertained in two ways. First, on attempted adduction the eye usually will drift in sluggishly a bit, and on attempted abduction a brisk, although small, movement laterally will be seen. Second, if the patient will cooperate, the eye is adducted forcibly with forceps, then the patient is asked to abduct the eye. A definite tug will be felt as the lateral rectus muscle contracts.[4] If the lateral rectus is paralyzed, a simple but generous recess-resect will probably suffice to straighten the globe.

Goal of surgery

The only goal of extraocular muscle surgery is to align the globe into the primary position. Little or no movement is expected. This goal should be carefully explained to the patient and/or parents of the patient. If the patient has had previous surgery, the patient and/or parents will readily agree that this goal is a worthwhile one.

The cosmetic deficiency of the patient with a third-nerve palsy is so great that they will readily accept a straight-ahead eye as a goal. The exotropia is often 90 plus prism diopters. If the patient has had prior surgery, the parent or patient will report that the eye was relatively straight for a few days to a few weeks only to have it drift out to its preoperative status. They often comment that the eye looked better before surgery, since at least the medial aspect of the globe was not red as it has remained since the surgery. How to correct and avoid this will be discussed. The ptosis should be considered after the eye is straight.

Surgical technics

The patient should be given general anesthesia. Often the superior oblique is somewhat difficult to locate, and the procedure will be longer than anticipated; local anesthesia in such cases wears off before the procedure is finished, to the consternation of patient and physician.

I use a fixation suture of number 7-0 black silk placed in clear cornea at the lateral limbal area. The fixation suture placed in sclera is dangerous and occasionally causes bleeding from the ciliary body. The eye is adducted with the suture, and note is made of the limitation of motion, which is usually present.

The limbal incision is used. I prefer it since the exposure is good in primary cases and is particularly good at reoperation. The lateral rectus muscle is identified. The Beren's muscle clamp is applied and the muscle reinserted as far posterior as possible, never less than 16 mm. Before the muscle is reattached, the globe is again forcefully adducted to be sure that there are no check ligaments still present. The muscle is reattached with number 6-0 suture.* I prefer nonabsorbable sutures in all squint surgery, since they minimize postoperative inflammation and subsequent contraction of scar tissue. Careful hemostasis is important for the same reason. The conjunctiva is closed with number 7-0 black silk interrupted sutures. If the conjunctiva does not close easily while the eye is in the adducted position, it should be attached to bare sclera sufficiently posterior that it will not act as a check ligament. The silk sutures are tied tightly and will fall out in less than seven days. The patient is much more comfortable with silk than with catgut sutures.

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* Tycron, product of Davis & Geck, Pearl River, New York.

The superior oblique and medial rectus are approached through the same limbal incision which is made from the 1:00 to 3:30 o'clock positions. The medial rectus is isolated as the first step but not disinserted at this time. Excess scar tissue is excised from the medial side of the globe if the patient has had previous surgery.

The superior oblique is isolated medially to the superior rectus by passing the muscle hook along the globe, turning the point of the hook superiorly and drawing it out. Several passes may be necessary, and the operator should not be satisfied until the typical tendon appears on the muscle hook. Often there is considerable fibrous tissue present in the area of the superior oblique even in primary cases, thus requiring patience and persistence in isolation of the superior oblique. When the superior oblique is isolated, I tie a black number 4-0 silk suture around it. The oblique tendon may slip from the muscle hook during the manipulation; if so, the black silk allows immediate identification.

The lid speculum is removed, and a narrow band retractor is passed along the tendon to expose the trochlea. Good illumination and further patience are required for this maneuver. When the trochlea is identified, it can be severed by fracturing it with a hemostat forcibly opened while its tip is in the trochlea or by cutting the trochlea with scissors. I prefer the former in older patients who typically have an ossified trochlea and the latter method in the younger patient who has a cartilaginous trochlea. This step must be carefully done; if the superior oblique tendon is inadvertently severed, it will be lost and you cannot proceed.

After the trochlea has been severed, the superior oblique will be felt to give; then it can be cleaned of any ligaments and brought forward. I apply the Prince clamp to the tendon and sever the tendon distally to the clamp. The superior oblique should be brought forward easily and down to lie over the insertion of the medial rectus muscle. The superior fibrous attachment of the superior oblique muscle should be carefully severed to prevent undue elevation of the globe as healing takes place.

The medial rectus is disinserted and resected and the superior oblique muscle imbricated in the same suture which is used to reattach the medial rectus. Often you will be able to place the suture through the muscle belly of the superior oblique. The excess tendon is excised. At this point, the eye should be adducted approximately 10 degrees. If you cannot overcorrect the exotropia on the table, the patient will be undercorrected when he awakens. I prefer to use nonabsorbable sutures such as Tycron on the medial side of the globe for the reasons mentioned when discussing reattachment of the lateral rectus muscle.

If the patient has had an injected medial conjunctiva, I usually recess the conjunctiva a few millimeters from the limbus to give a whiter eye after healing. It is noteworthy that the recession of the conjunctiva does not add to the postoperative discomfort of the patient. For optimal results number 7-0 silk sutures are used to anchor the conjunctiva to the sclera.

A steroid antibiotic combination is used locally for one week. The postoperative course of all patients has been uncomplicated.

Results

Eye position. All but 1 patient had more than two prior operations which were without any net effect two months postoperatively. All patients had at least 60 prism diopters (30 degrees) per eye improvement, and 2 of 10 had 85 prism diopters improvement per eye. The results obtained have not changed with time; three years is the longest follow-up at present. A good result was considered to be a squint of less than 20 prism diopters.

Ptosis. All patients have had an associated incomplete ptosis. Four patients have had levator resections, and 1 has had a frontalis sling. The ptosis results are not spectacular, for one must be conservative in the correction of the ptosis due to the absent Bell's reflex. There is no vertical movement of the eyes, and the corneas are protected only by a blink. To this date we have not had any corneas suffer from exposure keratitis longer than two weeks of mild symptoms immediately after surgery.

Conclusions

Transplantation of the superior oblique is a satisfactory means of aligning the eye which has a congenital third-nerve palsy. The author has found no other treatment to approach the results obtained in this manner. The associated ptosis is corrected after the eye has been repositioned horizontally. The ptosis correction must be conservative to avoid exposure keratitis.

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MECHANICAL ANOMALIES

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A mechanical anomaly of an eye muscle is due to the absence of a muscle, an impediment in its movement, or a pathologic change in the muscle tissue. The anomaly may be congenital or acquired and, in each instance, is limited to one or two muscles or generalized to almost all the muscles of the eye. The diagnosis is made on the basis of the clinical picture, the history, and the forced-duction test.

Congenital anomaly

Among the congenital anomalies of limited nature, the retraction syndrome in adduction (classic Duane) is the most frequently encountered. The superior oblique tendon sheath syndrome follows.[1] Fibrosis of medial recti (strabismus fixus) is rarer. The total absence of a muscle has been reported in the literature. However, in most instances, the muscle has been replaced by a very posteriorly situated fibrotic band.

In congenital generalized fibrosis, all the muscles of the eye are somewhat affected although to different degrees. The lid elevator also may be affected but not necessarily.

The treatment is surgical and must be undertaken with the following principles in mind: (1) Contrary to true muscle paralysis, the underacting muscle often need not be reinforced. It may act as soon as the obstacle to its function is removed. (2) Similarly, an old congenital paralysis may prove to be almost fully recovered, once the direct antagonist has been weakened. (3) The purpose is to straighten the eyes in the primary position. If they are already straight in this position, it is better not to operate. (4) The anomalies may extend to the sclera and render the dissection laborious, and one must keep in mind the risk of perforating the globe. (5) There may be compensatory head posture (ocular torticollis) either in the presence or in the absence of normal binocular vision.

Acquired anomaly

In the group of acquired anomalies, the cause may be traumatic or medical. The traumatic cause may directly or indirectly involve the muscle with one of the orbital walls. The orbital floor is injured most frequently; fracture of the medial wall, either isolated or combined with an orbital floor fracture, is the second most frequent type and is more difficult to diagnose. Tomography is helpful. The actual practice is to repair the orbital wall and to release any muscle that may be caught in the fracture line as soon as possible after injury. This procedure may not be sufficient to restore the parallelism of the visual axes, but it is advisable to wait at least one month before weakening or reenforcing the ocular muscles themselves.[2]

If the trauma involves only the muscle, the repair may be done as soon as the eye is not too congested. A trauma through the inferior lid may involve the inferior rectus as well as the inferior oblique and the sheath of the lateral rectus. A large resection of the inferior rectus should be done after freeing the abnormal adhesions between these muscles to improve the depression of the eye involved. In the case of a "lost" muscle one must look for it not posteriorly but anteriorly under Tenon's capsule, where it normally retracts.

Among the medical causes of mechanical ocular muscle anomaly, endocrine dysfunction is the most frequently encountered. The limitation of the ocular movement is secondary to pathologic changes in the muscle tissue. In thyroid myopathy elevation is the movement most frequently affected. A restricted abduction is the second most frequent. All the muscles of the eye may be somewhat affected and produce an ophthalmoplegia associated with exophthalmos. As for the previously described mechanical obstacle, a release of the impeding muscle is indicated first. In the case of limited elevation the inferior rectus is receded; in the case of limited abduction there is recession of the medial rectus. A resection of the direct antagonist also may be necessary.

In each case surgery must be undertaken only when the medical and ocular conditions are stabilized. Meanwhile prisms are of great help to relieve the patient of his major symptom, diplopia. The use of prisms may prove to be the safest treatment, since the ocular condition may improve after many years. If prisms do not overcome the diplopia, occlusion of one eye is prescribed.

If surgery is undertaken to overcome diplopia, there must be the possibility to restore the parallelism of the visual axes or to achieve fusion, since

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diplopia is more annoying when the images are closer together than farther apart.

Summary

The treatment for the congenital type of muscle anomaly of the eye is surgical and early. For the acquired type, except for the traumatic form, surgical treatment is delayed until the condition has proved to be definitive.

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DISCUSSION

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The wide variety of excellent material presented gives us an insight into a number of problems in strabismus. I congratulate all of the authors on their fine reports which have enriched our knowledge and have brought to the fore a number of interesting aspects.

Dr. Goldstein is to be commended for stressing the value of measurement in the nine positions of gaze. When the A and V patterns were first brought to the attention of ophthalmologists, I stressed the need for examining patients in the six cardinal positions of gaze, and I am happy that Dr. Goldstein agrees with these ideas. I also like the fact that Dr. Goldstein has attempted to differentiate the various types of vertical anomalies which give us many problems in diagnosis. I still maintain that it is very difficult, in many instances, to differentiate between what the author calls double hypertropia and alternating sursumduction or occlusion hypertropia.

It is obvious that when a paretic muscle can be readily identified, the surgery should be planned according to the rules governing surgery of paretic muscles. However, cases do exist in which vertical deviations are relatively comitant, and it is difficult to implicate a particular paretic muscle; here one must either recess an inferior rectus, an inferior oblique, or occasionally a superior rectus. Again we go back to the principles of examination stressed by Dr. Goldstein. The study of ductions and versions and the importance of Lancaster or Hess tests must not be overlooked.

I heartily agree with Dr. Goldstein when he says that we must avoid asymmetric surgery in his type 2, because operating on one oblique will result in postoperative dysfunction of the opposite oblique. By this I presume he means that one should not make the mistake of operating on one inferior oblique when in reality both are overactive in the presence of true double hypertropia. In such cases the hypertropia may be greater in one eye than in its fellow eye. Here I make a plea for the return to a measured recession of the inferior oblique so that a larger recession can be performed on the eye with the greater hypertropia and a smaller recession on the eye with the lesser hypertropia. In fact, I have never given up this operation in favor of the more easily performed myectomy. I like to know where the inferior oblique will reattach to the sclera.

Dr. Reinecke must be admired for pioneering with such radical surgery to alleviate the cosmetic defects caused by congenital third-nerve palsies. His description of transplantation of the superior oblique tendon is lucid and easy to follow. Personally, I have had no experience with this operation, but after studying his report I am going to search for a suitable patient. Dr. Reinecke's work with patients suffering from congenital and other nerve paralyses reminds me of my own efforts with nystagmus surgery. I know the problems involved in trying to popularize surgical approaches to rare disorders and how difficult it is to gain acceptance for this type of innovative surgery. The results shown by Dr. Reinecke are impressive. Fortunately, third-nerve palsy of congenital origin is a rare condition, so that we will not be called on to fracture or excise trochleas in too many patients. Again I take my hat off to Dr. Reinecke for finding 10 cases which satisfied his criteria and for doing something constructive about them.

Dr. Véronneau-Troutman has presented us with a comprehensive review of mechanical anomalies which cause incomitant deviations. She has stressed the importance of surgical repair of fractures of the orbital floor and/or the medial wall of the orbit. In this way any muscle which is caught

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in the line of fracture can be released as soon as possible. Among the most difficult conditions to manage surgically are residual diplopias after repair of fractures of the orbital floor, and it is not always possible to attain binocular single vision in a useful position of gaze. In some instances surgery on the fellow eye may become necessary, but I follow this course with the greatest reluctance. Other conditions, such as congenital generalized fibrosis, which Dr. Véronneau-Troutman discussed are even more difficult to treat. For this reason it is valuable to have her specific rules for management of this disorder. Although these rules are easily read, they are much more difficult to apply to an individual case.

One group of mechanical anomalies with which I have had considerable success includes cases, mostly congenital, in which a fibrous band replaces a muscle. One has difficulty passing a muscle hook under such an extraocular muscle, and it is even more difficult to pass a suture through such fibrous tissue, thus making it almost impossible to retroplace this particular muscle. Consequently, a simple lysis of this band from its insertion, often accompanied by resection of its direct antagonist, releases the eye enough so that the patient is cosmetically improved and the eye relatively centered. Of all the congenital mechanical dysfunctions, this form of strabismus fixus yields the most gratifying surgical results. In my experience the medial rectus or inferior rectus muscles are most frequently involved. This type of muscular defect may masquerade as a double elevator paralysis, and, therefore, the forced-duction test is very important before the surgeon attempts to elevate both horizontal recti.

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SEXUAL BEHAVIOR IN HEROIN ADDICTION AND METHADONE MAINTENANCE

Correlation with plasma luteinizing hormone*

Disturbances in sexual appetite and performance in heroin addiction were investigated by interviewing four groups; controls, active heroin addicts, abstinent former addicts, and methadone-maintained former narcotic addicts. Interviews disclosed a high incidence of libido, potency, and ejaculation difficulties accompanying heroin use in the currently addicted and formerly addicted groups. All patients described normal sexuality before addiction. Rapid return to normal usually accompanied enforced withdrawal from heroin in all the addicted groups. At the time of the study, all abstinent patients reported normal sexuality, and most methadone-maintained patients reported improved or normal sexual performance and libido. Measurements of plasma luteinizing hormone (LH) were normal in all groups. The inhibitory effects of heroin use in sexuality are usually rapidly reversible and do not appear to involve resting levels of plasma LH. The sedative or euphoric effects of heroin itself may play a contributory role in what may be primarily a psychologic disturbance.

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The endocrinologic, biochemical, and behavioral implications of heroin addiction are poorly understood. Patients frequently complain of amenorrhea, seem to have increased infertility, and report decreased sexual performance and libido.[1-3] It is not known whether this poorly documented reduction in sexuality is due to heroin itself or whether other factors in the totality of heroin addiction are responsible. Nor is it known whether such inhibitory effects are mediated through changes in the endocrine system, reside in nonendocrine tissue, or are primarily psychologic.[4,5]

The rapid expansion of methadone maintenance treatment of heroin addiction has resulted in thousands of patients taking methadone daily. It is of vital importance that the consequences of sustained high-dose methadone regimens regarding sex hormones, sexual function, and behavior be documented.

Studies of LH (luteinizing hormone), a major circulating pituitary hormonal factor recognized to play important role in sexual appetites and behavior,[5] were carried out in patients addicted to heroin, methadone-substituted addicts, patients withdrawn from heroin, and normal controls. Correlations with their histories of sexual behavior were made.

Materials and methods

Four populations of male patients were studied. Table I lists some pertinent demographic and narcotic history data. The four groups were:

1. Controls: normal male volunteers, who were usually hospital employes or guaduate students.
2. Abstainers: 13 former heroin addicts, in good standing in a New York City therapeutic community (The Exodus House), who were considered to have been heroin free for at least one year on the basis of history and serial negative urinary determinations for morphine and quinine.
3. Addicts: 13 actively addicted patients residing in the hospital's vicinity. Addiction was judged to be present on the basis of history of drug abuse, criminal behavior, and the presence of skin scars or "tracks." All narcotic patients admitted to sporadic use of drugs other than heroin, but they denied ever being addicted to them and denied their even recent use.
4. Methadone: 27 methadone maintenance patients were attending the St. Luke's methadone clinic for at least six months. Methadone-maintained patients were selected randomly, except for those without sufficient free time, those with heavily scarred veins, and those with a nonnarcotic illness, who were excluded. The urines of all methadone recipients had shown methadone only on serial examinations for at least four months, being free of morphine, amphetamines, and barbiturates. All but 2 patients were in

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TABLE I. Demographic and narcotic history data of patients interviewed for this study

Patients	Number	Age Mean ± SD (Range)	Race			Addiction Years (Mean ± SD)	Mean Daily Heroin cost (dollars)
			White	Negro	Puerto Rican		
			(Per cent of total)				
Normal	14	26.8 ± 3 (20–52)	42	33	25	...	...
Heroin addicts	13	29 ± 14 (19–53)	30	45	25	10.1 ± 6	25
Abstinent addicts	13	31.8 ± 8 (20–47)	31	39	31	10.5 ± 6	22
Methadone-treated addicts	27	33 ± 7 (25–52)	46	30	25	11.6 ± 6	27

excellent standing; both of these were subsequently discharged administratively from the clinic—consistent with the clinic's retention rate of 90 per cent during the time period of these studies. There were no significant differences demographically, nor in terms of history of addiction, dose, or duration of methadone maintenance, between the sample studied and the total methadone population under treatment during the time of these studies.

All patients had normal physical examinations. Liver function tests (albumin, serum glutamic oxaloacetic transaminase, alkaline phosphatase, and bilirubin) were obtained on all patients. Two patients were excluded; 1 in the abstinent group for hyperbilirubinemia, and 1 of the addicts for serum glutamic oxaloacetic transaminase above 60 units, which was arbitrarily taken as the cutoff point. All patients studied had normal plasma bilirubin, alkaline phosphatase, and albumin levels. Plasma luteinizing hormone was measured according to the method of Schalch *et al.*[6]

Interviews were casual, unstructured, and usually took place during intravenous infusions of arginine in the metabolic ward of St. Luke's Hospital Center. Ten methadone patients were randomly selected and interviewed in the methadone clinic. All patients appeared to cooperate fully in the interviews which reached the point of mutual understanding. Questions were asked about their potency, libido, and time to accomplish orgasm at the time of the interview. Those patients describing disturbances in libido or potency were asked if alternate sexual outlets produced arousal.

Libido was judged to be normal if the patient's sexual desires were aroused by the appropriate stimuli. Potency was normal if the patient was able to initiate and successfully conclude the coital act. The ejaculation time of four to twenty-five minutes reported in the control group was used as the criterion for the addict patients. Particular attention was paid to change in sexual performance in the same patient; comparisons of the prenarcotic era, the addicted years, and their present status on methadone were made.

Abstinent and methadone patients were questioned in detail about their sexual desires and performance during their last year of heroin addiction. Further details were sought about their sexuality during heroin "high," when "straight," and during "withdrawal" as well as their overall sexual performance. To establish how long sexual disturbances were retained after heroin was dicontinued, they were asked what happened during detoxification from heroin during enforced detention or hospital withdrawal. The patients on the abstinent or methadone treatment programs were asked when and at what rate they achieved their present status of sexual performance and desire after entry into treatment.

Results

Sexual problems during heroin use. Male heroin addicts have a high incidence of disturbed sexual performance and desire as reflected in the sexual histories of active heroin addicts, ex-addicts in an abstinent program, and methadone-treated addicts (Table II). The minor differences among the frequencies with which the abstinent, methadone, or active heroin-addicted patients admitted to altered potency, libido, or ejaculation times were not statistically significant. Therefore, the sexual histories of 53 total addicts were obtained by pooling the data from all 3 groups for the years of active heroin use. For these 53, the most common problem, reported by 36 (68 per cent), was a delay in ejaculation time beyond twenty-five minutes. Five of these patients stated that they were unable to ejaculate at all in at least 50 per cent of their attempts at sexual intercourse. Reduction in libido during heroin use in general was reported by 35 (66 per cent) of the same population. This figure may understate the prevalence of libidinous problems. For example, on further questioning of the abstinent addicted group, only 1 (7 per cent) claimed normal libido regularly when "high" on heroin, whereas 3 (21 per cent) of the same group reported their libido to be normal in general during their years of heroin use. On the other hand, 2 of the methadone-treated group felt that heroin "high" may have en-

TABLE II. Per cent of patients reporting normal or impaired libido, potency, and ejaculation time

Group	Time and Sex Function	Libido	Potency	Ejaculation Time (Normal is 4–25 min.)
Control (14)*	Present			
	Normal	100	92	100
	Impaired	...	7	...
	Absent	...	...	...
Heroin Addicts (13)	Present			
	Normal	39	61	30
	Impaired	61	39	70
	Absent	0	...	...
Abstinent (13)	Present			
	Normal	100	100	100
Abstinent (13)	During heroin use			
	Normal	23	46	23
	Impaired	61	30 (2)†	61
	Absent	15	23	15
Abstinent (13)	When high on heroin			
	Normal	8	46	23
	Impaired	38	30 (2)†	54
	Absent	54	23	23
Abstinent (13)	After detoxification			
	Normal	100	100	100
Methadone (27)	Present			
	Normal	74	70	78
	Impaired	22	27 (2)†	15
	Absent	3	3	7
Methadone (27)	During heroin use			
	Normal	37	48	34
	Impaired	63	52 (3)†	59
	Absent	...	...	7

* Number in parentheses indicates number in group.
† Indicates number with premature ejaculation.

hanced their sexual desires at times. This possible aphrodisiac effect of heroin was evidently rare and seemed to be inconstant by those subjects claiming it. Potency difficulties were reported by 26 (49 per cent) of the 53 patients. Twenty-two of these had erectional insufficiency, and 7 reported premature ejaculation.

Since there were many overlaps in patients reporting sexual problems during heroin use, it is notable that only 24 per cent, or 13 of the 53 patients (5 active addicts, 3 abstainers, and 5 methadone maintained), claimed normal sexual function for all three parameters: libido, potency, and ejaculation time.

Effect of enforced abstinence from heroin. Information about the duration of sexual problems, after discontinuation of heroin and removal from the hassle of the New York City drug world, was obtained. During hospitalization for detoxification from narcotics or during confinement in jail, coincident reduction in sexual impairment was described by all three groups. In the abstinent group, all patients reported no residual sexual problems at all within three weeks of confinement. Similarly, 18 of the 22 methadone patients who admitted sexual disturbance during their years of heroin use, felt their sexual problems either disappeared completely or largely subsided during the first two to three weeks of confinement.

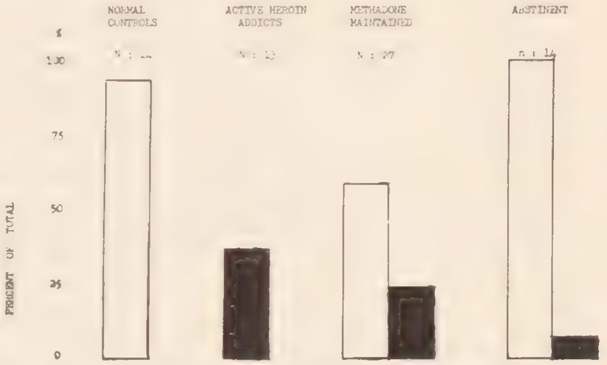

FIGURE 1. Normal sexual libido and performance in male heroin addiction. Open bars represent per cent reporting current libido, potency, and ejaculation time to be normal. Black bars represent per cent of same patients reporting normal sexual function during time of heroin use.

Incidence of admitted sexual problems at present. The abstinent patients all reported normal libido, potency, and ejaculation time at present (Fig. 1). Since they all reported normal sexual functions prior to drug abuse, it is likely that some factor in the totality of heroin addiction had significantly affected their sexual functions. The data also suggest that a rapid reversion to normal occurred in this group, since they had all regained normal sexual functions before one year of residence in an abstinent community.

The methadone-maintained patients showed much improvement in sexual function in comparison to the impairments reported during heroin use. All patients said they had been normal before drug abuse. Figure 1 depicts the percentage reporting normal libido, potency, and ejaculation time in contrast to the same sexual functions during the era of heroin use. At the time of this writing, 59 per cent claim entirely normal sexual functions, in contrast to 22 per cent who said they were normal during heroin use.

Of the 7 patients reporting reduced potency, 4 continued their impotency, which had initially appeared during heroin use. The 3 others developed potency difficulties while on methadone maintenance. All patients reporting potency difficulties appeared to have the psychogenic variety.[5] Not only were there considerable variations in sexual performances in each individual from time to time, but also there was no evidence of organic lesions known to be associated with impotency.[4]

Libido was normal in 55 per cent, reduced in 22 per cent, and absent in 3 per cent. An additional 18 reported libido to be reduced in their marital setting but to be fully arousable in alternate sexual outlets. Of the 6 patients who reported reduced libido, 4 seemed to have a continuation of libidinous difficulties initially appearing during fifteen years of heroin use, while 2 others seemed to have developed them during methadone treatment. Two other patients described transient loss of libido during the first year of methadone maintenance: one after a sickle-cell crisis and the other during marital and psychologic upheaval.

Ejaculation times were normal at the time of this writing, in 74 per cent, while 11 per cent reported complete inability to ejaculate in at least 50 per cent of attempts. Reduction in the frequency of ejaculation problems were evident after methadone maintenance treatment, similar to the reduced frequency of problems of potency and libido in this series.

The rate of change of overall sexual function after the induction of methadone-maintenance treatment was sought. Nine patients with disturbed sexual functions at the outset, reported a return to normal after the first month of treatment. An additional 3 patients were normal after three months, and another 2 became normal after six to eighteen months of treatment. Seven retained some sexual disturbance even after eighteen months.

Luteinizing hormone. The LH levels in all four groups are listed in Table III. The LH levels of all patients fell within the normal range. The means of each heroin group were not significantly different from the normal, nor was there any correlation between the history of past or present sexual dysfunctions and the levels of plasma LH measured. In the group of active addicts, the mean time since their last heroin injection was reported to be 5.4 hours (range one to thirteen hours). Since the LH levels were all normal, it is unlikely that heroin directly or acutely influences plasma LH concentrations.

TABLE III. Plasma levels of luteinizing hormone (mIU per ml.)

Group	Number	Mean	Standard Deviation	Range
Control	14	11.5	3.7	7–17
Heroin				
Addicts	13	12.4	3.3	8–19
Abstinent	13	11.9	1.3	7–22
Methadone	27	13.8	5.4	5–23

Comment

Significant alterations in human sexual appetite and performance appear to accompany the process of heroin addiction. The admission of sexual difficulties by a group of active heroin addicts, abstinent, and methadone-treated addicts during casual interviews confirms the clinical impression.[1-3] Since the heroin addict is often unreliable in reporting an accurate history, and since males seldom easily volunteer information about their sexual inadequacies, it is not possible to estimate the true frequency of sexual disturbances in this series of hard-core heroin addicts. However, the prevalence of disturbed sexual performance must be rather high for only 24 per cent to claim fully normal sexual function. The disturbances reported most commonly are difficulty in achieving orgasm, loss of potency, and reduced libido.

Although these data have the disadvantage of recall, they may be more reflective of past activities in the abstinent or methadone group than that obtained by interviews of active addicts. There is an advantage in the perspective of many heroin-free months; also their definition or normalcy may be more sharply defined after improvement in their own sexual performance. Finally, there are opportunities for forthright discussion of sexual behavior as part of the treatment both in the abstinent program and on methadone maintenance.

Rapid return toward normal sexuality was described by most of the active heroin users on discontinuation of heroin in jail or hospitals. The patients in the abstinent program claimed to have had normal sexual functions before addiction and to have all regained normal sexuality after one year of treatment. The rapid return of sexual desires and performance after withdrawal from heroin suggests that the inhibitory influences of heroin addiction are usually readily reversible.

The methadone-maintained patients, on the other hand, reported a high incidence of sexual disturbances. Some patients reported that their sexual problems began during heroin use and continued during methadone treatment. Others reported that their sexual disturbances appeared on methadone and were not present during heroin use. While most of these de novo sexual problems were transient, and were temporarily associated with environmental and psychologic influences, some other patients have sustained difficulties.

A hormonal explanation of these disturbed sexual performances was sought. Measurements of plasma LH levels indicate that normal persons, active heroin addicts, abstinent patients, and methadone patients studied all had LH levels within the normal range. It is unlikely, therefore, that these sexual disturbances can be attributed to a morphine and/or methadone disruptive effect on the hypothalamic-pituitary system regulating LH levels in peripheral plasma. Since morphine is well known to inhibit such hypothalamic-pituitary functions as corticotropin releasing factor release,[7] antidiuretic hormone secretion,[8] and possibly other hypothalamic functions as well,[9] it appears unlikely that the clinical disturbances in sexual function can be attributed to a neuroendocrine blockade of LH or its releasing factor.

The roles of heroin, morphine, methadone, or narcotic addiction in these sexual disturbances could not be defined. However, morphine itself may have been a contributing factor since (1) all patients said they were normal before narcotic use; (2) many patients reported that during the sedation or euphoria induced by heroin, sexual performance and desire were reduced; (3) the patients in the narcotic-withdrawal syndrome usually disregarded sexual opportunities in favor of a more compelling drive to obtain narcotics; and (4) reversal of sexual problems rapidly occurred during enforced abstinence from narcotics. It should be emphasized that factors other than addicting drugs themselves may have been important in the sexual experiences of these patients.

Recent evidence suggests that serotonin may exert an important influence on sexual behavior.[10] Studies with parachlorophenylalanine, an inhibitor of 5-hydroxytryptamine synthesis, indicate that marked changes in sexual behavior of animals may ensue.[11] Since morphine administration is reported to produce significant alterations in serotonin turnover rates,[12] the role of serotonin as a factor in the sexual inhibitory consequences of heroin addiction merits detailed study.

Although the data may suggest a lesser degree of return toward normal sexual functions in the methadone-treated group versus the abstinent group, comparisons of the sexual performances in these groups should be avoided. The abstinent patients studied were not representative of heroin addicts in New York City. Although they represented over half of the patients who had been drug-free for over one year in the abstinent community, they were a highly selective sample since they had remained in treatment while hundreds of others had dropped out. On the other hand, the methadone-treated patients studied were a representative sample of the total male patients in treatment in the clinic.

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PSYCHIATRIC TECHNICS IN CRISIS THERAPY*

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A crisis in the life of a patient offers the psychotherapist an extraordinary opportunity to score penetrating therapeutic gains that may not be possible later on when emotional homeostasis has been restored. Once his defenses have broken down, the patient is more motivated to accept alterations in a faulty life style responsible for the very crisis for which help is being sought. To take full advantage of this opportunity, the therapist must know, (1) how and when to apply emergency psychiatric first-aid measures, and, (2) ways of implementing these technics within the framework of a dynamic approach. Potentially, this combination can influence the patient beyond the benefactions of symptom relief.

In recent years, a number of psychotherapeutic adjuncts have become available that lend themselves admirably to the first phases of crisis therapy. These include drug therapy, hypnosis, behavior therapy, family therapy, and a number of other active approaches. A discriminative choice of methods will yield best results.

Technic selection

Selection of technics in crisis therapy are geared to a number of variables. First, we must consider which catastrophic symptoms in the patient require immediate handling. In my own practice the most common emergencies have been severe depression with strong suicidal tendencies, acute psychotic upsets with aggressive or bizarre behavior, intense anxiety and panic states, excited hysteric reactions, and drug and alcohol intoxications. Where symptoms are sufficiently severe to constitute a portentous threat to the individual or others around him, it is essential to consider immediate hospitalization. Conferences with responsible relatives or friends will be essential to make provision for the most adequate resource. If the therapist decides that ambulatory treatment would suffice, electroconvulsive therapy may be required to interrupt dangerous depression or excitement. Consultations with a psychiatrist skilled in the administration of somatic treatments will then be in order.[1] Psychotic attacks usually yield to a regimen of the phenothiazines in conjunction with a supportive and sympathetic relationship. It may require almost superhuman forebearance to listen attentively to the patient's concerns, with minimal expressions of censure or incredulity for delusional or hallucinatory content. Panic reactions in the patient require not only fortitude on the part of the therapist, but also the ability to communicate compassion blended with hope. In my experience, several sodium amytal interviews may encourage emotional catharsis and promote relaxation. Hypnosis, skillfully done, may also bring about dramatic quieting results. The temporary use of tranquilizers—such as diazepam (Valium, 10 mg. four times daily), sedatives, like ¾ to 1½ grains of sodium secobarbital (Seconal) and hypnotics, such as 3 grains of sodium amytal—may be required. Frequent visits, even daily, do much to reassure a frightened patient who feels himself to be out of control. Cases of borderline or psychotic reactions do well with chlorpromazine (Thorazine) or thioridazine (Mellaril) in adequate dosage. Intravenous chlordiazepoxide hydrochloride (Librium), 50 to 100 mg., repeated in four to six hours, and followed by large doses of oral chlordiazepoxide hydrochloride have been found useful in cases of severe excitement. Where psychotherapy and medicaments fail to halt panic, electroconvulsive treatments (as many as 2 daily for a few days, followed by 1 treatment daily) will often interrupt the attack. Delirium and confusion in elderly patients usually respond to chlorpromazine for restlessness and paraldehyde or chloral hydrate for insomnia. Wild panic with violence and assaultiveness may require intramuscular or intravenous sodium amytal (3 to 15 grains) or intramuscular chlorpromazine (25 to 50 mg. repeated in one hour). In the rare cases where panic cannot be controlled in any other way, hospitalization for sleep therapy may prove successful.[2,3] The technic is complicated as is the nursing care involved, but where it is expertly done, it may constitute a life-saving measure in cases that do not respond to anything else. Pathologic drug and alcohol intoxications and acute barbiturate poisoning need immediate hospitalization and institution of the proper detoxification procedures. Preferences as to first aid measures for emergencies depend largely on the training and experience of the therapist. In my own practice, in which I handle what I would consider to be more than the average number of patients in crisis, I rarely find it necessary to utilize any other measures for the control of disturbing symptoms than hypnosis and drug therapy.

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Precipitating factor

Once troublesome symptoms are brought under reasonable control, we may concentrate our attention on the second important variable in the crisis reaction, the nature of the precipitating agency. This is usually in the form of some environmental episode that threatens the individual's security or damages his self esteem. A broken love affair, rejection by or death of a love object, violent marital discord, persisting delinquent behavior and drug consumption on the part of important family members, transportation and industrial accidents, the development of an incapacitating or life-threatening illness, calamitous financial reverses, and many other provocative events may be the triggers that set off a crisis. It is rare that the external precipitants the patient holds responsible for his troubles are entirely, or even importantly, the cause of his difficulties. Indeed, the therapist will usually find that the patient participates actively in initiating and sustaining the environmental misfortunes which presumably victimize him. Respectful listening and questioning will give the therapist data regarding the character structure of the patient, his need for upsetting involvements, his projective tendencies, and the legitimate hardships to which he is inescapably exposed. An assay of the patient's existing and potential inner strengths in relation to the unavoidable stress he must continue to endure, and identification of remediable problem areas, will enable the therapist better to focus his therapeutic efforts.

Character organization

The third variable we must consider is the character organization of the patient, which is probably the crucial factor in initiating the crisis situation. Unresolved and demanding childhood needs, defenses, and conflicts which obtrude themselves on adult adjustment and compulsively dragoon the patient into activities which are bound to end in disaster, require exploration. The therapist, trained in dynamic psychotherapeutic methodology, may be able to identify them with some probing. The ability to relate these anachronistic promptings and the circumstances of their development in early conditionings to the present distortions in interpersonal relationships and the affiliation of characterologic flaws to the happenings surrounding the crisis will probably constitute the difference between merely palliating the present problem and providing some permanent solution for it. In my follow-up studies of a considerable number of patients treated in short-term therapy, I have found that where I have been able to establish a continuity between the immediate complaint factor, the characterologic defects that promote problems in adjustment, and their genetic origins, a reconstructive impact on the patient was often registered. This progressively helped to mature him over the years following termination of his brief contacts with me.[4]

Crisis therapy is oriented toward two goals: the modification or removal of the crisis or symptom complaint, and the initiation of a corrective influence on the patient's adjustments to life and other people. Once the adaptive equation has been unbalanced, the procedure used in the unbalancing should institute character changes over a long period of time after the termination of therapy. Any of several methods may be employed; manipulation of the environment, drug therapy, hypnosis, group therapy, family therapy, behavior therapy, or psychoanalytic probing; the method depends on both the individual needs of the patient and on the aptitude of the patient for working with the selected method. The technics employed usually reveal the patients resistances and defenses, which are then examined to provide the patient with insights essential to his understanding of his problems. Patient reactions to the technics and to the therapist can become important foci for dealing with obstructive transference and other resistances to change.

Deterrent

A deterrent to the use of the active technics essential in crisis therapy is the lack of faith in them on the part of the therapist. Confidence in what he is doing reflects itself in a reactive receptivity on the part of the patient. Even though the therapist may not verbally communicate his lack of enthusiasm, the patient will easily pick this up from nonverbal cues and then seriously be hampered in responding appropriately. There are still substantial numbers of therapists who believe that methods aimed at symptom control, while rapidly palliating suffering and perhaps even reinstating the precrisis psychological equilibrium, operate like a two-edged sword. Justifiable as symptom control may seem, these skeptics insist that it fails to resolve the underlying problems and difficulties that nurture the current crisis. Irreconcilable unconscious needs and conflicts continue to press for fulfillment, and we may anticipate a recrudescence or substitution of symptoms.

Marmor[5] has pointed out appropriately that early psychoanalytic assumptions regarding the inevitability of symptom return or substitution were based on an erroneous closed-system theory of personality dynamics. Marmor contends that symptoms once removed may actually result in productive feedbacks from the environment and within the self that may remove barriers to constructive shifts within the personality system. Even though these facts have been known for years, and have been corroborated in the therapeutic results brought about by active psychotherapeutic methods, the time-honored credo branding symptom removal as worthless persists.[4,6–8]

The evidence is overwhelming that symptom-oriented therapy does not necessarily circumscribe the goal. The active therapist still has a responsibility to work through as much of the patient's residual personality difficulties, as is possible within the confines of the time that is available to him, considering the existing motivations of the patient, and the basic ego strengths that may be relied on to sustain new and better defenses.

Patient reaction

Most patients who apply for help only when a crisis cripples their adaptation are motivated merely to return to the dubiously happy days of their neurotic homeostasis. But motivation may be changed if the therapist clearly demonstrates to the patient what really went on behind the scenes of the crisis drama. No better way of doing this exists than to study the reactions of the patient to the technics that are being utilized in the effort to resolve the crisis. The patient's reactions to the therapeutic situation, irrespective of the specific technics employed, will reflect basic needs, defenses, and reaction patterns that embody interpersonal involvements dating back to formative experiences in the past. If one understands psychoanalytic theory and methodology and has the motivation to use his knowledge, responses to the current treatment experience are like a biopsy of the smoldering psychopathology. Patterns excited by therapy and the therapist will reveal both the sources and effects of faulty early programming. These effects are often expressed in the form of resistance. Because the patient has learned to function with a social facade, and because the more fundamental strategies of repression shield him from anxiety, he may not manifest resistance openly. It is here that the trained and experienced therapist operates with advantage. From the patient's gestures, hesitations, manner of talking, slips of speech, dreams, and associations, one may gather sufficient information to help identify and deal directly and actively with resistance to technics. These resistances embody fundamental defensive operations, and their resolution may influence many intrapsychic elements, initiating a chain reaction that ultimately results in reconstructive change. This change, started in relatively brief therapy focused on the existing crisis, may go on the remainder of the individual's life.

To reiterate, if the patient has been able to establish a continuity between the crisis situation, his active participation in bringing it about, the forces in his character organization that sustain his maladjustment, and their origin in his early conditionings, the opportunities for continued personality maturation are good. Accordingly, the therapist who has no understanding of psychoanalytic theory and method is at a disadvantage in dealing with resistance. In my supervisory work, I have found that this factor principally accounts for failure in active approaches such as hypnosis and behavior therapy. Referrals to me of a sizable number of patients who were unable to achieve satisfactory results with behavior therapists, revealed in practically every case that transference had interfered with positive responses to the therapist's methods. Such reactions occurred with me also, but I was soon able to detect them from the patients' associations and dreams. They then constituted the focus in our therapy. For example, in several cases, referred to me for hypnosis by experienced hypnotherapists who were unable to induct a hypnotic state, I was able to detect easily the transference resistance that interfered with hypnotic induction. Without exception, once this impediment was brought to the surface and explored with him, the patient was easily able to achieve a satisfactory trance.

The actual technics of hypnosis, behavior therapy, family therapy, and couples therapy have been elaborated on elsewhere.[9] In recent years, multiple family therapy has emerged as an important way of reestablishing communication in situations of family crisis.[10] The specific technics that are employed will depend on the training of the therapist, his skill in implementing a special method, and his willingness to use it.

Qualities of a good therapist

Not all psychotherapists can do crisis therapy. Certain characteristics in the therapist and some oppositional attitudes are antagonistic to satisfactory results. To function properly the therapist must possess a good distribution of the following:

Extensive training. Astuteness in making a rapid diagnosis, skill in arriving at the essential dynamics, and sophistication in a wide spectrum of technics can be rewarding, especially if these are executed in a dynamic framework. Whether formal training in a psychoanalytic institute is essential or not will depend on what blocks the individual possesses in working with some of the more repressed and unconscious components of personality. The fact that the therapist does not expose himself to the discipline of formal analytic training does not imply that he will do an inferior kind of crisis therapy, even though he restricts himself to the more conscious psychic components. Nevertheless, when the therapist does expose himself to a structured analytic program, rewarding dimensions will be opened up for him, if solely to bring him to an awareness of his own intrapsychic and interpersonal conflicts that may interfere with an effective therapeutic relationship.

Irrespective of training there is no substitute for experience in the management of the wide variety of problems that potentially present themselves. It is important that the therapist try to recognize his strong and weak points in managing the various syndromes. No matter how well adjusted the therapist may be, there are some critical conditions he may not be able to handle as well as others. The therapist may, when he recognizes which problems give him the greatest difficulties, experiment with ways of buttressing his shortcomings.

Flexibility in personality. The therapist who is most effective in crisis therapy must possess a personality structure that enables him to set up a working relationship with his patient in a few sessions. Since the patient requires rapid stabilization, the therapist's manner must convey empathy, confidence, and understanding of the patient's turmoil and what is behind it. The patient, no matter how upset he may seem, will discern these qualities and react to them. It is important that the therapist also be able to control his own problems sufficiently, so that he avoids the pitfalls of his own neurosis interlocking with that of the patient. In particular, he will need to be sensitive to the irrational projections of the patient, hallmarks of the beginnings of a transference neurosis.

Flexibility in approach. A lack of personal investment in any one technic is of great importance in crisis therapy. This necessitates an understanding of the values and limitations of various procedures. It requires experience in utilizing a selected technic as a preferred method, or in blending a variety of approaches for their special combined effect. Not only is knowledge of, and experience with, different procedures important, but also their application to particular situations and to the needs of patients at certain times will require inventiveness and willingness to utilize the contributions of all schools of psychiatry, psychology, and the social sciences to therapeutic process, accepting the dictum that no one school has a monopoly on therapeutic wisdom.

Summary

Crisis therapy incorporates a number of active technics implemented in the medium of a directive therapist relationship with the patient. It is essentially short term, oriented around two goals: (1) the immediate objective of modifying or removing the critical situation or symptom complaint for which help is being sought, and (2) the hoped-for objective of initiating a corrective influence on the individual's adjustment to life and people. The unbalancing of the adaptive equation will, optimistically, over a long-term period after therapy has been terminated, institute reconstructive changes in the character structure. The theoretic framework governing the approach can be dynamic and considers, along with the conditioning of faulty habit responses as implicated in the neurotic process, the operation of unconscious conflict. The methodologic strategies are eclectic in nature and recruit the tactics of environmental manipulation, drug therapy, hypnosis, group therapy, family therapy, behavior therapy, and psychoanalytic probing, depending on the needs and problems of the individual and his particular aptitude for working with a selected method. The technic or technics employed, while aimed at relieving the immediate crisis situation or symptomatic upset, will usually set into motion the individual's customary resistances and defensive operations. These are then closely examined and worked through, if possible, as a means of inculcating essential insights. Although the tactics may be nonanalytic, the patient reactions to them and to the therapist become an important exploratory focus, if only to deal with obstructive transference and other resistances to change. Extensive personality modifications may eventuate as a serendipitous dividend which may continue after therapy has ended. Follow-up interviews over a period of years have shown that this approach can score sustained symptomatic relief and, in many cases, substantive constructive characterologic alterations.

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Clinicopathologic Conference

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Conducted by JOHN T. FLYNN, M.D., and
BASIL MOUMGIS, M.D.

Discussed by J. JAMES SMITH, M.D.

RAPID ONSET OF ACUTE CONGESTIVE HEART FAILURE

Case history

Anastasios Mihas, M.D.: A forty-year-old Negro male was admitted shortly after the sudden onset of severe pain in the epigastrium.

The details of the patient's illness were incompletely obtained because of his severe distress. During the preceding three days he had reduced his food intake to reduce weight, and he had engaged in mild calisthenics. At mid day before a professional conference, he hastily ate a hamburger and drank a cola drink; shortly thereafter on sitting down at the conference he noted the sudden onset of severe pain in the epigastrium and in the right upper quadrant, radiating through to the back. He vomited once and noted a small amount of blood in the vomitus.

The patient had been in good health and athletically active for many years; he had taken alcohol in moderation and denied the use of tobacco. Several years earlier he had undergone the surgical correction of a right ureteral stricture through a left flank incision. On physical examination in the emergency department, the blood pressure was 210/100 mm. Hg, the pulse 88, and respirations 26 per minute; the temperature was 96°F. The patient was perspiring freely and tossing restlessly on the examining bed. The muscles of the abdomen were held tensely; there was mild to moderate pressure tenderness in the epigastrium. The liver edge could not be determined by palpation; there was no rebound tenderness, and no bowel sounds were audible. Urinalysis revealed a specific gravity of 1.017, an albumin test with a 2 plus positive result, and a 1 plus positive result in the test for sugar; microscopic examination revealed no abnormality. The hemoglobin was 14.7 Gm. per 100 ml., the white blood count 10,650, with 54 per cent mature polymorphonuclear leukocytes, 41 per cent lymphocytes, 1 per cent monocytes, and 4 per cent eosinophils. On several occasions the patient raised sputum which was streaked with red blood prior to the insertion of the nasogastric tube; gastic contents were also noted to be streaked with bright red blood. He was treated with nasal oxygen, meperidine (Demerol), and an intravenous infusion; and he was admitted immediately to the hospital with an initial diagnostic impression of acute pancreatitis.

Physical examination on admission to the surgical service revealed a blood pressure of 180/120 mm. Hg, a pulse of 96, and respirations of 20 per minute; the temperature was 97.6°F. The patient was apprehensive and moderately diaphoretic. The general examination revealed a slight irregular inconstant movement of the eyes, suggestive of mild nystagmus; no fundal hemorrhages or exudates were seen, but the condition of the vessels could not be clearly evaluated because of the constant eye motion. The lungs were clear to percussion and auscultation. The heart rate was rapid and the rhythm regular; no murmurs were audible. The abdomen was soft with mild pressure tenderness across the epigastrium; the bowel sounds were normal. The carotid, radial, brachial, femoral, popliteal, and dorsalis pedis pulses were strong and equal in symmetric locations.

The urinalysis revealed a specific gravity of 1.020; results of tests for albumin, sugar, and acetone, and of the microscopic examination were negative. The initial glucose was 110 mg. per 100 ml. (normal 65 to 110 mg.), the blood urea nitrogen 16 mg. per 100 ml. (normal 10 to 20 mg.), and the serum amylase was 86 Somogyi units per 100 ml. (normal 50 to 180 units).

Roentgenogram of the chest revealed left ventricular enlargement with unfolding and prominence of the transverse portion of the aorta (Fig. 1A). The lung fields were clear. Findings on the abdominal film were negative (Fig. 1B).

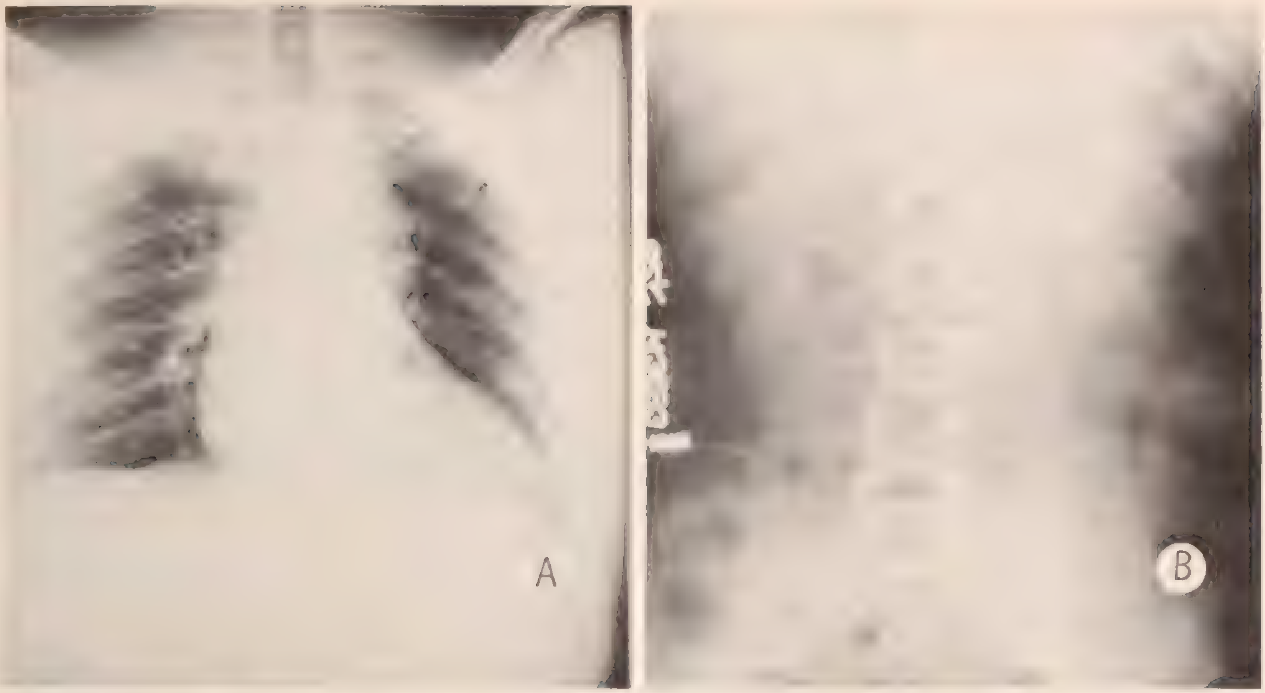

FIGURE 1. (A) Admission roentgenogram showing only left ventricular enlargement with unfolding and prominence of aorta. (B) Abdominal film showing good psoas shadows and no evidence of intra-abdominal calcifications.

The electrocardiogram was initially within normal limits, showing counterclockwise cardiac rotation (Fig. 2).

During the first eighteen hours after admission, the patient was treated with intravenous fluids, nothing by mouth, and the insertion of a Levin tube. During this interval his clinical picture changed dramatically; he became progressively more dyspenic until he reached the point of persistent orthopnea; sweating was profuse, his pulse rose from 95 to 150 per minute, and the blood pressure stabilized at approximately 180/70 mm. Hg. The respiratory rate rose from 20 to 55 per minute, and his temperature was elevated at 101°F. The heart sounds became distant, although they remained of good quality without murmurs; there was slightly less tenderness in the epigastrium, and the bowel sounds remained hypoactive. The morning after admission the patient coughed repeatedly with small amounts of bright red blood-streaking in the sputum; the returns via the Levin tube were occasionally coffee-ground in color and occasionally contained bright red blood. On examination by the medical consultant, the patient was found to be tense, restless, and in acute respiratory distress, leaning forward over his bedside table and unable to lie flat. The blood pressure was 140/90 mm. Hg, the respiration 54, and the pulse 150 per minute; the temperature was 101.2°F. The skin was cold and diaphoretic; scattered inspiratory rales were audible over both lung fields, most prominently over the lower lobes posteriorly, but also partly obscuring the cardiac sounds. The heart rhythm was regular; the sounds appeared to be of poor quality and were distant, with an extremely short very questionable diastolic murmur over the aortic and pulmonic areas. A crunching sound during systole was audible over the apical region, suggesting either compression of the overlying lung or the possibility of a pericardial friction rub. The abdomen revealed tenderness in the epigastrium, less severe than on the day of admission; the liver, spleen, and kidneys were not palpable. The bowel sounds were moderately active, and there

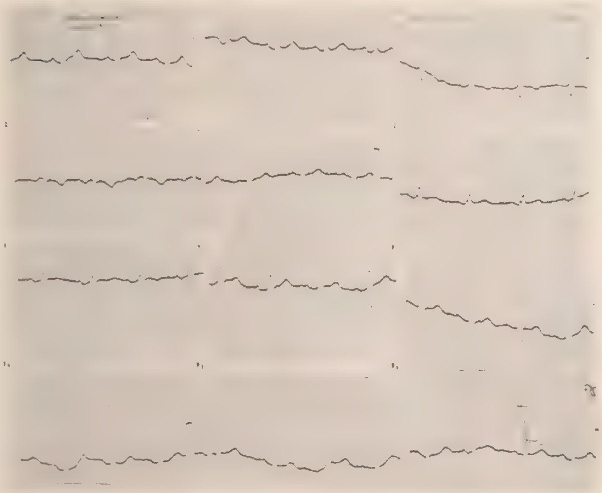

FIGURE 2. Normal electrocardiogram on admission.

was no distention. Arterial pulsations were easily palpable in all superficial locations and were of approximate equal strength in symmetric locations. There was no evidence of peripheral thrombophlebitis, and Homan's sign was absent bilaterally.

Twenty hours after admission the patient was transferred to the care of the medical service in the intensive care unit where furosemide, meperidine, and lanatoside C (Cedilanid) 0.8 mg. were administered intravenously. At this time the hemoglobin was 18.6 Gm. per 100 ml., the hematocrit 56, the white blood count 18,800 with 86 per cent polymorphonuclear forms. The serum bilirubin was 1.4 mg. (direct 0 mg.) per 100 ml.; the thymol turbidity, 1.6 units, and results of the cephalin flocculation test were negative. The total serum protein was 8.2 Gm. (albumin 4.7 Gm., globulin 3.5 Gm.) per 100 ml., the alkaline phosphatase 3.7 units (normal 0 to 4 units), serum glutamic oxalic transaminase 90 units (normal 1 to 27 units), serum glutamic pyruvic transaminase 38 units (normal 1 to 40 units), and the lactic dehydrogenase 1,030 units (normal 200 to 600 units) per milliliter. A specimen drawn for repeat serum amylase was insufficient for testing.

With additional furosemide, the patient's twenty-four-hour urine output reached 1,880 ml.; repeat urinalysis was interfered with by the fact that the patient forcibly removed the Foley catheter, and subsequent urine was persistently blood stained.

Shortly after admission to the intensive care unit on the afternoon of the second hospital day, the patient's blood pressure was 120/20-0 mm. Hg in both arms. The pulses were full and bounding at the radial, brachial, femoral, and popliteal areas, and again were approximately equal in symmetric locations. The pulse was palpable in the forearms bilaterally; however, there was no evidence of a water-hammer pulse, capillary pulse, or Durozier's sign. The temperature remained at 101°F.; the patient was restless, unable to assume any but the upright position, and was most comfortable sitting in a chair. Dyspnea remained extreme; bright red blood-streaked sputum was raised on coughing, but no frothy sputum was observed. The heart rhythm remained regular although with an extremely rapid rate between 140 and 160 per minute; the sounds were difficult to evaluate, since at times a very short diastolic murmur over the aortic area and over the left sternal border were suspected but could not be clearly defined. The crunching sound at the apex persisted and to some observers assumed more of the characteristics of a pericardial friction rub, although this remained debatable. Because the patient insisted on remaining in the upright position, it was not possible to evaluate prominence of neck veins which remained flat with the patient in the vertical position. The patient denied pain other than the mild distress in the epigastrium and in the right upper quadrant.

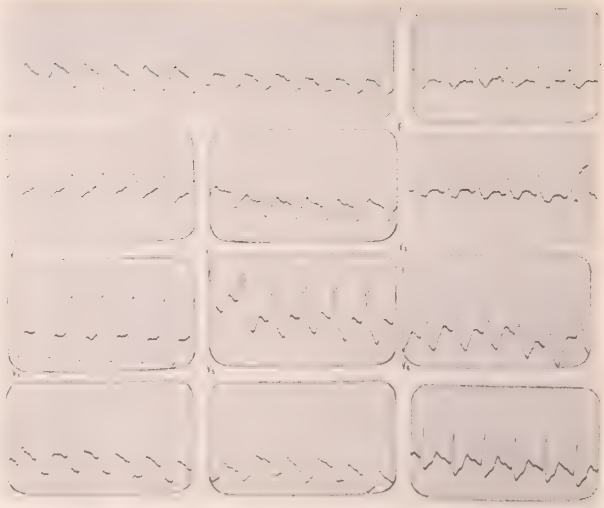

FIGURE 3. Rapid sinus tachycardia, right bundle branch block, and ST-T wave abnormalities, twenty-six hours after admission.

Throughout the last six hours of the patient's life, the blood pressure gradually fell from 120/20-0 to 80/0 mm. Hg; the pulse remained rapid, and symptoms and signs of severe congestive heart failure were unrelieved. The electrocardiogram revealed rapid sinus tachycardia in addition to right bundle branch block and ST-T wave abnormalities in several leads (Fig 3). A repeat x-ray film of the chest revealed increased congestion and/or pneumonic infiltration bilaterally. At 4:00 A.M. on the morning of the third hospital day, approximately thirty-six hours after admission, the patient went into complete cardiovascular collapse, with unobtainable blood pressure. He lapsed into coma with dilated pupils; the electrocardiogram rhythm strip showed complete atrioventricular block. Gastric aspiration showed coffee-ground material only. Cardiac function abruptly ceased, and the patient was pronounced dead.

Discussion

J. James Smith, M.D.*: As one reads the protocol of this interesting case, it is easy to be in agreement with the clinician's initial impression of acute pancreatitis. However, there are some aspects of the case which do not support that impression. First, the patient was almost too prostrate by his illness; seldom is the patient with acute pancreatitis as completely overwhelmed as this man appeared to be throughout his clinical course. Furthermore if I chose to agree with the concept of pancreatitis, the gastric bleeding might possibly be explained thereby but certainly not the bronchial bleeding. Bright red blood streaked his sputum throughout his course. Rupture of a pancreatic pseudocyst could be considered, but such an entity could not possibly develop in the brief period of this patient's entire illness. The normal serum amylase in no way influences my thinking about pancreatic disease here.

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It is always possible that the clinicians can become too enamored of their own first impressions of a case. On the Second (Cornell) Medical Division of Bellevue Hospital, we repeatedly presented a clinical pathologic conference in which the only diagnosis that could be made from the protocol was that of dissecting hematoma of the aorta. In fact, however, the patient died of a uremic syndrome with bilateral renal stones; but the enthusiasm of the clinicians for the diagnosis of dissecting hematoma at every point of the history and in every element of the physical examination completely obscured the proper answer.

The most noxious pains with which we deal in medicine are the pains of acute myocardial infarction, of dissecting hematoma of the aorta, and of renal colic. Other pains may be more severe or equally severe at times but not so consistently.

When the essayist prepared this protocol, he was well aware that dissecting hematoma of the aorta was going to be one of the major considerations in differential diagnosis, so he took great pains to reassure us that the peripheral pulses at no time anywhere showed any sign of compromise. He thereby made it virtually impossible for us to make a diagnosis of dissecting hematoma, or dissecting aneurysm as it is so frequently called.

It is important to point out that when the patient's red-cell mass was estimated a second time, it was greater than on admission. With the blood pressure gradually falling, one can say that hemoconcentration was a manifestation of shock and possibly also of dehydration under diuretic therapy. I think it is unlikely that a sizable dissecting hematoma of the aorta would be associated with an increase in the red-cell mass. Dissecting hematoma with hemopericardium is fairly common, and exit by that means is frequent. However, I must make a decision as to whether this man had a diastolic murmur of his heart or not. I gather in the final analysis of the protocol that the clinicians decided against an aortic diastolic murmur. Those peripheral vascular signs, which we classically associate with wide-open aortic insufficiency, are denied in this instance. If I did admit that he had an aortic insufficiency, I would have to consider a number of other disorders including Libman-Sacks endocarditis and an acute bacterial endocarditis; but I believe these can be discarded in the absence of clear-cut aortic insufficiency. A diastolic murmur is frequently audible in the presence of a dissecting hematoma which has reached the point of distorting the aortic valve ring; but the absence of such a murmur does not assist us in determining whether or not a dissecting hematoma of the aorta has occurred.

The initial blood pressure recording of 210/100 mm. Hg raises the question as to whether or not he had been known previously to have hypertension; if so, we ought to consider that as a higher-risk factor favoring acute myocardial infarction in a previously well forty-year-old man. The initial urinalysis showed proteinuria. One might suggest acute glomerulonephritis; or in the presence of a longer-standing blood pressure elevation, a malignant phase of hypertension might be possible, with bleeding from his stomach and from his bronchial tree. We did not obtain a perfect look at his eyegrounds, but we are told that there were no hemorrhages or exudates, a fact which I think would dispose of a rapidly progressive hypertension or malignant phase of that disease as a cause of his terminal episode. I believe it would most likely militate against any diffuse disease of the smaller arteries as well.

In any event therapy with intravenous fluids might have involved a small overload; he is reported to have become dyspneic, orthopneic, and tachypneic, with a tachycardia of 140 to 150 per minute, all of these criteria of congestive heart failure. He was unable to increase his cardiac output in the setting of an increased filling load or increased filling pressure. A temperature elevation to 101°F. developed, and he insisted in remaining upright, leaning forward over his bedside table, unable to lie flat. This is the typical position of a patient with acute pericarditis.

May we review the x-ray films now, Dr. Batillas?

John Batillas, M.D.: Chest and abdominal films taken in the emergency department demonstrate left ventricular enlargement; the aorta is unfolded with prominence of the transverse portion (Fig. 1A). The lung fields are clear as are the costophrenic angles. The abdomen is normal; the psoas margins are clearly seen, and the renal outlines appear normal; no masses are visualized nor are any radiopaque urinary or biliary calculi (Fig. 1B).

The roentgenogram of the chest on the following day taken by means of portable apparatus again demonstrated an enlarged cardiac silhouette with an unfolded and moderately prominent aorta. In addition there are increased markings throughout both lung fields, partially due to blurring because of motion and partially to pulmonary congestion. A specific type of pneumonia is not evident, although there may be superimposed scattered pneumonitis.

Dr. Smith: I have chosen to interpret the confusion of signs over the precordium as evidence of pericardial friction. The classic pericardial friction is triphasic and includes a sound associated with atrial systole, one with ventricular systole, and one with ventricular diastole. It is seldom with pericardial friction that one finds the classic triphasic sound, and probably to various observers or to the same observer the pericardial friction was truly varying from time to time.

The constellation of such symptoms as bronchial and gastric bleeding, possibly bleeding into the pancreas or other pancreatic lesion, myocardial failure, and pericarditis is difficult to attribute to one pathologic entity. Is this an unusual form of pericarditis, such as cholesterol pericarditis, chylopericardium, neoplastic invasion of the pericardium, or a lipemic syndrome associated with pancreatitis and causing a pericarditis?[1] These entities would not seriously be considered outside of a clinicopathologic conference. A clinical point that I reiterate many times and that originated with Conner,[2] emphasizes that in pericarditis or in pericardial effusion the pericardial membrane will yield or stretch only if significantly inflamed. Under the latter circumstance it might hold as much as 5,000 ml. of fluid; however, if the membrane is fibrosed or in its natural state, as little as 100 ml. of fluid or blood in that pericardial space will produce tamponade. This you can see in stab wounds about the heart. Thus hemorrhage from a dissecting hematoma of the aorta into the pericardial sac need not involve the loss of a major amount of blood and yet can lead promptly to a fatal outcome. Still, I cannot confine the diagnosis in this case to pericarditis alone, with pericardial tamponade, because of the evidence for a myocardial lesion as well, with enzyme and electrocardiographic changes that are very striking. The initial electrocardiogram is virtually a normal tracing which would not support the notion of acute myocardial infarction as a complete explanation of this clinical course. Most myocardial infarctions are associated with a very limited type of pericarditis but only very rarely with significant pericardial effusion. A myocardial infarction which gave rise directly to hemopericardium would likewise be statistically unlikely. Mural thrombi sufficiently large to compromise the cavity and volume of the left ventricle and to result in a low cardiac output syndrome, are very late rather than early complications of myocardial infarction; therefore, I would not include them as likely causes of the rapid progression of heart failure.

A clinical problem with protean manifestations will, of course, raise the question of acute polyarteritis, but I must admit that I have never seen acute polyarteritis terminate so rapidly, within thirty-six hours. In the tropics, in South or Central America, I might consider Chagas' disease, but this man has no history of tropical living, and affliction with that disease requires tropical living rather than merely a brief tropical exposure.

Several background items in the history do not really assist me in my search. I am not able to assess clearly the importance of the right ureteral stricture for which this man underwent surgery. When one finds ureteral stricture, one thinks of a migraine patient under prolonged methysergide therapy or of a retroperitoneal lymphoma; but both entities would surely have been identified at the surgical procedure. Furthermore such possibilities appear to offer no clues as to the pathogenesis of the terminal events of his life. Likewise I can contribute little to an explanation of the nystagmus in the absence of other signs involving the central nervous system; one might ask whether the nystagmus resulted from barbiturate or diphenylhydantoin (Dilantin) therapy.

Finally, I must emphasize the likelihood of a diffuse lesion which can explain this very striking constellation of symptoms, and I will therefore have recourse to a viral disease. It is not now likely that we could determine whether or not he had had close contact with animal pets or birds. Psittacosis would be appropriate to consider. However, I prefer a common viral disease of Coxsackie origin or influenzal viral origin as being responsible for a disease process which can include very serious myocardial lesions, a pericardial lesion with tamponade, and gastric and bronchial bleeding due to mucosal inflammation. Certainly such a viral disease would appear to account adequately for all the clinical phases of this illness, including its rapid onset and swift progression to a fatal outcome. Irrespective of other considerations, I will offer this suggestion as my final choice.

John T. Flynn, M.D.: Would the size of the heart on x-ray film be compatible with an acute viral myocarditis?

Dr. Smith: I think it would ordinarily require much more than thirty-six hours for it to grow large or to dilate to this extent, but sometimes such a change can occur rapidly.

Dr. Flynn: This man insisted that he was perfectly well until the sudden onset of symptoms during a business conference.

Harold H. Coppersmith, M.D.: I saw this man in the intensive care unit, Dr. Smith; he was a very intelligent articulate man who gave a very clear-cut history which appeared to be classic for dissection of the aorta. I, therefore, was very careful about checking all his pulses more than once, and I was unable to find any disparity in symmetric locations. The precordial friction rub to my ears was maximal to the left of the sternum in the third to fourth interspace, the characteristic place where one finds a rub, particularly with a dissection. With the blood pressure of 120/0 mm. Hg, at first I thought perhaps I was hearing a diastolic murmur; but I was inclined later to think the blood pressure reading was not correct and that the diastolic reading really was somewhere in the 80 to 60 range, with probably a change in the Korotkov sounds at that level.

Another finding that could not be reconciled, at least to my way of thinking, with an acute dissection was the spitting up of blood prior to the insertion of a nasogastric tube; that pointed to a massive pulmonary infarct which could also produce the remainder of the clinical picture. However, one would have thought that an embolus to the lungs would have preceded in time the spitting of blood by at least forty-eight to seventy-two hours. So he presented quite a problem. None of us considered that this was an acute infectious disease; he insisted that he had been perfectly well as Dr. Flynn emphasized.

Dr. Flynn: Not long ago one of our clinicopathologic conferences was devoted to a case of an eleven-year-old child, who became ill at home two or three days before admission and was found dead by the police at his home.[3] Our presentation of that case lacked a physical examination and yet the conference discusser reached the correct conclusion that a viral myocarditis was the cause of the catastrophic course and of the child's death. Interestingly also, the heart was not only the site of inflammatory cell infiltration but also of myocardial hypertrophy and of interstitial edema.

Henry A. Sampson, M.D.: Only a few conditions will cause sudden and very severe heart failure in the absence of cardiac murmurs, namely, myocardial infarction, a dissecting aneurysm, or possibly an overwhelming bacteremic myocarditis. I think the answer lies between these three, with myocardial infarction still a strong possibility.

Harold Eichler, M.D.: I was wondering if this patient was born in the United States or in the Caribbean Islands. There is a disease entity of Negro natives called cardiomyopathy of Jamaica, which is usually familial and can occur as a typical cardiomyopathy with sudden onset of congestive failure.[4] The reason I asked is because according to the protocol he claimed to be in very good health, but the admitting x-ray film of the chest indicates the large left ventricular configuration and an uncoiled tortuous aorta which would suggest some longer-standing myocardial disease, even though it may have been asymptomatic.

In addition, is it possible that he had a ruptured aortic valve cusp and possibly a ruptured intraventricular septum, which could precipitate the sudden onset of intractable heart failure, the very low diastolic blood pressure, rapid enlarging of the heart, and the abrupt appearance of right bundle branch block? A conduction defect can be a fatigue phenomenon seen with a very rapid tachycardia, but usually in that situation one finds left rather then right bundle branch block. An aneurysm of the sinus of Valsalva that ruptured and dissected could give rise to a similar sequence of events.

Dr. Flynn: This patient was native to the United States. His only previous illness was related to his ureteral difficulty, and he denied that he ever had high blood pressure, heart disease, or antihypertensive therapy of any kind.

Harry Y. Fong, M.D.: I was wondering whether any stool guaiac test was done. The abdomen showed persistent tenderness, and the pain in the right upper quadrant was severe. He had been vomiting blood and coffee-ground material, possibly as a result of a ruptured peptic ulcer.

Dr. Flynn: Except for the possibility of pancreatitis, none of us focused very much on the gastrointestinal tract as the primary source of the difficulty. I did not find in the record a stool guaiac report; it would certainly have been positive because he had vomited blood as well as swallowed sputum which was blood streaked. In the absence of grossly tarry stools, lesser evidences of gastrointestinal bleeding would not have been helpful to us.

Dr. Coppersmith: There was no evidence of brisk gastrointestinal bleeding; his hematocrit did not decrease but rather increased, as Dr. Smith pointed out. I want to address myself to the question of a ruptured aortic cusp. The sound that was heard at the base of the heart did not have the characteristics of a ruptured cusp; it was not musical, blowing, nor prolonged. While a ruptured cusp would explain his clinical course quite well, there were no physical signs nor other evidence to substantiate it.

Dr. Flynn: Dr. Smith, would an aneurysm of the sinus of Valsalva be compatible with this clinical picture?

Dr. Smith: You described this man on admission as having no heart murmur. The absence of a murmur would indicate that an aneurysm of the sinus of Valsalva should be eliminated from your considerations.

George Schreiber, M.D.: When I read the history it reminded me of a ruptured esophagus, which can create a variety of problems, especially when secondary to a tumor of the esophagus; but the previous good health would be against such a diagnosis. Furthermore the roentgenograms do not suggest such an event. Even if a foreign body had perforated the esophagus at the time of the luncheon mentioned in the protocol, I think the rapid demise would be difficult to explain, unless the perforation were accompanied by continued mediastinal bleeding.

Since the second x-ray film of the chest showed no change in the mediastinal shadow, I would have to dismiss such possibilities.

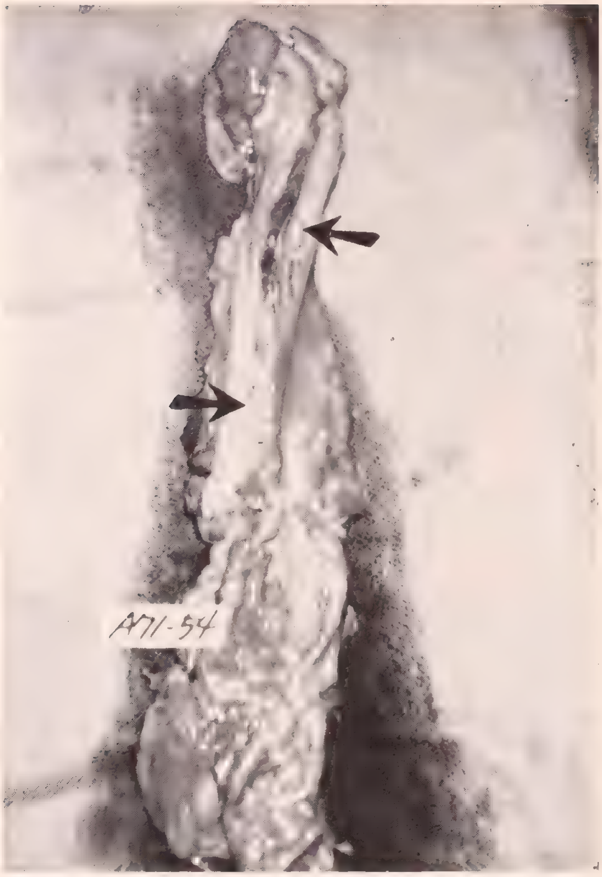

FIGURE 4. Thoracic aorta, showing intimal surface (lower arrow) and layers of media split apart by dissection (upper arrow).

Clinical diagnoses

1. *Probable massive pulmonary embolus*
2. *Acute cor pulmonale, secondary to pulmonary embolus*
3. *History of ureteral stricture treated surgically; cause undetermined*

Dr. Smith's diagnoses

1. *Viral infection (? Coxsackie or influenzal), with acute myocarditis and secondary congestive heart failure*
2. *?? Dissecting hematoma of the aorta*

Pathologic discussion

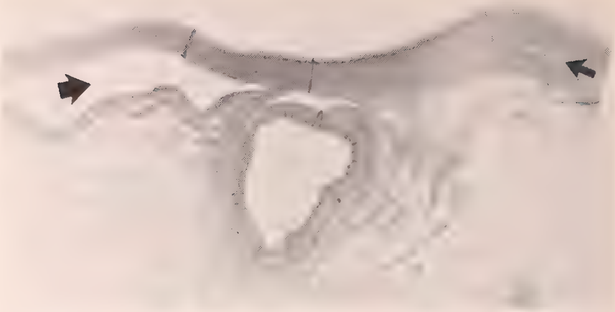

FIGURE 5. Dissection involving media of aorta (arrows), but not extending into major arterial branch seen in cross section.

Basil Moumgis, M.D.: The pathologic lesions here were primarily cardiovascular and secondarily pulmonary, with evidences of congestive heart failure. He presented clear evidence of a dissecting hematoma of the aorta, which we commonly, and erroneously, call a dissecting aneurysm (Fig. 4). Pathologically, cystic medial necrosis permitted such a dissection along the plane of the outer media of the aorta (Fig 5). Anatomically, the dissection extended from an intimal tear, located 1 to 2 cm. above the aortic valve, down as far as the first centimeter of each iliac artery. The great vessels to the head and arms, the coronary arteries, the renal and mesenteric vessels—none of the major aortic branches were involved. There was no evidence of a point of reentry into the lumen which we sometimes see in these cases, usually if the patient survives for a longer period. There was minimal retrograde dissection proximal to the intimal tear toward the aortic valve ring, but there was no evidence of dissection along the coronary arteries nor of compression of the coronary ostia. There was no evidence of rupture into the pericardial sac, which contained only about 30 cc. of clear fluid.

He was a large, well-developed man, about 6 feet 1 inch, weighing about 180 pounds. His heart weighed 460 Gm., so that by all statistics and studies, even for a man of this size, this is an enlarged heart by some 70 to 80 Gm. Most of the enlargement involved the left ventricle, and without evidence of valvular lesions the commonest cause would be some degree of prolonged hypertension. The other findings included acute pulmonary congestion and edema; the liver was minimally enlarged and microscopically was only mildly congested (Fig. 6). It was not the so-called shock liver. I can explain his hemoptysis and possible vomiting of blood only on the basis of congestion of the mucosa of the stomach and bronchi. We did not find any intrinsic lesions of those organs and no pulmonary emboli.

There were no lesions of the kidneys, neither grossly nor microscopically.

So far as the pathology is concerned, we do not know the cause of the lesion called cystic medial necrosis of the aorta; but in the presence of hypertension, it permits the development and progression of a hematoma usually in the outer one third or one fourth of the aortic media. Possibly an associated arteriosclerosis in the vasovasorum of the aortic wall initiates an oozing of blood into the aortic media, with progressive dissection until the hematoma ruptures through the intima into the

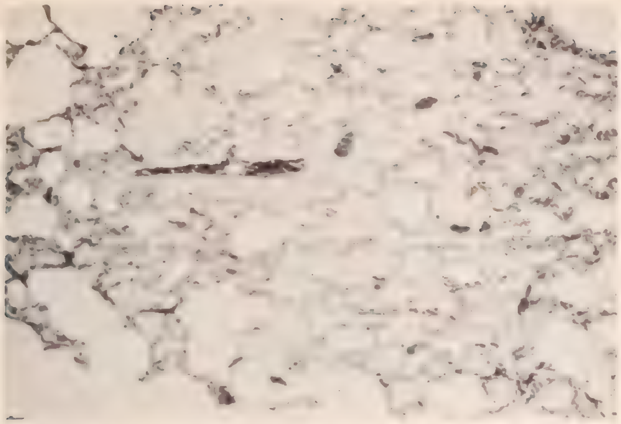

FIGURE 6 Pulmonary edema secondary to severe acute congestive heart failure

lumen of the aorta. Another theory suggests that a defect in the aortic intima possibly associated with hypertension allows a tear which then leads to a dissection in the plane of the cystic medial necrosis. The first explanation applies in those cases that do not show intimal tears. Such tears, by the way, are characteristically sharp and straight, as though cut by a clean razor stroke. A second intimal tear, allowing reentry at a more distal point in the aorta, is often found in patients who survive for some time. Endothelialization of the dissected media may take place also, and the patient may survive for several years. Rupture of the original hematoma into the pericardial space is a very common mode of exitus, but acute intractable heart failure must be very uncommon.

Dr. Flynn: Do the kidneys suggest the likelihood of prolonged hypertension in this patient?

Dr. Moumgis: There were no vascular nor inflammatory changes, only mild congestion.

Dr. Coppersmith: I wonder if there was any fibrin in the area of the base of the aortic arch, which might account for the friction rub?

Dr. Moumgis: The epicardium was smooth, with some bluish discoloration due to blood within the adventitial tissue at the root of the aorta, but without roughening of the surface. The pericardial fluid was clear and serous with no visible fibrin in it.

Dr. Coppersmith: I think blood in the adventitia at the root of the aorta would be sufficient to account for a rub.

Dr. Sampson: The message of today's conference is a very important one, and that is, a patient can have a dissecting hematoma of the aorta without the loss of arterial pulses, just as another patient can have a fatal myocardial infarction with no electrocardiographic changes.

Dr. Flynn: Originally the systolic and diastolic blood pressure in this patient were well sustained at 200/100 and later at 170/100 mm. Hg. However, about twenty-four hours after the onset of his symptoms, I was struck by a peculiarity of his radial artery pulse. I can only describe it as a bounding flabby pulse, which would almost entirely disappear if you maintained light pressure on it. His blood pressure at that point was 120/20 mm. Hg with no change of Korotkov sounds at higher levels. I looked for but did not find the signs of typical aortic insufficiency. On grasping his midforearm you could feel an arterial pulse wave, as in many normal people, but it was not water-hammer in character. In retrospect, since the dissection had not closed off any major peripheral vessels, ther peripheral arterial resistance must have been lower than in other instances of dissection, possibly burdening the myocardial pump to a greater degree; in addition when a tear through the intima suddenly developed, establishing a direct communication from the aortic lumen to the dissection cavity, his diastolic blood pressure fell to near zero, and the peripheral arterial resistance vanished almost entirely. Now the heart was called on to deliver blood to all the vital organs in the nearly complete absence of the normal hemodynamic pressure mechanisms which assure an appropriate distribution of blood flow throughout the arterial system. The result was foredoomed, namely, rapid failure of the pump, congestion of the bronchial and gastric mucosa with oozing of fresh blood, later severe dyspnea, and finally overwhelming pulmonary edema. Whether a preexisting hypertension and left ventricular hypertrophy now constituted an asset or added to the liability, can only be surmised.

Dr. Smith, would you agree with this formulation or would you throw it out the window?

Dr. Smith: I would have no criticism but only a question. How commonly does one see acute congestive heart failure of this type with dissecting hematoma of the aorta? My recall suggests that it would be unusually rare. It is true that congestive failure may follow a dissecting hematoma, but usually after an interval of time, in a chronic form, and commonly after the onset of aortic insufficiency.[5] Dyspnea, orthopnea, and tachypnea are seen during the acute phase of dissection, but their significance is clouded by the simultaneous occurrence of often severe pain; acute congestive failure is rarely found in my experience.

Furthermore I really do not understand why this man died. He sequestered a very small volume of his red cell mass in this hematoma, so why should this have interfered with the function of the left side of the heart in this fashion? It interfered with the function of the left side of the heart to the point of disturbing function on the right side enough to produce visceral congestion and bleeding.

Dr. Flynn: Suppose the dissection extended down toward the root of the aorta with some compression of the coronary ostia during life, especially with mechanical displacement of the heart during systole.

Might not the resulting myocardial ischemia aggravate the congestive failure, or would it produce other symptoms?

Dr. Smith: It would infarct his myocardium I suppose, but the pathologist does not find that.

Final diagnoses

1. *Dissecting hematoma of aorta*
2. *Acute congestive heart failure with pulmonary edema, secondary to dissecting hematoma of aorta*

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Clinical Anesthesia Conference

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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ELECTRICAL HAZARDS DURING SURGERY

First-hand reports on electrical accidents in hospitals are sparse. The following cases are presented to stimulate others to describe related experiences and to demonstrate the importance of holding "an electrical postmortem" immediately after the incident.

Case reports

Case 1. A five-year-old boy after surgical correction of tetralogy of Fallot developed total heart block. Teflon-covered ventricular electrodes were inserted and connected to battery operated electrodyne TR 3, which produced satisfactory pacing of the heart. The electrocardiogram was read on an Electronics for Medicine DR8 model, the electrodes being indwelling metal needles. The monitor was ungrounded. The patient had a radial artery cutdown, a catheter in the right atrium, a rectal thermistor connected to a Yellow Springs telethermometer, and the child was lying on a hypothermia pad.

During closure of the sternotomy wound, electrocautery connected to a standard Bovie machine was used on the subcutaneous vessels. The patient developed ventricular fibrillation which was noted as soon as the electrocardiograph was recognizable, being temporarily distorted by the electrocautery. The chest was reopened and defibrillation easily accomplished. Substituting the pacemaker with a new one rectified the situation.

Cases 2 and 3. These incidents occurred eight years later, two months apart, in the same operating room, under identical circumstances, and are described together.

Following insertion of an indwelling demand pacer (Chardach 5841) with a 5814 epicardial electrode in situ, application of the electrocautery electrode produced ventricular fibrillation. Both patients' electrocardiographs at the time were monitored with an Electronics for Medicine DR8 model. Four limb electrodes were attached, and the ground lead was connected to the Bovie plate. Both patients were successfully resuscitated.

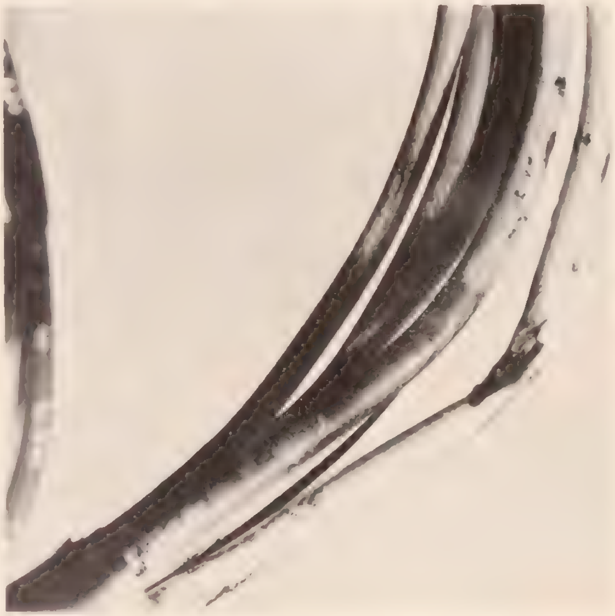

FIGURE 1. Wires leading from power input to main high-frequency generator looped over metal screw showing complete but intermittent line-to-chassis fault.

Case 4. A muscular man in his thirties was anesthetized for head and neck surgery. He was being monitored with an electrocardioscope. The ground plate of the electrocautery was placed beneath his right buttock. When the foot switch of the electrocautery machine was activated, the patient's right leg twitched vigorously. Another electrocautery unit was obtained and connected to the patient. The operation then proceeded without incident.

At no time did the ground-fault indicator on the electrocautery unit operate. An examination of the defective generator revealed it to be in good working order as measured by external testing of the power

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Presented and discussed at a conference held at St. Vincent's Hospital and Medical Center, New York City, September 27, 1971. Clinical Anesthesia Conferences are held on the fourth Monday of each month.

cords and foot switch. By accident, the machine was moved while connected to the power supply by one of the staff who was testing the equipment. This resulted in the noise of electrical discharge, the smell of burning rubber, and the response from the electrician of having received a minor electric shock. When the back of the unit was removed, the wires leading from the power input to the main high-frequency generator were looped over a metal screw and a complete, but intermittent, line-to-chassis fault could be demonstrated (Fig. 1). Fortunately neither the patient nor the electrician received any serious injury. The operating room nursing staff expressed surprise that the warning light on the generator and the warning buzzer did not operate. This type of indicator shows that there is a good contact from the indifferent electrode to the generator. Unfortunately, in no instance is this type of warning device meant to indicate any other possible defect in the machine. Furthermore, this particular warning device can in fact be a hazard since the current required to operate the alarm can constitute a danger.

Comment

Explanation of the ventricular fibrillation is speculative in Cases 2 and 3 since no electromechanical faults could be discovered. The following possibilities may explain these complications:

1. The high energy of the electrocautery interfered with the function of the pacemaker.
2. The pacemaker generator became grounded, thus placing the heart in a voltage-to-ground leak.
3. An induced current was produced in the loop of the epicardial pacing wires.

Improved monitoring with electrical equipment in the operating room and intensive care areas has increased the danger of burns, minor shock, and electrocution by faulty equipment or connections. In addition, patients have been "rendered electrically sensitive" with an externalized electric conductor, such as a probe, catheter, or other electrodes connected to the heart.

Anesthesiologists are constantly handling electrically sensitive patients and are using apparatus with potential electrical danger. It is essential, if accidents are to be avoided, that physicians familiarize themselves with the problems.[1] In addition improved supervision, maintenance, and preventive repairs of electrical equipment in the hospital by electrical engineers is essential to avoid electrical morbidity and deaths.[2]

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Number two hundred and four in a series of Clinical Anesthesia Conferences

Electrocardiograms of the Month

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Editors

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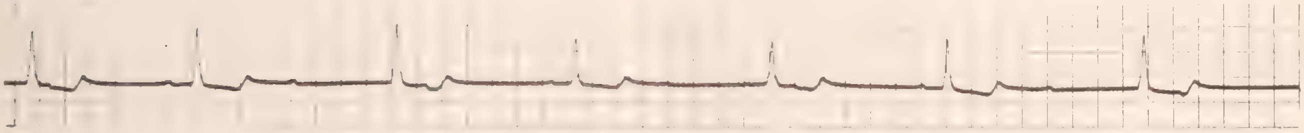
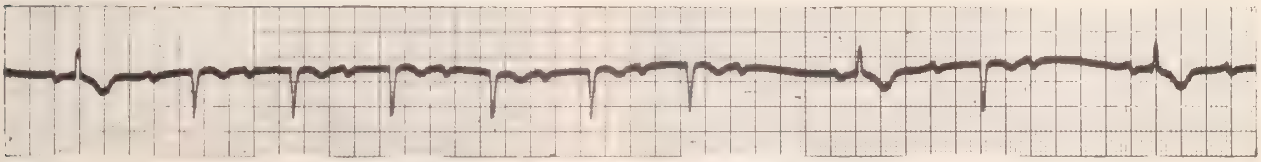


QUESTION 107. What is the rhythm? Continuous lead II.



QUESTION 108. What is the rhythm? Lead III.

ELUCIDATION

Question 107. The P-P interval is perfectly regular. The R-R interval varies slightly. Each of the early QRS complexes (beat numbers 2, 4, and 6) is preceded by a P wave with a fixed P-R interval of 0.20 second. All other P waves are blocked, and there is a junctional escape rhythm occurring at precisely regular R-R intervals. The rhythm is sinus rhythm with atrioventricular dissociation and occasional capture. This electrocardiogram represents a high degree of atrioventricular block (Mobitz 2). Patients with this arrhythmia usually require a cardiac pacemaker.

Question 108. The P-P intervals are regular at a rate of 80 per minute. The P-R intervals of beat numbers 2 to 7 and beat number 9 are prolonged to 0.38 second. The P waves following QRS numbers 7 and 9 are nonconducted. Following these nonconducted P waves, the P-R shortens to 0.21 second, and the succeeding QRS is aberrant. The shortened P-R interval is due to the prolonged pause following the blocked P wave which allows recovery of atrioventricular conduction. The variation in QRS configuration is also probably related to the duration of the R-R interval. The rhythm is regular sinus rhythm, first- and second-degree heart block.

ADENOCARCINOMA OF RETE TESTIS

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Adenocarcinoma of the rete testis is a rare and unusual testicular tumor. Curling[1] reported the first case in 1853. In a review of the subject Schoen and Rush in 1959[2] found only 12 cases reported in the literature to which they added their own. Desberg and Tanno in 1964[3] described the fourteenth case, and the following is the fifteenth case to be added to the literature.

Case report

A seventy-three-year-old white man was first seen at The Mount Sinai Hospital on September 19, 1969. A left hydrocele had developed in the patient, and the fluid was aspirated. He also gave a history of mild prostatism. As a young seaman in the Merchant Marine, he had contracted multiple venereal infections. He later worked for many years in a coal mine where he contracted pneumoconiosis.

Physical examination disclosed a normal abdomen. A left hydrocele, which transilluminated, was aspirated, and 200 ml. of straw-colored fluid were obtained. After aspiration, the left testicle

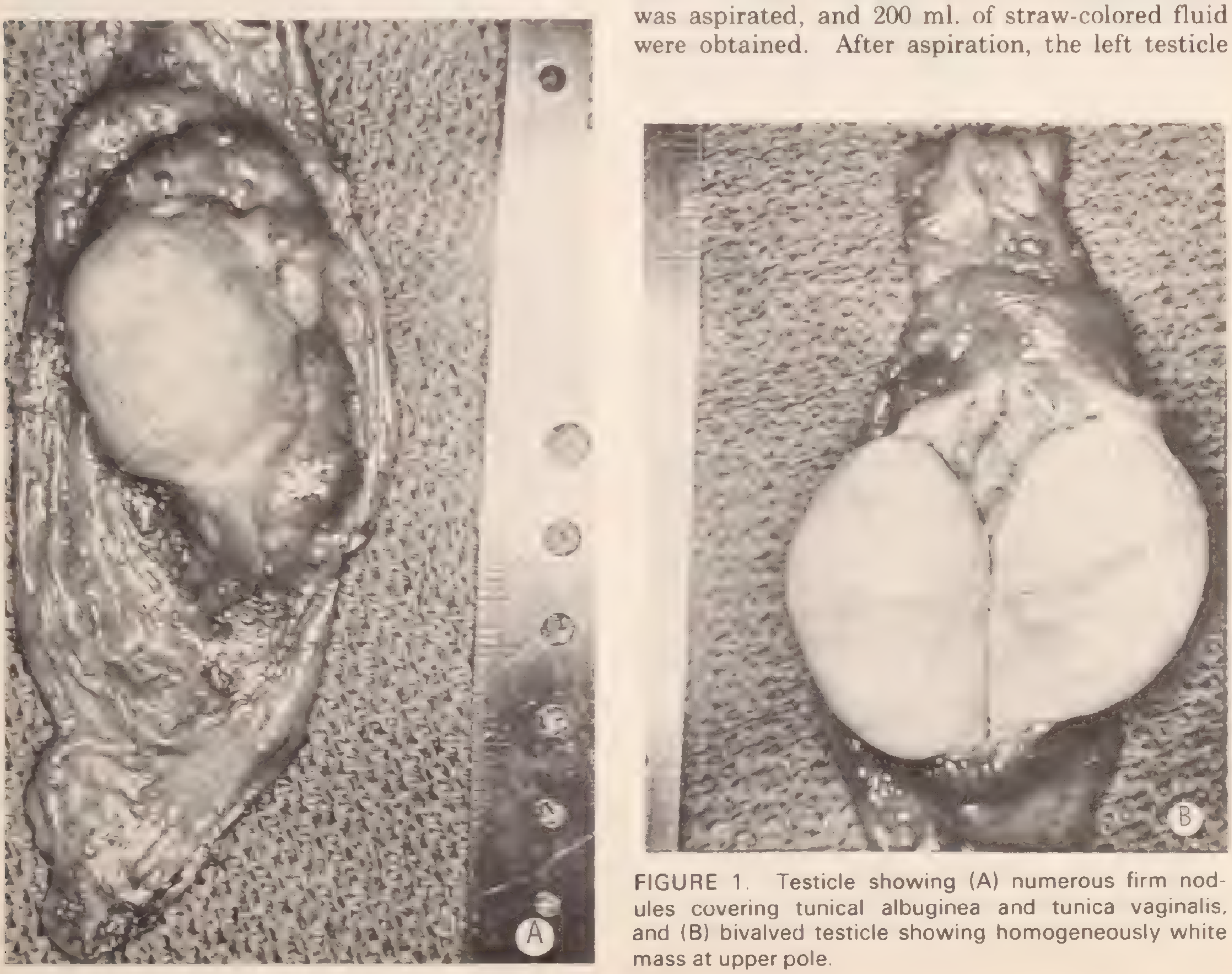

FIGURE 1. Testicle showing (A) numerous firm nodules covering tunical albuginea and tunica vaginalis, and (B) bivalved testicle showing homogeneously white mass at upper pole.

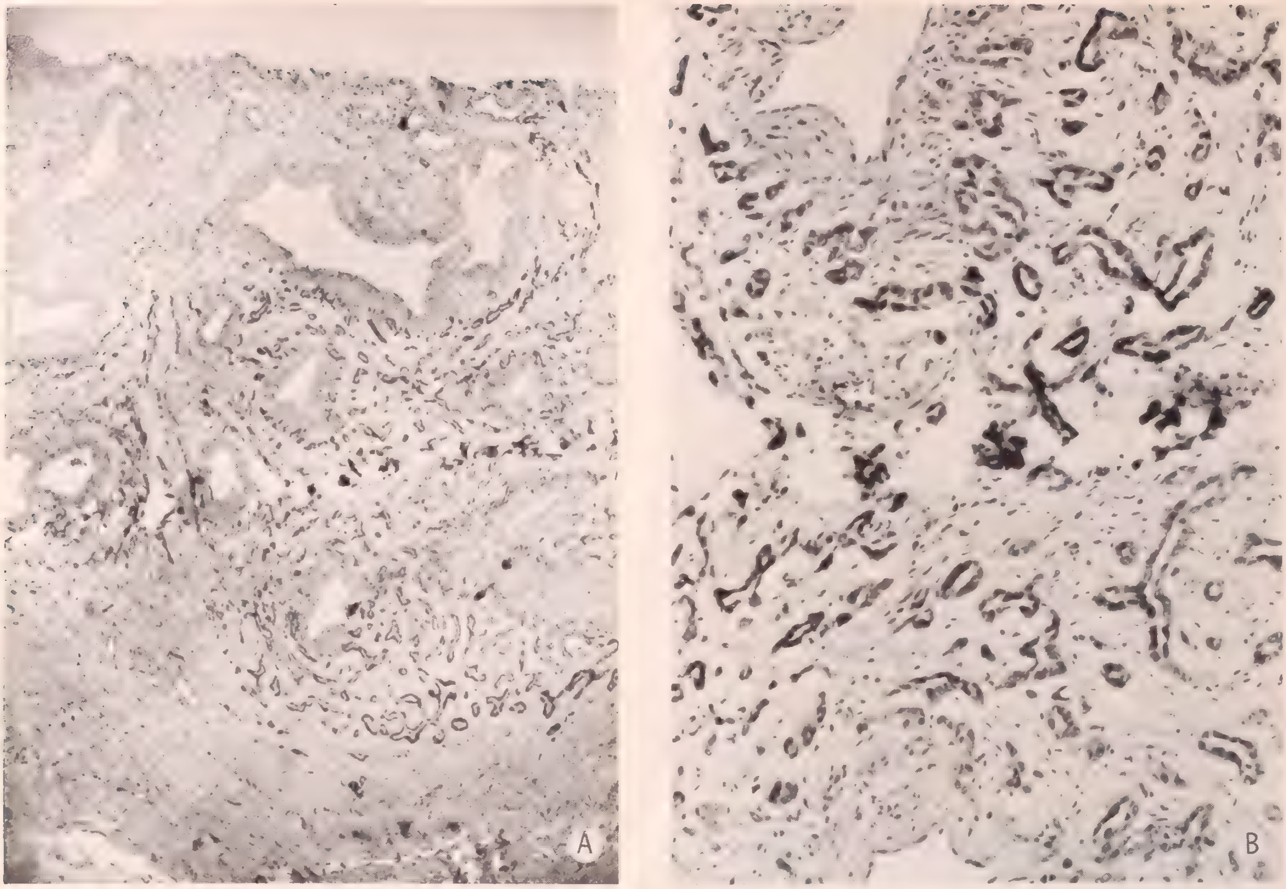

FIGURE 2. Microscopic examination. (A) Low-power view of adenocarcinoma in rete testis, and (B) glandular structure of small irregular glands lined by cuboidal cells; mitotic figures are not infrequent.

felt markedly irregular, nodular, and hard. The prostate, on rectal examination, appeared to be minimally enlarged and benign.

The patient was admitted to The Mount Sinai Hospital for definitive therapy on November 28, 1969.

X-ray examination of the chest showed severe changes in the lung due to pneumoconiosis which had been present for the last few years. Results of intravenous urogram and barium enema were normal. Electrocardiogram and laboratory findings were all within normal limits. The serologic test results were negative.

On December 4, 1969, through an incision in the left scrotal area, the left testicle was explored. The hydrocele sac, containing 50 ml. of amber fluid, was opened. The left testicle was hard and irregular, and on its surface extending to the tunica vaginalis were multiple nodular and granular excrescences. A left orchiectomy was performed, and the left testicle, epididymis, and hydrocele sac were removed in toto.

Gross examination showed that the entire specimen measured 10 cm. in its greatest diameter. The testicle measured 3 cm. in length and 1.5 cm. in circumference (Fig. 1). At its upper pole there was a homogeneously white mass not well demarcated from the surrounding testicular tissue which appeared to be whitish-tan and had lost its normal appearance. The tunica albuginea and tunica vaginalis contained numerous firm nodules on the surface, each measuring up to 0.5 cm. in diameter.

Microscopic examination disclosed an irregular glandular structure arising from the rete testis and infiltrating the surrounding area. The tumor consisted of small irregular glands lined mostly by cuboidal cells with large nuclei and prominent nucleoli. Mitotic figures were not infrequent. The epididymis was not involved. The final pathologic diagnosis was adenocarcinoma of the rete testis with invasion of the testicular parenchyma and tunica vaginalis (Fig. 2). The remainder of the testicle showed extreme atrophy.

The patient had an uneventful hospital course and was discharged on the sixth postoperative day. He has remained asymptomatic since, and there is no evidence of recurrence of the tumor.

Comment

Adenocarcinoma of the rete testis is a rare tumor of the genital tract. Mostofi believes that this is due mainly to the anatomic location, which precludes early detection and accurate localization of origin.[2] Feek and Hunter[4] established the criteria to differentiate adenocarcinoma of the rete testis from other testicular tumors, such as embryonal adenocarcinoma, teratoma, and metastatic lesions and from tumors of the tunics. Their criteria, in addition to proper histologic identification, include: maximum involvement of the mediastinum testis with minimum involvement of the corpus; evidence of "outward" rather than "inward" growth from the mediastinum testis; and growth outside the testis into the sac of the tunica vaginalis but not outside the parietal layer of the tunica.

Ewing[5] believed that the area where the spermatic tubules entered the rete testis was the usual point of origin of testicular teratoma. In reviewing the cases reported in the literature, to which the present case has been added, the following facts emerge[1-12]:

1. The youngest patient was twenty-one-years-old, and the oldest patient reported by Schoen and Rush[2] was eighty.
2. There were 6 patients with tumors occurring in the right testicle, 5 with tumors in the left testicle, and 1 with bilateral tumors.
3. Two tumors occurred in maldescended testicles, one of which was brought down into the scrotum by orchidopexy.
4. Six patients were treated by orchiectomy alone, while 7 received radiotherapy in addition to orchiectomy. Two patients received chemotherapy after orchiectomy, and 1 patient was treated with antibiotics.
5. Tumors of the rete testis are highly malignant.

Although the number of cases with adequate follow-up periods is too short for evaluation, 6 of the 12 cases for which information is available showed metastases within one year of surgical intervention, and 4 patients died in less than twelve months.

Summary

A case of adenocarcinoma of the rete testis in a seventy-three-year-old man, the fifteenth in the literature, is reported. Tumors of the rete testis are rare, and the differential criteria of this group of tumors are reviewed.

A brief review of the 15 cases reported in the literature indicates a high degree of malignancy.

The case reported fulfills the established criteria for the diagnosis of adenocarcinoma of the rete testis. Therapy consisted of simple orchiectomy.

Addendum

In March, 1971, sixteen months postoperatively, the tumor recurred in the patient's scrotal area and was removed by wide local excision. Pathologic report showed the scrotal skin was infiltrated by adenocarcinoma of rete testis. The patient has remained asymptomatic since that time.

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Acknowledgment. I would like to express my thanks to M. Kaneko, M.D., Department of Pathology, for his help.

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PERFORATED APPENDIX WITH ABSCESS AND MASSIVE HEMOPERITONEUM

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In 1966, an extensive review of acute appendicitis with special reference to unusual surgical findings was completed by Menick *et al.*[1] Since the first appendectomy in 1866, details of every aspect of appendicitis have been recorded.[2] Extensive reports of 50,000 specimens in 1955, 4,000 cases in 1961, and an additional study of 21,000 specimens of the human vermiform appendix in 1963 failed to disclose a single case of acute appendicitis with rupture and hemoperitoneum.[3–5] To our knowledge the first record of this unusual entity occurred in 1968.[6]

Lesions of the gastrointestinal tract—varices, ulcerations, inflammations, diverticuli, and tumors which bleed profusely into the lumen—are seen frequently. However, ulcerative lesions which perforate the bowel wall and result in massive hemoperitoneum are indeed uncommon. Previously, we have encountered a female patient with a ruptured peptic ulcer of the duodenum and another with perforation of the gallbladder with massive hemoperitoneum. At this time we wish to report the second case of perforated appendix with massive hemoperitoneum, peritonitis, shock, and fatal gram-negative sepsis.

Case report

A fifty-six-year-old short, obese housewife had been ill at home for five days when she first sought a physician's help. Unable to walk, she was carried into his office unannounced. Immediate examination disclosed a critically ill patient who gave the following history with marked difficulty. Initially, she noted nausea followed by vomiting which persisted. She had been unable to eat or drink, was aware of fever and obstipation, but denied any pain until the previous day when suddenly she noted intense lower abdominal pain which quickly subsided and disappeared abruptly. She denied trauma and food dyscrasia. Examination revealed the patient to be in shock, and she was summarily admitted to the hospital.

Pertinent findings on examination revealed the following. The patient was listless, cold, clammy, and drenched with perspiration. The skin and sclerae were icteric, and the skin turgor was poor with marked evidence of dehydration. The neck veins were not distended, but the radial pulse was thready and rapid at 120. The blood pressure was 90/60. The heart rate was rapid, 120, without enlargement or murmurs. The lungs were clear. Examination of the abdomen revealed marked distention, with muscle guarding and tenderness with rebound tenderness in all quadrants. The bowel sounds were absent. No scars were noted, and no masses were palpable. Vaginal and rectal examination revealed fullness and tenderness bilaterally. Examination of the extremities revealed nothing unusual.

Laboratory data. The hematocrit was 40, hemoglobin 14 Gm. per 100 ml., white blood count 8,500 with 78 segmented neutrophils and 4 band cells. Urinalysis revealed a pH of 5, specific gravity of 1.027, 3 plus protein, a trace of sugar with acetone negative, and no white or red blood cells per high-power field. Amylase was 50 Somogyi units per 100 ml. Direct bilirubin was 0.52 and total bilirubin was 1.67 mg. per 100 ml. Fasting blood sugar was 390 mg. per 100 ml. Blood urea nitrogen was 60, sodium 140, potassium 4.7, chloride 94, and carbon dioxide 19 mEq. per liter. Hydrogen tension was 7.49 and carbon dioxide tension was 25 mm. Hg. Examination of the vomitus and stool on the examining digit revealed 3 plus blood. The blood type was O. Serology findings were negative. Electrocardiogram findings were normal. An x-ray obstruction series revealed the lung fields to be clear, and the heart and mediastinum were unremarkable. Abdominal films revealed a nonspecific generalized ileus, more pronounced in the transverse colon. No evidence of free air was noted.

Hospital course. *Preoperative.* The patient was a grave surgical risk for immediate surgery; thus measures were taken to counteract the shock and overcome the dehydration. The patient was bathed with alcohol and water, placed on a thermal blanket, given intravenous fluids with insulin, and a urethral catheter was inserted to obtain urine specimens and record output. A Levin tube was attached to a Gomco suction apparatus, and immediately dark coffee-ground material was yielded. Blood typing and cross matching were completed. Antibiotics were administered. A blood culture was taken, and a central venous pressure catheter was introduced. In spite of all supportive measures for shock the patient showed little improvement. Three hours after admission she was taken to the operating room. The preoperative diagnosis was ruptured viscus [(1) ulcer (2) appendix] with widespread peritonitis.

Operative. At operation under endotracheal anesthesia, the peritoneal cavity contained about 1,000 cc. of blood. A mass was present in the right lower quadrant. After removing the blood by suction, the inflammatory mass was seen to be made up of cecum, a large abscess cavity, thickened omentum, and a completely disintergrated gangrenous appendix with an actively pumping appendiceal artery. The appendiceal vessel was immediately secured, and the appendiceal remnant was excised. After careful peritoneal toilet was completed, drains were placed in the right and left subphrenic spaces, and the right lateral gutter, and a sump drain was placed deep in the pelvis. A culture was taken. The abdomen was closed in layers. At the beginning of anesthesia the blood pressure was 120/70, but shortly after induction the patient's blood pressure dropped to 70/50 and was maintained with supportive therapy at 100/60.

Postoperative. The endotracheal tube was replaced with an airway. Subsequently, it was necessary to do a tracheostomy, and the airway was attached to a Bennett respirator. The temperature was 102° F. The blood pressure was 100/75. Respirations were labored at 30. Hydrocortisone sodium succinate (Solu-Cortef), blood, and digitalis were given. Urine output was minimal. Specific gravity was 1.020, pH 5, protein four plus, glucose negative, and acetone one plus. There were 1 to 2 white blood cells per high-power field, and there were 75 to 100 red blood cells per high-power field with a few squamous epithelial cells. Hematocrit was 30. Hemoglobin was 10 Gm. per 100 ml. There were 9,100 white blood cells per cubic millimeter. Blood sugar was 174 and blood urea nitrogen 54 mg. per 100 ml. Sodium was 147, potassium 6, chloride 108, and carbon dioxide 8.8 mEq. per liter. Hydrogen tension was 7.08 and carbon dioxide tension was 29 mm. Hg.

In spite of 6 L. of fluid, sodium lactate, 7 units of blood, antibiotics, additional hydrocortisone sodium succinate, and the Bennett respirator the patient remained cold and clammy. The pulse was 140. Blood pressure became unobtainable and the central venous pressure fell from 17 to 8. The electrocardiogram revealed a left bundle branch block. Nine hours after admission the total urinary output was only 250 cc. The Levin tube had drained 1,000 cc. of dark coffee-ground material. The patient expired seventeen hours after she was admitted to the hospital.

Cultures of the blood and peritoneal cavity subsequently revealed Escherichia coli and E. coli plus green-producing streptococci, respectively. An autopsy confirmed the operative findings and revealed all other intraabdominal vessels to be intact.

Comment

The patient was ill at home for five days with continued vomiting. Although she denied having any pain the first three days, pain over the lower abdomen was intense on the fourth day and quickly subsided. It was not until fourteen hours later, when she was almost unresponsive, that help was sought. Normally, as appendicitis becomes acute the pressure within the lumen increases, obstructing first the venous and then the capillary circulation leading to congestion and edema of the wall of the appendix. Ischemia leads to perforation. Meanwhile the periappendiceal tissues react in the same way. In an attempt to wall off the area the omentum becomes involved and forms the walls of the abscessed cavity following perforation, which confines the disease process locally. Normally, pain would subside when the appendix ruptured. However, it is likely that the appendix ruptured earlier to allow time for the abscess cavity to develop. If this is true, then it was the abscess cavity that had ruptured when the intense pain subsided, flooding the peritoneal cavity. The proximal appendiceal stump evidently continued to disintegrate owing to necrosis and finally eroded the appendiceal artery, which was found to be actively bleeding at the time of operation. We could not determine when the bleeding was initiated. The overwhelming gram-negative sepsis proved fatal.

Summary

A fifty-six-year old diabetic female with abdominal symptoms of five days' duration was moribund when she sought help. She had sustained a ruptured appendix with abscess formation, and erosion of the appendiceal artery flooded the peritoneal cavity with massive bleeding and purulent material.

Death was due to an overwhelming gram-negative septicemia.

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MEDICAL FEE SCHEDULES UNDER WORKMEN'S COMPENSATION LAW

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That problems in the area of workmen's compensation fee payments arise frequently can hardly be news to our readers. It seemed appropriate to review the development of the medical fee schedule and how we reached the present stage. For the third article in our series on the subject, "Workmen's Compensation," we invited Mr. Bernard Chase to prepare the article that follows.

The author is a veteran member of the Workmen's Compensation Board staff with a fount of knowledge and experience.

Subsequent articles will deal further with problems encountered with charges and payment procedures. To place those in perspective, one should, however, be aware of the history that Mr. Chase describes so well.

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Phase one (1914–1935)

Section 13 of the Workmen's Compensation Law deals with the subject of treatment and care of injured employes. Prior to 1935, this Section stated, in part, that:

> All fees and other charges for such treatment and services whether furnished by the employer, or otherwise, shall be subject to regulation by the Board as provided in Section 24 of the chapter and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living.

In 1922, the Appellate Division in the matter of *Lawson* v. *Wallace & Kenney* (202 App. Div. 434—114 S.B. 10) pointed out that the question raised by the carrier, at the hearing, with reference to the medical bills was simply whether the bills were reasonable and fair. A physician testifying on behalf of the carrier stated that the attending physician's reputation was of the highest and that his charges were reasonable for a man in good circumstances, but that they were not fair and reasonable in the light of the claimant's station in life. The court agreed, and that portion of the award relating to medical bills was reversed and the matter remitted to the State Industrial Board for further consideration.

The board reconsidered the charges in this matter and found that they were "fair and reasonable" when compared to the treatment of injured persons of like standard of living in the same community and when compared with the fees of other physicians possessed of similar skill in operative surgery. It, therefore, appears that the criteria until 1935 were that medical charges be limited to those fees that prevail in the community based on the standard of living of the person involved. Any questions regarding such bills were to be gauged on the basis of whether they were fair and reasonable.

It is important to bear in mind that prior to 1935 the employe did not choose his own physician. The employer was charged with the obligation of providing medical treatment and, therefore, the usual procedure was for him to refer the injured employe to a specified physician or physicians. This led to some practices which were frowned on by both the medical profession and the public in general. The period of the depression starting in 1929 also was a contributing factor to these practices. Physicians were not earning too much; their fees were low and often uncollectable. Having a source of referral and a guarantee of payment appealed to most physicians and therefore caused some of them to underbid their colleagues and vie for the business of treating workmen's compensation claimants.

Compensation bureaus, often referred to as compensation mills, were set up, and injured workmen were treated on an assembly line basis.

Treatment was often rendered by untrained personnel instead of by physicians. "Compensation doctors" were considered below the level of competency attributed to the average medical practitioner.

In 1933 Governor Lehman appointed a committee comprised of ten New York physicians, representing the New York Academy of Medicine and the Medical Society of the State of New York, to devise a plan to eliminate these improper practices in workmen's compensation, to insure injured workers of first-rate medical care, to encourage a better type of physician to undertake compensation work, and to reduce medical costs that were borne by the employer.

As a result of the investigation and report of this committee the Legislature enacted Chapter 258 of the Laws of 1935, entitled, "An act to amend the Workmen's Compensation Law . . . in relation to treatment and care of injured employees, providing for the selection by the injured employees of physicians authorized by the Industrial Commissioner to render medical treatment and care, empowering the Industrial Commissioner to establish a schedule of minimum charges and fees. . ." It was approved effective July 1, 1935.

The two major innovations in the amendment of Section 13 were (1) free choice of physician and (2) establishment of a minimum fee schedule.

Although the 1935 amendment retained the limitation on medical fees and allied services to "such charges as prevail in the same community for similar treatment of injured persons of a like standard of living," it introduced another factor. The Industrial Commissioner, whose duties in that respect later devolved on the chairman of the Workmen's Compensation Board, was given the responsibility of preparing and establishing a schedule of minimum fees for medical treatment rendered to injured workmen. That responsibility is still in effect, and, before preparing such schedule, the chairman requests the president of the Medical Society of the State of New York to submit a list of "fair and adequate" fees for such treatment. The chairman also takes into consideration the views of other interested parties. That the intent of the law was to stop the practice of some physicians undercutting others is borne out in Section 13d of the Law which lists such underpricing as one of the reasons for removing the name of a physician from the panel of physicians authorized to treat workmen's compensation claimants.

It is interesting to note that although it is labeled a "minimum fee schedule," Section 13 provides that no physician rendering medical treatment or care may receive payment in a higher amount unless authorized voluntarily by the employer or allowed by decision of an arbitration committee under Section 13g of the Law. Another new factor appears to be the phrase "fair and adequate." The president of the State Medical Society is requested to submit a list of "fair and adequate" fees.

According to *Webster's Dictionary* "adequate" and "reasonable" are not similes. "Adequate" is defined as sufficient for a specific requirement; barely sufficient; while "reasonable" means not extreme or excessive.

Fortunately the term "adequate" has not controlled the thinking of all interested parties but rather the more acceptable phrase "fair and reasonable."

Phase two (1936–1970)

The first medical fee schedule was promulgated on May 1, 1936, by Elmer F. Andrews, the Industrial Commissioner. This minimum fee schedule applied only in New York, Bronx, Queens, Richmond, Nassau, Suffolk, Rockland, and Westchester counties. On May 15, 1938, Frieda S. Miller, the new Industrial Commissioner, promulgated a fee schedule, with very few changes, but made it applicable to the entire State of New York. A total of 11 schedules have been promulgated during the thirty-five-year history of medical fee schedules under the Workmen's Compensation Law, four of them during the administration of Gen. S. E. Senior, the present chairman of the Workmen's Compensation Board: one in 1960, another in 1966, a third one in 1968, and the latest one effective October 1, 1970.

In 1959, on assuming the office of chairman, General Senior conceived the idea of appointing an advisory committee on the medical fee schedule and allied problems to assist him in preparing a fair and equitable schedule. This was not to be a one-time committee but a continuing body, well versed in the problems connected with the medical aspects of workmen's compensation.

The committee, appointed by the chairman, consists of representatives of the Medical Society of the State of New York, insurance carriers, and labor and industry, assisted by various members of the board staff.

In making the appointments, the chairman stated as follows:

> The impact and the growing importance of the medical aspects of workmen's compensation make it essential that we have a group representative of all of the parties concerned, meeting at regular intervals, in order to analyze and discuss problems as they arise, without waiting for them to develop into crises before receiving administrative attention.
>
> People who are talking to each other regularly, and who keep in close touch with developing problems, will be in a better position to advise me of their findings than a group that may be established just to deal with a single issue.

The advisory committee meets regularly, on a monthly basis, and during its tenure has reviewed and discussed more than a thousand items; it has held conferences with many medical and paramedical groups, and it has studied many surveys and a good deal of statistical data obtained from State and Federal agencies, as well as material obtained from many other sources.

Actuarially, it has been established that the first six items in the medical fee schedule, relating to home, hospital, and office calls, account for more than 60 per cent of the cost of physicians' services under the Workmen's Compensation Law. A 25-cent increase in the fee for a subsequent office visit, which is the most frequent charge, has been estimated to mean an additional outlay of one million dollars a year to industry.

To illustrate some of the changes during General Senior's tenure, let us examine four items in the fee schedule which frequently appear on bills for services rendered to compensation claimants (Table I):

A major advancement in the schedule occurred in 1967. The fee schedules promulgated in the past applied to new cases arising and old cases reopened after a designated effective date. In some instances this resolved into an unsatisfactory situation. For example, medical services rendered in 1966 to a claimant who was injured in 1942 were governed by the fee schedule in effect at the time of the accident, when the fee for the general practitioner was $2.00 per office visit. Mindful of Resolution 61–51 of the 1961 House of Delegates on the subject of retroactivity of revised medical fees, and convinced of the justice of the request, the chairman ordered that after July 1, 1967, the fees for medical services be governed by the date of the services rendered, not by the date of the accident.

Phase three (1965–19??)

Actually, there is a partial overlap between Phase two and Phase three. Phase three had its roots in 1965, presented its first shoots in 1966, and we will have to look into the future to see how it develops. Two important items gave impetus to Phase three:

A. The advent of Medicare and Medicaid in 1965 (Titles XVIII and XIX of the Social Security Act)

B. Establishment of a *Relative Value Scale for Medical Fees* adopted and published by the Medical Society of the State of New York in 1965

With the advent of Medicare and Medicaid, Governor Rockefeller became concerned with the type of care involved and decided to establish an interdepartmental task force, with the goal of promoting uniform high-quality medical care available to everyone, regardless of race, age, national origin, or economic standing. Based on this premise, the director of the budget established a task force consisting of representatives of the Division of the Budget, the Mental Hygiene Department, the Social Welfare Department, the Health Department, the Workmen's Compensation Board, the Insurance Department, and the division of vocational rehabilitation of the Department of Education.

TABLE I. Comparison of workmen's compensation fees (1960–1970)*

	Cost in		Dollar Increase	Per Cent Increased
	1960	1970		
First office visit (general practice)	5.00	7.50	2.50	50
Subsequent office visit	3.50	5.75	2.25	65
Herniotomy (single)	125.00	179.75	54.75	45
Laminectomy	250.00	414.00	164.00	65

* A *Consumer Price Index* published by the U.S. Bureau of Labor Statistics uses the factor of 100 for the year 1967. Based on this factor, the *Consumer Price Index* in the New York area in 1960 was 87.3; in 1970 it was 119.0; an increase of 36 per cent.

One of the items that required a great deal of study was the uniformity issue. The budget director specifically asked the task force to consider the feasibility of a uniform medical fee schedule.

State agencies are involved in purchasing or setting fees for medical care in six different major State programs and used four separate schedules: (1) social welfare, (2) mental hygiene, (3) combined schedule for three State rehabilitation programs, and (4) workmen's compensation medical fee schedule.

Medical care furnished to compensation claimants presents a number of unique attributes which set it apart from other State programs utilizing the services of private physicians:

1. The chairman of the Workmen's Compensation Board has specific statutory authority to determine medical fees.
2. The Board is an employer-financed State agency which, in the case of medical fees, authorizes the expenditure of carrier funds rather than tax revenues.
3. The law recognizes the interest of industry, insurance, labor, and the Medical Society by permitting these groups to participate during the fee-making process.
4. The physician undertakes what may be regarded as unusual responsiblities in treating a compensation patient. These include obligations to (1) determine the "causal relationship" of the injury to the job; (2) determine the degree of disability; (3) testify, in the event of a contested claim, before a referee; and (4) file reports at stated intervals on the patient's progress.

The task force stated that the arguments for uniformity were compelling, and in the early part of 1966 several members of the Division of the Budget met with the chairman's advisory committee on the medical fee schedule and allied problems to see whether workmen's compensation could be included in a uniform fee schedule. After the meeting, the task force was convinced that immediate integration of the two schedules was not a realistic objective.

The director of the budget, therefore, approved a medical fee schedule for the departments of Social Welfare, Health, Mental Hygiene, Education, and all other State departments and agencies except the Workmen's Compensation Board. This schedule is labeled as a "maximum reimbursable fee schedule" effective July 1, 1966, and is based on the 1965 *Relative Value Scale for Medical Fees* adopted and published by the Medical Society of the State of New York.

The schedule of medical fees for workmen's compensation was revised in 1966, 1968, and in 1970, but the format was continued on a specific fee basis. However, during the negotiations in 1970, the representatives of the Medical Society of the State of New York noted specifically that although they would agree to a percentage increase in the 1970 medical fee schedule, they would insist that a relative value scale be the basis for the 1972 revision.

At the meeting of September 16, 1971, the State Medical Society presented a relative value scale to the advisory committee on the medical fee schedule and allied problems, requesting that it be accepted as the next schedule of fees for medical treatment and care rendered under the provisions of the Workmen's Compensation Law, effective July 1, 1972, and, the matter is now under discussion by the committee. In the Foreword to a previous schedule, General Senior stated as follows:

> The Workmen's Compensation Board, members and staff, on behalf of the public at large, acknowledges and is grateful for the vital contribution of the medical profession in the field of workmen's compensation medicine and rehabilitation in this State.
>
> This schedule reflects the earnest and fruitful work of the Committee on the Medical Fee Schedule and Allied Problems, from whose advice and agreement as representatives of parties in interest the changes have been wrought. I want to record my deep appreciation to the members of the Committee for the time, care and conscientious exploration they devoted to the details of this revision between and during their monthly meetings. I have every confidence in the success of their continuing effort.

In conclusion, may I congratulate the medical profession on its representation on this advisory committee. The Medical Society could have no better advocates than George Himler, M.D., Past President, Medical Society of the State of New York; George M. Saypol, M.D., President, Medical Society of the County of New York; Max N. Howard, M.D., Director of Medical Services, Medical Society of the State of New York; and Carl F. Freese, M.D., Medical Society of the County of Nassau.

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HEROIN UTILIZATION

A communicable disease?

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Heroin, a white powder derived from poppies, is being increasingly utilized in the United States, particularly in the urban centers. Numerous attempts to control heroin utilization are being made by a wide variety of agencies and individuals concerned with the phenomenon, both in this country and abroad. One problem in dealing with heroin utilization seems to be a lack of an accepted theoretic construct of just what it is. In this report, an attempt is made to contribute one piece to such a theoretic construct. Then, using the theory developed, some conclusions concerning appropriate approaches to the control of heroin utilization are drawn.

Incidence and prevalence

The usual estimate, more precisely "guesstimate," of heroin utilizers in New York City in 1970 was 100,000.[1] However, this figure is probably far too low. By the end of 1968, the Narcotics Register of the City of New York Department of Health already had over 60,000 names, and those were only reported cases.[2] By the end of 1971, this figure was up to 150,000.[2a] A disputed study, done as part of a grant application to the National Institute of Mental Health, and reported by former National Institute of Mental Health director, Stanley F. Yolles, M.D., to a House Appropriations Committee subcommittee, stated that 18,000 "hard-drug addicts" were found in a 40-block area of Harlem.[3-5] The count was reported to have been made in a house-to-house survey among a total counted population of 60,000. Harlem contains about 400,000 people and, at the rate reported by the survey, would have about 120,000 heroin utilizers. If, to allow for errors in counting, errors in diagnosis, and variations in disease prevalence throughout the district, one were to say that the estimated rate was high by 300 per cent, Harlem would still have about 40,000 heroin utilizers, almost one half of the 100,000 figure usually given for the whole of New York City. With heroin utilization known to be very common in many other areas of the city, it is thus safe to assume that the 100,000 figure is indeed far too low. By early 1972, a number of officials and agencies had raised this figure substantially.[2a] City Council President Sanford Garelik was talking about 400,000 to 600,000, the Federal Bureau of Narcotics and Drugs was using the figures of 650,000 for the nation and 300,000 for New York City, and the Addiction Services Agency was estimating 150,000 hard-core addicts plus 200,000 to 400,000 others in New York City.

However, until such time as thoroughly reliable survey data for the city as a whole are available, it is really not correct to hazard any guesses as to numbers at all, except to say that heroin use is a health problem of major importance.

Corroboration of this last conclusion is found in data from the office of the Chief Medical Examiner for New York City.[6] For 1969, heroin utilization and its complications were the leading causes of death for people between fifteen and thirty-five years of age. In this age group, there were 770 heroin-related deaths as compared with 570 accident deaths, 525 homicides, 420 cancer deaths, and 345 suicides. There were four times as many heroin-related deaths in the decade 1960 to 1969 as there were in the decade 1950 to 1959. Most victims are New York City residents, and the most common primary cause of death is overdose. For 1970, narcotic-related deaths totalled 1,205, while for 1971, the preliminary figure of 1,259 is expected to rise by about 150 more after the final tally.[6a] In 1971, overdose was still the leading cause of death, but the proportion of traumatic narcotic-related deaths—homicides, suicides, and accidents—was rising sharply.

Heroin as a drug

Heroin may be introduced into the human system by a number of routes, the most common of which are per nasum ("snorting"), subcutaneously ("skin popping"), and intravenously ("mainlining" or "shooting up"). The last seems to be the route of choice of most heroin utilizers who come to the attention of medical facilities of one sort or another.

The short- and long-term psychologic effects of intravenous heroin have been well described by a former addict.

> [the effects of the drug are] immediate and uncompromising. Under its influence the addict succeeds in drawing in all his raw, delicate nerves which were previously exposed to the weather of the world. He closes his eyes to life around him and is comforted by the warmth within. People move about, things happen, a building could fall nearby, but the addict is not bothered because none of these things are real to him. The euphoria in which he is encapsulated is total, and in such a state the addict is literally "out of it"—"it" being any semblance of reality. Later, when he has arrived at addiction, when he not only wants but needs the drug, it presents an even greater satisfaction for his subconscious drives . . . The world of drug addiction is a twenty-four-hour-a-day existence. It encompasses every waking moment for the hustling, "strung-out" addict. Ironically, this is what he has been seeking—a place to be with something to do where there are no qualifications or standards and no threat of failure. He can go no lower and there is solace for him at the bottom . . . The addict thus succeeds in withdrawing utterly and completely from normality and reality.[7]

The pharmacologic effects of heroin on human beings include itching, urticaria, bradycardia, orthostatic hypotension, bronchospasm, respiratory depression, decreased peripheral vascular tone, and anaphylactic shock.[8] The effects probably vary with degree of use, but little hard information is available on that subject.

"Addiction" and "use": definitions and effects

According to a number of authorities dealing with heroin utilizers on a daily basis,[9] as well as Chein *et al.*,[10] they can be grouped into two categories: "addicts" and "users." Classic heroin addiction is a state of periodic or chronic intoxication resulting from heroin use, which is characterized by: (1) tolerance to heroin, or the requirement for increasing dose to maintain effect; (2) physical dependence on heroin, or the appearance of withdrawal syndrome characterized by abdominal pain, nausea, vomiting, sweating, shaking chills, and the like when heroin is denied; and (3) emotional dependence on heroin, or severe and continued craving for heroin to the exclusion of everything else in life.[10–14]

The heroin user is less well-defined, but seems to be becoming more common in the view of a number of authorities and was described as early as 1964.[9,10] At least two types of users have been identified. One is a person who utilizes heroin, but apparently only periodically. He is not "hooked," or at least he is not hooked to the exclusion of all else. He does not take heroin every day. He may have only a "weekend habit." He likes the occasional "high," seems to exhibit neither tolerance nor the withdrawal syndrome, and his craving is only periodic. It should be pointed out that an indefinite weekend habit has never been described. As far as is known, if a person continues to use heroin intermittently, he will, after an unknown time period, definitely become addicted to the drug.

The other type of person who physiologically fits into the user category is the person with a "needle habit." Because the quality of heroin currently sold in the street is often so poor—the white powder sold as "heroin" is mostly quinine, milk sugar, talcum powder, or what have you—some people seem to become addicted to the intravenous injection rather than to heroin itself. Although these people, often teenagers, may feel a craving, they do not exhibit withdrawal symptoms when denied heroin and thus cannot be considered physiologic addicts.[15] Indeed, they can be withdrawn from their habit using mild tranquilizers or sedatives over a period of a few days, whereas the true addict requires a heroin substitute, such as methadone, to achieve a painless withdrawal. Some pushers are said to understand the Pavlovian physiology behind a needle habit very well, keeping such a person primarily on milk sugar, but selling him a "good bag" (one with a reasonable proportion of heroin) every few times for reinforcement. At any rate, such a person is an addict psychologically in that his life revolves around shooting up, but is a user physiologically in that he has no tolerance and no withdrawal syndrome. The incidence of "needle addicts" is unknown. If they form a significant portion of heroin addicts, some very interesting questions concerning disease control arise.

Distinctions aside, addicts and users share a number of problems. They are placing themselves in a high-risk group for premature death, most often from overdose.[6,6a] Users and addicts are also placing themselves at increased risk for other complications of heroin and/or unsterilized needle use: superficial skin infections, cellulitis, bacterial endocarditis, thrombophlebitis and subsequent embolic disease, serum hepatitis, complications of pregnancy and neonatal heroin addiction in the offspring of female addicts, tetanus, and possibly malaria.[6,16–19]

Both users and addicts are placing themselves at risk with the law. While addiction itself is not a crime, possession and sale of both heroin and the means of its administration are crimes. Furthermore, since heroin is relatively expensive, many people have to commit crimes of one kind or another to raise the necessary funds, which places them at a further risk with the law, and simultaneously creates a severe problem for the people and property on whom those crimes are committed. The numbers game on the dollar cost to society resulting from heroin-related crimes is frequently played, but since there are no accurate estimates of the number of addicts, all that can be safely said is that heroin addiction and use is costly for society as a whole.

Finally, users become addicts with some finite, but unknown frequency. Thus, any heroin utilization makes the experimenter a potential heroin addict. For the purposes of this report, the distinction between heroin users and heroin addicts—although very important for treatment programs, that is, in general, users should not be placed on methadone maintenance and addicts should not be withdrawn with mild sedatives—will be dropped. The term "heroin utilizer" will be used and should be taken to include both addicts and users as has been defined.

Heroin utilization as disease

Disease has been defined as: "a failure of the adaptive mechanisms of an organism to counteract adequately the stimuli and stresses to which it is subject, resulting in a disturbance in function or structure of some part of the body,"[20] and, a bit more succinctly by the great medical historian, Henry Sigerist, as "the sum total of abnormal reactions of the organism or its parts to abnormal stimuli."[21]

There are a few authorities, notably Efren Ramirez,[22] former commissioner of New York City's Addiction Services Agency, who do not consider heroin utilization to be a disease. However, repeated heroin utilization as already described, in most cases, does "result in a disturbance of function or structure of some part of the body." Heroin is an "abnormal stimulus" in the Sigerist definition, and in most cases, does produce an "abnormal reaction" of a deviation in some sense from homeostasis of the organism. Thus it would seem appropriate to conclude that repeated heroin utilization is indeed a disease.

Heroin utilization as communicable disease

A communicable disease has been defined as "a disease, the causative agent of which may pass or be carried from one person to another directly or indirectly."[23] Heroin utilization is a disease which has an identifiable causative agent that is passed directly from one person to another. Therefore, it can be concluded that heroin utilization is indeed a communicable disease although, unlike the traditional communicable diseases, it is not an infectious disease.

To put heroin utilization into the epidemiologic triangle, the agent is heroin, the host is man, and the environment is the total social milieu of the disease sufferer. Furthermore, there is a vector: the manufacturer-importer-pusher conduit. The disease, as it is found in both addicts and users, fits the model. Both are hosts for the agent, and to that point of becoming hosts there is no difference between them. Both are also potential transmitters of the disease.

There is one very important difference between heroin utilization and the communicable diseases of the infectious type: in heroin utilization the host actively seeks out the agent. Indeed, the agent cannot reach the intracellular environment of the host without the latter's active participation in the process. In infectious diseases, the host either is actively attempting to avoid the agent or doesn't realize that it is in his environment. To put it another way, in heroin utilization the agent itself, in the hands of the vector, actively seeks out victims, while in infectious diseases this sort of pattern is not observed. However, this difference need not interfere with the concept of heroin utilization as a communicable disease. It merely reflects the difference in etiology between heroin utilization, a noninfectious communicable disease, and the infectious communicable diseases.

There are multiple factors involved in the etiology of virtually all diseases.[24,25] In infectious diseases it is the agent which is primary in the etiology, although the state of the host and environmental conditions are considered to be important.[26,27] Conversely, in heroin utilization the agent is considered secondary in the etiology, while the condition of the host, particularly his psychologic state and factors in the environment, especially those influencing the host's psychologic state, are considered primary.[28,29] However, this difference also does not inhibit one from defining heroin utilization as a communicable disease: it has an identifiable agent and is passed from man to man.

Present methods of control

Most current methods of heroin utilization control are aimed at the host, some are aimed at the vector, a few are aimed at the agent, and virtually none are aimed at the environment. There are two types of control methods aimed at the host: treatment and what is commonly called prevention.

Treatment. There are a variety of different treatment methods. The oldest, and the one which probably has the most widespread use, although precise figures are not available, is simple enforced abstinence. The usual method is imprisonment. It is the most common form of "treatment" in New York City, where there were approximately 40,000 arrests for heroin-related crime in 1968 (about 30 per cent of all misdemeanor and felony arrests), all of which led to a period of enforced abstinence ranging from a few hours while awaiting arraignment to many years if the person was convicted of a serious offense.[30] There are no figures available on the success rate in individual utilizers of this treatment modality.

The therapeutic community approach consists of work, group, and individual therapy, led by professionals and/or exaddicts in a residential setting over a period ranging from months to years.[31] Well-known examples of this approach in New York City include the Phoenix Houses of the city's own Addiction Services Agency, the Odyssey Houses, Daytop Village, and scattered independents.[22,31-33] Altogether in New York City, there are no more than 5,000 residents in all of these therapeutic communities. The total number of patients who have passed through their doors is unknown. Since statistical evaluation programs are a rare feature in therapeutic community programs, their rate of success or failure is also unknown.

The "Rockefeller Program" of New York State's Narcotics Addiction Control Commission seems to have been intended as a cross between jail and the therapeutic community approach.[31,34-36] Heroin utilizers are incarcerated in closed-ward facilities but are offered a variety of therapies and some vocational rehabilitation. Several thousand heroin utilizers have been or are under the care of this program. According to the *New York Times,* "the only independent, outside evaluation of this program has revealed it to be a dismal failure."[37]

The fourth major approach to treatment of heroin utilization is methadone maintenance.[38-40a] Methadone is a synthetic narcotic drug, which is addicting but does not produce tolerance, does not produce a high when taken orally, and does block the effects of heroin. To date, most programs using methadone for maintenance have accompanied administration of the drug with social services, vocational rehabilitation, and constant patient supervision. The program underway in New York City at Beth Israel Medical Center's Morris Bernstein Institute does have a high rate of success in those selected, well-motivated addicts who are accepted into the program.[41] In the United States there are currently about 50,000 persons on methadone maintenance and the programs are expanding.[41a] The number of patients on the waiting lists for admission, however, is larger than the number in programs and is growing rapidly.

Finally, there is individual psychotherapy for those who can afford it, and a number of "storefront centers" run informal group therapy sessions, usually led by exaddicts. The efficacy of these methods is unknown.

Prevention. Clark *et al.*[42] define prevention as follows:

> Prevention in a narrow sense, means averting the development of a pathological state. In a broader sense, it includes all measures—definitive therapy among them—that limit the progression of disease at any stage of its course. A distinction is commonly made between these two major types of prevention. Primary prevention means averting the occurrence of disease. Secondary prevention means halting or slowing the progression of a disease or its sequelae at any point after its inception.

Preventive medicine and public health concentrate on primary prevention. Secondary prevention is the realm of medical care. Typical measures in primary prevention are: health education, as in "don't smoke cigarets"; immunization, as in smallpox vaccination; destruction of disease agents, as in chlorination of water; prevention of contact with disease agents, as in sanitary sewage disposal; interruption of transmission of the agent, as in mosquito eradication and individual chemotherapy; and modification of the social environment, as in housing code enforcement.[43] Of these, all are aimed at the agent, the vector, or the environment with the exception of health education, which is aimed at the host. In specific disease control, health education is the least effective method of those listed.[44]

Prevention, as carried out by most existing addiction control agencies, is usually limited to health education, both in practice and in theory. The prevention programs of both the Addiction Services Agency and the Narcotics Addiction Control Commission in New York State, as well as that of the National Institute of Mental Health, are aimed solely at the host, rather than at the agent or the environment and consist almost entirely of literature dissemination and audio and visual communication to individuals and groups.

The effectiveness of programs of this type in controlling heroin utilization has yet to be measured. But it certainly can be concluded that prevention aimed solely at the host, as practiced by existing addiction control agencies, is narrow in scope when compared with the full range of preventive measures which have been used in dealing with other communicable diseases.

A second type of preventive measure is carried out, interestingly enough, by the law-enforcement agencies. They attempt to interrupt the transmission of the agent to the host by dealing with the vector. This is admittedly a difficult task. According to law-enforcement authorities themselves, the efforts currently being undertaken along these lines have been unable to stop the increase in prevalence of heroin utilization.[45,46] Whether this is because of a lack of manpower, primitive methods, law-enforcement agency corruption, the technical difficulties of the task, or a combination of all four is not known with certainty. The concept of interrupting the transmission cycle as a way of preventing the disease is certainly a correct one from the theoretic point of view. However, to date, it has failed to halt the spread of the disease. If this measure is to be effective, it will certainly need to be greatly improved.

Efforts are just now beginning to control the production of heroin at its source, primarily the poppy farms of Turkey and Mexico.[47–49] These efforts will be discussed further.

Communicable disease control

Many serious communicable diseases have been controlled or eliminated in the past by using one or more of the methods outlined by Payne.[43] It should be noted that, with the possible exception of bacterial pneumonia, no major communicable disease has been controlled by treatment of individual sick patients alone, except insofar as such treatment helped to control spread by eliminating a potential source of infection, as in tuberculosis, syphilis, gonorrhea, and malaria. Individual treatment in heroin utilization would not have this effect, because many of the agent dispensers, at both the wholesale and retail levels, are not themselves disease sufferers. Further, nonutilizer pushers may be more effective in spreading the disease than are utilizer pushers.

Communicable disease approach to heroin utilization control

If it is agreed that heroin utilization is a communicable disease, then certain conclusions can be drawn about how to control it. One can assume that treatment of individual utilizers will not control the spread of the disease, since heroin utilization can just as easily be spread by nonutilizers. This is not to say that treatment programs should be reduced. Quite the contrary, they should be improved and expanded, to help those people who already have the disease. But treatment will not stop the spread. In New York, the greatest proportion of the Addiction Service Agency's fiscal 1971 budget of approximately 35 million dollars, and of the Narcotic Addiction Control Commission's fiscal 1971 budget of approximately 65 million dollars was spent for treatment services. An unestimable amount was spent by the departments of correction on involuntary abstinence, probably not an effective control measure.

A relatively small amount of money went for prevention, and that for the least effective kind, health education. A smaller proportion, with a bit of help from the National Institute of Mental Health, was spent on research, concentrated primarily on treatment modalities. About 13 million dollars was spent in fiscal 1971 on the Narcotics Squad of the New York Police Department, in the attempt to break the transmission cycle. Additional, relatively small amounts were spent by State and Federal police agencies. However, New York City's former police commissioner feels that this approach at its present level, is "not making one dent . . . on the narcotic problem . . . ."[50]

To review briefly, of the methods available for the control of communicable diseases, which include health education, immunization, eradication of the disease agent, prevention of contact with the disease agent, interruption of transmission of the disease agent, modification of the physical environment, and modification of the social environment, only health education, prevention of contact, and interruption of transmission have been tried, all to a limited extent, in heroin utilization. The possible value of the other standard methods of communicable disease control in relation to heroin utilization must be examined.

Modification of environment

In discussions of the etiology of heroin utilization the nature-nurture argument is very prominent. Is the basic cause to be found in individual aberrations or in environmental conditions? Much research remains to be done on this question.[51,52] It seems likely, however, that environmental conditions are a very significant factor in the etiology of the disease.[53] If this is true, the environmental conditions involved in the etiology must be very broad ones, because heroin utilization is a disease which cuts across class lines. Although it is very prominent in black and Puerto Rican working-class communities in the larger urban centers, the disease is now also found in more affluent white, middle-class communities.

To be sure, the incidence and prevalence of heroin utilization by each social class is unknown, just as the overall population rates are unknown. However, with the disease cutting across class lines, the social factors involved might include increasing alienation of people from one another; the lack of unifying long-term goals for the society as a whole; the seemingly endless and unpopular war in Vietnam; racism at home; increasingly severe problems of unemployment, housing, education, transportation, social welfare, health services, environmental pollution, and the like, which seem to be virtually impossible to solve; and other social conflicts and contradictions which appear to be overwhelming and tend to produce feelings of immense frustration and hopelessness. Further, our society seems to offer a rather limited number of useful and socially gratifying roles to its members, particularly its younger ones. These very broad problems may be combined with other negative elements of our society—the heavy emphasis on the use of such nonaddicting drugs as aspirin, antacids, laxatives, vitamins, and antihistamines in everyday life; the heavily reinforced use of tobacco and alcohol; and the emphasis put on "new experiences," "getting kicks," and "escaping from the ordinary"—to be major causative factors in heroin utilization. After all, during a heroin high, one has retreated into a safe, secure, individualistic world in which all contact with other human beings and the problems of society is severed.[7] The utilizer escapes into a private world which has no conflict, no worries, and no frustrations. At the same time that an easy way out is achieved, the socially sanctioned "new experience" and "getting kicks" are also achieved.

If research were to prove that such social-environmental factors do play a significant role in the etiology of heroin utilization, then it would be obvious that one long-term approach to its control would be to change society in such a way that those factors are eliminated from it. It might be thought that this is a somewhat unusual approach to control a particular disease, but heroin utilization is a somewhat unusual disease. Further, control of heroin utilization in this manner might well lead to control of other diseases with which it has much in common, like alcoholism; other habits which may lead to disease, like cigaret smoking; and other socially pathologic conditions with which heroin utilization shares certain features, like uncontrollable gambling. It goes without saying that the elimination of the contradictions listed previously would have many other beneficial effects for our society.

Such major social changes, if they were found to be indicated, would take a significant amount of time to achieve. However, the communicable disease theory of heroin utilization does offer several other approaches to its control which do hold out hope of having significant impact on the spread of the disease in the short term, as opposed to simple treatment, which does not.

They are already in one stage or another of development and include immunization, or technics akin to it, eradication of the agent, and control of the vector.

Immunization

A number of serious communicable diseases have been or can be controlled by immunization: smallpox, diphtheria, poliomyelitis, cholera, yellow fever, and measles. It might be possible to develop a substance which could produce heroin antibodies within the human system, so that if heroin were injected it would be neutralized. Another approach, which is akin to immunization in its effect, although it is not immunization from a physiologic point of view, is to develop a heroin-neutralizing substance which could be permanently implanted in the body. One such project is already underway.

In testimony before a House subcommittee in April, 1970, Yolles,[54] then director of the National Institute of Mental Health, stated that a

> . . . long-acting and nearly pure antagonist [to heroin] with little or no additional pharmacological action [is being developed]. Research is being conducted to develop a device combining a polymer plastic and a morphine antagonist to be implanted in the body in order to allow slow release of the antagonist over an extended period of time.[54]

If such a substance can be produced, it would mean that if a person carrying an implant did inject heroin, there would be no reaction to it. A series of social policy decisions would be required to determine just who would receive these implants, but the development of such a technic would be a significant step forward in the control of heroin utilization.

It should be noted that heroin utilization is a disease which is a prime candidate for control through the development of herd immunity. If enough individuals were made immune to the effects of heroin, in one way or another, the market for it would obviously disappear and thus, so would its sale

Eradication of the agent

Another communicable disease control approach which might be effective in controlling heroin utilization is eradication of the agent. This would mean limiting the growth of opium poppies solely to that amount needed to produce adequate supplies of morphine and controlling opium poppy growth so that none of the crop could be used for heroin production. This is no doubt a difficult task, but heroin utilization is a serious disease.[54a] Efforts along these lines are already under way in Turkey and Mexico, with United States aid.[47,49] The program could be greatly expanded.[48] Although it would be technically difficult to eliminate heroin from the face of the earth, it is technically feasible, and it would certainly result in the elimination of this disease.

Vector control

Getting the pushers off the streets and halting the importation of heroin is a major concern of the community,[55] the police,[45-50] and many politicians.[56] What they are all talking about, correctly, is vector control in a disease which would not exist without noninfected transmitters. As has been pointed out, vector control at present is relatively ineffective, although one does not know how much more widespread it would be without those measures now in force. However, there is no malaria where there are no Anopheles mosquitoes. In the particular disease of heroin utilization, of course, effective vector control is primarily the responsibility of law enforcement rather than medical agencies. What is needed is the development of modern technics and the commitment of adequate resources to the effort. At present, it seems that there is a lot of lip service given to this approach, but not much else in real terms.

Summary

Heroin utilization is a disease which fits the classic definition of a communicable disease: it has an identifiable agent which is passed from man to man. The present major approach to heroin utilization, treatment, may or may not aid individual disease sufferers, but it is ineffective in controlling the spread of the disease. Health education is widely used in heroin utilization and is considered by its proponents as a premier preventive measure, but it is actually a weak control method. Vector control, as currently practiced, is also weak. However, three other communicable disease control measures—modification of the social environment, immunization or a technic akin to it, and eradication of the agent—all hold promise in the struggle to eliminate this disease. Greatly strengthened vector control could also be effective.

It would appear that implementation of these conclusions would involve major social policy decisions, with a complete reorientation of the approach to this disease. Currently, almost all of the relatively meager resources devoted to its control are spent on treatment. Treatment efforts should not, of course, be reduced. Indeed, they should be vastly increased to deal with the huge, although unknown, numbers of people who already have the disease. However, the history of communicable disease control teaches us that treatment of individual sufferers of a communicable disease does not control its spread. Only application of one or more broad control measures will do so. Great attention and significant resources should now be devoted to the development of these efforts.

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IMMIGRANT RADIOLOGIST OF CANADIAN AND NON-AMERICAN ORIGIN

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To make an incisive analysis of the immigrant radiologist as a phenomenon or an event that happened in the history of medicine in the United States, we first need to concern ourselves with definition and classification. The radiologist will be considered an immigrant if he was born in Africa, Asia, Australia, Canada, Europe, or New Zealand; immigrated into the United States; and practiced or is practicing radiology here. Those born in Latin America will be omitted at this time.

Classification

There are several classes of immigrant radiologists who have practiced or are now practicing in the United States. These are:

1. The physician who had been a practicing radiologist elsewhere before he undertook immigration into the United States. In a way, he represents the most prized acquisition since he represents the importation of completely trained, highly specialized, and experienced talent at no cost to this country, all of his training having been financed by outside sources.
2. The immigrant physician who had been practicing medicine abroad and decided to specialize in radiology only after arriving in this country.
3. The immigrant physician who entered this country shortly after his graduation from medical school abroad and took his internship and residency training in this country.
4. Those who immigrated to the United States before attending medical school and who studied medicine in the United States and eventually became radiologists.
5. Those who immigrated here as children and obtained part or all of their premedical schooling in the United States.
6. Those who did not practice radiology after their immigration because of old age or administrative obstacles.

For statistical purposes, it would be desirable to label each immigrant radiologist as coming from and representing a single country, but this is not possible. Many of the best known immigrant radiologists were born in one country; changed their citizenship, voluntarily or involuntarily, to that of another country through the dismemberment of the Austro-Hungarian empire; and, finally, studied in a third country, usually Germany, where they gained a foothold after graduation by accepting an assistantship. Through this, they eventually and almost automatically acquired German citizenship, which was accorded quite liberally to ex-empire Austrians if they worked in Germany. Therefore, triple-prior citizenship was not an unusual feature of a physician immigrating to the United States. Moreover, because of the dismemberment of the empire a second label, "Zuständigkeit, which may best be translated as "homestead registration" and which did not necessarily coincide with citizenship, was officially given to all of its former citizens.

More than 60 million people in Europe carry, in addition to their birth certificate, two separate documents: a citizenship paper and a homestead registration certificate (Heimatschein, or attest of domicile), which need not be of the same country. For instance, a Hungarian citizen may be homestead registered in Czechoslovakia, or vice versa. One solution to this dilemma is to label the individual according to the country of birth. Here again, however, the fortunes of war make a designation of nationality meaningless because the individual's city of birth may have changed hands. Someone who was born in Prague was an Austrian until 1918, but became a Czechoslovak thereafter, by this method of classification. Furthermore, he became a German after 1939, and changed back to a Czech again in 1945. What he considers himself nowadays—after having immigrated here—is up to his personal preference.

TABLE I. Country of birth and medical school graduation of 715 immigrant radiologists

Country	Number of Immigrant Radiologists	Number of Medical School Graduations
Asia Minor	1	0
Argentina	1	2
Armenia	1	0
Australia	3	1
Austria	35	40
Belgium	0	1
British Guiana	1	0
Burma	2	0
Canada	124	96
Czechoslovakia	11	6
Ceylon	2	1
China	56	29
Denmark	4	3
Egypt	3	2
England	20	14
Estonia	3	2
Finland	2	2
France	4	7
Germany	129	121
Greece	13	8
Holland	9	5
Hungary	38	18
India	7	0
Iran	4	4
Iraq	1	0
Ireland	11	9
Italy	21	20
Japan	5	0
Korea	5	5
Latvia	7	3
Lebanon	4	7
Lithuania	12	1
New Zealand	2	1
Norway	6	3
Palestine	6	0
Phillipines	2	1
Poland	43	3
Rumania	12	3
Russia	52	3
Scotland	6	6
Spain	8	7
South Africa	8	7
Sweden	2	1
Switzerland	1	18
Syria	3	1
Thailand	1	0
Turkey	8	1
Ukraine	10	0
USA	0	252
Yugoslavia	6	1
TOTAL		715

In the case of Asia the label is even more obscure. Manchuria and Korea changed hands without losing their official designations, while Formosa became one of the two existing Chinas. There are approximately a dozen radiologists practicing in this country who were born in China but possess Anglo-Saxon or German names. It is reasonable to assume that they are children of American missionaries or businessmen and not racially Chinese. They are listed as Chinese in the table, however, since no racial distinctions are being made here. To complicate matters further, the end of World War II injected an administrative meaning into the terms Ethnic Germans and State Germans (Volksdeutsche versus Staatsdeutsche) in addition to East and West Germans. In the tables of this report, an attempt has been made to enter that country to which a stated birthplace belonged at the time of the individual's birth.

There remains the criterion of judging the immigrant according to the country of medical school graduation. This cannot be applied to categories 4 and 5.

Statistical tabulation

Table I lists the number of immigrant radiologists who are practicing or have practiced in the United States, according to the country of origin and the country of their medical school graduation. The main sources used were volumes 8 (1956) and 13 (1968/69) of the *Directory of Medical Specialists.*[1,2] Again, this produced some inaccuracies. Not all immigrant radiologists acquired the American Board of Radiology diploma, even though their practice was limited to radiology throughout their medical careers in the United States. These colleagues of ours, often belonging to the ex-European elite, will not appear in the directory. An attempt has been made to obtain as many of their names as possible through correspondence and private conversations. A total of 715 immigrant radiologists are listed. Those who did not acquire a specialty board diploma (not a legal requirement for the practice of radiology) are not included. Their number is estimated to lie between 10 and 50. Also, those who died before 1956 are not included here.*

The countries listed fall into the following three groups:

1. Those who gave birth to more immigrant radiologists than they graduated as physicians.
2. Those who gave birth to the same number of immigrant radiologists as they trained as physicians.
3. Those who gave birth to fewer immigrant radiologists than they trained as physicians.

Category 3 is of especial interest here. It comprises Austria, Lebanon, Switzerland, and the United States. These are countries which have trained nonnative physicians in addition to their own. This speaks well for their high educational standards, which caused nonnationals to be attracted to their universities.† The most significant figure is that of the United States. By definition, it produced no "immigrant" physicians because birth in the United States automatically confers citizenship on the child so born. Nevertheless, the United States trained 252 immigrants as physicians who were later to become radiologists. Most of these probably immigrated here as children or adolescents.

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*Members of both of these categories are included in Tables II and III, however, if they met the criteria of special achievement.

†Native Americans who studied medicine abroad are excluded from Table I. They would swell the figures of Austria, Belgium, Italy, Scotland, and Switzerland but do not fall into this category because they are not classed as immigrants.

Contributions of immigrant radiologists

Contributions of immigrant radiologists fall into two classes: material and spiritual.

Material. The material assets (money or equipment) and foreign-financed schooling or training which the immigrant physician brought with him can easily be assessed in terms of money. An immigrant physician, who enters the United States as a graduate physician, represents a training investment of $40,000 by present standards, and of $20,000 in earlier years. Until 1937, he usually arrived with money in his pocket and x-ray machines in his lift which must be added to these figures.

If he accepted an internship or a residency or both after his arrival, this has to be added to his material contribution to this country. In this respect, he did not differ from the native American physician who likewise had to give his services without pay or for a token salary. One may calculate that an unpaid intern contributed approximately $10,000 per year to society. If he accepted a residency in radiology, his material contribution may be computed as follows: within three training years he reported a minimum of 15,000 x-ray examinations for which his employer collected a gross of between $150,000 and $300,000. This money was usually used to reduce the operating overhead of the hospital in which the resident worked, and thereby benefited society at large. Parenthetically it might be stated that this practice is fading from the American scene; interns now receive a salary of $10,000, whereas residents collect $12,000 to $15,000 per annum. Moreover, accreditation standards require supervision of each resident by an attending radiologist whose salary has to be added to the cost of maintaining a residency program.

Spiritual. The spiritual contribution of the immigrant radiologist (like that of any native radiologist) lies in his achievements in the fields of patient care, research, teaching, and administration. It is in this area of human endeavor that criticism may be voiced regarding past and present conditions.

Whereas this nation kept its promises and provided an adequate income for nearly every immigrant radiologist, thus enabling him to live a comfortable middle-class life in congenial surroundings and see his children grow up and receive a decent education, he was rarely permitted to contribute to the culture of his new country. Very few immigrant radiologists obtained a position of leadership in their profession which would have given them an opportunity to impress their viewpoints on society, their skills on students and colleagues, or their methods or inventions on their professional confreres. In short, very few had a "say so" in the culture of their newly chosen homeland. This not only hurt them as individuals but also harmed the country at large, since it led to underutilization of available talent. This condition caused the immigrant unhappiness because it injured his self esteem, frustrated his capabilities, and often negated even his previous achievements in his own specialty. He wished to contribute spiritually, and considered this a much greater reward than making money. Many of them would have gladly accepted a smaller income in exchange for a position of higher cultural prestige.

Mechanism of exclusion and/or degradation

The history of the immigrant radiologist can be divided into two periods: an earlier one which ended approximately in the middle or late 1930s, and a later one which followed the early one and extends up to the present time. During the earlier period any physician who arrived on the shores of this country and was a graduate of an approved medical school, was allowed to practice medicine or radiology without any major delay. He was able to obtain a license to practice medicine by mail if his credentials were adequate; this license would usually arrive within six weeks in most states of the Union. Most of the country was open, therefore, to the newly arrived radiologist, and bureaucratic obstacles to his practicing radiology were nonexistent.

During the late 1930s the climate changed. It became progressively more difficult for the immigrant to obtain a state license.* Credentials were retained in the offices of regulatory agencies for prolonged periods of time. Later, an examination was demanded. Gradually these examinations became so difficult that immigrants needed at least a year of "cram courses" to prepare themselves. Soon a year of American internship was made a requirement with the licensure application being accepted only after completion of its term. Very soon thereafter, immigrant physicians were not accepted by many state boards under any condition, unless they went to medical school again in the United States. Since most schools refused admission to the immigrant physician, his professional activities often came to a complete standstill, with the states of Connecticut, Illinois, Maine, Massachusetts, and New York remaining the only areas in which he had at least a remote chance to practice. To practice radiology without a state medical license was illegal.

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*Graduates of Canadian universities have retained a privileged status until the present day. A Canadian medical degree (and sometimes a Canadian specialty diploma) is considered equivalent to an American one by several regulatory agencies. As a rule, a Canadian physician can obtain a license by endorsement or reciprocity and start practicing soon after his arrival.

To alleviate this situation now and in the future, it is well to analyze how this difficulty evolved. There was no plot, no conspiracy to "keep" the immigrant radiologist "down"; instead an incidental constellation of circumstances arose which easily could have been remedied. In essence, an artificial delay prevented the arriving radiologist from starting to practice in his accustomed specialty immediately. The requirement of having to take a state board examination before practicing radiology was a serious obstacle. Many of the physicians could not stand the physical strain of being an intern at an age of fifty or sixty years. Many radiologists of international fame, who came here as victims of Nazi persecution, ran out of funds while taking an often unpaid internship which had become a prerequisite for the admission to the state board examinations in many areas. Their wives had to support their families by doing the most menial jobs, and the squalor of their initial two years in the United States was most demoralizing to them.

The need to take "cram courses" in preparation for state board examinations—to learn details of medicine, physiology, anatomy, bacteriology, and biochemistry, irrelevant to their own specialty—further deflected their concentration from their own field of work. For a year or two, the radiologist, who might previously have been a university professor and chairman of a department somewhere in Europe, was taken away from his specialty so completely that he had trouble finding his way back when he finally succeeded in obtaining the much-coveted state license.

Many states did not admit graduates of foreign medical schools to the examinations at all; others made the examinations so difficult that even the greatest former professors failed repeatedly. This often prevented them from accepting positions offered in certain states where there was a particular shortage of radiologists.

The unfortunate conclusion is that while the lives of many radiologists, persecuted by foreign dictators, had been saved physically by immigration into the United States, their professional skills were sometimes not salvaged, but were ruined beyond redemption. Their radiologic souls, so to speak, perished in the bureaucratic maze of obstacles.

The remedies are obvious: (1) relinquish state board examinations for the practice of radiology in this country if the person in question is a recognized authority in his field and/or possesses preeminence in his specialty, or has a reasonable record of having been a bonafide radiologist elsewhere; and (2) offer him a position worthy of his previous status, to start immediately on his arrival, so that he will be spared the degrading and demoralizing two years of radiologic quarantine to which he is subjected nowadays.

Even if these reforms are instituted, the road of the immigrant will remain a rocky one. The private practice of radiology depends on the good will of referring physicians who, more likely than not, will send their patients to those with whom they grew up in school and whom they trust. The language barrier, even when it is minimal, is serious enough when it comes to "selling" an immigrant radiologist to a certain category of private patients. Even the slightest accent makes the paying patient feel that he is not getting his money's worth, unless he happens to belong to the uppermost social strata, which possesses a cosmopolitan outlook on life. Immigrant radiologists tend to flock, therefore, to hospital positions where the patient does not expect to have the right of choice and is willing to accept him. Some of these immigrant radiologists would do better in private practice if existing conditions did not prevent them from doing so. Others, who are basically suited to salaried employment, will find it difficult to obtain hospital positions worthy of their skills.

Favorable trends

A considerable improvement of the conditions mentioned in the body of this report has occurred recently in regard to patient acceptance and licensure. Acceptance of the immigrant radiologist by the patient has increased gradually since 1942. Perversely, it was the initial military success of the Hitler war machine which raised the respect for Europe's technologic skills. The rise in Europe's prestige, ironic as it was, did not extend to members of the Slavic or Asian races then. However, ten to fifteen years later, Russian space explorations, Japanese industrial and mercantile successes, and Chinese Nobel prize winners widened the scope of racial acceptance. Finally, inexpensive travel opportunities acquainted millions of uncommitted Americans with the level of applied sciences and technology in the Western and Central Europe of today. Thus, the psychologic barriers began to fall and the opportunities for the immigrant radiologist are decidedly on the rise.

In the legal field of licensure a significant reform has been carried out in the Commonwealth of Massachusetts.[3] On July 15, 1970, Governor Sargent signed into law a bill that carried out major changes. Of these, the most significant one permits a physician, who has been practicing a bonafide specialty for a number of years (this number varies from five to ten years, depending on the category) to acquire the Massachusetts license without taking an examination. This specifically

TABLE II. Honor roll of deceased immigrant radiologists

Country of Origin	Number	Without American Professorship	Minor American Professorship	Major American Professorship	American Chairmanship
Austria	5	4	0	1	0
Canada	1	0	0	1	1
Czechoslovakia	2	1	0	1	0
Denmark	1	1	0	0	0
Germany	4	1	0	3	1
Ireland	1	0	1	0	0
TOTAL	14	7	1	6	2

and intentionally includes physicians who are graduates of medical schools outside the United States or Canada, provided they possess a United States Specialty Board diploma or a license of another state. Although it still does not give the immigrant radiologist the right to practice radiology immediately after his arrival in the United States, it is a step in the right direction.[4]

Attitude of profession

One of the brighter sides of the picture was the attitude of the radiologic profession toward the newcomer. It must be stated, to the honor of all concerned, that it was above reproach. Most established radiologists tried sincerely and most selflessly to help the recent arrival. When the Hitler holocaust occurred, even those who might have had reservations in the past were moved to actively help innocent victims of persecution. It would be impossible to narrate the many kindnesses extended, the valuable help offered, and the benefits received. Their number is legion. However, even in this narrowly defined chapter on human relations, there is one person who distinguished himself above all others in lending the immigrant radiologist a helping hand. He was the late James T. Case, M.D., professor of radiology at Northwestern University, and chief radiologist at the Passavant Hospital of Chicago. Later he semiretired to California, where he headed the cancer and radiotherapy institute of the Santa Barbara Cottage Hospital almost until his death. Word spread among immigrant radiologists that anyone who suceeded in reaching Dr. Case's office and sat in his comfortable guest chair would find that his troubles were over. And so it was. He never failed to give effective help.

Finally, it is proper in this context to illustrate the basically friendly atmosphere which exists in this country within the specialty by quoting Paul C. Hodges, M.D., professor emeritus of the Univeristy of Chicago, who was my own teacher. Almost twenty-five years ago when the fiftieth anniversary of Roentgen's discovery was celebrated—and Germany was still at war with the United States—he delivered an inspirational historic review of radiology. He described Roentgen's trials and tribulations; how he was expelled from one school because of a narrow-minded, malicious, pedantic teacher; how he could not obtain a degree in Germany because of some other bureaucratic excesses; how he had to move to Switzerland to continue his work; and so on. Dr. Hodges concluded: "There is no question in my mind that Professor Roentgen, were he alive today, would be a refugee from Germany, an immigrant, working now in the United States."

Immigrant radiologists' honor roll

One hesitates to single out by name those immigrant radiologists who have distinguished themselves in their chosen specialty in this country, in the country of their origin, or both. It is impossible to be complete, since the pertinent information is not available in many cases. Moreover, it is difficult to judge someone else's achievements objectively. Those who are my personal choice are listed in Tables II and III. This evaluation is based on personal contact and on the academic titles found listed in the specialist directory. This does not indicate that everyone who possesses a professorship is automatically included in this list. On the contrary, professorships are too numerous among the immigrant radiologists for making it the primary criterion for tabulation. Conversely, some who have no academic title are included.

The term "minor" American professorship denotes assistant professorship and all clinical professorships exclusive of clinical full professorships. The term "major" includes associate professors, full professors, clinical full professors, and full professors of clinical radiology. Clinical full professorships and full professorships of clinical radiology are classed as "minor" if the geographic separation of the position from the school in question makes it obvious that it is intended as an honorary title rather than a work designation. The term "chairman" is reserved exclusively for the head of the central department of radiology of a medical school.

Chiefs of subsidiary departments, affiliate departments, associate departments, or departments which have no connection with a medical school

TABLE III. Honor roll of immigrant radiologists presently practicing in the United States

Country of Origin	Number	Without American Professorship	Minor American Professorship	Major American Professorship	American Chairmanship	American Past Acting Chairman
Austria	5	0	1	4	1	1
Canada	2	0	0	2	1	0
China	2	0	1	1	0	0
England	2	0	0	2	0	0
Egypt	1	0	0	1	0	0
France	1	1	0	0	0	0
Germany	6	0	0	6	2	0
Hungary	1	0	1	0	0	0
Italy	1	1	0	0	0	0
New Zealand	1	0	0	1	0	0
Palestine	1	0	0	1	0	0
Poland	2	0	0	2	0	0
Rumania	3	0	1	2	0	0
Russia	1	0	0	1	0	0
Yugoslavia	1	0	0	1	1	0
TOTALS	30	2	4	24	5	1

are not included in this category even if they are full professors.

Summary

A statistical tabulation of past and present immigrant radiologists is given by country of origin and country of medical school graduation. Those who have achieved distinction in their profession are shown on a separate table statistically, without listing their names. The main obstacle the immigrant radiologists encountered in this country, after 1937, was a "radiologic quarantine" which prevented them from practicing their own specialty for the first two years (on the average) after their arrival. The demoralizing effect of this experience has retarded their careers and reduced their contributions to this country below the level of their capabilities.

31 Inverness Road
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Necrology

Isidore Berger, M.D., of Long Beach, died on April 11 at the age of seventy-three. Dr. Berger graduated in 1921 from New York Homeopathic Medical College and Flower Hospital and in 1940 he received his master of science degree in otolaryngology from the University of Pennsylvania School of Medicine. He was an associate otorhinolaryngologist emeritus at Montefiore Hospital and Medical Center. Dr. Berger was a Diplomate of the American Board of Otolaryngology, a Fellow of the International College of Surgeons, and a member of the American Academy of Facial Plastic and Reconstructive Surgery, the American Academy of Ophthalmology and Otolaryngology, the Nassau Academy of Medicine, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Albert Blasi, M.D., of Yonkers, died on April 21 at the age of sixty-nine. Dr. Blasi received his medical degree from the University of Rome in 1930. He had been an assistant attending radiologist at Metropolitan and Bird S. Coler Memorial Hospitals, a consulting radiologist at Phelps Memorial Hospital (North Tarrytown) and St. Joseph's Hospital. Dr. Blasi was a Diplomate of the American Board of Radiology (Diagnostic Radiology) and a member of the Society of Nuclear Medicine, the Radiological Society of North America, Inc., the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Elinor Weed Demarest, M.D., of Rye, died on April 14 at the age of forty-two. Dr. Demarest graduated in 1950 from the University of Maryland School of Medicine and College of Physicians and Surgeons. She was a member of the American Psychiatric Association, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Barnett Dobrow, M.D., of New York City, died on March 27 at the age of seventy-five. Dr. Dobrow graduated in 1919 from University and Bellevue Hospital Medical College. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Joseph Fusco, M.D., of The Bronx, died on February 18 at the age of fifty. Dr. Fusco graduated in 1948 from the New York Medical College. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Gold, M.D., of New York City, died on April 21 at the age of seventy-two. Dr. Gold graduated in 1922 from Cornell University Medical College. Professor of clinical pharmacology at Cornell University Medical College from 1947 to 1965, at the time of his death he was a consulting cardiologist at the Hospital for Joint Diseases, Sea View Hospital and Home, and Beth Israel Hospital. In 1971 he received the award of distinction of the Cornell Medical College Alumni Association which cited him as founder of clinical pharmacology. Dr. Gold was a Diplomate of the American Board of Internal Medicine and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Gruber, M.D., of Brooklyn, died on April 6 at the age of sixty-four. Dr. Gruber graduated in 1931 from the Georgetown University School of Medicine. He was an assistant attending pathologist at Kings County Hospital Center. Dr. Gruber was a member of the American Thoracic Society, the New York Pathological Society, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Josef Gudemann, M.D., of New York City, died on January 8 at the age of eighty-four. Dr. Gudemann received his medical degree from the University of Vienna in 1922. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arno Herz, M.D., of New York City, died on April 10 at the age of seventy-four. Dr. Herz received his medical degree from the University of Wurzburg in 1923. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Krasner, M.D., of New York City and Queens, died on December 31, 1971, at the age of forty-nine. Dr. Krasner graduated in 1954 from State University of New York Downstate Medical Center College of Medicine. He was an assistant attending dermatologist at University Hospital, an associate dermatologist at Peninsula General Hospital, and an assistant attending dermatologist at St. Joseph's Hospital (Far Rockaway). Dr. Krasner was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology, the Society for Investigative Dermatology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jack Levine, M.D., of The Bronx, died in April at the age of seventy. Dr. Levine graduated in 1926 from Tufts University School of Medicine. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene Livigi, M.D., of Brooklyn, died on April 8 at the age of seventy-eight. Dr. Livigi received his medical degree from the University of Naples in 1920. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Israel Hyman Marcus, M.D., of Brooklyn, died on April 16 at the age of seventy-five. Dr. Marcus graduated in 1921 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Internal Medicine and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Nunzio Joseph Mazzola, M.D., of Brooklyn, died on April 15 at the age of sixty-one. Dr. Mazzola graduated in 1934 from Long Island College of Medicine. He was an associate attending obstetrician and gynecologist at Long Island College Hospital and an attending obstetrician and gynecologist at Long Island College Hospital Outpatient Department and Bay Ridge Hospital, and a consulting obstetrician and gynecologist at Victory Memorial Hospital. Dr. Mazzola was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the American College of Surgeons, and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Ethelbert Gutherie Padgham, M.D., of Geneva, died in November, 1971, at the age of ninety-six. Dr. Padgham graduated in 1906 from Eclectic College of Medicine and Surgery, Cincinnati. He was an honorary physician at Geneva General Hospital. Dr. Padgham was a member of the Geneva Academy of Medicine, the Ontario County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raymond Gerald Shea, M.D., of New Rochelle, died on March 30 at the age of sixty-six. Dr. Shea graduated in 1934 from Long Island College of Medicine. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugen Simon, M.D., of New York City, died on January 25 at the age of seventy-three. Dr. Simon received his medical degree from the University of Heidelberg in 1921. He was an assistant attending physician at Harlem Hospital Center. Dr. Simon was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Siegfried Simon, M.D., of Houston, Texas, formerly of New Rochelle, died on December 12, 1971, at the age of eighty-five. Dr. Simon received his medical degree from the University of Bonn in 1912. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Daniel Sobey, M.D., of New Rochelle, died on March 15 at the age of seventy-six. Dr. Sobey received his medical degree from the University of Prague in 1922. He was a member of the American Academy of General Practice, the American Geriatrics Society, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry K. Taylor, M.D., of New York City, died on March 20 at the age of seventy-seven. Dr. Taylor graduated in 1915 from University and Bellevue Hospital Medical College. He was director of roentgenology at the Institute of Rehabilitation Medicine and a consulting roentgenologist at University Hospital. Dr. Taylor was a Diplomate of the American Board of Radiology (Diagnostic Roentgenology), a Fellow of the American College of Physicians, a Fellow of the American College of Chest Physicians, a Fellow of the American College of Radiology, and a member of the American Academy of Compensation Medicine, Inc., the American Roentgen Ray Society, the Radiological Society of North America, Inc., the Pan American Medical Association, the New York Academy of Medicine, the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Alexander Tworkowski, M.D., of Hempstead, died on April 4 at the age of fifty-five. Dr. Tworkowski graduated in 1942 from Long Island College of Medicine. He was an associate attending general practitioner at Nassau Hospital. Dr. Tworkowski was a member of the American Academy of General Practice, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Stuart L. Vaughan, M.D., of Buffalo, died on April 3 at the age of seventy-one. Dr. Vaughan graduated in 1924 from the University of Buffalo School of Medicine. He was a consulting physician in medicine and hematology at Buffalo General Hospital. Dr. Vaughan was a Diplomate of the American Board of Internal Medicine, a Diplomate of the American Board of Pathology (Hematology), a Fellow of the American College of Physicians, a Fellow of the College of American Pathologists, and a member of the American Society of Clinical Pathologists, the Buffalo Academy of Medicine, the International Society of Hematology, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Roberts Webster, M.D., of Pearl River, died on March 27 at the age of sixty-nine. Dr. Webster graduated in 1928 from Queen's University Faculty of Medicine, Ontario. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Willis Morris Weeden, M.D., of New York City, died on January 25 at the age of seventy-six. Dr. Weeden graduated in 1919 from Cornell University Medical College. He was a Diplomate of the American Board of Preventive Medicine, Inc. (Occupational Medicine), a Fellow of the American College of Surgeons, and a member of the Industrial Medical Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lena Halpern, M.D., of The Bronx, died on April 17 at the age of sixty-four. Dr. Halpern graduated in 1935 from Yale University School of Medicine. She was an assistant attending physician at Montefiore Hospital and Medical Center.

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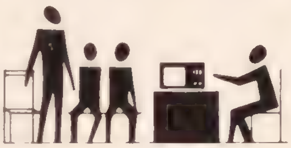

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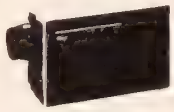

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And what I got was good old reliable U.S. Savings Bonds.

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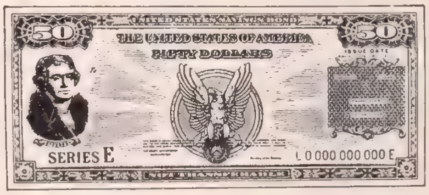

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Medical Society of the State of New York

Minutes of the 1972 House of Delegates

the Americana of New York
February 13 through 17, 1972

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MEDICAL SOCIETY OF THE
STATE OF NEW YORK

House of Delegates

Minutes of the Annual Meeting*

February 13 through 17, 1972

The 166th Annual Meeting of the House of Delegates of the Medical Society of the State of New York convened at the Americana of New York, Seventh Avenue and 52nd Street, New York City, on Sunday, February 13, 1972, at 2:00 p.m.; on Tuesday, February 15, 1972, at 2:00 p.m.; on Wednesday, February 16, 1972, at 9:00 a.m. and 2:00 p.m.; and on Thursday, February 17, 1972, at 9:00 a.m.; George T. C. Way, M.D., Speaker; Samuel Wagreich, M.D., Vice-Speaker; Carl Goldmark, Jr., M.D., Secretary; Joseph G. Zimring, M.D., Assistant Secretary.

Opening Proceedings

Invocation and National Anthem

. . . Speaker Way introduced Mr. Arthur Wolfson, Cantor of Temple Emanuel, New York City, and Dean of Sacred Music at Hebrew Union University, who gave the invocation. This was followed by the National Anthem . . .

Report of Reference Committee on Credentials

. . . Joseph F. Shanaphy, M.D., chairman of the Committee on Credentials, reported that 244 delegates were registered; Secretary Goldmark reported that a quorum was present. Speaker Way then declared the 166th session of the House of Delegates open for the transaction of business. . .

Memorial Tribute

. . . Speaker Way read the names of the deceased members of the House of Delegates, as follows:

Albany County: Joseph J. Russo, county delegate 1959 to 1962 and 1964 to 1966; delegate of the Section on Dermatology and Syphilology 1968 to 1971.

Bronx County: Henry J. Barrow, county delegate 1951 to 1962.

Dutchess County: Elvin E. Gottdiener, county delegate 1971.

Erie County: Herbert H. Bauckus, county delegate 1936 to 1939, councilor 1940 to 1943, president-elect 1944, president 1945, past president 1946 to 1971, trustee 1951 to 1960; William F. Beswick, delegate of the Section on Neurology and Psychiatry 1953 and 1954.

Kings County: Charles A. Anderson, county delegate 1935 to 1939, 1942 to 1950, and 1952 to 1954; David B. Monheit, county delegate 1953 to 1956 and 1958 to 1961; and Robert A. Moore, county delegate 1967 to 1970.

Lewis County: Harry E. Chapin, county delegate 1961.

New York County: C. Joseph Delaney, county delegate 1956 to 1971; and Frank J. McGowan, county delegate 1954, 1955, and 1957 to 1961.

Onondaga County: W. Walter Street, county delegate 1931 to 1960, 1962 and 1963; vice-president 1961.

Orange County: Allen H. Keniston, county delegate 1962 to 1968.

Queens County: Tobias M. Watson, county delegate 1951, 1954, 1955, and 1964 to 1966.

St. Lawrence County: Thomas M. Watkins, county delegate 1949 to 1956.

Schoharie County: John H. Wadsworth, Third District Branch delegate 1954 and 1955, and county delegate 1956 to 1964 and 1966 to 1968.

Steuben County: William J. Tracy, county delegate 1940, 1943, and 1945 to 1954; Richard E. Travis, county delegate 1953 and 1954.

Suffolk County: Sol Shlimbaum, county delegate 1951, 1953 to 1956, and 1958 to 1963.

Tompkins County: C. Stewart Wallace, county delegate 1954 to 1964, and councilor 1965 to 1971.

Westchester County: Walter Wesley Mott, councilor 1951 to 1953, and trustee 1954 to 1959; Donald R. Reed, county delegate 1956, 1959, and 1960; and Waring Willis, county delegate 1951 to 1959, councilor 1960 to 1962, secretary 1963 and 1964, president-elect 1965, president 1966, past president and trustee 1967 to 1971.

. . . The House of Delegates rose and stood for a moment of silence in memory of their departed confreres . . .

. . . The following memorial resolutions were unanimously adopted by the House:

72-65. C. Joseph Delaney, M.D.

Introduced by Medical Society of the County of New York

WHEREAS, C. Joseph Delaney, M.D., died on October 20, 1971; and

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*A verbatim copy of the Proceedings of the House of Delegates is on file at the Headquarters Office of the Medical Society of the State of New York, 420 Lakeville Road, Lake Success, New York 11040.

WHEREAS, Doctor Delaney was a past president of the Medical Society of the County of New York in 1966–1967, and a delegate to the Medical Society of the State of New York from 1960 until his death; and

WHEREAS, Doctor Delaney was for many years a member of, and then chairman of, the Credentials Committee of this House of Delegates; and

WHEREAS, Doctor Delaney devoted his adult years to the practice of surgery and the training of young surgeons at New York Medical College and its affiliated hospital; and

WHEREAS, At the same time he worked actively for the improvement of the organization of medicine and for the delivery of medical care as a director of United Medical Service; and

WHEREAS, Doctor Delaney simultaneously maintained deep involvement in the Medical Corps of the U.S. Navy and retired with the rank of Captain; therefore be it

Resolved, That this House of Delegates of the Medical Society of the State of New York pass this memorial resolution in memory of a distinguished colleague; and be it further

Resolved, That this resolution be entered in the official minutes of this House of Delegates and that a copy be sent to his widow and to his family.

72–101. Waring Willis, M.D.

Introduced by Medical Society of the County of Westchester

WHEREAS, Waring Willis, M.D., was deceased on April 25, 1971; and

WHEREAS, Dr. Willis was president of the Westchester County Medical Society and the Westchester Academy of Medicine; and

WHEREAS, Dr. Willis served as president of the Medical Society of the State of New York, chairman of the Board of Trustees of the Medical Society of the State of New York, and a member of the House of Delegates of the American Medical Association; and

WHEREAS, Dr. Willis was untiring in his efforts to further the ideals of medicine exemplifying his strong leadership to the profession and the community; therefore be it

Resolved, That this House of Delegates of the Medical Society of the State of New York express its profound sorrow at the passing of Dr. Waring Willis; and be it further

Resolved, That this resolution be published in the minutes of this meeting and a copy be sent to Mrs. Willis as an expression of sympathy and condolence, and of the esteem held by his colleagues in this House of Delegates.

Resolution 72–86, C. Stewart Wallace, M.D.

Introduced by Fifth and Sixth District Branches

WHEREAS, C. Stewart Wallace, M.D., died on December 28, 1971; and

WHEREAS, Dr. Wallace resumed the practice of medicine after serving his country as a Commander in the U.S. Navy Medical Corps in the Pacific in World War II; and

WHEREAS, He served his community in many civic affairs, greatly improving the physician's image by his efforts, and served his colleagues as a vigorous president of his hospital staff, county medical society, and Sixth District Branch; and

WHEREAS, By his contagious enthusiasm and efforts successfully obtained better legislative relations and communications with our Federal and State Legislatures; and

WHEREAS, He demonstrated the effectiveness of the district branch by his successful workshops on public relations, quackery, and high school sport injuries at this level, and helped to pioneer the political, social, and medical coalition of the Fifth and Sixth District Branches; and

WHEREAS, As county medical society delegate, delegate to the American Medical Association, chairman of the Society's Commission on Public and Professional Relations, councilor, and trustee, he always urged better communications between our headquarters and the practicing physician; and the *Capital News, News of New York,* Ad Rem, to name a few, are, in large part, results of his efforts; therefore be it

Resolved, That with profound sorrow this House of Delegates make official note of his passing; and be it further

Resolved, That a copy of this resolution be sent to the family of this, our beloved colleague.

Introduction of New Delegates

. . . Speaker Way introduced the following new delegates who were applauded by the House:

County Delegates

John P. Albanese, The Bronx
James C. Amico, Kings
Carmelo S. Armenia, Erie
Charles D. Bauer, Erie
Seyton G. Bentham, New York
Charles R. Blair, New York
Francis M. Bohan, Cattaraugus
Rodman D. Carter, Otsego
William P. Clark, Westchester
Ray S. Crampton, Nassau
Martin J. Downey, Jr., Erie
Sears E. Edwards, Nassau
Leo Fishel, Nassau
Richard D. H. Flaherty, Dutchess
Jacob Savin Garber, Queens
Stephen J. Grey, Schenectady
James A. Holleran, Suffolk
Robert E. Kaufman, New York
Lewis Foster Kibler, Chautauqua
Charles M. Landmesser, Albany
Tiffany Lawyer, Jr., The Bronx
Warren W. Leeds, Westchester
David R. Levine, Kings
Perry R. Mandel, Nassau
Robert A. Mayers, Westchester
William F. Mitty, New York
Frank T. Moran, Cayuga
Keun H. Park, Tioga
Hubert S. Pearlman, Kings
Victor H. Raisman, Queens
Joseph Y. Roberts, Schuyler
William G. Roberts, Yates
John A. Root, Onondaga
Bernard Seligman, Kings
Harold Sobel, Orange
Frank C. Starpoli, Dutchess
George I. Starr, Clinton
John M. Stirna, Jr., Sullivan
John W. Stoll, Livingston
Bruno J. Tryka, Wyoming
Charles W. Wiles, Erie

Section Delegates

Edwin I. Cleveland, Otolaryngology
William E. Hermance, Allergy
Frederic P. Herter, Surgery
Norman B. Kanof, Dermatology and Syphilology
George E. Leone, Preventive Medicine and Public Health
James F. Phillips, Gastroenterology and Proctology

Approval of Minutes of 1971 Meeting

. . . The minutes of the February, 1971, session were approved as published in the June 1, 1971, issue of the ***New York State Journal of Medicine*** . . .

Reference Committees

. . . Speaker Way announced that the reference committees for the 1972 House of Delegates were as follows:

Credentials

Joseph F. Shanaphy, Richmond, *Chairman*
Edward A. Barrett, Orleans
Jeff J. Coletti, Nassau
Walter F. Harrison, Jr., Warren
Oma H. Price, New York

Reports of Officers

President
President-Elect
Secretary
Treasurer
Executive Vice-President
Board of Trustees
Budget and Finance
Our Building

James R. Nunn, Erie, *Chairman*
Thomas P. Hamilton, Jr., Jefferson
Harry S. Lichtman, Kings
Joseph C. Polifrone, The Bronx
Thomas D. Pemrick, Rensselaer

Medical Services

Commission on Medical Services
  Economics
  Medical Care Insurance
  Occupational Health
  Workmen's Compensation
Policy and Negotiating, on Government Supported Health Plans
Interspecialty
Universal Health Insurance

Daniel Friedman, Suffolk, *Chairman*
Marcelle T. Bernard, The Bronx
Ralph E. Schlossman, Queens
John F. Spring, Broome
Francis A. Stephens, Albany

Standards of Medical Care

Commission on Standards of Medical Care
  Ethics
  Hospital and Professional Relations
    Government Health Centers
  Hospital-Based Physicians
  Medical Review
  Nursing and Allied Health Professions
Foundations
Peer Review Mechanisms

James R. Nealon, New York, *Chairman*
Guy S. Alfano, Erie
James K. Keeley, Dutchess
Milton M. Grover, Jr., Ulster
Perry R. Mandel, Nassau

Public Health and Education

Commission on Public Health and Education
  Accident and Injury Prevention
  Aging and Nursing Homes
  Alcoholism and Drug Abuse
  Audio-Visual Aids
  Cancer
  Cardiovascular Disease
  Chronic Pulmonary Diseases
  Continuing (Postgraduate) Education
  Data Processing in Medicine
  Disaster Medical Care
  Environmental Quality
  Forensic Medicine
  General Practice
  Health Care Technology
  Health Manpower
  Maternal and Child Welfare
  Medical Aspects of Sports
  Mental Health
  Metabolic Diseases
  Physical Medicine and Rehabilitation
  Preventive Medicine
  Rural Medical Service
  School Health
Abortion
Liaison with Deans of Medical Schools and Directors of Regional Programs

Samuel H. Madell, New York, *Chairman*
Katharine L. Friedmann, Westchester
Stephen J. Grey, Schenectady
Milton Rosenberg, Suffolk
Victor J. Tofany, Monroe

Scientific Activities and Publications

Journal
What Goes On
Archives
Prize Essays
Convention
Physician's Placement
District Branches
Ad Hoc, To Evaluate the Status of the ***New York State Journal of Medicine*** *(Including the Problem of a New Editor)*

Robert B. Wallace, Oneida, *Chairman*
Thomas M. Flanagan, Chenango
John A. Finkbeiner, New York
Martin Markowitz, Kings
Donald W. Hall, Erie

Public and Professional Affairs

Commission on Public and Professional Affairs
  Federal Legislation
  State Legislation
  Public Relations
Education Law Revision
Advisory to the New York State Medical Assistants Association

Alfred L. George, Genesee, *Chairman*
Joseph R. Fontanetta, Kings
Clarke T. Case, Oneida
Frederic W. Holcomb, Jr., Ulster
Herbert E. Joyce, Erie

Organization, Policies, and Legal Matters

Professional Medical Liability Insurance and Defense Board
Legal Counsel
Judicial Council
Constitution and Bylaws
New York Delegation to AMA
Research and Planning
Ad Hoc, To Study Participation of Medical Students in MSSY
Ad Hoc, To Study Professional Medical Liability Insurance
Ad Hoc, To Meet with New York State Podiatry Society

Charles D. Sherman, Jr., Monroe, *Chairman*

Jason K. Moyer, Broome
Francis J. Loperfido, The Bronx
Albert S. Lyons, New York
M. Theodore Tanenhaus, Kings

Sergeants-At-Arms

Armand J. D'Errico, Fulton, *Chairman*
Irwin Felsen, Allegany
John A. Kalb, Broome
Philip Miles Standish, Ontario
Garret W. Vink, Putnam

Tellers

Vincent J. Manzella, Westchester, *Chairman*
Maurice J. Elder, St. Lawrence
William C. Stein, Jr., Niagara
Robert C. Webster, Monroe

Referral of Reports, Supplementary Reports and Resolutions

. . . On motion of Secretary Goldmark, the reports and supplementary reports of officers, trustees, commissions, committees, and district branches, both published and distributed, and resolutions as distributed were referred to the appropriate reference committee without reading.

Addresses to the House

President of the American Medical Association*

. . . Speaker Way introduced Wesley W. Hall, M.D., of Reno, Nevada, President of the American Medical Association. Dr. Hall addressed the House as follows:

I must first assure you I have had one of the most enjoyable couple of hours it has been my experience and privilege to have spent. This, I can assure you. Your discussions here have been good, and I think your meeting has been unusually good.

The future of American medicine has been discussed and cussed over quite a period of time. I am sure most of you are familiar with the papers, particularly with the newspapers in your area, and it is an amazing thing to me when a citizen of the State of Nevada has completely pushed National Health Insurance off the front pages of your papers here, and Howard Hughes has up and done it.

I am very happy to see the actions you have taken here today. That is a very pleasing thing to me, and I think very pleasing to you members of this House because it is constructive. I believe one of my favorites of all time and probably the favorite man of many in the Twentieth Century was Winston Churchill. As I recall, during the tough days of World War II, when the German Luftwaffe was clobbering England day and night and the Royal Air Force was doing its utmost to save that particular country, in paying tribute to the Royal Air Force, Churchill said to Parliament, "Never before was so much owed by so many to so few." Never in the history of American medicine has so much been owed by all of the doctors of this State, the great Empire State, to such a few hard working doctors. It is safe to say they were leaders, and you are leaders, and your leaders have a quality of leadership about them that marks them as leaders. There is a certain something to distinguish a man and set him apart from the people who sit on the sidelines and watch things done and the people who are doers and do things, as you are in the House of Delegates. I think your State Society is tremendously proud of you for the dedication and the work you are doing.

I believe that the future of American medicine will be settled sometime in the next twenty-five to fifty years. I do not think we are facing such a crisis that we will see a complete change in the type of health delivery system in this country within the next six months or within the next year. I believe the people of this country are beginning to wake up. In my travels, going about this country from one place to another and talking to not only the doctors but the members of the press, the mass media, and civic leaders, I can tell you this: I think the country as a whole is much better than we realize at this time.

Now, the membership of the American Medical Association and American physicians, I believe, are better than they have been in quite a few years. I believe we are improving; why are we improving? Because you at the State level and also the members of the county medical societies are taking a far greater interest in the affairs of medicine than has ever been taken before. I want to congratulate you on this. This is every doctor in America who is interested and active.

I am especially happy to see that one of your members has created so much movement, so much interest, and so much study on a matter that I think is of tremendous interest to us and may be the salvation of the medical profession. You have a man in your State who has studied the foundation type of health care and given a tremendous amount of time to it. I understand that your State has approved several foundations. Some of them may vary in concept, but I seriously believe the history of medical care lies more in the foundation concept, as has been presented to your Society by your State president, than it does in the politics in Washington, D.C.

May I say, members of the House and distinguished guests, it certainly is a privilege for me to be here. I hope to have an opportunity to visit with you again. I recall, a while back, I had a rather unpleasant experience with an aneurysm, a clogged fuel pump. Since that time my doctor has told me that this fuel pump has cleared up, and said I am good for four or five years. I will try to do that.

Thank you so much.

President-Elect† (Address)

This has been a difficult year not only for the Society but for medicine in general. The new building assessment, the Health Department's new interpretations of rules, and the soaring malpractice insurance premium rates did not do much for the morale of our members. I am not especially concerned about the traumatic effects of the assessment on our Society. In the final analysis, it was the only sensible thing to do. Our new building is a magnificent structure which will reap us great benefits in years to come, despite the generalized discomfiture it has stirred among some of our membership. I firmly believe that this Society has made a great investment in its future, and that time will justify what to some may presently seem an extravagance. I am *more* concerned with the generalized attack on our profession.

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*Dr. Hall addressed the House at the Sunday afternoon session.

†Dr. Siegel addressed the House at the Thursday morning session.

I do not know of another time, in my experience at least, when we have had to assume the defensive posture that has been thrust on us. The strident voices of those in high places of responsibility are heard throughout the land. We have become a prime target for criticism from increasing segments of our population. There has been a gradual but definite erosion of confidence in medicine at all levels. The physician is becoming low man on the totem pole, even in our hospitals. Fewer physicians are being appointed to governmental committees in areas directly involved in medical care. Even the physician membership on Blue Shield governing boards (wasn't that once called the Doctors' Plan) is being legally reduced to a token force. The arbitrary and unilateral cutbacks in Medicare and Medicaid are further manifestations of this insidious attack. Need I mention more?

It seems obvious to me that to combat this trend the physicians of this State must be united as never before. If we agree then, that a Medical Society is needed, let us look at its purpose and its performance. Is it doing the job it set out to do? Is it being responsive to its members' desires and needs? Do its officers, trustees, councilors, and delegates represent a democratic choice?

By the same token, the members must ask themselves, are they sharing in the burden? Are they putting their best foot forward for quality medical care? Are they telling it as it is to the people?

Let us look at Article I of our Constitution, and see how we are doing! I have extracted four main headings.

> 1. "To federate into one organization the medical profession of the State of New York."

According to the *AMA's Reference Data, 1971,* revised editions, exclusive of Federal employes, medical teaching, administration, and others, we have about 27,000 members in this Society. Can a Society with such a large membership and with varying interests combine into an effective force working for the interests of all? I think we have done so rather well.

The specialty groups play a very important part in our organization, and I am delighted that our Interspecialty Committee has become stronger than ever before. I hope that these groups will always act under the umbrella of the Society and not attenuate this Society's effectiveness by splinter action. It is equally incumbent on the Society to not isolate these groups. I call for continued and greater cooperation between this Society and the specialty groups.

I feel greater effort should be made toward attracting new members, as well as improving membership retention.

> 2. "To extend medical knowledge and advance the science and art of medicine."

Our Committee on Continuing Medical Education has done yeoman work and has spent many hours on this complex issue. We are encountering the expression "quality medical care" more and more, especially from governmental agencies. It is a term which means different things to different people. With the advent of bigger and better emergency rooms and the concomitant expectations of the public for this service, the definition of quality medical care has taken on new connotations. Our emergency rooms are becoming outpatient clinics. To one patient it may mean having a physician immediately available, day or night, regardless of the need or the complaint. To another patient, quality medical care may mean gourmet food and a baronial hospital room.

To a physician, however, quality medical care can mean only one thing and that is care rendered by a competent, up-to-date, conscientious, well-trained physician. The patient has a right to expect this, and we would be the last to argue the point. Quality medical care also means peer review done *by* physicians *on* physicians. We must not lose this responsibility of speaking out when we find shortcomings in the care of our patients. The peer review committee of the Society has done outstanding work and is looked on as a model for other Societies. If we really believe in quality medical care, then we must support continuing medical education and peer review. We need have no fear of reexamination, recertification, or the accusations of self-appointed zealots if we follow the recommendations of these committees. To show you the importance which some of our profession itself attaches to continuing medical education and professional competence, I need only remind you of the action of the Oregon Medical Association. This body has recently ousted 11 physicians from membership because of their failure to meet their society's requirements in continuing education. This was not a requirement imposed by government but rather one by physicians on themselves. It raises the interesting question of whether or not minimal standards of continuing education should be required for membership in medical societies.

> 3. "To promote the betterment of public health."

As you well know, the committees of this society are generally divided into three commissions. The Commission on Public Health and Education is responsible for promoting the betterment of public health. The amount of constructive work that is done by this commission was a revelation to me. Each committee of this commission has a representative of the State Department of Health assigned to it as adviser and liaison officer. This commission is doing its work in a highly productive manner and serves our society and the people of this State admirably.

> 4. "And to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State."

It is in this area that the Society has the potential for its greatest triumphs as well as its most costly defeats. The problems of medicine and health are endless, and if we are to do anything at all in this area, it requires the complete cooperation of all of our members. The Venereal Disease Prevention Education program of the Society is a classic example of one of its best efforts. Those of us who experienced firsthand this activity on the campuses and schools of our State could not but be impressed with its success. Similar programs on other problems should be devised and offered to the people of this State.

I think that we are doing a reasonably good job in fulfilling Article I of our Constitution. I do feel, however, that we should and could do a better job. Physicians must take a larger and more active role in the issues affecting community health and life. We cannot afford the luxury of hiding behind the "I'm too busy" excuse, although we are indeed busy. Somehow we must find the time to reassert our natural role. Physicians are knowledgeable and uniquely qualified to lead. In what other profession does one see firsthand the results of inadequate housing, malnutrition, pollution, poverty, and poor education? We see it all! If we really believe that the Society must enlighten the people of this State in regard to problems of medicine and health, then we must be the first to point out areas in which there is lack of medical care. Lack of medical care in the inner-city areas should be of just as much importance to physicians upstate as the lack of rural care should be to those in the big cities. George Himler, in his scholarly report on foundations, has shown how this very problem can be attacked. I suggest that this should be required reading for all members. All the foundations and institutes in the world, however, will not work unless this Society dedicates itself to things as they are and not as they have been. Your Society has given you a blueprint for a viable and reasonable method of delivering quality medical care. I trust that it will be given an honest chance to work.

I should like to address myself to some of the internal workings of this Society. There have been ripples of concern from some quarters about the manner in which we elect our officers, trustees, councilors, and our delegates to the American Medical Association. To satisfy myself, I have gone over the elections of the past fifteen years (1956 to 1970) and have plotted them so that we may see for ourselves just how democratic this organization has been (Chart).

An explanation is needed for those unfamiliar with the workings of the Society to justify some of the apparent discrepancies. The position of president is usually alternated between upstate and downstate each year. The geographic boundaries of these two entities, I leave to our political demographers. The position of vice-president has traditionally gone to a deserving member of the Society for past services and has had no relationship to area representation. In the past few years, however, more attention has been given to this important position. As a result of the changes in our Constitution, I imagine that both the president and the vice-president will now be chosen from the same area

District Branch (DB)	1	2	3	4	5	6	7	8	9
DB % Total MSSNY Membership	53	11.5	3.3	2.6	5.1	2.8	5	7	9.3
President	5	1	0	1	3	2	1	1	1
Vice-Pres	4	2	2	0	4	0	0	2	1
Secretary	12	1	0	0	0	0	0	0	0
Asst Secy	14	0	0	0	0	0	0	0	1
Treasurer	15	0	0	0	0	0	0	0	0
Asst Treas	15	0	0	0	0	0	0	0	0
Officers-15 Years (88)	65	4	2	1	7	2	1	3	3
% of Officers	72	4.5	2	1.1	7.7	2	1.1	3.3	3.3
Councillors-15 Years (193)	44	19	17	15	24	25	10	23	17
% of Councillors	22	10	8	7.5	12	12	5	12	8
Trustees-15 Years (102)	43	7	7	4	17	9	3	4	8
% of Trustees	40	7	7	4	16.8	9	3	4	8
Delegates-15 Years (169)	75	12	6	9	20	16	8	15	8
% of Delegates	44	7	3.5	5.3	11.5	9.4	4.7	8.8	4.7
Total of All Offices (552)	227	42	32	29	68	52	22	45	36
% of All Offices	42.5	7.5	5.8	5.2	12	9.2	3.9	8	6.4
DB % Total MSSNY Membership	53	11.5	3.3	2.6	5.1	2.8	5	7	9.3

inasmuch as the matter of succession has now been changed. The obvious disproportion of the next four positions is apparent and was started years ago when we did not have the staff arrangements we now have. I would look for a more equitable distribution of these positions in the years to come. I will not go over each, but they are being offered for your information. Although some other conclusions may be arrived at, I feel that there has been remarkably good representation, considering we follow no real ground rules.

I have made no attempt to break the district branches down into counties. For those who would do away with the district branch concept, I point out that these statistics show that we do have reasonable representation.

Although I do not believe that membership in the AMA should be mandatory, I am distressed that the AMA has lost so many New York members. The eternal cry is raised, who needs the AMA? What does it do for me? It's too liberal! It's too reactionary! It's too conservative! Anyone who has followed the AMA knows that the voices of dissension and criticism are now being heard in that organization. As all organizations must change to survive, the AMA is changing. What direction it takes depends on those of you who are interested enough to have a part of the action.

There is not a single physician in this country today who has not benefited from the AMA when one considers the fantastic amount of work that they have done on a national scale in all facets of medicine and public health. A look at their journals, magazines, committees, councils, and task forces will vouch for this.

I think it morally unacceptable for us to share in the benefits of the AMA without supporting the AMA. Its actions, however, have not always made friends nor influenced people. It will take a long time before I can fully accept the defeat of two of our illustrious sons who ran for trustee. This Society does not expect any special favors because of its size, but I do feel there should be some effort toward a more equitable representation on at least a geographic basis. I had never been a delegate to the AMA until this year, so I cannot criticize past activities of our delegation. I do feel, however, that New York must have a more effective voice in the affairs of the AMA. The AMA, as well as the MSSNY, must better reflect the desires of its members, or there may be a further exodus from the ranks! I urge all members who have withdrawn from the AMA to reconsider and rejoin. Whether they belong to the AMA or not, all physicians will be equated with that organization and its actions. At least, let us have a voice!

The practice of medicine in the "Age of Aquarius" is, and will continue to be, a frustrating experience. We are beset with foundations, HMOs, institutes, PSRO, multiphasic testing, CHAP, peer review, physicians' assistants, medical manpower shortages, medical crises, Medicare, Medicredit, Medicaid, health care, third parties, usual and customary, relative value scales, EMPAC, and AMPAC. It would be funny, if there were not tragic overtones.

That long list emphasizes the problems facing organized medicine, and you will notice that this is the first time that I have used the word "organized." When the word organized is used, it conjures up thoughts of unions and strikes. Anyone who reads medical journals these days knows that there is an increasing number of physicians who advocate unionization of the medical profession. When you form a union there is always the implied threat of strike action. I think George Himler put it succinctly when he said of such action, "The transcendental importance of constantly available medical services makes the threat of their being withheld intolerable." I recall to your minds, however, that only last year on this very dais our colleague, Raymond Robillard, M.D., from Montreal, told us in detail the bloody events leading up to that very thing—the withholding of services except for emergencies. How much provocation is necessary to make reasonable men and women alter lifelong convictions? I trust this Society may never have to take such action.

We must, therefore, gird ourselves for the job ahead. We have made an excellent start in the revamping of our legislation department. The foundations for medical care offer great promise, but they are still in their infancy, and their effectiveness has yet to be proved. The New York Institute for Research and Development in Health Care must be given every chance of success and time to become functional. Research and planning must be beefed up to achieve their potential. Medical students, interns, and residents must become part of our family, and they must be heard. We must devote more time to our communities and their problems.

We must employ more public forums on medical and health problems! We must be more aggressive with our political leaders! We must take more time to communicate our views to our patients! How many of us have spoken to a service club lately? How many of us have taken time to answer the often libelous and phoney charges against the profession?

In addition to a vigorous and dynamic approach to our problems, the Society itself must be staffed by energetic, knowledgeable people. This Society has indeed been fortunate to have the continued vigor which our executive vice-president brings to his office. I have never believed in the indispensable person, but he may make me change my mind.

Although we are not the oldest profession, there are those who would treat us as such. We have been berated for the ever-spiralling cost of medical care when we have been only minimally responsible. We have been belabored for overutilization and then sued for malpractice. When the high cost of Medicaid for the inner cities and rural areas became apparent, the "second-class citizens," for whom the plan was designed, were soon forgotten. Financial incentives are now being offered to lure the physician back into the very areas he had long been serving with only humanitarian incentives. At a time when the hysterical shrill of "medical crisis and medical manpower shortage" is heard throughout the land, there are many physicians stopping part-time and limited practices because of the exorbitant malpractice rates.

On December 1, 1862, Abraham Lincoln stated to the Congress:

> The dogmas of the quiet past are inadequate to the stormy present. As our case is new so we must think anew and act anew. We must disenthrall ourselves.

It is in times of disorder and chaos that men and women are given their greatest opportunities. We must indeed disenthrall ourselves with the past and look to the future. What profession offers more challenges than ours—a profession whose very history is steeped in change itself!

I have mixed thoughts about the year ahead. I wonder if 1972 can be a very good year for any medical society president. I offer no great plans, programs, or panaceas to solve all our problems. I do have, however, a deep love and respect for the practice of medicine. I feel it to be the obligation of all members of this Society to foster and maintain that love and respect for our profession. We know that Rome wasn't built in one day: neither was it destroyed in a day. The destruction of a state or an organization comes from within, when it loses its will to fight for those beliefs which made it strong. If we stop believing in ourselves and in our profession, then all the groups, foundations, institutes, and even unions will not avail us.

When the history of the Medical Society is written let it not be said "that we have met the enemy and they are us"!

President of the Woman's Auxiliary*

. . . Speaker Way introduced the President of the Woman's Auxiliary to the Medical Society of the State of New York, Mrs. Francis E. Ehret, of Erie, who addressed the House as follows:

It is my pleasure to report to you the activities of your auxiliaries for 1971–1972. The theme, "Make The Voice Of Your Auxiliary Heard"—has received every cooperation from our counties in striving to become a more outstanding voice for health education and in extending community service as Auxiliary members.

Physical Fitness and Nutrition—one of the priority projects for the year, has brought into focus the importance of these measures as a means of improving the "Quality Of Life" in our own families and in the community. Fred L. Allman, Jr., M.D., member of the A.M.A. Committee on Exercise and Physical Fitness, will address our House of Delegates on Monday on "The Role of the Physician's Wife in Promoting Physical Fitness."

We appreciate your financial assistance for the Auxiliary exhibit at the New York State Exposition in Syracuse. This year we presented the AMA's "Seven Paths to Fitness" and a table display on "Nutrition Nonsense." The exhibit in the Hall of Health is one of our most important public relations functions with an opportunity to reach from 120,000 to 300,000 people. We are not utilizing the enormous potential of the exhibit with the AMA displays (we have used them for many years), and we will welcome your suggestions for a more effective and dynamic presentation.

It is impossible to detail all of your Auxiliaries' activities in this resume, but I am very proud to report the wide scope of programs in the health field which your wives are implementing throughout the State.

Health Careers Days and recruitment of health manpower are well organized projects. Home Centered Health Care, Friendly Visiting, and sunshine kits to patients in nursing homes are rewarding efforts. We are pleased that New York State is a pace-setter nationally in the drug abuse program. Many counties have made outstanding contributions in this area. The antismoking program continues to be an important educational effort. We participated in a follow-up survey of the smoking habits of physicians and their wives in New York State under the direction of Peter Greenwald, M.D., director, Cancer Control, New York State Department of Health.

Our counties have implemented one or several of the following programs: GEMS, classes to train good emergency mothers; environmental conservation; immunization; screening for hearing and vision defects; safety, E.M.I.T.; venereal disease, our organized counties contacted their district school superintendents to promote the use of the medical societies Venereal Disease Prevention Education Mobile Health Unit; bloodmobile; senior citizens programs and problems of the aging; sex education; and poison control. Many counties have programed international health activities. Drugs, books, bandages for lepers, and layettes have been delivered. A new program of sending surgical instruments to a hospital in Paraguay has been successful. Enthusiastic cooperation was received in compiling an international cookbook and in extending hospitality to foreign students, physicians, and their families.

All counties reported successful fund-raising projects to benefit scholarship to medical students, interns, residents, and students in the allied health professions, Care-Medico, Project Hope, Physicians' Home, and AMA-E.R.F. program. A conservative figure of $35,279 received from 31 of our 38 organized counties will support these philanthropies.

We appreciate Dr. Himler's invitation to cooperate with the Medical Society in State medical legislation programs. We welcome your direction in this area. Nineteen interested members represented the Auxiliary at the Legislative Forum in Albany, on February 1, and heard Gov. Rockefeller's address to the Forum.

Your approval of the dual billing system has been a great help in increasing membership in those counties which used the plan. We have 3,752 paid members with a potential of 25,000. Gentlemen, we need your support, your help, your direction, and your assurance to your wives of the need for your county auxiliary. I cannot think of a more interested public relations representative for your medical profession and Medical Society than a doctor's wife. We are most anxious to support and assist our medical societies in any way possible, to promote better community health and to cooperate with you in any area which you designate.

The New York State Auxiliary was recognized nationally at the Convention in Atlantic City when the U.S. Department of Health, Education, and Welfare's Emergency Health Services Award was presented to Oneida County for their Emergency Medical Identification Tags Program. Broome County's Smoking Education Program, in which high school students teach elementary school students, has received national recognition from several sources. Erie County received a citation from the Veterans of Foreign Wars for their community service program on drug abuse.

I trust that these highlights have apprised you of your wives' accomplishments through the Auxiliary.

On behalf of the Auxiliary, may I express our gratitude to Dr. Himler, Dr. Fineberg, Dr. Zimring, our adviser, and to the staff at the State Medical Society for the tremendous assistance and cooperation extended to us. We are grateful to the Medical Society for arranging the beautiful room for the Auxiliary's use in the Society's new home in Lake Success. I am sure that the room will be a source of pride and usefulness in the years to come.

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*Mrs. Ehret addressed the House at the Sunday afternoon session.

Thank you for your assistance in the 1971–1972 Auxiliary year. We are proud of you, your profession, and the service which you extend to your fellow men. We are privileged to serve with you as members of your Auxiliary.

President of the New York State Society of the American Association of Medical Assistants*

. . . Speaker Way introduced the President of the New York State Society of the American Association of Medical Assistants, Ms Anne M. Savarese, who addressed the House as follows:

The New York State Society of the American Association of Medical Assistants is honored to spend these few minutes with you, and it is my privilege to bring you up to date on the growth and progress of our programs.

In 1955, 78 medical assistants met in Kansas City, Kansas, representing 16 state associations and many local groups, and the American Association of Medical Assistants was born. In 1972, 46 state societies are represented, including Alaska, Hawaii, and Puerto Rico, with a membership of 14,000. Our primary objective is to render more efficient service to the physician and the patient.

Developing educational programs for the practicing medical assistant, one who had had no formal educational background in this profession, but rather, one who was trained on the job, was the beginning of inservice education.

The American Association of Medical Assistants has expanded the recruitment and training of medical assistants and in the development of audio-visuals used for this purpose. The two major programs which are highlighted today are: curriculum planning and certification. The AAMA Curriculum Review Committee reviews applications from schools for approval of their medical assistant programs. They schedule and conduct the surveys of these schools and recommend their approval to the AMA Council on Medical Education.

Essentials for use in curriculum planning cover both one and two year programs; both general and specialty medical assistant training; in junior, community and senior colleges; in vocational-technical schools; proprietary educational institutions; and military-based schools. These essentials and guidelines, drawn up by the committee were first approved by the AMA Council on Medical Education drawn up by the AMA House of Delegates. The certification program was developed as recognition for those who sought the challenge of their knowledge. It has stimulated continuing and advanced education and has created a sense of pride for those who have achieved this goal. Applicants for certification are tested in anatomy, physiology, medical law and ethics, psychology, personal and human relations. There are two classes of certification: administrative and/or clinical. The administrative candidate goes on to testing in communication, oral and written; bookkeeping and insurance; credit and collection, and medical records. The clinical candidate is tested for practical application of anatomy and physiology, laboratory orientation, and clinical procedures.

In addition to these two major programs, AAMA is one of 14 allied health organizations represented on the panel of consultants to the AMA Advisory Committee on Education for Allied Health Professions and Services. We have cooperated in the survey on the accreditation of medical assistant programs under the sponsorship of the AMA National Commission on Accreditation and Association of Allied Health Professions. Representatives of the AAMA attended meetings on the subject of licensure and certification with the allied health organizations, and in September about 33 members of AAMA attended the annual general meeting of the Association of Medical Secretaries in London. The pioneers in AAMA can now look back with fulfillment, knowing they were a part of one of the most progressive of the allied health professions. In essence, these programs help us to help you.

With struggle comes reward, and over the years, we have been rewarded with financial grants from the pharmaceutical companies. At the annual meeting in November, in Atlanta, Georgia, we received $25,000 from Merck, Sharp & Dohme, and $25,000 from the AMA. These grants, which are substantially greater than in previous years, will enable us to continue to reap the benefits from our educational consultant. Since Natresource, Inc., our educational consultant, was employed seventeen months ago, we have taken great strides in all phases of our development.

The New York State Society is but a part of this great Association, and we look to the future to make it the greatest. The report of our Advisory Board enumerates our State and county programs. Our public relations campaign this year was directed toward the physician as well as the medical assistant. Our objective goal was to keep you informed by means of news releases to the county medical society journals, newsletters of the Blue Shield plans, *News of New York*, the ***New York State Journal of Medicine,*** and Ad Rem bulletins. We gratefully acknowledge and thank those who cooperated in this program. Its success was evident by the registration of 171 nonmember medical assistants in attendance at our three State-sponsored seminars. An even greater number attend the many county-sponsored seminars.

The New York State Society of the American Association of Medical Assistants wishes to express their deep appreciation to the entire staff of the State Medical Society for their enthusiastic assistance. We could not possibly operate without the communication facilities and cooperation of Charles Struzinski and his staff. We are grateful and we thank you, Dr. Fineberg, Guy Beaumont, and every member of your staff who has been most cordial and helpful over the years. We also have three wonderful advisers, Dr. Harrison, Dr. Rozek, and Dr. Stark, who are always there when we need them.

, However, this has not done enough to increase our membership. And to you, the physicians of New York State, I express a plea for support: to encourage your medical assistant staff in membership and to encourage your colleagues to do the same.

It is not enough to sit here year after year and accept the recommendations of the Advisory Board to "urge its members to pay all or part of the medical assistants dues in this Association." We are asking you to set the example as leaders of your county and State medical societies. Dues in the Association are between $15 and $30 annually, and while this may seem minimal to you, it may be burdensome for a medical assistant, who is truly interested in professional growth.

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* Ms Savarese addressed the House at the Sunday afternoon session.

There are 27,000 physicians in New York State. We are counting on you to sponsor the membership so that our roster of 750 will be 7,500 next year. We are reaching out our hand—please help us—help us to help you.

Executive Vice-President of the American Medical Association*

. . . Speaker Way introduced Ernest B. Howard, M.D., Executive Vice-President of the American Medical Association. Dr. Howard addressed the House as follows:

I thought I would take the time today to run over, very quickly, about 20 different points, far too many for an ordinary speech such as this, to try to answer the question: what is going on in the AMA across the country; to give you some of my views on what is taking place; and also as you sit here to consider so many of the important problems that are before you, to tell you that many of the same problems are before every medical society in the nation.

Let me pursue this rapidly, some for a few seconds, and others for a minute or two. I hope this information will be helpful to you.

Current status of the Wage and Price Stabilization Act with special reference to physicians. I am sure you are all aware of the discriminatory and harsh action that the Price Commission took on the recommendation of the Committee on the Health Care Industry. I am speaking specifically of the 2.5 per cent ceiling under Phase II, for allowable cost increases established by the Price Commission for physicians and other members of the so-called "health industry," dentists, and others. We protested this as strenuously as we could; obviously, we failed to have any favorable action taken. At the present time, we are working on a form that will be used by physicians to request exemption from the rules and the authority to increase their fees more than the 2.5 per cent on the average. The form, as originally proposed to the Internal Revenue Service, was totally unacceptable. Hopefully, through the AMA input and staff working with the Price Industry Committee, the revised form is now reasonably succinct and clear and will be approved for use by those physicians who request an exemption. I might say here, I hope many physicians across the country will request exemption because of the inequity and hardship that this 2.5 per cent ceiling imposes on their practice. Obviously, some physicians would not respond adversely, but if this ceiling applies to your group, it appears that in no time it will be a hardship to all physicians in the nation. I can only say, we are hopeful that in the near future, perhaps before the next election, this control will go out of existence, but we are not sure the program will be terminated before the elections.

National Health Insurance. Briefly, the situation is this, as I see it. As you know, many proposals are before Congress, among them are the AMA Medicredit Bill and President Nixon's Bill for the mandatory purchase of health insurance policies by employers for employes. I am sure you have read a good deal about all of these bills. The House Ways and Means Committee will be having executive sessions in about a month and may, by June, place before the House of Representatives an amalgam consolation-type bill with all the features of our bill. I am confident the Kennedy far-out proposal has no chance of enactment into law in this session of Congress. The Medicredit proposal of the AMA may successfully have some of its features adopted by the committee, but we are uncertain. I can only say this: it is probable that some kind of bill will be passed by the Ways and Means Committee and adopted by the House of Representatives. I predict that it would be one with which the medical profession can live. From the House of Representatives it will go to the Senate, and it is anyone's guess on what will happen there, considering that it is a presidential election year and that various changes will be taking place in the Senate this year. In all likelihood, nothing will happen before the November election date.

Malpractice insurance on a national basis. I would say there is nothing dramatically new. Carl A. Hoffman, M.D., president-elect of the AMA, serves on the President's Commission on this subject and hearings are being held across the country. Dr. Hoffman tells me that the hearings are going well, and that they are assembling an amazing amount of information. He hopes this Commission may come up with recommendations for the government and for the national and state legislatures that may provide some favorable developments.

Current Procedural Terminology. This is an important program of the AMA. The publication is now going into its third edition and currently is one of the most important on the national scene because, finally, after the nomenclature is accepted not only by the AMA, but by the carriers and physicians across the nation, it will be a standard procedural terminology used by all physicians. We are not close to that but moving in that direction. The AMA version of C.P.T. is going into its third edition and is meeting with opposition by the National Association of Blue Shield Plans and to a lesser degree from Blue Cross. The National Association of Blue Shield Plans is not happy about the C.P.T. and the five-digit code, because of the expense involved in conversion of nomenclature plus the expansion of the number of procedures the physicians can use to identify their services to patients. Those expenses are also added to the cost of the transformation from four or three digits in some localities. There is sufficient objection to cause us to go slow. Dr. Schlee in Michigan is making up his own system of nomenclature for several thousand hospitals and is also opposed because he feels the C.P.T. will cause problems for his own nomenclature and hospital services system. Questions have been raised by the American College of Surgeons and two or three other specialty societies. We are continuing to pursue this goal of a national system of nomenclature, especially procedural terminology and the five-digit code to be used by all physicians in their offices. It is felt that in the long run, during the next decade, the five-digit code will make it possible for physicians to identify what they do and to bill properly for the services they render.

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*Dr. Howard addressed the House at the Tuesday afternoon session.

Graduate Medical Education. An important new development on the national scene happened last month. The question was who should guide physicians in their continuing education after graduating from medical school. There was quite a controversy between the AMA and the National Association of Medical Colleges with respect to the role the two groups will play in guidelines for the education of physicians during their residency years. We have reached a satisfactory resolution, at least for the moment, of that problem. After meeting about a month ago with the American Board of Medical Specialties, the Council of Medical Specialty Societies, which represents in a fashion all specialty societies of the country, and the American Hospital Association, it was agreed to form a five-pronged combined council with representatives of those five organizations to spell out standards and norms for accreditation of existing systems of education for the various specialties in this country in the future. Also, a Cook County office of representatives is being established simultaneously from those five organizations to work with the specialty societies and the AMA to bring order and clarity to the residency program.

Dues and Budget. You are all aware of the fact that the AMA increased its dues last year which was followed by various reactions across the country. I do want to tell you this: our budget is in balance. I want to tell you that for the forseeable future, there will be no increase in AMA dues. It is nice to announce something like that from the Board of Trustees of the AMA. I, personally, as the director of the staff, have decided that, absolutely no matter what happens, whether our taxes are increased or new programs are crystalized, we shall streamline and cutback wherever possible to maintain our level of appropriations and dues income, which is in balance.

Socioeconomic journal. We are preparing to publish a new journal, a socioeconomic journal. We, now, do not have an authentic socioeconomic publication, and the Board of Trustees has approved this. We expect to have the first issue on the stands and distributed to you free across the country in about one year.

Quality of Life Congress. We are very proud of the Quality of Life Congress, sponsored by the AMA, to be held in March. It was pushed through by the Committee on Child Health, and we are the only one featuring such a congress in this country, which will emphasize quality of life at birth, actions that can be taken on the potential abnormalities and optimum life from the birth of the child and during the first few years. You will hear a lot about this conference to be held in Chicago.

H.M.O. and fee-for-service. I want to spend a few moments on H.M.O. and fee-for-service because it involves the restructuring of the practice of medicine along certain directions and is a most important subject. I will not use the word "threat" for the moment because I do not want to editorialize more than is necessary on this subject. It is a most important question for our profession across the country. One sees it not only here, but at San Diego last year, and whether you are in rocky Maine or wherever, there is a national anxiety, a national misgiving, about this news and about the future. Personally, I am optimistic.

If we keep cool, act and plan carefully, and have careful thoughts free from unnecessary emotion, we can identify the needs that exist and do the best we can in a voluntary way to organize ourselves to meet those needs. The H.M.O. idea was sold to Health, Education, and Welfare's Veneman, and then to Mr. Finch. I have talked about Health Maintenance Organization many hours. The words are propaganda, a public relations device, that have no effective or essential meaning. I might say there is no H.M.O. in this country. I have used the term and you have used the term; it doesn't exist until a law is passed by the Congress of the United States, which establishes a common meaning and a contractual relationship within the field and with the sponsoring communities. I repeat, there is no H.M.O. in this country. There is a prototype of activities being conducted by various communities and community organizations, county medical societies, and others which are called H.M.O. in the sense that they may be prototypes of a future organization, as defined by the Federal government in the currently pending bills if they are adopted.

I have instructed the staff of the AMA, in order to speak about this question more clearly and to identify the issues that are involved, to use the term "contract practice." You will be seeing this reference in AMA material. In this way, I think it will help in the discussion of this question, especially considering some of the discussions I have been hearing.

As a matter of fact, if you go back to the June, 1932, or '33 or '31, minutes of the House of Delegates of the AMA, you will read words that you hear today in 1972. One great problem which the AMA House of Delegates became quite concerned about in those days was the question of contract practice. This was a proposal made by various groups to buy physicians' services with funds derived from capitation prepayment on a salary basis and caused serious problems at that time.

Today, we are seeing much the same. Both the Republican and Democratic parties and many legislators, including Senator Kennedy, have been exhibiting grave concern about the increasing costs of health care. Their apparent preference for group practice and capitation prepayment could result in legislation which would force physicians across the nation into group practice arrangements with capitation as the mode of paying for services. The programs they have sponsored provide for consumer input with regard to acceptability, quality, and cost of care. These programs would place physicians into salaried practice or, if they accept reimbursement, on a quasi-fee-for-service basis. I say quasi because physicians can no longer, except for a short period of time, approach this on a fee-for-service basis. These programs actually are not an attempt to provide better quality care, criteria, productivity, or a physician-patient relationship, but to control the cost. It is my belief that they are wrong with respect to what the product and the quality will be. I submit they are wrong, and if this movement does gain momentum, just the opposite will happen. They say these programs will serve after the fee-for-service concept is successfully eliminated.

I say this because this is the truth. There are many across the country who wish to restructure medicine and who consider the fee-for-service concept a questionable mechanism which is characterized by the exploitation of the patient. I will submit to you and say with understanding and force that the fee-for-service concept is an essential ingredient for good quality care whether it is given by an M.D., a Ph.D., a lawyer, an architect, or any one professional person. I can just imagine if the elimination of fee for service on legal fees came up in Congress, you would hear the howl throughout the Congress and across the country because the lawyers would not tolerate it.

Fee for service, which individualizes and personalizes services is absolutely essential. I don't want to cast any aspersions on salaried physicians. I am one, and it is an occupation that provides professional high-quality services. I am speaking generally, and I think the predominantly strong feeling of physicians across the country demands that fee for service should be maintained, not as the sole, but the predominant method of reimbursement for services. There should not be a diffidence and uncertainty among physicians on the fee for service versus salary concept.

Scientific meetings. We are quite disturbed about the participation in our national scientific meetings, held in June and December. We are considering, at the Board of Trustees and staff level, a variety of radical departures, if you will, from the methods we have been using for many years in an effort to increase participation in the scientific meetings.

Specialty societies in the AMA. This is an important point to me. I believe the strength of medicine during the next decade depends to a large degree on the willingness of the MSSNY, or the AMA, or whatever the geographic configuration, to extend the circle to include specialty societies in the decision-making process in a sensible manner. The Interspecialty Committee of the AMA, which consists of members from 17 specialty societies and is a committee of the Board of Trustees, adopted a motion which went to the House of Delegates requesting that the House of Delegates of the AMA be restructured to permit a larger input from the specialty societies of the country and for a general statement of principle. How the Board will react to that, I don't know, but, obviously, this is a highly controversial question. I must say, I think there should be some change whereby the physician who wears the cap of a specialty society member, should be given the right to represent that specialty society. But also you may have the circumstance in the House of Delegates of the AMA where a physician may be a member of the American College of Surgeons, but the College of Surgeons doesn't feel he represents them. This is a vital question, which I think has a great bearing on the future design and on the morale of our organization.

Hospital staff participation in organized medicine. There is a strong movement across the country, more or less, to create a new national organization of hospital staffs. I mention it because it is gaining momentum in some areas of the country, to the increasing consternation of some. I would say the thrust from the medical staffs, with their local office in Los Angeles, California, is the recognition that the hospitals and medical staffs are a focal point in the decision-making, thinking, and planning as a part of the big circle. Whether it is the AMA, the Medical Society of the State of New York, or the Illinois State Medical Society, we must find a way to give physicians, when serving as members of medical staffs, a voice in organized medicine. There are various ways to do this.

Cancer Committee of the AMA. There is a strong movement and an increased emphasis in Washington on how to extend this effort with billions of dollars to be spent yearly. We have now established an Advisory Committee on Cancer. We do not have any committees on this disease; obviously, this was indicated. The Board of Trustees appointed this committee to advise the Board on the substantial and promising developments in cancer research. I look forward to a most important contribution from this committee.

Membership Recruitment Campaign by the AMA. For the first time, our Board of Trustees has proposed a membership recruitment campaign for the AMA. We have never had such a drive because this has been done by the county societies and then the states. The Board has appropriated $150,000 for this purpose, and I can tell you here we shall be working with Henry I. Fineberg, M.D., and through him with the county societies in New York State, and of course other areas of the country. I will tell you that some of this money will be available to you and some of the county societies to help in this campaign. It seems to me the AMA should participate financially in underwriting this campaign.

Hospitals and M.D.s. I mention this because it is a continuing national question. The American Hospital Association and the AMA have had continuing liaison, but this has become somewhat extreme now because of the proposal made by the American Hospital Association, which if enacted into law, will have the effect of nationalizing the practice of medicine centered in the hospitals, with physicians on a salary basis. This radical proposal was withdrawn at the last minute, but shortly, some kind of revised plan will be sent to Congress. This problem continues to be a difficult and complex one.

Foundations. I will say that foundations are a nationally emerging movement. I know that you have had a good deal of discussion regarding foundations. It is an important new development. The National Association of Medical Foundations was just established, and the AMA Board of Trustees has appointed three members to its Board to show our continuing interest. In essence, the AMA is neutral and is doing what it can to help to provide information. I would say that this word "foundations," like H.M.O., means nothing. It is a legal instrument to set up a corporation, basically nonprofit, to conduct certain activities. There is no point in debating the concept of foundations. The question is how they are to be financed, the input and output, and their relationship to the county medical societies. All those questions are important.

Emergency medical services. I want to mention that a new ad hoc committee was appointed by the Board of Trustees to consider the number one problem in the nation, emergency medical services.

Drug abuse. Drug abuse is a serious problem. I will mention that in passing. You have been and will continue to hear quite a bit about it.

Quackery. I must mention quackery and the question of chiropractic. This continues to be a serious national problem. We are holding our own. I cannot mention chiropractic without mentioning Henry I. Fineberg, M.D., one of the great fighters in this area in every sense of the word. I have been around this country quite a bit and involved in this a good many years, and this needs continuous vigilance because chiropractic will never stop.

Peer Review. I do want to mention that the P.S.R.O. bill by Senator Bennett is again before the Congress. In any Federal bill which institutionalizes the peer review mechanism and places the Federal government in a substantial relationship with county societies across this country or with new institutions called peer review agencies, the county societies will play some kind of role. However, county medical societies cannot be peer review agencies but can and will play an important role in the agency, since most of the members of the peer review organization would be physicians. The point I am making is that a peer review organization that considers or evaluates the activities, diagnosis, procedures, and the fees of other physicians, acting voluntarily and totally within the private sector is one thing, but when peer review is on a contractual basis with the Federal government and the government pays the expenses, audits, and looks over the shoulder, that is something entirely different. I consider the Senate bill a dangerous change in the relationship of government to our profession and peer review functions. I hope this bill will not pass.

Conclusion. I would say that we are trying to build the best organization we can with the potential membership, to identify the problems of the nation, recognizing the serious gaps and deficiencies, and to try to meet those problems. The public does not demand answers for every problem, but they do demand responsiveness. If we do respond to these challenges and do build up our tremendous unity and strength, frankly, I am optimistic about the future.

Report on Physicians' Home*

. . . Speaker Way introduced Carl Goldmark, Jr., M.D., president of Physicians' Home, who addressed the House as follows:

May I preface my remarks about the Physicians' Home by reminding you that this does not require a two-thirds vote.

I feel very honored this afternoon as I address you on behalf of your Physicians' Home. Honored, when I realize the long list of distinguished physicians who have preceded me as president of the Physicians' Home. We must respect our less fortunate colleagues when we realize the fortitude with which they have faced adversity and financial hardship. We and they are most grateful to that small percentage of donors who have given additional monies over and above the minimal assessment to this worthy cause. They represent a little less than 10 per cent of our donors. I hope that next year we will be able to report a greater increase in these extra donations.

Lest you fear that this is going to be a fund-raising speech, let me reassure you this is not the case. I have been allotted a few minutes of valuable delegates' time to give you the annual report of the Physicians' Home, to tell you of our accomplishments, and to give you a brief look at our financial position.

During our last fiscal year, which closed in September, 1971, we expended $160,895 for beneficial aid. With this money, we gave help to 106 persons. Of these 106 persons, 23 were physician-members of our State Medical Society. There were 12 wives of physicians and 44 widows who received aid. A total of 27 other dependents of physicians completes the list. Of this $160,895, contributions from members and county societies accounted for $103,808. An additional $3,333 were donated by those hard working physicians' wives who comprise the Woman's Auxiliary. The balance of our money to reach the $161,000 figure plus our overhead expenses came from investment income.

I am sure you are all aware that each year the members of our State Medical Society are asked, at the time of annual dues, for a $2.00 donation to the Physicians' Home. This past year, Erie County assessed each of its members an additional $10 and sent us a check in the amount of $6,408. Ontario and Broome Counties assessed their members $10 each and thus added substantially to our income. To these three county societies, our heartfelt thanks from the entire Board of Directors of the Physicians' Home. I trust this good example will encourage other county societies to do likewise. In addition, there were many added donations from individual physicians in amounts of from $10 to $500.

As you can see from the foregoing mathematics, all monies received from you go for beneficial aid. All our overhead expenses come from investment income. Incidently, it is of interest that our administrative costs are only 18.5 per cent of our total budget; a truly outstanding achievement. This is due in great measure to the skill, devotion, and untiring efforts of our managing director, Beatrice Hoyt. She not only runs the office at 420 Lexington Avenue with brisk efficiency, but with warmth and understanding interviews applicants for aid, and assists them in drawing up budgets. Each year she visits nearly all our guests to keep us informed of their welfare and reassures us that our aid is doing as good a job as possible.

I am sure that having heard this annual report each year, you do not have to be told that there is no actual home, and that our guests, as we call them, are allowed to live in their own homes, in their own environment, among their friends and families.

I wish you all could read some of the touching letters we receive asking for aid. Your reactions would all be similar, "there but for the Grace of God, go I." We must indeed consider ourselves fortunate to be in a position to donate to this worthy cause. To show you what the Physicians' Home means to our guests, may I read you excerpts from several of the many letters we receive.

> 1. Please express to the Board of Directors of Physicians' Home my heartfelt thanks and appreciation for their continuing support to this family. Your belief in us as individuals who want to succeed, has been of tremendous value. It is enabling us to try to make the best of our lives. Thank you again.
>
> 2. This is just a note to thank everybody at Physicians' Home and to tell you what a relief from worry it is to know that I can count on being able to get along for the short span of life that I may yet have. This will help me have some outside help which I need, and I am very grateful for your interest

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*Dr. Goldmark addressed the House at the Tuesday afternoon session.

and generosity. (This lady, a doctor, is ninety-two years of age and lives alone in her own home, after having broken her hip and being in a nursing home for three months.)

3. Belatedly, I ask you to accept my heartfelt thanks for your kind letter of recent date. I am most grateful to you for your prompt, generous action on my behalf. To say it is a Godsend would leave it grossly understated. Without your charitable donation I would be forced to rely completely on my social security of less than $1,800 per year for support. Please convey to your associates at Physicians' Home my great respect and appreciation for their kindness to me and assure them of my deepest thanks.

These letters, although addressed to the directors and officers of the Physicians' Home, are really intended for our donors, the entire membership of the Medical Society of the State of New York, and its Womans' Auxiliary.

We look forward to your continuing support of this most essential activity of the Medical Society of the State of New York.

... The House applauded as Dr. Goldmark left the podium ...

Chairman of Student Delegation*

... Speaker Way recognized Charles D. Sherman, Jr., M.D., who introduced Mr. Allan Gibofsky, a student at Cornell Medical College, who addressed the House as follows:

I am privileged to appear before you this morning as the chairman of the newly organized Student Session of the State Medical Society. Your decision to encourage the formation of a medical student group demonstrates at once both your commitment to undergraduate medical education as well as your sincere desire to extend participation in the activities of the Society to those who seek to join you in the practice of medicine. As such, it is, therefore, of particular significance.

As you are well aware, the session consists of two student delegates chosen from each of the medical colleges within the State of New York. Although newly born, we have nonetheless begun our growth and development at a pace commensurate with that of our parent organization. To effect maximal communication between medical students and also to coordinate the activities of the session between meetings of the State Society, we have met and elected our officers.

We have set the date and place of our next organizational meeting, at which time we hope to present our Bylaws to the membership for formal ratification. Finally, and perhaps most important, we have even at this early stage begun consideration of several areas of concern to both the student community and the medical community as a whole. As a representative student group, we have even gone through the formal process of drafting a resolution and submitting it through our adviser to the Reference Committee on Medical Services.

And so you see, our time these past few days has been well spent, for we have come away with a definite sense of accomplishment as well as a positive feeling toward this system through which we ultimately hope to work. Our guiding principle at this time is to work within this State Society and with its membership to achieve a stronger marriage between the academic center and the independent practitioner, for we believe that without a certain union between the two, without a certain harmony, there can be no medical education.

With this in mind, the long-range goal of the Student Session becomes readily apparent. Stated simply, our goal as students is to become physicians, and while working toward this goal, we hope to derive as much as possible from our association with you as individuals and as a Medical Society.

Like any newborn, we fully expect to experience our growing pains in the months ahead. As we go through the stages of our development, we hope that you will be tolerant of us, and that you will continue to provide us with a source of good counsel as well as a model of progressive accomplishment. We anticipate that there may be those individuals who would strongly question the wisdom of involving students in the deliberative process since, by definition, the student is but a transient. To this objection we answer that just as a physician can no longer afford to be ignorant of the affairs that affect his greater society, neither can the student physician afford to refrain from becoming interested and involved in those areas of concern that may have a direct bearing not only on his later studies, but on his entire professional career.

In allowing us to form under your aegis, you have given us a mechanism for meaningful involvement in the affairs of this State Medical Society. It is up to us at this point to use this mechanism with integrity, dignity, and wisdom as befitting future members of the medical profession.

In closing, I should very much like to thank Charles D. Sherman, Jr., M.D., chairman of your Ad Hoc Committee to Study the Participation of Medical Students, who has since become our adviser, for his efforts on our behalf, and also Allison B. Landolt, M.D., chairman of the Westchester Delegation, for his advice and kind concern.

Speaking as a lifelong resident of the State of New York and as an individual who has received his entire educational training within its geographic borders, I look forward to that day when I may finally list my name as a member of this Medical Society. Speaking on behalf of the newly formed Student Session, which has elected me to serve as its chairman, I should just like to thank you once again for allowing me to speak at this session of the House of Delegates. Thank you.

... The House applauded as Mr. Gibofsky left the podium ...

Introduction of Guests*

... Speaker Way introduced the following guests from neighboring state medical societies, who addressed the House and were applauded:

Frederick C. Weber, Jr., M.D., president, Connecticut State Medical Society (Edward C. Hughes, M.D., host);

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*Mr. Gibofsky addressed the House at the Wednesday morning session.

* Dr. Davis, Dr. Glassmire, and Dr. Weber were presented at the Sunday afternoon session; Dr. Lewis, Dr. Lord, and Dr. Rosemond were presented at the Tuesday afternoon session; Dr. Ballantine and Dr. Dale were presented at the Wednesday morning session; and Dr. Bedwell was presented at the Wednesday afternoon session.

Charles R. Glassmire, M.D., immediate past president, Maine Medical Association (Thomas F. McCarthy, M.D., host);

H. Thomas Ballantine, Jr., M.D., president, Massachusetts Medical Society (Walter T. Heldmann, M.D., host);

Robert H. Lord, M.D., president, New Hampshire Medical Society (James M. Blake, M.D., host);

E. Vernon Davis, M.D., president, Medical Society of New Jersey (Ralph S. Emerson, M.D., host);

George P. Rosemond, M.D., president, Pennsylvania Medical Society (Milton Helpern, M.D., host);

Robert V. Lewis, M.D., president-elect, Rhode Island Medical Society (Walter Scott Walls, M.D., host);

Porter H. Dale, M.D., president, Vermont State Medical Society (Joseph J. Kaufman, M.D., host);

Theodore C. Bedwell, Jr., M.D., Chief Medical Officer of the Bureau of Health Insurance, Social Security Administration (Ralph S. Emerson, M.D., host).

Award Presentations*

. . . Speaker Way introduced President Himler who made the following presentations:

President's Citation for Distinguished Community Service

President Himler: As you are aware, every year, one or more President's Citations are awarded. The purpose of this citation is to encourage physicians to participate in their own local communities as citizens rather than purely as physicians and to recognize their responsibilities as members of those communities in which they work. Today, it is my pleasure to make two such presentations to two physicians who more than amply fulfill these requirements.

The first presentation is being made on the recommendation of Ralph C. Parker, Jr., M.D., president of the Medical Society of the County of Monroe, to a citizen of that county and the City of Rochester, and it goes to Robert J. Rivers, Jr., M.D., of Rochester. This is the information we have on Dr. Rivers.

In making his nomination, Dr. Parker said:

> Bob Rivers is the rare type of citizen who contributes unstintingly of his time and energies in service to his community and looks for no recognition whatsoever. He would be the last to seek or expect an honor such as the President's Citation and is, therefore, the more deserving of it. Dr. Rivers worked untiringly and effectively in the black community of this city during the tense and difficult times of the late 1960s.

And in addition, we find he worked extensively with the YMCA of Rochester and Monroe County. James C. Pratt, former director of the Rochester YMCA "Operation Outreach," wrote to express his admiration of Dr. Rivers.

> "Operation Outreach," is a special program developed by the YMCA for the purpose of reaching out to the children on the streets who needed help in education, recreation, and guidance. This program reached disadvantaged children in the inner city and others separated from the mainstream of society. Dr. Rivers was enthusiastic and dedicated to the success of the "Operation Outreach" program, and with his assistance the program became very successful and now serves as a prototype for other urban youth programs around the country.

Dr. Rivers' outstanding service obviously was well-recognized, however, for he was subsequently elected to the Board of Directors of the YMCA of Rochester and Monroe County. Dr. Rivers has bent his efforts to other youth work as well. Dr. Rivers is on the Board of Trustees of Princeton University and gives abundantly of his time to the youth of Princeton University making two or more trips each month from Rochester to Princeton for the purpose of working with the faculty and the administration of the school on the problems of black students. His primary concern is the admission of black students, their vocational preparation, and their individual development. Dr. Rivers' service to his community does not stop there. He is also an active member of the Urban League Board of Directors.

There is much more to this, but I think we will unduly embarrass Dr. Rivers.

Dr. Rivers, it is my great pleasure to make this award to you.

. . . The House rose and applauded . . .

President Himler: The next award goes to Carl E. Marlow, M.D., of North Syracuse, New York. This nomination was made by Roderick A. McLean, M.D., president of the Onondaga County Medical Society who said: "He has a nationally distinguished record of leadership activities with the Boy Scouts of America," and judging from the many letters from the various organizations of the Boy Scouts of America, he has indeed.

Dr. Marlow began in scouting as a Webelos Den Leader in 1962. He worked directly with very young boys who were preparing to enter the boy scout program. He next became Scoutmaster of Troop 150 in North Syracuse. This service lasted through 1969. He started this troop almost from scratch and within two years had one of the largest and most successful troops in the local council. It had a waiting list of boys anxious to become members.

While he was a scoutmaster, Dr. Marlow assisted the Scout Council in their leader-training courses, fund raising efforts, and by bringing in adult volunteers to work in the scouting program. In 1969, Dr. Marlow was also named Course Director for the local Junior Leadership Development Course which was designed to develop potential leaders from scouts who demonstrated extraordinary skills. The ideas he incorporated into his own training course were accepted nationally and are now being used across the United States in similar courses.

In 1970, he was appointed Course Director for Adult Leadership Development. This was an experimental

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*The President's Citations for Distinguished Community Service, the Vice-President's medal, the Redway Award, the ***Journal*** Distinguished Service Awards, and the announcement of the Fifty-Year Citations were presented at the Sunday afternoon session; the Albion O. Bernstein, M.D., Award was presented at the Tuesday afternoon session; and the Scientific Exhibits Awards and the Lucien Howe Prize were announced at the Wednesday morning session.

course in which he worked closely with representatives of the National Council of the Boy Scouts of America in developing a course to train Scouters in management technics. The syllabus he developed and successfully used is now the syllabus for the Woodbadge Courses held yearly throughout the nation. Most recently, he has been named to the Executive Board of the local Hiawatha Council where he serves as Woodbadge Coordinator for the Scout Council. He also worked with the Oneida District in a key fund-raising capacity.

The high regard of his community is expressed in the many letters we received supporting Dr. Marlow's nomination. The letters are typified by this quotation from a letter from the editor of his local newspaper:

> It is my pleasure to write to you on behalf of Dr. Carl Marlow who is running for a most high honor of your organization. Dr. Marlow has distinguished himself in our community, not only as a physician, but through his devotion to his community, his church, his family, and many other worthwhile endeavors. If we can be of any assistance, please do not hesitate to call.

Now, it was for his work with the Boy Scouts of America that I have awarded the President's Citation to Dr. Marlow, but his community insists we tell you something of Dr. Marlow's part in working for over five years toward the desired goal of a hospital to serve the large and rapidly growing area lying generally north of the City of Syracuse. As Thomas Hansen, secretary of the Hospital Planning Association, says in his letter:

> No one has recorded the endless hours Carl Marlow has devoted to all of this, in trips to Albany, meetings with our consultants, in conversations with his medical colleagues, in explaining matters to our own Board, talking to civic groups, interrupting his practice hours to pick up checks from contributors, none of us quite understand how he managed it while maintaining a large practice, raising a fine family, and being so active in Boy Scouts and other activities at the same time. Hospital North won't be named after Dr. Carl Marlow, or formally dedicated to him, Carl wouldn't want it that way, but it nevertheless is going to be a living monument to his courage, his leadership, and his incredible capacity for just plain hard work.

Here again, we have a great deal of very enthusiastic material praising Dr. Marlow, but I think probably, this is enough to indicate to you the very fine qualifications of Dr. Carl E. Marlow and the reasons for receiving this President's Citation, which I take pleasure in presenting to you, Dr. Marlow.

. . . The House rose and applauded . . .

Redway Award

. . . Speaker Way recognized William Hammond, M.D., editor of the ***New York State Journal of Medicine.***

Dr. Hammond: This is the eleventh winner of the Annual Redway Medal and Award for excellence in medical writing, and it goes to Susan T. Carver, M.D., of the New York Hospital-Cornell Medical Center, for her article on "Ecology of Coronary Heart Disease" which was published in the May 15, 1971, issue of the ***Journal.***

This study of the internal and external influences bearing on coronary heart disease summarized existing knowledge of the subject to date. Weighing all the evidence carefully, the author concluded that the pathophysiologic processes which determine subsequent risk are established early in life, and that future investigations of the genesis and prevention of coronary heart disease should be centered more in the periods of childhood and adolescence. This excellently written, informative example of medical writing is eminently worthy of high acclaim.

President Himler: Dr. Carver, it gives me great pleasure to make this presentation to you.

. . . The House rose and applauded . . .

Journal Distinguished Service Awards

President Himler: The recipients of the ***Journal*** Distinguished Service Awards are: Lloyd T. Barnes, M.D., and Alfred P. Ingegno, M.D.

I understand that Dr. Barnes cannot be here today, but most happily for us, Dr. Barnes' daughter, Miss Wyndolyn M. Barnes, is with us. I understand you are a second year medical student, and I presume we should address you as Miss Barnes rather than doctor. This is two years off.

This is the Citation for Distinguished Service to the ***Journal.*** Lloyd T. Barnes, M.D., has a long and enviable record of service to the ***Journal.*** He was appointed to the Associate Editorial Board to replace the late Peter Marshall Murray, M.D.; Dr. Barnes quickly became a highly valued member. His advice and guidance in regard to manuscripts in internal medicine has been immensely important. This Award measures our high regard and deep appreciation for all that Dr. Barnes is doing for the ***Journal.***

I think you are all familiar with the form of this Citation. Miss Barnes, it gives me great pleasure to present this Citation to you for Dr. Barnes.

. . . The House rose and applauded . . .

President Himler: The next citation gives me a good deal of pleasure. I have known Al for a good many years, more than either of us cares to admit. At one time, both of us were on the Editorial Committee of the State Medical Society's ***Journal.*** This again, is a Citation for Distinguished Service to the ***Journal.***

Alfred P. Ingegno, M.D., has served the ***Journal*** faithfully, first as member and later as chairman of the old Publications Committee and latterly as an Associate Editor for gastroenterology. His counsels in all matters have been of material help in placing the ***Journal*** in its forward position among its peers.

Al, it gives me special pleasure to present this Citation to you.

. . . The House rose and applauded . . .

Vice-President's Medal

President Himler: I think it would be presumptuous of me to tell you of the extremely high regard in which all of us hold our Vice-President, John Edward Lowry, M.D. We have all known him through the many years. It gives me great pleasure, indeed, to present him with this silver Vice-President's Medal and to tell him that this is a modest recognition of his many services to the Medical Society of the State of New York.

. . . The House rose and applauded . . .

Albion O. Bernstein, M.D., Award

. . . Speaker Way recognized Alfred A. Angrist, M.D., chairman of the Committee on Prize Essays, who escorted Samuel R. Powers, Jr., M.D., to the podium.

President Himler: The Albion O. Bernstein, M.D., Award is given to a physician, surgeon, or scientist who makes a widely beneficial discovery in medicine, surgery, or prevention of disease.

The donor of this award, Mr. Morris J. Bernstein, of New York City, died on October 14, 1971, at the age of eighty-eight, and we mourn his passing. In 1966, he established an institute in his name at Beth Israel Hospital, which launched inpatient and outpatient psychiatric services dealing with chronic addictive diseases. It became widely identified with the methadone treatment program based on research at Rockefeller University by Vincent P. Dole M.D., and Marie Nyswander M.D. I mention this to indicate the abiding interest Mr. Bernstein had in medicine, beyond the scientific award that is given under the auspices of the Medical Society of the State of New York.

In his will, Mr. Bernstein made a bequest to the Medical Society of the State of New York of $50,000 to continue the award which was named in honor of his son, Albion O. Bernstein, M.D., who died in an automobile accident while answering a medical call in 1940. Mr. Bernstein also bequeathed $100,000 for the establishment of a library in his son's name at our new headquarters building. It will house memorabilia of this scientific award program, and we owe Mr. Bernstein our gratitude for his generosity.

The 1972 competition for scientific achievement generated 15 nominations from throughout the country, and the winner chosen by Dr. Angrist's committee is Samuel R. Powers, Jr., M.D., professor of surgery, Albany Medical Center.

Trauma is the leading cause of death in the United States for persons up to thirty-eight years of age. Dr. Powers' work involved a study of the disturbed physiology associated with the adult form of the respiratory distress syndrome. His studies indicated that respiratory insufficiency was a foremost precipitating cause of death following successful resuscitation. The syndrome, I might mention, shows progressive hypoxia even while breathing 100 per cent oxygen, and this occurs also despite respiratory support. This is quite similar to the syndrome in newborn infants, and these advances may well be applied to this frequent cause of death in infants.

Dr. Powers' group demonstrated that functional residual capacity can be increased in controlled fashion by increasing end-expiratory pressure. This results in a fall in venous admixture and a progressive rise in arterial oxygen tension. His method has allowed for maintenance of lung volume at normal capacity to decrease the morbidity and mortality rate in respiratory distress syndrome.

It gives me great pleasure, ladies and gentlemen, to present the 1972 Albion O. Bernstein, M.D., Award for a widely beneficial scientific discovery to Samuel R. Powers, Jr., M.D., "in recognition of his work in the development and application of computer technology and modern engineering methods to the study and correction of the adult form of the respiratory distress syndrome following trauma."

Dr. Powers, my congratulations to you.

. . . The House rose and applauded as Dr. Powers left the podium . . .

Scientific Awards

Speaker Way recognized Albert H. Douglas, M.D., chairman, Scientific Awards Subcommittee, who presented the following report.

To the House of Delegates, Gentlemen:

The Committee on Scientific Awards is as follows:

Albert H. Douglas, M.D., *Chairman*	Queens
R. Scott Howland, M.D.	Chemung
Leonard F. Ciner, M.D.	New York

The scientific exhibit awards are given in two categories: Group I awards are made for exhibits of individual investigation which are judged on the basis of originality and excellence of presentation. Group II awards are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of data.

The awards of Group I, Scientific Research, are as follows:

First: "Surgical Treatment of Coronary Atherosclerosis," C. W. Lillehei, M.D., R. G. Carlson, M.D., and A. J. Lande, M.D., The New York Hospital-Cornell Medical Center, New York City.

Second: "New Trends in the Diagnosis and Treatment of Osteogenic Sarcoma," Ralph C. Marcove, M.D., Andrew Huvos, M.D., and Nael Martini, M.D., Memorial Hospital for Cancer and Allied Diseases, New York City.

Honorable Mention: "Current Advances in the Diagnosis and Treatment of Peripheral Vascular Diseases," Bok Y. Lee, M.D., Veterans Administration Hospital, Castle Point and "Duodenal Fixation Anomalies: A Cause of Persistent Vomiting in Children," Anita Falla, M.D., Diller Groff, M.D., and James Marquis, M.D., New Jersey College of Medicine and Dentistry, Newark, N.J.

The awards in Group II, Clinical Research, are as follows:

First: "Observation of Subcapsular Lymphatics in Normal and Diseased Human Pancreas," Benedict M. Reynolds, M.D., Misericordia Hospital, The Bronx.

Second: "New System for Teaching Proctosigmoidoscopic Morphology," H. David Markman, M.D., and Herbert Volk, M.D., Albert Einstein College of Medicine of Yeshiva University, The Bronx.

Honorable Mention: "An Educational Experience in Historic Medicine," Milton Gordon, M.D., Morris R. Keen, M.D., and Noel H. Miller, M.D., Public Health Education Committee of the Suffolk Academy of Medicine and the Suffolk County Medical Society, Hauppauge; and "Female Cancer Detection Mobile Unit," Philip Strax, M.D., American Cancer Society, New York City.

. . . The House applauded . . .

Lucien Howe Award*

Speaker Way recognized Alfred A. Angrist, M.D., chairman of the Prize Essays Committee, who introduced Thomas A. Poole, M.D., winner of the Lucien Howe competition with his manuscript on "Stress Distribution in Keratoconus."

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*The Lucien Howe Award was presented at the Wednesday morning session.

President Himler: It is a pleasure, Dr. Poole to present you with this check, the Lucien Howe Essay Prize, (see report of the committee, page 1364).

. . . The House rose and applauded . . .

Fifty-Year Citations

President Himler: There is one other pleasure reserved for lame-duck presidents and that is the presentation of the Fifty-Year Citations.

Each year, on this occasion, the President of the State Medical Society takes notice of those of our colleagues who have served their fiftieth year in the practice of medicine. It should be written in the records of this 166th Annual Meeting of the House of Delegates that we pause to congratulate them for their devotion to the service of their fellow men. This year, we honor 248 physicians. They will either receive their citations in the mail soon after this convention or they will be presented to them by their own county medical societies.

I am sure you will all join me in wishing them good health and happiness in the years ahead as they continue their good work, or many years of great pleasure in well-merited retirement. To all these physicians, I wish to extend my personal good wishes and congratulations.

. . . The House applauded . . .

The list of recipients of the citations follows:

Albany
Alvah Robert Davignon
Alva Gwin McCord

Bronx
Emanuel W. Billard
Morris G. Blutstein
Leo Max Davidoff
Dora Diamand
William Ebner
Max Friedman
Berthold Fleischmann
Harry Gordon
Irving I. Gottesman
Leo Gourvey
Louis Leiter
Thomas Levin
Maximillian Lowenthal
Abraham Mahler
Max Pollock
Lucien Quiton
Leonard Rosett
Gamliel Saland
Julian Scholle
Max Joseph Shulman
Augusta Skodnick
Abraham Bernard Tamis
Stanley M. Wershof
Berthold Weingarten
Hugo Wit

Broome
Frank Guy Moore
Ray Wilson Peterson
Claude Remell Young

Chautauqua
Eric Kaminski
Ernest J. Kelley

Cortland
Walter M. Dresel

Dutchess
Paul Jacobson
Earle W. Voorhees

Erie
Max S. Aber
Paul Beck
Arthur N. Bodenbender
Archibald S. Dean
George Graydon Martin
Kurt Mathews
Daniel R. Tronolone

Jefferson
Alfred Morrell Stanley

Kings
George Edward Anderson
Glenna Garratt Caddy
Harold S. Douglas
Bernard Ehrenpreis
Joseph De Filippi
Abraham Fine
Abraham Louis Framer
Kurt Freundlich
Julius Dudley Fritz
Mary Margaret Goerner
Kenneth G. Jennings
Sigmund Karfiol
Jacob Kravitz
Saul F. Livingston
Anna B. McGrath Meehan
Joseph Irwin Nevins
Italo A. Palmieri
Maria Pollara-Ferrauto
Rosa E. Prigosen
Max S. Rabinowitz
Jonas Reich
Hilda Ries
Sydney Shapin
Leonard Shapiro
Max B. Sholod
Isaac Skir
Ainsworth L. Smith
Hugh Ernest Stedfeld
H. Melmuth Sternberg
Adele Emily Streeseman
Harry Wexler

Monroe
Frederick William Bush
Aaron Davis
Stanley H. Erlenback
Clyde Alexander Heatly
Franklin K. Holzwarth
Frank W. Ingram
Morris J. Moskowitz
Lynn Rumbold

Nassau
Walter Cane
Robert Hugh Feldman
Wendell Lochead Hughes
Emma I. Jacoby

Fernand Vistreich
Erich Wiesen

New York
Joseph Andrei
Rosa Aronoff
Arthur Bamberger
Edward Joseph Bassen
Otelia J. Bengtsson
Kurt Berliner
Alice R. Bernheim
John Hans Birnbaum
Beatrice Bolan
Rose Cohen Boyer
Max Braun
Lester Breidenbach
Clarence De La Chapelle
Simeon O. Chlenoff
Tzu Pei Chou
George Eaton Daniels
Max David
Julius D. Davis
Morris Dessauer
Oskar Diethelm
Joseph George Druss
Dorian Eisenklam
Helen Joan Fabian
Josef Faltitschek
Leo M. A. Fleischer
Edward M. Freeland
Jacob Robert Freid
Joseph John Fried
Jacob Friedman
Helen Gavin
H. Charles Gerard
Harry Gold
Myron E. Goldblatt
William Goldring
Eli Goldstein
Frederick W. Good
Josef Gudemann
Edwin Toal Hauser
Louis Arthur Hauser
Franz Jacob Herrmann
Hanna H. Hirsh
Werner Hochstetter
Esther Holdengraeber
Edward Adolph Horowitz
Marie B. Karelitz-Karry
Emanuel D. Kotsos
Anna S. Creighton Laing
Michael Lake
Abraham Lew
Isaac Lewenter
Maximilian Lewitter
Max Liebmann
Adolf Lowenthal
Sigmund Mage
Kirby Armstrong Martin
Richmond L. Moore
Paul Colhoun Morton
Leon Motyloff
Joseph B. Moszczynski
Eduard Muehsam
Walter G. Nauenberg
John Neilson, Jr.
Arthur Raymond New
Irving Newman
Savas T. Nittis
Olga Brody Oller
Gordon D. Oppenheimer
Osborn Poor Perkins
Coleman Berley Rabin
Milton Reder
Walter Redisch
Benjamin Rice
Rieva Rosh
Henry M. Sarason
David Scherf
Alfred Schick
Martin Schreiber
Sidney Pincus Schwartz
Paul Benedict Sheldon
Ned Shnayerson
Joseph Siegel
Philip Slater
Clara Chaje Steg
Clarence R. Straatsma
Emile G. Stoloff
Joseph Samuel Stovin
Joseph Frank Szoo
Bronislawa Szuldberg
Henry Martin Taterka
John Arthur Taylor
Richard A. Tuch
Harry Vesell
Rudolf Weil
Imre Weitzner
Hermann L. Wenger
Paul Wermer
Seymour Wimpfheimer

Niagara
Franklin Turner Clark
Irwin Miller Walker

Oneida
Rudolf B. Freund
Harold Daniel Sehl
Samuel Waterman Sweet

Onondaga
William Russell Dolan
Gerald P. Metzler
Leonard E. Nichols
Raymond Joseph Pieri
Benedict W. Riefenstein
Warren Edward Saile
Morris A. Schoenwald

Orange
Emil Herman
Daniel Rakov
Yetta Shevell

Queens
Hans Bergmann
Edward James Carey
Theodor Friedrichs
Albert Frohman
Ernest Martin Fuss
Thomas Murray Grodin
Maurice Grozin
Forrest Hayes
William Heilbrun
Harry L. Kava
Kurt E. Jacoby

Emanuel F. Kalina
Mark G. Kantor
Jules Lessem
Howard Bryson Miller
Louis J. Morse
James Edward Stack
James F. Tobin
James Bernard Tormey

Rockland
Isaac N. Wolfson

Schenectady
William M. Mallia
Kamil Jaromir Neuman
Beverly Leland Vosburgh

Suffolk
Charles Buckman
Ernest Bert Hofman
Paul Fordham Nugent

Sullivan
Jacob Rubin

Tompkins
Marjorie Murray Burtt
Jennette Evans

Ulster
Leon S. Gray
Alfred S. Weigert

Wayne
Franklin L. Myers

Warren
Irving R. Juster

Westchester
Charles Wilson Aitcheson
Siegfried Alexander
Arturo A. Brindisi
Joshua William Davies
Kenneth Gibson Hancher
Frederick H. Johnston
Theron I. Lane
Richard A. Mandelbaum
Joseph Dominic Marraffino
Albert Aloysius Sichel
Arthur Daniel Sobey
Philip Zelvin

Wyoming
Leo L. Trnka

Change in The Order of Business

. . . **Speaker Way:** The chair has an important matter to bring before the House. The rules of the House indicate that we hear from our president-elect on Sunday afternoon, who would then present his program for the coming year. I met, as an ex officio member, with the House Committee on Constitution and Bylaws and learned that one of the major changes recommended in the revision of the Constitution and Bylaws, which we have voted to have lay over for a year, is a change in the order of business so that the new president, our current president-elect, would be presented to the House on Thursday, immediately after the voting, when the ballots are being counted, and at that time present his program for the coming year. May I have your permission to so change the order of business. I will not put it to a vote unless someone objects. There being no objections, it is so ordered.

House Committee on Constitution and Bylaws

. . . Carl Goldmark, Jr., M.D., chairman, reported as follows:

The House Committee on Constitution and Bylaws consists of the following members:

Carl Goldmark, Jr., M.D., *Chairman*	New York
George L. Collins, Jr., M.D.	Erie
Gerald L. Glaser, M.D.	Monroe
Milton J. Greenberg, M.D.	Washington
Swen L. Larson, M.D.	Chemung
Francis A. Stephens, M.D.	Albany
George T. C. Way, M.D., *ex officio*	Dutchess

The House Committee on Constitution and Bylaws has held three meetings during the past year, on August 18, October 6, and November 18. The committee considered the proposed revisions of the Society's Constitution and Bylaws and the *Principles of Professional Conduct* and the twelve resolutions referred to it by the 1971 House of Delegates, and reached the following conclusions and recommendations:

71-20. Amendment to the Constitution and Bylaws Article IX, Funds, First Paragraph*
Introduced by Medical Society of the County of Schenectady

WHEREAS, The assessment of monies, and the levying of dues is the prerogative and duty of the entire House of Delegates of the Medical Society of the State of New York; and

WHEREAS, Any other method denies each member his right to be represented in determining the fiscal requirements of the Medical Society of the State of New York; and

WHEREAS, The present Constitution of the Medical Society of the State of New York now allows the Council the privilege of assessing its members when the House of Delegates is not in session; therefore be it

Resolved, That the first paragraph of Article IX of the Constitution and Bylaws of the Medical Society of the State of New York which reads as follows: "Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session. The dues or assessments of each junior member shall be one-third the amount levied on each active member." be amended by deleting the words "or by the Council when the said House of Delegates shall not be in session."

This paragraph would then read as follows: "Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates. The dues or assessments of each junior member shall be one-third the amount levied on each active member."

The House, after discussion, voted not to adopt resolution 71-20.

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*See Reference Committee report following resolution 71-86 on page 1337.

71-21. Amendment to Constitution to Limit Assessment by Action of the Council

Introduced by Medical Society of the County of Chautauqua

WHEREAS, The Constitution of the Medical Society of the State of New York as presently drawn up gives the Council fiscal powers which are greater than is thought prudent by a majority of the membership of the Medical Society of the State of New York; therefore be it

Resolved, That Article IX, paragraph 1, of the Constitution of the Medical Society of the State of New York be amended by placing a period after the word "delegates" in line 5, deleting the phrase "or by the Council when the said House of Delegates is not in session," and inserting thereafter the following sentence: "When the House of Delegates is not in session, the Council may raise funds by levying assessments in an amount not to exceed $10.00 (ten dollars) per member per year."

Article IX, paragraph 1 would then read: "Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates. When the House of Delegates is not in session, the Council may raise funds by levying assessments in an amount not to exceed $10.00 (ten dollars) per member, per year. The dues or assessments of each junior member shall be one-third the amount levied on each active member."

The House voted not to adopt resolution 71-21.

71-46. Amendment of Constitution and Bylaws so that Approval of the House of Delegates or Component Societies is Required for an Assessment

Introduced by Medical Society of the County of Schoharie

Resolved, That the Constitution and/or Bylaws of the Medical Society of the State of New York be amended or revised to require the approval of the House of Delegates, or the component county medical societies, for an assessment on the members of the Medical Society of the State of New York.

The House voted not to adopt resolution 71-46.

71-86. Amendment to Article IX of the Constitution

Introduced by Medical Society of the County of Warren

WHEREAS, Article IX of the Constitution of the Medical Society of the State of New York provides for unlimited raising of "funds in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session"; and

WHEREAS, The assessment for the purpose of completing a building already under construction is probably not an emergency financial situation; and

WHEREAS, The State Medical Society holds a lever for coercing its members to maintain membership in this Medical Society because of its malpractice insurance program; therefore be it

Resolved, That article IX of the Constitution of the Medical Society of the State of New York be amended as follows: Delete the following phrase, "funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session."

Resolutions 71-20, 71-21, 71-46, and 71-86 were considered together since they all pertain to the raising of funds. *For the following reasons, your committee recommends that these resolutions not be adopted.*

1. The restricting of power to levy funds to the House of Delegates, thus taking this power away from the Council, would necessitate convening the House for assessments. This procedure would be expensive, time-consuming, and cumbersome.
2. The recent action taken by the Council in levying a special assessment was taken after extensive research and study and was in the best interest of the members of the Society. The basic consideration was not to saddle future generations of physicians by spreading out the assessment over a period of years.

The House voted not to adopt resolution 71-86.

71-22. Osteopathic Physicians in Medical Society of the State of New York

Introduced by Medical Society of the County of Erie

WHEREAS, The American Medical Association has amended its Bylaws so that qualified doctors of osteopathy may be admitted to active membership in that organization; and

WHEREAS, The action of the American Medical Association is a necessary first step toward the desirable objective of ending the coexistence of osteopathy as a separate discipline of medical education and for the delivery of medical services; and

WHEREAS, A number of state medical societies have amended their constitutions so that doctors of osteopathy who have been given unlimited licenses to practice medicine may apply for full active membership in such state medical societies; therefore be it

Resolved, That this House of Delegates instruct the House Committee on Constitution and Bylaws to prepare appropriate amendments to the bylaws to permit qualified doctors of osteopathy to be admitted to membership in the Medical Society of the State of New York and that such amendments be presented to this House for action at the 1972 annual meeting.

Resolution 71-22 concerns osteopathic physicians in the Medical Society of the State of New York.

It was the feeling of the committee that, since this resolution was referred to it without direct action of the House on the *Resolved* clause, which states in part that the House of Delegates *instruct* the House Committee on Constitution and Bylaws to prepare appropriate amendments to permit qualified doctors of osteopathy to be admitted to membership, *the committee should take no action on this resolution.*

The House, after discussion, voted to adopt resolution 71-22, with directions to the House Constitution and Bylaws Committee to present a resolution, properly worded, for action by the House of Delegates at its meeting in February, 1973.

71-53. Change in Age Requirement for Life Membership

Introduced by Medical Society of the County of Schenectady

WHEREAS, It has become increasingly evident that physicians in the Medical Society of the State of New York are leaving practice at an earlier age; and

WHEREAS, The increasing dues requirements are becoming more difficult for retired physicians to meet; therefore be it

Resolved, That Chapter I, Section 6, of the Constitution and Bylaws of the Medical Society of the State of New York be changed by deleting the words "seventy years" and substituting the words "sixty-five years," so that Chapter I, Section 6, shall then read; "An active member in good standing on reaching the age of sixty-five, or who is permanently disabled . . . ."

Resolution 71-53 calls for a change in the age requirement (from seventy years to sixty-five years) for Life Membership. In view of the facts that the American Medical Association's limit for life membership is age seventy, adoption of the lower age would result in loss of income and that new members are joining the Society at an older age than in the past, *the committee recommends that resolution 71-53 not be adopted.*

The House, after discussion, voted not to adopt resolution 71-53.

71-56. Life Membership

Introduced by Medical Society of the County of Kings

WHEREAS, During the past year, the Council of the Medical Society of the State of New York approved 213 members for remission of dues and has elected a total of 2,791 to Life Membership through the year 1970, constituting almost 12 per cent of the total membership of 27,047, and this total is steadily increasing; and

WHEREAS, Statistics show that the membership of the Medical Society of the State of New York is not increasing as gains are balanced by losses due to deaths, resignations, and nonpayment of dues; and

WHEREAS, Advertising sales in the ***New York State Journal of Medicine*** declined by $3,679 for the first ten months of 1970 and technical exhibitors are cutting back because of austerity programs with a resultant monetary loss to the Society; and

WHEREAS, Because of rising building costs the Council found it necessary to assess each member $75; and

WHEREAS, The Internal Revenue Service ruling that all income unrelated to the purposes of an exempt organization will now be taxable and may create an additional liability to the Medical Society of the State of New York of about $25,000 on 1970 interest and dividend earnings alone; and

WHEREAS, In the 1970 House of Delegates' report, the executive vice-president states, "I am compelled to remind you that we are operating on a 'tight budget' . . . . We must confine our expenses to necessities only"; therefore be it

Resolved, That Chapter I, Section 6, of the Bylaws of the Medical Society of the State of New York be amended as follows: "An active member in good standing for ten years or more, who becomes permanently disabled or who has reached the age of seventy years and is retired from active practice, may apply for Life Membership . . . ."

Resolution 71-56 pertains to life membership and was considered in two parts. The first part concerns disability and the second part concerns age seventy.

The committee voted to approve life membership for an active member in good standing for five years or more who becomes permanently disabled, since the committee felt that a person who is disabled permanently should not be required to be a member for ten years; the disability should be the controlling factor.

The committee disapproved Life Membership for physicians who have reached the age of seventy and are retired from active practice, since it felt that the addition of retirement is not justified.

The committee, therefore, recommends the adoption of the following substitute resolution:

> *Resolved,* That Chapter I, Section 6 of the Bylaws of the Medical Society of the State of New York be amended to read as follows: "An active member in good standing, on reaching the age of seventy years, or an active member in good standing for five years or more who is permanently disabled, may apply for life membership . . . .

The House voted to adopt the substitute resolution.

71-62. Medical School Representation in the House of Delegates of the Medical Society of the State of New York

Introduced by Medical Society of the County of Monroe

WHEREAS, There is a growing need for all the major components of the medical profession to work together to respond to an increasing variety of outside influence in the practice of medicine as well as to initiate constructive steps forward; and

WHEREAS, The previous close relationship between the "academic community" and the practicing physician, which has deteriorated in the last few decades, needs to be strengthened again for the benefit of both groups and the general public; and

WHEREAS, One means of increasing rapport between medical schools and organized medicine is to involve official representatives of the medical schools in the deliberations of the governing body of the Medical Society of the State of New York; therefore be it

Resolved, That the Medical Society of the State of New York ask each medical school to appoint one official representative to serve as a delegate, with full privileges, in the House of Delegates of the Medical Society of the State of New York.

Resolution 71-62 concerns medical school representation in the House of Delegates of the Medical Society of the State of New York. The committee voted to amend the *Resolved* portion of this resolution by the addition of the following: "Provided that such delegate fulfills the requirements necessary to be a delegate to the House of Delegates of the Medical Society of the State of New York."

It was the opinion of the committee that a delegate should not be a nonmember of the Society, which would be possible under the original wording of this resolution; and that to retain the increased interest of medical students in organized medicine, something must be done to give the schools a more active role in the government of the State Medical Society. This seems to be the most feasible approach at the present time.

The *Resolved* portion would then read as follows:

Resolved, That the Medical Society of the State of New York ask each medical school to appoint one official representative to serve as a delegate, with full privileges, in the House of Delegates of the Medical Society of the State of New York, provided that such delegate fulfills the requirements necessary to be a delegate to the House of Delegates of the Medical Society of the State of New York.

The committee recommends the adoption of resolution 71-62 as amended.

The House, after discussion, voted to amend the amended portion of the *Resolved* by the addition of "in the State of New York" following the words "each medical school"; by the deletion of the phrase "provided that such delegate fulfills the requirements necessary to be a delegate to the House of Delegates" and the substitution of the words "is a member." The amended *resolved* portion would then read as follows:

> *Resolved,* That the Medical Society of the State of New York ask each medical school in New York State to appoint one official representative to serve as a delegate, with full privileges, in the House of Delegates of the Medical Society of the State of New York, provided that such delegate is a member of the Medical Society of the State of New York.

The House, after further discussion, voted to amend the resolution further, as follows:

> *Resolved,* That Chapter II, Section 1, of the Bylaws, following (E) Commissioner of Health . . . be amended by the addition of (F) to read: "A representative from each of the medical schools in the State of New York, provided that the representative, serving as a delegate, is a member of the Medical Society of the State of New York."

The House then voted to adopt resolution 71-62 as amended by the reference committee and the House.

71-66. Election of the Council of the Medical Society of the State of New York by Districts

Introduced by Onondaga County Medical Society

WHEREAS, More direct responsibility and representation to the Council of the Medical Society of the State of New York is important; and

WHEREAS, This would improve two-way communication and responsiveness between the State and county medical societies; and

WHEREAS, This would strengthen and improve the importance of the individual districts of the Medical Society of the State of New York; therefore be it

Resolved, That the members of the Council of the Medical Society of the State of New York be elected by each district; and be it further

Resolved, That the Bylaws of the Medical Society of the State of New York be changed as follows:

1. Chapter III, Section 1, delete the word "councilors."

2. Chapter III, Section 2, paragraph 3, delete the paragraph and substitute the following: "Councilors shall be elected by each district branch on the following basis: three councilors shall be elected annually for a term of three years."

3. Chapter XIII, Section 1, insert the words, "a Councilor to the Medical Society of the State of New York for a term of three years," between the words "a president for two years" and "a district delegate" so that Section 1 shall then read as follows: "Each district branch shall elect a president for two years, a councilor to the Medical Society of the State of New York for a term of three years, and a district delegate to the House of Delegates for two years, but with the approval of the Council a district branch may elect a president for one year."

Resolution 71-66 concerns election of members of the council by districts.

Since the number of members vary greatly from one district to another, with the possibility that there would be 600 in one and 6,000 in another, and there would not be proportional representation, the *committee recommends that resolution 71-66 not be adopted.*

The House, after discussion, voted not to adopt resolution 71-66.

71-67. Election of American Medical Association Delegates by District Branch

Introduced by Onondaga County Medical Society

WHEREAS, It is necessary to restore more direct responsibility of American Medical Association Delegates to the area and region they serve; and

WHEREAS, After the abolishment of mandatory American Medical Association membership not all of the members of the House of Delegates of the Medical Society of the State of New York will necessarily be members of the American Medical Association; and

WHEREAS, The problems which concern the American Medical Association differ in various areas of the State; therefore be it

Resolved, That the Delegates from the Medical Society of the State of New York to the American Medical Association's House of Delegates be elected from and by each district branch in direct relation to the number of physicians in that district branch with a maximum of five allowable Delegates for any one district branch; and be it further

Resolved, That the Constitution and Bylaws of the Medical Society of the State of New York be changed as follows:

1. Chapter III, Section 1, be changed to read: "The officers, councilors, and trustees of the Society and the "at-large" delegates to the American Medical Association shall be nominated and elected as the first business of the last scheduled session of the annual meeting of the House of Delegates. A member of the Society who is in arrears for county dues or State Society dues or assessments shall not be eligible for any office or entitled to vote for any officer, councilor, trustee, or delegates."

2. Chapter III, Section 6, be deleted and replaced by the following: "The following method shall govern the election of delegates and alternates according to the following formula based on American Medical Association membership in the respective district branch:

1 to 1,000 members	one delegate
1,000 to 3,000 members	two delegates
3,000 to 5,000 members	three delegates
5,000 to 7,500 members	four delegates
7,500 to 10,000 members	five delegates

"There shall then be a number of delegates 'at-large,' this number to be determined by the number of delegates remaining to the Medical Society of the State of New York following the district branch election of American Medical Association delegates. These 'at-large' delegates shall be elected at the appropriate annual meeting of the House of Delegates of the Medical Society of the State of New York.

> "Nominations shall be made for not less than double the full number of delegates to be elected, and the delegates shall be declared elected in the order of the highest number of votes cast until the allotted number shall have been chosen. A corresponding number in the highest order of votes cast shall be declared alternate delegates.
>
> "When the full quota of elected delegates or alternate delegates is not available for attendance at the meeting, the president shall appoint and certify a sufficient number to complete the quota."

Resolution 71-67 concerns election of AMA delegates by District Branch.

Because of the following reasons, *the committee recommends that resolution 71-67 not be adopted:*

1. Delegates to the AMA represent the State and not the districts;
2. Delegates should be elected by the State as a whole and not by parts thereof;
3. The number of members in the districts vary greatly, as previously indicated, so that one district may have 600 members and another 6,000.

The House, after discussion, voted not to adopt resolution 71-67.

71-77. Student American Medical Association Participation in State Medical Society Activities

Introduced by Charles D. Sherman, Jr., M.D., as an individual

> WHEREAS, Today's medical students have the maturity and interest necessary to participate with members of organized medicine as they wrestle with an increasing variety of problems in our changing health scene; and
>
> WHEREAS, The American Medical Association and many state societies are already involving students in their activities and finding such efforts to be worthwhile; and
>
> WHEREAS, Our own students in New York State have expressed the desire to work within organized medicine; and
>
> WHEREAS, We need to reverse the trend toward fragmentation of the profession and involve all elements of our profession in a more united voice in response to outside thrusts and initiation of needed activities in the health field; therefore be it
>
> *Resolved,* That the Medical Society of the State of New York form a section composed of student representatives from each medical school who shall meet and deliberate as a "special section" and be allowed to elect two delegates to the House of Delegates with full voting privileges; and be it further
>
> *Resolved,* That initially two representatives from each chapter of the Student American Medical Association be elected to this "special section" by the chapters involved.

The report of the Special Committee to Study the Participation of Medical Students in the Medical Society of The State of New York, dated September 29, 1971, concerning resolution 71-77 was discussed.

The Committee on Constitution and Bylaws voted to delete the second *Resolved* and to amend the first *Resolved* to read as follows:

> *Resolved,* That the Medical Society of the State of New York form a session composed of two student representatives selected by each medical school in New York State, and whose selection shall be certified by the dean of the medical school as being representative of that school. After meeting in two successive years as sessions, they may then form a section in accordance with the Bylaws of the Medical Society of the State of New York, and provide for a delegate and an alternate to the House of Delegates with voice and vote.

The committee on Constitution and Bylaws recommends the adoption of resolution 71-77 as amended.

The House, after discussion, voted to adopt resolution 71-77 as amended.

71-34. Revision of the Constitution and Bylaws of the Medical Society of the State of New York

Introduced by Edward Siegel, M.D., as an individual

> WHEREAS, The House of Delegates of the Medical Society of the State of New York, at its meeting in February, 1968, approved a recommendation of the House Committee on Constitution and Bylaws that a detailed study of the Constitution and Bylaws be conducted; and
>
> WHEREAS, The Ad Hoc Committee to Study the Constitution and Bylaws has presented in its annual report to the House, a draft of a revised Constitution; therefore be it
>
> *Resolved,* That the recommended revision of the Constitution and Bylaws of the Medical Society of the State of New York by the Ad Hoc Committee to Study the Constitution and Bylaws, as presented in its annual report, be referred to the House Committee on Constitution and Bylaws.

Resolution 71-34 states that the recommended revision of the Constitution and Bylaws of the Medical Society of the State of New York, prepared by the Ad Hoc Committee to Study the Constitution and Bylaws, as presented in its annual report, be referred to the House Committee on Constitution and Bylaws. This resolution has been acted on by the committee's overall consideration of the subject.

Working with the revision prepared last year by the ad hoc committee and a complete history of our present Constitution and Bylaws prepared by the Division of Research and Planning, your committee submits for your consideration a proposed revision of our present constitution and bylaws. This revision presents a streamlined version of our organization, eliminates many discrepancies, recognizes actual practices and procedures which have developed over the years, and includes in one single document, called the Bylaws, what we feel is a practical, workable, and efficient framework for the State Society.

To facilitate your study of the proposed revision, Tables I, II, and III list the substantive new material, substitutions, and deletions, with references to our present constitution and bylaws and to the proposed revision.

Much thought has gone into this proposed revision in an attempt to clarify all details. You will note some major changes, for example, the upgrading of the office of vice-president, the requirement for New York State licensure for membership, the provision for action on life membership applications, the requirement that officers, councilors, and trustees shall practice or maintain a residence or office in the State of New York, and recognition of our annual convention with its various parts. The annual meeting of the State Medical Society has been transferred to a morning meeting to include the introduction of the new president.

Many minor changes are included and are indicated in italics in the proposed revision; substantive changes are listed in the tables.

We particularly want to thank the Division of Research and Planning for the staff work which has made this proposed revision possible.

At the 1971 meeting of the House of Delegates, the House Committee on Constitution and Bylaws was charged with doing a complete study and revision of the Constitution and Bylaws of the State Medical Society. The results of our deliberation in draft form follow. We recommend that this draft be accepted and be laid over for one year.

The Speaker of the House stated that unless there was objection, he would rule that this new report, which is different from last year's, be laid over for a year and be considered by this group in 1973.

There being no objection from the House, it was so ordered.

DRAFT OF PROPOSED REVISION OF BYLAWS*
MEDICAL SOCIETY OF THE STATE OF NEW YORK

ARTICLE I. NAME AND PURPOSE

The name and title of the State Society shall be the Medical Society of the State of New York. The purposes of the State Society shall be: to federate into one organization the medical profession of the State of New York; to extend medical knowledge and advance the science and art of medicine; *to establish the Principles of Professional Conduct which shall be binding on the members of the State Society, the members of the component county medical societies, and the members of the component district branches, in all matters in their relation to each other and to the public; to enhance the delivery of medical care of high quality to all people in the most economical manner; to promote the betterment of community* health; and to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State.

ARTICLE II. MEMBERSHIP

SECTION 1. CLASSES

The membership in the State Society shall be divided into four classes: (a) active, (b) junior, (c) life, and (d) honorary.

Active and junior membership shall be limited to graduates of recognized medical schools who have completed not less than four satisfactory courses of at least eight months each in a medical school in the United States of America or Canada registered as maintaining at the time a standard satisfactory to the medical licensing authorities of the State of New York, or in a medical school in a foreign country maintaining a standard not lower than that prescribed for medical schools in this State; *and who are licensed by the State of New York.*†

Junior members shall be those members who have been graduated from medical college not more than five calendar years, not counting *active service in the armed forces of the* United States or *in the* United States Public Health Service, or who have not completed their continuous residency training, and *who are* licensed by the State of New York. In no case may junior membership continue more than seven years after the date of graduation from medical school.

The active and junior members shall be all active and junior members in good standing of the component county medical societies. A copy of the roster of such members, certified to be correct by the respective secretary of each component county medical society, shall be evidence of the right of the members whose names appear therein to membership in the State Society.

Junior members may become active members at any time during the period of allocated time deferment by paying the dues and assessments to their respective component county medical societies and to the State Society.

A junior member shall automatically become an active member of his component county medical society and the State Society on the expiration of the allocated time and the payment of the current active membership dues and assessments of his component county medical society and the State Society.

An active member in good standing, on reaching the age of seventy years, or who is permanently disabled, may apply for life membership. He shall apply for such life membership to the component county medical society of which he is a member. His application shall be governed by the constitution and bylaws of the component county medical society relative to active membership.

His application shall be signed by the president and the secretary of the component county medical society of which he is a member and sent to the secretary of the State Society for presentation to the Council *for approval.*

The honorary members of the State Society shall be such distinguished physicians residing outside the State of New York as may be elected. Nominations for honorary membership shall be endorsed by three members of the State Society and forwarded to the secretary of the State Society for presentation to the House of Delegates. A two-thirds vote of the House of Delegates present and voting shall be necessary for election to honorary membership.

SECTION 2. PRIVILEGES

Active members vote and hold office in the State Society.

They shall be entitled to receive the ***New York State Journal of Medicine,*** the *News of New York,* and the *Medical Directory of New York State.*

They shall be entitled to defense by the counsel of the State Society in actions concerning professional medical liability, *subject to the rules and regulations of the State Society.*

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* Material in italics is new.

† *Those physicians who are not licensed by the State of New York but who have been elected to membership in their component county medical society and in the State Society prior to the adoption of this section shall not lose their membership for lack of licensure.*

Junior members shall be privileged to attend all meetings of their component county medical societies, where they shall have voice in all discussions but no vote. They shall be entitled to receive the ***New York State Journal of Medicine*** and the *News of New York* but not the *Medical Directory of New York State. They shall be entitled to defense by the counsel of the State Society in actions concerning professional medical liability, subject to the rules and regulations of the State Society.*

Life members shall not be subject to *State Society* dues or assessments but shall be accorded all the rights and privileges of active membership. *They shall be entitled to receive the **New York State Journal of Medicine** and the News of New York, but the Medical Directory of New York State only on request.*

Honorary members shall be entitled to the privilege of attending the meetings of the State Society.

For a member elected after October 1, all rights and privileges of membership shall date from the time of election.

State Society dues and assessments of a member elected after October 1 shall be credited to the succeeding year.

A member of one component county medical society shall not be permitted to transfer to membership in another component county medical society until he has paid the current annual dues and assessments to the former component county medical society, and he has established a legal residence or practices in the county to which he desires transfer, except as provided in Article XVIII, "Component County Medical Societies," paragraph 2. The question of legal residence or locus of practice shall be verified by the component county medical society to which the member desires transfer.

Any member, except a member who is eligible and has applied for life membership, whose component county medical society and State Society dues are unpaid after May 1 of any current year *or whose assessments are unpaid by the specified time* is not in good standing and shall be deemed to be in arrears.

A member of the State Society who is in arrears for component county medical society dues or State Society dues or assessments shall not be eligible for any office or delegacy or be entitled to vote for any officer, councilor, trustee, or delegates.

A member of this State Society who has no professional medical liability insurance in force and who is in arrears shall lose his right to professional medical liability defense by counsel of the State Society for any acts on which suit may be predicated during the period of his arrearage. This last is not recoverable, even when he becomes reinstated. Immediately on payment of current dues and arrears, his right to professional medical liability defense by counsel of the State Society shall be restored from that date.

A member whose dues are unpaid after June 1 *or whose assessments are unpaid one month after the specified date* shall automatically be dropped from the rolls of membership of both his component county medical society and the State Society, without notice to such member by his component county medical society or the State Society, or without further action on the part of either the component county medical society or the State Society, and on such date he shall automatically cease to be a member of both the component county medical society and the State Society.

The secretary of the State Society shall forthwith notify the American Medical Association of said termination of membership.

A member who has been dropped from the roll of a component county medical society by reason of failure to pay dues shall not be accepted by another component county medical society except by regular transfer after reinstatement in the original component county medical society.

State Society dues of a member reinstated after October 1 shall be credited to the succeeding year, all rights and privileges of membership, however, dating from the time of reinstatement; but no member dropped for nonpayment of dues and assessments shall be reinstated until he has, in addition, paid his dues and assessments for the year in which he was dropped.

A member convicted in a court of law of a crime evidencing moral turpitude shall thereupon cease to be a member of this State Society.

A member expelled from his component county medical society or suspended from its rights and privileges shall likewise be expelled or suspended for the same period from the State Society. The right of appeal to the State Society shall not be impaired, nor shall such appeal prevent the carrying out of the judgment of the component county medical society pending such appeal. Members not in good standing or ceasing to be members of their component county medical society shall ipso facto have the same status in the State Society. The right to professional *medical* liability defense by counsel of the State Society shall terminate on expulsion, suspension, or arrearage. In the latter events, this loss of defense will continue for the period of suspension or arrearage.

ARTICLE III. HOUSE OF DELEGATES

There shall be a House of Delegates which shall be the legislative body of the State Society and shall be charged with the general management, superintendence, and control of the State Society and its affairs and shall have such general powers as may necessarily be incident thereto, except as otherwise specifically provided by the Bylaws.

SECTION 1. COMPOSITION

The House of Delegates shall be composed of: (a) duly designated delegates from the component county medical societies; (b) officers of the State Society, councilors and trustees; (c) a duly designated delegate from each district branch; (d) a *duly designated* delegate from each scientific section; (e) the Commissioner of Health of the State of New York or a deputy designated by him, provided that any representative shall be a member of the State Society; and (f) past presidents of the State Society who shall be members for life.

The number of delegates to which each component county medical society is entitled shall be determined by the following formula:

Any component county medical society, which according to the rolls of the State Society on May 1 of the previous calendar year shall have had up to 99 members, shall be entitled to 1 delegate. Any component county medical society having 100 to 199 members shall be entitled to 2 delegates. Any component county medical society having 200 to 349 members shall be entitled to 3 delegates. Any component county medical society having 350 to 499 members shall be entitled to 4 delegates. Any component county medical society having 500 to 749 members shall be entitled to 5 delegates. Any component county medical society having 750 to 999 members shall be entitled to 6 delegates. Any component county medical society having 1,000 or more members shall be entitled to at least 7 delegates and 1 additional delegate for each additional 300 members. Each component county medical society shall be entitled to designate at least 1 delegate, but no component county medical society shall be entitled to designate more than *30* delegates.

A delegate to the House of Delegates shall not be considered in good standing or entitled to vote in the House of Delegates if the component county medical society by which he was elected is in default of the payment of any dues or assessments imposed by the House of Delegates, and said component county medical society has been duly notified of such default, or if such component county medical society shall at the time be under sentence of suspension imposed by the House of Delegates, or if such delegate is not in good standing in the State Society, or in the component county medical society to which he belongs.

The term of a delegate duly designated by a component county medical society, district branch, or scientific section shall begin at the first annual meeting of the House of Delegates subsequent to his designation.

A delegate shall practice or maintain residence or an office in the State of New York. Otherwise his delegacy in the State Society shall be declared vacant.

SECTION 2 DUTIES

The House of Delegates formulates policy for the State Society. No officer, councilor, board, commission, or committee or employe shall initiate any policy or commit the State Society to any policy unless such policy has been expressly approved by the House of Delegates or by the Council.

It shall elect the officers, councilors, and trustees of the State Society and the delegates to the American Medical Association.

Credentials signed by the president and secretary shall be issued to delegates to the American Medical Association.

It shall pass on the credentials and qualifications of delegates and shall decide who are entitled to be members of the House of Delegates of the State Society.

It shall have authority and power to suspend or otherwise discipline its own members, district branches, component county medical societies, or any member of the State Society charged with special duties for and under authority of the State Society.

It shall provide for a division of the scientific work of the State Society into appropriate sections; for the organization of the district branches; for rules and regulations for its own government, and for the administration of the affairs of the State Society.

It shall provide for the issuance of charters to component county medical societies in affiliation with the State Society.

It shall have authority to appoint special committees from among members of the State Society.

SECTION 3 MEETINGS

The annual meeting of the House of Delegates shall be held at the call of the speaker *during the annual convention of the State Society.* The sessions of the House of Delegates may be adjourned from time to time as may be necessary. At least 30 days before the annual meeting of the House of Delegates, the Speaker shall announce a schedule of the adjourned sessions of the House of Delegates. This schedule may be amended by the House of Delegates during its meeting.

No new resolution shall be introduced at the last scheduled session except by a unanimous vote of the House of Delegates.

Special meetings of the House of Delegates shall be called by the Speaker on the request in writing of *25 per cent of the duly accredited delegates of the previous annual meeting of the House,* or at the request of the Council; and in case of the failure, inability, or refusal of the Speaker to act, such meetings may be called by a notice thereof subscribed *by 25 per cent of duly accredited delegates.*

The notices of the annual and special meetings of the House of Delegates shall state the date, place, hour *and items of business that will be considered.* These shall be mailed postpaid to each delegate at least seven days before such a meeting.

Publication of the notice of the annual meeting in the *official publication of the State Society* shall be considered as complying with this provision.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the *delegate* shall be deemed sufficient proof of the service on each and every *delegate* for any and all purposes.

A quorum shall consist of 100 members of the House of Delegates.

The following shall be the order of business at the sessions of the House of Delegates:

1. Calling the meeting to order
2. Invocation
3. National Anthem
4. Report of Reference Committee on Credentials
5. Report by the secretary as to the presence or absence of a quorum
6. Remarks by the speaker
7. Reading the minutes of the previous meeting by title
8. *Address* by the president
9. *Report of House Committee on Bylaws*
10. Report of the Judicial Council
11. Report of Council *commissions and committees*
12. Report of the secretary
13. Report of the treasurer
14. Report of the Board of Trustees
15. *Report of the executive vice-president*
16. Reports of district branches
17. Reports of special committees
18. Reports of reference committees
19. Elections
20. *Recess for annual meeting of the State Society*
21. Unfinished business
22. New business
23. Adjournment

This order *of business* may be altered by the speaker with the approval of the House of Delegates and may be suspended by two-thirds vote of the House.

No delegate shall speak on any question before the

House of Delegates for longer than five minutes nor more than once on any subject except by the consent of a majority vote *of the House.*

As the first business of the last scheduled session of the annual meeting of the House of Delegates, the officers, councilors, and the trustees of the State Society, and the delegates to the American Medical Association shall be nominated and elected.

The rules contained in Sturgis Standard Code of Parliamentary Procedure shall govern the House of Delegates in all cases in which they are not inconsistent or in conflict with the Bylaws of the State Society or the standing or special rules of the House of Delegates.

ARTICLE IV. COUNCIL

There shall be a Council which shall exercise all the rights and duties of the House of Delegates consistent with the Bylaws of the State Society, when the House of Delegates is not in session.

SECTION 1. COMPOSITION

The Council shall be composed of the president, president-elect, vice-president, immediate past-president, secretary, assistant secretary, treasurer, assistant treasurer, speaker, vice-speaker, chairman of the Board of Trustees, and 12 councilors elected by the House of Delegates.

The trustees, the executive vice-president, the assistant executive vice-president, and *the counsel of the State Society* shall attend all meetings of the Council with voice but without vote.

Four councilors shall be elected annually by the House of Delegates, each for a term of three years. In the event of a vacancy, a councilor shall be elected *by the Council to serve until the next meeting of the House of Delegates, at which time the House of Delegates shall elect a councilor to fill the unexpired term.*

No person shall serve, consecutively, more than two terms as councilor. An unexpired term shall not be construed as a term of office.

The councilors shall assume office on election and shall hold office until their successors are duly elected and qualified.

A councilor shall practice or maintain a residence or an office in the State of New York. Otherwise his position in the State Society shall be declared vacant.

If a councilor is absent from three consecutive regular meetings of the Council without proper excuse, the Council shall declare his position vacant and elect a successor for the unexpired term.

SECTION 2. DUTIES

The Council shall take such action as is necessary to carry out the Bylaws and to give full effect to any resolution or vote of the House of Delegates.

It shall also have power to legislate as a House of Delegates, when the latter is not in session, on all matters consistent with the Bylaws.

It shall have the authority to make policy for the State Society when the House of Delegates is not in session.

The Council's resolutions and actions shall be decisive and final except that all resolutions and actions of the Council are subject to review by the House of Delegates. Its actions shall be governed by the Bylaws of the State Society and the rules and regulations of the House of Delegates.

The Council shall have power to fill any vacancy which may occur in any elective office not otherwise provided for, until the next meeting of the House of Delegates.

It shall prepare an annual budget for submission to the Board of Trustees.

The Council shall, with the approval of the Board of Trustees, appoint an executive vice-president, who shall be the chief executive officer of the State Society, to manage and direct the activities of the State Society including disbursement of its funds when duly authorized. He shall be a member of all boards, commissions, and committees with voice but without vote. The executive vice-president shall appoint an assistant executive vice-president *subject to the approval of the Council.*

The Council shall act on the applications for life membership which have been submitted by the component county medical societies. A majority vote of the Council present and voting shall be necessary for election to life membership.

The Council shall have responsibility for all publications of the State Society and their distribution. *For the purpose of required announcements, the official publication of the State Society shall be the* ***New York State Journal of Medicine.***

Special committees shall report to the Council and shall be subject to the Council unless otherwise instructed by the House of Delegates.

The Council, with the aid of the counsel of the State Society, shall examine the constitution and bylaws of component county medical societies and district branches and/or all amendments thereto which shall be submitted to the Council for approval and shall approve or disapprove of said amendments.

The duties of the Council shall include the supervision *of all commissions, committees, and activities of the State Society.*

The Council shall also keep constantly advised of the activities of and collaborate with the health and *social service* departments of the State and with hospitals, clinics, and *social service* agencies in furthering the health of the community.

Commissions and committees of the Council may include *any* member of the State Society *who* shall be appointed by the president subject to the approval of the Council.

The Council shall control all arrangements for the annual *convention* of the State Society.

SECTION 3. TRIALS FOR MALFEASANCE

The Council shall sit as a trial body for hearings on charges of malfeasance and/or nonfeasance.

Charges of malfeasance or nonfeasance preferred by a member against an officer, councilor, trustee, or member of a board, commission, or committee of the State Society shall be transmitted to the president in writing. The president shall order a trial on said charges by the Council, or a committee thereof.

Charges of malfeasance or nonfeasance preferred by a member against the president shall be transmitted in writing to the secretary of the State Society and shall be considered by the Council with the vice-president presiding.

The accused shall be given at least ten days' notice of such trial and of the charges against him and shall have full opportunity to defend himself, but no such officer, councilor, trustee, or member of a board, commission, or committee shall be removed or otherwise disciplined except by a *three-fourths* vote of the Council.

In case any such officer, councilor, trustee, or member of a board, commission, or committee shall be removed, he may appeal from the decision of the said Council to the House of Delegates; but, pending the determination of such appeal, he shall not exercise the functions of this office.

SECTION 4. EXECUTIVE COMMITTEE

The Council shall establish an executive committee to be composed of the president, the president-elect, *the immediate past-president,* the secretary, the treasurer, and *two* additional members of the Council appointed by the president with the approval of the Council.

This committee shall be appointed by the president immediately on his assumption of the office of president and *shall* serve *only* during his tenure as president.

The executive committee shall have the authority to take action in case of emergency arising in the interim between the meetings of the Council to protect the interests and purposes of the State Society as set forth in these Bylaws. In times of such emergency, the executive committee shall have all the powers and duties which are conferred on the Council, and it shall at all times assist the Council. Any action taken by the executive committee shall be reported in full to the Council at its next meeting.

SECTION 5. MEETINGS

The newly elected Council shall meet at the close of the annual meeting of the House of Delegates. The Council and *Executive Committee* shall meet at regular intervals at times and places that shall be fixed by the president with the approval of the Council. *Twenty-five per cent of the members* of the Council *in writing* may require the president to call a *special* meeting for such time and place as *he shall designate, within ten days of his receipt of such notice.*

The notices of the regular meetings of the Council shall state the date, place, hour, and shall be mailed postpaid to each member at least seven days before a meeting.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the Council member shall be deemed sufficient proof of the service on each and every Council member for any and all purposes.

Council members must receive at least three days' notice by letter or telegram from the State Society's office of a special meeting, which shall state the data, place, hour, *and items of business that will be considered.*

A quorum shall consist of 14 members of the Council.

The following shall be the order of business at meetings of the Council, which may be altered by the chairman with the consent of the Council:

1. Calling the meeting to order
2. Roll call
3. Reading of minutes
4. Communications
5. *Report of the Executive Committee*
6. *Report of the president*
7. Report of the secretary
8. Report of the treasurer
9. *Report of the executive vice-president*
10. Reports of commissions and committees
11. Unfinished business
12. New business
13. Adjournment

ARTICLE V. OFFICERS

The officers of the State Society shall be a president, a president-elect, a vice-president, a secretary, an assistant secretary, a treasurer, an assistant treasurer, a speaker and a vice-speaker of the House of Delegates. They shall take office at the termination of the annual meeting at which they are elected and shall serve for one year or until their successors have been duly chosen.

No person may serve, consecutively, more than five terms as secretary, treasurer, assistant secretary, assistant treasurer, *speaker, or vice-speaker.* An unexpired term shall not be construed as a term of office.

No salaried employe of the Medical Society of the State of New York shall be an *elected* officer of the State Society. For the purposes of this article an honorarium shall not be considered as a salary.

SECTION 1. VACANCIES AND SUCCESSION

An officer shall practice or maintain a residence or an office in the State of New York, otherwise his office in the State Society shall be declared vacant.

The president-elect shall succeed to the presidency at the end of his term as president-elect.

In the event of the president's death, resignation, removal, *permanent* incapacity, or refusal to act, the *vice-president* shall succeed him and shall serve for the remainder of the unexpired term.

If the president is temporarily incapacitated for service by injury, ill health of himself or his family, important professional duties, or any other mandatory absence, the vice-president shall become acting president for the duration of such incapacity of the president. The president shall promptly notify the vice-president of his incapacity and request his attention to the duties of the office and shall also promptly notify the vice-president of the end of the period of temporary incapacity before resuming the office of the presidency.

If the office of vice-president becomes vacant for any reason whatsoever the Council shall elect a successor for the unexpired term.

If the office of president-elect becomes vacant, it shall remain so until the next annual meeting of the House of Delegates, at which an eligible member shall be elected to become president. *A president-elect to succeed him at the end of his term shall also be elected at the same meeting.*

The assistant secretary, the assistant treasurer, and the vice-speaker shall serve as the secretary, the treasurer, and the speaker, respectively, whenever these senior officers are incapacitated for service by injury, ill health of themselves or families, important professional duties, or any other mandatory absences. This shall be construed so as to include duty at or during meetings of the Board of Trustees as well as the other official duties designated for the senior officer. The senior officer shall promptly notify the junior officer of his incapacity and request his attention to said duties. *When the period of incapacity is ended, the senior officer shall promptly notify the junior officer of the end of the period of temporary incapacity before resuming office.*

If the offices of secretary, treasurer, or speaker become vacant, for any reason whatsoever, these officers shall be succeeded by the assistant secretary, assistant treasurer, and vice-speaker, respectively, for the unexpired term.

If an elected officer is absent from three consecutive regular meetings of the Council, without proper excuse, the Council shall declare his office vacant. The vacancy shall be filled as provided in the Bylaws.

Any *elected* officer of the State Society who is called into active service *in the armed forces of the United States or in the United States Public Health Service* may, on application to the Council, be granted leave of absence for any portion of his term of office during which he is on active service. During such absence, his duties shall be delegated as the Council may direct except where such delegation is already provided for elsewhere in the Bylaws.

SECTION 2. DUTIES

The president shall set the dates and place of regular meetings of the Council *and Executive Committee* and shall preside at all meetings of the State Society, the Council, *and the Executive Committee.*

He shall name the appointive members of the Executive Committee and appoint *the chairmen and members of* all committees and *the chairmen of all commissions* of the Council with the approval of the Council. He shall appoint all other committees not otherwise provided for, with the approval of the Council.

Within three months after assuming the office of president, he shall appoint, as prescribed in Article XII, paragraph 5, a nominating committee, whose names he shall cause to be published in *the official publication of the State Society.*

He shall be an ex officio member of all *boards, commissions,* and committees with voice *and vote.*

With the *approval* of the Council, he shall appoint a member to the Judicial Council to succeed the member with an expiring term, and in the event of a vacancy occasioned otherwise, he shall appoint a member for the unexpired term.

He shall appoint, with the approval of the Council, representatives to other medical societies or similar bodies as the interests of the State Society may require.

He shall appoint a sufficient number of delegates or alternate delegates to the House of Delegates of the American Medical Association when the full quota of those elected is not available, as provided in the Bylaws, Article VIII, Section 1, paragraph 4.

He shall appoint, with the approval of the Council, a chairman and a secretary for each organized session of the State Society.

When charges by a member of malfeasance or nonfeasance are preferred against *any other* officer, councilor, trustee, or member of a board, commission, or committee of the State Society and are transmitted to the president in writing, he shall order a trial on said charges by the Council, or a committee thereof.

He shall assign the special branches of work for which the members of the Council shall be responsible, with the approval of the Council.

He shall make an annual report to the House of Delegates.

He shall deliver an address *at the annual meeting of the House of Delegates.* He shall perform such other duties as the House of Delegates or the Council shall require.

He shall attend all meetings of the House of Delegates of the American Medical Association.

The president-elect shall perform such duties as may be requested by the president.

The president-elect shall attend all meetings of the House of Delegates of the American Medical Association.

The *vice-president* shall perform the duties of the president in the latter's absence.

He shall preside over the Council when it is deliberating on charges of malfeasance or nonfeasance preferred against the president.

The secretary shall attend all meetings of the State Society, the House of Delegates, the Council, the Board of Trustees, and the Judicial Council, and shall keep minutes of their respective proceedings. These minutes shall be copied from a stenographer's notes with such deletion only as will not modify, alter, or becloud the history of the actions of the said bodies. The stenographer's typewritten copy shall be preserved until ordered destroyed by the House of Delegates.

He shall perform such other duties as may be prescribed from time to time by the House of Delegates or the Council. He shall attend all meetings of the House of Delegates of the American Medical Association.

The secretary shall be the custodian of the seal of the State Society, and of all books of records and papers belonging to the State Society, except such as properly belong to the treasurer, and shall keep an account of and promptly turn over to the treasurer all funds of the State Society which come into his hands.

He shall record the name and date of admission of each member of the State Society.

He shall provide for the registration of the members at all *conventions* of the State Society. With the aid and cooperation of the secretaries of the component county medical societies, he shall keep a proper register of all the registered physicians of the State by counties.

He shall conduct the official correspondence, notifying members of meetings, officers, councilors, trustees, and board members of their election, and *commissions and* committees of their appointments and duties.

He shall affix the seal of the State Society to the credentials *of delegates to the American Medical Association* and to such other papers and documents as may require the same.

He shall make an annual report to the House of Delegates. Acting in cooperation with the Council, he shall prepare and issue all programs.

He shall be *an ex officio* member of all boards, *commissions,* and committees with voice *and vote.*

The assistant secretary shall aid the secretary in the work of his office.

The treasurer shall keep accurate books of accounts of all moneys of the State Society which he may receive and shall disburse or cause to be disbursed the same when duly authorized. He shall be the official custodian of all securities and the income thereof owned by the State Society, subject to the direction and disposition of the Board of Trustees. The Board of Trustees may select a bank on trust company to act as custodian in the place of the treasurer of all or any part of such securities and to act as agent of the State Society in collecting the income therefrom.

He shall collect, on or before the first day of May in each year, from the treasurer of each component county medical society, the State Society per capita annual dues. He shall collect any assessments voted by the

House of Delegates or the Council. He shall at the expense of the State Society give a bond for the faithful performance of his duties, which shall be approved by the Board of Trustees as to amount, form, and surety. He shall make an annual report to the House of Delegates and reports to the Council *at each of its meetings.*

The assistant treasurer shall aid the treasurer in the work of his office.

He shall, at the expense of the State Society, give a bond for the faithful performance of his duties, which shall be approved by the Board of Trustees as to the amount, form, and surety.

The speaker shall preside at all meetings of the House of Delegates. He shall appoint all committees to serve during the meeting of the House of Delegates at least thirty days in advance of the meeting. All resolutions submitted by component county medical societies, district branches, *and scientific sections* to be presented to the House of Delegates should be forwarded to the speaker at least forty-five days in advance of the annual meeting of the House and referred by him to the appropriate reference committees; and all resolutions sent in subsequent to forty-five days should be presented to the House and referred to the appropriate reference committees.

The vice-speaker shall perform the duties of the speaker when so requested by the speaker.

ARTICLE VI. TRUSTEES

There shall be a Board of Trustees which shall have charge of all property including trust funds and shall supervise the financial affairs of the State Society.

SECTION 1. COMPOSITION

The Board of Trustees shall consist of seven members elected by the House of Delegates. The president, secretary, treasurer, executive vice-president, assistant executive vice-president, *and counsel* shall sit with the Board of Trustees with voice but without vote.

One trustee shall be elected annually for a term of five years, but whenever the terms of two trustees expire in the same year, two trustees shall be elected each for five years.

To be eligibile for election as trustee a member shall have served at least two years as an officer, or at least three years as a councilor, or at least five years as a member of the House of Delegates.

No person shall serve more than *one* term as a trustee. An unexpired term shall not be construed as a term of office.

A trustee shall practice or maintain a residence or an office in the State of New York, otherwise his position in the State Society shall be declared vacant.

If a trustee is absent from three consecutive regular meetings of the Board, without proper excuse, the Council shall declare his position vacant and elect an successor for the unexpired term.

In the event of a vacancy, a trustee shall be elected *by the Council to serve until the next meeting of the House of Delegates at which time the House of Delegates shall elect a trustee to fill the unexpired term.*

SECTION 2. DUTIES

The annual budget estimate, prepared by the Committee on Budget and Finance, after its approval by the Council shall be submitted to the Board of Trustees for its approval.

All resolutions or recommendations of the House of Delegates or Council pertaining to expenditures of money must be approved by the Board of Trustees before the same shall become effective.

The Board of Trustees shall make and execute all contracts for the State Society. The fiscal year shall begin January 1 and end December 31 of each calendar year.

All moneys of the State Society received by the Board of Trustees, Council, or any member or agent thereof, shall be paid to the treasurer of the State Society. The Board of Trustees shall approve the bond of the treasurer and the assistant treasurer as to amount, form, and surety, and shall employ a certified public accountant licensed by the State of New York to audit the accounts of the treasurer and secretary and other agents of the State Society and present a statement of the same in its annual report to the House of Delegates.

The chairman of the Board of Trustees shall make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the State Society under its control.

SECTION 3. MEETINGS

The Board of Trustees shall meet immediately on the close of the annual meeting of the House of Delegates, and shall organize under the *temporary* chairmanship of the member senior *in service on the Board, elect a permanent chairman,* and fix the time and place of its regular meetings. Should two trustees have similar seniority, *choice between them for temporary chairmanship shall be by lot.*

The Board of Trustees shall meet at least bimonthly, except in July and August.

The notices of the regular and special meetings of the Board of Trustees shall state the date, place, and hour and shall be mailed postpaid to each member at least seven days before a regular meeting and at least five days before a special meeting.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the trustee shall be deemed sufficient proof of the service on each and every trustee for any and all purposes.

Any three members of the Board of Trustees may require the chairman to call a special meeting at the office of the State Society for such time as shall be designated by them in writing.

A quorum shall consist of four members of the Board of Trustees.

The following shall be the order of business at the meetings of the Board of Trustees, which may be altered by the chairman with the approval of the Board:

1. Calling the meeting to order
2. Roll call by the secretary
3. Reading of minutes
4. Communications
5. Reports
6. Unfinished business
7. New business
8. *Adjournment*

ARTICLE VII. JUDICIAL COUNCIL

There shall be a Judicial Council which shall have jurisdiction to hear and determine all appeals from decisions on discipline of component county medical societies or decisions of such societies which may involve the privileges, rights, or standing of members, whether in relation to one another or to component county medical societies or to the State Society.

It shall hear also from applicants on appeals from the action of a component county medical society in excluding them from membership.

SECTION 1. COMPOSITION

The Judicial Council shall consist of five appointed members. One member shall be appointed by the president each year for a term of five years with the *approval* of the Council.

No member shall serve for more than two consecutive terms, but a member *appointed* to serve an unexpired term shall not be regarded as having served a term unless he has served three or more years.

A member of the Judicial Council shall practice or maintain a residence or an office in the State of New York, otherwise his position on the Judicial Council shall be declared vacant.

In the event of a vacancy, a member shall be appointed *by the president* for the unexpired term with the *approval* of the Council.

The president and secretary of the State Society shall be ex officio members of the Judicial Council with voice and vote. The executive vice-president, the assistant executive vice-president, and the counsel of the State Society shall sit with the Judicial Council with voice but without vote.

SECTION 2. DUTIES AND PROCEDURES

A member of a component county medical society who shall have been disciplined or directed to suffer discipline in any degree by any final decision of his component county medical society and who shall have exhausted his right of appeal, if any, with a component county medical society, feeling aggrieved by the decision of such society, may appeal to the Judicial Council of the State Society from the decision of such component county medical society by filing a notice of appeal with the secretary of the State Society and with the secretary of such component county medical society within three months after such final decision by such component county medical society.

An applicant for membership in a component county medical society who has been excluded from membership in such society may likewise appeal from the action of said society.

The Judicial Council shall investigate also all charges preferred (a) by a member of a component county medical society against a component county medical society of which he is not a member; and (b) by a component county medical society against another such component county medical society or a member thereof.

A notice of appeal shall set forth in writing the name of the appellant, the name of such component county medical society, and the date and substance of the decision appealed from, and shall indicate the ground or grounds on which such appeal is taken. If the appellant desires to be present, with or without counsel, at the hearing of said appeal, the notice of appeal must so state. In that event, the appellant must file with the notice of appeal a bond in the sum of $500 to *guarantee his appearance or that of his representative.* If the appellant fails to appear in person or *be represented* by counsel on hearing of said appeal, he shall forfeit to the State Society such share of said bond as represents necessary expenditures incident to convening the Judicial Council for the hearing of said appeal.

On filing a notice of appeal, the appellant and the component county medical society shall submit to the secretary of the Judicial Council all records, minutes, letters, papers, and all written evidence, including a digest of all testimony not stenographically reported relating to the matter. All data so submitted shall be available only to the Judicial Council.

The Judicial Council shall consider the appeal on the data so submitted to it and may affirm, modify, or reverse the decisions so appealed from, by a majority vote of the members present and voting. If, in its opinion, the taking of further evidence is advisable, the Judicial Council may summon witnesses and proceed to take such evidence in such manner as it may deem proper and render its decision by a majority vote of those present and voting, which decision shall be final and binding. A member shall have the right of appeal to the Judicial Council of the American Medical Association, *provided said member is a member of the American Medical Association.*

Whenever the Judicial Council has met, the secretary shall report the proceedings to the Council of the State Society at its next meeting.

The chairman shall submit an annual report of the Judicial Council to the House of Delegates.

SECTION 3. MEETINGS

Immediately at the close of the annual meeting of the *House of Delegates* the Judicial Council shall organize and elect its own chairman.

The secretary of the State Society shall be the secretary of the Judicial Council.

The Judicial Council shall meet on the call of the chairman. The notices of the meetings of the Judicial Council shall state the date, place, and hour and shall be mailed postpaid to each member at least seven days before a meeting.

The affidavit of mailing of the secretary of the State Society to the last recorded address of the member *of the Judicial Council* shall be deemed sufficient proof of the service on each and every member for any and all purposes.

A quorum shall consist of three members of the Judicial Council.

ARTICLE VIII. ELECTIONS

As the first business of the last scheduled session of the annual meeting of the House of Delegates, the officers, councilors, and trustees of the State Society, and the delegates to the American Medical Association shall be nominated and elected.

A member of the State Society who is in arrears for component county medical society dues or State Society dues or assessments shall not be eligibile for nomination to any office, the Council, the Board of Trustees, or as a delegate to the American Medical Association, or entitled to vote for any officer, councilor, trustee, or delegate.

The delegates to the American Medical Association shall be elected in the calendar year preceding the meeting of the House of Delegates of the American Medical Association to which they are elected. One half of the allotted number of delegates and alternate delegates shall be elected each year.

Nominations for delegacy to the American Medical Association shall be made for not less than double the full number of delegates to be elected. *Only members of the State Society who are members also of the American Medical Association shall be eligible for nomination or election as delegates to the American Medical Association.*

SECTION 1. BALLOTING

After the appointment of a sufficient number of tellers by the speaker and after all nominations have been made, the secretary of the State Society shall cause to be displayed in full sight of the House of Delegates a list of nominees for each office of the State Society and delegacies to the American Medical Association, arranged in alphabetical order, and shall also cause to be distributed a sufficient number of blank ballots for the use of the House of Delegates. These ballots shall have printed or stamped thereon the appropriate headings for each office with spaces thereunder in which may be written the name of the candidate or candidates to be voted for.

All elections for offices of the State Society and delegacies to the American Medical Association shall be by ballot, each member of the House of Delegates depositing his ballot on roll call individually. *When, after the call for nominations from the floor,* there is only one candidate for an office, *the speaker shall direct the secretary to cast one ballot on behalf of the delegates. If there are more than two nominees for an office and none* received a majority of votes on the first ballot, the nominee receiving the lowest number of votes shall be dropped and a new ballot taken for that office. This procedure shall be continued until one of the nominees receives a majority of the votes cast when he shall be declared elected.

For the election of delegates to the American Medical Association, the delegates shall be declared elected in the order of the highest number of votes cast until the allotted number shall have been chosen; a corresponding number in the next highest order of votes cast shall be declared alternate delegates.

When the full quota of elected delegates or alternate delegates is not available for attendance at the meeting of the House of Delegates of the American Medical Association, the president of the State Society shall appoint and certify a sufficient number to complete the quota.

A duly elected delegate to the American Medical Association who does not serve as such because of reduction in number of delegates to which the State Society is entitled shall fill any vacancy which may occur in the delegation before alternate delegates are designated for that purpose.

The delegates and alternate delegates shall take office at the beginning of the calendar year following their election and shall serve for a term of two years.

ARTICLE IX. REFERENDUM

At any meeting of the House of Delegates *two thirds* of the members present and voting may order a referendum vote of the State Society on any question consistent with the Bylaws and in accordance with such regulations respecting the submission of the question as the House of Delegates may prescribe.

The members of the State Society shall vote thereon by mail. The polls shall be closed at the expiration of fifteen days after the mailing of the question; and if the members voting shall comprise a majority of all the active and life members of the State Society, a majority of such vote shall determine the question and be binding on the State Society and the House of Delegates.

When the House of Delegates is not in session the Council may in a similar manner order such a referendum by a *two-thirds vote.*

ARTICLE X. COMMITTEES OF THE HOUSE OF DELEGATES

SECTION 1. REFERENCE COMMITTEES

At least one month before the meeting of the House of Delegates the speaker shall appoint and publish in the official publication of the State Society such reference committees as he shall deem expedient for the purposes of the meeting. Immediately after the organization of the House of Delegates he shall formally announce the appointments of the committees. Only members of the House of Delegates shall be eligible for appointment to the reference committees. Such committees shall each consist of five members, three members constituting a quorum, and shall serve during the meeting of the House of Delegates for which they are appointed.

Annual reports of officers, Council commissions and committees, Board of Trustees, Judicial Council, district branches, and special committees shall be printed at least one month before the meeting of the House of Delegates and sent to the members of the reference committees appointed according to paragraph 1, for their preliminary consideration.

All recommendations, resolutions, measures, and propositions presented to the House of Delegates and which have been duly seconded shall be referred by the speaker to the appropriate reference committees, except that reports of committees of the House of Delegates may, at the discretion of the House, be presented directly to the House without referral to the reference committees.

Each reference committee shall consider such business as may have been referred to it and shall report promptly to the House.

Any member of the State Society in good standing shall have the right to appear before any reference committee and participate in its deliberations.

SECTION 2. COMMITTEE ON BYLAWS

The House Committee on Bylaws shall be appointed annually by the speaker. It shall consist of at least five members including a chairman, all of whom shall be members of the House. The president, secretary, and the speaker shall be ex officio members with voice and vote. The executive vice-president, assistant executive vice-president, and counsel of the State Society shall be members of the committee with voice but without vote.

It shall be the duty of the committee to study all proposed amendments to the Bylaws and the Principles of Professional Conduct of the State Society and to report thereon at the annual meeting of the House of Delegates following the meeting at which such amendments are proposed. The committee shall include in its report recommendations for action on the proposed amendments with reasons for such recommendations.

It shall be the duty of the committee to suggest *amendments to or revisions of the Bylaws and the Principles of Professional Conduct of the State Society.*

The report of the House Committee on Bylaws shall be presented directly to the House, without referral to a reference committee.

SECTION 3. SPECIAL COMMITTEES

Special committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the speaker or other officer presiding pro tempore over the meeting at which the committee is authorized.

ARTICLE XI. COUNCIL COMMISSIONS AND COMMITTEES

SECTION 1. ORGANIZATION

Committees of the Council are grouped by the related nature of their purposes and functions. A commission is composed of the chairmen of all committees within such a group.

Subject to the approval of the Council, the president shall appoint the chairmen and members of all of its committees and the chairmen of the commissions.

Any member of the State Society is eligible for membership on committees and commissions of the Council.

All chairmen of such commissions and committees shall have the right to present their reports in person to the Council and to engage in the discussion of such reports. Members of such commissions and committees shall have the privilege of presenting minority reports at the discretion of the Council.

Any ex officio member of a committee who enjoys that status by being a duly elected officer of the State Society shall have all the rights, responsibilities, and duties of any other member of the committee.

SECTION 2. NOMINATING COMMITTEE

The Nominating Committee shall be appointed by the president in conformity with Article V, Section 2, paragraph 3. It shall consist of 11 members, 1 from each district branch and 2 members at large. It shall be the duty of this committee to propose and nominate members of the State Society for all vacancies to be filled at the ensuing annual meeting of the House of Delegates. These recommendations shall be made to the House of Delegates in the same manner as prescribed in Article X, Section 1, paragraph 2.

SECTION 3. PROFESSIONAL MEDICAL LIABILITY INSURANCE AND DEFENSE BOARD

A committee to be known as the Professional Medical Liability Insurance and Defense Board shall be appointed by the president with the approval of the Council. It shall consist of seven members including a chairman, each appointed for a five-year term. No member shall serve for more than two consecutive terms. A vacancy created by expiration of a term shall be filled by the president, with the approval of the Council, by appointment of a member for five years. Other vacancies shall be filled for the unexpired term in similar manner. *The secretary and the treasurer shall be ex officio members of the committee with voice and vote.* The counsel and indemnity representative shall attend all meetings with voice but without vote. It shall be the duty of the committee to study and supervise, on behalf of the State Society, all matters having to do with professional liability insurance and defense.

SECTION 4. COMMITTEE ON PRIZE ESSAYS

A Committee on Prize Essays shall be appointed by the president with the approval of the Council. It shall consist of three members, including the chairman. It shall be the duty of this committee to receive all essays offered in competition for prizes which may be offered by the State Society. The committee shall make all necessary rules and regulations for the awarding of prizes, subject to the terms of the deeds of gift, and shall report the result at the next annual meeting of the House of Delegates. It shall give notice through the official publication of the State Society or by other methods of the amount of the prize and when the essays shall be submitted to the committee.

ARTICLE XII. SECTIONS AND SESSIONS

As designated by the House of Delegates, there shall be sections devoted to the scientific work of the State Society and sessions devoted to scientific, cultural, historical, or economic subjects. Both sections and sessions shall meet during the annual convention of the State Society, under the supervision of the Council.

SECTION 1. SECTIONS

The scientific sections designated by the House of Delegates shall organize at their annual meetings by the election of officers. Officers to be elected shall include a chairman, a vice-chairman, a secretary, and a delegate to the House of Delegates. The chairman, the vice-chairman, and the delegate shall be elected for one-year terms; the secretary for such term as the section may deem fit.

To participate in the election of any section, a member of the State Society must be registered with such section.

Should the delegate of a scientific section be unable to serve in the House of Delegates, the chairman of the section shall designate a substitute delegate and shall so notify the secretary of the State Society in writing.

The officers of the various sections shall prepare programs for their sections under the direction and subject to the approval of the Council.

No new section shall be created by the House of Delegates unless a session devoted to its subject matter or specialty shall have been held at at least two successive annual conventions.

SECTION 2. SESSIONS

A session shall be a single meeting of a group to discuss scientific, cultural, historical, or economic subjects, under the direction and subject to the approval of the Council.

Each session shall have a chairman and a secretary who shall be appointed by the president with the approval of the Council.

ARTICLE XIII. MEETINGS

SECTION 1. ANNUAL CONVENTION

There shall be an annual convention of the State Society to be held at a time and place designated by the House of Delegates or by the Council.

This convention shall include the annual meeting of the State Society, the annual meeting of the House of Delegates, the annual scientific program which shall include the annual meetings of the sections and sessions and scientific motion pictures and exhibits, and such *other activities and presentations as the House of Delegates or Council may direct.*

SECTION 2. STATE SOCIETY ANNUAL MEETING

The State Society shall hold its annual meeting at the last scheduled session of the House of Delegates, while the House is recessed following the annual elections. The president shall preside at this annual meeting of the State Society, which shall include the induction of the incoming president. The incoming president shall deliver his inaugural address at the annual meeting of the State Society.

Following the adjournment of the annual meeting, the House of Delegates shall reconvene to complete its agenda and receive the report of the tellers.

SECTION 3. SPECIAL MEETINGS

Special meetings of the State Society shall be called by the president on the request in writing of 250 members from the membership of at least 10 component county medical societies, and in case of the failure, inability, or refusal of the president to act, such meeting may be called by a notice thereof subscribed by 250 members from the membership of at least 10 component county medical societies.

SECTION 4. ORGANIZATION AND PROCEDURES

The notices of the annual *convention* and annual and special meetings of the State Society shall state the date, place, and hour and shall be mailed postpaid to each member at least thirty days before a meeting.

Publication of such notice in the official publication of the State Society shall be considered as complying with this provision.

The affidavit of mailing by the secretary of the State Society to the last recorded address of the member shall be deemed sufficient proof of the service upon each and every member for any and all purposes.

Each member in attendance at the annual *convention* of the State Society shall enter his name and the name of the component county medical society to which he belongs in a register to be kept by the secretary of the State Society for that purpose. No member shall take part in any of the proceedings of such convention until he shall have complied herewith.

All members in good standing so registered may attend and participate in the proceedings and discussions of the scientific meetings of the State Society and of the sections and sessions.

A distinguished physician of a foreign country or a physician not a resident of this State who is a member of his own state medical association may become a guest during any annual *convention* upon the invitation of the president or officers of the State Society, and may be accorded the privilege of participating in all the scientific programs of the *convention.*

No address or paper before the State Society, except those of the president and president-elect, shall occupy more than twenty minutes in its delivery.

All papers read before the State Society at its annual *convention* by its members shall become the property of the State Society. Whenever such paper shall be deemed not acceptable for publication in the New York State Journal of Medicine it shall be returned to the author as promptly as possible after its receipt in the publication office of the State Society.

The following shall be the order of business at the annual meeting of the State Society:

1. Calling the State Society to order
2. Reading of minutes of the last meeting by title
3. *Induction of incoming president*
4. *Inaugural address by incoming president*
5. Adjournment

The rules contained in Sturgis Standard Code of Parliamentary Procedure shall govern the State Society in all cases in which they are not inconsistent or in conflict with the Bylaws of the State Society.

ARTICLE XIV. FUNDS

Funds shall be raised by annual dues levied on each active member at a uniform per capita rate throughout the State. Funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session. The dues or assessments of each junior member shall be one-third the amount levied on each active member.

The approval of the Council and of the Board of Trustees shall be necessary for the expenditure of any funds of the State Society, except that the said Board may delegate, to such person or persons as it sees fit, the authority to expend funds of the State Society in amounts and under conditions to be determined by said Board, on recommendation of the Council.

ARTICLE XV. DUES

The annual dues shall be determined by the House of Delegates.

Assessments can be levied by the House of Delegates or the Council *and shall be payable within a period of time specified by them.*

Life and honorary members shall not be required to pay dues or assessments to the State Society.

Annual dues are due and payable on the first day of January of each year. The dues year shall coincide with the calendar year, January 1 to December 31.

Any member, except a member who is eligible for and has applied for life membership, whose component county medical society and State Society dues are unpaid after May 1 of any current year *or whose assessments are unpaid by the specified time* is not in good standing and shall be deemed to be in arrears.

A member whose dues are unpaid after June 1 of any current year *or whose assessments are unpaid one month after the specified date* shall automatically be dropped from the rolls of membership of both his component county medical society and the State Society, without notice to such member by his component county medical society or the State Society, or without further action on the part of either the component county medical society or the State Society, and on such date he shall automatically cease to be a member of both the component county medical society and the State Society.

Dues and State Society assessments of a member elected or reinstated after October 1 shall be credited to the succeeding year, but no member dropped for nonpayment of dues and assessments shall be reinstated until he has, in addition, paid his dues and assessments for the year in which he was dropped.

The dues of an active or junior member of the State

Society may be remitted for the current year by action by the Council on account of illness, financial hardship, or temporary active service in the Armed Forces of the United States or in the United States Public Health Service, when the request for such remission is made by the member's component county medical society. *Such a request shall be accompanied by a brief summary of the reasons therefore. Remission of dues due to illness or financial hardship shall be reviewed annually.*

ARTICLE XVI. EXPENSES

Allowances for expenses incurred in the actual performance of official duties by officers, councilors, trustees, members of the Judicial Council and of commissions and committees, delegates to the American Medical Association and employes of the State Society shall be made in conformity with the following conditions.

The president and the president-elect shall be allowed a per diem and expenses when engaged on official business. The amount of the per diem shall be set by the House of Delegates.

All other officers, councilors, trustees, members of the Judicial Council, delegates to the House of Delegates of the American Medical Association or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association, members of commissions and committees of the Council, of all special committees, members of the State Society appointed by the president or the Council to carry out special assignments for the State Society, and employes of the State Society shall be allowed traveling expenses when engaged on official business.

Members for life of the House of Delegates, delegates of the district branches and of the scientific sections, sitting in the House of Delegates, shall be allowed necessary expenses by the State Society.

Proper vouchers must be filed with the secretary of the State Society before any of the above allowances shall be made.

There shall be no allowances for the expenses, traveling or otherwise, for members of any *reference committee.*

Each district branch shall be entitled to receive a sum not to exceed $1,000 exclusive of the work done by the State Society regarding notices, programs, and so on, to defray the expenses of such district branch, provided a proper statement of such expenses shall have been presented to the secretary.

All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees.

ARTICLE XVII. DISTRICT BRANCHES

SECTION 1. DIVISION

The membership of the State Society shall be divided into nine district branches, as follows:

The First District Branch shall comprise the members of the Medical Societies of the Counties of Bronx, Kings, New York, Queens, and Richmond.

The Second District Branch shall comprise the members of the Medical Societies of the Counties of Nassau and Suffolk.

The Third District Branch shall comprise the members of the Medical Societies of the Counties of Albany, Columbia, Greene, Renesselaer, Schoharie, Sullivan, and Ulster.

The Fourth District Branch shall comprise the members of the Medical Societies of the Counties of Clinton, Essex, Franklin, Fulton, Hamilton, Montgomery, Saratoga, Schenectady, Warren, and Washington.

The Fifth District Branch shall comprise the members of the Medical Societies of the Counties of Cayuga, Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, and St. Lawrence.

The Sixth District Branch shall comprise the members of the Medical Societies of the Counties of Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Schuyler, Tioga, and Tompkins.

The Seventh District Branch shall comprise the members of the Medical Societies of the Counties of Livingston, Monroe, Ontario, Seneca, Steuben, Wayne, and Yates.

The Eighth District Branch shall comprise the members of the Medical Societies of the Counties of Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming.

The Ninth District Branch shall comprise the members of the Medical Societies of the Counties of Duchess, Orange, Putnam, Rockland, and Westchester.

Changes in the number or membership of these district branches may be made by a two-third vote of the House of Delegates at any annual meeting thereof.

SECTION 2. AIMS AND ORGANIZATION

The objectives of the district branches shall be to promote the scientific, social, cultural, and other interests of the medical profession within the district and to cooperate with the Council of the State Society in any way which that body may advise.

Each district branch may adopt a constitution and bylaws for its government and may amend them. The Constitution, Bylaws, and amendments shall not be in conflict with the Bylaws of the State Society, and before becoming effective, they shall be approved by the Council.

SECTION 3. OFFICERS AND ELECTIONS

Each district branch shall elect a president for two years and a delegate to the House of Delegates for two years, but with the approval of the Council a district branch may elect a president for one year.

Each district branch shall elect such other officers as are provided for in its bylaws. They shall attend the business meetings of the branch.

In the case of the inability of the delegate of a district to serve, the vice-president shall serve as delegate, and if the vice-president is unable so to function, the president shall designate a *substitute* delegate to serve and shall so notify in writing the secretary of the State Society.

Any elected officer of a district branch who is called into active service in the armed forces of the United States or the United States Public Health Service may, on application to the Council, be granted leave of absence for any portion of his term of office during which he is on active service. During such absence his duties shall be designated as the Council may direct, except where such delegation is already provided for elsewhere in the Bylaws.

The president of each district branch shall visit the component county medical societies of the district at least once during his tenure of office and make a careful inquiry of the condition of the profession in each county in his district and shall report thereon to the House of Delegates.

ARTICLE XVIII. COMPONENT COUNTY MEDICAL SOCIETIES

SECTION 1. DEFINITION

The term "component county medical society" shall include all county medical societies now in affiliation with the State Society or which may hereafter be organized and chartered by the House of Delegates. There shall be but one component county medical society in each county affiliated with the State Society. If there should be an insufficient number of physicians in any of the counties of this State to form themselves into a component county medical society, such physicians may become members of the component county medical society of an adjoining county when eligible by the constitution and bylaws of such component county medical society.

SECTION 2. MEMBERSHIP

Eligibility for membership in a component county medical society shall be determined by that society. Except by the approval of the Council no physician shall be an active or junior member in a component county medical society other than that of the county in which he practices or maintains legal residence.

Whenever an active or junior member in good standing or a life member in any component county medical society removes to another county in this State, his name on his request shall be transferred to the roster of the component county medical society of the county to which he removes, without cost to him, provided that he files a certificate with the secretary of the State Society, signed by the president and secretary of the component county medical society from which he removes as to his good standing in such society, and provided his application for membership has been acted on favorably by the members of the component county medical society of the county to which he has removed.

No member shall be an active or junior member of more than one component county medical society, nor shall any component county medical society accept as a member a physician who does not practice or have a residence in that county in any other way than in accordance with the law governing transfers.

SECTION 3. DUTIES OF OFFICERS

The secretary of each component county medical society shall keep a roster of its members in which shall appear the full name of each of said physicians, the date of his admission to such society, his residence, and the date when his license to practice medicine in this State was granted. He shall note any changes in said roster by reason of removal, death, or change of name, revocation of license, or other disqualification.

He shall forward said roster and information together with the names and places of residence of each of the officers of said society and the names and residences of each delegate to the House of Delegates from said society to the secretary of the State Society at least ninety days before the date of the annual meeting of said House of Delegates.

The treasurer of each component county medical society shall forward to the treasurer of the State Society the amount of the State Society per capita dues and/or assessments and the amount of all American Medical Association dues collected from members of his component county medical society as promptly as possible but in any event before the first day of May of each year.

SECTION 4. MEETINGS

Each component county medical society shall hold an annual meeting for the purpose of electing officers and a delegate or delegates to represent it in the House of Delegates of the State Society in accordance with the Bylaws.

The annual meeting of each component county medical society shall be held between January 1 and July 1 of each year at a time which it shall determine.

All officers of the component county medical society shall enter on their official duties between May 1 and July 1 at a date determined by the component county medical society and shall serve for a term of one year or until their successors shall have been duly elected and qualified.

SECTION 5. RESIGNATIONS

A member in good standing, whose resignation from membership in his component county medical society shall have been duly accepted, shall be considered to have resigned from the State Society as of the same date.

When a member in good standing, other than a life or honorary member, ceases, between May 1 and December 31 of any year, to reside and practice in the State of New York, he shall be considered to have resigned from membership effective as of that December 31. If such cessation to reside and practice occurs between January 1 and May 1 of any year he shall, provided he has been in good standing for the prior calendar year, be considered to have resigned from membership effective as of the previous December 31.

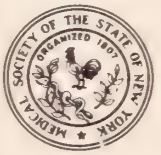
On resignation, a member shall forfeit all rights and title to any share in the privileges and property of the State Society, the district branch, and his component county medical society.

SECTION 6. CONSTITUTION AND BYLAWS

Each component county medical society shall adopt a constitution and bylaws for the regulation of its affairs and may amend them. The Constitution, Bylaws, and amendments shall not be in conflict with the Bylaws of the State Society, and before becoming effective, they shall be approved by the Council.

ARTICLE XIX. SEAL OF THE STATE SOCIETY

The seal of the State Society shall be as follows:


MEDICAL SOCIETY OF THE STATE OF NEW YORK
ORGANIZED 1807

ARTICLE XX. AMENDMENTS

Amendments to the Bylaws or to the Principles of Professional Conduct, except such as are obligatory by law, shall be made only at an annual meeting of the House of Delegates after having been submitted in writing at a previous annual meeting and having been published in the official publication of the State Society at least once and at least one month before the annual meeting at which action shall be taken.

The affirmative vote of two thirds of the House of Delegates present and voting shall be necessary for adoption of any amendment.

Amendments made necessary by law shall be made either by the Council or House of Delegates whenever such necessity exists.

TABLE I. New material: not in present Constitution and Bylaws but in Proposed Revision*

Article	Section	Paragraph	Text
I. Name and purpose	...	4, 5, 6	“... to establish the Principles of Professional Conduct which shall be binding upon the members of the State Society, the members of the component county medical societies, and the members of the component district branches, in all matters in their relation to each other and to the public; “... to enhance the delivery of medical care of high quality to all people in the most economical manner; “... to promote the betterment of community...”
II. Membership	1. Classes	2	“... and who are licensed by the State of New York.” Also Footnote.
		8	“... for approval.”
	2. Privileges	3	“... subject to the rules and regulations of the State Society.”
		4	“... They shall be entitled to defense by the counsel of the State Society in actions concerning professional medical liability, subject to the rules and regulations of the State Society.”
		5	“... They shall be entitled to receive the *New York State Journal of Medicine* and the *News of New York*, but the *Medical Directory of New York State* only on request.”
		10	“... or whose assessments are unpaid by the specified time...”
		12	“A member of the State Society who has no professional medical liability insurance in force and who is in arrears shall lose his right to professional medical liability defense...”
		13	“... or whose assessments are unpaid one month after the specified date...”
III. House of Delegates	1. Composition	6	“A delegate shall practice or maintain a residence or an office in the State of New York. Otherwise his delegacy in the State Society shall be declared vacant.”
	3. Meetings	4	“... and items of business that will be considered.”
		8	(In Order of Business) “8. Address by president; 9. Report of House Committee on Bylaws; 15. Report of executive vice-president; 20. Recess for annual meeting of State Society;...”
IV. Council	1. Composition	2	“... and the counsel of the State Society...”
		3	“... by the Council to serve until the next meeting of the House of Delegates, at which time the House of Delegates shall elect a councilor to fill the unexpired term.”
		6	“A councilor shall practice or maintain a residence or an office in the State of New York. Otherwise his position in the State Society shall be declared vacant.”

(continued)

TABLE I. *Continued*

Article	Section	Paragraph	Text
	2. Duties	7	". . . subject to the approval of the Council."
		8	"The Council shall act on the applications for life membership which have been submitted by the component county medical societies. A majority vote of the Council present and voting shall be necessary for election to life membership."
		9	". . . For the purpose of required announcements, the official publication of the State Society shall be the *New York State Journal of Medicine*."
	3. Trials for Malfeasance	3	"Charges of malfeasance or nonfeasance preferred by a member against the president shall be transmitted in writing to the secretary of the State Society and shall be considered by the Council with the vice-president presiding."
	4. Executive Committee	1	". . . the immediate past-president. . ."
	5. Meetings	1	". . . and Executive Committee. . ."
		1	". . . he shall designate, within ten days of his receipt of such notice."
		4	". . . and items of business that will be considered."
		6	(in Order of Business) ". . . 5. Report of the Executive Committee; 6. Report of the president; 9. Report of the executive vice-president; . . ."
V. Officers		2	". . . speaker, or vice-speaker."
	1. Vacancies and Succession	1	"An officer shall practice or maintain a residence or an office in the State of New York. Otherwise his office in the State Society shall be declared vacant."
		3	". . . permanent. . ."
		4	"If the president is temporarily incapacitated for service by injury, ill health of himself or his family, important professional duties, or any other mandatory absence, the vice-president shall become acting president for the duration of such incapacity of the president. The president shall promptly notify the vice-president of his incapacity and request his attention to the duties of the office and shall also promptly notify the vice-president of the end of the period of temporary incapacity before resuming the office of presidency."
		5	"If the office of vice-president becomes vacant for any reason whatsoever the Council shall elect a successor for the unexpired term."
		6	". . . A president-elect to succeed him at the end of his term shall also be elected at the same meeting."
		7	". . . When the period of incapacity is ended, the senior officer shall promptly notify the junior officer of the end of the

(*continued*)

TABLE I. *Continued*

Article	Section	Paragraph	Text
			period of temporary incapacity before resuming office."
		8	"If the offices of secretary, treasurer, or speaker become vacant, for any reason whatsoever, these officers shall be succeeded by the assistant secretary, assistant treasurer, and vice-speaker, respectively, for the unexpired term."
		10	". . . in the armed forces of the United States or in the United States Public Health Service. . ."
		6	"He shall appoint, with the approval of the Council, representaives to other medical societies or similar bodies as the interests of the State Society may require."
		11	"He shall make an annual report to the House of Delegates."
		17	"He shall preside over the Council when it is deliberating on charges of malfeasance or nonfeasance preferred against the president."
		31	". . . and scientific sections. . ."
VI. Trustees	1. Composition	1	". . . and council. . ."
		5	"A trustee shall practice or maintain a residence or an office in the State of New York. Otherwise his position in the State Society shall be declared vacant."
VII. Judicial Council	1. Composition	3	"A member of the Judicial Council shall practice or maintain a residence or an office in the State of New York. Otherwise his position on the Judicial Council shall be declared vacant."
	2. Duties and Procedures	6	". . . provided said member is a member of the American Medical Association."
VIII. Elections		4	". . . Only members of the State Society who are members also of the American Medical Association shall be eligible for nomination or election as delegates to the American Medical Association."
	1. Ballotting	2	". . . the speaker shall direct the secretary to cast one ballot on behalf of the delegates."
IX. Referendum	. . .	3	". . . by a two-thirds vote"
X. Committees of the House of Delegates	2. Committee on Bylaws	1–4	"The House Committee on Bylaws shall be appointed by the speaker. It shall consist of at least five members including a chairman, all of whom shall be members of the House. The president, secretary, and speaker shall be ex officio members with voice and vote. The executive vice-president, assistant executive vice-president, and counsel of the State Society shall be members of the committee with voice but without vote. "It shall be the duty of the committee to study all proposed amendments to the Bylaws and the *Principles of Professional Conduct* of the State Society and to report thereon at the annual meeting of the House of Delegates following the meeting at which such amendments are proposed.

(*continued*)

TABLE I. *Continued*

Article	Section	Paragraph	Text
			The committee shall include in its report recommendations for action on the proposed amendments with reasons for such recommendations. "It shall be the duty of the committee to suggest amendments to or revisions of the Bylaws and the *Principles of Professional Conduct* of the State Society. "The report of the House Committee on Bylaws shall be presented directly to the House, without referral to a reference committee."
XI. Council Commissions and Committees	1. Organization	4	". . . Members of such commissions and committees shall have the privilege of presenting minority reports at the discretion of the Council."
		5	"Any ex officio member of a committee who enjoys that status by being a duly elected officer of the State Society shall have all the rights, responsibilities, and duties of any other member of the committee."
XIII. Meetings	1. Annual convention	1, 2	"There shall be an annual convention of the State Society to be held at a time and place designated by the House of Delegates or by the Council. "This convention shall include the annual meeting of the State Society, the annual meeting of the House of Delegates, the annual scientific program which shall include the annual meetings of the sections and sessions, scientific motion pictures and exhibits, and such other activities and presentations as the House of Delegates or Council may direct."
	2. State Society annual meeting	1, 2	"The State Society shall hold its annual meeting at the last scheduled session of the House of Delegates, while the House is recessed following the annual elections." "The president shall preside at this annual meeting of the State Society, which shall include the induction of the incoming president. The incoming president shall deliver his inaugural address at the annual meeting of the State Society." "Following the adjournment of the annual meeting, the House of Delegates shall reconvene to complete its agenda and receive the report of the tellers."
XV. Dues	. . .	2	". . . and shall be payable within a period of time specified by them."
		5	". . . or whose assessments are unpaid by the specified time . . ."
		6	". . . or whose assessments are unpaid one month after the specified data . . ."
		8	". . . Such a request shall be accompanied by a brief summary of the reasons therefor. Remission of dues due to illness or financial hardship shall be reviewed annually."

* References are to articles, sections, and paragraphs in the proposed revision.

TABLE II. Substitutions: material in proposed revision substituted for present Constitution and Bylaws*

Proposed Revision				Present Constitution and Bylaws			
Article	Section	Paragraph	Text	Page	Article or Section	Line(s)	Text
III	1	3	"... 30..."	12	1	8	"... 25..."
	3	1	"... during the annual convention of the State Society..."	12	3	2–4	"... at least two and not more than four days before the annual meeting of the Society."
	3	3	"... 25 per cent of the duly accredited delegates of the previous annual meeting of the House,..."	31	6	3	"... sixty..."
	3	3	"... by 25 per cent of duly accredited delegates"	31	6	6	"... sixty..."
IV	2	13	"... social service..."	20	9q	3	"... welfare..."
	2	13	"... social service..."	20	9q	5	"... welfare..."
	3	4	"... three-fourths..."	41	5	12	"... two-thirds..."
	4	1	"... two..."	17	1b	4	"... three..."
	4	1	"... 25 per cent of the ..."	18	3	3	"... any four..."
V	1	3	"... vice-president..."	26	2	4	"... president-elect..."
	2	4	"... with voice and vote"	25	1	2–3	"He shall be an ex officio member of all committees"
	2	12	"...House of Delegates ..."	25	1	14	"...Society."
	2	16	"...vice-president..."	25	2	3	"...He (president-elect) ..."
	2	22	"...conventions..."	27	7	8	"...sessions..."
	2	24	"...of delegates to the American Medical Association..."	28	7	5, 6	"...issued to members of the Society elected by the House of Delegates..."
	2	26	"He shall be an ex officio member of all boards, commissions, and committees with voice and vote"	28	7	12–13	"...and committees with voice but without vote."
	2	29	"...at each of its meetings"	29	9	2	"...monthly..."
VI	1	4	"...one term..."	15	3	11	"...two terms..."
	1	7	"...by the Council to serve until the next meeting of the House of Delegates at which time the House of Delegates shall elect a trustee to fill the unexpired term"	15	3	5 and 6	"... for the unexpired term"
	2	1	"...prepared by the Committee on Budget and Finance, after its approval by the Council..."	21	2	5	"...prepared by the Council..."
	3	1	"...member senior in service on the Board, elect a permanent chairman..."	20	1	4	"...senior member..."
	3	1	"...choice between them for temporary chairmanship shall be by lot"	20	1	6, 7	"...the chairman of the Board shall be chosen from these two trustees by lot"

(continued)

TABLE II. *Continued*

Proposed Revision				Present Constitution and Bylaws			
Article	Section	Paragraph	Text	Page	Article or Section	Line(s)	Text
VII	1	5	"The president and secretary of the State Society shall be ex officio members of the Judicial Council with voice and vote. The executive vice-president, the assistant executive vice-president, and the counsel of the State Society . . ."	3	VII	2–4	"The president, secretary, and legal counsel of the Society shall sit with the Judicial Council with voice but without vote"
	3	1	". . . House of Delegates . . ."	22	1	12	". . . Medical Society of the State of New York . . ."
IX		1	". . . two-thirds . . ."	4	X	1	". . . a majority . . ."
X	1	5	"Any member of the State Society in good standing shall have the right to appear before any reference committee and participate in its deliberations."	35	5	2–7	". . . All members of such committees, who are not members of the House of Delegates, shall have the right to present their reports in person to the House of Delegates and to participate in the debate thereon, but shall not have the right to vote."
XI	3	1	". . . The secretary and the treasurer shall be ex officio members of the committee with voice and vote. The counsel and indemnity representative shall attend all meetings with voice but without vote. . . ."	34	2	12–15	". . . The secretary, treasurer, legal counsel, and indemnity representative shall be ex officio members of the committee with voice but without vote. . . ."
XIII	4	7	". . . president-elect . . ."	40	1	2	". . . orators . . ."
	4	9	(in Order of Business) ". . . 3. Induction of incoming president; 4. Inaugural address by incoming president; . . ."	31	4	4–8	". . . (in Order of Business) 2. Address of welcome by the chairman of the committee on arrangements; 4. Miscellaneous business; 6. Special addresses; . . ."
XVI		6	". . . reference committee"	32	1	26 and 27	". . . appointed pursuant to Chapter X of these Bylaws."
		7	". . . State Society . . ."	33	1	1	". . . secretary . . ."

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* References in the left column are to articles, sections, and paragraphs in the proposed revision; in the right column to pages, articles or sections, and lines in the present printed Constitution and Bylaws (1971 version).

TABLE III. Deletions: material in present Constitution and Bylaws not in proposed revision*

Page	Article or Section	Line(s)	Material
2	IV	8, 9	". . . the editor of the *New York State Journal of Medicine* . . ."
10	8	2, 3	". . . all persons now on the roster as such and in addition . . ."
10	8	12	". . . and addressing . . ."
11	1(a)	1–4	"(a) Each component county society shall be entitled to as many delegates as there shall be State assembly districts in such county at the time of election . . ."
16	7	5, 6	". . and in accordance with the constitution and bylaws of that body . . ."
16	1	9	". . . reconsideration, and action . . ."
17	1	11–16	"The Council shall have power and authority to employ, discharge, and arrange duties and, with the approval of the Board of Trustees, fix compensation of and for any employe whom it may find necessary for conducting the affairs of the Society."
18	7	6–8	". . . The Council shall advise the legal council in actions brought against members for alleged malpractice."
19	9	2	". . . study and . . ."
21	2	4	". . . and shall invest the surplus from time to time."
27	7	11–15	". . . He shall aid the officers of the district branches in the organization and improvement of the county societies and the extension of the power and influence of the Society. . . ."
34	1	6–8	". . . if such committee is to conclude its work during said meeting of the House of Delegates. . . ."

* References are to pages, articles and sections, and lines in the present printed copy of the Constitution and Bylaws.

Proposed Revision of *The Principles of Professional Conduct*. The following proposed Revision of *The Principles of Professional Conduct* was presented to the House Committee on Constitution and Bylaws for consideration. The committee recommended its approval. These revisions will be presented to the House at its meeting in February, 1973.

Resolution 70-17, Revision and Updating of the *Principles of Professional Conduct* of the Medical Society of the State of New York was referred back to the Ethics Committee by the House of Delegates.

The proposed revision and updating follow:

Chapter I, Section 1, is to be amended as follows:

"The prime object of the medical profession is to render service to humanity; reward of financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals."

Delete remainder of Section 1, after "ideals." The committee deleted the third and fourth sentences because they are considered to be superfluous and redundant.

Delete existing Section 2. The committee agreed that this section is superfluous.

Delete footnote "*Sir Thomas Watson." This was included in Section 2.

Present Section 3 becomes Section 2.

In new Section 2, the words "partnerships" and "corporations" should be inserted after the word "companies" since "partnerships" and "corporations" were added to cover or include as many as possible of the types of agreements physicians might enter, so that Section 2 shall then read as follows:

> The *Principles of Professional Conduct* shall apply to doctors of medicine as individuals or as members of staffs of hospitals, clinics, colleges, schools, foundations, partnerships, corporations, or groups, by whatsoever name they may be known.

Present Section 4 becomes Section 3 and is to be amended by adding the word "patients" after the words "advertises for" and again, after the phrase "and directs such" so that paragraph 2 shall read as follows:

> It should be understood that any medical care plan, company, or organization which advertises for patients and directs such patients to a restricted panel of doctors of medicine for medical care is advertising for the benefit of the doctors of medicine involved. The word "patients" is used because it is more descriptive; whereas the word "subscribers" is limited in scope.

Present Section 5 becomes Section 4. At the beginning of the second paragraph, delete the words "an ethical," since doctors of medicine are assumed to be ethical. It shall then read as follows:

> A doctor of medicine may provide appropriate information regarding important medical and public health matters which have been discussed during open medical meetings or in technical papers which have been published, and he may reveal information regarding a patient's physical condition if the patient gives his permission, but he should seek the guidance of appropriate officials and designated spokesmen of component or consitituent medical societies.

Divide the first paragraph of new Section 5 into three paragraphs, without alteration of text except for deletion of "ethical" before "doctor of medicine," for simplification, as follows:

Paragraph 1 shall consist of sentences one and two.
Paragraph 2 shall consist of sentence three.
Paragraph 3 shall consist of sentence four.
Delete "ethical" in new paragraphs four and five.

Change last paragraph of new Section 5 as follows: Change "prescription" to "prescribing" and change order of wording for simplification, so that it will read as follows:

> The prescribing or dispensing of secret medicines or other secret remedial agents by a doctor of medicine or the manufacture or promotion of their use is unethical.

Delete "of which he does not know the composition." Section 7 shall become Section 6.

In Chapter II, Section I, delete fourth sentence, because it was considered to be superfluous, so that it reads as follows:

> Section 1. In order that a doctor of medicine may best serve his patients, he is expected to exalt the standards of his profession and to extend its sphere of usefulness. A sectarian or cultist as applied to medicine is one who alleges to follow or in his practice follows a dogma, tenet, or principle based on the authority of its promulgator to the exclusion of demonstration and scientific experience. All voluntarily associated activities with cultists are unethical. Such consultation lowers the honor and dignity of the profession in the same degree in which it elevates the honor and dignity of those who are irregular in training and practice.

Section 3. Delete the part of the sentence after "family" and substitute the phrase "the patient and the authorized or legal representative of the patient, when in the doctor's considered opinion, the circumstances demand it" (This addition was necessary for the legal protection of the physician.); so that it reads as follows:

> The doctor of medicine should be a minister of hope and comfort to the sick; however, he should not fail to give timely notice of dangerous manifestations to the family, the patient and the authorized or legal representative of the patient, when in the doctor's considered opinion, the circumstances demand it.

A new Section 8 shall be added to read as follows:

In Chapter III, Article IV, delete Section 2. The committee considered this section to be unintelligible.

Present Section 3 shall become Section 2.
Present Section 4 shall become Section 3.
Present Section 5 shall become Section 4.
Present Section 6 shall become Section 5.
Present Section 7 shall become Section 6.
Present Section 8 shall become Section 7.

A new Section 8 shall be added to read as follows:

"Use of Credit Cards for Payment of Fees." Section 8. The use of credit cards is not approved in the payment of medical fees. This was added since the House of Delegates of the Medical Society of the State of New York has voted that the use of credit cards is unethical in the practice of medicine.

Appendix I. In addition to the Oath of Hippocrates, add the Prayer of Maimonides and the Declaration of Geneva. The committee feels that a more liberal, modern, and meaningful interpretation of a physician's oath should be utilized.

Introduction of Past Presidents

. . . Speaker Way introduced the following past presidents who were in the House: James M. Blake, Henry I. Fineberg, Walter T. Heldmann, Edward C. Hughes, and Walter Scott Walls.

The House rose and applauded.

Scientific Activities and Publications

New York State Journal of Medicine

The annual report concerning the ***New York State Journal of Medicine*** can be found under the Reports of the Executive Vice-President, pages 1383, 1387, and 1397.

REPORT OF THE REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS. The following report was presented by Robert B. Wallace, M.D., chairman.

The ***New York State Journal of Medicine*** continues to be widely recognized as an outstanding state medical journal, used by many other states as a standard. The new format has somewhat decreased the costs of printing and has certainly increased its readability.

The questionnaire which was distributed both in 1970 and in 1971 regarding the ***Journal*** contained approximately 94 per cent favorable comments. William Hammond, M.D., editor of the ***Journal,*** indicated that scientific articles, articles on drugs, and editorials created the most interest. He stated that we owe a great deal of thanks to the Editorial Board for its untiring efforts in maintaining the high standard of this publication.

Last year, the reference committee recommended that medical students be solicited for scientific papers. Response has been poor. Medical schools were also contacted to obtain prize-winning essays to be published in the ***Journal,*** but there was little response to this.

Dr. Hammond suggested that there probably would be an increased interest in the ***Journal*** by expanding the use of the dialogue method of presenting scientific articles, such as between internal medicine and the clinical laboratory. Dr. Hammond also thought that using guest editorials would be another method to increase interest in the ***Journal.***

It was noted that there was a considerable drop in the income from advertising, which is consistent with the decrease in advertising in other similar journals throughout the country.

Since Dr. Hammond is retiring in July, 1972, the reference committee wishes to thank him for his years of devotion to the ***Journal.*** In recognition of raising the ***Journal*** to its present preeminent position in scientific literary circles, the reference committee recommends that the House of Delegates give Dr. Hammond a standing ovation.

The House rose and applauded in recognition of Dr. Hammond, and the reference committee report was adopted by acclamation.

To Evaluate the Status of the New York State Journal of Medicine (Including the Problem of a New Editor)

To the House of Delegates, Gentlemen:

The members of the Ad Hoc Committee to Evaluate the Status of the ***New York State Journal of Medicine*** (Including the Problem of a New Editor) are:

Albert H. Douglas, M.D., *Chairman*	Queens
Reid R. Heffner, M.D.	Westchester
Bernard J. Pisani, M.D.	New York

After careful consideration, the committee reported to the Council as follows:

1. That the ***Journal*** be continued;
2. That a publications committee be appointed;
3. That Alfred A. Angrist, M.D., be appointed editor and that the position of associate editor be established with the idea that the latter will eventually take over the activities of the ***Journal;*** and
4. That William Hammond, M.D., be appointed editor emeritus.

The council at its meeting on December 16, 1971, voted approval of items 1, 3, and 4 and postponed action on item 2.

Respectfully submitted,
Albert H. Douglas, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

Albert H. Douglas, M.D., chairman of the committee, appeared before the reference committee and submitted his report.

The Council had approved the recommendations of the Ad Hoc Committee except for appointment of the publications committee. As recommended by Dr. Douglas, your reference committee feels that such a committee would assist the Editorial Board with the format, and in reevaluating reader interest and other salient features that might increase the interest and readability of the ***Journal.***

The House voted to adopt this portion of the reference committee report.

Resolution 72–54, Creation of a Single Scientific Commemorative Issue of the New York State Journal of Medicine based on Scientific Reports, Symposia, and Panel Discussions Presented at the Annual Meeting of the Medical Society of the State of New York

Introduced by Edward A. Barrett, M.D., as an individual

WHEREAS, There are more than 22,000 members of the Medical Society of the State of New York; and

WHEREAS, A very small number of these members attend the annual scientific sessions of the Medical Society of the State of New York; and

WHEREAS, The ***Journal*** of the Medical Society of the State of New York is one of the leading medical journals of its type in this country; and

WHEREAS, Publication of reports presented at the Annual Meeting of the Medical Society of the State of New York may be stretched out in the ***New York State Journal of Medicine*** over twelve to eighteen months following their actual presentation at the scientific sessions of the said annual meeting; and

WHEREAS, There always exists a great number of medical papers accepted by the editor of the ***Journal*** that await further publication in the ***Journal;*** and

WHEREAS, It is a stated prime function of the Medical Society of the State of New York to keep its members abreast of current information, trends, and progress in the practice of medicine; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York favor the publication each year of a single commemorative issue containing all scientific and clinical reports within six months of their presentation at the Annual Meeting of the Medical Society of the State of New York; and be it further

Resolved, That implementation of this resolution begin with this current meeting of the Medical Society of the State of New York.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

After some discussion, your committee felt that there would be problems in getting many of the speakers to give the ***New York State Journal of Medicine*** exclusive rights to reprints of their scientific presentations. Furthermore, the cost of printing and mailing such a commemorative issue would be prohibitive.

Your reference committee recommends disapproval of this resolution.

The House voted not to adopt resolution 72–54.

Resolution 72–55, Publication in Abstract Form of Annual Proceedings of the House of Delegates of the Medical Society of the State of New York

Introduced by Medical Society of the County of Orleans

WHEREAS, The cost of annual publication in the ***New York State Journal of Medicine*** of the proceedings of the House of Delegates of the Medical Society of the State of New York has risen to horribly indecent levels with the end not in sight; and

WHEREAS, The cost of mailing this separate issue of the ***Journal*** has again risen in accord with increased postal rates; and

WHEREAS, Little interest in this annual publication of the multitude of verbatim committee reports and deliberations of the House of Delegates is manifested by the great majority of the more than 22,000 members of the Medical Society of the State of New York; therefore be it

Resolved, That the annual proceedings of the House of Delegates of the Medical Society of the State of New York, reports by its officers, agencies, committees, Council, and Board of Trustees be published in the ***New York State Journal of Medicine*** in brief abstract form; and that permanent file copies of said proceedings and reports in complete verbatim form be maintained in the administrative offices of the Medical Society of the State of New York for ready reference; and be it further

Resolved, That, in the interests of economy, implementation of this resolution be effected to begin with the publication of these abstracts in a regular scheduled issue of the ***New York State Journal of Medicine*** within six months of the adjournment of this meeting of the House of Delegates.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

After discussion, Edward A. Barrett, M.D., representing the County of Orleans, agreed with the committee that this resolution was impractical.

Your reference committee recommends disapproval of this resolution.

The House voted not to adopt resolution 72-55.

What Goes On

The annual report concerning the publication *What Goes On* can be found under the Report of the Executive Vice-President, page 1386.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS. The following report was presented by Robert B. Wallace, M.D., chairman.

Your reference committee commends this activity, especially since the need for continuing education is important for the practicing physician. It was noted that announcements of *What Goes On* have been sent by the editor to all medical schools, 75 hospitals, 120 specialty societies, and allied groups, including chapters of the American Academy of Family Physicians. Your committee feels that the mailing list could be expanded still more.

The House voted to adopt this portion of the reference committee report.

Archives

To the House of Delegates, Gentlemen:

The members of the Committee on Archives are as follows:

Joseph A. Tamerin, M.D., *Chairman*	New York
Morris R. Keen, M.D.	Suffolk
Bernard R. Margolius, M.D.	Greene
Harriet Northrup, M.D.	Chautauqua

The Section on Archives met during the annual convention held at the Americana of New York in conjunction with other organizations, such as Medical Archivists of New York, the United Hospital Fund, the Federal Record and Archive Center, the Regional History and Archive Department of Cornell College at Ithaca, and the Committees on Archives of the New York Academy of Medicine and the Medical Society of the County of New York.

The theme of the February meeting, attended by about 50 to 60 archivists, was a salute to The New York Hospital on its bicentennial celebration. A distinguished panel of speakers presented reports which we hope will be published in the ***New York State Journal of Medicine.***

As a result of this meeting and two other meetings held with the same group at the New York Academy of Medicine and at the United Nations Auditorium, a substantial amount of money has been allocated by New York Hospital to put its records and archives in order. This is a milestone, since professional record management, disposal, evaluation, cataloging, preservation, and duplication for scholarly use in American hospitals has never before been done.

This has opened up the possibility of training hospital archivists on a professional basis. In view of the increasing interest in American archives because of the bicentennial celebration of the Declaration of Independence in 1976, this activity will be much needed. An executive committee, chosen to outline the direction of this activity, has met at the offices of the United Hospital Fund on two occasions.

Much credit is due Mrs. Louise Heinze, librarian at the United Hospital Fund, Carlyle R. Bennett, manager, National Archives and Record Service, New York City, and C. Herbert Finch, curator, Regional History and University Archives, Cornell University.

Our program for the 1972 annual meeting will be on the preservation of "Hospital Archives," which has been our theme for the last three meetings.

We confidently expect that, as a result of this work, the rest of the country will look to us for guidance in this area in the near future.

Respectfully submitted,
Joseph A. Tamerin, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS. The following report was presented by Robert B. Wallace, M.D., chairman.

The report of the Committee on Archives, with Joseph A. Tamerin, M.D., chairman, was reviewed with interest. It was noted that the research involved with New York Hospital's Bicentennial could open up a whole new field in training hospital archivists professionally.

It was noted that through the efforts of Mr. Douglas Baaken, Collector of Regional History, Cornell, archive material was not lost in the move of the headquarters of the Society from New York City to Lake Success.

Again, an appeal was made to county societies and hospitals to utilize the repository at Cornell for storage of important material.

The House voted to adopt this portion of the reference committee report.

Prize Essays

To the House of Delegates, Gentlemen:

The Committee on Prize Essays consists of the following members:

Alfred A. Angrist, M.D., *Chairman*	Queens
J. Frederick Eagle, M.D.	New York
Richard D. Eberle, M.D.	Onondaga

Your committee supervised the 1972 Albion O. Bernstein, M.D., Award competition. This national award honors a physician, surgeon, or scientist for a widely beneficial scientific discovery in medicine, surgery, or prevention of disease. It was created by the late Morris J. Bernstein, of New York City, in memory of his physician-son who died in an accident while answering a hospital call on November 23, 1940.

The report of the executive vice-president notes with sorrow the passing of Mr. Bernstein and continues with an account of Mr. Bernstein's generous bequest to the Medical Society of the State of New York in support of this award and for the establishment of the Albion O. Bernstein, M.D., Memorial Library at our new headquarters building. With all due respect, I refer you to that report rather than repeat here this detailed information.

The winner of the 1972 Albion O. Bernstein, M.D., Award was Samuel R. Powers, Jr., M.D., for his work in the development and application of modern engineering methods to the study of trauma, and we were honored to have Dr. Powers with us to receive the award. Again, rather than delay the House with a repetition of information, I refer you to the citation read by Dr. Himler which gives a full account of Dr. Powers's outstanding work. Your committee reviewed 13 nominations before arriving at a decision, and I wish to thank Dr. Eberle and Dr. Eagle for the careful attention they give to this process.

Your committee also opened competition for the Lucien Howe Prize and the Merit H. Cash Prize for original, unpublished essays. These competitions are held every three years and are limited to participation by interns and residents in hospitals of New York State. The Howe prize of $200 is for the best contribution in surgery, preferably ophthalmology, and the Merit H. Cash Prize of $200 is given for the best original essay on a medical or surgical subject.

I might mention in passing that in these inflationary times the amount of the prize appears to be less an incentive than the desire to compete. Despite regular announcements in the ***Journal,*** there were no entries for the Merit H. Cash Prize. The Lucien Howe competition, however, turned up an outstanding manuscript, and I have invited the author to be with us today to receive the $200 prize.

He is Thomas A. Poole, M.D., a third-year resident in ophthalmology at New York Hospital, and his manuscript is on "Stress Distribution in Keratoconus." The major thrust of Dr. Poole's analysis, which he illustrates mathematically, is that the ectasia of keratoconus results in progressively less strain on the apex of the cone as it enlarges. The results of his study reemphasize that the indication for keratoplasty in keratoconus is for restoration of visual acuity, not structural integrity.

Respectfully submitted,
Alfred A. Angrist, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

A report concerning prize essays can be found in the Report of the Executive Vice-President, page 1395.

It was noted in the executive vice-president's report that the Society had been willed the amount of $50,000 from the estate of the late Mr. Morris J. Bernstein for the Albion O. Berstein M.D., Award, to be presented annually in the amount of $2,000, honoring a physician, surgeon, or scientist for the most widely beneficial discovery or development of the most useful method in medicine, surgery, or in the prevention of disease.

The House voted to adopt this portion of the reference committee report.

The House applauded Thomas A. Poole, M.D., as he received the Lucien Howe Essay Prize (see Awards).

Convention

The annual report of the Committee on Convention can be found in the Report of the Executive Vice-President, page 1384.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

Your reference committee wishes to commend Bernard J. Pisani, M.D., and the members of his committee, Frank LaGattuta, M.D., Stephen Nordlicht, M.D., Joseph G. Zimring, M.D., Arthur H. Diedrick, M.D., Albert H. Douglas, M.D., Kenneth B. Olson, M.D., and William B. Rawls, M.D., for once again producing an outstanding convention.

Dr. Douglas, who is the chairman of the Subcommittee on Scientific Exhibits, reported that the number of applications for scientific exhibits has continued to decrease. This, however, has been balanced by the size and quality of the exhibits.

Similarly, there has been a decrease in the number of technical exhibits. The reference committee urges the continued solicitation of exhibits of basic research, particularly those of clinical interest, from medical schools and research institutes.

Your committee agrees with Dr. Pisani that some form of award of recognition be given to exhibitors for continued participation throughout the years and for outstanding and high quality exhibits.

The House voted to adopt this portion of the reference committee report.

Physicians' Placement

The report concerning Physicians' Placement can be found in the Report of the Executive Vice-President, page 1387.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

In the Executive Vice-President's report, it was noted that the physicians' applications processed by the Bureau increased from 740 to 1,165 in 1971. More than 130 communities requested 210 family practitioners, but the Bureau had only 57 applicants on file, so most of the requests were from specialists. There were 21 placements in family practice and 25 specialists were also placed. The booth at the convention has proved to be highly successful.

The House voted to adopt this portion of the reference committee report.

District Branches

FIRST DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The First District Branch of the Medical Society of the State of New York and its executive committee, the Coordinating Council of the Five County Medical Societies of the City of New York, has had an active and productive year. Under the able leadership of our chairman, Leonard L. Heimoff, M.D., the Coordinating Council has concerned itself with those problems facing its constituent societies which are city wide rather than county wide. There appears to be general agreement that five-county concurrence and consensus are necessary if effective representation of the position of organized medicine and its practitioners in New York City is to be made to such bodies as the Health Services Administration, the Hospital Corporation, the Comprehensive Health Care Planning Agency, the Department of Health, the Regional Medical Program, and the Health and Hospital Planning Council of Southern New York.

The Coordinating Council has been active on the Medicaid Committee of the Department of Health. A significant step forward was the recent announcement of pre-audit payments to physicians who bill $2,000 a month or more. This followed after two meetings with Commissioner Sugarman and numerous meetings with his deputies. We are still meeting with the objective of making payments more realistic and to attracting more physicians to accept Medicaid patients. The problems of Medicaid regarding payments by physicians to hospitals is still under study.

The Coordinating Council has also been active in the Regional Medical Program, the Comprehensive Health Planning Agency, and the Regional Hospital Planning Council. Through the Coordinating Council the local county medical societies will be kept informed as to planning for local community boards, hospitals, neighborhood health centers, and health maintenance organizations.

The finances of the Coordinating Council are now in excellent shape, and it is living on its income without the necessity for added assessments. Francis Loperfido, M.D., has done an excellent job as treasurer.

The Coordinating Council has met on January 12, February 14, March 9, May 11, September 14, and November 16, and its committees have worked diligently: (1) Public Health—Isaiah Gross, M.D., The Bronx; (2) Mental Health—Harvey Bluestone, M.D., The Bronx; (3) Public Relations—Norton Luger, M.D., Queens; and (4) Legislation—Stanley Stark, M.D., Kings. Other committees will be appointed on an ad hoc basis as required, rather than have too many standing committees.

Despite a monumental effort on the part of the late Robert A. Moore, M.D., and his committee on reorganization of the Coordinating Council, the report was not adopted. The Coordinating Council still continues to suffer from its inability to function as a united front on medical problems in the City of New York. Each county zealously and jealously guards all its prerogatives and functions and is rarely willing to act as a concerted whole. The Coordinating Council is desperately trying to get uniformity and unanimity in its relations with New York City. The Health Services Administration, the Health and Hospital Corporation, and others continue to make plans and carry them out while the Coordinating Council debates ad infinitum as to how to act and react. The Coordinating Council desperately needs to review its method of operations and, indeed, its reason for being. An ad hoc committee will again be formed to examine this constant but malignant problem. All counties must cooperate and take an active part if we are to successfully survive.

The officers for the ensuing year are:

Chairman—Leonard L. Heimoff, M.D., The Bronx
Vice-Chairman—Norton Luger, M.D., Queens
Secretary—Lester Tuchman, M.D., Queens
Treasurer—Francis Loperfido, M.D., The Bronx

The officers of the First District Branch will be elected on February 13, 1972.

We mourn the loss of our distinguished and devoted member, Robert A. Moore, M.D.

Respectfully submitted,
Lester R. Tuchman, M.D., Secretary

SECOND DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The annual meeting of the Second District Branch was held on October 15 at the Nassau Academy of Medicine.

A suggestion was made that both county medical societies, as well as the Board of Directors of the Nassau Medical Services Foundation, be contacted with a view to establishing a Second District Foundation Liaison Committee. The purpose of such a committee would be to discuss the possibility of a Bi-County Medical Services Foundation. Representatives from major industries on Long Island (LILCO, Sperry, Grumman, Republic, and Fairchild-Hiller) have already approached Dr. Edmund Pellegrino, director of the Health Services Division, State University of New York at Stony Brook, in the hope that a medical services group could be established through the University's faculty and paramedical personnel to provide their employes with comprehensive medical and related services. It was suggested that the Nassau Medical Services Foundation members meet with Dr. Pellegrino to discuss this possibility. There was considerable discussion of the mechanics of the Foundation.

There was also discussion of bulletin 259 of Associated Hospital Service, dealing with the possibility of hospitals taking over the responsibility of providing primary medical care through outpatient departments. If this system were effected, Blue Cross would pay for up to 30 visits per person per year, utilizing any accredited hospital's emergency and/or outpatient departments as reimbursible services under Blue Cross. It was felt that this was a direct confrontation with private practitioners and sets the hospital up as an institution in the practice of medicine through physicians on salary who staff the emergency rooms and/or outpatient departments of hospitals.

It was also suggested that nominations for officers, councilors, and delegates to the American Medical Association be limited only to members of the State Medical Society, rather than to delegates only. It was further suggested that a resolution be submitted to the State Medical Society to this effect.

The scientific program for the trip to Rome featured the following topics and speakers:

November 16: "Management of Certain Common Dermatologic Problems," David Dexter, M.D., Nassau County; "Porphyria Cutanea Tarda, A Dermatologic and Hepatic Disease," Prof. Paolo Nazzaro, director of the Institute of Dermatology and Syphilology, University of Rome.

November 17: "Bone Scanning in Clinical Practice," Perry R. Mandel, M.D., Nassau County; "Immunologic Factors in Male Hypogonadism," Prof. Carlo Conti, director, Institute of Special Pathologic Medicine and Methodological Clinic, University of Rome.

November 18: "Endocrinology and Growth Syndrome," William C. Hollis, M.D., Nassau County; "Present Views in Total Replacement of the Hip in Patients Affected by Coxarthrosis," Prof. Giorgio Monticelli, director, Institute of Clinical Orthopedics and Traumatology, University of Rome.

It was pointed out that it was mandatory for all physicians to be registered for these seminars. On return to the United States, certification of attendance would be given to these physicians.

Israel was selected as the site for next year's seminar.

Respectfully submitted,
Jeff J. Coletti, M.D., President

FIFTH DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The executive committee of the Fifth District Branch held its first meeting of 1971 on February 16. The agenda covered reports on legislation affecting medicine, the Student American Medical Association, the proposed three-tier organization, the Fifth District insurance program under Charles J. Sellers & Co., Inc., and plans for the annual joint meeting of the fifth and sixth districts to be held in September at Hotel Hershey, Hershey, Pennsylvania.

The Fifth District Branch hosted the tenth annual joint meeting of the Fifth and Sixth District Branches which convened on September 10, 1971, at Hotel Hershey, Hershey, Pennsylvania. The business meeting of the Fifth District Branch was held on September 10 at which time all committee chairmen gave their annual reports. It was voted to continue financial assistance to the Student American Medical Association, and the 1971–1972 budget was formally approved. It was reported that the Sixth District Branch had arranged for the 1972 joint meeting to be held at the Concord Hotel, Kiamesha Lake, New York, and the Fifth District had tentatively made plans to hold the 1973 joint meeting in Bermuda.

The educational program on September 11 was chaired by Mr. Henry Spiegelblatt, director of programs, Medical Services Administration, U.S. Department of Health, Education, and Welfare. He discussed "The Administration's Health Plan," and the Hon. Barber B. Conable, Jr., member of the House Ways and Means Committee, gave an enlightening report on "Health Insurance: How It Looks From the Ways and Means Committee."

A total of 264 members and guests at the banquet held on September 11 enjoyed a short but stimulating talk by George Himler, M.D., president of the State Medical Society, and were entertained by the evening's after-dinner speaker, Professor Irv Wermont, ambassador of wit and humor, whose topic was "Laughter—The Secret Weapon."

The scientific session on September 12 was chaired by John F. Devlin, M.D., Deputy Chief Medical Examiner of the City of New York. Dr. Devlin discussed "The Significance of Medical Examiners' Cases." The interest in Dr. Devlin's speech was evidenced by the lively question-and-answer period which followed. A new format was tried, this year the wives and guests were invited to the educational meetings since it was felt that the topics would be of interest not only to the physicians but also to their wives and guests.

George Lim, M.D., was thanked for his work on the golf tournament and regret was expressed that Dr. and Mrs. Henry I. Fineberg could not be with us. From all reports it appears that this was one of our most successful annual meetings.

I wish to take this opportunity to thank the officers of the Fifth District Branch for their cooperation and especially Russell H. Feltus, our executive director, for his handling of the minute details which make a program such as this outstanding.

Respectfully submitted,

Bernard J. Hartnett, M.D., President

SIXTH DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The Tenth Annual Joint Meeting of the Fifth and Sixth District Branches was held on September 10, through 12, at Hotel Hershey, Hershey, Pennsylvania. The Fifth District Branch, as host, prepared a splendid session, including such guest speakers as, the Hon. Barber B. Conable, Jr., member of the House Ways and Means Committee, and Mr. Henry Spiegelblatt, director of programs, Medical Services Administration, U.S. Department of Health, Education, and Welfare.

Mr. Spiegelblatt spoke on the various health programs currently being investigated and discussed by H.E.W. Mr. Conable held everyone's interest as he reviewed the health insurance proposals and "How It Looks From the Ways and Means Committee." John F. Devlin, M.D., Deputy Chief Medical Examiner, New York City, provided the Sunday morning fare discussing a wide range of unusual medical examiner cases.

The Sixth District Branch held its annual meeting on September 10. The membership approved the budget and financial report for 1971. They also agreed to continue to contribute to the Student American Medical Association. The executive committee reported that Mr. Russell D. Sprague, of Binghamton, and the Rupert & Lutz Agency, Inc., were appointed insurance administrators for the Sixth District with the exception of Chenango County.

Rupert & Lutz Agency, Inc. was assigned to provide a catastrophic insurance program, while Mr. Sprague was authorized to establish group-member life, disability, office overhead expense, and other insurance programs.

The business session also included approval of changes in district bylaws to allow for the appointment rather than election of the district delegate. The membership agreed that this arrangement would provide continuity relative to our representation in the House of Delegates.

Once again, efforts were made to establish the three-tier committee structure. While this has been difficult to arrange, the membership, nevertheless, urged the district officers to seek ways to institute the program. It was suggested that each county medical society president be requested to appoint the chairman of the county committees to the district branch committees. The district committees would not be obligated to meet and would be used only when needed.

Professional Review Organization (PRO) Services, Inc., informed the district branch that Chase Manhattan Bank resigned as retirement plan trustee. In seeking a new bank to handle the plan, PRO reported that the Continental Bank and Trust Company, in Philadelphia, was willing to become the successor trustee if this was acceptable to the district membership. The members agreed to endorse the recommendation.

Thomas Flanagan, M.D., of Norwich, requested that the question of developing an acceptable standard definition of death be presented to the membership. The topic was of interest to everyone and several avenues of research were suggested. It was recommended that a study group be appointed to develop guidelines.

Other business activities included the announcement that the Sixth District Branch will host the eleventh annual joint meeting to be held on the second weekend after Labor Day, 1972, at the Concord Hotel. The membership was encouraged to attend. The Fifth District Branch announced tentative plans to hold the 1973 annual meeting in Bermuda; the Sixth District members supported the plans.

The following slate of officers were elected to serve, beginning February 1972–1974:

President—Paul M. DeLuca, M.D., Broome
First Vice-President—Cornelius F. Ryan, M.D., Otsego
Second Vice-President—Robert E. Good, M.D., Chemung
Secretary—Stephen W. Blatchly, M.D., Tompkins
Treasurer—Thomas Flanagan, M.D., Chenango

The Delegate will be appointed pending approval by the Medical Society of the State of New York in the changes of the 1971 Bylaws.

In conclusion, I wish to express my appreciation to our Trustee, C. Stewart Wallace, M.D., our councilor, Paul M. DeLuca, M.D., and to the district and county society officers for their assistance and contributions to the activities of the district during the past two years.

Respectfully submitted,
Jason K. Moyer, M.D., President

SEVENTH DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The Advisory Council met twice after the annual meeting of September 9, 1970, in Canandaigua. The scientific meeting for 1970 was cancelled due to the bankruptcy of the planning agency, the Leisure Planning Corporation. Legal counsel has informed us that the physicians will receive the majority of their funds back in a few months.

On October 15, 1970, the district branch with Geigy Pharmaceutical Co. and other health organizations, cosponsored a symposium on "Youth and Family in a Changing Society." An outstanding program of interest to physicians and others interested in sociologic implementation of change as it affects the family, was attended by over 500 participants.

The seven-tier committees continued to forward pertinent material to the county level.

Our district caucus of delegates took place in April. Future plans were formulated. We maintain liaison with the Eighth District Branch caucus, and the combined caucuses of the seventh and eighth districts have produced meaningful results and lend strength to both of our districts.

The Advisory Council supports the Monroe Plan sponsored by the Monroe County Medical Society, a foundation concept to maintain fee-for-service payments, and urges all physicians to become members of the plan.

The development of numerous types of health maintenance organizations in the district has been noted by the Advisory Council, and progress in this area has been followed. There are several organizations with different approaches, and these certainly indicate a trend for the future.

The Charles J. Sellers and Co. Insurance Agency asked and was granted approval to place the "umbrella type" liability coverage policy with another company because the former company asked to be relieved of responsibility for our group. Also Insurance Company of North America (INA) discontinued the disability insurance and accidental and dismemberment coverage, and this, too, was transferred to another insurance company, the Commercial Insurance Company of Newark.

PRO-Services Inc. manages the Keogh Plan of the district through the PRO Fund and maintains an agent in Rochester, who is available for consultation and information. This fund will probably transfer from the present trustee to a Philadelphia bank in the near future, and legal counsel informs us that this will not affect the status of accounts in any way.

Ralph C. Parker, Jr., M.D., executive director of the Rochester Regional Medical Program, at one of the Advisory Council meetings, outlined plans for training physicians' assistants and nurse practitioners to work with physicians to help relieve the shortage of physicians. Malpractice coverage appears to be a problem.

The *Bulletin* as part of the district branch's service to the public continues to request letters and articles from component counties for publication.

The president attended a meeting of each component medical society in the past year. His attendance at the sesquicentennial celebration of the Monroe County Medical Society on May 25, was one of the highlights of his visits. These meetings with members of the component societies makes physicians more aware of the existing medical organizations, and acquaintances are developed with members not usually seen at State and district meetings. The problems are found to be quite similar—shortage of physicians, increased workloads, concern about the cost of medical care and peer review, the burden of paperwork, and concerns for the future of the practice of medicine with the development of Health Maintenance Organizations. Quality of care is also a major concern.

The Advisory Council urged all counties not presently incorporated to investigate the feasibility of incorporation since it has certain advantages if litigation should develop.

Changes in the Bylaws to conform with the Constitution and Bylaws of the Medical Society of the State of New York have been sent to the State Medical Society for approval. If approved, copies of the changes will be mailed to members of the district branch and may be presented for approval at the next annual meeting.

As the treasurer's report reveals, our organization is financially sound.

The maintenance of good communications has been our goal, since it helps our organization as well as being beneficial to the county and State medical societies. The distance to travel to meetings and time involved are problems, but these can be answered only by dedication and some sacrifice.

The annual meeting of the seventh and eighth districts was held at the Otesaga Hotel, Cooperstown, on October 3 to 6, 1970. The following programs were presented: "Clinical Trends in Chemotherapy, Surgical Management of Oncology, and Radiotherapy," and "The Future of Health Care in America." Outstanding speakers participated. George Himler, M.D., was the principal speaker at the annual banquet.

The 1971 annual meeting of the Seventh District Branch was held in Cooperstown, on October 4, 1971.

The following officers were elected to serve until the annual meeting of 1973:

President—Eric Hirsch, M.D., Ontario
First Vice-President—David L. Koch, M.D., Seneca
Second Vice-President—James M. Flanagan, M.D., Wayne
Secretary—Kenneth J. Berkes, M.D., Yates
Treasurer—Gerald L. Glaser, M.D., Monroe
Delegate—Vincent I. Bonafede, M.D., Livingston

Eric Hirsch, M.D., of Ontario County, the next president of the seventh district will do a fine job, and the continued cooperation of all county societies is urged.

I would like to thank all those who have worked with me during my two-year term of office, the advisory committee members; all committee members; the staff and executive secretary; Donald M. Irish; his assistant, Mrs. Marie Bernhardi; and Harry Dexter, field representative from the State Medical Society. The help of all has been necessary for our success.

Respectfully submitted,
Wayne C. Templer, M.D., Chairman

EIGHTH DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The 1971 Annual Meeting of the Eighth District Branch of the Medical Society of the State of New York was held at the Otesaga Hotel, Cooperstown, together with the Seventh District Branch, from October 3 to 6. On October 5, there was a scientific program moderated by Thomas S. Bumbalo, M.D., chairman of the program committee and immediate past president of the district branch. The following panelists discussed, "Current Clinical Trends in Cancer Therapy":

Richard G. Cooper, M.D., clinical associate, Buffalo General Hospital, on "Chemotherapy."

John T. Phelan, M.D., associate cancer research surgeon, Roswell Park Memorial Institute, on "Surgical Management of Oncology."

Walter T. Murphy, M.D., chief, Radiation Therapy Department, Buffalo General Hospital, on "Radiotherapy."

On October 4, a panel discussion was conducted by the Seventh District Branch on the subject of the "Future of Health Care in America."

The participants and their presentation are reported in the Seventh District Branch Report.

Both scientific sessions had a record attendance, and many questions were asked of the speakers.

The business session of the Eighth District Branch was held on October 5.

Approval of the report of the auditors, Hoch, Denny and Co., was voted.

The following reports were also approved:

The Report of the 1970 Annual Meeting, as published in the October, 1970, *Bulletin.*

The Annual Report of the President, as published in the November, 1970, *Bulletin.*

The Report of the Advisory Council Meeting, July 22, as presented by Dr. Harrington.

The Report of the Delegates Meeting, May 13, and the Report of the Delegates Meeting, September 16, as presented by the president.

The Nominating Committee, Herbert A. Laughlin, M.D., Chautauqua; chairman, Guy S. Alfano, M.D., Erie; and Glenn E. Jones, M.D., Niagara, reported as follows:

For Secretary:	Kenneth H. Eckhert, M.D. (Erie)
For Treasurer:	Paul Sum, M.D. (Cattaraugus)

These were the only two offices in which vacancies currently occur.

Dr. Eckhert and Dr. Sum were unanimously elected.

Discussion was held on Section 86.11 (c) of the Administrative Rules and Regulations, Subchapter K, Chapter II of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York. The members considered this regulation and the proposed changes and listened to a presentation by George Himler, M.D., president, regarding the attitude and action of the State Medical Society in connection with this regulation. Dr. Himler reported that the Council had taken the following action:

> That the Medical Society of the State of New York take all legal steps that are necessary to achieve the revocation of Section 86.11 (c) of the Rules and Regulations of the Commissioner of Health.

The Eighth District Branch voted to endorse the position of the State Medical Society in this matter and to encourage the component county medical societies and individuals to add their support to the stand of the State Medical Society in this matter.

Considerable progress has been made in rewriting and redrafting the Bylaws of the District Branch to make the Branch a more viable and action-oriented medical society. It was stressed that it has been difficult in these busy times to hold committee meetings and the current dues structure of $1.00 per year, per man, the same as it was twenty years ago, is not conducive to program planning and implementation. It has been suggested that the Telephone Lecture Network of the Regional Medical Program be utilized for some committee meetings of the Branch.

The District Branch voted to recommend to its component county medical societies that they endorse a proposal to raise the Branch dues from $1.00 to $5.00 per man, per year.

The three-day meeting culminated with the annual dinner at which George Himler, M.D., president, MSSNY, was the honored guest and the principal speaker.

The registration totaled 189.

Certificates of Appreciation for past services as presidents of the Eighth District Branch were presented to the following: Wilfrid M. Anna, M.D.; Thomas S. Bumbalo, M.D.; Paul A. Burgeson, M.D.; John T. Donovan, M.D.; Irwin Felsen, M.D.; John C. Kinzly, M.D.; Henry W. Ingham, M.D.; Leon J. Leahy, M.D.; Herbert A. Laughlin, M.D.; Elmer T. McGroder, M.D.; Sydney M. McLouth, M.D.; John D. Naples, M.D.; and Clyde L. Wilson, M.D.

I wish to acknowledge the work of the program committees in arranging the excellent programs: Vincent I. Bonafede, M.D.; Thomas S. Bumbalo, M.D.; Kenneth H. Eckhert, M.D.; David R. Harrington, M.D.; Erich Hirsch, M.D.; Alan R. Johnson, M.D.; David L. Koch, M.D.; Herbert A. Laughlin, M.D.; James R. Nunn, M.D.; Ralph C. Parker, M.D.; and Wayne C. Templer, M.D.

In conclusion, I would like to acknowledge with gratitude the assistance of our executive staff, Mr. Richard F. Treccase, Mr. Warren A. Mutz, and Mr. Joseph J. Guariglia. I wish also to acknowledge the excellent cooperation extended to us throughout the year by Mr. Harry J. Dexter, regional representative, State Medical Society, and to the staff of the Medical Society of the County of Erie.

I wish also to thank Victor M. Breen, M.D., our capable golf chairman for the annual meeting.

The work of the Eighth District Branch was reflected in the Reports of the Advisory Council Meetings, the meetings of the Delegates, and the meetings of the program committees throughout the year.

Respectfully submitted,
David R. Harrington, M.D., President

NINTH DISTRICT BRANCH

To the House of Delegates, Gentlemen:

The annual meeting of the Ninth District Branch was held at the Americana of New York on February 15, 1971.

George T. C. Way, M.D., in giving a report on his efforts to establish comprehensive health planning on a regional basis, stated that the Mid-Hudson Comprehensive Health Planning Corporation, Inc. had been formed and was composed of Putnam, Orange, Sullivan, Dutchess, and Ulster Counties; Westchester and Rockland Counties were excluded from submitting applications with these five counties. Dr. Way reported he was negotiating with the county governments of the areas involved, and to date, approval for one has been granted. By the end of the summer, Dr. Way hopes to have approval from all five counties.

Irving Weiner, M.D., commented on the value of the two meetings of the Ninth District Branch held at the Pforzheimer Building in Westchester, and it was agreed to hold another meeting of this type in late October or early November.

There was a brief discussion regarding the cancelled November travel meeting to Spain and Portugal. It was pointed out that some judgments had been obtained against the travel agency involved. However, there was little hope of receiving full financial restitution for the 30-odd subscribers, although pressure is still being exerted on the agency for complete reimbursement.

A new trip-meeting in December, 1971, to Sonesta Beach, Key Biscayne, Florida, is being considered by a committee composed of Wallace M. Sheridan, M.D., chairman, and officers of the district branch, assisted by Vincent Zingaro, executive director of Westchester County, and William Baltaks. Details will be furnished to the membership at a later date.

The list of officers who will serve their second and final year follows:

President—Irving Weiner, M.D., Orange
First Vice-President—Garrett W. Vink, M.D., Putnam
Second Vice-President—Burton Allyn, M.D., Rockland
Secretary—Wallace M. Sheridan, M.D., Westchester
Treasurer—James Keeley, M.D., Dutchess
Delegate—Irving Weiner, M.D., Orange

Respectfully submitted,
Irving Weiner, M.D., President

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

The reports of the First, Second, Fifth, Sixth, Seventh, Eighth, and Ninth District Branches were received and reviewed. No reports were received from the Third and Fourth Districts. It was interesting to note that the reports highlighted the varying activities, functions, and problems of the district branches.

A member of the Second District Branch discussed some of the problems contained in their report. The reference committee felt that these problems would be discussed in other reference committees.

The House voted to adopt this portion of the reference committee report.

Resolution 72-6, Transfer of Medical Society of the County of Chenango from the Sixth District Branch to the Fifth District Branch of the Medical Society of the State of New York

Introduced by Medical Society of the County of Chenango

WHEREAS, The Medical Society of the County of Chenango has aligned itself medically, politically, financially, and socially with its neighboring Medical Societies of the Counties of Oneida, Herkimer, and Madison; and

WHEREAS, Chenango County is a component part of the 45th Senate District with Madison and Onondaga Counties; and

WHEREAS, Chenango County is a component part of the 114th Assembly District with Madison County; and

WHEREAS, The majority of the members of the Medical Society of the County of Chenango belong to the Central New York Academy with headquarters within the Fifth District Branch; and

WHEREAS, The members of the Medical Society of the County of Chenango are served by the Medical Economics Bureau with headquarters within the Fifth District Branch; and

WHEREAS, The members participate in the Four-County Peer Review Committee, the Four-County Insurance Committee, the Four-County Malpractice Committee, and will participate in the planned Four-County Medical Foundation; therefore be it

Resolved, That the Medical Society of the County of Chenango be officially transferred from the Sixth District Branch to the Fifth District Branch of the Medical Society of the State of New York.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted unanimously to adopt resolution 72-6.

Resolution 72-56, Issuance of Commemorative Medallion of the Medical Society of the State of New York on Bicentennial Celebration, at Philadelphia, in 1976

Introduced by Constantine D. J. Generales, Jr., M.D., as an individual

WHEREAS, Meritorious institutions, societies, and individuals are in the process of being represented at the Bicentennial Celebration at Philadelphia by some form of artistry; and

WHEREAS, The Medical Society of the State of New York, the oldest state medical society in continuous existence with numerous records of outstanding achievements in its profession and service to the public, city, State, and nation is deserving of the display of a symbol of artistic heraldry of this notable occasion which will also be available to its members; therefore be it

Resolved, That the Medical Society of the State of

New York be properly represented at this Centennial by the issuance of a commemorative medallion to appear in due time; and be it further

Resolved, That the medallion shall reflect its long history, including the present, with its accomplishments and shall be struck in gold, silver, bronze, or in any desired alloy; and be it further

Resolved, That a committee be formed which is knowledgeable in medallic heraldry and numismatics to research appropriately this matter; and be it further

Resolved, That the committee avail itself of the offices of the esteemed American Numismatic Society through the services of its well-known past president and curator, Mr. Henry Grunthal; and be it further

Resolved, That the designing of the medallion be open to competition among members of the Medical Society of the State of New York; and be it further

Resolved, That advertisement be placed in the ***Journal,*** *Newsletter,* and others to encourage participation and an award presented for the winner; and be it further

Resolved, That the winning design be presented to the president, officers, and Councilors for final approval; and be it further

Resolved, That the financing of the medallion, whether private or through membership, be determined by appropriate officers of the Medical Society of the State of New York.

REPORT OF REFERENCE COMMITTEE ON SCIENTIFIC ACTIVITIES AND PUBLICATIONS: The following report was presented by Robert B. Wallace, M.D., chairman.

Your reference committee recommends that this resolution be referred to the Council for study and possible action.

The House voted to refer resolution 72–56 to the Council for further study and possible action.

The House then voted to adopt the report of the reference committee as a whole.

Reports of Officers

President (Annual)

To the House of Delegates, Gentlemen:

This report must be submitted in October to appear in the January 1 issue of the ***Journal.*** It is, therefore, more in the nature of a progress report than a summary of the year's activities and their results. Events have been occurring at such a rate, however, that a progress report may be in order.

As you know, your executive vice-president and I had a number of conversations early in my term on how we could eliminate staff positions that were no longer justified and achieve greater economy and efficiency by reassigning personnel and redefining their functions. A good beginning has been made and, no doubt, the program will have been completed by the time of the annual meeting. The details of the changes made will be found in the report of the executive vice-president and, therefore, need not be given in full here. I would, however, like to make reference to one important innovation, which is the creation of a Division of Legislation under the directorship of Martin J. Tracey, J.D.

There has been a great deal of dissatisfaction expressed on the outcome of our legislative efforts of last year. Many of our failures were inevitable, but an analysis of the manner in which our legislative program is conducted led me to believe that there was room for improvement. In my opinion, the services the State Medical Society receives from its legislative counsel, DeGraff, Foy, Conway, and Holt-Harris are excellent of their kind, but they could be enhanced by supplementation from the Society's staff. Accordingly, the decision was made to station Mr. Tracey in Albany during the legislative session with the objective of establishing direct and continuous contact with all senators and assemblymen on all bills of interest to the Society. Specific details of the new program appeared in *News of New York,* volume 27, number 10, October, 1971. I urge you to reread this issue since the success of our future legislative endeavors will depend in large part on how well the State Medical Society's activities can be coordinated with those of the counties and district branches.

Professional liability insurance. The meteoric rise of malpractice insurance premiums has been a persistent and growing threat to the physicians of this State. The problem has now reached such proportions that it is no longer simply a nuisance and a burden to our members but is beginning to affect the cost and availability of health care. As a result, both the State and Federal governments have begun to take an interest and are studying the entire field of professional liability insurance.

On August 26, 1971, your executive vice-president and I appeared before a State legislative committee chaired by Senator Tarky Lombardi and testified extensively on the issues raised by rising premiums and on possible methods of containing or reversing the upward trend. The meeting was an open one with a number of interests represented and, as such, was not conducive to a discussion in depth. Nevertheless, the committee was left with a number of our suggestions and recommendations.

In October, Senator Lombardy followed this up with a letter requesting our comment and advice on 15 or 20 proposals and questions. He further indicated that, following receipt of our response, we would be accorded opportunities for continued explorations with his committee. It is encouraging to note this interest in a matter that has hitherto been of concern only to physicians. Every effort will be made to keep the subject before the legislators and enlist their aid in introducing and supporting remedial bills.

Fortunately, we are well prepared to do this. Early in 1971, I called together the members of the Society's Professional Medical Liability Insurance and Defense Board, the directors of the H. F. Wanvig, Inc., and William F. Martin, Esq., our counsel. My purpose in doing this was to prepare a legislative program on malpractice for the Society and to establish clear-cut positions on the questions and issues that we anticipated would be raised. After thorough and lengthy discussion, the group came forward with a number of suggestions which have been turned over to the Committee on State Legislation, our legislative counsel, and Mr. Tracey for preparation in the form of bills for introduction during the 1971–1972 session.

At the national level, the U.S. Department of Health, Education, and Welfare formed a commission in August, 1971, to conduct a broad study of medical malpractice and liability insurance. It is headed by attorney Wendell Freeland, of Pittsburgh. Its members will represent health care providers and institutions, lawyers, the insurance industry, and the general public. Eli Bernzweig, the HEW specialist in medical malpractice will be the executive director. There are 5 physicians on the commission, including Carl A. Hoffman, M.D., president-elect of the AMA. Nationwide hearings have been scheduled. The date for the one in the New York area has not been set, but I have made arrangements to testify when it is held.

Shortly after the most recent rate increases, we received many letters indicating that a substantial number of members were having difficulty in making their new premium payment in one lump sum and were, therefore, having to secure bank loans at current rates of interest. Accordingly, it was decided to enter into negotiations with the H. F. Wanvig, Inc. and The Employers Mutual of Wausau, to make provisions for quarterly payments, either at no cost or for a minimum penalty.

These negotiations were concluded in October, and it was agreed that our member physicians could make quarterly premium payments if their annual premium was $1,500 or more. The charge for this service has been set initially at $6.00 per quarter or $24 per year, regardless of the dollar amount of the premium above the $1,500 level. The program cannot be put into effect before March 1, 1972, because of the tooling up and the EDP changes that are necessary. The arrangement clearly does not affect all our members equally, but it is the best that can be done immediately. It will at least give relief to those physicians who are most sorely pressed. Further liberalization of the policy may be possible when additional experience is available.

The review of our liability insurance program and our discussions with the carrier and H. F. Wanvig, Inc., brought to light a variety of questions, misunderstandings, and gaps in the information of the Council. The Professional Medical Liability Insurance and Defense Board is thoroughly informed on the details of the administration of our program, but the duties of the Board are primarily to determine physicians' insurability and premium rating. The work load of its members leaves the Board little time for overseeing the plan in its entirety.

In view of the extreme liability of the current situation in malpractice insurance, and in the interest of society members, it was deemed advisable to subject the plan to continuing surveillance and evaluation. I have, therefore, appointed a small committee, under the chairmanship of Thomas F. McCarthy, M.D., to serve the Council in this capacity. The new committee will in no way conflict with, or assume the functions of, the Professional Medical Liability Insurance and Defense Board. It is my hope that these actions will help to curb the spreading blight of malpractice litigation and mitigate its impact on our members.

Article 86:11 (c). This regulation of the State Health Department has become a cause célèbre within a few months. The wording of the original rule was impossibly ambiguous and raised the possibility that all so-called hospital-based physicians could be forced to become hospital employes, to be followed at a discrete distance by all other physicians of the State. The Commissioner of Health assured us that this was not his intent, but it was my opinion that, at a subsequent time, other State officials and other commissioners might place an entirely different interpretation on the regulation.

At my suggestion, on September 23, 1971, the Council adopted a resolution to the effect that the State Medical Society take every legal step possible to secure the revocation of Article 86:11 (c). Following this, the State Health Commissioner proposed a substitute which did little to meet our objections, whereon the Council reaffirmed its previous position with regard to the substitute.

It has been agreed that there will be further meetings between representatives of the State Medical Society and the State Health Department to reconcile our differences, if possible. The entire matter will be reviewed by the State Hospital Review and Planning Council at its meeting on December 9, 1971. I have asked to be present and heard at that meeting. In the meantime, the effective date of the regulation has been postponed by the State Health Department, and legal action on the part of the Society has been deferred.

Continuing medical education. The details of the Society's endeavors in the field of continuing education will be set forth in the report of the committee assigned to establishing a program. The Society has taken the position that continuing education should be voluntary and that the provision of appropriate opportunities would be sufficient to motivate physicians to participate. Your officers have, therefore, resolutely and consistently opposed State proposals for legislation to make such education mandatory. The Council has supported the concept, advanced by the committee, that an independent Commission on Continuing Education be created with members to be drawn from the State Medical Society, the Interspecialty Committee, the State Regional Medical Programs, and the medical schools. The Commission would be charged with the development of standards and curricula, as well as the establishment of "teaching resource centers" in strategically located hospitals throughout the State. The Interspecialty Committee has undertaken the monumental task of devising programs for the various specialties. The entire project has taken form under the capable and energetic Committee on Continuing (Postgraduate) Education, chaired by Marvin L. Bloom, M.D.

Workmen's Compensation. At the time of the last Workmen's Compensation fee negotiation in 1970, I, as the representative of the Medical Society of the State of New York on the Advisory Committee to the Chairman of The Workmen's Compensation Board on Fee Schedules and Allied Matters, stipulated that the next negotiation, due to be completed by July, 1972, was to be based on a relative value scale. It was our hope at the time that the Peat, Marwick, and Mitchell study would enable the Economics Committee to develop such a scale for our State. This is in progress, but it is obvious that the scale will not be ready in time to serve as the basis for the negotiations, which must begin soon. Accordingly, with the agreement of the specialty societies in the form of the Interspecialty Committee, it was decided to propose the five-digit 1969 California Relative Value Scale to be used in current negotiations. The carriers have raised a number of objections and see great difficulties in the use of any relative value scales but, in view of the fact that a definite agreement was made to use this method, your representatives will continue to insist on its adoption. The director of the Division of Medical Services, Max N. Howard, M.D., has done a tremendous amount of work in preparing comparative charts and tabulations and has researched the subject completely. Without these preliminary efforts, there would not be the remotest possibility of our reaching an agreement on the use of a relative value scale.

Compensation fees themselves must necessarily await the thaw that we all hope will follow the executive wage and price freeze and the post-congelation guidelines that are imposed. Until we know what these are, we will attempt to conduct the negotiations as though there were no legal limits on fee increases. The simplification of negotiations by the use of a relative value scale should be of considerable assistance in reaching the goal of customary fees in Workmen's Compensation.

The New York Institute for Research and Development in Health Care, Inc. In my inaugural address, I indicated my intention of establishing this agency at the State level. It has now been incorporated as a not-for-profit corporation. Like the Empire State Medical, Scientific and Educational Foundation, it is independent of the State Medical Society, but a number of its directors and officers will be taken from the Council of the State Medical Society. The Institute is not, as many believe, simply a Statewide foundation. It is designed primarily to supplement the efforts of local and regional medical foundations, to assist them in developing their own programs and methodologies, and to help them negotiate those plans that extend beyond the boundaries of a single county or region. Federal grants are being sought to finance the development of the Electronic Data Processing (EDP) technologies and programs necessary for the management of foundations and for the preprocessing required for competent peer review.

The specifics of the Institute's objectives and functions, and the manner in which it will interrelate with medical foundations, are too intricate for presentation in this report. I hope to have an article prepared for distribution early in November, 1971, that will set forth all these facts in detail. I would like to state here, however, that I have traveled widely throughout the State and made great efforts during this past year, to encourage the establishment of medical foundations. To my mind, they represent the best means of organizing privately practicing physicians to help them meet the needs of a demanding society and, at the same time, to preserve the essential elements of a diversified, free, and viable system of health-care delivery.

Conclusion. I must express my appreciation to the Council, to the executive vice-president, Henry I. Fineberg, M.D., and to the entire staff, for their unstinting support and assistance in what has been a hectic, but extremely interesting, year.

Respectfully submitted,
George Himler, M.D., President

President (Supplementary)

To the House of Delegates, Gentlemen:

Under ordinary circumstances, on an occasion such as this, a departing president might review the events of his term of office, present his achievements with modest pride, and limit his discussion of the future to a few uplifting generalizations. In the annual report which appears in your *Handbook,* I have already presented the broad outlines of last year's happenings. I would, therefore, prefer to spend the short time I now have looking forward, rather than back.

The presidency is a unique vantage point from which to view the condition of medical practice and identify and evaluate the pressures that mold it. Without taking undue advantage of my right to pontificate, I would like to comment on the state of this society, relate to you briefly what I believe the future holds, and make a few suggestions on the courses we should follow.

To tell you that our profession is under heavy fire and that its very existence is threatened by the constant erosion of physicians' authorities and prerogatives, is to belabor the obvious. Who among you, ten or even five years ago, would have believed possible the imposition of regulations that limit increases in professional fees to a trivial amount, make no effective provision to control the costs that determine those fees, and leave few, if any, avenues of appeal? How many of you would have expected to be required to keep a "price list" for your professional services available, to be produced on demand?

You live in an era when state and local governments give substantial preferential loan and tax concessions to certain types of group practitioners and simultaneously impose discriminatory taxes on those physicians who wish to continue to exercise their profession as individuals. You serve a society that sees nothing wrong with subjecting physicians to official tax scrutiny when they earn more than a stipulated amount from a Federal program, even though there is no evidence whatever of wrongdoing. You are witnessing the steady expansion of government regulatory power, and you would even now be living with an edict that could be used to dictate employed status for physicians, if the regulation had not been challenged. As a profession, we are experiencing unremitting administrative and legislative pressure for mandatory continuing education, periodic reexamination and recertification, and the constant monitoring of the quality, propriety, and cost of our services.

I cannot honestly tell you that all these attempts at control are unjustified and unnecessary. Indeed, we have endorsed the principle of continuing medical education, albeit on a voluntary basis, and are currently occupied with developing and refining methodologies for peer review. I also concede that government has the responsibility of applying those controls to health care that are absolutely essential to safeguard and promote the public welfare. At the same time, I would remind you of the saying attributed to William Pitt that, "Necessity is the argument of tyrants." I do not suggest that we are being subjected to deliberate tyranny, but excessive regulation and regimentation can exercise a tyranny that is no less oppressive for being unintended. The current overenthusiasm for public regulation is a real and imminent threat because, if it gets out of control, and the ant armies of bureaucracy are released on our profession, they will destroy everything in their path. We must, therefore, be more vigilant and energetic than ever in preserving both our professional and our civil liberties. Yet, we must remember that a defensive policy directed toward preservation, although necessary, does not, by itself, constitute an adequate or intelligent response to either our problems or those of the society in which we live and practice.

We can agree that access to comprehensive health care, while it may be a right, is not equally enjoyed by all elements of the public. The deficiencies and inequities are not of such general "crisis" proportions as to justify some of the proposals we have heard for hasty, ill-considered, and sweeping changes in our systems of rendering care. They constitute a real crisis, however, for the individuals and groups to whom needed services are not regularly and uniformly available. There is an undeniable need for constructive action. At the same time, alterations in the manner of providing and paying for health services must be such as to encourage the augmentation and improvement of the services themselves, and to strengthen, rather than weaken, the professions that provide them.

There has been no disagreement on these principles, but there has been a dismaying lack of initiative and leadership in implementing them. This has been particularly evident in the quarter from which leadership might most logically have been expected—the medical profession. The resulting vacuum has been responsible for action in the public sector that has produced a crazy quilt of legislation and regulation that is now exerting a profound, disturbing influence on the health professions without, parenthetically, bringing about measurable progress. I cannot overstate my conviction that both the ultimate welfare of the public, and the integrity of our profession, demand that physicians, through their organizations, accept health planning as a primary responsibility and that they undertake that planning promptly and energetically.

As you may know, I tried this thesis out on the AMA. It received what might charitably be called a mixed reception. Having failed there, at least for the time being, it seemed logical to introduce it on my home ground. By the beginning of last year, a number of the county medical societies of this State had already interpreted the omens and, among other actions, had established medical care foundations as one instrument to exert medical influence and leadership. As I promised you then, I, in turn, organized the New York Institute for Research and Development in Health Care, to supplement the functions of those foundations, lend them necessary assistance, and encourage the formation of new ones. The number of these foundations has increased rapidly, and many previously indifferent societies are either in the process of establishing their own or are investigating and considering the possibility. Therefore, in the recommendations I am about to make, there is no need for me to advise you to reorganize your societal structure, through a constitutional convention or otherwise. Your county medical societies and foundations at the local level, and the MSSNY coupled with the Institute at the State level, constitute all the organizational framework you can possibly need to meet your social and professional obligations and achieve your purposes.

There is no time to expound on the functional relationships of these bodies in this presentation—that has already been done at some length elsewhere. There is, however, one misconception concerning the Institute that I want to lay to rest, once and for all.

It has come to my attention that there is a rumor circulating to the effect that the Institute threatens to undermine the authority and stature of the State Society and perhaps, ultimately, even to displace it. It should take only a little reflection to allay these doubts.

To begin with, the Institute will have no individual members and cannot, therefore, compete with the MSSNY in this regard. It will not formulate policy and will have no control over the actions and policies of the House of Delegates or the Council. It will be a completely nonpolitical and apolitical organization whose major endeavor will be to provide service to medical care foundations and the State Society. Its net effect will be to support the Society by providing it with a data base for planning and making policy decisions. In the light of the Institute's stated purposes and its structure, which are set forth in its Articles of Incorporation and Bylaws, it is difficult to see how it could, in any way, be detrimental to the Society.

If the MSSNY faces any threat, it is from within. I have traveled widely throughout the State this year, by invitation, I might add, and the one theme I heard, over and over again, was the Society is falling short of meeting the needs and expectations of its members. Some of the criticisms were unjust, others were uncomfortably near the mark. What disturbed me most about them was the spirit of antagonism in which they were made. Most of the critics did not sound like concerned members seeking improvements—they seemed rather to be outsiders bent on destruction. You will remember that in February, 1971, there was talk of secession in a few of the county societies. This impelled me to announce that I would use all means, including legal action, to preserve the integrity of the State organization. This particular threat has receded into the background, but the attitudes that prompted it have not changed perceptibly. In my opinion, the MSSNY will not be able to meet its internal and external obligations unless its leaders undertake certain positive-action programs and its members undergo a marked change in their thinking and their customs. Let us look at the programs first.

Our Society, like organized medicine in general, has failed to identify, with clarity and precision, its obligations and objectives with regard to the public on the one hand, and its members on the other. In the absence of a clear, affirmative statement of its missions, neither the public nor its members have reposed confidence in it or given it the support it must have to be effective. I originally hoped that a planning and development group, backed by the research of a staff division, would make these identifications and help to enunciate policy. That hope was not borne out, and I now expect that the Institute, as it develops its methodologies, will provide the Society with the data and research base it so badly needs.

Once the MSSNY has determined its directions and goals with specificity, it can begin the short- and long-range planning necessary for their attainment. I know of no major organization or corporation that does not carry on a continuing research and planning effort to orient it in its environment and guide its management in making major policy decisions. We must abandon the futile strategy of fighting defensive, rearguard actions. Studies based on hard data, rather than emotion and subjective impressions, will enable us to develop enlightened policies and devise imaginative programs that can earn us a prominent, and perhaps even a dominant, role in planning for health care. Only in this fashion can we achieve public respect and credibility, represent our members sufficiently well to regain their full support, and, perhaps, even retain a degree of control over our destinies.

As far as other attitudes are concerned, it should be obvious to you that the Society is rather badly divided, and that there is a marked element of factionalism in our internal politics. This may be normal to a certain extent, and even acceptable under standard conditions. In times like these, however, when the Society is faced with harsh challenges and medicine really stands at the crossroads, it is essential that these divisive forces be eliminated and that the officers, the House of Delegates, and the Council act in unison, toward a common goal, and in the best interests of all the members.

This Society has great possibilities and equally great opportunities. With its ancillary organizations, it is structurally sound. What it needs to attain its full potential is the stimulus and direction of a united, informed, capable, and determined governing body. An individual's endearing characteristics or the section of the State from which he originates are no longer sufficient qualifications for office. I urge you henceforth to select your officers for their proved competence and their records of achievement. Elect them as though your professional lives depended on them, because I'm not so sure that they don't.

Since this is virtually the end of my term, I felt it my duty to offer these comments and suggestions, although it might have been easier and more pleasant to avoid raising issues. Having done this, I believe that I have discharged my last major responsibility, and there is nothing left for me to do but wish you Godspeed.

Respectfully submitted,
George Himler, M.D., President

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

The annual and supplementary reports of the president were reviewed. The president outlined several areas of change in Society activities which will be mentioned in the report.

An important change is the development of a Division of Legislation under the directorship of Martin J. Tracey, J.D., who now spends a great deal of time during the legislative session in Albany where he can be in continuous contact with senators and assemblymen concerning bills that may be of interest to the Society. He is also in constant contact with our Legislative Counsel, DeGraff, Foy, Conway, and Holt-Harris, during this period.

Your reference committee spent a great deal of time discussing professional medical liability insurance. It was the feeling of the reference committee that the president, along with the other officers involved, have made an exhaustive study of the professional medical liability insurance problem. Reports would indicate that the State Medical Society has one of the finest malpractice programs in the country. Every effort is being taken to keep the cost of this program as low as possible. We have noted that the overall expense factor for the State Society program is only 15.5 per cent compared to 30 to 35 per cent as reported by the AMA. We would like to point out that the responsibility of bringing down the cost of professional medical liability insurance is not only the responsibility of the State Society, but also the responsibility of each physician that participates in the program. Much can be done at the county society level and, indeed, at the hospital staff level to correct many of the problems we face in the area of medical malpractice.

We note that considerable time and effort have been expended concerning such problems as the New York State Department of Health, Article 86:11(c) relating to the payment of hospital-based physicians. We understand that action on this Article has been deferred until later this year. All those interested should remain alert to this problem.

We note further that opposition to proposed legislation to make continuing education mandatory has been vigorous, and the Society is fostering an independent commission on continuing medical education.

The president reviewed the New York Institute for Research in the Development of Health Care, Inc. He detailed the organization of the Institute and explained the method of funding, operation, membership, and its relationship to the Society. At this time, the Institute is not funded and its operation depends on the action taken on its grant application.

The committee wishes to express its gratitude to our president, George Himler, M.D., for his outstanding service as president. He has contributed greatly to the Medical Society during the year.

The House voted to adopt this portion of the reference committee report.

Secretary (Annual)

To the House of Delegates, Gentlemen:

Duties of the secretary have been performed as follows for the year 1971–1972.

House of Delegates. Minutes of the 1971 meeting were edited and transmitted to the ***New York State Journal of Medicine;*** they appear in the June 1, 1971, issue of the ***Journal.*** The verbatim record of the 1971 House of Delegates' proceedings is on file at the Society's headquarters. Instructions of the House of Delegates were referred to the appropriate officers, committee chairmen, division directors, or other persons by the executive vice-president, either directly or in accordance with action taken by the Council in March on matters presented to it by the secretary at that time. Final disposition of instructions of the House have been excerpted from reports of officers and committee chairmen so far as they are available at the time of writing this report and are included in the "Résumé of Instructions of the 1971 House of Delegates and Actions Thereon by the Council, Board of Trustees, Officers, and Committee Chairmen."

Council, Executive Committee, Judicial Council, and Board of Trustees. The secretary has sent notices of the meetings of the Council, the Board of Trustees, and the Executive Committee and has also reported Executive Committee actions to the Council. There have been no meetings of the Judicial Council during the year, to date.

Membership. In response to requests by the county medical societies, presented by the Secretary, the Council has approved remission of dues of 167 at its meetings in March, May, and September because of illness, financial hardship, or military service. A supplementary report will contain additional membership information including dues remissions approved by the Council in November, 1971, and January, 1972, and a list of life members elected by the Council in November, 1971, and January, 1972. A list of persons elected to life membership at the Council meetings held in March, May, and September, 1971, follows.

Abram Joseph Abeloff, New York City
Cullen Adlerblum, New York City
Abraham Adnopoz, Brooklyn
William Brewster Allan, New York City
William Elliott Allison, Camden
George Edward Anderson, Brooklyn
George Clinton Andrews, New York City
David Irving Arbuse, New York City
Benjamin I. Ashe, New York City
Samuel Atkin, New York City
Amin Assad Audeh, Menands
Liese Auerbach, New York City
Joseph Avin, Brooklyn

Moses Bacher, The Bronx
Grace Baker, New York City
Irvin Balensweig, New York City
Valer Barbu, New York City
Arthur Joseph Barsky, New York City
Edgar Coleman Beck, Buffalo
Joseph Nuntius Bellino, Newburgh
Richard Berczeller, New York City
Louis Berg, New York City
Bernard Berglas, New York City
Ruth Pirkle Berkeley, New York City
Ira Jay Berlove, New York City
Jacob Clarence Bernstein, Greenlawn
Oscar Hirsch Bernstein, Hollywood, Florida
Samuel Bernstein, New York City
Louis F. Bishop, New York City
Josef Bleichfeld, Buffalo
Benjamin Abner Bloom, Brooklyn
Joseph Blum, New York City
Guido Boccardi, Long Island City
Edward Andrew Bogdan, Amsterdam
Cologero John Bonadio, Kings Park
Morris Bonfield, Brooklyn
James Bordley, III, Cooperstown
Alexander Borota, New York City
David Marsh Bosworth, New York City
Malcolm Albert Bouton, Schenectady
Charles Hugh Branigan, Bronxville
Eugene Braude, New York City
Lester Breidenbach, New York City
Ruth Pilpel Brickner, Hastings-on-Hudson
Samuel Brock, New York City
Isaac B. Brodsky, The Bronx
Katherin Forster Brokaw, Ghent
Ludmilla F. Brown, New York City
Philip Brown, The Bronx
Leon Allan Bryan, New York City
Charles Buckman, East Meadow
Vincent DePaul Bull, Syracuse
Samuel C. Burchell, New York City
William Gerald Burke, Brookville
Julius Burstein, New Rochelle
Con Amore V. Burt, New York City
Giovanni Caggiano, The Bronx
Otto Anthony Carabba, Brooklyn
Wolfgang Albert Casper, Staten Island
Thomas Norman Cassidy, Westbury
Anthony Joseph Cava, Valley Stream
William V. Cavanagh, Watertown
Nathan Wolf Chaikin, New York City
Levere McDonald Chaney, New York City
Alexander I. Charin, New York City
Joseph Solomon Chasnoff, Brooklyn
Robert S. Chernuchin, New York City
Albert A. Cinelli, New York City
Anthony Caesar Cipollaro, New York City
Philip Cirincione, The Bronx
Alphonse Vincent Clement, Brooklyn
Hollis Emerton Clow, White Plains
Samuel Lewis Cohen, Brooklyn
Frederick Eduard Cohn, Rhinebeck
Alfonso Coletta, Flushing
Charles Anthony Collins, Old Greenwich, Connecticut
Walter Edwin Constantine, Buffalo
William P. Corriero, Garden City
Harry A. Coveler, New York City
Ruth Foster Crabtree, Newburgh
John Dorsey Craig, New York City
Henry Aloysius Crane, Staten Island
William Henry Crull, New Paltz
Ralph Leslie Cudlipp, Sr., Winthrop
Salvatore Ralph Cutolo, New York City

Max Dahl, Poughkeepsie
Elbert Dalton, Beaver Falls
George Eaton Daniels, New York City
James Llewellyn Davis, Newark
Nathan Davis, New York City
Elizabeth W. De Csepel, New York City
John Kenneth Deegan, Beacon
Clarence E. de la Chapelle, New York City
Edward Victor Denneen, Thendara
Clifford Leroy De Rago, Brooklyn
Louis Marius D'Esopo, Tarrytown
Joseph Sante Diasio, Oakfield
Bernard Disick, Brooklyn
Vera B. Dolgopol, New York City
Edward Vincent Dollard, Miller Place
Arthur F. Donofrio, The Bronx
Harold S. Douglas, New York City
Margaret Douglas, New York City
Thomas Frazer Draper, Queens Village
Joseph George Druss, New York City
James Howard Dwinelle, Rye
Myron John Dybich, Schenectady

Joseph Eidelsberg, New York City
Joseph Jordan Eller New York City
Harold Lloyd Ellis, New York City
Werner Herman Engel, New York City
Joseph Engelmann, New York City
Alfred John Ephraim, Brooklyn
Harry Herman Epstein, Sherburne
Herbert Arthur Epstein, New York City
I. Leslie Epstein, Brooklyn

Maximilian Fabrykant, New York City
George Linden Fair, Syosset
Miklos Farago, Helmuth
Raphael Farber, Rochester
Franklin Crevling Farrow, Buffalo

Anthony Godfrey Featherston, New York City
Frederic Feldman, Brooklyn
Eugene Alfred Fierro, New York City
Jacob Figarsky, Brooklyn
Leon E. Fineman, The Bronx
Hermann Fischel, Brooklyn
Alfred Elias Fischer, New York City
Arthur M. Fishberg, New York City
Grant Tracy Fisher, Lackawanna
Ferdinand N. Forbes, New York City
Claude Ellis Forkner, Deland, Florida
Ruth Fox, New York City
Sidney Albert Fox, New York City
William Henry Frazier, Yonkers
Samuel Z. Freedman, New York City
Arthur Jerome Freeman, Port Ewen
William Adrian Freeman, New York City
Jacob Robert Freid, New York City
Arthur Morton Freund, The Bronx
Hans Freundlich, Hamburg
Joseph John Fried, New York City
Benjamin Friedman, New York City
George Friedman, New York City
Jacob Friedman, New York City
Leon Arthur Friedman, Scarsdale
Margaret Evelyn Fries, New York City
J. Dudley Fritz, Palm Beach, Florida
Arthur Laverne Funk, Buffalo

Harry Gabe, The Bronx
Elmer Stewart Gais, New York City
Conrad K. Gale, New York City
Elizabeth M. Gallinek, New York City
Thomas Joseph Galvin, New York City
Percy Garson, Peekskill
Jacob Gantman, The Bronx
William Geiger, New York City
Francis Giammattei, North Tarrytown
William Vincent Gilbert, The Bronx
Joseph H. Gillman, Brooklyn
Paul Henry Girard, Utica
Ameil Glass, White Plains
Samuel Thomas Glasser, New London, Connecticut
Rachelle Goldberg, Brooklyn
Simon Noah Goldberg, Yonkers
Maximilian W. Goldstein, New York City
Leo Gottesman, Woodside
Arthur Gottlieb, Brooklyn
Horace Greeley, Jr., Brooklyn
Robert Stone Grinnell, New York City
Henry Nathaniel Gross, Brooklyn
Benjamin Grossman, Flushing
Friedrich Wilhelm Grossmann, New York City
Aleksander Grudzinsky, Elmhurst
Charles Gruen, Fort Myers, Florida
Arnold Grunfeld, New York City
Arthur Herman Grunfeld, Buffalo
Karl William Gruppe, Sauquoit

Marczel Haas, The Bronx
Ernst Hammerschlag, New York City
William Hammond, Scarsdale
Philip N. Harff, Cambridge
Louis Arthur Hauser, New York City
Anna Lee Hecht, Forest Hills
Lionel M. Heiden, New York City
Max Helfand, New York City
Frieda Henkin, New York City
Harry Lewis Herman, Brooklyn
Julian Bertram Herrmann, New York City
Leo Goldschmidt Hess, New York City
Hans Hesse, New York City
Norman L. Higinbotham, New York City
Louis Hirschborn, Great Neck
Hans Hirschfeld, New York City
Margot Hoffmann, The Bronx
Robin Hood, New York City
Edward Adolph Horowitz, New York City
Charles Voorhees Hults, Brooklyn
Henry Dunham Hunt, Saratoga Springs
Arnold A. Hutschnecker, New York City

Louis Iacueo, New York City
Alfred Ianora, Bellerose
Nicholas Ingoglia, Hollis
Ludwig Isaak, Greenwich, Connecticut
Otto Isakower, New York City

Edith Jacobson, New York City
Jacob O. S. Jaeger, New York City
Joseph J. Jaksy, New York City
Charles Neal Jeffries, Mamaroneck
W. Yerby Jones, Buffalo
James Craig Joyner, New York City
S. Fred Julich, New York City

Lothar B. Kalinowsky, Brightwaters
Edmund Kapise, New York City
Edward E. Kaplan, New York City
Samuel Karelitz, Flushing
Sigmund Karfiol, Brooklyn
Leopold Karp, Binghamton
Ernst Kaskel, New York City
William Augustus Katz, Flushing
Harry Harvey Kaufman, The Bronx
Julius Kavee, The Bronx
Alexander Sandor Kelen, New York City
Byron Benjamin Kenyon, Millerton
John Joseph P. Kilgallen, Brooklyn
Joseph Kertesz, Miami Beach, Florida
John Henry Kilgus, Bronxville
William L. King, Jamestown
Joseph Horace Kinnaman, Farmingdale
Edwina Kittredge, Yonders
Hans Simon Kiwi, New York City
Sophia J. Kleegman, New York City
Emil Fredrick Klein, Elmont
Irwin Jay Klein, Brooklyn
Percy Klingenstein, New York City
Morris I. Knopfelmacher, The Bronx
Isabel Knowlton, Key West, Florida
Hedwig Koenig, New York City
Jerome Kogan, Hallandale, Florida
Mortimer M. Kopp, New York City
Stefan Kornhauser, New York City (deceased)
Abraham Leon Kronzweig, New York City
Joseph Jack Kowles, The Bronx
Kyman Kozak, Brooklyn
Oscar Kramer, Brooklyn
Samuel Kramer, The Bronx
Emanuel Krimsky, Brooklyn
Marianne Kris, New York City
Harry Esslier Kroin, Jackson Heights
Julius D. Krombach, Crystal Beach, Florida
Harry Dayton Kruse, Bronxville
Norbert W. Kuch, Wayland

Bernard Kurz, The Bronx
Isaac Kuschner, New York City

Marion Dorothy Laird, The Bronx
Samuel Lampert, Long Island City
Herman Lande, New York City
Alfred Lang, Woodside
Gasper Anthony LaRosa, Rego Park
Norman Franklin Laskey, New York City
Evelyn G. Lavendel, Jackson Heights
John Walter Lawson, Yonkers
Wladyslaw Lewin, Kew Gardens
Leo Lefkowitz, Montrose
William Leifer, New York City
Martin Leiser, Poughkeepsie
Erwin Lengyel, Massapequa
Harold Sello Leopold, New York City
Harry Julius Lesnick, The Bronx
Kurt Leubuscher, Brooklyn
Charles Kantor Levy, Brooklyn
Eric L. Levy, New York City
Martin Lewy, Brooklyn
George Lichtenfeld, New York City
Betsy P. Lidsky, New York City
Milton Roland Louria, New York City
Harry Joseph Lowen, New York City
Henry J. Lowenfeld, New York City
Samuel Lowy, New York City
Joseph Lubart, New York City
Salvatore Luca, New Rochelle
Paul Joseph Lussheimer, New York City
Frederick Henry Lutze, New Rochelle

Kenneth Sheldon MacLean, New York City
Sigmund Mage, New York City
William Joseph Mahar, White Plains
Megirdich Mangoian, New York City
Hans Louis J. Mannheim, New York City
Joseph Mortimer Marcus, New York City
Lazar C. Margulies, New York City
Rafael A. Marin, New York City
Anthony Wayne Martin Marino, Brooklyn
Frank F. Marino, New Rochelle
James M. Markin, Rochester
Hirsch Marks, New York City
Jerome Alexander Marks, New York City
Kirby Armstrong Martin, New York City
Eugene Roland Marzullo, Brooklyn
William Edward Mathews, Niagara Falls
Joseph Bryant Mathewson, Ithaca
Leo Mayer, New York City
May R. Mayers, New York City
James Arthur McAleese, Freeport
Edward James McCabe, New York City
Joseph Tecumseh N. McCastor, New York City
John Corran McCauley, Jr., Wellsboro
Gladys May McDermaid, Arcadia, Florida
Harold Patrick McGan, Albany
Frederick William Haskell McKee, New York City
Abraham Medjuck, Brooklyn
Leon Merkin, New York City
Benjamin Messinger, The Bronx
Joseph Charles Micelli, Brooklyn
Ade Thomas Milhorat, New York City
Frederick Munger Miller, Jr., Utica
Kate Freeman Miller, Stony Brook
Charles Osborne Mills, Syracuse
Hyman Miner, The Bronx
Oscar Joseph Mink, Hastings-on-Hudson
Alex Mintzer, Hollywood, Florida
Peter John Milazzo, Corona
Ludovico Marion Mirabella, Floral Park
Sonya Arina Monen, Brooklyn
David Dodge Moore, Islip
Edwin King Morgan, Brooklyn
Leon Motyloff, New York City
Gerard Harry Mueller, New York City
Meta Froehlich Mueller, New York City
Michael George Mulinos, Westfield, New Jersey

Kurt Sam Nahm, New York City
Max Bernard Nathanson, The Bronx
Walter Gerhard Nauenberg, New York City
William Alexander Newlands, Tarrytown
Saul Charles Newman, Amityville
Elizabeth Grace Nicholls, Pittsburgh, Pa.
Savas Nittis, New York City
Michael Anthony Nocero, The Bronx
Arthur A. Nussbaum, Brooklyn

John Edward O'Connor, New York City
Edward Opin, West Palm Beach, Florida
Hellmuth Ernst Oppenheimer, New York City
Samuel Zachary Orgel, New York City
Julius Gustave Ottenheimer, New York City

Clarence Quinton Pair, Mount Vernon
Orla James Park, Hudson Falls
Richard Townley Paton, Southampton
Brittain Ford Payne, New York City
Nellie Pelecovich, Forest Hills
Stephan I. Pellathy, Kings Park
Osborn P. Perkins, New York City
Louis Perlman, Brooklyn
Arthur Melvin Persky, Brooklyn
Albert Bela Peterfy, New York City
Theodore Pick, New York City
Ulric Richard Plante, Massena
Alfons Podnieks, West Hempstead
Abraham Charles Posner, New York City
Harry B. Pozner, Elmont
Moses L. Press, Brooklyn
Pro V. Prewitt, New York City
Rosa Elizabeth Prigosen, Brooklyn
Rose Marie Pucci, Rochester

Marie Soloff Quasha, Brooklyn
John Joseph Quinlan, Troy (deceased)

Jay Robert Rabinowitz, Brooklyn
Milton Joseph Rader, North Miami Beach, Florida
Louis G. Raff, Flushing
Walter Redisch, New York City
Carl Reich, New York City
Ellen Reiner, New York City
Nathaniel H. Robin, Hempstead
Philip James Robinson, Ithaca
Abe Irving Rock, Buffalo
Adelaide Romaine, New York City
Alfred Romanoff, New York City
Leo Rosen, Brooklyn
Stephan S. Rosenak, New York City
Hyman Rosenfeld, Brooklyn
Maurice C. Rosenkrantz, Hollywood, Florida
Theodore Rosenthal, New York City
Alfred M. Rosier, Lynbrook
Mayer Edel Ross, Brooklyn

Abraham Simon Rothberg, New York City
David Rothstein, Jackson Heights
Kenneth Thomas Rowe, Hornell
Pierre Adolph Rube, New York City
Lucian C. Rutecki, Buffalo
Samuel Rubenstein, Brooklyn

Israel J. Sackin, Brooklyn
Edward Irving Salisbury, Plandome
Myron A. Sallick, New York City
Abraham Norman Saperstein, Bellerose
Stephen Frank Saxl, New York City
Max Morton Scharf, Hallandale, Florida
Alfred Schick, New York City
Henry A. Schlesinger, Brooklyn
Milton Herman Schlesinger, Jackson Heights
Solomon Schneider, Brooklyn
Ferdinand J. Schoeneck, Syracuse
Martin Schreiber, New York City
Philip Maxwell Schulman, Fort Lee, New Jersey
Milton John Schulz, Lancaster
Simon Jacob Schumacher, The Bronx
Harry Schwartz, New York City
Samuel Schwartz, New York City
William A. Schwartz, Hollywood, Florida
Paul Sylvester Seager, New York City
Robert Charles Seeley, New York City
Frank Justin Serafin, Amityville
Frank Z. Serman, New York City
Benjamin S. Shapley, Flushing
William Anthony Shay, Cortland
John Newton Shell, Freeport
Jacob W. Shemin, The Bronx
Penelope Sherwood, Newburgh
Irving Daniel Shorell, New York City
Gertrude M. Shults, Lakemont
Samuel A. Sidat-Singh, New York City
Samuel Silber, Brooklyn
Joseph Anthony Sileo, Brooklyn
Charles Franklyn Sims, The Bronx
Samuel Edward Sinberg, New York City
Frank Badger Smarzo, Livonia
Ainsworth Lockhart Smith, Miller Place
David Henry Smith, New York City
Henry Templeton Smith, New York City
Maxwell Conrad Snider, Binghamton
Robert Folger Solley, St. Louis, Missouri
Nathan Solomon, The Bronx
Anni Sonnenfeld, New York City
Herman Sparber, Brooklyn
Nathan Spector, Fort Lee, New Jersey
Joseph Maurice Spielberg, Miami Beach, Florida
Alfred Morrell Stanley, Adams Center
Samuel Jay Stabins, Rochester
Henry Staff, Bath
Otto Steinbrocker, New York City
Arthur Steindler, Forest Hills
Hans L. Steiner, Lindenhurst
Michael Steiner, New York City
Emil Sternberg, Buffalo
Herman Max Sternberg, New York City
Grete Stohr, New York City
Hilton Hedley Stothers, New York City
Adele Emily Streesman, Brooklyn
George Morris Stroll, Shelter Island
Marion Baldur Sulzberger, San Francisco, California
Harry Suna, Hollywood, Florida
Elizabeth G. Sunners, New York City
Wilson Carroll Swasey, Batavia
Willard Hamilton Sweet, Jr., Peekskill

Oscar Tanne, New York City
Sidney Tausend, Scarsdale
Stanleigh Sydney Tausend, New York City
Howard Canning Taylor, Jr., New York City
William Volf Tenzel, New York City
Robert Collins Towse, Watervliet
Ervin Anthony Tusak, New York City
Jacob H. Turner, The Bronx
John Russell Twiss, New York City

Albert Vander Veer, II, Delmar
Alfonso Alfred Vanore, Whitestone
Ilona Vass, New York City
Edmund Vermes, New York City
Raoul Elie Vezina, Troy
Eduard Walter Violin, New York City
John J. Viviani, Garden City
Peter Vogel, New York City
George Claus von Borstel, Scotia
Harry Edward Voss, Scarsdale

Max Waltuch, New York City
Francis Cluskey Ward, Odessa
Tobias M. Watson, Palos Verdes Estates, California
Abraham Weber, Brooklyn
Virginia Travell Weeks, Brooklyn
Selma Wehl, Brooklyn
Rudolf Weil, New York City
Seligman Weinberg, Yonkers
Joseph Weiss, The Bronx
Franklin Howard Westcott, San Diego, California
Francis Clark White, Victoria, British Columbia, Canada
Sidney B. Wilensky, New York City
Sigmund P. Winter, The Bronx
Rudolf Wittmann, New York City
Louis A. Wolfe, New York City
Ludwig Wolfermann, New York City
Joachim Berthold Wolff, New York City

William Abraham Zavod, Mount Vernon
Zelman Zelikson, The Bronx
Frederick Ziman, New York City
Alphonse Alfred Ziviello, The Bronx
Joshua Zuckerman, New York City
Julius Stephen Zufa, New York City
Wolf Zukerman, New York City

Dues payments. As of May 1, 1971, the date after which good standing is lost, dues had been received from the members in each county medical society in accordance with the following list.

Albany	429
Allegany	22
Bronx	1,499
Broome	328
Cattaraugus	82
Cayuga	77
Chautauqua	112
Chemung	121
Chenango	40
Clinton	71
Columbia	38
Cortland	37
Delaware	35

Dutchess	309
Erie	1,279
Essex	18
Franklin	39
Fulton	42
Genesee	46
Greene	26
Herkimer	39
Jefferson	99
Kings	2,790
Lewis	10
Livingston	37
Madison	56
Monroe	982
Montgomery	31
Nassau	1,879
New York	6,604
Niagara	171
Oneida	308
Onondaga	627
Ontario	109
Orange	212
Orleans	23
Oswego	52
Otsego	56
Putnam	24
Queens	2,208
Rensselaer	134
Richmond	294
Rockland	343
St. Lawrence	79
Saratoga	45
Schenectady	206
Schoharie	21
Schuyler	8
Seneca	25
Steuben	104
Suffolk	1,072
Sullivan	44
Tioga	20
Tompkins	100
Ulster	140
Warren	80
Washington	30
Wayne	54
Westchester	1,376
Wyoming	23
Yates	15

Meetings. The Secretary has attended meetings of the Council, the Executive Committee, the Board of Trustees, the Professional Medical Liability Insurance and Defense Board, the House of Delegates of the American Medical Association, and the New York Delegation to the American Medical Association. He plans to attend the meeting of the Nominating Committee. To date there has been no meeting of the Judicial Council.

Other Matters. The Secretary has kept the minutes and verbatim record of the proceedings of the House of Delegates, the Council, the Executive Committee, and the Board of Trustees. He has also kept files of the correspondence resulting from these meetings. He has served as custodian of the seal of the Society and has had it affixed to all appropriate documents.

As a result of his holding office in various other organizations, your Secretary was able to act as liaison officer with the following organizations: The New York Association of the Professions, New York Board of Trade, Group Health Insurance, and Physician's Home. Your Secretary also served as a member of the American Medical Association's Committee on Malpractice.

Before closing his report, your Secretary would like to express his thanks and appreciation for the great help rendered him during the past year by the Assistant Secretary, Joseph G. Zimring, M.D., and for the ever-constant aid of the executive assistant, Miss Gretchen Wunsch.

Respectfully submitted,
Carl Goldmark, Jr., M.D., Secretary

Secretary (Supplementary)

To the House of Delegates, Gentlemen:

At its meeting in December, 1971, the Council adopted the Secretary's recommendation for remission of dues of 8 members because of illness, financial hardship, and military service. No remission requests were presented to the Council in January, 1972.

In addition to the life members listed in the Secretary's annual report, 50 life members were elected by the Council in December, 1971, and 52 were elected in January, 1972. The list of these life members follows:

Edwin Benjamin Bilchick, New York City
Henry H. Blum, The Bronx
Abraham Bohrer, Jackson Heights
Samuel S. Brown, Brooklyn
Ralph Matthew Burns, Glen Cove
Michael Paul Calvacca, Brooklyn
Alfred Rocco Caruso, Brooklyn
Frank Celano, Westbury
William Thomas Clark, Woodgate
Harry J. Cohen, The Bronx
Heinz Gunther Cohn, Utica
Hugh Edward Conly, Mineola
Sam Vincent Corso, Manhasset
Willard John Davies, Rockville Centre
Virgil B. DeWitt, New Paltz
Pasquale M. DeCarlo, Bronxville
H. Elias Diamond, Hartsdale
Harry Abraham Dick, The Bronx
Herman Domush, Lido Beach
Steven Dobo, Poughkeepsie
Mortimer Byron Downer, Kingston
Solomon Dresner, Yonkers
William Ebner, North Miami Beach, Florida
Samuel J. Ehrlich, Scarsdale
John Joseph Elliott, Eggertsville
Norris Clarence Elvin, Garden City
John Leo Finnegan, Flushing
Sidney Frank, Great Neck
Martin Friedland, Buffalo
Samuel Meyer Friedland, Fort Lee, New Jersey
Lyman Gill Fussell, Mineola
Marcel Friedman, Beacon
Eugene Frederick Galvin, Rosendale
Samuel Gartner, The Bronx
Wendell Dow George, Chaumont
Walter B. Georgi, The Bronx
Richard Glauber, Forest Hills
Robert Glass, New York City
Louis Lazar Golden, Forest Hills

Martin Francis Geruso, Amsterdam
Edward Morris Gould, New York City
Sidney W. Grossman, Englewood, New Jersey
Francis Joseph Gustina, Snyder

Frank Coleman Hamm, Shelter Island
Robert Emmet Harrington, Saratoga Springs
Raoul Albert Hebert, Cohoes
Edward C. Held, North Hempstead
Francis Hess, Rochester
Franklyn Alvin Huber, Winter Park, Florida
Harold Fredrick Hulbert, Dansville

Donovan Meredith Jenkins, Webster

William Joel Kibler, Jr., Tonawanda
Milena Klein, Jamaica
Robert Scott Kunkel, Gloversville

Harry A. LaBurt, Queens Village
John Blake Laidlaw, Rochester
Joseph Clarence Lane, Manhasset
Louis Leiter, The Bronx
Arnold John Lee, Carthage
Jack Levine, The Bronx
Hans Lowenstein, Middleport

Malcolm James Magovern, Saratoga Springs
Philipp Manecke, Jr., Glendale
Delfino P. Mascolo, Roslyn Estates
Abraham P. Matusow, Long Beach
James A. Mitchell, Elmira

A. Lloyd Norris, Brooklyn
Rudolf Nurnberger, Richmond Hill

Morris Henry Oken, The Bronx
Benjamin Joel Ollodart, Buffalo

Theodore Parfanowicz, Buffalo

Daniel Edward Quinlan, Brooklyn

Armand E. Rainville, New Hyde Park
Jonathan Harris Ranney, New York City
Nathaniel S. Reimer, The Bronx
Jose Guadalupe Reyes, The Bronx
Lawrence Patrick Roberts, Poughkeepsie
Gustav Rosbasch, Rochester
Samuel Rosenfeld, Brooklyn
Charles Edward Rung, Buffalo

Carl Joseph Sachs, Plainfield, New Jersey
Anna Mirkin Schlessinger, Jackson Heights
Harry Schenkman, Hookset, New Hampshire
Jacob Schulman, Brooklyn
Morris B. Schwartzfarb, The Bronx
Samuel David Shapiro, The Bronx
Benjamin Maurice Shure, North Miami Beach, Florida
Seymour Harry Silvers, Brooklyn
Harris Sklaire, Rouses Point
Paul John Soley, LaGrangeville
Franklin Vaughn Sunderland, Jackson Heights
Grace Maguire Swanner, Saratoga Springs

Simon Leonard Victor, Nyack
Johannes Vironeem, College Point

Alfred Julius Weil, Pearl River
Harry Weiner, Miami Beach, Florida
George Weiss, The Bronx
Oscar Wilcox, Jr., Chatham
Arthur Raymond Wilsey, Gloversville
Hugo Wit, The Bronx

Irving Yarvin, Queens Village

The following year-end membership figures have been supplied by the Membership Department.

1970 Membership	27,052	
1971 New members	1,034	
1971 Reinstated members	158	28,244
1971 Deaths	437	
1971 Resignations	398	835
		27,409
1971 Delinquent members	377	377
1971 Total membership		27,032

Remission of 1971 dues was voted for 212 members as follows:

Illness and financial hardship	173
Temporary military service	39
	212

Membership totals for the years since 1960 have been as follows:

1960	25,250	1966	26,127
1961	25,351	1967	26,468
1962	25,401	1968	27,002
1963	25,528	1969	27,164
1964	25,630	1970	27,052
1965	25,915	1971	27,032

Respectfully submitted,
Carl Goldmark, Jr., M.D., Secretary

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

We reviewed the reports of the Secretary, Carl Goldmark, Jr., M.D., and wish to compliment him on the excellence of his report.

We note particularly that despite the loss of membership due to the assessment our net loss for 1971 was only 20 members due to the increase in the number of new members. Our total membership at this time is 27,032. Your reference committee wishes to thank Dr. Goldmark and the Assistant Secretary, Joseph G. Zimring, M.D., for their efforts on behalf of the Society during 1971.

The House voted to adopt this portion of the reference committee report.

Treasurer (Annual)

To the House of Delegates, Gentlemen:

The following will be my last report as treasurer of the Society. My association with its fiscal matters began in 1963 when I assumed the office of assistant treasurer and continued as treasurer, beginning in 1967.

I am most gratified that I have had an opportunity to help guide our organization through almost a decade of economic uncertainties. Certainly, the cost of doing business, and we are a part of big business, has become increasingly trying. Yet, during this time, we were able, in large degree, to prevail against the ever-increasing high cost of doing business. The $75 special assessment levied on our membership made possible the receipt of over $1,735,000 which together with previous surplus, paid in full for the acquisition of land and construction of our present headquarters building in Lake Success, New York. We have no mortgages hanging over our heads, no interest to pay, and, above all, we have an adminis-

TABLE I. Estimated Budget for 1971 after nine months operations ended September 30, 1971

Income	*Revised Estimated Budget*	*Received to September 30, 1971*
Dues	$1,620,000	$1,210,000
Journal Advertising	295,000	227,901
Journal Circulation	6,000	3,529
Journal Reprints	13,000	12,066
News of New York advertising	52,038	43,365
Medical Directory sales	35,000	1,685
Annual convention exhibit rentals	47,115	47,115
Interest on investments of General Fund	16,000	15,035
Dues Collection from AMA	17,000	16,435
Relative Value Study	1,550	390
What Goes On subscriptions	400	261
Guidelines for Medical Review	1,800	1,687
Miscellaneous Income	75	70
TOTAL INCOME	$2,104,978	$1,579,539

Expenditures	*Revised Estimated Budget*	*Expended to September 30, 1971*
Administration	$ 213,726	$ 139,592
Standards of Medical Care Division	37,849	26,542
Research and Planning Division	51,101	35,820
Business Division	497,688	331,817
Public Affairs Division	342,913	218,194
Medical Services Division	66,314	49,060
Scientific Activities Division	93,085	62,588
Scientific Publications Division	417,156	247,855
Annual Convention	58,836	58,836
Legal Counsel	60,000	45,000
Legislative Counsel	22,500	16,875
Officers, Board, AMA Delegation	96,909	52,408
House of Delegates (Special Committees)	6,000	4,377
Council Committees	51,984	25,891
Nondivisional	320,905	185,466
TOTAL EXPENDITURES	$2,336,966	$1,500,321
Excess of Income over Expenditures	$ −231,988	$ 79,218

trative headquarters which provides us with the facilities and capacity to carry out our responsibilities to the public and the profession in a most satisfactory manner.

It is gratifying that we can report that our fiscal operations for the calendar year 1971 are better than previously anticipated. Table I shows that the revised estimated budget deficit at September 30, 1971, was $231,988. At this writing, we can report that the actual operational deficit for the year ended December 31, 1971, is −$1,990.

The final year-end financial report prepared by our auditors, the certified public accounting firm of Patterson and Ridgway, will be presented to the House of Delegates as a supplementary report of the Board of Trustees.

At this time, the treasurer would like to thank the administrative staff for their cooperation and continued efforts on behalf of the State Medical Society. In particular, special gratitude is extended to Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president; and Eugene S. Dombrowski, director, division of budget and finance.

Respectfully submitted,
Thomas F. McCarthy, M.D., Treasurer

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

We note that despite a difficult year, the deficit for 1971 was only $1,990. The expected deficit for 1971 was $231,988. This would appear to reflect careful spending and careful budget adjusting. The 1972 budget was carefully reviewed. Our treasurer reports that there will be an estimated deficit for 1972 of $310,758. This deficit is due to an increase in cost of operations and a much needed salary increase for the staff. We note that the last salary increase for our Society's staff was in 1969. It was felt that a salary increase is long overdue in light of the inflationary trend of the economy with which we are all faced.

Your reference committee wishes to express the gratitude of the Society to Thomas F. McCarthy, M.D., for his diligent service as assistant treasurer, and treasurer from 1963 to 1972.

The House voted to adopt this portion of the reference committee report.

Executive Vice-President (Annual)

To the House of Delegates, Gentlemen:

This report covers the period from the annual meeting in February to November 1—approximately nine months.

THE BUILDING

Work on the building has been progressing in the right direction, but slower than we had anticipated. As the deadline approaches, we become more and more impatient. This is only natural.

Although we realize that present-day trends do not call for dedication and speed, which was so prevalent in yesteryear, we still feel that more men should have been assigned to the job, so that completion of all phases of the building would be brought closer to realization. With this in mind, we have been meeting with the architects and contractors frequently—and urging them to go ahead at full steam.

The chairman of the Building Committee and our treasurer also have "been on the ball." They have been visiting the site at regular intervals. We could not have better "watchdogs."

Despite all the frustrations, we will occupy our new headquarters soon. We are scheduled to move to Lake Success on November 16.

The formal dedication will take place on December 10. By then, we hope that the "bugs," which are inherent in any new structure, will have been eliminated.

Assessment. Through October 12, the building assessment has brought in $1,727,530. The figures show:

Full Members:	22,851 × $75 =	$1,713,825
Junior Members:	90 × $25 =	2,250
Contributions:		11,455

In other words, 97.2 per cent of our regular dues-paying members have transmitted their checks. A few returns are still coming in.

Real Estate Tax. As some of you know, unexpectedly, a new law passed by the last Legislature makes it possible for property such as ours to be included in the list for real estate taxes—on local option. In other words, we have lost the privilege of real estate tax exemption.

Sometime ago, this letter was transmitted to the Village Trustees by John Lewis, our "village expert counsel."

> This statement is presented on behalf of the Medical Society of the State of New York in opposition to the proposal to adopt A Local Law to Provide for the Taxation of Presently Exempt Real Property Owned by Certain Nonprofit Corporations and Associations.
>
> The Medical Society was created by Special Act of the New York State Legislature, Chapter 138 of the Laws of 1806. It is a nonprofit membership corporation created for the purpose of advancing the science and art of medicine and to promote the betterment of public health.
>
> The Medical Society acquired property in Lake Success on August 31, 1967. It is in the course of constructing a building on such property which will constitute its headquarters. The building is expected to be ready for occupancy in October, 1971.
>
> Prior to the acquisition of the property and the preparation and filing of plans for the construction of such building, the Medical Society acting in reliance upon Section 420 (1) of the Real Property Tax Law of the State of New York which exempted properties of a medical society as well as properties of other educational, scientific, charitable and benevolent organizations, prepared a budget of its expenses of operation. Such budget did not nor could it be expected to include any sum for payment of real estate taxes on its proposed building. Any effort on the part of a municipality, whether at the town and county, the school or village level, to impose a real estate tax on such property would, if successful, seriously disrupt the Medical Society's budget and could have the effect of curtailing its activities.
>
> The recently enacted Section 420(1)(b) amendment to the Real Property Law of the State of New York was predicated upon a legislative finding that real property in the State of New York having an assessed valuation of excess of 22 billion dollars is exempt from and free from the payment of real property taxes and that the continuous removal from the tax rolls of taxable real property is a particular hardship on local governments and upon the citizens who are increasingly burdened by additional taxes whenever such tax exemptions reduce the tax base. No quarrel is raised with respect to the purpose enunciated in the Act. However, the condition sought to be corrected is of minor importance in Nassau County and minimal in the Village of Lake Success. Although the impact on municipalities of tax exempt properties held by public and by private nonprofit organizations is great, the proportionate share of such tax exempt properties held by hospital and medical facilities is relatively small and this impact is counterbalanced by the beneficial services the medical facilities provide to the taxpayer. Before considering a proposal to revoke a tax exemption enjoyed by a nonprofit organization, the municipality should determine whether that particular organization is providing a public benefit which should be encouraged.
>
> As stated above, Nassau County is not drastically affected by the percentage of real property exempt from taxation. Based upon 1967 assessment rolls, Nassau County tax exempt property amounts to 14.88 per cent whereas tax exempt property in St. Lawrence County was 62.59 per cent, Seneca County 57.88 per cent, and Livingston County 48.09 per cent. (See Final Report of the Joint Legislative Committee to Study and Investigate Real Property Tax Exemptions, Legislative Document (1970) No. 15.)
>
> Nassau County has taken no action under the authority granted to it in subdivision (b) of Section 420(1) of the Real Property Law. In fact, it is understood that the County at this time has no plans for enacting a local law revoking the present tax exempt status of properties within the County.
>
> Real property located within the Village is assessed at $32,180,322. Tax-exempt properties owned by the County of Nassau, the Town of North Hempstead, the School District, the Manhasset-Lakeville Water District, religious organizations, the Medical Center, the Nursing Home, the Medical Society of the State of New York, and by the Village itself are assessed at $2,161,725 or approximately only 6.7 per cent of the assessment roll. This tax exempt property does not constitute a significant portion of the total land value within the Village and certainly does not create a burden upon the Village taxpayers. Since subdivision (b) of Real Property Law Section 420(1) does not en-

compass properties owned by State, County, Village, School Districts and Water Districts, the only property against which the proposed Local Law is directed is the single parcel held by the Medical Society. It is respectfully submitted that the benefits to residents of the Village to be provided by the Medical Society far outweigh the cost to the individual taxpayer.

There is a grave danger that any action on the part of the Village of Lake Success in revoking tax exemption heretofore granted to the property of the Medical Society would trigger similar action on the part of Town and County authorities and as a result the impact of taxes on the Medical Society could have a drastic effect upon its operations.

Furthermore, we question the validity of a Local Tax Law directed specifically against one single taxpayer.

For all the above reasons the proposed Local Law No. 1 of 1971 revoking tax exemptions presently granted should not be enacted.

The Board of Trustees of the Medical Society of the State of New York is considering an alternate plan to ease the burden of the tax, if the Village Board decides to pursue this matter.

Of course, to make up for the real estate tax cost, we also will plan the rental of unassigned space in our building to allied groups.

Subletting of Space at 750 Third Avenue. We have been very actively engaged in trying to find a lessee for subletting our present quarters. A number of organizations are definitely interested in occupying our space. The latest bid was $6.50 per square foot. The problem is being negotiated with Cross & Brown, the real estate agent for 750 Third Avenue. We are awaiting further developments.

STATUS OF MSSNY MEMBERSHIP

Since an additional 3.2 per cent of our members are in arrears and no longer in good standing during this year as compared with 1970, due mainly to the assessment, we will lose approximately 600 members, or a decrease in revenue of 600 × $70, which is over $40,000 less than the original estimate of income.

AMA DUES

The latest review shows that there will be about 8,000 members who have not paid their AMA dues, as compared with last year. This will reduce our representation in the American Medical Association House of Delegates from 27 to 19.

UNRELATED BUSINESS INCOME—JOURNAL ADVERTISING

The problem of unrelated business income, as far as the Journal advertising is concerned, has been presented to you on a number of occasions. Recently, the Internal Revenue Service submitted to us an income tax bill for 1968 of $40,116.56, plus a penalty of $6,017.48, for a total of $46,134.04. This matter was referred to Wilkie, Farr and Gallagher, tax experts.

Recently, we received the following communication from these people:

With reference to our telephone conversation last Monday, I am writing to confirm our recommendation in connection with a proposed adjustment of the 1968 Federal income tax liability for the Medical Society of the State of New York (hereinafter called the Society). That adjustment, as set forth by letter dated July 20, 1971, from the Internal Revenue Service to the Society, proposed a deficiency of $40,116.56 in income tax, plus a delinquency penalty. As I stated to you on the telephone, we recommend that the Society pay the proposed deficiency and penalty, and thereupon file a claim for refund of such amount with the Internal Revenue Service.

The alternative procedure is to file a memorandum with the Internal Revenue Service protesting the adjustment proposed in its July 20 letter.* Some months after the filing of that protest, there would be a conference with officials of the Internal Revenue Service; and, if a satisfactory agreement could not be reached, the Society at that time would have the choice of litigating in the United States Tax Court or then following the procedure which we recommend now, that is, paying the tax and filing a claim for refund.

The procedure of filing a claim for refund is ordinarily selected if the taxpayer chooses to litigate the issue in a local district court rather than the Tax Court. Although there are no decisions indicating that a New York district court would be more favorably inclined to the Society's claim than would the Tax Court and—in view of the lack of precedent—much may depend upon the individual judge who hears the case, we are inclined to favor having the case heard in the District Court for the Southern District of New York.† Whether litigation is advisable at all, of course, depends upon the attitude of the Internal Revenue Service toward our claim for refund, as to which there will be followed an administrative procedure somewhat similar to that had we responded to the July 20 letter, that is, the filing of a memorandum followed by a conference. The fact that a district court might be relatively more hospitable than the Tax Court does not necessarily mean that our chances of success are likely.

In addition, the asserted delinquency penalty accrues at the rate of 0.5 per cent of the tax each month, with a maximum of 25 per cent. As of the date of the letter, the penalty was 15 per cent for thirty months. If this penalty is ultimately payable, the cost for the next year of not paying the tax now will be 12 per cent, consisting of 6 per cent interest plus the penalty.** By contrast, to the extent that a refund of tax and/or penalty is obtained, the Society will be entitled to 6 per cent interest from date of payment. Moreover, the Society will not have to go through the administrative procedure twice, that is, to file a response to the July 20 letter and, if no satisfactory agreement is reached, then to prepare a claim for refund.

If you have any questions or comments about the foregoing, please do not hesitate to call me.

Yours very truly,

(signed) Charles I. Kingson

After conferring with William Martin, our counsel, and

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*Although technically the time for filing such protest expired 30 days from that day, we believe that even now an extension might be granted.

†From the complaint in the Massachusetts Federal District Court which Mr. Martin sent us, it appears that counsel for the Massachusetts Medical Society reached a similar conclusion.

**Unlike interest, the penalty is not a deductible item.

James Blake, M.D., chairman of the Board of Trustees, the following communication was transmitted to the New York City District Director of Internal Revenue Service:

> Enclosed is our check in the amount of $46,134.04 which we are paying under protest pursuant to your letter, dated July 20, 1971. This amount is related to the tax return for the year 1968. We hereby request a conference in the district office.
>
> We do not agree with your findings that there is a deficiency of $40,116.56 in the taxes paid for the year 1968, and, of course, disagree that there is any penalty due.
>
> It is our understanding that the deficiency is based on the finding of the Service that certain revenue related to publications of the Medical Society is taxable income. It is the position of the Medical Society that the revenue in question is income related to the purposes of the Medical Society and, therefore, is not taxable income.
>
> Under the penalties of perjury, I declare that I have examined the statement of facts presented in this protest, and to the best of my knowledge and belief, they are true.

THE 1971 CONVENTION

As usual, we held a "postmortem" convention staff meeting on March 10. Representatives of the Americana of New York attended.

All phases of the annual meeting were reviewed and evaluated—with the hope that our deliberations would result in better utilization of what we have to offer and increased efficiency. The Americana people promised to cooperate in every way possible.

Here are a few important statistics:

	Attendance				
	Sun	Mon	Tues	Wed	Total
Physicians*	1,068	611	287	578	2,544
Allied professions†	241	100	61	183	585
Guests	483	229	112	186	1,010
Totals	1,792	940	460	947	4,139
Technical exhibitors					727
Total					4,866

Comparative figures	Years		
	1969**	1970	1971
Physicians	1,805	2,864	2,544
Allied professions	298	520	585
Guests	498	745	1,010
Technical exhibitors	814	788	727
Totals	3,415	4,917	4,866

*Includes House of Delegates (259).

†Includes dentists, Ph.D.s, medical students, nurses, medical technicians, and others.

**Year of the blizzard.

Figure 1 (see page 1403) is the exhibitors' evaluation report. The following comments were excerpted from an exhibitor's report:

Physician's family are a problem. Children take many copies of expensive scientific literature, to which they are not entitled.
Low attendance in general practice, orthopod, and physical medicine fields.
Sales of premiums and giveaways of drugs at one booth instead of vice versa.
Arrange scientific exhibits among technical.
Too cool on Sunday-Monday, stuffy at other times.
Samples lost or stolen, waste basket missing.
Booth furniture was "stolen" during evening of first day.
Missing 2 books.
Our sample cartons were disarranged and rifled this morning.
Charges for service excessive, as usual.
Would like specialty on identification.
Booth placed directly opposite close competition.
Have specialty on badge instead of number. (3)
Not enough registrants.
Have better ventilation too hot. (5)
Poor physician interest and participation.
Recommend 5:00 P.M. closing on Sunday. (3)
Have 3:00 P.M. closing on Wednesday.
The booths are too close.
Booth is not centrally located, so traffic is not heavy.
Average age of registrant is too old.
General lack of interest on the part of the physician in the technical exhibits.
Good turnout, good atmosphere, physicians look for us.
Program could be a little more coordinated.
Turnout could be better.
Anybody could come in, guards not efficient.
Hotel dirty, service terrible. (3)
We are located away from the main stream of traffic.
Visitors seen without badges on five occasions.
Excellent Sunday, then downhill thereafter.
Too many children and wives on Sunday (on same report as above item).
Have at mountain resorts (2); Statler Hotel (1).

REORGANIZATION OF THE STAFF

A year ago, we discussed the beginning of a staff reorganization. The Division of Occupational Health and Workmen's Compensation was eliminated, and became part of the Division of Medical Services. Max Howard, M.D., is its director; and he has fitted into our plans admirably.

In December, we propose to disassociate legislation from the Division of Public Affairs and establish a new separate Division of Legislation, with Martin J. Tracey, J.D., as its director (see president's message in *News of New York*, October, 1971).

Further administrative changes and streamlining are contemplated. The plans will be transmitted to you at the proper time.

DIVISIONS

Executive Assistant. The tasks assigned to this Division have been many. In addition to routine chores, we would like to mention the following:

...Preparation and circulation of the summary of the minutes of the annual meeting.

...Compilation of the official minutes of the annual meeting for publication in the June 1 issue of the New York State Journal of Medicine.

...Actions of the House of Delegates requiring further consideration were prepared for presentation by the Secretary at the March Council meeting.

...The changes in the Constitution and Bylaws of the following societies were prepared for Council approval (after study by the committee and legal counsel): Bronx, Columbia, Erie, Seneca, and Chautauqua.

A list of officers of county medical societies was prepared for distribution and also for publication in the New York State Journal of Medicine, October 1, 1971.

The minutes of meetings of the Council, the Executive Committee, and the Board of Trustees were prepared and circulated.

Minutes of meetings of the New York Delegation to the American Medical Association in June, in Atlantic City, were transcribed and distributed.

Letters were sent to officers, chairmen of comissions and committees, and presidents of district branches asking that annual reports be in our hands by October 1 so that they can be ready for presentation to the Journal before its November 15 deadline for publication in the January 1 issue.

County medical societies, district branches, and sections have been requested to send in the names of delegates to the House for its 1972 meeting.

Memoranda have been prepared and sent to the presidents and secretaries of county medical societies and district branches, and to chairmen and secretaries of scientific sessions asking for recommendations for membership on the various committees of the State Society.

A resume of actions taken on resolutions and other recommendations of the 1971 House of Delegates is being prepared.

Scientific Activities. On March 9, 1971, a symposium entitled, "The Current Drug Epidemic," dealing with many of the problems of drug abuse and the control of same was held at Colgate University, Hamilton, New York. The Medical Society of the State of New York acted as cosponsor. Many prominent authorities participated, including George Himler, M.D., President, Medical Society of the State of New York; and Donald Louria, M.D., President, New York State Council on Drug Addiction. Approximately 300 students and 200 guests were present. It was a very successful meeting.

At the meeting of the Council on March 25, a report was submitted outlining all the phases of the drug abuse program from its inception. The *Desk Reference on Drug Abuse* for physicians, which had been mailed to the membership, has been very helpful. Shortly, a later edition will be completed for distribution. The current status of the Joint Drug Abuse Professional Education Project of the State Health Department and the State Medical Society, together with a list and dates of sessions to be held in various sections of the State, was presented for the information of the Council.

The Committee on Alcoholism and Drug Abuse met on March 26, 1971. One subject on the agenda and of great interest to the committee is the legal right of the individual physician to treat heroin addicts from the point of view of the practice of medicine. The committee unanimously agreed on the urgent need for physicians to administer narcotics to patients on an ambulatory basis and possibly detoxifying them under similar conditions, because the addict population is far out of proportion to the number of available hospital beds.

At a meeting of the Public Health Council, held on April 27, there was a long discussion about the proliferation of "scofflaw" medical care facilities throughout the State which were posing a mounting threat to the quality of care of patients. The discussion ended with the recommendation that a letter should be sent to all physicians in the State informing them about these establishments which are organized around specific medical procedures (abortion, hemodialysis, and multiphasic screening) and that this letter be signed by the New York State Commissioner of Health, the president of the Medical Society of the State of New York, and the chairman of the Public Health Council.

Since the May meeting of the Council, the director of Scientific Activities attended the meetings of the Committee on Data Processing, held at Mount Sinai Hospital, on June 2, the Committee on Health Care Technology, held at the Medical Society offices on June 3, and the Public Health Council meeting on June 4. He attended a meeting of the Committee on Forensic Medicine at the Medical Examiner's Office held on June 7, and a State Mental Hygiene Board meeting on June 8.

Also, he was present at a meeting of the Committee on Physical Medicine and Rehabilitation and a meeting of the Committee on Organization Coordination to the Health Planning Commission on June 9. On June 15 he joined Dr. Pisani for the meeting with the associate chairmen to formulate programs for the General Sessions at the next annual convention in February, 1972. Again, on July 8, both of these gentlemen participated in a meeting of the section and session chairmen at the Americana of New York where next year's session and section programs were discussed, and in large measure formulated. At this meeting, much discussion took place regarding outside funds to support session and section meetings, also the rule that papers presented were the property of the State Medical Society. In addition, the director prepared a draft of a memorandum on the subject of outside funds for scientific meetings. The same memorandum discusses who will designate prior approval for a paper not to be the property of the State Medical Society.

The meeting of the Commission on Public Health and Education was held on July 15, and was well attended. Considerable interest was expressed by both old and new chairmen of committees. A whole day of reports and discussions were stenotyped.

The director carried out the mandate of the Council that a letter be sent to all county society presidents and chairmen of county medical society cancer committees using the showing of the Cancer Society's new film about quackery entitled, "Journey Into Darkness." This letter was mailed to all county society presidents on July 6, 1971, and carried the address of every cancer society office in the State from which the film may be obtained.

The director was host to the Public Health Council at Tompkins County Hospital on July 22. Just before the meeting, Vincent Dole, M.D., of Rockefeller University, revealed the intention of the Food and Drug Administration to withdraw the conditions under which methadone maintenance programs are now being conducted. This would open the field for inexperienced as well as knowledgeable physicians to prescribe methadone. Such freedom could easily lead to unintentional, yet possible, hordes of young methadone addicts. The recommendation passed by the House of Delegates in 1970 did approve only one form of treatment with methadone, that is, the Dole method. The reference committee reported as follows:

> 1. That the State Medical Society go on record as approving the Dole methadone maintenance as a method of maintenance of opiate addiction at this time.
>
> 2. That the State Medical Society encourage sup-

port for the expansion of facilities for the methadone treatment of opiate addiction.

3. That the State Medical Society make every effort through proper channels to remove the legal restrictions which prevent the use of methadone treatment (mentioned in paragraph 1) by qualified physicians in offices, clinics, and hospitals.

The Dole method referred to in paragraph 1 involves provision for detoxification, available psychiatric services, social counseling, and controlled treatment; the addict patient returning to the clinic to receive his supply of methadone, usually taking the medication in the presence of clinic personnel.

Also, a back-up hospital is required. The largest program of this kind is now being carried out in Beth Israel Hospital. Thus, the Medical Society of the State of New York can participate in the formulation of guidelines without violating recommendation 3 of the 1970 House of Delegates because of the inclusion of the Dole system in number 3. William Antopol, M.D., and John E. Gainor, M.D., will have a free hand in working with the ad hoc committee.

The Public Health Council took the leadership in organizing an ad hoc committee to advise the Council on guidelines. At its meeting on July 19, 1971, the Executive Committee of the State Medical Society designated Dr. Antopol and Dr. Gainor to represent the Medical Society on the ad hoc committee, thereby assisting to construct guidelines for use of methadone which, if satisfactory, could be ratified by the Council of the Medical Society of the State of New York, the Public Health Council, and the New York City Board of Health. This procedure could avoid having three ad hoc committees arrive at about the same conclusions in the case of abortion guidelines in 1970. Ray Trussell, M.D., is chairman of the ad hoc committee, which will have ample staff from the State Health Department.

On July 28, the director attended an organization coordination meeting of the Advisory Committee to the Health Planning Commission; and on July 29 made himself available for a meeting of the Budget Committee, prepared a memorandum for that committee, and memoranda for consideration of the Executive Committee which met in the afternoon.

On September 21 and October 5, he attended meetings of the Mental Health Board, material from which meetings were distributed to councilors, officers, and trustees.

On October 14, the director represented the Medical Society at the hearing of the Joint Legislative Committee on the Mental and Physical Handicapped, Senator Dalwin Niles, chairman. All who spoke regretted the cutback on funds for rehabilitation of handicapped children. A crowd from Sampson put on quite an emotional show about removing retarded adults from Sampson to other hospitals.

Archives. On April 13, Mr. Douglas Bakken, Collector of Regional History, Cornell University, packed and took in his station wagon 28 boxes of materials from this office.

He picked up 17 boxes of material on August 11. He also met with department heads for a briefing by him of what materials are considered important to the collection. He asked for original source materials, including photos, memos, verbatim minutes, correspondence, and others. He reiterated that everything is retrievable. He asked that material be kept in filing sequence when emptied from files into packing boxes and that boxes be labeled with the name of the department, file "A–L," and so on.

Last February, Professor Herbert Finch gave a report at the Session on Archives. The article was printed in the June 15, 1971, issue of the New York State Journal of Medicine. He explained the value of archival material and the ease with which it can be overlooked and thus lost to posterity. He gave examples of collections on medicine and where they may be found. To continue to stimulate county society officers not to discard important material, he requested that a reprint of his talk be sent to all county society presidents on behalf of the Committee on Archives, with a covering letter from the director of the Division of Scientific Activities. The following memorandum was sent to county society presidents, with the reprint, during August:

> Subject: Preserving medical archival material
>
> Twice, since I have been associated in some capacity with the Medical Society of the State of New York, the headquarters of the Society has moved and twice important historical documents about our Society have been lost to posterity because no one took responsibility for their preservation. Again the MSSNY is about to move its headquarters, but this time we are more fortunate because all department heads are watchdogs over important archival material which should be preserved. The stimulus for saving archival material comes from the Committee on Archives and the agreement between MSSNY and the Regional History and University Archives at Cornell University for storing, indexing, and servicing material in case MSSNY officials wish to examine it.
>
> Last February, Professor Herbert Finch of Cornell Archives gave a paper at the Session on Archives in which he urged all hospitals and county medical societies to make a search for archival material and make sure of some arrangement for the preservation of it.
>
> In order that your society officers may become more familiar with what medical archival material is, I am enclosing, on behalf of the MSSNY Committee on Archives, a reprint of Professor Finch's presentation as reported in the New York State Journal of Medicine. If your Society should decide that the Regional History and Archives is the place where your archival material can be preserved best, you can contact Professor Herbert Finch, chief archivist, Olin Library, Cornell University, Ithaca, New York 14850. All material placed there is retrievable by your Society at any time. Such is the agreement between the State Society and the Regional History and University Archives at Cornell.
>
> In the future the Committee on Archives hopes to compile a list of medical archival material and where it is located. You can see from Professor Finch's article there are many collections in many places. It will be important to future scholars to know where archival material for a region may be examined.

What Goes On. *What Goes On* continues to be well read according to the survey of the New York State Journal of Medicine conducted during 1971. The number of subscriptions for *What Goes On* is 116. This amounts to approximately $350.

During the period since our last annual report (October 1, 1970 to October 1, 1971) 1,275 announcements were published. These announcements were sent to the editor's office by all of the medical schools in the State, more than 75 hospitals, about 120 nonprofit specialty societies and allied groups, including foundations, academies of medicine and science, as well as chapters of the American Academy of General Practice. Four special notices were published; three inviting deans of medical schools and administrators of hospitals to send in notices for publication, of postgraduate courses and important lectures, and so on, and the other notice was about preceptorships in Buffalo.

Physicians' placement opportunities were published at the back of *What Goes On* as often as space allowed. These amounted to 217 announcements during the year. Each time one of those announcements appeared a copy of *What Goes On* was mailed with a letter to the "contact" person. In this way, every community requesting a physician has been informed of our continuing interest in helping to place doctors in needed areas.

Physicians' Placement Bureau. The number of physicians wanting to locate in New York State has increased during 1971. Physicians' applications processed by the Bureau totaled 1,165 as compared with 740 a year ago. The great increases by specialty were in internal medicine, pediatrics, and general surgery; but other specialties that showed a sharp increase include anesthesiology, obstetrics and gynecology, ophthalmology, orthopedics, psychiatry, and radiology.

While the Bureau continues to place specialists, it cannot fill the real needs of the communities for "family doctors." More than 130 communities have requested 210 family practitioners, and only 57 applications from general practitioners are in our files. Seven have accepted places on our lists.

Areas where physicians were placed include Albion, Batavia, Brooklyn, Broome County, Cape Vincent, Carthage, Cato, Elizabethtown, Elmira, Moravia, Newfane, New York City, Plattsburgh, Rochester, White Plains, and others.

The Physicians' Placement Bureau of the Medical Society of the State of New York was mentioned in the May issue of *The House Physician Reporter* in a feature supplement entitled, "A Nationwide Look at Doctor Needs."

A booth was assigned to the Physicians' Placement Bureau at the annual convention of the State Medical Society in February. A great deal of activity resulted in more than 100 lists of placement opportunities and questionnaires being taken and a chance for personal communication between the physician and the Bureau. The same kind of rapport was achieved by personal contact with physicians from the upstate communities who took time to look up the Bureau and discuss their problems of trying to recruit doctors. Many took literature about group practice, the business side of practice, communities trying to find doctors, and so on. The booth was well stocked with pamphlets, brochures, and guidelines. Almost every piece of literature was taken before the end of the four days that the booth was in operation.

Scientific Publications. Judging from comments that have reached us, the new format of the Journal has been received enthusiastically. Particularly noteworthy are the improved appearance, greater legibility, and the remarkably enhanced illustrative material. It is gratifying to find that printing bills have been consistently lowered through this process. It has also speeded up the copy editing procedures to some extent. We seem to be back on schedule.

We have been analyzing the two questionnaires concerning the Journal that were sent out to physicians through the Division of Public Affairs; and plan to publish the results. Questionnaire I was given out during the fall (1970) months at meetings in upstate New York; and some were put into physicians' mail boxes in hospitals. Questionnaire II included five additional items to check and was given out early in the spring (1971) in the Greater New York area and at the annual convention. The returns at meetings were very high, but even including those given out more generally, there was an overall return of approximately 40 per cent. Since the replies were anonymous, respondents could express themselves quite freely.

Of approximately 4,000 copies distributed, there were 1,640 returned, of which 1,475 were positive, 165 negative (negative meaning they did not fill in any of the boxes). Of the positive returns, the adverse comments were fewer than 5.5 per cent. We have analyzed these returns item by item and find they are very revealing and heartening. Many of the comments are useful to us and will help in our thinking for the future.

Medical Services. On March 16, the director participated, together with Dr. Himler and Mr. Irving Gold (of the Workmen's Compensation Board) in a meeting with the Ad Hoc Committee of the Medical Society of the County of Erie regarding the marked increase in cases requiring arbitration of disputed workmen's compensation fees.

The director attended a number of workmen's compensation arbitration committee meetings. All the county societies in the Greater New York area have now been visited; and personal relationships established between the county representatives on the arbitration committees and the executive secretaries of the respective societies. This relationship has been helpful in resolving many problems in this field that reach our office both by telephone and letter.

With further respect to the workmen's compensation field, a good deal of time and thought has been devoted to develop the relative value fee schedule that is to be used in future negotiations with the Workmen's Compensation Board. The director attended two meetings of the Advisory Committee on the Medical Fee Schedule and Allied Problems, participating actively in discussions and actions as they pertain to the problems of the practicing physician. Here also avenues of communication have been established, not only with the officials of the Workmen's Compensation Board but also with carriers, self-insurers, and the New York Compensation Insurance Rating Board. These relationships have been fruitful and cordial.

Relative Value Schedule. The director has been urging the various specialty groups to get their studies into this office. They are finally beginning to arrive and have been or are in the process of being analyzed. This has required considerable telephone and letter communications. We have analyzed, tabulated, and developed relative value schedules based on 549 raw questionnaires received from the pediatrics group and 584 tabulated results from the internal medicine group. There are several hundred raw questionnaires from the dermatology group now in the process of analysis. Separate meetings were held with representatives of the neurosurgeons, the internists, and the dermatologists to assist them in their data accumulation and analysis.

In regard to this, the director met with the statisticians of Blue Shield to be certain that the procedures that were followed were correct. He will meet with the representatives of Peat, Marwick, and Mitchell to establish a comparative base between their figures and what the specialty societies are submitting. Both secretaries have been preparing voluminous work sheets from the California Relative Value Schedule.

The Society's Committee on Occupational Health has been rather inactive during the past year; an effort will be made to stimulate a more energetic approach to the problems in this field. Mention might be made that the new Federal Occupational Health and Safety Act went into effect on April 28, 1971; your director has attempted to familiarize himself with the provisions of this Act by reading and by discussion with others knowledgeable in this field.

He attended the Industrial Health Conference in Atlanta, Georgia. Apart from the many scientific discussions, of particular interest were articles concerned with the changing pattern of health-care delivery systems and their effect on the practicing physician.

While in Atlanta, the director visited and discussed with Mr. J. Pullin, of the Georgia State Labor Department, workmen's compensation practices in Georgia. He also met with T. Howell, M.D., chairman of the Georgia State Workmen's Compensation Medical Board, and explored our common problems in this sector.

The first of a planned series of articles concerned with the problems of our members in the field of workmen's compensation has been submitted and accepted for publication in the New York State Journal of Medicine. An article has also been prepared and submitted to the American Academy of Compensation Medicine for publication in their newsletter.

In regard to the Economics and Interspecialty Committees, a good deal of time was required to correlate their efforts in the development of a relative value schedule with the Peat, Marwick, and Mitchell study.

The director chaired the Section on Medical-Legal and Workmen's Compensation Matters at the annual meeting of the State Medical Society. He has continued to concern himself with this Section hoping that its future programs can be developed to attract more interest by emphasizing topics that are of interest to our membership.

Medical Care Insurance material from county medical societies, as well as subjects brought to our attention by inquiries from our members, have been duplicated and called to the attention of the chairman for consideration by his committee.

The director attended two meetings of the Executive Board of Blue Shield, as well as a meeting held with representatives from all the county medical societies.

During the past weeks, there has been considerable correspondence and telephone conversations with various group representatives, as well as members, in regard to Section 86:11 (c) of the Rules and Regulations of the New York State Commissioner of Health. Material was accumulated and discussed with other division heads, as well as the president of the Medical Society.

The director attended a conference on National Health Insurance Plans sponsored by the New York City Labor Management Council.

We still receive numerous inquiries in regard to CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) and refer these to the proper channels.

Research and Planning. The Division of Research and Planning has continued to engage in projects of the House Committee on Constitution and Bylaws and the Committee on Research and Planning.

The director prepared a resume of items to be especially considered by the House Committee on Constitution and Bylaws at its meeting in Syracuse, on May 24. At that all-day meeting, the House Committee reviewed and discussed, page-by-page, the first half of the "Draft of the Revised Constitution." This document contained the changes previously proposed by the Ad Hoc Committee to Study the Constitution and Bylaws. Since the meeting in Syracuse, the Division has been occupied in rewriting the Constitution and Bylaws to carry out the actions taken by the House Committee. The first half of the latest revision has been completed. On August 18, the House Committee met to finish its scanning of the last half of the Ad Hoc Committee's draft revision. For this meeting, the Division of Research and Planning prepared an annotated list of items and questions for deliberation by the House Committee.

The director wrote an article entitled, "Prepaid Capitation, Group Practice Plans of Health Insurance: A Resume and Critique," which was prepared to serve as source material for the Committee on Research and Planning, and was enlarged to include a section on Health Maintenance Organizations and made into a report of the Committee, at its request. This report was approved by the Council, which directed that a copy be sent to each county medical society. It will also appear in the September 15 issue of the New York State Journal of Medicine.

At the annual meeting, the House of Delegates referred to the Council a proposed substitute resolution that the Society "establish a committee to study practical methods of providing health care to the urban poor and medically indigent." Rather than create a new committee, the Council chose to assign the study to the Committee on Research and Planning. This topic will be on the agenda of the committee's next meeting. As a basis for the committee's deliberations, the Division is drafting an article which sets forth the various ways in which medical care is now provided for the urban poor and medically indigent.

Standards of Medical Care. This Division is assisting in the organization of an Institute on Foundations.

Work is continuing with the Committee on Peer Review Mechanisms which will probably work in close harmony with this Institute.

The director participated in:

...A conference with the representatives of the New York State Nursing Association and the Hospital Association of New York State. It was at this meeting that the nurses notified us of their (*a*) disassociation with our Society because of our disagreement with them on paramedical personnel; and (*b*) desire for the passage of legislation changing the concept of the nursing profession.

...The AMA Regional Meeting on Peer Review, in Washington, D.C.

...A budget meeting of the Department of Mental Hygiene, in Albany.

The Attorney General's hearings on commercial abortion referral services.

A meeting with the Assistant Commissioner of Health, Lowell Bellin, M.D., and others to discuss "continuing education bill" introduced by Assemblyman Blumenthal.

Public Affairs. Since the Society's annual meeting, the major efforts on the part of the director of the Division of Public Affairs have been as follows:

With the resignation of Mr. Anton Finelli, effective March 12, as coordinator of the News Relations Department, Mr. Barton Hickman was hired.

Assembling of the "New Member Kit" for distribution was commenced during March. With the receipt in April of letters of welcome personally signed by the executive vice-president, the first kits were released in the mail (to the four large boroughs in New York City) and distributed to the regional representatives for hand delivery in all other county medical societies. The bronze paperweights will be distributed to all members receiving a hand-delivered kit.

A systematic analysis of the effectiveness and condition of Ad Rem bulletin boards was commenced in March. In a routine manner, the regional representatives visited each hospital where a bulletin board is situated, inspected the board for condition, discussed its general value to the staff physicians with the hospital administrator, and reported to the director on all points.

It is of interest to note that about 95 per cent of the boards were maintained in "perfect" condition and are reported to be of high value to the physicians as a source of information.

We are now to evaluate the feasibility of expanding this means of communication with the membership.

On February 27, the director attended a regional meeting on "Medicine and Religion." Unfortunately, the Medical Society of the State of New York was not represented by its committee.

On March 18, the Medical Society's Committee on Medicine and Religion met in Syracuse. The Rev. Barry Wood, M.D., chairman, was discouraged by lack of activity of his committee. None of the assigned work was accomplished between the summer of 1970 and March of 1971.

With the resignation of Mrs. Helen Hickey as manager of information, the director interviewed applicants and hired Miss Madeleine Gaffney, effective June 7.

He produced and distributed through the State a survey to determine which county medical societies have formal operative medical care referral services and which of these include referrals for abortions. He will recommend how this information should be made available to the public.

Much of his effort in the past months has been directed to the production of the audio-visual presentation for use with the health van, a survey of which schools are interested in our visiting their campuses, the mechanical condition of the van, and the search for and training of an operator.

On August 16 and 17, the director attended the AMA Communications Clinic, in Chicago. This clinic, under the direction of Frank Campion, the new director of the Division of Communications, was a major improvement over the last two or three such meetings the AMA has conducted. He picked up several very helpful ideas which will be reflected in innovations in the Public Affairs Division in the near future.

The following is information with regard to the various departments of the Division:

News Relations. Mr. Barton Hickman, immediately on arrival, was assigned to thoroughly investigate procedures involved with printing, addressing, and mailing of the *News of New York* to the end that we may improve these operations. He has done a good job and several innovations along these lines will be put into effect immediately. We believe that finally we may have discovered a means of speeding up delivery of the *News* via the mails.

Public and Professional Relations. Mr. Richard Klemfuss, Coordinator of Public and Professional Relations, attended the Public Relations Workshop for county public relations chairmen of District Branches I, II, and IX, which was conducted by Rockland County.

He was present at a meeting of the Committee on Medical Aspects of Sports and handled its correspondence. He coordinated the meeting of the Special Committee to Study Student Participation in the Medical Society of the State of New York and handled special correspondence for its chairman, Dr. Sherman.

He has had bound volumes made up of the Ad Rem bulletins dated over the past three years. He also put together a bound volume commemorating the 1971 Albion O. Bernstein, M.D. Award and submitted it to Mr. Morris Bernstein who responded with a letter of sincere appreciation.

Mr. Klemfuss continues to release Ad Rem bulletins and averages about seven per month.

He distributed promotional material on the venereal disease education mobile unit to the woman's auxiliaries, county health departments, and county medical society presidents.

Legislation. Mr. Martin J. Tracey represented the Medical Society at the New York State Association of the Professions' Board of Directors meeting on March 9. On March 10, Senator Tarky Lombardi, chairman, Senate Health Committee, called a conference which Mr. Tracey attended. The subject was the Senator's bill setting up health service corporations.

He was kept busy through May and June with the great number of bills, many of them health related, which were in the hopper this year. During May, his principal effort was the opposition to the nurses definition bills. An all-out campaign to defeat S. 1918-B and A. 6164-A, the nursing definition bills, was conducted and involved memorandums, telegrams, and others. Mr. Tracey was successful in having the president of NYSAP send telegrams to the Governor placing that organization on record as being in opposition to these bills.

By invitation, Mr. Tracey participated in the May 19 meeting of the Medical Society's Ad Hoc Committee to Study Legislation, Professional Medical Liability Insurance and Defense Board.

During June, with the adjournment of the State Legislature and commencement of the Governor's thirty-day period for consideration of bills referred to him, Mr. Tracey disseminated information on what happened in the last hours of the session and advised the county societies of the status of legislation of interest.

At the direction of the executive vice-president, Mr. Tracey accepted an invitation from Joseph W. McGovern, Esq., chancellor, University of the State of New

York, to participate in the annual legislative conference of the Board of Regents on September 9.

Department of Information. The work of the Department of Information continues at about the same rate, that is, an average of 20 telephone calls per day and 6 letters per week, plus about 5 personal visits per month.

Miss Madeleine Gaffney, who assumed the responsibilities of the Department on June 7, has been doing a good job and is rapidly learning the requirements of the Department.

On assignment, she has been compiling a list of topics for which policy statements are needed by the Division.

The Department receives about 30 abortion inquiries each month. Obviously, the majority of these are referred to the Medical Society of the County of New York.

Requests for information on the physician's assistant career are increasing rapidly; and we have been distributing information in large quantities with regard to this opportunity. Information has been secured through Donald Walker, M.D., New York State Department of Health.

Regional Representatives. The field service men are continuing their usual efforts.

In August, Mr. William Baltaks resigned from the State Medical Society to accept the position of AMA assistant director of field services for the New England states. He will be headquartered in Framingham, Massachusetts. Mr. Coleman M.C. Fineberg, regional representative of the Fifth and Sixth District Branches, has been transferred to fill the responsibilities in the New York area. Tentatively, no replacement is planned for the Fifth and Sixth District Branches, which will be handled respectively by Mr. Gerald Sullivan and Mr. Harry Dexter, upstate regional representatives.

Miscellaneous. Mr. Klemfuss arranged for Wesley W. Hall, M.D., American Medical Association president, to meet with the *New York Times* publisher, Arthur O. Sulzberger, and the *Times*' editorial board. This two-hour interview took place on September 22. Shideler Harpe, Dr. Hall's assistant, expressed great pleasure at this meeting and its results. Mr. Harpe has informed Mr. Klemfuss that the AMA would like to try to arrange such a conference each year for incoming AMA presidents.

The editor of the *News of New York* and the director have been working on several facets of the *News of New York*. For one thing, we are attempting to develop a new format which will generate greater readership. Believing that physicians are interested in brief, succinct articles on important, current subjects, we are slowly changing the format of the *News* to include extremely condensed reports in preference to long, detailed stories which have jumps from the front page, and so on.

Second, we are analyzing the advantages of the cold-type process instead of hot-type in an effort to reduce the lead time required for printing. It appears that we will be able to pick up several days to a week's time by going to cold-type. This will also result in a saving of about $50 per page in contrast to type-setting.

We are planning to publish a front-page picture of our new building and an announcement of the change of address, telephone number, and location in the November issue of the *News of New York*. This issue will be reaching our membership during the middle of November at about the time we are arriving at our new location.

The Medical Society Health Shows van, after a discouraging start in New York City, is now hitting a good pace on upstate campuses. Except for three days when we had unseasonably cold and wet weather, the exhibit has experienced great success. The schools, the students, our membership, as well as the local public health people are finding the Medical Society Health Shows program to be a valuable contribution to the youth of New York State. We are learning every day how to improve our presentation. Interestingly enough, we are still definitely within our budget and hope that we are going to be carrying over some of the present budget into 1972, when, with the approval of the Budget Committee and Council, the program is continued.

BUSINESS

Advertising Sales—*Journal.* Gross billings for the first ten months of 1971 totalled approximately $250,319.20, as compared with gross billings of $265,879.20 last year, or a decrease of $15,560. However, our August, 1971, billings showed a slight increase over August, 1970, and our September, 1971, billing volume showed an encouraging 30 per cent increase ($8,036.30) over September, 1970.

It appears that the low ebb in pharmaceutical industry advertising has been reached and passed. Companies that had cut back advertising are reconsidering; the companies that had blindly favored "mass" circulation magazines are now talking about specific markets, that is, specialty journals and geographic magazines such as the New York State Journal of Medicine.

Advertising Sales—Technical Exhibits. The prospectus for the 1972 annual convention was mailed on July 19 to about 800 prospective exhibitors.

To date, we have received signed applications for over 40 exhibit spaces. Many of our past exhibitors have as yet not responded.

We have received communications from 31 firms who are unable to exhibit with us because of the usual reasons—"budgetary limitations," "arbitrary and unreasonable conditions associated with exhibiting in New York City," and "heavy national convention schedule."

We have planned a total of 101 technical exhibit spaces plus 3 table spaces, as well as approximately 50 scientific exhibit spaces.

Membership-Directory Department. The conversion of all the biographic data for the new *Medical Directory of New York State* was completed with Fisher-Stevens and production on it was initiated.

We met with representatives of Maple Press concerning the presswork and binding of the new *Directory;* and an agreement of this phase of the *Directory* operation was consummated.

Extensive discussions were held, and communications exchanged, with Fisher-Stevens and Lloyd Prang, of the American Medical Association, concerning the unsatisfactory aspects of our experience with the Central Automated Physician Information System (CAPIS). Suggestions for improving the system were evaluated; and several innovations will be incorporated into the program in 1972. Costs for these improvements will be paid for by the AMA, which is anxious to "sell" CAPIS to other states, and recognizes the shortcomings of the program as we have had to cope with it.

We have continued to process 1971 dues payments—a procedure which was extremely complicated this year due to the impact of (1) the mandatory Special Building Fund assessment, and (2) the dropping of mandatory AMA affiliation.

Letters have been mailed to the county medical societies and to individual physicians advising those who are being dropped for nonpayment of assessment.

We expect that the new *Directory* will appear at the end of November.

MISCELLANEOUS

We know that you will be interested in the following:

I. Memorandum we submitted to county medical society secretaries and executive secretaries:

> The Department of Motor Vehicles of the State of New York has advised us of the procedures to be followed by medical professional corporations wishing to obtain "M.D." plates, and we thought you might wish to call this to the attention of your members.
>
> "In order to be eligible for special plates as a professional corporation, the corporate name must end with the words 'Professional Corporation' or an abbreviation 'P.C.'
>
> "An individual may effect a change of registration at any time, provided he surrenders his current plates and the corporation obtains new plates as a new registrant.
>
> "An individual desiring to transfer his existing plates to a corporation must wait until the expiration of his current plates to effect the change. Immediately after the expiration date the corporation may apply for a transfer of those plates to the corporate name. Proof of insurance in the name of the corporation is required in either situation.
>
> "Our present policy of issuing only one special plate per professional has remained unchanged. Therefore, a corporation applying for professional plates will be required to complete a certification that the total number of plates issued in the name of that corporation and to individual members of that corporation does not exceed the number of professional members of that corporation. A special form for this certification will be available at all Issuing Offices."

II. Letter from the American Medical Association:

> The Office of the Executive Vice-President has been receiving an increasing number of inquiries from physicians in all parts of the country who are now over seventy years of age, and who feel that they should not be required to pay AMA membership dues.
>
> "We will appreciate your reviewing the AMA membership files, and a summary copy is enclosed.
>
> "You will note that physicians over seventy years of age, who are regular members of their state medical society, should not be required to pay AMA membership dues, but should be reported for active, regular dues-exempt membership.
>
> Perhaps it will be possible for you to pass this information along to the physicians in your State, with the hope that you can encourage all such physicians to continue their membership in your State medical society and then be reported by you for dues-exempt membership in the AMA.
>
> Incidentally, these active, regular dues-exempt members count in the apportionment of AMA delegates in your State.

1972
FACT SHEET
MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

According to the present Constitution and Bylaws of the American Medical Association, which was revised for 1972, there are now two basic types of membership:

I ACTIVE MEMBERS

II. SPECIAL MEMBERS

I. Active Members shall be (A) Regular Members and (B) Direct Members.

(A) **Regular Members.** Regular membership shall be limited to those members of a state association who hold the degree of Doctor of Medicine or Bachelor of Medicine, or who hold an unrestricted license to practice medicine and surgery, and are entitled to exercise the rights of membership in their state associations, including the right to vote and hold office, as determined by their state associations.

A member in good standing of a state association of the American Medical Association is eligible for Regular membership in the American Medical Association after he has been certified for enrollment to the executive vice-president of the American Medical Association, by the secretary of the state association in the jurisdiction of which he conducts his professional activities provided there is no disapproval for membership by the Judicial Council. The Board of Trustees may excuse the following members from payment of dues, provided they are fully or partially excused from the payment of local dues by their component and state associations, except as noted in (4) below, and provided the request for exemption is transmitted through the state association to the executive vice-president of the American Medical Association.

(1) A member for whom the payment of dues would be a financial hardship, by reason of physical disability or illness. A member may also be excused from payment of dues because of financial hardship for other reasons, but these must be set forth by the secretary of the member's component society.

(2) Members retired from active practice.

(3) A member temporarily in the Armed Forces, regardless of local dues exemption, for the period beginning January 1 or July 1 following the date of the member's entrance into the service.

(4) A member, on request, regardless of local exemptions, on July 1 following his seventieth birthday.

(B) **Direct Members.** There are three classifications of Direct Members: (1) Service Members; (2) Physicians employed by Federal Agencies; and (3) hospital interns and residents.

(1) *Service Members.* Regular commissioned medical officers and commissioned medical officers of the reserve components, who hold the degree of Doctor of Medicine or Bachelor of Medicine or Doctor of Osteopathy, on extended active duty (more than two years) with the United States Army, the United States Navy, the United States Air Force, and the United States Public Health Service, who, on application, have been nominated by the Surgeons General of their respective services, may become Service Members provided there is no disapproval for membership by the Judicial Council. Service Members shall have the same rights and privileges as Regular Members but shall not be required to pay dues and shall not be entitled to receive any publication of the American Medical Association except by subscription. Service Members shall retain membership as long as they are on active duty, and thereafter if they have been retired in accordance with the Federal laws and are not eligible for membership in a county and state society.

(2) *Physicians Employed by Federal Agencies.* Full-time civilian physicians employed by all Federal agencies, including but not limited to the Veterans Administration, who are ineligible for membership in a county and state society, may become Direct Members on nomination by the chief medical director of their administration or agency, provided there is no disapproval for membership by the Judicial Council. Such members shall have the same rights and privileges and shall pay the same dues as Regular Members. They shall retain this class of

membership only as long as they are employed by the Federal government and thereafter if they have been retired in accordance with Federal law and are not eligible for membership in a county and state society.

(3) *Hospital Interns and Residents.* Interns and residents serving in training programs approved by the Association, and for whom there are no provisions for membership in a county and state society, may become direct Intern and Resident Members on application with endorsement of two (2) Regular Members of the American Medical Association on the staff of the hospital in which they are training provided there is no disapproval for membership by the AMA Judicial Council. Intern and Resident Members shall have the same rights and privileges as Regular Members. They shall pay such dues as are fixed for them by the House of Delegates and shall receive the Paid Member Benefit publications.

Interns and residents serving in training programs approved by the Association and who are members in good standing of a state association of the American Medical Association are eligible for Direct Membership in the American Medical Association and participation in the Business Meeting of Interns and Residents of the American Medical Association on payment of such dues as are fixed for Direct Intern and Resident Members by the House of Delegates. They shall receive the Paid Member Benefit publications.

II. Special members are (A) Associate, (B) Affiliate, and (C) Honorary.

(A) **Associate Members.** Associate membership shall be limited to:

(1) Those members of the state associations who are ineligible for Regular membership in the American Medical Association, and who hold the degree of Doctor of Medicine or Bachelor of Medicine;

(2) Members of the Armed Forces on temporary duty (two years or less).

Associate Members may attend meetings of the Scientific Assembly but may not vote or hold office in the American Medical Association. They shall not be required to pay membership dues to the American Medical Association and shall not be entitled to receive any publication of the American Medical Association except by subscription. An Associate Member must be certified for enrollment to the executive vice-president of the American Medical Association by the secretary of the state association in the jurisdiction of which he conducts his professional activities, or by the Surgeon General of his respective service. All such Associate Members may be disapproved for membership by the Judicial Council.

(B) **Affiliate Members.** Persons who belong to one of the following classes may become Affiliate Members.

(1) Physicians who are members of the national medical societies of foreign countries, to be approved and nominated by the Judicial Council;

(2) American physicians, located in foreign countries or possessions of the United States and engaged in medical missionary, educational, or philanthropic labors, to be approved and nominated by the Judicial Council;

(3) Dentists who hold the degree of D.D.S. or D.M.D., who are members of the American Dental Association and their state and local dental societies, to be approved and nominated by the Judicial Council;

(4) Pharmacists who are active members of the American Pharmaceutical Association, to be approved and nominated by the Judicial Council;

(5) Teachers of medicine or of the sciences allied to medicine who are citizens of the United States and are not eligible to membership, to be approved and nominated by the Judicial Council; and

(6) Scientists in sciences allied to medicine and others who have attained distinction in their fields of endeavor, who are not otherwise eligible to membership, to be approved and nominated by the Judicial Council.

Affiliate Members shall not be required to pay membership dues, and shall enjoy the privileges of the scientific assembly without the right to vote or hold office, and shall not be entitled to receive any publication of the American Medical Association except by subscription. Nominations for class (4), (5), and (6) must also be approved by the appropriate county and state medical society.

(C) **Honorary Members.** Physicians of foreign countries who have risen to preeminence in the profession of medicine and who attend a convention may be elected at that convention to Honorary membership by the House of Delegates on nomination by the Board of Trustees. The several scientific sections may make recommendations to the Board of Trustees for such nomination. Honorary Members shall enjoy the privileges of the Scientific Assembly without the right to vote or hold office, shall not be required to pay membership dues and shall not receive any publication of the American Medical Association except by subscription.

Discrimination in Membership. Membership in the American Medical Association or in any of its constituent associations shall not be denied or abridged on account of color, creed, race, religion, or ethnic origin.

Delinquency. An Active Member is delinquent if his dues are not transmitted by the state society to the American Medical Association by June 1 of the year for which dues are prescribed and shall forfeit his Active Membership in the American Medical Association if his delinquent dues are not received by this Association within thirty days after notice of delinquency has been mailed to his last known address by the executive vice-president of the American Medical Association. Members of the American Medical Association who have been dropped from the membership roll for nonpayment of annual dues cannot be reinstated until such indebtedness has been discharged, but such indebtedness shall apply only to the one year of delinquency. The delinquency provisions of this section also apply to Direct Members whose dues have not been transmitted to the executive vice-president by June 1 of the year for which the dues are prescribed.

III. In the sophisticated pharmaceutical industry, the physician market is well defined. Whether a physician is board certified or is limiting his practice to a specialty, he is equally interested in products for that specialty. Thanks to Fisher-Stevens, there follows the new AMA Statistics for Office-Based Patient Care: the totals of primary and secondary specialists in the U.S., in New York State, and the percentage of those U.S. specialists who practice in New York State (Table I, page 1402).

IV. There have been a number of reports that the county medical societies receive the minutes of the Council meetings much too late. Therefore, we have reestablished the routine of preparing a summary of the proceedings of the Council immediately after each meeting; and they will be transmitted to all concerned soon thereafter.

Table II (page 1403) is a list of dues-paying members and the amount paid by each to his county medical society.

MEETINGS

In addition to routine affairs, your executive vice-president has participated in these activities:

1. A "closed" conference called by Attorney General Lefkowitz, to review and discuss the conduct of the commercial abortion referral services, on March 11, in New York City.

We testified against this practice; and read the following letter addressed to the Attorney General by our president:

> In response to your letter of February 11, addressed to Henry I. Fineberg, M.D., the Medical Society of the State of New York shares your concern regarding the activities of some commercial abortion referral agencies. We agree wholeheartedly

that they must be under close control, if they are allowed to continue at all.

As you know, many of our county medical societies offer an abortion referral service. While they do not have the facilities for arranging for transportation, hotel accommodations, or hospital reservations, they do refer patients seeking terminations of pregnancy to qualified gynecologists, exactly as they would refer patients to any other specialists.

It should not be too difficult to educate New York State residents to seek abortion referrals in this fashion. The main difficulty arises with out-of-town patients who are not accustomed to calling on them when problems of finding physicians arise.

We will make every effort to comply with the suggestion in your letter. We have already clarified and interpreted our code of ethics with particular regard to this situation and intend to enforce them stringently. I propose to circularize our 61 county medical societies to be sure that they all continue to offer a referral service. In addition, through our Public Affairs Division, we will explore all means of publicizing the existence of such services. As you pointed out, the various departments of the State administrations can be of enormous assistance to this.

Please be assured of our continuing concern in this matter, and do not hesitate to let us know if there is anything further we can do.

2. A meeting with our legislative consultants, on March 12, in Albany.

3. The 71st annual banquet of the New York State Legislative Correspondents Association, on March 13, in Albany. In keeping with precedent, the important political figures of our day—national, State, and city—were lampooned. The guest speakers were Senator Buckley, Assembly Minority Leader Steingut, and Governor Rockefeller.

4. A meeting with Allison B. Landolt, M.D., president of the Medical Society of the County of Westchester, on March 16, in New York. We discussed county society problems.

5. A meeting of the State Hospital Review and Planning Council, on March 18, in New York City.

6. A conference with the Honorable Harry W. Albright, Jr., executive assistant to the Governor, on March 19, in New York. George Himler was also present. We talked about many matters of common interest.

7. A dinner in honor of the Honorable Alexander del Giorno, Judge of the State Court of Claims, on March 25, in Queens County.

8. Another conference concerning commercial abortion referral services, called by Senator Tarky Lombardi, Jr., on March 29, in Albany. Members of the Legislature were present. We reiterated our policy against these groups.

9. George Himler and your executive vice-president met with Charles Gillett, executive vice-president of the New York Convention and Visitors Bureau, on April 12, in New York.

10. The regional Conference of Foundations for Medical Care, on April 16, 17, and 18, in Rochester. The host was the Monroe Plan for Medical Care, Inc. The meeting was attended by representatives from New England, the Middle Atlantic States, Ohio, and Pennsylvania. George Himler was the speaker at the luncheon on April 17.

11. A stated meeting of the Medical Society of Jefferson County, on April 20, in Watertown. We discussed "The State of the MSSNY."

12. The installation banquet of the New York State Society of the American Association of Medical Assistants, on April 24, in New York.

13. The American Medical Association Congress on Environmental Health, on April 26, in New York. There were welcoming addresses by Wesley Hall, of the AMA, and George Himler. Governor Rockefeller accepted our invitation to deliver the keynote address. He discussed solid waste management and its impact on the public from the standpoint of magnitude of the problem, the cost of adequately handling solid waste disposal, organization and administration to effectively cope with the problem, and generally how it affects the public.

14. A forum of the presidents of the 48 smaller county medical societies, called by our president, on April 29, in Syracuse. This was arranged as a "sounding board" for the leaders of the counties.

15. On May 4, in New York, a conference with representatives of the U.S. Department of Health, Education, and Welfare to talk about Medicaid and its progress in New York. Our president described what is going on here.

16. A meeting of the AMA Committee on Quackery, on May 6, in Washington.

17. The annual convention of the New York State Academy of General Practice, May 9 to 12, in Kiamesha Lake. We addressed the Congress of Delegates on the State of the MSSNY; and stressed our legislative program. Our president was the guest speaker at the annual banquet.

18. Another forum of the presidents of 13 "metropolitan-size" county medical societies, on May 13, in New York. The agenda was similar to that of the meeting held on April 29.

19. The dedication of the Joseph Ushkow Research Laboratory of Endow Laboratories, E. I. duPont de Nemours & Co., on May 14, in Garden City.

20. The Medallion Ball (Fiftieth Anniversary) of the Nassau County Medical Society, on May 15, in Garden City. All past presidents were honored.

21. The 74th annual dinner of the New York State Society of Certified Public Accountants, on May 17, in New York City.

22. A meeting of the National Tuberculosis and Respiratory Disease Association, in Los Angeles, May 19 to 21.

23. The sesquicentennial dinner of the Medical Society of the County of Monroe, in Rochester, May 25.

24. A meeting with the officers of Group Health Insurance, Inc., in New York City, on June 9. Also present were our president, George Himler, M.D., and Samuel Wagreich, M.D., and M. Theodore Tanenhaus, M.D., of the New York State Academy of Family Physicians.

25. The first Brook Ball for the Meadowbrook Medical and Educational Foundation, in Garden City, on June 12. At this affair, George Loring Hubbell, Jr., a former member of the Board of Regents, and John M. Shell, M.D., were honored for their services to the community.

26. Your executive vice-president delivered the main address at the graduation exercises of the School of Nursing of Flushing Hospital and Medical Center, in Queens, June 18.

27. The annual meeting of the American Medical Association in Atlantic City, June 19 to 24.

28. A medical bill-signing ceremony in the New York

City office of the Governor, July 6.

29. The annual outing meeting of the Medical Societies of the Counties of Oneida, Herkimer, Madison, and Chenango, in New Hartford, on July 8. Our president was the main speaker. Your executive vice-president talked about the "state of the MSSNY."

30. A meeting with officers of the Bankers Trust Company to discuss the banking procedures that we will follow when we move to Lake Success, in New York City, on July 12.

31. A meeting of the Commission on Public Health and Education, in Albany, on July 15. In accordance with the precedent established some years ago, this was a very fine meeting and was well attended.

32. A meeting of the Board of Directors of the New York State Academy of Family Physicians, in Tarrytown, on July 31 and August 1. Your executive vice-president was afforded the honor of sitting in with the family practitioners and participated in the discussion of many problems.

33. A meeting of the AMA Committee on Quackery, in Chicago, on August 5 and 6. As usual, chiropractic was the main topic on the agenda.

34. A meeting of the New York State Education Department Medical Committee on Grievances, in New York City, on August 16. The new organization of the State Board for Medicine was reviewed.

35. Your president and executive vice-president met with Commissioner Ingraham and Mr. George Foy, in Albany, August 26, to talk about the rules and regulations of the Commissioner of Health, with specific reference to Section 86:11(c). This matter will be discussed fully by our president.

36. A meeting called by Senator Tarky Lombardi, in Albany, for the afternoon of August 26. The purpose of this conference was to discuss all the features concerned with medical malpractice. This meeting was attended by governmental officials, members of the Bar, Education Department, Department of Health, and others.

37. Conference with Edward C. Rozek, M.D., chairman of the Empire Medical Political Action Committee, in New York, on August 30. The relationship between this organization and the Medical Society was again reviewed. This was an amicable meeting; and we hope that some good will come of it.

38. A meeting of the Judicial Council of the American Medical Association, in Chicago, September 18 and 19.

39. A meeting with representatives of the AMA delegations of New Jersey and New England, in New York, September 29. Dr. Himler presided.

40. Your president and executive vice-president met with Harry Albright and the State Superintendent of Insurance, in New York, on October 18, to talk about our legislative program.

41. Meeting of the Medical Society of the County of Kings, in Brooklyn, October 19. On the agenda: the inaugural address of the president and a talk on malpractice by Carl Hoffman, M.D., president-elect of the American Medical Association.

42. The annual meeting of the Bronx County Medical Society. Your executive vice-president was presented with an honorary membership.

43. The president's Dinner-Dance of the Medical Society of the County of Kings, in Brooklyn, October 30.

ACKNOWLEDGMENT

As always, your executive vice-president expresses his gratitude to all who have participated in the affairs of our Society.

Respectfully submitted,
Henry I. Fineberg, M.D., Executive Vice-President

Executive Vice-President (Supplementary)

To the House of Delegates, Gentlemen:

This is an addendum to the annual report which appeared in the January 1 issue of the ***Journal.***

THE BUILDING

We moved into our new headquarters on November 16. The formal dedication took place on December 10. The program consisted of the following:

National Anthem
Welcome: Henry I. Fineberg, M.D.,
Executive Vice President,
Medical Society of the State of New York,
Master of Ceremonies
Remarks: The Honorable Richard F. Antonoff,
Mayor, Village of Lake Success
The Honorable Ralph G. Caso,
Nassau County Executive
James M. Blake, M.D.,
Chairman, Board of Trustees,
Medical Society of the State of New York
Ernest B. Howard, M.D.,
Executive Vice-President,
American Medical Association
Address: George Himler, M.D.,
President,
Medical Society of the State of New York
Conducted Tours of Building—Refreshments

The building is a fine structure from the standpoint of architecture, construction, and availability of facilities for our activities—worthy of the largest state medical society in the United States. Our members should make every effort to visit this center of operation of MSSNY and see what it has to offer.

During the next six months or more, there will be continuous surveillance by the architects and building contractors to make sure that proper adjustments are made to eliminate minor inadequacies, that appear in any new construction; and to practice "preventive" maintenance so that major mishaps will not occur. In our contracts, we have arranged to withhold a percentage of the construction costs until we are convinced that all is in good order.

Assessment. Through December 31, the building assessment has produced $1,735,280. Following are the figures:

Full members	22,953 × $75	$1,721,475
Junior members	90 × $25	2,250
Contributions		11,555
		$1,735,280

These results show that 97.67 per cent of our regular dues-paying members sent in their checks.

Bequests to MSSNY. The late Morris J. Bernstein, a great philanthropist and humanitarian—with whom some members of the House of Delegates were acquainted—had a son, Albion O. Bernstein, M.D., who was killed while on an "errand of mercy."

This fine gentleman died a short time ago; and in his last will two bequests to the MSSNY were provided. They are:

1. I give and bequeath the sum of FIFTY THOUSAND ($50,000) DOLLARS to the MEDICAL SOCIETY OF THE STATE OF NEW YORK, to be held by it in trust and to manage, invest and keep the proceeds thereof invested and reinvested and to collect any income therefrom and reinvest said income and out of said income and so much of the principal as may be necessary therefor, to make an award annually of TWO THOUSAND ($2,000) DOLLARS to the physician, surgeon or scientist who, in the judgment of a committee to be designated by the said MEDICAL SOCIETY OF THE STATE OF NEW YORK, shall have in the year immediately prior to the anniversary of the death, that is, November 23rd of each year, of my beloved son, DR. ALBION O. BERNSTEIN, made the most widely beneficial discovery or developed the most useful method in medicine, surgery or in the prevention of disease, and on condition that my Trustees are notified in advance of the time and place when such award will be presented. The award shall be known as "THE DR. ALBION O. BERNSTEIN AWARD." If in any year the said MEDICAL SOCIETY OF THE STATE OF NEW YORK shall deem it advisable to withhold the making of such award, because of a lack of such discovery or development of preeminent merit or for any other reason (which withholding in no case shall be for more than three (3) consecutive years), the said MEDICAL SOCIETY OF THE STATE OF NEW YORK is hereby authorized when making such postponed award to increase the amount thereof to the sum of FOUR THOUSAND ($4,000) DOLLARS. I further authorize the said MEDICAL SOCIETY OF THE STATE OF NEW YORK to reimburse itself from the income and, if necessary, from the principal, of said trust fund, up to the sum of FIVE HUNDRED ($500) DOLLARS annually, for the said MEDICAL SOCIETY's cost and expenses of circularizing and publicizing this annual award and in selecting the annual recipient thereof. If said MEDICAL SOCIETY OF THE STATE OF NEW YORK shall fail to accept such bequest upon all the conditions herein set forth, then I give and bequeath this bequest to BETH ISRAEL MEDICAL CENTER, provided said MEDICAL CENTER shall accept this bequest upon the same conditions as herein set forth and if said MEDICAL CENTER shall fail to accept this bequest upon such conditions, then I give and bequeath this bequest to such other tax-exempt (as hereinafter defined) scientific, medical or educational institution or institutions located in Greater New York City, as my Executors may select, willing and able to accept such bequest upon said conditions.

2. I give, devise and bequeath the sum of ONE HUNDRED THOUSAND ($100,000) DOLLARS to the MEDICAL SOCIETY OF THE STATE OF NEW YORK, in memory of my beloved son, DR. ALBION O. BERNSTEIN. This bequest is made upon my understanding with the said MEDICAL SOCIETY that it will be used to endow the library of the said MEDICAL SOCIETY in its new quarters now under construction in Lake Success, New York, to be known as the "DR. ALBION O. BERNSTEIN MEMORIAL LIBRARY" and that said MEDICAL SOCIETY will so designate said library, or any successor library in perpetuity and that it will prominently and permanently install in said library an appropriate plaque and portrait of my said son to commemorate his services to the community during his lifetime and the endowment of the library. Should the said MEDICAL SOCIETY fail or refuse to accept this bequest upon the conditions herein provided, this bequest shall lapse. I authorize my Executors, in their sole discretion, to determine whether the said MEDICAL SOCIETY in its preparation and designation of the plaque and portrait comply with the terms of my understanding with it. If the said MEDICAL SOCIETY fails or refuses to accept the aforesaid bequest upon the terms of my understanding with it, this bequest shall lapse.

Naturally, these bequests were accepted by the Council and Board of Trustees.

Words cannot express our gratitude to this man who lived a "full life," and shared his good fortune with people everywhere.

Subletting of space at 750 Third Avenue. Up until the present time, we have been unable to sublet our old quarters. The real estate market in Manhattan has deteriorated tremendously.

We have had a few "nibbles," but nothing definite. We are still hopeful that the right people will come along. A major New York City real estate firm—experts in the field—is helping us; and our Counsel has been trying to make some contacts.

MSSNY MEMBERSHIP

The picture here is not as dismal as we thought it would be. While we dropped a total of 277 members for nonpayment of the Special Building Fund Assessment and 118 for nonpayment of 1971 dues, we absorbed a total of 1,034 new members in 1971, to more than compensate for this loss (958 new Active Members and 76 new Junior Members.)

AMA DUES

The AMA has informed us that, as of December 31, we had 19,342 active members in our national organization. This figure includes over 3,000 life members.

In other words, we lost about 7,000 AMA regular members. Our representation in the AMA House of Delegates has been reduced from 27 to 20.

The apportionment of Delegates is defined in the AMA Constitution and Bylaws, and one Delegate is assigned for each 1,000 or fraction thereof of our active AMA members.

REORGANIZATION OF THE STAFF

Over a year ago we began a restructuring of the staff.

I. When Mr. George Farrell retired, we combined the Division of Occupational Health and Workmen's Compensation and the Division of Medical Services into one—the Division of Medical Services. This new arrangement has been very successful.

II. In December, we disassociated legislation from the Division of Public Affairs; and established a new separate Division of Legislation. Martin J. Tracey, J.D., director, has been spending two to three days each week in Albany, visiting government officials and legislators; and alerting everyone concerned to the fact that the MSSNY is "alive." Working in conjunction with DeGraff, Foy, Conway and Holt-Harris who contact the leaders, prepare bills, write our memoranda, and so on, we have high hopes that this new venture will pay dividends.

Also, there will be an assistant director of legislation at our headquarters who will always be available to our members in the field. Recently we distributed this memorandum:

TO: Members, Senate and Assembly
New York State Legislature
FROM: Henry I. Fineberg, M.D.,
Executive Vice-President,
Medical Society of the State of New York

We are pleased to announce the inauguration of a new system of servicing the members of our State Lesislature with information concerning the health of our people and medicine's role in its preservation and improvement.

A new Division of Legislation has been established to provide the members of our State Legislature with the position of the medical profession on pending legislation, the reasons for such position and other supporting informational data. The division will also make available other information which may be of assistance to the legislators in evaluating the thousands of bills that confront them annually.

The director of our new division is Martin J. Tracey, J.D., a veteran member of our staff who has worked more than twenty years for our State Medical Society in both the State and Federal legislative fields. He will represent me on behalf of MSSNY, in Albany, in regard to policy matters, and will work closely with our legislative counsel of many years, George W. Foy, Esq., our expert in legislative procedures.

Mr. Tracey will be available for consultation at your convenience and will make every effort to meet you personally. He can be reached in Albany at: 518-465-8085.

He can also be contacted at the Medical Society of the State of New York headquarters: 420 Lakeville Road, Lake Success, New York 11040. The telephone number is 516-488-6100, extension 222.

Our legislative counsel, Mr. Foy, assisted by Gerard L. Conway, Esq., and John C. Rice, Esq., is available at all times at: 90 State Street, Albany, New York. The telephone number is 518-462-5301.

We hope that our new program will help to create better understanding between you, as a member of our State Legislature, and our State Medical Society, and the doctors of medicine in our great State of New York.

III. On January 1, we deactivated the Division of Research and Planning and the Division of Standards of Medical Care. The committees formerly "serviced" by these divisions have been reassigned to other departments (see below).

IV. The problems of Budget and Finance are very important in these turbulent times. Therefore, we have set up a Division of Budget and Finance, with our comptroller as its director.

V. A new Staff Table of Organization (T.O.) is on page 1404.

We have always maintained that the staff must participate in all committee activities. Therefore, we again are assigning our divisions to committees.

Should a committee chairman require secretarial help, and others, he should consult the designated division director.

DIVISIONS

Administration
  Henry I. Fineberg, M.D., Executive Vice-President
  J. Richard Burns, J.D., Assistant Executive Vice-President
  George W. Forrest, Jr., Assistant to the Executive Vice-President
  Gretchen Wunsch, Executive Assistant
Scientific Activities
  Director, Norman S. Moore, M.D.
Scientific Publications
  Director, William Hammond, M.D.
Medical Services
  Director, Max N. Howard, M.D.
Legislation
  Director, Martin J. Tracey, J.D.
Budget and Finance
  Director, Eugene S. Dombrowski
Public and Professional Affairs
  Director, Guy D. Beaumont
Business
  Director, J. Richard Burns, J.D.

ASSIGNMENTS OF COMMISSIONS AND COMMITTEES TO STAFF

Administration

- House of Delegates
- Council
- Executive Committee
- Board of Trustees
- Ethics
- Constitution and Bylaws (Council)
- Convention
  - Dinner
- Research and Planning
- Constitution and Bylaws (House)
- Judicial Council
- Professional Medical Liability and Defense Board
- Nominating
- Evaluation of ***Journal***
- Peer Review Mechanisms
- Study of Professional Medical Liability Insurance
- Delegation to the AMA
- Trustees' Committees

Scientific Activities

- Commission on Public Health and Education
  - Accident and Injury Prevention
  - Aging and Nursing Homes
  - Alcoholism and Drug Abuse
  - Audio-Visual Aids
  - Cancer
  - Cardiovascular Disease
  - Chronic Pulmonary Disease
  - Continuing (Postgraduate) Education
  - Data Processing in Medicine
  - Disaster Medical Care
  - Environmental Quality
  - Forensic Medicine
  - General Practice
  - Health Care Technology
  - Health Manpower
  - Maternal and Child Welfare
  - Medical Aspects of Sports
  - Mental Health
  - Metabolic Diseases
  - Physical Medicine and Rehabilitation
  - Preventive Medicine
  - Rural Medical Service
  - School Health
- Nursing and Allied Health Professions
- Archives
- Convention
  - Scientific Awards
  - Scientific Exhibits
  - Scientific Motion Pictures
  - Scientific Programs
- Prize Essays
- Liaison With Deans of Medical Schools
- Study of Participation of Medical Schools in MSSNY

Medical Services

Commission on Medical Services
  Economics
  Medical Care Insurance
  Occupational Health
  Workmen's Compensation
Interspecialty
Hospital and Professional Relations
Foundations

Legislation

Commission on Public and Professional Affairs
  Federal Legislation
  State Legislation

Budget and Finance

Budget and Finance

Public and Professional Affairs

Commission on Public and Professional Affairs
  Public Relations
Advisory to New York State Medical Assistants Association
New York State Association of the Professions

Business

Convention
  Technical Exhibits

CHIROPRACTIC

Again, the State of New York has taken a backward step in the field of the healing arts. We marvel at the machinations of the Education Department, despite the protestations of experts throughout the country.

Following is a release of January 7—which speaks for itself. How low can education sink! Doctor Elliott E. Leuallen, assistant commissioner for professional education, has made a mockery of health education in this State. Naturally, his determinations were approved by his superiors. Let the plague be on their houses!!

SED REGISTERS FIRST CHIROPRACTIC SCHOOL

The New York State Education Department has approved the professional education program of the National College of Chiropractic, Lombard, Illinois. *This is the first chiropractic education program in the country to be approved by the Department under the requirements of the law which became effective January 1, 1968.* As a result, persons completing the approved program will be eligible for admission to the New York State professional licensing examination in chiropractic.

The registration of this program is the culmination of three years of collaborative effort between the school and the Department, according to *Elliott E. Leuallen, assistant commissioner for professional education.* During this time, the faculty has been augmented and curriculum revised and the program now meets New York State requirements. *In announcing the registration, Leuallen said, "It reflects the dedication of the administration and faculty in their pursuit of excellence in the field."*

Kenneth Padgett, D.C., president of the New York State Chiropractic Association, and Maholn Blake, D.C., chairman of the State Board of Chiropractic, agreed that the action is of major significance for the future of the chiropractic profession in New York State.

DIVISIONS

Executive Assistant. Since our last report, this department of the Administration Division has prepared, in addition to the usual minutes and letters required by actions taken by the Executive Committee, the Council, and the Board of Trustees, the list of committees for 1972-1973; letters of appointment to members of reference committees; letter of instructions to members of the House of Delegates; a schedule for the meeting of the House of Delegates; credential cards, lists, and badges for members of the House; minutes of the meetings of the New York Delegation to the AMA in New Orleans. The annual reports of the Officers, Committees, Commissions, and District Branches have been edited and prepared for publication in the ***New York State Journal of Medicine.***

Scientific Activities. The director attended the October 3 meeting of the Committee on Organization Coordination of the Advisory Council to the Health Planning Commission, the Public Health Council meeting on October 22, and the Council on Voluntary Health Agencies meeting in Memphis on October 29 to 31. On November 9 he was present at the meeting of the Mental Hygiene Council at Creedmore State Hospital; and on November 11, he gave a talk to the Council of Senior Citizens of Tompkins County regarding the White House Conference on Aging, "What to Expect."

He chaired the Public Health Council meeting on November 19; and from November 29 to December 1 the White House Conference on Aging. On December 9 he attended a meeting with the Boards of Health of Suffolk and Nassau Counties regarding public health activities of the two counties with cutback in State Health Department reimbursement to counties.

On December 14 the director participated in the meeting of the Continuing Education Committee; and a meeting with Mary McLaughlin, M.D., of the New York City Board of Health, and several of her guests who are interested in public health, on December 16. Also, he attended the Public Health Council meeting on December 17.

Among the correspondence answered, there were a great variety of subjects all of which are too numerous to mention. They included: drug abuse; statement for Woman's Auxiliary for public hearing on venereal disease; accreditation of educational programs; status of podiatrists in nursing homes; questionnaire to deans of medical schools asking for names of students being subsidized by county governments; memoranda to all county medical societies regarding sickle cell-anemia committees; National Municipal League regarding medical examiner systems in New York State; review of 28 articles in the ***New York State Journal of Medicine,*** 1971, for Redway Award; letter to Alan Miller regarding change of attitude of Mental Health Committee about recodification of Mental Hygiene Law—preparation of committee report for Council, and so on.

Scientific Publications. The January 1 issue of the ***Journal*** was, as usual, devoted to the Annual Convention, including program and reports. Additional reports were included in the January 15 issue. This year, there were approximately 20 more pages in the January 1 issue than in 1971. The program book is made up from the material that appears in the January 1 number, plus additions. The *House of Delegates Handbook* includes reports that appear in the January 1 and 15 issues.

The backlog of material still concerns us; manuscripts require meticulous copy editing and preparation before they can be published. Our questionnaires revealed that our readers feel that the ***Journal*** is a superior medical publication; and we trust the standards may be maintained.

Doctor Hammond will retire as editor of the ***Journal*** on July 1; and his retirement has been accepted with regret. The loss will be felt deeply by all who have been associated with him. During his tenure as editor, the ***New York State Journal of Medicine*** has become recognized as preeminent among state medical journals.

Medical Services. One year has elapsed since the restructuring of the committees that now constitute the Division of Medical Services.

A great deal of time and effort was spent by the division director in preparing for, and participating in, the activities of the Advisory Committee on the Medical Fee Schedule and Allied Problems of the Workmen's Compensation Board. In addition to attending 10 meetings he also, on various occasions, met with the staff of the Workmen's Compensation Board and with carrier representatives to facilitate the development of a new fee schedule based on a relative value scale by July, 1972. He also addressed a group of claims managers of the New York Compensation Insurance Rating Board on this subject.

The director attended 50 arbitration sessions, mostly in the greater New York area, but in other parts of the State as well. Although not a voting member of the arbitration committee, his opinions have been requested, and well received; and, it is believed, have influenced some of the decisions. His attendance at these meetings has been helpful in defining problems our physician members encounter in the practice of workmen's compensation medicine. On numerous occasions, he has intervened directly on behalf of our members when problems arise between them and either the Workmen's Compensation Board or carriers, leading to prompt resolution and the avoidance of arbitration. Correspondence between this office and our members regarding the problems in this field has been very active.

There were 8 meetings of the Interspecialty Committee and 5 meetings of the Economics Committee which the director attended. Some of the matters considered, such as Section 86.11 (c), Part 86 of the New York State Department of Health Rules and Regulations and Section 52 of the Insurance Law of New York State, required many consultations in person, by telephone, or by correspondence with members of specialty groups, as well as with representatives of the Blue Shield Plans and the Hospital Association. The cooperation of these groups has been excellent.

Two meetings of the Medical Care Insurance Committee were held during the year. Here again, many consultations were held with representatives of the Blue Shield Plans and the Hospital Association, as well as with various county medical societies. The director attended 4 meetings of the Board of Directors of United Medical Service, Inc., and 2 meetings of the County Medical Society's Reference Committee of the United Medical Services, Inc.

The Committee on Occupational Health met on January 25, 1972. It concerned itself primarily with the newly enacted Occupational Health and Safety Act and how the latter will affect the employe-patient, the practicing physician, and industry in New York State.

Public Affairs. On September 22, the coordinator of professional relations arranged a meeting for Wesley Hall, M.D., president of the AMA, with publisher Arthur O. Sulzberger of *The New York Times* and with the *Times* editorial board. The AMA representatives were pleased with the results, and indicated they would like to arrange an annual meeting of this type for future incoming AMA presidents.

Press inquiries handled during September included ABC Medical Service, Associated Press on anatomical gifts, *New York Post* on Alpha Wave Relaxation, CBS News on acupuncture, and a request from WWRJ-FM for public service announcements.

Promotional material was released with regard to the Medical Society's Annual Legislation Conference on November 11 and with regard to the State and Federal Legislation Committees which held meetings the day before, November 10.

Commencing with the September issue of the *News of New York,* an innovation was made changing the style of that publication to predominantly short punchy news bulletins.

In October, two experimental area conferences in medical school settings were conducted; on October 20 at the New York University School of Medicine; and October 27 at the Rochester School of Medicine and Dentistry. Both meetings were designed to increase communications with medical students through discussion and social exchange. They seemed to be successful. Guests who participated on October 20 were Wesley Hall, M.D., Fitzhugh Mullan, M.D., past president of the Committee on Interns and Residents of New York City, George Himler, M.D., President and moderator, and medical student Milton Burglass. The audience consisted of approximately 145 physicians and students.

On October 27 in Rochester, our guests were Ernest Howard, M.D., of the AMA; Donald Raines, M.D., president of Monroe Plan for Medical Care; Robert Berg, M.D., professor of community health; and Geoffrey Smith, vice-president of SAMA. Charles D. Sherman, Jr., M.D., chairman of MSSNY's Committee on Student Activities, was moderator of the discussion.

A survey of county medical societies which provide abortion referral services was completed and submitted to the Public Relations Committee in November.

Promotion of the 1972 Albion O. Bernstein, M.D., Award was carried out by the mailing of nomination forms, posters, and so on to 3,858 sources.

Advertisements were placed in the ***Journal*** announcing two essay competitions, the Merit Cash and Lucien Howe essay competitions, open to interns and residents in New York State with awards to be given at the 1972 convention.

During November, 5,000 copies of the brochure and coupon announcing the Fifth Annual Sports Symposium on the Medical Aspects of Sports were printed and distributed, in bulk, to directors and trainers of athletic associations.

The dedication ceremony on December 10 went smoothly. Press releases were used by the Sunday *Times.* A picture and copy appeared in the *Long Island Press;* and an advance notice appeared in The New York *Daily News.*

During this entire period, September through December, our Medical Society Health Show Mobile has been touring the campuses of New York State and some of the senior and junior high schools. We can report that our program has been well received. Students, faculty, and our physicians who have observed what we are doing, commented very favorably. The Medical Society has received much "press," which has been totally favorable; and, we believe, of great value. In the Spring, we expect to have the van on the road again, making another tour of college campuses.

Legislation. *Organization of new division.* A great deal of time and activity has been devoted to the organization of the new Division of Legislation, which went into operation on December 1, 1971. Applicants for the positions of assistant to the director and of clerical assistant were interviewed. Procedures for the operation of the division have been developed. The heading for *Capitol News* has been revamped and the first issue for 1972 published.

The director spent two days in Albany during December making preparations for the 1972 session. On January 10, the director again traveled to Albany and met informally with a few key legislators, since the session adjourned shortly after convening; and legislators left the Capitol.

Legislative Counsel. Frequent telephone conversations were held between director and legislative counsel's office, in Albany, particularly with Gerard L. Conway, Esq. The director also spent several hours in Albany discussing preparations for the 1972 session with Mr. Conway. Among the items discussed and prepared were the following:

1. A letter in response to a communication from Senator Tarky Lombardi, setting forth 19 questions concerning malpractice.
2. A statement for public hearing on the newly revised Education Law held on January 10, 1972. Francis A. Stephens, M.D., member Education Law Revision Committee, was contacted, and he appeared as the representative of MSSNY.
3. A statement on the proposed New York State Controlled Substances Act for presentation to the Temporary State Commission to Evaluate the Drug Laws, headed by Assemblyman Hardt; a statement was prepared on the basis of a report submitted by William Antopol, M.D., chairman, MSSNY Committee on Alcoholism and Drug Abuse.

Business Division. *Advertising Sales—**Journal.*** Gross billings for the year 1971 totaled approximately $292,143 as compared to gross billings in 1970 of $310,511 or a decrease of $18,368. This decrease in advertising revenue appears to be part of a nation-wide trend. The *Journal of the American Medical Association* as well as other state medical journals have experienced a similar decline in advertising sales.

The new larger size of the ***Journal,*** adopted in January, 1971, has been accepted enthusiastically by our members. We have received a number of favorable comments about the use of larger size type and adoption of the "perfect binding" which replaced the old stapled binding.

Advertising Sales—News of New York. We are pleased to report that Hoffmann-LaRoche, Inc., has agreed to renew its contract for advertising in the *News of New York.*

Technical Exhibits. As of the date of preparation of this report, we have sold a total of 74 technical exhibit booths, producing revenue of approximately $36,375. This is another area in which there seems to be a national downward trend. At the AMA Clinical Convention, in New Orleans, in November, 1971, it was readily apparent that the number of technical exhibitors had declined from that of former years.

Complimentary exhibit space has been assigned to the New York State Society of Surgeons and the Empire Medical Political Action Committee, among others.

Membership-Directory Department. We solicited and completed 1972 dues-payment data from the constituent county medical societies; incorporated this information; and effected other innovations in the CAPIS dues-billing and accounting program. Dues bills for 1972 were mailed out to the membership on schedule. We are now collecting, accounting, and otherwise processing 1972 State and AMA dues payments. The processing of 1971 dues payments has been completed, and all AMA dues payments have been forwarded to its Chicago headquarters.

Proofreading and other production phases were concluded on schedule; and the publication of the new *Medical Directory of New York State* (volume 53) has now been completed. The new *Directory* is being mailed by Fisher-Stevens to each of our active members. The "purchase" edition is being mailed from our headquarters in response to advance orders; and a continuous flow of incoming orders are being invoiced and processed. The sale price of the "purchase" edition has been increased from $25 to $30 per copy to help allay rising costs. The increase has been well received.

A total revenue of $84,330.75 was received from sales of the previous edition of the *Directory* (volume 52).

MISCELLANEOUS

I. Governor Rockefeller reappointed your executive vice-president to the New York State Hospital Review and Planning Council.

II. Your executive vice-president was again asked to serve on the AMA Committee on Quackery.

III. We know you will be interested in this statement by Frank Appleton of Wanvig:

> QUARTERLY PREMIUM PAYMENTS
>
> The pros and cons of various installment plans have been discussed with the company officials in Wausau. Several different approaches were considered but before outlining the details of the recommended plan, I will first set forth some of the basic principles that the company felt should be followed:
>
> 1. The company did not feel it advisable to immediately set up a plan that would be so attractive that every insured doctor in the State would want to make use of it. It was felt that any budget plan should contain an incentive for a doctor to pay his full annual premium in one lump sum.
> 2. Only *one* budget plan should be made available. To have an assortment of payment plans adds considerably to the expenses and increases the possibility of error in handling the payments.
> 3. The company should reserve the right to refuse this budget plan to doctors who in the past have been delinquent in their payments on more than two occasions.
> 4. While verbal confirmation of the use of budget plans has been obtained from the New York State Department of Insurance, the installment of any plan would have to be subject to formal written approval of the New York State Department of Insurance, if required.
>
> For many years, the Insurance Law in New York required that an interest charge be made if annual premiums were col-

lected on an installment basis. When the Council asked us to look into the possibility of quarterly payments, we found that there was a section in the law permitting partial payments for certain types of insurance without an interest charge. The company feels that this section would be applicable to professional liability insurance.

However, the company did not think it advisable to offer a plan without a charge since it could be anticipated that under those circumstances very few doctors would pay their full premium at the start of the policy year. It should be realized that any plan without an interest charge really would not be "free." In establishing rates, investment income is taken into consideration, whether by a precise figure or by general concept. Installment payments mean a loss of that income and details of this can be discussed with the company actuary. Costs of handling any budget plan (added personnel, office space, mailing, phone calls, and others) will vary with the per cent of participation which, of course, makes advance estimates difficult. Obviously, the greater participation in an installment payment plan, the greater cost of our program as a whole.

At the present time, we insure approximately 21,500 doctors. If we were to limit the plan to doctors whose premiums are over $1,000, we would eliminate approximately 10,000. If we were to have the budget plan available for doctors whose premiums come to more than $1,500, we would eliminate 14,321 doctors. Restricted to doctors whose premiums exceed $2,000, we would eliminate 15,524 doctors.

As a starting point, a budget plan is being proposed where the minimum annual premium to be budgeted is $1,500. To offset the charge of "discrimination" that might otherwise be made on behalf of those doctors with lower premiums, it was felt that some interest or service charge should be made so that those doctors using the plan would be paying some of the costs of the project. (I say "some" because in the examples discussed in Wausau, the service charges or finance charges would probably not offset all the loss of investment income and additional handling expense.) We arbitrarily picked a flat charge of $6.00 a payment and the proposed budget plan would look as follows:

MINIMUM ANNUAL PREMIUM TO
BE BUDGETED: $1,500

Down payment 25 per cent: 3 quarterly payments of 25 per cent: $6.00 service charge with down payment and each quarterly payment.

Example: Limits of $1,000,000/$3,000,000
Doctor A: General Surgeon—Metropolitan Area, Class 1
Doctor B: Ophthalmologist—Metropolitan Area, Class 3

Annual Premium	Doctor A	Doctor B
Total	$4,983.00	$2,470.00
Down payment due on effective date of policy	1,251.75	623.50
First installment due 3 months after effective date of policy	1,251.75	623.50
Second installment due 6 months after effective date of policy	1,251.75	623.50
Third installment due 9 months after effective date of policy	1,251.75	623.50

It should be noted that this proposed budget plan calls for equal installments which means that the installments would have to be paid on the due date without a "grace period" or the policy would be subject to cancellation. We would plan to bill physicians one month in advance of the installment date, with another reminder ten days before the installment date. The policy itself could not be canceled without a formal ten-day notice and with this equal-payment plan, it is anticipated that the company would be sending out these formal notices promptly after the installment date if the premium was not received.

Mr. Dunbar Uhthoff, actuary for Employers Insurance of Wausau, and Mr. Raymond Bohl, of the Special Accounts Branch of the company, will be available to discuss the pros and cons of this proposal. We can also discuss the probable starting date for any budget plan that is accepted.

Respectfully submitted,
Frank W. Appleton

IV. The Speaker of the House of Delegates of the AMA has appointed your executive vice-president to a special ad hoc committee "to determine the opinion and desires of the total membership on critical basic issues by an informed opinion poll to the entire membership."

SEAL OF MSSNY

Recently, probably because our seal has been displayed prominently in our new building, we have had many inquiries about its significance.

In the June 1, 1961, issue of the ***New York State Journal of Medicine,*** Mr. Wesley Draper presented this explanation:

> The seal of the Medical Society of the State of New York is extremely interesting in medical symbolism. The rod with the single snake entwined around it is, of course, the staff of Aesculapius and is well known, as the special symbol of medical healing. This goes back to Greek mythology. Aesculapius, son of Apollo, was known as the god of healing. In fact, he eventually became so proficient in the art that Pluto accused him of diminishing the number of shades in Hades, which finally led to his destruction.
>
> The meaning of the rooster prominent on the seal is not quite so familiar, but it also undoubtedly goes back to Greek mythology. Early Greek medicine was connected with temple worship, and those who followed the Aesculapius cult upheld the ancient concept of the sacrifice as a communion between God and man. Generally speaking all animals which the ancients were wont to give to their deities could be offered also to Aesculapius, as he was not very particular. However, in one respect he did show an extraordinary attitude; he was satisfied with small dedications. The Coan women who sacrified a cock to him apologized for the cheapness of their offering; they were aware of the fact that other suppliants would have offered perhaps an ox or a pig, yet they were assured that nobody could give to Aesculapius a gift which would be more welcome. The cock was indeed the most common sacrifice; the phrase "a cock to Aesculapius" was almost proverbial. Socrates, as reported by Plato, has made this memorable. Feeling his body gradually losing its vital heat and realizing that relief from his troubles was at hand, he said (and these were his last words): "Crito, I owe a cock to Aesculapius; will you remember to pay the debt? The debt shall be paid," responded his friend. However, thank offerings to Aesculapius did not consist necessarily of animal sacrifices nor of these alone. In exchange for the fulfilment of their wishes the people gave him almost anything. Whatever it was, the god received it graciously: "The gods do not strive after human goods. Wealth is not gratifying to them, nor any other gain. They are interested in beneficence alone. In this the gods find their riches." This the ancient skeptic said before he was asked to render his due to Aesculapius.
>
> The symbol of the branch and leaves is not quite so easy to identify with certainty, but it too probably comes from Greek mythology. It appears to be laurel, also known as the bay tree, although the present seal bears less resemblance to laurel than did earlier ones. The leaves of the sweet bay tree, still used in cooking and making confections because of their pleasant aromatic flavor, were supposed to have certain narcotic properties which were used when questioning the Oracle of Apollo at Delphi. Among other things Aesculapius found delight in a gift of laurel. It was with these leaves that garlands were made for crowning the heroes of antiquity.
>
> The bay tree also had the miraculous power to resist witchcraft, for "neither witch nor devil, thunder nor lightning will hurt a man in the place where a bay tree is." So says Nicholas

Culpeper in his "English Physician and Complete Herbal." He says also that it has many other virtues and is so well known that it needs no description. The frontispiece of an edition of this work published in London about 1798 shows a picture of Nicholas Culpeper holding a branch of laurel with other branches decorating the page.

It is not known when the Medical Society of the State of New York first adopted its seal, but it seems that a seal must have been used from the time that the Society was first organized, as it was required then to validate the diplomas which were issued to physicians qualified to practice medicine in the State. The seal in use about 1836 is essentially the same as the one used today, except that it seems to bear a closer resemblance to the leaves of the bay tree.

MEETINGS

Since our last report, your executive vice-president has participated in these out-of-the-ordinary meetings and activities.

1. A breakfast-meeting of the Board of Trustees of the Milton Helpern Library of Legal Medicine, in New York City, on November 4.
2. A meeting with officials of The Bankers Trust to discuss financial matters, in New York City, on November 4.
3. A meeting of a Special Committee of the State Hospital Review and Planning Council to talk about Section 86.11 (c), in New York City, on November 10.
4. A conference of the General Practitioners Section of Wyckoff Heights Hospital, in Brooklyn, on November 16.
5. Your executive vice-president was honored by the State Committee on Medical Grievances on his retirement as chairman, in Amityville, on November 30.
6. A conference with Frank Appleton concerning our Professional Medical Liability Program, in New York City, on November 23.
7. The 25th Clinical Convention of the AMA, in New Orleans, November 28 to December 1.
8. A meeting of the Judicial Council of the AMA, in New Orleans, on November 27.
9. A seminar of the AMA Committee on Quackery, in New Orleans, on November 28.
10. The dedication ceremony of our new building on December 10.
11. A private showing of "A Festival of Mad Doctors" by the Friends of the Milton Helpern Library of Legal Medicine, at the New York University Medical Center, on December 12.
12. The Staff Christmas Party, at our building, on December 17.
13. Memorial services for "Skip" Wallace, in Ithaca, on December 30.
14. A meeting of a special AMA Ad Hoc Committee on Membership Opinion Polls, in Chicago, on January 8.
15. A meeting of the Coordinating Council (Executive Committee of the First District Branch), in New York City, on January 11.
16. A conference with representatives of the Hoffmann-LaRoche Laboratories (They subsidize our *News of New York*) to discuss clinical laboratories, at Lake Success, on January 12.

This organization has taken over the Kings County Research Laboratories, Inc.

17. A meeting with Leon Singer and Samuel Gordon of the legal firm of Blumberg, Singer, Ross, Gottesman and Gordon concerning bequests to MSSNY, provided by the will of the late Morris J. Bernstein, at Lake Success, on January 13.
18. A special meeting with representatives of the State Nursing Association to talk about the Pisani-Laverne Bill, at Lake Success, January 24. Another conference was held on January 31.

ACKNOWLEDGMENT

As always, we are grateful to everyone—physicians and staff—who have assisted the administration in every way possible.

Respectfully submitted,
Henry I. Fineberg, M.D.,
Executive Vice-President

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS The following report was presented by James R. Nunn, M.D., chairman.

The executive vice-president, in his usual efficient manner, has rendered a comprehensive report of each of the major activities of the Society. We wish to note some of the salient points in the executive vice-president's report.

The Medical Society building at Lake Success is now completed and occupied. We can all point with pride to this beautiful building, and we feel that the $75 assessment was well spent.

We note that 97.6 per cent of the membership has paid the assessment with only a small loss in membership. We note further that some 600 members did not pay the assessment, 350 of which were forgiven this debt because of hardship. In each case, the hardship status was reviewed by both the county and State organizations. We further point out that expenditures on the building have remained well within the budget, and that no funds will be required from our operational budget. The Medical Society building was dedicated on December 10, 1971. A visit to this outstanding building is well worth your time.

Doctor Fineberg has advised us of two bequests totalling $150,000 to be used for our reference library and for an annual research award. These bequests were given in memory of Albion O. Bernstein, M.D., by his late father, Morris J. Bernstein.

The executive vice-president points out that about 7,000 members of our State Society have not paid their AMA dues. As a result, we have lost 7 delegates to the AMA. It is regrettable that this large number of physicians does not see fit to have representation in the AMA. Ernest B. Howard, M.D., the executive vice-president of the AMA, reported to us that a recruitment campaign will soon be under way which may well change this number.

Reorganization of the staff has occurred during the past year wherein two divisions have been dropped, namely Research and Planning and Standards of Medical Care. The Division of Legislation was created as previously mentioned. These changes have resulted in considerable saving of expense and in greater efficiency.

Your reference committee, together with Dr. Fineberg, deplores the action of the New York State Education Department's approval of the professional education program of the National College of Chiropractors, Lombard, Illinois. This is the first chiropractic education program in the country to be approved by the Department.

Your reference committee believes that greater interest in the problem of quackery should be developed by its members at the county level.

Your reference committee wishes to commend the outstanding efforts of Dr. Fineberg during the past year on behalf of the membership of the State Medical Society.

The House voted to adopt this portion of the reference committee report.

TABLE I. Total office-based patient care

Practice	Primary and Secondary Specialists U.S.	Primary and Secondary Specialists New York State	U.S. Totals in New York State (Per Cent)
Allergy	2,504	368	15
Pediatric	842	120	14
Anesthesiology	8,453	984	12
Cardiovascular disease	7,986	1,279	16
Pediatric cardiology	356	64	18
Dermatology	3,305	450	14
Gastroenterology	2,132	394	19
General Practice	40,386	2,768	7
General Practice with Secondary	15,015	2,365	16
Aerospace Medicine	922	77	8
Family Practice	337	13	4
Gen. Prev. Med.	642	92	14
Physical Medicine and Rehabilitation	928	168	18
Public Health	1,583	223	14
Internal Medicine	29,965	4,518	14
Diabetes	87	14	16
Endocrinology	344	53	15
Geriatrics	344	16	5
Hematology	505	73	14
Infectious diseases	101	10	10
Neoplastic diseases	228	27	12
Nephrology	258	26	10
Nutrition	7	0	0
Rheumatology	307	46	15
Neurology	2,639	379	14
Child Neurology	20	0	0
Obstetrics & Gynecology	16,070	1,889	11
Gynecology	434	47	11
Obstetrics	16	0	0
Occupational Medicine	3,592	422	12
Ophthalmology	8,343	919	11
Otorhinolaryngology	5,037	557	11
Laryngology	2	0	0
Otology	5	0	0
Rhinology	2	1	50
Pathology	3,392	209	6
Clinical	84	6	7
Forensic	394	41	10
Pediatrics	12,172	1,631	13
Psychiatry	12,007	2,337	19
Child	1,867	360	19
Hypnosis	34	3	9
Psychoanalysis	201	52	26
Psychosomatic Medicine	40	8	20
Pulmonary Diseases	2,247	388	17
Broncho-esophagus	8	0	0
Radiology	6,256	481	8
Diagnostic	1,101	129	12
Nuclear Medicine	198	25	13
Pediatric	14	2	14
Therapeutic	1,041	101	10
General Surgery	24,907	2,416	10
Abdominal	130	13	10
Cardiovascular	180	9	5
Colon and Rectal	1,119	170	15
Hand	157	14	9
Head and Neck	67	11	16
Neurologic	1,743	159	9
Orthopedic	7,260	709	10
Pediatric	50	4	8
Plastic	1,616	239	15
Thoracic	2,741	280	10
Traumatic	50	5	10
Urologic	4,612	501	11
Other Specialty	20,563	2,859	14
Unspecified	120,901	13,192	11

TABLE II. Breakdown of dues-paying members and amount paid to his county medical society

County	Dues-Paying Members	CMS Dues
(1 to 30 members)		
Lewis*	7	25
Schuyler	9	50
Yates*	14	5
Tioga	18	10
Allegany*	21	60
Greene	21	10
Orleans	21	40
Essex	23	15
Schoharie	23	10
Wyoming	23	19
Seneca	27	20
(31 to 50 members)		
Herkimer†	32	125
Putnam	33	5
Cortland	34	25
Livingston	34	37
Washington	34	10
Chenango†	36	105
Delaware†	36	65
Montgomery	36	20
Fulton	40	25
Columbia	41	9
Sullivan	41	20
Franklin	42	35
Otsego†	49	75
Genesee	51	35
Wayne	51	35
Saratoga	52	10
Madison**	54	100
Oswego	55	40
Clinton	71	20
(51 to 100 members)		
Cayuga†	72	65
Cattaraugus	74	10
St. Lawrence	83	10
Warren	87	20
Jefferson†	89	60
Steuben	92	45
Ontario	98	30
Tompkins	102	25
Chautauqua	106	30
Chemung	109	43
Ulster†	129	55
Rensselaer	134	12
Niagara†	175	55
Orange	203	85
(100 to 500 members)		
Schenectady†	251	38
Richmond	273	85
Oneida**	288	105
Dutchess	294	20
Broome**	300	65
Rockland*	354	70
Albany*	444	65
Onondaga*	578	70
Monroe*	920	135
Suffolk*	1,040	80
(Over 500 members)		
Erie*	1,270	85
Bronx	1,288	50
Westchester*	1,461	100
Queens	1,848	55
Nassau*	1,939	90
Kings	2,596	59
New York	5,777	35

* Full-time executive secretary and staff.

† Part-time, or recording secretary, or other part-time outside assistance.

** Multiple-county executive (shared).

TALLY OF INDIVIDUAL EXHIBITOR REPORTS	Excellent	Good	Fair	Poor	No opinion
1. Registrants interest in exhibits	6	42	23	3	
2. Traffic past your exhibit	12	36	18	8	
3. Identification of registrants	21	37	9	3	4
4. Control of admissions	24	30	9	6	5
5. Adequacy of time to visit exhibits	10	37	13	5	9
6. Accessibility of exhibit area(s)	24	42	2	2	4
7. Booth arrangement	21	40	7	3	3
8. Lighting and ventilation	12	39	12	(8v 1L) 9	2
9. Janitorial service	10	46	9	5	4
10. Shipping & receiving service	11	34	7	4	18
11. Hotel accommodations	14	25	5	1	29
12. Exhibit protection	24	37	5	1	7
13. Overall management of the meeting	17	42	6	1	8

14. Charges for services Reasonable 32 Excessive 13 No opinion 29

15. Do you favor convention returning to this city? Yes 60 No 3 Undecided 11

SUMMARY

A. Rating of this meeting based on your primary reason for participation.

	E	G	F	P	?
Pharmaceutical	5	21	11	2	3
Publishers			1		
Surg. Supp. & Equip.	2	4	3		1
Educational & Other	4	8	6	2	1

B. Would you recommend that your firm exhibit next year?

	yes	no	
Pharmaceutical	31	3	8 undecided
Publishers	1		
Surg. Supp. & Equip.	7	1	2 undecided
Educational & Other	17	2	2 undecided

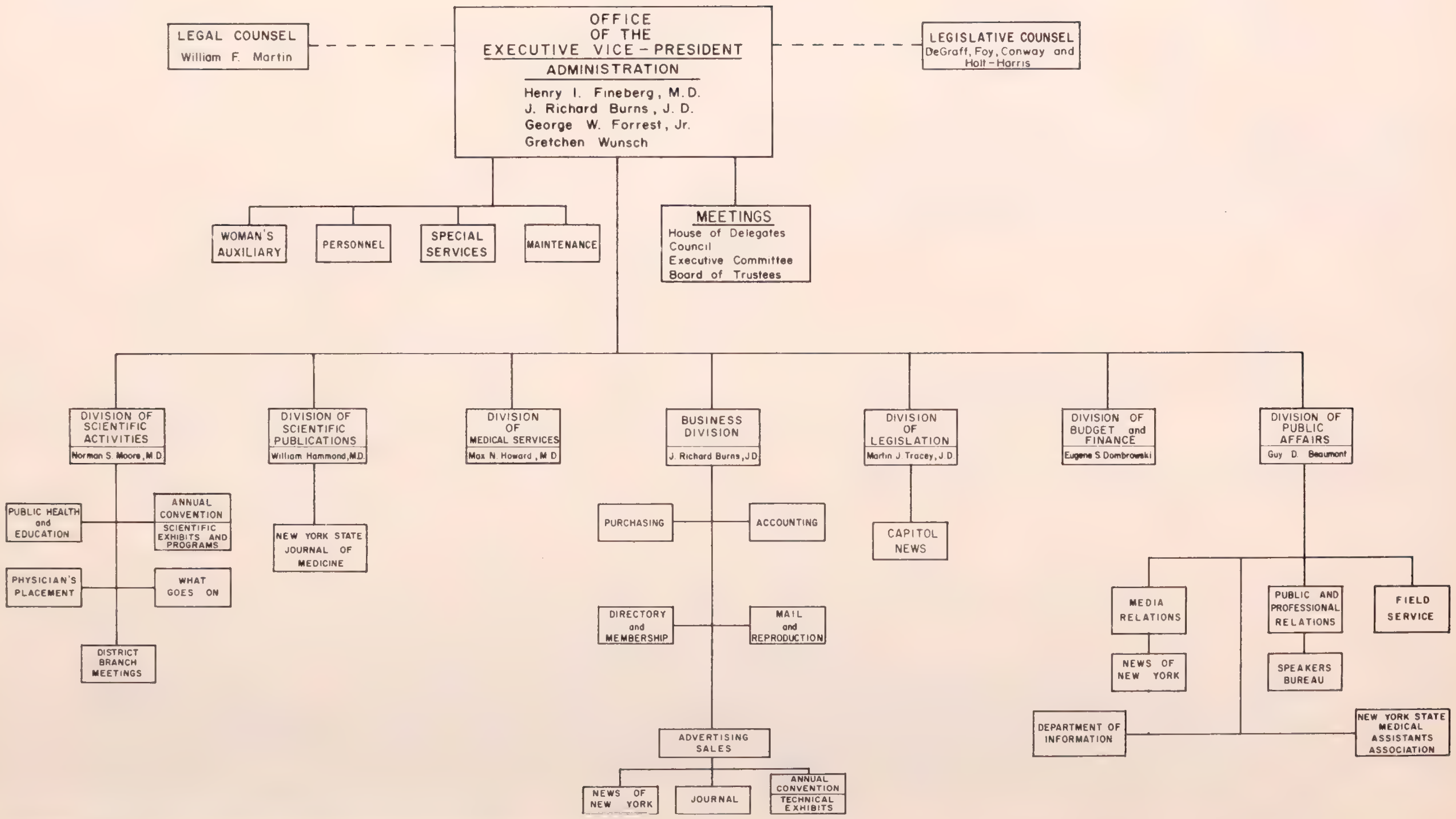
Location of 1971 meeting Americana Hotel, New York City, Albert Hall
Number of exhibiting firms 105
Number reporting 74
Was this discussed with the exhibit Manager at close of meeting? Yes

Date Held 2/14–18/71
Registration Data
Physicians 2864
Nurses
Exhibitors 788
Guests 745
Others 520
Total 4917

FIGURE 1. Exhibitors' evaluation report, 1971 Annual Meeting.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK

THE STAFF


LEGAL COUNSEL
William F. Martin
OFFICE OF THE EXECUTIVE VICE - PRESIDENT
ADMINISTRATION
Henry I. Fineberg, M.D.
J. Richard Burns, J. D.
George W. Forrest, Jr.
Gretchen Wunsch
LEGISLATIVE COUNSEL
DeGraff, Foy, Conway and Holt-Harris
WOMAN'S AUXILIARY
PERSONNEL
SPECIAL SERVICES
MAINTENANCE
MEETINGS
House of Delegates
Council
Executive Committee
Board of Trustees
DIVISION OF SCIENTIFIC ACTIVITIES
Norman S. Moore, M.D.
PUBLIC HEALTH and EDUCATION
ANNUAL CONVENTION
SCIENTIFIC EXHIBITS AND PROGRAMS
PHYSICIAN'S PLACEMENT
WHAT GOES ON
DISTRICT BRANCH MEETINGS
DIVISION OF SCIENTIFIC PUBLICATIONS
William Hammond, M.D.
NEW YORK STATE JOURNAL OF MEDICINE
DIVISION OF MEDICAL SERVICES
Max N. Howard, M.D.
BUSINESS DIVISION
J. Richard Burns, J.D.
PURCHASING
ACCOUNTING
DIRECTORY and MEMBERSHIP
MAIL and REPRODUCTION
ADVERTISING SALES
NEWS OF NEW YORK
JOURNAL
ANNUAL CONVENTION
TECHNICAL EXHIBITS
DIVISION OF LEGISLATION
Martin J. Tracey, J.D.
CAPITOL NEWS
DIVISION OF BUDGET and FINANCE
Eugene S Dombrowski
DIVISION OF PUBLIC AFFAIRS
Guy D. Beaumont
MEDIA RELATIONS
NEWS OF NEW YORK
PUBLIC AND PROFESSIONAL RELATIONS
SPEAKERS BUREAU
FIELD SERVICE
DEPARTMENT OF INFORMATION
NEW YORK STATE MEDICAL ASSISTANTS ASSOCIATION

Budget and Finance (Annual)

To the House of Delegates, Gentlemen:

The Committee on Budget and Finance consists of the following members:

Thomas F. McCarthy, M.D., *Chairman*	Bronx
Walter T. Heldmann, M.D.	Richmond
John E. Lowry, M.D.	Queens
Albert M. Schwartz, M.D.	New York
James M. Blake, M.D.	Schenectady

Following the pattern of prior years, the committee met on a quarterly basis, except at the close of the calendar year when a full account of the financial structure is presented to the House of Delegates. Meetings were held on April 22, July 29, and October 28, when a line-by-line analysis was made of expenditures versus estimated budgets. Changes were made where necessary, these being either upward or downward as dictated by experience and/or circumstances.

The revised estimated budget after the close of operations at September 30, 1971, reflected an anticipated deficit of $231,988. As contrasted to this figure, there was an actual excess of income of expenditures of $79,218 at the end of nine months. The difference between the estimate and the actuality was due primarily to the stringent economic programs that were instituted. It was hoped that we might reach a break-even point in the fiscal operations of 1971. At this writing, however, due to the lateness in publishing the *Medical Directory of the State of New York*, we shall probably close the year slightly in the "red." Of course, any revenues anticipated in sales of *Medical Directory* in 1971 were not lost but will be reflected as additional revenues in 1972.

The committee at the meeting of October 28, also put into final form the estimated budget for the calendar year 1972. It is well to note that with the approval of the Council and Board of Trustees, the divisions of Standards of Medical Care and Research and Planning were deactivated, and these changes are reflected in the 1972 estimated budget. The programs and activities of these divisions will be continued by committees of the Council and assisted by the administrative staff of the Medical Society of the State of New York. Another change reflected in the budget was the creation of the Division of Legislation. The reason for this change has been explained in other pertinent reports.

The recommendations of the Committee on Budget and Finance were forwarded to the Council and Board of Trustees at their respective meetings on December 16, 1971. With some minor revisions, the proposed estimated budget for 1972 was adopted which shows an estimated deficit for 1972 of $310,758 (Table I).

It must be pointed out that we are at the end of our uncommited surplus and that a critical fiscal period is before us.

Our budget estimate shows that under the present fiscal situation we will be operating with a large deficit during this year, and for years to come. It is impossible to progress under this arrangement. Therefore, we strongly recommend that there be a substantial increase in dues. It is understood that this cannot become effective until January 1, 1973.

We should point out that according to an analysis which we received in 1970 (evidently it is now out of date), we are tied for thirty-ninth place in the amount of dues. These figures appeared in the September 14, 1970, issue of *American Medical News*.

TABLE I. Estimated Budget 1972

Income	Amount
Dues	$1,620,000
Journal Advertising	295,000
Journal Circulation	3,200
Journal Reprints	12,000
News of New York advertising	52,038
Medical Directory sales	60,000
Annual Convention—exhibit rentals	45,000
Interest on investments of General Fund	5,000
Dues Collection from AMA	17,000
Relative Value Study	500
What Goes On subscriptions	250
Guidelines for Medical Review	500
Miscellaneous Income	100
TOTAL INCOME	$2,110,588
Expenditures	Amount
Administration	$ 238,921
Standards of Medical Care Division	8,303
Research and Planning Division	...
Business Division	528,522
Public Affairs Division	282,109
Legislation Division	85,105
Medical Services Division	61,533
Scientific Activities Division	95,623
Scientific Publications Division	418,705
Annual Convention	68,475
Legal Counsel	60,000
Legislative Counsel	22,500
Officers, Board, AMA Delegation	110,900
House of Delegates (Special Committees)	5,850
Council Committees	51,350
Non-Divisional	383,450
TOTAL EXPENDITURES	$2,421,346
Excess of Income over Expenditures	$ −310,758

Alaska	$200
Iowa	150
Nevada	150
North Carolina	145
Wisconsin	145
Hawaii	140
Michigan	125
North Dakota	125
South Dakota	125
Idaho	120
Oregon	115
Arizona	105
Illinois	105
New Mexico	105
Minnesota	100
Washington	97
New Hampshire	95
California	90
Indiana	90
Virginia	90
Delaware	85
District of Columbia	85
Louisiana	85
Maryland	85
Kentucky	80
Rhode Island	80
Tennessee	80
West Virginia	80

Alabama	75
Arkansas	75
Florida	75
Kansas	75
Oklahoma	75
Pennsylvania	75
South Carolina	75
Wyoming	75
Puerto Rico	73
Colorado	70
Nebraska	70
New York	70
Maine	65
Missouri	65
Montana	65
Vermont	65
Mississippi	60
New Jersey	55
Texas	55
Connecticut	50
Ohio	50
Georgia	40
Massachusetts	35

Utah not reported in survey

The committee intends to hold quarterly meetings in the future. These meetings have proved to be successful in holding down expenditures to an acceptable minimum.

In behalf of the committee, the chairman would like to thank Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president; and Eugene S. Dombrowski, director, division of budget and finance, for their dedicated work in directing the daily fiscal operations of the State Society.

Respectfully submitted,
Thomas F. McCarthy, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

The Committee on Budget and Finance has strongly recommended that there be a substantial increase in dues to become effective on January 1, 1973. The latest available figures show that New York State tied for thirty-ninth place in the amount of dues charged its members. Your reference committee appreciates the urgency of this plea and the necessity for a dues increase, and, therefore, recommends at this time that the annual dues of the Medical Society of the State of New York be increased by $30.

The House voted, without a dissenting vote, to adopt this portion of the reference committee report, thereby increasing the dues by $30 effective January 1, 1973.

Resolution 72–11. Office of President-Elect of State Medical Society and Major Issues Facing Medical Profession

Introduced by Nassau County Medical Society

WHEREAS, It is logical and appropriate for candidates for the office of president-elect of the State Medical Society to make known their ideas, policies, and positions on major medical issues; therefore be it

Resolved, That the Medical Society of the State of New York provide appropriate opportunities for all candidates for the office of president-elect of the Medical Society of the State of New York to discuss their positions on the many issues facing the medical profession.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

Your reference committee felt that the *Resolved* in this resolution would be too cumbersome to implement. Furthermore, we felt that nominees for the office of president-elect and their attitudes toward the major issues facing the medical profession are well known. For these reasons, we recommend disapproval of this resolution.

The House voted not to adopt resolution 72–11.

Resolution 72–42, Council to Study Staffing Patterns, Budgetary Practices, Legal Rights, and other Aspects of MSSNY with Suggestions Sought from Individual County Medical Societies and Members

Introduced by Medical Society of the County of Monroe.

WHEREAS, Our times are marked by increasing encroachments on the freedom of professional action of physicians; and

WHEREAS, The American Medical Association is embarking on a searching program in an attempt to gear up for optimal representation of physicians in the 1970s; and

WHEREAS, Our membership needs to be convinced that the Medical Society of the State of New York is optimally organized to represent us in our efforts to continue to practice quality medical care in the coming years; therefore be it

Resolved, That the Council be asked to embark on a full-scale study of the Medical Society of the State of New York to include, but not be limited to, staffing patterns, budgetary practices, legal rights, and restrictions in our dealings with third parties; and be it further

Resolved, That suggestions from individual county societies and members be sought in an organized, meaningful, and constructive fashion; and be it further

Resolved, That the President and Council make an indepth report of the results and recommendations of this study to the membership and House of Delegates of the Medical Society of the State of New York in time for the next regular meeting of the House of Delegates.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

This resolution was discussed by your reference committee, the officers of the Society, and many interested members. The intent of the resolution is well taken. The lengthy deliberations of the reference committee and participants have brought to the attention of the Society's officers the need for better communications and liaison between the State and county societies. Furthermore, efforts which would fulfill the intent of this resolution have already been undertaken. We suggest that the offices of vice-president and president-elect be given the added responsibility of communication and liaison with the component county medical societies. The implementation of this type of study suggested by the resolution would burden the Medical Society with unwarranted expense.

Your reference committee recommends disapproval of this resolution.

The House voted not to adopt resolution 72–42.

Resolution 72–43, Approval by the House of Delegates of the Council's Action in Levying a Special Assessment for the Building Fund

Introduced by Norman S. Blackman, M.D., as an individual

WHEREAS, The Council of the Medical Society of the State of New York acted entirely within its legitimate constitutional rights in levying a special assessment to help pay for the Society's new building; and

WHEREAS, This action, nevertheless, caused concern among many of the members of the Society; and

WHEREAS, The House of Delegates of the Medical Society of the State of New York has never previously approved this special levy on the membership; therefore be it

Resolved, That the House of Delegates approve the action of the Council of the Medical Society of the State of New York in levying a special assessment on the members to help defray the cost of the Society's new building.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

Your reference committee considered this resolution carefully and felt that the actions of the House of Delegates at the opening session, Sunday, February 13, left little doubt about its feelings regarding the action of the Council of the Medical Society of the State of New York. We, therefore, recommend disapproval of this resolution.

The House, after discussion, voted to amend the reference committee report by deleting the words "about its feelings regarding" and inserting the words "that the House of Delegates approved;" and also deleting the words "disapproval of this resolution" and inserting the words "that this resolution, which is unnecessary, be filed."

The report of the reference committee would then read:

> Your reference committee considered this resolution carefully and felt that the actions of the House of Delegates at the opening session on Sunday, February 13, left little doubt that the House of Delegates approved the action of the Council of the Medical Society of the State of New York, and we, therefore, recommend that this resolution, which is unnecessary, be filed.

The House voted to file resolution 72–43.

Board of Trustees (Annual)

To the House of Delegates, Gentlemen:

The Board of Trustees consists of the following members:

James M. Blake, M.D., *Chairman*	Schenectady
Milton Helpern, M.D.	New York
Walter S. Walls, M.D.	Erie
Edward C. Hughes, M.D.	Onondaga
Walter T. Heldmann, M.D.	Richmond
Joseph J. Kaufman, M.D.	Wayne
C. Stewart Wallace, M.D.*	Tompkins
Waring Willis, M.D.*	Westchester

The Board of Trustees in officially recording the deaths of Waring Willis, M.D., and C. Stewart Wallace, M.D., do so with deep sorrow, but with gratitude for the many years of unselfish service these two fine gentlemen gave for the betterment of their fellow men, for the profession of medicine, for the Medical Society of the State of New York, and for the American Medical Association.

Dr. Willis, in directing his attention to the "medical services" aspect of medical care, became well known and respected not only in his home county of Westchester and in the State of New York, but also throughout the United States by his activities and his interest in the American Medical Association. Dr. Willis served his county in many offices including the presidency, and he also served the Medical Society of the State of New York in various committee activities, Council functions, and served as president of the Society in 1955 and 1966. He further established an excellent rapport throughout the United States, between the Medical Society of the State of New York and the American Medical Association, by his interest and activity in medical services at the national level.

Dr. Wallace served his county medical society (Tompkins) in many areas, including the presidency. His activities on the Council of the Medical Society of the State of New York involved primarily the area of public relations. Dr. Wallace considered public relations to be extremely important, and he was constantly striving to improve the story of medicine and medical care before the public. He was truly loved by his patients and in this way surely gained his goal in public and patient respect by the people of his community.

These two gentlemen will be missed, but we must be truly grateful for their contributions to our Society and for the opportunity of having known and associated with them.

The Board of Trustees this year, in assuming the responsibility for the fiscal affairs of the Society, has perhaps taken a little harder look at the activities and the programs of our Society.

Early in the year, we requested the administration of the Society to review the activities of the various departments and to determine whether or not the benefits to the Society justified the expenditures involved. We further suggested that such findings and/or recommendations be made to the Council for its consideration of any further change.

Some changes, without loss of services to the Society but with financial savings, have been approved by the Council this year, on recommendation of the administration.

It has not been our intent to discontinue or to hamstring any department or any project of benefit to the Society, but in making such suggestions, it was our concern that we were getting "a dollar value for a dollar spent."

We believe that our responsibilities as your Trustees call for a close fiscal stewardship of the funds of our

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*Deceased.

Society in appropriating these monies for the various recommended programs of activity.

A supplementary report of the Trustees containing a detailed audit of the fiscal affairs of our Society, prepared by the firm of Patterson and Ridgway, will be distributed to the House of Delegates.

Headquarters building. During the early part of the year, it was necessary that we give prime consideration to the final financing of the completion of the new headquarters building and for the disbursement of funds for completion of its construction.

The assessment of the members of the Society by the Council for this purpose produced a total income of $1,735,280. This, together with the previously established building fund and with other surplus funds, gave us sufficient monies for the total cost of construction of the headquarters building.

It is unfortunate that the economic conditions of the time, the spiraling costs of construction, and the decision of the Department of Internal Revenue concerning surplus funds of our Society mandated not only that we proceed with the construction at the time, but called for the need for additional funds.

Nevertheless, as a result, we have a beautiful headquarters building which gives adequate space for services and appears to be constructed for efficient operation.

The Board of Trustees, however, would call to your attention that in keeping with the directive of the Internal Revenue Service, a minimum surplus of monies is now present in any of the uncommitted funds.

Our Investment Committee has this year continued to put all available monies into short-term commercial paper producing the highest possible rate of return. This action of investing income or funds not immediately needed in short-term securities has produced several thousand dollars of additional income to the Society.

Early in the year, the Board of Trustees decided to sell our remaining long-term bonds and stocks and to invest these monies in short-term securities. These transactions, according to our business division, have produced a gain of more than $140,000 during this year.

The War Memorial Fund which was established by you several years ago has had in recent years minimum call for need by sons or daughters of physicians who died as the result of service in the armed forces. This fund has a surplus of more than $70,000 presently, and it is estimated that a like amount of surplus will be available when the last current beneficiary completes his education in 1973. In view of this, the Board of Trustees determined recently to purchase $22,000 of securities from these funds, such securities to mature in 1977, yielding 6.3 per cent.

It is necessary at this time that we keep all of our available funds working for us to produce the greatest income for the Society.

Following completion of our new headquarters building, it was necessary for us to decide whether or not to purchase maintenance for upkeep of the building and grounds on a contract basis, or to provide such services with our own employes. After careful consideration and study of this subject, it was the decision of the Board that it would be to our benefit and, as far as could be determined at that time, less costly to contract for these services. Therefore, arrangements were made with Levitt & Sons to furnish these services to us for a cost of $75,000 per year.

In addition to this maintenance charge, we will have an annual expenditure of approximately $50,000 for heat, electrical services, water, telephone, and other supplies.

By comparison, our costs at 750 Third Avenue, New York City, were $82,000 per year for rent and approximately $30,000 for other services.

Unfortunately, we have not as yet been able to sublet the space at 750 Third Avenue. The rental market in New York City has declined during the past few months, this apparently due to the many new office buildings which have been constructed in the area and also to the number of organizations that have moved from Manhattan to elsewhere. It is hoped and anticipated that we will be able to sublet this space in the near future.

The formal dedication of the headquarters building was held on December 10, 1971, as determined by the council. The following remarks were made by James M. Blake, M.D., chairman of the Board of Trustees, at this dedication.

> All of us are, I am sure, delighted to be witness to the completion and to the dedication of this beautiful building—the home and headquarters of the Medical Society of the State of New York.
>
> Many of you, and I am sure many of our members, are not familiar with what a group of nomads we, as a Medical Society, have been over the years. The dedication of this building, being held in this tent, probably has some significance in history.
>
> In our early years in New York, we sort of wandered in tribes, without a home of our own. Meetings of the Society were held in various places where space could be found. Some of our meetings were held in the State Capitol, in Albany, these meetings being held in conjunction with the State Legislature. In fact the president of our Medical Society in those days, gave an address and a report to the State Legislature of the status of the "public health" in our state.
>
> History would seem to indicate that in the early 1800s, the Legislature was in close contact with, and was continually seeking the advice of, the Medical Society and the medical profession relevant to medical problems of the day.
>
> Subsequently in the early 1900s, the Medical Society established its first headquarters at 64 Madison Avenue, New York City.
>
> Incidentally, as chairman of the Board of Trustees and with the responsibilities of the keeping of the funds, I am somewhat amused at looking at this magnificent building, to realize that the rental for our first headquarters, at 64 Madison Avenue, was $500 per year.
>
> During the succeeding years and up to the present time, we have occupied six different locations, all in New York City.
>
> The first location was at 64 Madison Avenue, then 17 West 43rd Street, 2 East 103rd Street in the New York Academy of Medicine Building, subsequently 292 Madison Avenue, 386 Fourth Avenue, 750 Third Avenue, and now to the first "home" of our own, 420 Lakeville Road, Lake Success.
>
> There are, I am sure, many anecdotes about these various sites. The first perhaps, and foremost, is that the move from our original headquarters, at 64 Madison Avenue, was made because the rent was increased above the $500 per year fee and this was considered, according to the Council notes, as too high and too excessive.
>
> The minutes of the Council also refer to meetings of the Council, where "late arriving members had to stand because of a lack of sufficient chairs."
>
> As early as 1927, however, reference was made to the possible "establishment of a permanent home," this like our neighboring State of Pennsylvania.
>
> This was given in the annual report of the then president, James E. Sadlier, M.D., of Poughkeepsie, New York.
>
> There was established at about that time, a fund which was

entitled, "The Wear, Tear, Loss and Depreciation Fund." This probably was the beginning of what is now known as our building fund.

Because of the limited size and space in our early headquarter's offices, it was often necessary, to the delight of the staff, to give them part of the day off, when the Council met, so that the latter would have sufficient space and adequate chairs to hold their meeting.

While this arrangement apparently met with the approval of the staff, it was not well received by some of the more frugal members of the Council and Board of Trustees, nor was it considered conducive to the peace of mind of the then secretary of the Society. Therefore, arrangements were made, with the approval of the House of Delegates, to hire an outside room for the Council meetings, so as not to interfere with the routine work of the Society staff.

During this era, the Bronx County Medical Society, by resolution in the House of Delegates, objected to the inaccessibility of the headquarters at the Academy of Medicine Building, requesting more centrally located offices.

This request or suggestion was disapproved and in essence ignored by the Reference Committee and by the House of Delegates. This reminds me somewhat of the suggestion that, in recent years, was made for Albany as a more accessible location for our permanent headquarters.

The need for improved and larger quarters was continually referred to over a period of years.

When I first became a member of the Council in 1957, one of the major items of discussion then was the need for additional space and improved headquarters.

Walter Mott, M.D., chairman of the committee, was given the task to find more suitable headquarters. I remember well Dr. Mott's report and the recommendations of his committee, pointing out that they had searched Manhattan, but rents were too high and with sincere apology and assurance of the future, they were recommending 750 Third Avenue.

Dr. Mott stated that they were fearful of Third Avenue at that time and apologized for the suggestion of the location of our headquarters in this part of the city. But he pointed out that the costs "West of Third Avenue" were unapproachable and that the society could not afford the rents that were being requested in mid-Manhattan. He did assure the Council, however, that he had been advised and he personally believed that within a few years, Third Avenue would be one of the leading "business avenues of Manhattan." This of course has become a reality.

Still the members of our Medical Society continued as "restless renters," the society being further stimulated to have its own home by the reports of some of our past presidents. It was noted that in the annual reports of Stanley Kenney, M.D., and Andrew Eggston, M.D., during their terms of office as president, reference was made to the desirability and the possibility of our, sometime, owning our home. The real impetus, however, for our obtaining a home of our own, came from a "handsome young man named Henry Fineberg." Not having been a taxpaying property owner up to that time, he didn't know about the shoveling of snow and the mowing of the lawns in the summer, but he now has that chore to face up to.

Well anyway, after all these years, a trunk full of rent receipts, and a lot of empty aspirin bottles, here we are in our own home—a beautiful building, a delightful location, and with the stimulation, the desire, and the determination to continue forward in the protection of the public health and the providing of high-quality medical care to the people of the State of New York.

We all realize that we as a profession are "damned by some" but, "God forgive them, for they know not what they do."

We know we are not perfect; we know there is much to do.

We know there is need for some changes in the delivery of medical care, just as there is need for changes in labor, in business, in government, in industry, in sales, in advertising, in news reporting—yes, in all spheres of our life and economy.

We further know, that in spite of our critics and those that would change it all for something entirely new, that our people have the finest overall medical care available anywhere in the world.

Sure we know we have "some bad apples in the barrel." Name me a profession, or business, or enterprise that doesn't.

The Lord himself had 12 disciples—one was no good—that according to my calculations is 8 per cent. As I look at all groups and organizations, including our own, that is about the correct percentage.

Sure we know we need to make some changes to improve our ability to deliver high-quality medical care to all the people, and with the cooperation of government and all other involved groups, we will and can make the necessary changes to meet the needs of modern America.

We will build on the sound and proved methods of the past and of the present to provide for all the people of our State the best medical care.

We shall further, through our influence and cooperation with the medical societies of all the other states and with the American Medical Association, provide this same best care for all the people of this, our United States.

Ladies and Gentlemen, we welcome you to this, our home, the headquarters of the Medical Society of the State of New York.

Tax exemption status. While we as individuals have been concerned about ever-increasing taxes for a long time, we have not been so concerned as a Society. However, we now find ourselves as an organization likewise involved.

The Internal Revenue Service has ruled that "unrelated business income" relating to advertising in our ***Journal*** is taxable. This decision has been appealed by us as well as by other nonprofit organizations, including the American Medical Association. Nevertheless, we were presented with tax bills by the Internal Revenue Service for such income for the year 1968, totaling $50,134.04. This question was discussed in detail with our tax consultants, Wilkie, Farr, and Gallagher, and on their recommendation this tax was paid under protest, pending the decision of the appeal, this being done to avoid further penalty.

All levels of government must now be considered "big business;" at least it seems that all levels of government consider themselves big business based on their desire for ever-increasing income, if not in economy.

The New York State Legislature last year in this respect enacted permissive legislation allowing local governments to impose real estate and school tax assessment on nonprofit organizations, such as medical societies and bar associations.

We are, therefore, faced with the possibility of the imposition of local real estate and school taxes on our property at Lake Success. While no decision has been made as yet, we sincerely hope we will not be taxed on this property, but we have considered this possibility.

Should the authorities involved determine to impose taxes on our property, we will be faced with the decision as to whether or not to accept such ruling and pay the taxes accordingly or whether to consider transferring the property from the Medical Society of the State of New York to the Empire State Medical, Scientific and Educational Foundation, which is a tax-exempt foundation. Such an action, if determined desirable, would require approval by the membership of the Society, as well as permission of the Supreme Court of the State of New York. If circumstances continue as now in this respect, it may be desirable that all educational and economic activities of the Medical Society of the State of New York be taken over by the Foundation.

The Board of Trustees is cognizant of these factors and certainly such will need to be considered at the proper time, and we shall advise and recommend to you accordingly.

Malpractice Insurance. The increasing cost of our Malpractice Insurance and Defense Program has been of concern to all of us. The Board of Trustees, early in the year, decided to review our program of Insurance and Defense from a fiscal point of view. In doing such, it has been our desire to try to determine if the benefits of our program justify the cost of such. The Board of Trustees is now in the process of reviewing this program from the viewpoint of (1) our legal counsel, Martin, Clearwater, and Bell; (2) our insurance broker, H. F. Wanvig Company, Inc.; and (3) our insurance carrier, Employers Insurance of Wausau.

We have held meetings with each of these three organizations and have discussed in detail with them their relationships, one with the other, and their responsibilities as such pertain to our insurance program.

It is anticipated that when this study is completed, we, as a Board, may be able to provide you not only with a full report of the program as we see it from a fiscal point of view, but perhaps also make some recommendations and provide answers to many questions concerning this important subject.

While our studies to date have not been completed sufficiently to draw definite conclusions to make specific recommendations, we have gathered certain information which we would like to share with you at this time.

In reviewing the activities and responsibilities of our legal counsel, William F. Martin, Esq., the following information of significance is presented to you.

Mr. Martin reported that he had increased his staff from 20 in 1969 to 37 at the present time, and that this included an increase from 11 to 19 lawyers. He also stated that he found it necessary, because of the increasing number of malpractice cases upstate, which amount to approximately 40 per cent of all the cases, to open an office in Syracuse staffed full time by two attorneys and a secretary. This branch covers the Buffalo, Rochester, Binghamton, Utica, and Albany areas, as well as Syracuse. Others of his staff handle upstate cases as required.

Among his activities on behalf of the Society, he reported that he or his staff had in 1971 attended over 90 State and county society malpractice committee meetings in all parts of the State, as well as answering innumerable inquiries from individual members. He has spent a great amount of time handling the various contractual and other problems associated with building our new headquarters.

Mr. Martin advised us that at the present time his office is handling between 150 and 200 cases for uninsured members for which he receives no compensation other than his annual retainer by the Society. He assured the Board that his non-State Society legal activities are miniscule.

Mr. Frank Appleton, our indemnity representative, of H. F. Wanvig, Inc., discussed in great detail with the Board the activities of his company in our behalf in our insurance program. The following data are presented to you for your information.

1. The net expense factor, or the portion of the premium dollar retained by the insurance companies, is an average of 37.6 per cent throughout the country.

2. The expense percentage used by the Employers Insurance of Wausau for our State Society program is 15.5 per cent.

3. Mr. Appleton reports this to be the lowest expense factor in the country for this line of insurance.

4. The commission rate averages 20 per cent, with a low average throughout the country of 5 per cent.

5. The commission rate in our program is "less than 5 per cent."

6. The commission rate, like the expense factor, fluctuates as rate changes are made.

7. The commission rate, is renegotiated with the company at the time of each rate change.

8. Our rate change, according to Mr. Appleton, has decreased each time there has been a rate increase.

9. At no time is a commission charged for the *rated-up portion* of any policy.

10. H. F. Wanvig, Inc., is a "general line" brokerage office. Their total business in lines other than professional liability insurance, however, is less than 1 per cent of their overall business.

11. All stockholders of H. F. Wanvig, Inc., are and must be employes who have a direct interest in the business.

12. H. F. Wanvig, Inc., has at present 35 employes, 6 of whom are licensed insurance brokers.

These points of information we thought would be helpful and will be elaborated on in our final report and recommendations concerning our insurance program.

The Board of Trustees also interviewed representatives of the Employers Mutual Insurance of Wausau, namely, Mr. Dunbar Uhthoff, senior vice-president and actuary, and Mr. Raymond H. Bohl, vice-president special accounts, who provided us with the following information.

1. For the years 1966 through 1970, the following amounts of premium dollars were collected by the company in New York State for malpractice insurance:

Year	Premium
1966	$5,003,958.90
1967	5,906,180.76
1968	8,947,734.07
1969	11,938,607.77
1970	18,963,585.99

2. The following is a tabulation of payments made by the company:

A. Represents all payments for investigation expense by other than company personnel.

B. All payments for legal expenses by legal firms that are not owned or controlled by the company.

C. All expense payments other than investigation and legal expenses. This includes reports of the Retail Credit Company, experts' testimony, bond premiums, court reporters, witness fees, transcript fees, trial or testimony fees, and arbitration fees. For the years 1966 through 1970, these expense items are as follows:

Year	A	B	C	Total
1966	$ 438.55	$329,150.37	$120,903.70	$450,492.62
1967	433.75	375,290.48	139,144.84	514,869.07
1968	296.75	441,558.32	184,116.58	625,971.65
1969	5,572.89	453,668.21	240,418.72	699,659.82
1970	19,093.17	560,572.85	237,723.46	817,569.48

3. In response to an inquiry as to how the reserve funds set up for each claim file are managed during the

pendency of the litigation, the following explanation was given: "When a policy is written, approximately 10 per cent of the collected premium is expended to pay acquisition on expenses, operating expenses, and taxes. The remaining 90 per cent is placed in reserve to pay for losses and loss adjustment expenses. These funds are invested until needed to pay losses. The amount of reserves invested is thus equal to approximately 90 per cent of the collected premiums less the losses and loss adjustment expenses already paid. If the premiums do not provide sufficient funds to pay losses, monies must be taken from surplus. The rate of return on invested assets has been as low as 2 per cent per annum in past years."

4. If the company underwriter finds a situation where either frequency or severity involves a particular physician, an additional study is made to determine whether or not that particular policyholder is insurable and under what conditions.

5. A physician's coverage might be discontinued, with the concurrence of the Professional Medical Liability Insurance and Defense Board of the Society, if the underwriter felt that frequency had reached a point considered to be excessively high. If expert opinion indicated that a particular physician was using poor medical judgment in his practice, and if this were coupled with severity in losses paid, this could also be grounds for the underwriter to consider cancellation.

6. When asked if the company actually refuses to write a policy for a physician it considers to be a poor risk or does it write the policy at an inflated premium, the company replied that "there are occasions where a physician has been refused insurance because he is considered to be a poor insurance risk. The number of physicians who have been refused insurance during the course of a year is extremely small, representing a fraction of 1 per cent of the total number of physicians we insure. We do write some physicians on a rated-up basis, and while we write up more doctors than we turn down, the total numbers of doctors rated up during the past year still amounted to less than 1 per cent of the total we insured."

7. Employers Mutual was asked if they were more reticent to write a policy on a rural general practitioner than an urban physician and whether or not they would include certain restrictions in a policy on a rural general practitioner. It answered that they "are *not* more reticent to write a policy on a rural general practitioner than on an urban physician. There are *no* restrictions in their policy that would affect doctors practicing in rural areas."

8. The company was asked its feeling about insuring a physician who does not have a hospital affiliation and whether or not he was treated differently. It replied that "there is no specific distinction between doctors who have hospital affiliations and those who do not." It pointed out, however, that "if a physician had been removed from the staff of a hospital because of incompetency, this would be an item for the underwriter to consider when evaluating the overall risk."

9. When asked if Employers Mutual limits coverage to a physician's specialty, it replied that "it is our intention to write a broad policy that would protect our physicians for any medical act performed and not try to limit coverage under the terms of the policy. Deep and superficial x-ray therapy and electroshock therapy coverage is excluded unless an additional premium is paid. Other than this, we have very few instances where a doctor's policy has been limited or restricted. An example might be where a group of a physician's peers felt that he was not qualified to perform surgery or give anesthesia. In such a situation, a policy might be issued restricting coverage to medical treatment only."

This information is provided to you purely as factual data received by the Board of Trustees, and which we wish to present to you at this time for information only.

We have made no attempt to arrive at any conclusions at this time concerning the fiscal aspects of our Malpractice Insurance and Defense Program. After we have received further information and have had an opportunity to complete our study of the financial aspects of this program, we will present a complete "dollar value" report to the Council.

Estate of Morris J. Bernstein. We have received this year from the estate of Morris J. Bernstein, in memory of his son, Albion O. Bernstein, M.D., two bequests. The first is $50,000 in trust for the continuation of the Albion O. Bernstein annual award for the most widely beneficial scientific discovery in medicine, surgery, or the prevention of disease.

The second bequest in the amount of $100,000 is for the establishment of a library in memory of Dr. Albion O. Bernstein. This memorial reference library is now in the process of being established in our headquarters building at Lake Success.

We are grateful, of course, to Mr. Bernstein for these bequests to the Medical Society of the State of New York in memory of his son, the late Dr. Albion O. Bernstein.

I, as chairman of the Board of Trustees, am very grateful to the other members of the Board for their fine cooperation and dedication to duties during this past year.

I apologize to them for the long sessions we have had and for the late travel reservations made necessary by our activities, but our problems this year have necessitated the hours involved. I sincerely hope our decisions have justified the time spent.

Respectfully submitted,
James M. Blake, M.D., Chairman

Board of Trustees (Supplementary)

To the House of Delegates, Gentlemen:

The Certified Public Accountants audited financial report for the year ended, December 31, 1971, is as follows. The statements represent our financial position at December 31, 1971, as well as the results of our operations for the year then ended.

Respectfully submitted,
James M. Blake, M.D., Chairman

Certified Public Accountants

To the Board of Trustees, Medical Society of the State of New York:

We have examined the balance sheet of the Medical Society of the State of New York as of December 31, 1971, and the related statements of operating income and expenses and general and other funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such test of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statements of operating income and expenses and general and other funds present fairly the financial position of the Medical Society of the State of New York as of December 31, 1971, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Patterson & Ridgway
Certified Public Accountants

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS: The following report was presented by James R. Nunn, M.D., chairman.

Your reference committee reviewed carefully the annual report of the Board of Trustees submitted by James M. Blake, M.D., chairman. We wish to compliment the efforts of the Board of Trustees on behalf of the members of the Society. We note with deep regret the loss of two of its members, namely, C. Stewart Wallace, M.D., and Waring Willis, M.D.

Doctor Blake's complete report covered the headquarters building, the loss of tax exemption on income from the advertising in our ***Journal,*** and extensive review of our professional medical liability insurance program. Your reference committee felt that the analysis of our professional medical liability situation would be more meaningful if we had available a more complete breakdown of income and expenses in the area of liability loss and reserve investment income.

Your reference committee reviewed the balance sheet, dated December 31, 1971. We find it complete and correct.

Your reference committee thanks James M. Blake, M.D., and the Board of Trustees for their untiring efforts on behalf of the Medical Society.

The House voted to adopt this portion of the reference committee report.

The House voted to adopt the report of the Reference Committee, as a whole as amended.

MEDICAL SOCIETY OF THE STATE OF NEW YORK
Operating Income and Expenses—General Fund
For the Year Ended December 31, 1971

Operating Income		
Dues income	1,643,152.00	
Less: Allocated to JOURNAL Circulation and *News of New York*	144,000.00	
		1,499,152.00
JOURNAL circulation	132,708.86	
News of New York—allocation from dues income	24,000.00	
Advertising income	345,997.70	
Reprint income, JOURNAL	12,834.19	
Directory circulation	18,505.88	
Annual Meeting, booth rentals	47,115.00	
Dues collection income from AMA	17,182.40	
Interest	15,741.51	
Miscellaneous	1,169.82	
		615,255.36
Total Operating Income		2,114,407.36
Operating Expenses		
Administration	170,052.41	
Business Division	494,720.01	
Communications Division	313,120.18	
Legal Division	64,936.11	
Medical Services	65,307.56	
Scientific Activities Division	85,244.56	
Scientific Publications	340,224.60	
Legislative Counsel	22,500.00	
Annual Meeting	60,115.60	
Officers, Board of Trustees, and AMA Delegation	85,387.75	
Council Committees	38,005.10	
Research and Planning	49,685.11	
Standards of Medical Care	36,078.75	
House of Delegates (Special Committee)	427.74	
Non-Divisional	290,592.34*	
Total Operating Expenses		2,116,397.82
Net Loss		1,990.46

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* The Internal Revenue Service assessed the Society $46,000 on unrelated business income for the year 1968. They also examined the year 1969 and found no tax due. The Society does not expect any tax for the years 1970 and 1971.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

December 31, 1971

Cash in Banks and on Hand

General Fund	18,292.83*
Investment Fund	24,531.08
Building Fund	45,723.98
Employee Benefit Fund	2,474.06
War Memorial Fund	1,586.84
Repair and Replacement Fund	670.62
Total	93,279.41

* Includes $11,745.79 due to American Medical Association.

Endowment Funds	
Lucien Howe Prize Fund	10,487.84
Merit H. Cash Prize Fund	3,090.02
A. Walter Suiter Lectureship Fund	10,984.63
Total (Union Dime Savings Bank)	24,562.49

Investments

The investments of the Society are summarized as follows:

	Cost	Market
Investment Fund		
Corporate bonds	13,200.00	14,906.00
Commercial Paper	186,000.00	186,000.00
Total	199,200.00	200,906.00
Building Fund		
U.S. Government securities	95,722.08	85,250.00
Commercial Paper	297,000.00	297,000.00
Total	392,722.08	382,250.00
Employees Benefit Fund		
Commercial Paper	50,000.00	50,000.00
Repair and Replacement Fund		
Commercial Paper	31,000.00	31,000.00
War Memorial Fund		
U.S. Government securities	50,000.00	50,312.00
Corporate and other bonds	22,080.00	22,080.00
Total	72,080.00	72,392.00

MEDICAL SOCIETY OF THE STATE OF NEW YORK
Balance Sheet
December 31, 1971

ASSETS

General Fund		
CURRENT ASSETS		
Cash in banks and on hand	6,547.04	
Investment, commercial paper	150,000.00	
Accounts receivable (net of reserves)	38,165.76	
Inventories	27,664.70	
Due from other funds	63,324.02	
TOTAL CURRENT ASSETS		285,701.52
PREPAID EXPENSES		
Sundry expenses and deposits		13,495.93
FURNITURE AND FIXTURES		
At nominal value		2.00
ADVANCES		
Employees cash funds		5,221.33
Total General Fund		304,420.78
Investment Fund		
Cash in banks	24,531.08	
Investments at cost (market value $200,906)	199,200.00	
Accrued interest	334.65	
Total Investment Fund		224,065.73
Building Fund		
Cash in banks	45,723.98	
Land and building at cost*	3,896,869.42	
Investments at cost (market value $382,250)	392,722.08	
Equipment	182,560.21	
Accrued interest	1,196.93	
Total Building Fund		4,519,072.62
Employee Benefit Fund		
Cash in bank	2,474.17	
Investments at cost (market value $50,000)	50,000.00	
Due from other funds	5,717.63	
Accrued interest	367.26	
Total Employee Benefit Fund		58,559.06
Repair and Replacement Fund		
Cash in bank	670.62	
Investment at cost (market value $31,000)	31,000.00	
Accrued interest	117.26	
Due from other funds	31,679.33	
Equipment	4,553.72	
Total Repair and Replacement Fund		68,020.93
War Memorial Fund		
Cash in banks	1,586.84	
Investments at cost (market value $72,382)	72,080.00	
Accrued interest	1,263.75	
Due from other funds	165.62	
Total War Memorial Fund		75,096.21
Endowment Funds		
Cash in banks	25,462.49	
Less: Due to other funds	900.00	
Total Endowment Funds		24,562.49
TOTAL ASSETS		5,273,797.82

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* The Society has occupied their new offices at Lake Success, New York. The total cost of the new building will approximate $4,200,000, of which $3,900,000 had been expended at December 31,1971.

Medical Society of The State of New York
Balance Sheet
December 31, 1971

LIABILITIES AND FUNDS

General Fund		
Current Liabilities		
Taxes payable (including withholding)	693.56	
Accounts payable and accruals	190,023.38	
TOTAL CURRENT LIABILITIES		190,716.94
DEFERRED CREDITS		
Membership dues 1972	52,353.00	
Annual meeting 1972	21,537.75	
Sundry	12,903.23	
TOTAL DEFERRED CREDITS		86,793.98
GENERAL FUND BALANCE		26,909.86
Total General Fund		304,420.78
Investment Fund		
Accounts payable	1,914.16	
Due to other funds	12,520.78	
Balance	209,630.79	
Total Investment Fund		224,065.73
Building Fund		
Due to other funds, net	87,465.82	
Balance	4,431,606.80	
Total Building Fund		4,519,072.62
Employee Benefit Fund		
Balance	58,559.06	
Total Employee Benefit Fund		58,559.06
Repair and Replacement Fund		
Balance	68,020.93	
Total Repair and Replacement Fund		68,020.93
War Memorial Fund		
Balance	75,096.21	
Total War Memorial Fund		75,096.21
Endowment Funds		
Lucien Howe Prize Fund	10,487.84	
Merit H. Cash Fund	3,090.02	
A. Walter Suiter Lectureship Fund	10,984.63	
Total Endowment Funds		24,562.49
TOTAL LIABILITIES AND FUNDS		5,273,797.82

MEDICAL SOCIETY OF THE STATE OF NEW YORK
Statement of General and Other Funds
For the Year Ended December 31, 1971

	GENERAL FUND	INVESTMENT FUND	BUILDING FUND	EMPLOYEE BENEFIT FUND	REPAIR AND RE-PLACEMENT FUND	WAR MEMORIAL FUND	LUCIEN HOWE FUND	MERIT H. CASH FUND	A. W. SUITER LECTURE-SHIP FUND
Balance at January 1, 1971	228,900.32	203,548.52	3,683,854.43	48,564.65	57,320.11	73,047.76	9,966.65	2,919.83	10,434.33
Additions									
Interest on bank balances	...	1,189.07	2,096.43	63.28	...	...	521.19	170.19	550.30
Income from securities	...	7,876.49	46,411.30	2,612.29	1,278.95	4,819.95	...	...	...
Gains on sale of securities	...	3,657.94	146,089.21	...	421.87	28.50	...	...	...
Insurance dividend	...	...	...	3,999.00	...	...	...	...	...
Contributions	...	...	1,850.00	...	...	...	...	...	...
Assessments received	...	...	417,940.00	9,239.67	...	...	...	...	...
Budgeted appropriation for equipment	...	...	...	...	9,000.00	...	...	...	...
Transfers from other funds	...	...	200,000.00	...	...	...	...	...	...
Total Additions	...	12,723.50	814,386.94	15,914.24	10,700.82	4,848.45	521.19	170.19	550.30
Deductions									
Prior year's adjustment*	...	...	25,378.52	...	...	...	...	...	...
Custodian and investment service fees	...	6,641.23	...	...	...	...	...	...	...
Net loss for the year	1,990.46	...	...	....	...	...	...	...	...
Miscellaneous expenses	...	...	41,256.05	...	...	...	...	...	...
Benefits disbursed	...	...	...	5,919.83	...	2,800.00	...	...	...
Transfers to other funds	200,000.00	...	...	...	...	...	...	...	...
Total Deductions	201,990.46	6,641.23	66,634.57	5,919.83	...	2,800.00	...	...	...
Total Increase	*201,990.46*†	6,082.27	747,752.37	9,994.41	10,700.82	2,048.45	521.19	170.19	550.30
Balance, December 31, 1971	26,909.86	209,630.79	4,431,606.80	58,559.06	68,020.93	75,096.21	10,487.84	3,090.02	10,984.63

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* Prior year's realty taxes, assessed by the Village of Lake Success for the fiscal year ended June 30, 1970, amounted to $25,378.52.. The Society has obtained exemption from these taxes for the years ended June 30, 1971 and June 30, 1972.

† Italics denote figures in red.

Organization, Policies, and Legal Matters

Professional Medical Liability Insurance and Defense Board

To the House of Delegates, Gentlemen:

The members of the Professional Medical Liability Insurance and Defense Board are as follows:

Arthur J. Mannix, Jr., M.D., *Chairman*	Westchester
David Kershner, M.D., *Vice-Chairman*	Kings
A. L. Loomis Bell, M.D.	Kings
George L. Collins, Jr., M.D.	Erie
Robert George Hicks, M.D.	New York
Peter La Motte, M.D.	New York
Raymond S. McKeeby, M.D.	Broome
Carl Goldmark, Jr., M.D., *ex officio*	New York
Thomas F. McCarthy, M.D., *ex officio*	Bronx
William F. Martin, Esq., Counsel, *ex officio*	New York
Frank W. Appleton, indemnity representative, *ex officio*	New York

The American Medical Association recently reported that one physician in six now practicing in the United States has been sued for malpractice during his professional career; that in New York and the District of Columbia, one out of five has been sued; and in California, the rate is one out of four. Some experts calculate that before long one out of three physicians will have been charged with malpractice sometime before his retirement.

To compensate for skyrocketing damage awards, insurance companies across the country have had to raise their premiums substantially. Dozens of malpractice insurers have dropped out of the field in the past five years because, despite the rate increases, income did not keep up with losses.

Most physicians have read about the situation in Hawaii in 1970 where two leading insurance companies suddenly withdrew from the malpractice field, and one fourth of the Hawaiian physicians learned that they could not obtain coverage from any other carrier. In Pennsylvania there were drastic rate increases, and at one time in that state during 1970 there was only one company writing malpractice coverage for surgeons. In 1969, the California Medical Association discovered that the number of companies providing liability insurance had dwindled from 9 to 3 in just two years. At times a few states have been without any malpractice insurance at all.

Rates. In our own program, rates have increased 439 per cent in the last five years. The average size of claims has been rising rapidly. Within our own State Medical Society Program the statistics read as follows for the average cost of closed cases:

1965	$ 5,662
1966	7,531
1967	7,704
1968	8,085
1969	8,879
1970	13,272

Company officials tell us that they are hopeful that this latest increase as of July 1, 1971, will be the last of any "large" increases. They are hopeful that their system of developing trend factors are proper, and that we have begun to reach a plateau. We certainly hope they are right. However, whenever rates go up, there is a temptation for physicians in various specialties to run off on their own in splinter groups. The members of the Professional Medical Liability Insurance and Defense Board have seen time and time again the advantages of physicians in all specialties uniting in the common defense of a malpractice case. Within our program, premiums and losses are tabulated by specialty so that we are paying premiums based on losses for our own specialty or type of practice.

Specialty groups insuring on a nationwide basis have not fared too well. Let us see what happened to some of these groups within our own State.

St. Paul Mercury discontinued their program through the American College of Radiologists in 1953.

Lloyds of London and/or other companies beginning in 1953 started writing a considerable volume of malpractice insurance. The November, 1959, issue of the *AMA News* carried an article on the liquidation of British Commercial Insurance, Ltd., one of the "other companies." Since that time Lloyds has not been writing much malpractice insurance in the State of New York.

Lloyds was the carrier for a program started in 1954 by the American College of Pathologists. This was discontinued by the College in 1958.

British Commercial Insurance, Ltd., was one of the companies that had insured members of the American College of Physicians. On November 13, 1959, the insurance administrator for this program regretfully told their members of the "voluntary liquidation" of this company.

Interstate Fire and Casualty Company started writing for members of the American Society of Anesthesiology in 1952. Effective February 15, 1961, this company canceled all anesthesiologists' policies in New York State, irrespective of stated expiration dates.

The Professional Insurance Company of New York discontinued writing policies for anesthesiologists in January, 1963.

Michigan Mutual began writing malpractice insurance for the American College of Surgeons in 1955 but stopped writing new and renewal policies on September 1, 1963.

The American Insurance Company wrote for members of the American Academy of General Practice for eight years but refused to renew as of January 1, 1965.

The Interstate Fire & Casualty Company, writing a program for the American Academy of Ophthalmology and Otolaryngology, refused to write limits over $100,000/$300,000 as of January 1, 1966.

Fidelity General, as of September, 1966, would no longer issue policies in excess of $25,000/$75,000 in New York State for members of the International College of Surgeons.

Public Service Mutual, writing insurance for members of the New York State Society of Anesthesiology since January 1, 1963, did not renew policies after January 1, 1967.

The Professional Insurance Company of New York, as of January 1, 1968, would write limits of only $15,000/$45,000 for a period of time until they made other arrangements for reinsurance.

St. Paul Fire & Marine Insurance Company refused to renew professional liability coverage for the American Academy of General Practice in the New York City area as policies expired, commencing late in 1969.

Suggested solutions. Many publications have carried suggested "solutions" to this malpractice dilemma.

You may be interested in knowing that the AMA programs are largely patterned after our New York program. Articles discussing the AMA program have referred to a "new idea" of peer review to determine a physician's insurability. In our own program, we have had for many, many years an agreement with our insurance carrier that no physician's insurance would be canceled (except for nonpayment of premium) unless a committee or board of physicians appointed by the State Medical Society agreed that cancelation was justified. Our county advisory committees which review pending cases have been in existence for a number of years. The AMA points with pride to the fact that they have reduced the expense factor from the usual 40 per cent to something in the neighborhood of 30 or 35 per cent. Ours is currently 15.5 per cent, we are way ahead of them.

What can we do to stem the tide of rapidly rising malpractice costs in our State?

First and foremost, we think it imperative that the teaching institutions within our State take a real interest in the problem and allow time for the discussion of malpractice prophylaxis. All members of the Professional Medical Liability Insurance and Defense Board are willing to cooperate with any institution willing to set up such a program.

Slowly but surely we hope to make progress by having some laws changed within our State. During the past legislative session, bills were approved granting immunity from liability for members of peer review committees. The confidentiality of peer review committee proceedings was also recognized. This was a big step to assist self-policing within the medical profession.

Statute of limitation. There are other changes that are being explored. We have mentioned in the past that the long lag between the time of an act of alleged malpractice and the time the suit is concluded makes this a very difficult line of insurance to write. The statute of limitations in our State has gradually been expanded over the past years, and we would like to see it rolled back to some extent. In the case of children, the statute does not even start until the minor is twenty-one years old, and yet we now see the voting age being lowered to eighteen years. We hope to change the law so that the statute will commence when the minor becomes eighteen years old.

We would like to see the statute itself tightened, particularly in the realm of foreign objects. Not too long ago we had a court decision which said that in foreign-object cases the statute would not begin to run until the patient was aware that a foreign object, such as a needle or a sponge, had been left in his body. Shortly after that decision, we received a claim alleging that a needle had been left in a patient at the time of an operation in April, 1948. The insurance carrier at the time was the Yorkshire Indemnity which stopped writing malpractice insurance in 1949. They had long since paid out in malpractice loss dollars much more than they ever collected in malpractice premiums; yet, they were called on to accept this claim presented twenty-one years after the event. We hope that some change can be made to correct this situation.

Expansion of definition of "court costs." When a malpractice case is won, the defendant is entitled to collect costs, but by definition the "costs" are rather limited. We hope to introduce bills to expand the amount of court costs that will be collectible to include the costs of transcripts and perhaps even attorneys' fees.

Service of a summons improper unless the case has been put "on file" with the appropriate court. At various symposiums we often hear the plaintiff's attorneys talk about statistics in 1969 where there were over 7,000 suits filed, and only about 170 were for malpractice. We know that in 1969, in our program alone, we had 552. The problem is that these cases were not put "on file" at the court and thus did not start moving along the court calendars. This is just one other small item that slows down processing of these cases and relates to this interminable lag that we have mentioned in the past.

Informed consent. Informed consent is an increasing problem and to date no easy solution has been found in the way of potential legislative changes. We are doing our best to let the physicians in our State Medical Society know the potential dangers of this problem.

In spite of all this effort, the best solution for the malpractice problem is for each practicing physician to be aware of the pitfalls so that he can protect himself as best he can.

Respectfully submitted,
Arthur J. Mannix, Jr., M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

This report was reviewed, and the members of your reference committee met in conjunction with the Board on February 13, 1972. We are impressed with the work of this Board and the caliber of the members who serve on it. However, it became apparent from the discussion regarding professional liability that this one item, costing the members in excess of $18 million in 1970 deserves increasing consideration. We are particularly anxious that major aspects of this problem and its impact on premiums be disseminated widely to the members. One mechanism which appealed to your reference committee was to have a brief accurate summary included with each premium notice. We further feel that your reference committee should have more complete indepth data to enable it to weigh the cost benefit to the individual members of the Society.

The House voted to adopt this portion of the reference committee report.

Legal Counsel

To the House of Delegates, Gentlemen:

In the spring of 1928, on my graduation from Columbia Law School, I entered the office of Lloyd Paul Stryker who was then counsel to the Medical Society of the State of New York. I was with Mr. Stryker and his successor, Lorenz J. Brosnan, for fourteen years, and shortly after the untimely death of the latter, I was appointed to the office so that this is my twenty-ninth annual report as Counsel. As an assistant in the office, I began the trial of cases; for several decades, I tried the vast majority of our upstate cases as well as many in the city. I have thus had the opportunity to meet a great number of physicians, lawyers, and judges, and I cherish the friendships that I have made. I have been blessed with the assistance of very able personnel.

Except for a brief time, when he was in the Navy in World War II, Robert J. Bell, the attorney for the Society, has been with us continuously since 1933.

I knew Harold Shapero as early as the first day I was in Mr. Stryker's office since he was a law clerk at that time prior to his admission to the bar. When Mr. Stryker resigned to concentrate on the trial of some of the greatest cases in the history of this State, Harold went with him, and a year or so before Mr. Stryker's death, and with his wholehearted approval, he came back to this office.

Bob Bell and Harold Shapero are both members of the American College of Trial Lawyers, and they are held in the highest regard by the judiciary, their fellow lawyers, and a vast number of physicians who are indebted to them for their skillfull and kindly services.

John J. DeLuca has been engaged in appellate and pretrial work with us for twenty-six years. He is the son of a distinguished former lieutenant governor of this State and carries on a great family tradition in the practice of the law.

Donald J. Fager, who manages our Syracuse office, has not only tried a host of cases throughout the State but has lectured extensively at the various campuses of the State University, to hospital groups and bar associations. He has recently been appointed one of the attorneys for the Society, and that is a distinct benefit because of the number of problems that are handled to a conclusion in the upstate office.

Anthony L. Schiavetti has been with us for eleven years and is engaged almost exclusively in the trial of cases in the Supreme Court, particularly in New York City.

Francis P. Bensel came with us six years ago from one of the large corporate firms. He is the son of a great trial lawyer, and it is a source of pride to us that he has tried so many cases successfully.

Daniel Boone, Jr., is another second-generation lawyer. He has tried cases, argued appeals, and as of recent date, has been engaged before the new tribunal system in the County of New York about which I will speak at some length later.

George van Setter came to us after graduation as a Root Tilden Scholar from the New York University School of Law and has accomplished all that one could expect of him. He has done a great deal of research, tried a number of cases, written briefs, and attended meetings of various county committees.

Walter G. Alton, Jr., started with our New York City office and then assisted Don Fager upstate for several years, during which time he tried to a successful conclusion a number of cases in the Supreme Court. He is now back in the New York City office and has continued his fine record as a trial lawyer.

A. Baisley Sheridan, who retired from the legal department of Pan American Airways, has been engaged in the preparation of and attendance at examinations before trial. Many physicians who have participated at these hearings can testify to the patience that is required to prepare for them and see that they are moved along to a conclusion. Baisley Sheridan has done particularly well at this.

Steven C. Mandell, our managing clerk before he graduated from law school and who now has been admitted to the bar, continues to supervise the detail work in the office to the great satisfaction of us all. He has attended a number of examinations before trial and tried Supreme Court and Civil Court cases. With the aid of two law school students, he prepares the schedules of our court work.

We were most fortunate to have as an assistant to Don Fager in the upstate office, John Ganotis. After graduating from Syracuse University and Duke Law School, he spent several years in general practice in Syracuse. He has just won two supreme court cases in as many counties. I just received a letter from the Medical Society of the County of Monroe thanking us for the excellent speech he gave at the indoctrination session for their new members.

Joseph Story, who was with us for several years, retired from the practice of law to join a business venture which seems to offer him an attractive future. We were pleased with his work and wish him well.

Richard Young, a graduate of Brown University and the University of Virginia Law School, came with us last year. He has conducted depositions, assisted in a number of trials, and has tried several cases on his own. He has been most helpful with the State Society problems and has assisted George Himler, M.D., president, with several time-consuming projects.

Luke Pittoni has just joined our staff. He is the son of the Hon. Mario Pittoni, a distinguished Supreme Court Justice in Nassau County. Luke attended Holy Cross College and Fordham Law School. He is awaiting admission to the Bar.

I have mentioned that the members of our staff attend the malpractice review meetings of the various county societies, the meetings of the specialty advisory committees, and the meetings of the Professional Medical Liability Insurance and Defense Board. I attend all the meetings of the Council and Board of Trustees and a number of other committee meetings at the State Medical Society.

This year the problems associated with our new headquarters building at Lake Success have been time consuming. They were quite complex, and it is just a delight to see that, as I am writing this report, the Medical Society will be in its new building.

Each senior member of our office speaks at a number of meetings at hospitals, law schools, legal and medical forums, and others. To illustrate the range of these activities, I will mention those at which I appeared. As a member of the Joint Committee of the American Bar Association to cooperate with the American Medical Association, I was at several meetings over the last year, each of which entailed a weekend in Chicago where we arranged for the biennial symposium on medicolegal matters which was held at the Americana of New York on March 18, 19, and 20, 1971, and at which I moderated the panel discussion on malpractice. I spoke at a symposium on medicolegal matters at the annual meeting of the American Medical Association in Atlantic City. At the time of the American Bar Association meeting in London, I attended a meeting of the British Medical Protective Society and had an interesting exchange of experiences with some of the most distinguished physicians in the British Empire. I spoke on physician and hospital liability to the International Association of Insurance Counsel at the Shoreham Hotel, in Washington, D.C. I discussed medicolegal problems at a Columbia University symposium at Harlem Hospital; spoke at the annual banquet of the Marathon County Medical Society in Wausau, Wisconsin, which was attended by physicians from northern Wisconsin and western Michigan; addressed the members at the annual dinner of the Niagara County Medical Society; attended an all-day meeting in Albany of Senator Tarky Lombardi's committee on the problems of medical malpractice; attended two meetings with the Hon. Harold A. Stevens, Presiding Justice of the Appellate Division First Department, where plans were outlined for the new tribunal that he has created to discuss malpractice cases; and addressed a symposium on malpractice at the Association of the Bar of the City of New York.

Manhattan College, my alma mater, at the June commencement, conferred on me the honorary degree of Doctor of Laws and Letters. The citation spoke of my years of service to the medical profession.

Professional Liability. The multitude of malpractice suits that have been brought against the physicians of this country present a real hazard to the profession, and this was mentioned by President Richard Nixon in his opening remarks at the annual convention of the American Medical Association, in Atlantic City, where he referred to the problem in a most sympathetic way and hoped something could be done to improve the situation. Subsequently, the U.S. Department of Health, Education, and Welfare conducted a nationwide survey on the problem of medical and hospital liability, and a commission was appointed to implement the same. Recently, *American Medical News,* one of the fine publications put out by the American Medical Association, reported that the commission has just held its first hearing in California, and that there would be a series of further sessions to be held in the Midwest, South, and New York City. A member of the commission is Mr. John E. Linster, vice-president of the Employers Insurance of Wausau, the carrier of the Society's plan. Generally, at the California hearing, physicians complained that the contingent fee system encouraged a great number of cases often with catastrophic results and with such an increase in insurance premiums that some physicians were leaving the state and others were deciding they could no longer afford to carry on their careers. In the high-risk area of neurosurgery, there was talk of some physicians paying premiums in excess of $15,000.

In the November, 1971, issue of *Fortune,* there is an article entitled "Toward the Socialization of Injury," which discussed the rather widely held belief that every person should be entitled to compensation for an untoward injury, and wherein some leaders in the plaintiff's negligence field surmise that if the "no fault" system is adopted in automobile cases, sooner or later it would be adopted in professional liability cases. Of course, that remains to be seen.

I think the following quote from this article should be of interest: "Nevertheless, the contingent fee does give lawyers a direct financial interest in the outcome of their client's case. It tends to aggravate the present liability system's inherently heavy pressures to shade the truth and exaggerate the client's injury. The prospect of big contingent fees, furthermore, often tempts lawyers to engage in solicitation of business from accident victims, a practice commonly called 'ambulance chasing.' While negligence lawyers generally insist that little of this goes on, the evidence runs otherwise. 'All of the big cases are chased,' says Melvin Belli. 'There's a hell of a lot of chasing in the United States, brutal and bad, and I think the bar associations are unctuous about it.' "

Time does not allow of our telling of all the cases that are reported around the country; however, a few cases which were printed in a recent publication put out by the plaintiff's bar speaks of verdicts in California, Washington, D.C., Louisiana, Massachusetts, New Hampshire, Indiana, Delaware, Kansas, and Pennsylvania. One of the California cases involved a failure to do a urinalysis, which would have disclosed diabetes. Although complaints indicated the presence of the disease in a twenty-nine-year-old man, it was claimed that the failure to diagnose the disease resulted in his death, and the case was settled in the sum of $250,000. In the same state a twenty-six-year-old housewife experienced cardiac arrest during the repair of a right inguinal hernia. She had an iron deficiency and a hemoglobin of 8.7 Gm. It was claimed that she was not a proper candidate for surgery, that the spinal anesthesia was given improperly, and that the resuscitation measures were ineffectual, as a result of which the plaintiff was a quadriplegic. The case was settled by the surgeon, the anesthesiologist, and the internist for a total of $400,000. The case then went to the jury, and a verdict was returned in the sum of $600,000 against the hospital and another anesthesiologist. The $400,000-settlement figure was subtracted from the verdict of $600,000. Thus the hospital was liable for $200,000, and the total net recovery against all defendants was $600,000. In the United States District Court for the Southern District of New York, there was a case involving the administration of the "pill" to a nineteen-year-old hemiplegic girl which allegedly caused a cerebrovascular accident. The case was settled for $85,000.

In Oregon there was a recent decision which spoke of the tort of "outrage," in which the Supreme Court recognized the mother's right to recover for emotional distress suffered by her as a result of the defendant-doctor's outrageous misconduct in rudely refusing to treat her baby who was injured in an automobile accident. The plaintiff, her ten-month-old daughter, and her mother-in-law were injured in an auto accident on a winter evening when the weather was severely cold. The plaintiff and her mother-in-law suffered cuts and bruises, and the baby was rendered unconscious and apparently suffered from severe shock and head injuries.

A passing motorist took the plaintiff, the baby, and her mother-in-law to the defendant's office where the defendant treated the plaintiffs in a very rude fashion from the moment they met. He insisted there was nothing wrong with any of them, including the unconscious baby (who in fact was suffering from a skull fracture), and when the defendant finally with the utmost reluctance examined the child, the defendant told the mother that there was nothing wrong and that the child's vomiting had been caused by overfeeding. Although the plaintiff was bleeding from cuts on her face and inside her mouth and the baby was visibly unconscious, the defendant insisted several times that there was nothing wrong with them and urged them to go elsewhere for treatment, to go out into the night with below-freezing weather when the baby's clothing and blanket were wet with vomit and told them to wait outside by a nearby streetlight until someone came to get them. The plaintiff was given emergency treatment at the hospital and released, and her baby spent about a week in the hospital undergoing surgery to elevate a depressed skull fracture. The court said: "Certainly a physician who is consulted in an emergency has a duty to respect (plaintiff's interest in peace of mind), at least to the extent of making a good-faith attempt to provide adequate treatment or advice. We think a jury could infer from the evidence that the defendant willfully or recklessly failed to perform that duty."

In our office we have had a number of settlements in six figures, and in one case with several codefendants the total settlement was $650,000. In other states there have been several verdicts in excess of a million dollars. There is literally no field of practice that is immune from suit by a patient. There has been much speculation about the reasons for this great increase in litigation, and over and over again there is stressed a lack of close personal relationship that used to exist between the doctor and the patient. This is most succinctly expressed in Alvin Toffler's book, "Future Shock," from which I quote the following paragraph:

> And the same trend toward time-truncated relationships is reflected in the demise of the family doctor. The late lamented family doctor, the general practitioner, did not have the refined narrow expertise of the specialist but he did, at least, have the advantage of being able to observe the same patient almost from cradle to coffin. Today the patient doesn't stay put. Instead of enjoying a long-term relationship with a single physician, he flits back and forth between a variety of specialists, changing these relationships each time he relocates to a new community. Even within any single relationship, the contacts become shorter and shorter as well. Thus the authors of "Crestwood Heights," discussing the interaction of experts and laymen, refer to "the short duration of any one exposure to each other. . . . The nature of their contact, which is in turn a function of busy, time-pressed lives on both sides, means that any message must be collapsed into a very brief communique, and that there must not be too many of these. . . ." The impact that this fragmentation and contraction of the patient-doctor relationships has on health care ought to be more seriously explored.

While I am on this general subject, it is probably well to reflect for a moment on the attitude of some plaintiff's lawyers in these cases. I have always said they sue everyone whose name appears anywhere on the hospital record. We had an instance of this recently where the name V. O. Davis appeared as a defendant on the face of the pleadings, but the plaintiff's attorney was never able to serve such a person, and well he should not have because that was taken from a note in the hospital record which said: "2 aspirin. V. O. Davis, signed Nurse A." So the only part anyone named Davis played was to give "a verbal order" for two aspirin when the treating doctor was not available.

In the September 6, 1971, issue of *American Medical News,* there is a summary of a recent California symposium wherein 3 plaintiff's lawyers "disagreed over what they admitted as a 'real point of irritation' with physicians—the 'shotgun' approach to malpractice suits. (One) said bluntly that he endeavors to 'sue everybody who might have been involved' to avoid leaving a potential legal loophole. This also increases the insurance coverage and provides a greater possibility of settlement, he said. . . . While conceding that it is easier to file a suit naming everyone who had anything to do with the medical problem, there are times when this is the wrong approach,' he concluded."

Every year I have tried to offer some advice to the doctors as to how to improve their patient-relationship and avoid the chance of a lawsuit. In a recent issue of *American Medical News,* there is a useful group of suggestions:

1. Be certain that there is a pathologic condition or symptoms that warrant surgery.
2. Be sure the consent obtained for surgery is an informed consent. This must be to the mental level of the patient.
3. Do not undertake any procedure unless you are fully qualified and competent to do it. Robert J. McNeil, M.D., a Los Angeles obstetrician and gynecologist, advocated use of "quality control sheets" to limit the surgical and medical procedures each physician is authorized to perform. This would prevent a physician from "stepping beyond the bounds of what he is really capable of doing," Dr. McNeil said.
4. If there is a problem or a doubt, be certain adequate consultation is obtained.
5. If an accident occurs during surgery, explain it carefully and fully.
6. Maintain current, accurate, and legible records. Attorney Lewis L. Fenton warned physicians not to attempt to "assist in their own defense" by changing, modifying, or adding to patient records after a claim becomes known. "There is no more certain way to ruin a potentially defensible case than to horse around with your records," he declared.
7. Discuss your fees frankly and in advance of the care.
8. In the event the patient is not compatible with your method of practice, sever the relationship as easily and as quickly as possible.
9. Do not assume that you are infallible and that your judgment is perfect, and do not assume an arrogant attitude when your procedures or ability are questioned by an unhappy or dissatisfied patient.
10. When discussing a condition with a patient that involves another physician, carry the level of the conversation as though the second physician were invisibly present and hearing all that is said.

The publications of the American Medical Association have been of great assistance to our office. Under the able leadership of Bernard Hirsch and his associate, Richard Bergen, the *Citation* periodically reviews medicolegal decisions from all over the country. Even our opponents admit it is very fairly written and most informative.

The *J.A.M.A.* has a column entitled "Medicine and Law" which correlates cases in different branches of medicolegal litigation.

I have in many of my annual reports called attention to the perils which are presented in hospital emergency rooms. This subject was discussed at length in the October 5, 1971, issue of *The Wall Street Journal.* The headline of the article reads: "*Grim Diagnosis* More Americans Turn to Emergency Rooms and Receive Poor Care—Flooded with Patients, Units in Many Hospitals are not Well-Staffed or Equipped—Best Doctors Often Absent." The point to be made is that an emergency room should be adequately staffed at all times, and the needs of the patients should be taken care of promptly. With the ever increasing use of emergency rooms by patients who do not even attempt to get a private physician as a first resort, hospitals and doctors are faced with the growing problem of how to staff them, but it is very much to the interest of all concerned that those people who come to the emergency room are handled with the same kind and skillful help that they would receive in the hands of a physician of their own selection. Typical of several of our outstanding New York City hospitals is one which has a chart in its emergency division with the names of physicians in the important specialties who are on call twenty-four hours a day to confer with the admitting doctors about the problems of a particular patient. Ofttimes, thorough examination and prompt diagnosis by a specialist may make a tremendous difference in the end result.

New York State. The Illinois case of *Cunningham* v. *MacNeal Memorial Hospital,* 266 NE2d 897, decided by the highest court of that State, caused great concern to hospitals throughout this country. It decided that when a hospital provided blood for a patient there was an implied warranty of fitness for use, and should hepatitis result, the hospital is automatically responsible. The opposite result was reached some years ago in New York State by the Court of Appeals in the case of *Pearlmutter* v. *Beth David Hospital,* 123 NE2d 792, where by a 4 to 3 vote it was held that when blood was provided, it was a service and not a sale, and no implied warranty of fitness for use existed. The New York State Hospital Association and the Medical Society of the State of New York recommended legislation to clarify the situation, and there was recently adopted Chapter 195 of the Laws of New York, which reads as follows:

> The collection, processing, storage, distribution or use of blood or a blood derivative for the purpose of diagnosis, prevention or treatment of disease or the assessment of medical condition is hereby declared to be a public health service and shall not be construed to be, and is declared not to be, a sale of such blood or blood derivative for any purpose or purposes whatsoever.

This change does not mean, however, that should a hospital and/or blood bank fail to follow the accepted practice recommended by experts at a given time that they would not be held liable on a theory of negligence.

Last year in my report I mentioned that I considered very unjust the decision in the case of *Flanagan* v. *Mt. Eden General Hospital,* 24 NYS2d 427, which held that in a foreign-body case the statutory period started to run at the time of the discovery of the foreign body. I called attention to the fact that as soon as that decision was announced a considerable number of ancient foreign body cases were commenced, in all of which the discovery occurred within three years of the date of suit, but in several of which the previous surgical procedure had been done a decade or more before the discovery. There are other states that have extended this so-called "discovery rule" to other than foreign-body cases, but this is not so in New York State as is indicated in the recent case of *Schiffman* v. *Hospital For Joint Diseases,* decided by the Appellate Division Second Department on February 2, 1971, the headnote of the case reads as follows:

> The plaintiff alleges that, in 1959, his surgeon operated upon him at the defendant hospital; during the operation, a specimen of his tissue was examined by members of its staff; they reported that the tissue indicated malignancy, and his surgeon so informed him. The slides of the biopsy upon which that report was made were reviewed in 1967, and no malignancy was revealed. On September 21, 1967, the plaintiff was told that no malignancy had existed; he claims that he did not know this fact before that date, and he could not have reasonably discovered it previously. By reason of the negligence of the defendants, the plaintiff suffered the administration of unnecessary radiation, that caused him personal injury, and he accordingly, seeks damages. In his action begun on June 10, 1969, the motion by the defendant hospital to dismiss the complaint was granted. The Appellate Division affirmed this order upon the ruling by Special Term that the action was barred by the three-year statute of limitations. The Court of Appeals has limited its modification of the general rule, that measured the running of the statute from the time the negligence occurred. That modification was phrased to apply to an action based on the negligent failure to remove a foreign object. In these cases alone, does the modified rule measure the running of the statute from the time of the discovery by the patient that the foreign objects have been left in the site of an operation. The instant claim relates to a misdiagnosis of ailment. It is extremely doubtful whether an intermediate appellate court has authority to depart further from the traditional view of the statute. Apart from that consideration, the preference for repose outweighs in this case the disadvantages to the plaintiff which result from an adherence to the general rule.

One of the statutory changes suggested by the State Society would call for a statutory period in a foreign-body case that would limit the time to three years after the date of treatment, or at the most, one year after the discovery.

On August 26, 1971, Senator Tarky Lombardi, Jr., chairman of the Senate Health Committee, called a conference on medical and hospital malpractice. He said in part:

> The purpose of this meeting is to seek solutions to this serious problem. I will first call upon the Medical Society of the State of New York, who has recently been exceedingly critical of this Legislature, to come forth with their suggestions. I sincerely hope that we can work together harmoniously not for the benefit of the doctor, or the lawyer or the insurance company, but for the welfare of the patient.

At this meeting the State Society was represented by George Himler, M.D., Henry I. Fineberg, M.D., J. Richard Burns, J.D., Martin J. Tracey, Frank Appleton, our legislative representative, George Foy, and myself. Representatives of the Employers Insurance of Wausau, the plaintiff's bar, and the public participated. A number of statutory changes were offered, and one of the senators was favorably impressed by our suggestion that a bond should be posted in the sum of at least $500 by anyone bringing a malpractice action, and he said he would sponsor such a measure. We heard nothing from the Senate Committee until Senator Lombardi asked for a great deal of material from the State Society, and its insurance carrier stating in words or substance that at the hearing: "No one had come up with any constructive ideas." Our recollection is otherwise.

In New York City there has been a most interesting development which at the present time centers only in the County of New York. As a result of many conferences of the joint committee of the New York County Lawyers Association and the Medical Society of the County of New York sponsored by the Hon. Harold A. Stevens, Presiding Justice of the Appellate Division

First Department, a system was worked out for the review of all malpractice cases on the ready calendar with the aim of saving time and expense to all concerned. I have a feeling that Mr. Justice Stevens, who presides over one of the busiest courts anywhere in this world, was motivated in part to initiate this project by a case that was tried for seventeen days only to result in a mistrial, and then the retrial took another sixty-one days. Since it is now on appeal, detail discussion of it would not be appropriate at this time. With a view toward relieving this situation, the following rule was issued in the First Department to apply only in New York County. I think the program is best described by a quote from the August 13, 1971, issue of the *New York Law Journal:*

> Mediation as an effective cure to the increasing burden being placed on the courts by medical malpractice actions will be tested in New York this fall under a pioneering plan of the Appellate Division, First Department, that will bring together the combined abilities of the Bench, Bar and medical profession against unnecessary trials. Describing it as the first program of its kind in the nation, Presiding Justice Harold A. Stevens of the First Department yesterday announced that the three-member mediation panels will sit in the opening of the fall term of Supreme Court, New York, in September.
>
> Presiding Justice Stevens said the panels to preside over a new special part of Supreme Court, are to consist of a justice, a lawyer and a physician.
>
> "The panels will initially hear every medical malpractice case brought in New York Supreme Court and attempt to arrive at an early amicable disposition," Presiding Justice Stevens said.
>
> "Every case brought in court against a physician or a hospital will be processed through one of the panels for an informal hearing," he said adding: "This is the first time to our knowledge that mediation has been used to assist the courts in dealing with our heavy caseloads."
>
> *Test of Mediation*
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> The presiding justice said the cooperative effort between the courts and both professions "will also act as a pilot project for measuring the effectiveness of mediation for the disposition of other kinds of court matters."
>
> The panels are to make recommendations for the disposition of each case in an attempt to have the parties themselves reach agreement on the issues involved. The voluntary nature of the disposition will be stressed.
>
> The panels' focus in the effort to avoid unnecessary lengthy trials will be on highly technical medical matters.
>
> "To encourage (dispositions), statements made during the course of the hearings will not be admissible to any subsequent trial. The judge presiding over a panel and the physician and lawyer members of the panel would be ineligible to act as judge, witness, counsel or otherwise thereafter in the case," Presiding Justice Stevens pointed out.
>
> *Genesis of Plan*
>
> The plan was developed at a public conference sponsored last year by the Interprofessional Committee of Doctors and Lawyers in a year-long series of studies and conferences by the Appellate Division and the committee.
>
> Interprofessional Committee members are appointed by the Presiding Justice of the Appellate Division. The committee, with half of its members from the medical profession and half the legal profession "is concerned with all problems in which each profession relates to the other," Presiding Justice Stevens said.
>
> Operational aspects of the panels are:
>
> Each panel will attempt to resolve one or more of the issues involved in the case. In some cases the basic issue of liability will be settled; in others there will be no settlement and some cases will have partial settlements.
>
> The hearings will be informal and without stenographic record.
>
> Parties may be represented by counsel. Any disposition agreed upon, either as to the entire case or any part of it, will be incorporated into an order of the court.
>
> The names of the panelists and calendars of cases to be assigned them are scheduled to be published in September in the *Law Journal* with other calendars and assignments.

I was not on the committee, but I was called on, as a representative of the defendants in these cases to discuss the plan. I urged on the court that none of the lawyers representing either the plaintiff's side or the defendant's side should be asked to recommend the lawyer-members to sit on these tribunals. Several of the plaintiff's representatives insisted, however, that they were entitled to name plaintiff's lawyers. The net of it was that everyone compromised to a degree. After all, under the plan as it presently exists, there is no finality to its recommendations, and the point was made that it would be interesting to see how objective a plaintiff's lawyer could be should he sit as a member of the panel. About that I do not wish to comment. However, I had strong views which I expressed before a decision was made.

It is much too early to analyze the results of this program. We have promised Mr. Justice Stevens and his associates that we will do everything we can to try to make it a success. I personally think the panels should have more authority with the aim toward disposing of cases rather than having them go on to jury trials. The performance of the panels has varied from good, to indifferent, to bad. I am convinced that if the judges who rotate as the presiding members of these panels got together among themselves and discussed some of the frustrations that presently exist, much could be done to improve the program. That it has disposed of a number of cases which would have taken a great deal of time and expense to try, is quite true. Except in the rare instance where we feel the panel is mistaken in its recommendation to settle a case, we have followed its advice and disposed of a considerable number of cases. But in those cases, and there are several of them, where the panel has told the plaintiff's attorney that he has no case and that he should discontinue, or at least, recommend such a course of action to this client, the attorneys for the plaintiff have reacted with a uniform sense of outrage. In fairness I should say that some genuinely think the panel is wrong, but others have frankly told the panel that even though they agree with the fact that they probably have no case, they still insist if they can get their case before a jury they might win. Obviously, if this failure to cooperate persists, to that extent the plan will fall into discredit. I have reason to believe there is great determination on the part of the administrative officials of the Court to see that the plan does succeed, and if certain adjustments are necessary in its procedure, there will be a firm effort to see that such takes place.

Another hopeful sign in the courts throughout the city is the adoption of the so-called "troika" system where the oldest cases on the calendar are assigned to a group of three judges who have demonstrated an ability to cooperate with one another. The system admits of practically no adjournments and seeks final disposition of the cases to clear up the court's calendar. I think this system is working well and is of great efficacy particularly in death cases where interest makes a verdict expensive for the defendant. It is difficult to see why a defendant should be blamed in a death action because there is a delay of several years in reaching a trial with interest rates set at 7 per cent or more in the meantime.

Acknowledgments. Finally, I must express my gratitude to the marvelous cooperation extended to us by Henry I. Fineberg, M.D., executive vice-president, and J. Richard Burns, J.D., assistant executive vice-president of the Medical Society of the State of New York.

Frank Appleton and his associates, George Wright, Thomas Baldwin, and John Fiore of H. F. Wanvig, Inc., have, as always, been most helpful to us over the past year, and to them we extend our appreciation.

I am deeply grateful to the officers of the Employers Insurance of Wausau for the kind, considerate, and skillful services they have rendered to us throughout the year; they are: C. F. Schlueter, president; William Morse, vice-president; J. E. Linster, Raymond Bohl, D. R. Uhthoff; Messrs. Marx, Hanner, Bourbeau, Andreotta, Tonn, Shalley, Gordon, Ressa, and McIntyre of the New York City office; Messrs. Bollman, Duggan, Unger, and Byrne of the Syracuse office; and to Mr. Lester of the Buffalo office.

I cannot close without extending to William Hammond, M.D., every wish for health and happiness in his forthcoming retirement as editor of the ***New York State Journal of Medicine.***

Respectfully submitted,
William F. Martin, Legal Counsel

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

The extensive, informative report of Legal Counsel, particularly on matters involving professional medical liability insurance, should be read by all members of the Society. We appreciate the efforts which various members of our legal staff made to acquaint us with the intricacies of the various reports and resolutions presented to us.

The House voted to adopt this portion of the reference committee report.

Constitution and Bylaws

To the House of Delegates, Gentlemen:

The Council Committee on Constitution and Bylaws consists of the following members:

John E. Lowry, M.D., *Chairman*	Queens
Leo S. Drexler, M.D.	Kings
Stuart L. Vaughan, M.D.	Erie
William F. Martin, Esq., *ex officio*	New York

During 1970 and 1971, the committee reviewed and reported to the Council on proposed amendments or revisions of the bylaws and/or constitution and bylaws submitted by the Medical Societies of the Counties of Albany, Bronx, Broome, Chautauqua, Columbia, Erie, Ontario, Queens, Schenectady, Seneca, Steuben, and Westchester and also the Bylaws of the Fifth District Branch.

The Council, at its May 21, 1970, meeting, adopted the committee's recommendation that the revised Bylaws of the Medical Society of the County of Albany and the Medical Society of the County of Westchester be approved, and that the revised Bylaws of the Fifth District Branch be approved with recommended changes to be submitted to the Fifth District Branch. The Council also approved amendments to the Bylaws of the Medical Society of the County of Schenectady and the Constitution and Bylaws of the Medical Society of the County of Steuben at this meeting.

At its meeting on June 18, 1970, the Council adopted the committee's recommendation that proposed amendments to the Bylaws of the Broome County Medical Society, including recommended changes, be approved and transmitted to Broome County Medical Society.

Proposed amendments to the Constitution and Bylaws of Bronx County Medical Society and the bylaws of the Medical Societies of the Counties of Columbia, Erie, and Seneca, including changes recommended by the committee for transmission to these four county medical societies, were approved by the Council at its meeting on January 28, 1971.

The committee's recommendation that a proposed amendment to the Constitution and Bylaws of the Medical Society of the County of Ontario be approved, because it was not in conflict with the Constitution and Bylaws of the Medical Society of the State of New York, was adopted by the Council at its meeting on March 25, 1971.

A proposed amendment to the Constitution and Bylaws of Bronx County Medical Society was approved by the Council at its meeting on May 27, 1971, as recommended by the Committee, because it was not in conflict with the Constitution and Bylaws of the Medical Society of the State of New York.

The Council, at its June 17, 1971, meeting, adopted the committee's recommendations that the revised Constitution and Bylaws of the Medical Society of the County of Chautauqua and the Medical Society of the County of Queens, including recommended changes, be approved and transmitted to the Medical Society of the County of Chautauqua and the Medical Society of the County of Queens.

At its meeting on September 23, 1971, the Council approved proposed amendments to the newly revised Bylaws of the Medical Society of the County of Erie including corrections recommended by the committee for transmission to the Medical Society of the County of Erie.

Details of the foregoing revisions, amendments, and recommended changes are on file and available for your perusal, if desired, in the office of the State Medical Society.

Proposed amendments to the Constitution and Bylaws of the Sixth District Branch and a proposed revision of the Bylaws of the Medical Society of the County of Westchester have been received for study and review by the committee. Any action taken by the Council at its November or January meetings on these proposals will be reported in a supplementary report.

Your chairman takes this opportunity to thank the members of his committee and legal counsel for their assistance and cooperation. We deeply appreciate the able assistance of our secretary, Miss Mary Singer.

Respectfully submitted,
John E. Lowry, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS. The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

This report covering revisions of the Constitution and Bylaws of the individual county societies was reviewed. We appreciate the efforts of this committee to avoid conflicts between the constitution and bylaws of the local medical societies and those of the Medical Society of the State of New York.

The House voted to adopt this portion of the reference committee report.

New York Delegation to the AMA (Annual)

To the House of Delegates, Gentlemen:

The New York Delegation to the 120th Annual Convention of the American Medical Association, held in Atlantic City, New Jersey, June 20 to 24, 1971, included:

Delegates: Lawrence Ames, M.D., Edgar P. Berry, M.D., James M. Blake, M.D., Charles M. Brane, M.D., Irwin Felsen, M.D., (alternate serving for Thomas S. Bumbalo, M.D.), John Lee Clowe, M.D., Albert H. Douglas, M.D., Ralph S. Emerson, M.D., Henry I. Fineberg, M.D., Abraham W. Freireich, M.D., Carl Goldmark, Jr., M.D., Walter T. Heldmann, M.D., Milton Helpern, M.D., George Himler, M.D., R. Scott Howland, M.D., Edward C. Hughes, M.D., Joseph J. Kaufman, M.D., David Kershner, M.D., Warren A. Lapp, M.D., Herbert A. Laughlin, M.D., John Edward Lowry, M.D., James A. Moore, M.D., Bernard J. Pisani, M.D., Charles D. Sherman, Jr., M.D., Samuel Wagreich, M.D., C. Stewart Wallace, M.D., and Walter Scott Walls, M.D.

Alternate delegates: Andrew W. Lawrence, M.D., and Irving M. Pallin, M.D.

Section delegate: George F. Reed, M.D., Section on Otorhinolaryngology.

AMA Past President: Gerald D. Dorman, M.D.

Also present: Edward Siegel, M.D., Thurman B. Givan, M.D., Carlton E. Wertz, M.D., William B. Rawls, M.D., and Walter F. Harrison, Jr., M.D.

State Medical Society Staff: Guy Beaumont, Gretchen Wunsch, Coleman Fineberg, Gerald Sullivan, William Baltaks, and Harry Dexter.

County Medical Society Executives: Lester J. Candela, M.D., Queens; Elvira A. Tirola, New York; Hazel Spadafora, Kings; and Richard Treccase, Erie.

Meetings. The delegation held a meeting on Saturday, June 19, at 5:00 P.M. and conferences at breakfast on Monday, Tuesday, and Wednesday. The delegates also met for breakfast on Thursday. Informal luncheons were available to the delegation on Wednesday and Thursday. A German Buffet was held on Tuesday for all delegates. This successful luncheon was arranged by the Communications Division.

Matters coming before the House were discussed; actions were decided on specific issues; and assignments were made.

Candidates for president-elect, vice-president, and the Council on Medical Service appeared at the breakfast meetings of the delegation. Dr. Himler and Dr. Hughes appeared before many of the other delegations in support of Dr. Hughes's candidacy for trustee to fill the unexpired term of Burtis E. Montgomery, M.D. The delegation voted at its meeting on June 21 to support Dr. Hughes for this one-year term. The candidacy of Dr. Hughes had been announced, brochures distributed, and other preparations made to conduct a successful campaign.

Margaret A. Krikker, M.D., Albany, appeared before the delegation to urge passage of resolution 13, "Iron Content of Enriched Flour."

Resolutions. The following resolutions were introduced by the New York Delegation and were acted on as indicated: (new material in italics).

1. *Resolution 7,* "Advertisements in the Mass Media on Mood-Changing and Analgesic Drugs," referred to, Reference Committee E (Warren W. Quillian, M.D., chairman). The text of the resolution follows:

Whereas, Many advertisements in the mass media suggest that mood-changing and analgesic drugs can be of great help in solving everyday problems; and

Whereas, This philosophy that drugs are necessary or helpful in coping with the stresses of everyday life may be a major factor contributing to the epidemic of drug abuse and misuse among the young people of this nation; therefore be it

Resolved, That the American Medical Association condemn advertising in the mass media that suggests that mood-changing and analgesic drugs are necessary for meeting the demands of life in our society; and be it further

Resolved, That the American Medical Association undertake a study of this matter and institute a program designed to bring about the banning of advertisements in the mass media promoting the use of mood-changing and analgesic drugs.

Action. The following substitute resolution was adopted:

Resolved, That the American Medical Association follow the studies being conducted to ascertain the relationship between proprietary drug advertising in the mass media and excessive use of self-prescribed drugs and drug dependence problems; and be it further

Resolved, That the American Medical Association intensify its efforts to establish effective liaison with the National Association of Broadcasters and the Proprietary Drug Association to assure more stringent voluntary controls over proprietary drug advertising in the mass media; and be it further

Resolved, That the American Medical Association cooperate in every way possible in the studies being conducted by the Federal Trade Commission to assure the enactment of proprietary drug advertising regulations in the interests of protecting consumers.

2. *Resolution 8,* "Support of Continued Government Funding for Basic and Applied *Clinical* Research," referred to Reference Committee C (Urban H. Eversole, M.D., chairman). Text of the resolution follows:

Whereas, Medical societies are obligated to extend medical knowledge and advance the science and art of medicine; and

Whereas, The American Medical Association and its constituent and component medical societies have always had a vital interest in the advancement of medicine and the promotion of medical progress; and

Whereas, Modern clinical care depends heavily on the uninterrupted continuation of both basic and applied research; and

Whereas, The financial support of government has, for some years, played an increasingly important role in promoting both basic and applied research, thereby increasing the fund of knowledge of clinical medicine; and

Whereas, Recently there has been a regrettable change in the government's policy of support, which has brought about retrenchment in funding, resulting in the dislocation of much research effort and great hardship to many investigators and their technical and professional supporting personnel; therefore be it

Resolved, That the American Medical Association reaffirm its interest in promoting research and the further advancement of medical knowledge for the continuing benefit of patients; and be it further

Resolved, That the American Medical Association bend its efforts, and join with other organizations, to achieve the restoration and continuation of government budget funds for basic and applied *clinical* medical research; and be it further

Resolved, That a copy of this resolution be sent to the Secretary of the Department of Health, Education, and Welfare, the president, legislators, and other individuals, organizations or agencies as, in the good judgment of the Trustees, can be helpful in achieving the objectives set forth in this resolution.

Action. The House voted to adopt this resolution as amended.

3. *Resolution 9,* "Amendment of the Social Security Act to Change Qualifying Dates," referred to Reference Committee B (Donald B. Koonce, M.D., chairman). The text of the resolution follows:

Whereas, Public Law 89–97, 1965, amended the Social Security Act to provide for inclusion of physicians under Social Security; and

Whereas, The current qualifying dates by which benefits under the Social Security Act are determined, namely 1936 and 1951, preclude many physicians who have paid the maximum tax for many years from the possibility of obtaining the full benefits of the act; and

Whereas, The House of Delegates of the American Medical Association at its meeting in June, 1966, referred to the Board of Trustees for study and appropriate action resolution 45, which called on the AMA to explore every legitimate channel and take every legitimate action to have the Social Security Act amended at the earliest possible date to provide a more recent qualifying year; and

Whereas, To date there has been no evidence that the Trustees or the Association have acted on this resolution; and

Whereas, The Social Security Administration is sufficiently automated and computerized to cope with the administrative problems incident to a change in the qualifying year; and

Whereas, The present provisions are iniquitous and contrary to the best interests of a large portion of the membership of the AMA; therefore be it

Resolved, That the House of Delegates of the American Medical Association reaffirm its action on resolution 45, 1966, "Amendment to the Social Security Act to Change Qualifying Dates," and that this matter be assigned top priority; and be it further

Resolved, That the Association work for a qualifying date for Social Security benefits for physicians which is five years or less prior to the effective date of the amended act, 1962, as equitable for counting the quarters and average monthly earnings for physicians; and be it further

Resolved, That the House of Delegates be informed at the November, 1971, session of the actions that have been taken to implement this resolution.

Action. The House adopted this resolution.

4. *Resolution 13,* "Request for Public Hearing before FDA re Iron Content of Enriched Flour," referred to Reference Committee E (Warren W. Quillian, M.D., chairman). The text of the resolution follows:

Whereas, Iron is an essential trace mineral nutrient; and

Whereas, There is an inherent danger of hemosiderosis and hemochromatosis with a high incidence of hepatomas from an unnaturally high dietary iron intake over a prolonged period; and

Whereas, The Federal Food and Drug Administration's so-called "GRAS" (Generally-Recognized-As-Safe) status of iron permits food manufacturers to add iron to foods in uncontrolled amounts; and

Whereas, The FDA is now considering a proposal to mandatorily increase the iron content in enriched flour and bread four times above its natural level; and

Whereas, The benefits from the fortification program compared to the risks are controversial; and

Whereas, The proposal ignores the caution expressed by the AMA Council on Iron Deficiency in 1968 and conflicts with the 1968 Joint Policy Statement of the AMA Council on Foods and Nutrition and the National Academy of Science-National Research Council Food and Nutrition Board; and

Whereas, The majority of physicians have not been aware of the proposal under consideration by the FDA; therefore be it

Resolved, That the American Medical Association request the Department of Health, Education, and Welfare, Food and Drug Administration, to conduct a public hearing on its position with regard to the iron content of enriched flour so that physicians may have the opportunity to voice their opinion on the little-publicized proposal to make mandatory fourfold increase in the iron content of enriched flour above the natural level.

Action. The House adopted this resolution.

5. *Resolution 85,* "Restraints on the Production, Distribution, and Prescribing of Amphetamines," referred to Reference Committee E (Warren W. Quillian, M.D., chairman). The text of the resolution follows:

Whereas, Amphetamines have been found to be psychologically more destructive than heroin; and

Whereas, Amphetamines are now more available than marijuana and, in many ways, are more treacherous than all other abused drugs; and

Whereas, The production per year of amphetamines has reached the astronomical number of 4 billion pills, or 40 for every person in the nation; and

Whereas, Pilot studies in Suffolk County, New York, have shown that the majority of physicians are interested in imposing a temporary embargo on the use of amphetamines except for a few medical indications; therefore be it

Resolved, That the American Medical Association urge all physicians to accept their real responsibility with respect to the use and abuse of amphetamines by sharply curtailing the prescription of amphetamines; and be it further

Resolved, That the American Medical Association lend its full support to the plans of the Justice Department to set production quotas and tighten the distribution of amphetamines.

Action. The following substitute resolution was adopted for resolutions 85, 6, and 29:

Resolved, That the American Medical Association urge all physicians to limit their use of amphetamines and other stimulant drugs to specific, well-recognized medical indications; and be it further

Resolved, That the American Medical Association support the proposal of the Bureau of Narcotics and Dangerous Drugs to transfer amphetamine and methamphetamine and their salts, optical isomers, and salts of their optical isomers from Schedule III to Schedule II published in the May 26, 1971, *Federal Register.*

6. *Memorial resolution.* Waring Willis, M.D.

Whereas, On April 23, 1971, Waring Willis, M.D., of the New York Delegation, passed from our midst; and

Whereas, He is remembered for his years of service as an outstanding obstetrician and gynecologist; and

Whereas, He served his profession unselfishly at the county, state, and national levels: as president of his county medical society; councilor, secretary, president, and chairman of the Board of Trustees of the Medical Society of the State of New York; and

Whereas, Dr. Willis served as a delegate to the American Medical Association for eight years and as a member of its Committee on Community Health Care; therefore be it

Resolved, That this House of Delegates of the American Medical Association express its profound sorrow at the passing of Waring Willis, M.D.; and be it further

Resolved, That the sympathy of this House be extended to Mrs. Willis and her family; that this resolution be recorded in the proceedings of this House; and that copies be appropriately presented to Dr. Willis's wife and family.

Action. This resolution was adopted.

At its meeting on Saturday, the New York Delegation honored the memory of Waring Willis, M.D., a member of the Delegation for many years, with a moment of silence.

Reference committee assignments. Members of the New York Delegation serving on reference committees were:

Amendments to Constitution and Bylaws	James M. Blake, M.D., chairman
B (Legislation)	Milton Helpern, M.D.
E (Scientific-Public Health)	James A. Moore, M.D.
F (Board of Trustees)	Charles M. Brane, M.D.

Observers at reference committee hearings, designated by the chairman of the *New York Delegation,* were:

Amendments of Constitution and Bylaws	Walter T. Heldmann, M.D.
Committee A (Insurance and Medical Service)	Ralph S. Emerson, M.D. Walter Scott Walls, M.D.
Committee B (Legislation)	Lawrence Ames, M.D.
Committee C (Medical Education)	Charles D. Sherman, Jr., M.D. Warren A. Lapp, M.D.
Committee D (Hospitals and Medical Facilities)	Albert H. Douglas, M.D. Edgar P. Berry, M.D.
Committee E (Scientific-Public Health)	Carl Goldmark, Jr., M.D. John Edward Lowry, M.D.
Committee F (Board of Trustees)	Joseph J. Kaufman, M.D.
Committee G (Miscellaneous)	C. Stewart Wallace, M.D. Abraham W. Freireich, M.D.
Committee H (Miscellaneous)	John Lee Clowe, M.D.

Hospitality. The New York Hospitality Suite, in the Garden Room at Haddon Hall, was open according to the following schedule: Sunday, 5:00 P.M., New York delegates only; Monday, 5:00 P.M., guests; Wednesday Noon, AMA delegates and alternates; Thursday, Noon, New York delegation only. On Tuesday at Noon a German Buffet was held for AMA delegates and alternates in the Rutland Room.

AMA Report. The following is a summary of the actions of the House of Delegates, as compiled by the executive vice-president of the AMA, of the 120th Annual Convention held June 20 through 24, 1971, in Atlantic City, New Jersey.

In addition to studying, discussing in committee, and acting on 158 items of business that came before it at the 120th Annual Convention, the House of Delegates heard a stirring speech by the President of the United States, as well as outlines of future plans as seen by both outgoing and incoming AMA presidents.

Meeting for a total of thirteen hours and fifty-three minutes, the House acted on 6 special reports; 31 reports from the Board of Trustees; 2 from the Council on Constitution and Bylaws; 4 from the Council on Medical Education; 8 from the Council on Medical Service; 2 from the Judicial Council; 1 from the Council on Long Range Planning and Development; and 104 resolutions.

Elections. Charles A. (Carl) Hoffman, West Virginia, was chosen president-elect of the AMA. Others elected or reelected to Association positions were: vice-president: Ralph C. Teall, California; speaker of the House: Russell B. Roth, Pennsylvania (reelected); and vice-speaker of the House: J. Frank Walker, Georgia (reelected).

The following were elected trustees: John M. Chenault, Alabama (reelected); Raymond T. Holden, Washington, D.C. (reelected); John R. Kernodle, North Carolina (reelected); Donald E. Wood, Indiana (filling the vacancy of L. O. Simenstad who was ineligible for reelection); Robert B. Hunter, Washington (to fill the unexpired term of Burtis E. Montgomery); and Jere W. Annis, Florida (succeeding Charles A. Hoffman).

Judicial Council: Henry I. Fineberg, New York, was elected (succeeding Renato J. Azzari).

Council on Constitution and Bylaws: Carroll L. Witten, Kentucky (reelected); and John H. Burkhart, Tennessee (to fill the vacancy left by Robert Hunter's election to the Board).

Council on Medical Education: James W. Haviland, Washington (reelected); and Bernard J. Pisani, New York (reelected).

Council on Medical Service: Guy A. Owsley, Indiana (reelected); and C. Willard Camalier, Jr., Washington, D.C. (filling the vacancy of Charles J. Ashworth who was ineligible for reelection).

Address by Richard M. Nixon, President of the United States. President Nixon began with some general statements based on Disraeli's comment that "The health of the people is really the foundation upon which all their happiness and all their powers as a state depend," pointing out that "I am happy for this opportunity to salute this profession which has contributed so much to the health of the American people and to the strength of this nation."

He talked about the current debate on national health insurance, emphasizing that, "I believe that the most expensive plan that has been offered—a plan for nationalized, compulsory health insurance—is the plan that would actually do the most to hurt health care in this nation."

Such a plan, the president said, "would exact a very high price from our people in terms of dollars and cents. But it would exact an even higher price in terms of the quality of American medicine."

Mr. Nixon emphasized that America's health care system needs reform. But he added that, "We can never improve our country's medical system by working against our country's medical profession. No system of health care will ever work unless the doctors of the nation make it work. So let us work together," he said, "for a system—a system that will continue to provide for choice, that will continue to provide for quality and one that will at the same time deal with the pressing problems of costs in an effective way that will not destroy quality."

The bulk of the president's speech, which was punctuated several times by applause, was a challenge to America's physicians to assume leadership in curing and preventing drug abuse. That problem, he said, "is America's public enemy number one. It afflicts the rich and the poor, the blacks and the white, the servicemen and the civilians, and the ghettos and the suburbs. It spreads like a plague throughout our society. It erodes our nation's strength. It destroys our nation's spirit. And worst of all, it undermines our nation's future.

"The best way to end drug abuse is to prevent it, and America's doctors are the indispensable front-line soldiers for success in this all-important battle. No one, believe me, can have more effect when he or she speaks out than a doctor on this issue of drug abuse. You speak with greater authority, because you speak about the power of drugs to save life—but also the power to destroy it.

"Rather than preach moralistically about the sinfulness of drugs, you can teach realistically about their physical and psychologic impact."

The president finished this major portion of his speech by saying, "The AMA can once again render outstanding service at a point of critical need by helping to develop what I would like to call Project USA—a project which would marshal the tremendous energy, the brains, the dynamism, the leadership of the doctors of this country in an all-out battle against drug abuse."

After some remarks about the need for physicians to be more active in politics and community leadership, President Nixon closed with these words: "The health of America is in your hands, and by its health I speak not just of its physical health—but its mental health, its moral health, its character. Meet that challenge."

AMA Response. Directly and immediately accepting the president's challenge, the Board of Trustees came before the House with Report EE, which the House adopted. The report points out that, "In respect to the urgent problems of drug abuse, the Council on Mental Health and its Committee on Alcoholism and Drug Dependence have already given support to the president's announcement of the establishment of a Special Action Office of Drug Abuse Prevention within the executive office and to his proposal to strengthen resources and programs for treatment and rehabilitation of drug-dependent persons."

The report recommended and the House adopted as policy that the AMA "strengthen and expand its program to combat drug dependence with particular attention to prevention, identification, treatment, rehabilitation, and research and that state and local medical societies be urged to give priority to the implementation of this program at the community level throughout the nation." The House also called on "individual physicians—whether in practice, research, teaching, or administration—to give special attention to problems of drug abuse and to volunteer their efforts to community programs." (Additional action on drugs and drug abuse is described later in this summary.)

President's final report. In describing his "Blueprint for the Future," Walter C. Bornemeier, M.D., pointed out that of three principal ingredients of medical care—cost, quality, and availability—"availability is on the front burner. People are more concerned about getting medical care when they need it," he said, "than they are about its cost or its quality. The question never has been 'is there a good doctor in the house?' or 'is there a cheap doctor in the house?' The question has always been 'is there a doctor in the house?'"

Along with increasing the number of physicians being produced by the nation's medical schools, Dr. Bornemeier said that "group practice appears to be the answer" to availability. "Groups can be either fee for service or have a prepaid package arrangement. They could be a combination of the two.

"When we eventually have a private practice group in every neighborhood," he said, "we will have come full circle, from a doctor over every drug store to a multispecialty group facility in every population center. It is my firm conviction that if we bring comprehensive medical care back into the population centers, the neighborhoods, and have medical care available twenty-four hours a day, seven days a week, the people will tell Congress that the present system does not need to be restructured."

Dr. Bornemeier also pointed out that expanding group practice centers will lead to a strong come-back for the family physician, who will best be able to give complete care to the whole patient. "Group practice," the president said in closing his final report, "has been on the increase and all indices point to accelerated development of this type of practice. Along with this, a movement of group practice to the population centers is inevitable. Competition between groups will encourage distribution to residential areas. All of this adds up to availability, today's most important ingredient of health care."

Inaugural address. In his inaugural address, Wesley W. Hall, M.D., the AMA's 126th president, began with a brief history of medicine as an art and science. "What was the state of medicine for some 6,000 years?" he asked. "Compassion, hope, and the patient's confidence in the physician were the foundation stones on which medicine rested for centuries. As an exact science, medicine had its beginning less than a century ago, when Robert Koch discovered the tuberculosis bacillus in 1882."

He traced the growth of medicine to the present time and then detailed some of the profession's more pressing problems of today, including the state of medical education, the need for more manpower, care for the poor, rural health, and others. He pointed out, however, that often too much emphasis is put on problems and not enough on achievements. "We need not agonize that we have not done enough," he said. "We should trumpet our successes while we strive all the harder in those areas where we have not yet attained perfection. To assure that, in a rapidly changing world, the AMA will be able to pursue its historic goals," Dr. Hall offered suggestions for consideration by the House.

The first was that the Association have a constitutional convention to "streamline our governing process to suit the needs and pace of the twentieth century physicians and its people"; to "combine overlapping functions within our organization"; and "enfranchise those whose voices we should hear."

He listed major changes made in past years by the AMA, but pointed out that "this year, one or two changes will not be enough."

Some of his suggestions were "at least one additional meeting day" for the House to conduct its business; reexamination of "the aims and duties of our 100-plus councils, committees, and commissions"; moving "through our state organizations to bring a greater number of young, able, and productive physicians into our Association"; setting "a limit on the number of terms delegates can serve in this House"; and rescinding "a number of outdated and long-ignored resolutions (that) remain on our books as policy statements."

Dr. Hall urged the Woman's Auxiliary to undertake new and increased activities in "encouraging prenatal care for the expectant mother, especially in rural areas and in areas where low-income families are concentrated," and in "helping to combat problems of teenage drug abuse and addiction."

Referring to the fact that some physicians are critical of the AMA, Dr. Hall emphasized that "the goal of the AMA and the goal of these colleagues is the same: to provide the best possible health care for each and every American, at reasonable cost."

"I urge all physicians—those in practice, those in government, those in research and teaching, those in public health, those in administrative positions, those in all facets of medical activity—to come under the AMA's umbrella, to bring to us their hopes, their beliefs, their ideas, and their vigor."

In closing his inaugural address, President Hall said, "The basic needs of man are food, clothing, shelter, education, and health. Certainly physicians have some expertise in each of these areas. We know the requisites of good nutrition; we are able to give advice concerning the health aspects of clothing and shelter; we can contribute to education; we care for the sick, and we attempt to keep the healthy in that enviable condition."

(The Board of Trustees brought before the House the question of a constitutional convention, as suggested by Dr. Hall. Delegates voted to defer action until the 1971 Clinical Convention, meanwhile requesting informational "white papers" on the subject from the Council on Constitution and Bylaws and the Council on Long Range Planning and Development.)

Organization changes. The Guam Medical Society of Agana, Guam, was accepted as a constituent association of the AMA, bringing to 55 the number of state, commonwealth, and territorial associations.

The scientific Section on Psychiatry and Neurology was separated to form two sections, the Section on Psychiatry and the Section on Neurology.

The Bylaws of the Association was amended to create a new membership classification. Under "Active Members," there now are two classifications: Regular Members and Direct Members. There is no change in the definition of Regular Members. Direct Members include service members, physicians employed by Federal agencies, and interns and residents.

Right of access to medical care. The House elaborated on its existing policy regarding the right of access to medical care by adopting this statement:

> It is the right of every citizen to have access to adequate medical care, but it is the responsibility of the citizen or of society to seek it. The American Medical Association will use all means at its disposal in an endeavor to make adequate medical care available to meet the needs of each person.
>
> In the spirit of inheritance of the Oath of Hippocrates, the AMA reaffirms its obligation to humanity. In this effort, the AMA cannot assume the responsibilities of government or the individual citizen. The AMA also recognizes the right of the physician to choose whom he will serve and the conditions under which he will render this service. These are integral essentials in the delivery of quality medical care.

Drugs and drug abuse. In addition to the action taken in direct response to President Nixon's speech to the House, delegates also took several other actions on the subject of drugs and drug abuse.

A report of the Council on Mental Health and its Committee on Alcoholism and Drug Dependence was filed for the information of the Association. It contains these recommendations for the medical profession:

1. Increased attention to alcoholism and drug abuse in the curriculum of medical schools.
2. Medical students, interns, and residents should be encouraged to associate themselves with "street clinics" to establish links between the profession and young drug abusers.
3. Continued development and dissemination of reliable information to physicians and other health professionals.
4. Laws and regulations should be modified to recognize alcoholism and drug dependence as illnesses.
5. Closer liaison between medical societies and law enforcement and licensure bodies to deal jointly with the problem of physicians suspected of professionally misusing or personally abusing drugs.
6. Continually updated factual material for public consumption.
7. Increased emphasis on the responsible use of drugs for therapeutic purposes, both by the public and by physicians.

The House resolved to follow "studies being conducted to ascertain the relationship between proprietary drug advertising in the mass media and excessive use of self-prescribed drugs and drug dependence problems" and to "cooperate in every way possible in the studies being conducted by the Federal Trade Commission to assure the enactment of proprietary drug advertising regulations in the interests of protecting consumers."

Delegates also resolved to "urge all physicians to limit their use of amphetamines and other stimulant drugs to specific, well-recognized medical indications."

In addition, the House resolved to go on record "favoring the implementation of stern measures for narcotic traffic control in Vietnam, as well as measures for the identification, prevention, diagnosis, and adequate treatment of addicts within the armed forces, with adequate provision for the availability of proper follow up and aftercare."

Terminology and definitions. Concerned with the growing use of the term "physician's associate" as opposed to the term "physician's assistant" to describe new health occupations, the Board and its Council on Health Manpower recommended (and the House agreed) that the term "physician's associate" be used only to denote another physician.

The House resolved that future editions of *AMA Drug Evaluations* "avoid the use of the word 'irrational.' "

Delegates adopted three definitions in the area of peer review:

> 1. Peer Review: Evaluation by practicing physicians of the quality and efficiency of services ordered or performed by other practicing physicians. Peer review is the all-inclusive term for medical review efforts. Medical practice analysis; inpatient hospital and extended care facility utilization review; medical audit; ambulatory care review; and claims review are all aspects of peer review.
>
> 2. Medical Practice Analysis: A function of the medical society, or other organization authorized by the medical society, designed to coordinate all peer review efforts of a community. Medical practice analysis focuses on the development and application of criteria for optimal medical care, and evaluates the individual and collective quality, volume, and cost of medical care, wherever provided.
>
> 3. Claims Review: Peer evaluation and adjudication of claims questions referred for peer review by any party with a valid interest in the case.

Definitions of other elements named in the "peer review" definition itself were referred back to the Council on Medical Service for further refinement.

Peer review. Further in connection with peer review, the House resolved:

> That the American Medical Association and its constituent state associations reaffirm their support of voluntary mechanisms of review and education by physicians, such as grievance committees, insurance review committees, and the numerous hospital review mechanisms, many of long standing;
>
> That the AMA and its constituent state associations continue to stress that peer review shall be considered a professional function, and as such shall be carried out by physicians or under the sponsorship of the county and state medical societies;
>
> That this House of Delegates call on all state and county medical societies and the AMA to take an active responsible role in peer review and to document for the information of the public current functioning procedures and programs which are serving in the interests of delivering good medical care.

Better health and patient care. With respect to teen-age pregnancy, the House adopted the statements that, "The teenage girl whose sexual behavior exposes her to possible conception have access to medical consultation and the most effective contraceptive advice and methods consistent with her physical and emotional needs"; "The physician so consulted should be free to prescribe or withold contraceptive advice in accordance with his best medical judgment in the best interests of his patient." Earlier in that report, the House inserted the statement that "definite effort should be made to obtain consent from the minor's parents or legal guardian whenever possible."

Regarding maternal and infant care, the House adopted a report pointing out that "application of recent advances in scientific knowledge and skills in the intensive-care management of high-risk pregnant women and high-risk newborn infants will result in reduction of present maternal and infant mortality rates. A major contribution to such a program is the development of a centralized community (or regional) hospital-based newborn intensive-care unit. Concentration of high-risk infant-care programs in hospitals specially staffed and equipped to provide optimal care is a proved life-saving mechanism for infants at risk."

Concerned with the spread of venereal disease, the House resolved:

(1) that medical societies be urged to "support education of patients and the public through more extensive and more imaginative use of all available media and through school curricula"; (2) that the AMA "reiterates its support and cooperation with the National Commission on Venereal Disease to hasten the control of these diseases"; and (3) that the AMA "strengthen in every way possible research efforts toward the development of vaccines for the active immunization of our population against venereal disease."

On health education in schools, the House resolved to encourage state and local medical societies "to establish active liaison with their school systems to provide lectures and appropriate educational support regarding: personal hygiene, the effects of tobacco and drugs, the problem of medical quackery, and the role of physicians in maintaining good health."

To increase patient safety in hospitals, the House resolved that "medical staffs be urged to form a staff committee to cooperate with the administration and lend guidance in developing safety programs that will include the concepts of prevention, detection, and correction, and which will fully utilize the expertise of physicians and other members of the health care team."

Considering the use of assistants in medical practice, delegates resolved that "the physician may properly delegate technical procedures to an allied health worker" but affirmed the principle "that whatever privileges may at any time be granted either to allied health workers or to independent limited practitioners, by law or otherwise, such grant in no way circumscribes the physician's authority in that field and in no way restricts the practice of medicine by the physician."

House officers and medical students. The House commended "those county medical societies which have opened participation opportunities to house officers" and recommended to county medical societies "that reduced membership dues be provided for house staff members."

Delegates also resolved:

—To request the Board of Directors of AMA-ERF "to investigate the feasibility of providing financial aid for the continuation and coordination of the SAMA-MECO (Medical Education and Community Orientation) Project."

—To "urge that the Congress support increased Federal aid to medical students."

—"That residency training in community hospitals is worthy of strong and continued support."

—To encourage "individual state societies to promote community programs in their states to provide facilities or loan programs for students for which the student agrees to return to the community after training."

—That individual members of the AMA "assume sustaining membership in the Student American Medical Association."

—That the AMA "offer active support and counsel to the Student American Medical Association for their community health projects."

Additional actions and events. Delegates adopted a 39-page report on "Physician Manpower and Medical Education," prepared jointly by the Council on Medical Education and the Council on Health Manpower, with help from the Council on Medical Service.

They approved a progress report of the Board Committee on Professional Liability and filed for information an 89-page summary of "Computer Systems in Medicine."

They adopted a report from the Judicial Council reaffirming the position "that the basic principles of a fair and objective hearing should always be accorded to the physician whose professional conduct is being reviewed. These basic guarantees are: a specific charge, adequate notice of hearing, the opportunity to be present and to hear the evidence, and to present a defense. These principles apply when the hearing body is a medical society tribunal or a hospital committee."

They adopted the report of the Council on Long Range Planning and Development which included these objectives for the AMA:

1. To maintain an active, viable organization representing the majority of physicians of the United States.
2. To serve as the central coordinating organization of medicine.
3. To serve as the representative of the medical profession in its relations with other health professions, industry, government, labor, consumers, and other nonmedical organizations.
4. To develop, stimulate, and present scientific and professional programs and advances to the profession and public.
5. To continue its historic interest in all levels of medical education.
6. To assimilate recent medical graduates into the medical professional organizations.
7. To promote high standards of quality medical care.

Delegates saw the Sheen Award (including a check for $10,000) presented to Maxwell Finland, M.D., of Boston, a member of the Harvard Medical School faculty since 1928 and associated with Boston City Hospital since 1927.

Delegates also recognized the medical winners in the 22nd International Science and Engineering Fair, whose exhibits from the fair were on display among the scientific exhibits at the convention. The two were Barbara Solee, age seventeen, of Jamestown, North Dakota, with an exhibit on "Effect of Noise on Hamster Behavior Patterns"; and Thomas W. Wakefield, age seventeen, of Toledo, Ohio, with an exhibit on "Blood Supply to the Sinu-Atrial Node (Pacemaker) in Normal Human Hearts."

The chairman of the Board of Trustees of the AMA presented a plaque to Gerald D. Dorman, M.D., for his many years of work with both the AMA and the WMA (World Medical Association). Dr. Dorman has served on both Boards; has been president of the AMA; and has served as chairman of the Council of the WMA.

Before the House, the chairman of the Board announced that Richard S. Wilbur, M.D., deputy executive vice-president of the AMA, has been named by President Nixon as assistant secretary for health and environmental affairs of the Department of Defense. Dr. Wilbur is taking a leave of absence from his AMA position.

Respectfully submitted,
George Himler, M.D., Chairman

New York Delegation to the AMA (Supplementary)

To the House of Delegates, Gentlemen:

Representing the Medical Society of the State of New York, the New York Delegation to the 25th Clinical Convention of the American Medical Association, held in New Orleans, Louisiana, on November 28 through December 1, 1971, included:

Delegates: Lawrence Ames, M.D.; Edgar P. Berry, M.D.; James M. Blake, M.D.; Thomas S. Bumbalo, M.D.; John L. Clowe, M.D.; Albert H. Douglas, M.D.; Ralph S. Emerson, M.D.; Irwin Felsen, M.D.; Henry I. Fineberg, M.D.; Abraham W. Freireich, M.D.; Carl Goldmark, Jr., M.D.; Walter T. Heldmann, M.D.; Milton Helpern, M.D.; George Himler, M.D.; R. Scott Howland, M.D.; Joseph J. Kaufman, M.D.; David Kershner, M.D.; Warren A. Lapp, M.D.; Andrew W. Lawrence, M.D.; John Edward Lowry, M.D.; James A. Moore, M.D.; Bernard J. Pisani, M.D.; William B. Rawls, M.D.; Charles D. Sherman, Jr., M.D.; C. Stewart Wallace, M.D.; and Walter Scott Walls, M.D.

Alternate Delegates: Walter F. Harrison, Jr., M.D.; Frederick W. Holcomb, Jr., M.D.

Section Delegates: George F. Reed, M.D., Section on Otorhinolaryngology, and Maus W. Stearns, Jr., M.D., Section on Colon and Rectal Surgery.

AMA Past President: Gerald D. Dorman, M.D.

Also present: Edward Siegel, M.D.; Thurman B. Givan, M.D.; Charles Weller, M.D.

State Medical Society Staff: J. Richard Burns, J.D., Guy D. Beaumont, and Gretchen Wunsch.

County Medical Society Executives: Lester J. Candela, M.D., Queens; Robert D. Potter and Elvira A. Tirola, New York; Donald M. Irish, Monroe; and Stephen K. Leech, Onondaga.

Meetings. The delegation held breakfast meetings Sunday through Wednesday. Matters coming before the House were discussed, and actions were decided on specific issues. Assignments were made several weeks before the meeting by Chairman Himler.

Charles Weller, M.D., of New York, appeared before the delegation asking for support for Report C of the Council on Medical Services, regarding Multiphasic Health Testing, and Report D of the same Council on "A Statement on Health Planning."

Also Miss June Heilman, of the Student American Medical Association, addressed the delegation. Representatives of the American Board of Nuclear Medicine and of the American College of Radiologists addressed the delegation regarding Resolution 24, "Conjoint American Board of Nuclear Medicine."

A telegram was sent to Dr. Samuel Wagreich who could not attend the convention because of the illness of his wife.

Resolutions. The following resolutions were introduced by the New York Delegation and were acted on as indicated. (Deletions are in brackets; additions are in italics.)

Subject: Hospital Resident Staff Control of Private Patients in Teaching Hospitals

WHEREAS, There has been an ever-increasing demand by teaching hospitals to turn over the treatment of all patients, be they private or otherwise, to the resident staff; and

WHEREAS, In some hospitals the patient's own physician is not allowed to write an order for his own private patient but can only make suggestions that are not allowed to become part of the patient's record; and

WHEREAS, Legal counsel has stated that, "When a physician is taking care of a patient and that patient is being admitted to a hospital where the doctor can no longer care for him, the patient must be informed (and preferably in writing) by his physician that if he enters the teaching unit, due to new rules and regulations, he (the physician) is forbidden to order for him and, therefore, cannot accept any responsibility for his care and that failing to do so the physician is still legally liable"; and

WHEREAS, All physicians are aware of the need for training young physicians but believe a better method for meeting these needs can be developed; therefore be it

Resolved, That this House of Delegates of the AMA go on record as opposing any regulations that prevent the physician on the staff from [being able to participate in and] *controlling* decisions concerning the care of his own patients; and be it further

Resolved, That an ad hoc committee of the AMA consisting of private practitioners and representatives from hospitals be appointed to study the problem of *the use of patients for* teaching [material for] medical students, interns, and residents and report to this House at its annual session in 1972; and be it further

Resolved, That this resolution be brought to the attention of all teaching hospitals.

This resolution was approved as amended and referred to the Council on Medical Education and the Judicial Council.

Memorial Resolution: Herbert H. Bauckus, M.D.

WHEREAS, On October 7, 1971, Herbert H. Bauckus, M.D., of Buffalo, New York, passed from our midst; and

WHEREAS, He is remembered for his years of service in the specialty of dermatology; and

WHEREAS, He served his profession unselfishly at county, State, and national levels: president of his county medical society and councilor, president, and trustee of the Medical Society of the State of New York; and

WHEREAS, He served as a delegate to the American Medical Association from 1945 to 1956; therefore be it

Resolved, That this House of Delegates of the American Medical Association express its appreciation for Herbert H. Bauckus's long and outstanding service to the profession and nonprofessional aspects of medicine; and be it further

Resolved, That the sympathy of this House be extended to his family; that this resolution be spread on the minutes of this meeting of the House of Delegates; and that copies be appropriately presented to members of his family.

This resolution was unanimously adopted.

Reference Committee Assignments. Members of the New York Delegation serving on reference committees were:

Rules and Order of Business . . . . George Himler, M.D.
Committee C (Medical Education) . . . . Carl Goldmark, Jr., M.D., *Chairman*
Committee D (Hospitals and Medical Facilities . . . . Ralph S. Emerson, M.D.
Committee E (Scientific-Public Health) . . . . Lawrence Ames, M.D.
Committee G (Miscellaneous) . . . . Bernard J. Pisani, M.D.

Committee H (Miscellaneous) ....
......................Charles D. Sherman, Jr., M.D.

Observers at reference committee hearings, designated by the chairman of the delegation, were:

Amendments to Constitution and Bylaws ....
.........................Walter T. Heldmann, M.D.
Committee A (Insurance and Medical Services) ......
..........................Joseph J. Kaufman, M.D.
Committee B (Legislation) ....
..........................C. Stewart Wallace, M.D.
.......................Thomas S. Bumbalo, M.D.
Committee F (Board of Trustees) ....
.........John E. Lowry, M.D.; Milton Helpern, M.D.
Committee I (Constitutional Convention) ....
..........................Albert H. Douglas, M.D.

Hospitality. The New York Hospitality Suite in the Columbia Suite of the Fairmont Roosevelt Hotel was open according to the following schedule: Sunday, 5:00 P.M., New York Delegates only; Monday, 12 noon, reception of AMA delegates only, and 5:00 P.M. reception of all guests; Tuesday, 5:00 P.M., open for all guests.

AMA Report. The following is a summary of the actions of the House of Delegates, as compiled by the executive vice-president of the AMA, of the 25th Clinical Convention held on November 28 through December 1, 1971, in New Orleans, Louisiana.

Actions which were not only significant, but historical, were taken by the House of Delegates at the Clinical Convention. They included creation of a special section for medical students, and one for interns and residents; ordering open hearings at the two 1972 conventions to explore questions relating to AMA organizational structure and programs, questions raised by AMA President Wesley W. Hall last June, in Atlantic City, and again in New Orleans; approving a vote on the Board of Trustees for the AMA vice president; approving participation of nonmembers of the AMA in AMA scientific programs, and directing that the AMA lead in developing a national program for certification of the assistant to the primary-care physician.

The House met for a total of 9 hours and 42 minutes. It acted on two special reports; 20 reports from the Board of Trustees; 8 from the Council on Medical Education; 4 from the Council on Medical Service; 2 from the Council on Constitution and Bylaws; and 1 each from the Judicial Council and Council on Long-Range Planning and Development, plus 72 resolutions.

If one prevailing mood of the House had to be described, it would appear to be one of wanting to move forward, at the swiftest possible pace.

Medical Students. No less than five items of business—Report I of the Board of Trustees and four resolutions—concerned this subject, reflecting the intensity of interest. These items were studied by a reference committee and a substitute resolution was offered in lieu of all of them, referring the matter to the Board for study of mechanisms to include students in the organizational structure.

But the House rejected the move. It adopted instead an amended resolution on motion of the California delegation. This measure approved "creation of a special section for medical students and a section for interns and residents." It directed that the Council on Constitution and Bylaws "develop appropriate language to accomplish this purpose," working with representatives of the Student American Medical Association and representatives of the interns and residents. The long-heard appeal of students and younger physicians for a voting voice in the AMA was thus answered.

President's address. AMA President Wesley W. Hall, saying, "our House of Medicine is sorely in need of some major repairs," repeated his call for a constitutional convention, or other appropriate procedure, for a basic review of organizational structure and programs. He first suggested such a convention on his inauguration last June.

Dr. Hall said that since that time he had traveled throughout the nation and heard from physicians "hundreds of unsolicited views on medicine in general, on problems they are encountering in their practice, and on our stewardship of the AMA.

"Frankly, I am troubled and disturbed by what I see and hear," Dr. Hall told the House, "and I am more convinced than ever that we need a basic review of our Association's organizational structure."

He did not envision "a study that will continue over a period of years and years and become bogged down in trying to anticipate problems and programs of the distant future. We all recognize the need for long-range planning, but my concern calls for more immediate action."

Dr. Hall said he was disturbed by a number of things, including losses in membership, association finances, and a decrease in attendance at annual and clinical meetings.

He also said, "We simply have too many programs. Some have outlived their usefulness. Others are of considerable value in these times. Still others should be pruned."

He called for employment of the consulting firm of Cresap, McCormick & Paget, which did a study for the AMA in 1968, to do another survey on AMA operations.

The president also called for closer liaison with specialty societies; suggested the AMA should sponsor only national and international congresses on general subjects, rather than its traditional meetings, and said it may be time to consider reorganizing the association as a "for profit" corporation or service corporation.

Dr. Hall's address and resolution 50 which also called for organizational review, were studied and discussed in reference committee. The committee also studied two reports dealing with the question of a constitutional convention, from the Councils on Constitution and Bylaws, and Long-Range Planning and Development, both of which recommended against holding a constitutional convention.

The reference committee "reapprised itself of the 1968 management report" of Cresap, McCormick & Paget. On completion of Phase I of that study, "the Board of Trustees, of which Dr. Hall was a member, terminated the study, and the action was approved by the House of Delegates in December, 1969. Your reference committee concurs in this decision."

There is continuous review and evaluation of AMA structure and programs, the committee said:

> Changes in the Constitution and Bylaws at every meeting bear this out. Recent changes in membership provisions with respect to interns and residents, as well as current changes in the status of medical students and voting powers of the vice-president are prime examples.

The committee said the Council on Long-Range Planning and Development was an appropriate mechanism for reviewing structure and programs and to serve as a focal point for planning activities.

The panel said it believed the Board of Trustees was "vigorously pursuing" the problem with membership and that the president's concern about AMA involvement in scientific matters "will be alleviated by recent changes in the Constitution and Bylaws establishing Section Councils which will become operative in 1972."

Many of the problems faced by medicine come from social unrest and are common to all society, the committee said. It said, Dr. Hall "in his tireless efforts in appearances throughout the country, has seen this unrest and is to be commended for bringing this to the attention of the House of Delegates."

The House accepted the committee's recommendation to refer Dr. Hall's remarks and resolution 50 to the Council on Long-Range Planning and Development. But it also called for specific procedures to be instituted by the Council.

This came in an amendment from the Wisconsin delegation, whose spokesman said it came to the convention "with a mandate to seek a constitutional convention or some type of meeting to effect organizational changes." The amendment instructed the Council to hold open hearings for the membership in San Francisco, in June, 1972, and in Cincinnati, in November, 1972, and provided the House with progress reports and a summary report on its recommendations and findings in June, 1973, in New York City.

Vice-President. There was overwhelming support for resolution 55, to give the vice-president of the AMA voting privileges on the Board of Trustees, and the measure was quickly adopted by the House. Presently, the vice-president attends Board meetings, with the right of discussion but no vote. The action would increase the size of the Board from 15 to 16 members. Although the House vote had the effect of amending the Bylaws, a Constitutional change is necessary, and the matter was referred to the Council on Constitution and Bylaws. Even as discussion continued before the House, the Council came up with the necessary proposed amendments, clearing the way for final action at the annual meeting in June, 1972.

Nonmember participation. The House amended the Bylaws to permit those physicians who are not members of the AMA to participate in AMA scientific programs as "invited guests." The recommendation came from the Board of Trustees, which said the programs should be available to all members of the profession. The Board report said "nonmember physicians, eminent persons from foreign countries, and residents of the United States who are not engaged in the practice of medicine" may be invited to participate.

Dues for interns and residents. The House established annual dues of $20 for interns and residents as members of the AMA. The amount was calculated "solely to cover some of the costs of the benefits of membership," such as receiving AMA publications. Interns and residents currently may join the AMA in two ways: Through active membership in a state association or, where there are no provisions for such membership, by direct application to the AMA. In either case, they must pay the $20 AMA dues.

Physicians' Assistants. Several major actions were taken in regard to the rapidly developing field of physicians' assistants.

The House directed that the AMA, through its Council on Health Manpower, "assume a leadership role in developing and sponsoring a national program for certification of the assistant to the primary-care physician, who functions at the highest level of responsibility described by the National Academy of Sciences as a 'Type A' assistant."

Delegates also adopted a report of the Council on Medical Education, outlining essential requirements for AMA approval of educational programs for such assistants. The essentials were developed in collaboration with the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Society of Internal Medicine.

Essential requirements of an approved educational program for urologic physicians' assistants, outlined in another Council report, went back to the Council for further study.

The House directed the Board of Trustees to develop guidelines on compensation of physicians for the services of their assistants and to report back to the House next June.

Hospital costs—education factors. The rising costs of hospital care and those cost factors attributable to hospital-based education programs, also drew House attention and action. Delegates adopted a resolution which reiterated AMA concern about increasing costs and pledged AMA efforts to achieve cost control, and added the following:

> *Resolved,* That the Board of Trustees be urged to assign to appropriate councils and committees the responsibility to conduct a detailed study of the costs of hospital services to identify (1) the multiple factors involved, (2) the elements that have the greatest impact on the rise in hospital costs, (3) the various cost factors attributable to hospital-based medical and allied health education programs, (4) the alternative mechanisms to finance the costs of such educational programs including the possibility of reducing or eliminating charges to patients that are attributable to such programs, and (5) the degree of impact, if any, that federally funded health programs have on these hospital costs.

The resolution called for the study to be conducted in consultation with the American Hospital Association, private and governmental payment agencies, and representatives of the public. Periodic progress reports, to be submitted at each session of the House of Delegates until completion of the study, also were requested.

Miscellaneous. Immediate action to improve the quality of emergency medical services in the United States was urged in a Board of Trustees report adopted by the House. The report said:

> Those medical societies that have not already done so are urged to establish councils on emergency medical services or to assign that subject area to an appropriate existing council, whose responsibility should include developing action programs in emergency medical services to meet their area's needs and maintaining liaison with groups at all levels of organized medicine concerned with emergency medical services.

Small communities without necessary resources to develop their own systems "should consider linking together with surrounding communities to form a regional system." Skilled personnel and high-quality equipment and facilities should be provided, the report said, and the medical profession should see to it that quality of service is periodically evaluated. The report also recommended a single agency at the Federal level with responsibility for all governmental efforts to improve emergency medical services.

A revised statement on the scope, objectives, and functions of occupational health programs also was adopted by the House. The statement, among other things, said "some employes on occasion may find it impossible to locate or to obtain the services of a personal physician or health service. In such circumstances, limited to where treatment is otherwise unavailable, the occupational physician may undertake additional and continuing treatment of an employe's nonoccupational condition if requested to do so by the employe or his family."

The statement added that if such services become ongoing within the occupational health program, approval of the employer should be obtained. "In order to assure high quality medical care, consideration, and approval by the local medical society in developing such projects, including the methods of payment for services, is urged."

The House adopted a study on Community Health Delivery Programs and urged it be given wide distribution. The study, by a task force of the Committee on Community Health Care, described funding, scope of operations, and staffing of 30 programs around the nation.

Physicians should be active, the report recommended, in a number of areas including: participating in planning and operation of community health programs; using all means at their disposal to ensure that all people are afforded equal access to adequate medical and health care; supporting campaigns against factors harmful to health, such as lead poisoning, drug abuse, and poor housing; and supporting health education programs in schools, homes, and the mass media. The Federal government should be urged to consolidate all Federal health programs under one department and to provide long-range approval and multiple-year funding—rather than annual funding—to help retain top staff, the report said.

Awards. Milton Helpern, M.D., the noted chief medical examiner for New York City, was chosen by the House to receive the AMA Distinguished Service Award for 1972. It will be presented at the annual convention in June, 1972, in San Francisco. Dr. Helpern earned his M.D. degree from Cornell University Medical College in 1926. Following his internship and a pathology residency at Bellevue Hospital in New York City, he became an assistant in the office of New York City's chief medical examiner. He became chief of the department in 1954. Dr. Helpern, author of a book and numerous articles, is professor of pathology and chairman of the Department of Forensic Medicine at New York University School of Medicine.

Mac F. Cahal, J.D., executive director of the American Academy of Family Practice for nearly a quarter of a century, received the Layman's Citation for Distinguished Service. Mr. Cahal, an attorney, retired last month from the Academy, now known as the American Academy of Family Physicians. But he continues to serve as its general counsel. The nomination described him as having "implemented ideas which have contributed greatly to American medicine on every level and in every area open to him."

Respectfully submitted,
George Himler, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

These reports were reviewed, and the accomplishments of the AMA House of Delegates were noted. Your committee wishes to express its gratitude to the New York Delegation for the time and effort it expended on behalf of the State Medical Society.

The House voted to adopt this portion of the reference committee report.

Research and Planning

To the House of Delegates, Gentlemen:

The members of the Committee on Research and Planning are as follows:

G. Rehmi Denton, M.D., *Chairman*	Albany
Edward A. Burkhardt, M.D.	New York
Robert E. Good, M.D.	Chemung
Ralph C. Parker, Jr., M.D.	Monroe
Clyde L. Randall, M.D.	Erie
Charles Weller, M.D.	Westchester
Robert E. Westlake, M.D.	Onondaga

During the past year the committee lost two dedicated and productive officers, John M. Galbraith, M.D., and Waring Willis, M.D., both of whom had served since its inception. Dr. Galbraith, the committee's first chairman, has retired to Arizona. Dr. Willis, vice-chairman, died April 25, 1971. The committee pays tribute to their outstanding performances.

G. Rehmi Denton, M.D., a member of the committee since its beginning, succeeds Dr. Galbraith as chairman. The committee welcomed a new member, Charles Weller, M.D., who follows John Lee Clowe, M.D. It commends the outgoing Dr. Clowe for his services.

The committee has held one meeting thus far during 1971 and has scheduled another meeting for November. At its session on March 24, the agenda contained the topic: "Prepaid, Capitation, Group Practice Plans of Health Care." Playing such a large part in the funding of health care and seeking to halt and reverse its rising cost in which hospitalization was the major expense, the government turned to promoting ambulatory care. It was attracted to the prepaid, capitation, group-health plan because the record of the Kaiser-Permanente Health Plan was reported in 1967 by the Presidential Commission on Health Manpower to show that medical care was provided at a 30 per cent lower rate than other systems. By controls and incentives the Kaiser-Permanente plan had achieved a low usage rate of hospitalization. Its ratio of outpatient visits to admissions was 45:1 in contrast to 4.3:1 of the country's community hospitals in 1969. Kaiser-Permanente reported that the average length of stay was 6.2 days compared with 8.3 for the community hospitals.

Since prepaid, capitation, group-practice plans were increasingly in the national spotlight, the Committee on Research and Planning subjected the topic to analysis. The name itself suggests three components: payment in advance, basis of payment, and multiple physicians. It has been declared that a viable prepaid, capitation, group-practice plan of health care must satisfy seven essential elements. On examination the topic was found to have thirteen categories of variables. With choices in each category, it was little wonder that the plan appeared in so many modified forms.

In the Kaiser-Permanente method of organization the health plan, the hospital, and the medical groups are separate entities; the health plan contracts with the latter two. At first membership in the Kaiser-Permanente health plan was restricted to the gainfully employed, but recently in some of its locations it has removed this qualification so that it is providing services under a true community rating. It has demonstrated that an indigent population can be successfully integrated with a paying membership in the health plan.

But whether or not a plan can be sustained for a massive indigent population alone, a former medical director of a Kaiser-Permanente plan regards as questionable. The Kaiser-Permanente organization has not tried it. But a prepaid, capitation, group-practice plan of health care has been started locally in impoverished areas of two cities, Baltimore and Boston. In the experience of the East Baltimore community plan, the problems were characterized as larger, more numerous, and different from those with an employed population.

In its study the Committee on Research and Planning differentiated prepayment, with payment in advance from postpayment, as in fee-for-services. But another contradistinction of fee-for-services is capitation under which the unit is the person, not a service. Nevertheless, fee-for-services may be combined with capitation. It may be capitation for the subscriber but fee-for-services for the physician who may be paid from the capitation pool.

Group practice may be either in or outside an organized health-care plan. Its relationship determines the preponderant mode of remuneration to the physician. Outside a plan the group physician usually provides medical care for fee-for-services. Within a plan the physician may be remunerated by share, salary, or even fee-for-services.

In promoting the prepaid, capitation, group-practice type of health plan the government designated a name of its own coinage: Health Maintenance Organizations. It emphasized two advantages of this type of organization (1) a wide range of services in a single unit, an arrangement that is convenient for the patient, and (2) provision of these services for a fixed contract fee payable in advance.

Since the Health Maintenance Organization is the government's name for prepaid, capitation, group-practice plan of health care, it too may be organized in various forms. Indeed, one of its strengths is said to be its flexibility. This variability confirms one of the committee's conclusions.

Writing about the record on prepaid, capitation, group-practice plans of health care, one director of a plan states: "After some thirty-five to forty years of experimentation less than 5 per cent of the population of the United States is enrolled in these allegedly superior methods for the delivery of personal health services. Even in localities where successful plans operate, such as Kaiser-Permanente, or Health Insurance Plan of Greater New York, less than 10 per cent of the population living in the service areas of the plans are members." Under the headline "Kaiser Permanente—Controversial Plan in the National Spotlight" the *AMA News* of September 13 carried an article which asserted: "The least controversial statement to be made about this health giant is that it is the largest nongovernmental provider of health services in the country and probably the world." It then cites opposite opinions about the plan. Its expansion and ultimate size are regarded as moot points.

The committee published its report on "Prepaid, Capitation, Group-Practice Plans of Health Care," including health maintenance organizations in the September 15 issue of the ***New York State Journal of Medicine.***

For the forthcoming meeting of the committee, the agenda will be medical care for the urban poor.

Respectfully submitted,
G. Rehmi Denton, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

Your committee reviewed this report and had considerable discussion with the chairman of the committee, with Dr. Westlake, as well as several other members at the hearing. For a variety of reasons, not of its own making, this committee did not function as had been originally intended. We believe that the work of this committee is important to the Society, and that the functions of research and planning should be separated. Not only long-range planning for the Society as a whole, but planning by the various commissions of the Society is particularly important. It is also important to plan rational adjustments of the Society's position and policies in response to anticipated changes in the national and local health scenes. Adequate and competent staff support is necessary for any real accomplishment. Although the committee itself should function as a "think tank," we believe that there should be an input of ideas from the officers and from the various commissions of the Society on a formal basis.

Mr. Speaker, I move adoption of this portion of the report and recommend that these suggestions be referred to the Council for appropriate action.

The House voted to adopt this portion of the reference committee report, with referral to the Council for appropriate action.

Judicial Council

To the House of Delegates, Gentlemen:

The members of the Judicial Council are as follows:

Joseph G. Zimring, M.D., *Chairman*	Nassau
James M. Blake, M.D.	Schenectady
Reid R. Heffner, M.D.	Westchester
Walter T. Heldmann, M.D.	Richmond
Theodore J. Prowda, M.D.	Oneida

The Judicial Council is pleased to report that no appeals were presented to it during the year 1971, and, therefore, no meetings were held.

Respectfully submitted,
Joseph G. Zimring, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

The report of the Judicial Council was read, and your committee recommends approval.

The House voted to adopt this portion of the reference committee report.

To Study Participation of Medical Students in MSSNY

To the House of Delegates, Gentlemen:

The members of the Special Committee to Study the Participation of Medical Students in the Medical Society of the State of New York are as follows:

Charles D. Sherman, Jr., M.D., *Chairman*	Monroe
John H. Carter, M.D.	Albany
George L. Collins, Jr., M.D.	Erie
Bernard J. Pisani, M.D.	New York

This committee has been in existence only a year and is exploring possible ways of developing more meaningful relationships between the Medical Society of the State of New York and the medical students in our 12 schools. The following comments are worth consideration. Today's medical students will comprise nearly half of the practicing physicians in 1982, and we should get them involved in some phase of our activities at an early age so that they will understand some of the problems we face. As one medical student who attended the State Society's last annual meeting said, "My eyes were opened, and I was favorably impressed."

Your committee feels that the most effective and least expensive way of involving students in the activities of organized medicine is to have them work on various committees of county medical societies in the areas where they attend medical school. For the last few years, there has been increasing activity regarding involvement of students in medical societies, and your committee encourages even greater efforts in this area.

Since students represent one of the significant segments of the medical profession and have some political power, your committee feels there should be an organized formal access to the making of policy decisions of MSSNY's House of Delegates, just as there is in several other state societies and will be in the AMA. Indeed, your committee feels that the fragmentation with which the medical profession's voice is heard should be changed and that all the major segments of the profession should deliberate together and speak with a more unified voice.

The organized formal structure we recommend is that of forming a "special student section" consisting of 24 students (2 selected by the student organizations of each of our 12 schools). These 24 students would meet as a section and elect one or two "section delegates" to MSSNY's House of Delegates with voice and vote. They would bring resolutions, comments, and ideas from their respective schools and would have the privilege of the floor at reference committee hearings to give the students' viewpoints on our various activities. This section would also be the mechanism for entry into our Council of any projects or ideas developed by the Student American Medical Association.

The "special student section" would differ from the other sections in the following respects: (1) The members of the section would be limited to those 24 students selected from their respective schools; (2) since they are not yet M.D.s, they would not be "members" of the MSSNY; and (3) since students' incomes are minimal, they would not be charged dues.

A student section such as we describe was recommended through resolution 71-77 introduced last year. The formation of such a student section requires a constitutional amendment, and the wording of the resolution was such that it was left to the House Committee on Constitution and Bylaws to develop the "legalese" indicated to accomplish these aims and to bring the amendment to our House of Delegates for voting in 1972.

An additional aspect of MSSNY's relationship with medical students involves the Medical Education for Community Orientation (MECO) project which is aimed toward acquainting students with the variety of health activities, including general practice, which take place in our small communities and with which they seldom come in contact in the usual university-metropolitan setup. Your committee has worked with national, regional, and local SAMA representatives to develop this project for the summer of 1972, and we have had excellent cooperation from the Hospital Association of New York State and the New York State Academy of Family Practice. We hope that next summer's program will be a successful one.

After the development of the student section described, we anticipate that the students will work with us in a variety of projects of particular interest to today's medical students, such as combating drug abuse, innercity health, and community planning.

Your committee looks forward to a continuing mutually beneficial relationship with our medical students. We have contacted the associate deans for student affairs in each school and will continue to involve them in our deliberations, and expect them to be helpful to us in a variety of ways, not the least of which is to serve as a permanent contact in a fluctuant sea of students.

Respectfully submitted,
Charles D. Sherman, Jr., M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

This report was read and accepted. Your reference committee is pleased that there is now a mechanism for involving medical students in the activities of our Society.

The House voted to adopt this portion of the reference committee report.

Liaison with New York State Podiatry Society

To the House of Delegates, Gentlemen:

The Liaison Committee with the New York State Podiatry Society consists of the following members:

Otho Hudson, M.D., *Chairman*	Nassau
Thomas D. Pemrick, M.D.	Rensselaer
Henry Young, M.D.	New York

The committee met with the following members of the New York State Podiatry Society: Harry Horowitz, D.P.M.; Henry Marletti, D.P.M.; and Murray Edelstein, D.P.M., on April 30, September 17, and December 10.

Association of Professions. The application for membership in the Association of Professions made by the Podiatry Society was denied without explanation.

Legislation. It is recognized that there are areas of common interest in legislation, for example peer review protection, professional liability insurance, control of unlicensed persons, and others. It was suggested that the executive director of the Podiatry Society, Mr. Gilbert Hollander, communicate with the executive vice-president of the State Medical Society, Henry I. Fineberg, M.D., regarding proposed legislation which is of mutual concern.

Hospital Staff Privileges. The State Medical Society representatives agreed that a statement from the State Medical Society concerning staff privileges for qualified podiatrists should be issued in conformity with the regulations of the Joint Commission on Hospital Accreditation. Dr. Pemrick and Dr. Hudson stated that they would introduce a resolution into the Medical Society's House of Delegates concurring with the statement of the Joint Commission and recommending that hospitals in New York State, on an individual basis, take the necessary action to implement these regulations.

Podiatry Society Clinical Conference. The Podiatry Society's representatives suggested that the Medical Society participate in the February, 1972, Region II Annual Clinical Conference. It was suggested that the Medical Society be asked to provide a list of physicians who would participate in a panel discussion dealing with an area of common interest, such as the Medical-Podiatric care of the aged.

Malpractice. A review of the previous discussion on malpractice problems was made and extended to a consideration of "no-fault" malpractice insurance.

On invitation of the Dental Society of the State of New York, various health professions met on May 20 and November 19 to discuss problems dealing with health care, quality control, and malpractice.

It was the opinion of the group that an excellent interchange of ideas on subjects of mutual interest had occurred. It is recommended that the liaison between the State Medical Society and the State Podiatry Society continue and that additional areas of interest be explored.

Other discussions concerned continuing education, legislation, the medical assistants programs, and others.

Future discussions should include medical-podiatry problems and national health insurance.

The members of the Podiatry Ad Hoc Committee would like to thank Dr. Hudson and Dr. Pemrick for their capable assistance and cooperation. We would extend sincerest best wishes for the Podiatry Society of the State of New York, and particularly to Dr. Hudson, for a happy retirement, blessed with good health and long life.

Respectfully submitted,
Otho C. Hudson, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION. POLICIES, AND LEGAL MATTERS The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

The report of the Ad Hoc Committee to Meet with New York State Podiatry Society was received, and the committee approved its recommendation that the liaison between the State Medical Society and the State Podiatry Society should continue and that additional areas of interest should be explored.

The House voted to adopt this portion of the reference committee report.

Resolution 72-13, Minutes of the Council Meetings of the State Medical Society

Introduced by Nassau County Medical Society

WHEREAS, There are a number of delegates to the American Medical Association elected to represent the Medical Society of the State of New York at the American Medical Association's annual and clinical meetings who are not members of the Council; and

WHEREAS, It is the duty of each delegate to the American Medical Association to present the current thinking of the Medical Society of the State of New York to the American Medical Association's House of Delegates; and

WHEREAS, An informed delegate is a more effective delegate; therefore be it

Resolved, That the Medical Society of the State of New York supply all delegates and alternate delegates to the American Medical Association with copies of the minutes of Council meetings.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

Your reference committee recommends adoption of this resolution.

The House voted to adopt resolution 72-13.

Resolution 72-14, Study on the Feasibility of Using the Individual County as the Unit in Determining Premiums for Malpractice Insurance

Introduced by Medical Society of the County of Schenectady

WHEREAS, There has been a marked increase in the cost of medical malpractice insurance during the past year; and

WHEREAS, This increase has been disturbing to physicians who practice in counties where the malpractice rate has been low; therefore be it

Resolved, That the Medical Society of the State of New York's Professional Medical Liability Insurance and Defense Board investigate the feasibility of prorating the malpractice insurance rates to physicians on the basis of the actuarial experience in each individual county; and be it further

Resolved, That the results of this study be widely disseminated among the membership of the Medical Society of the State of New York.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION. POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

In the discussion and investigation of this resolution, we have found that the premium paid reflected accurately the total loss in each of the varied areas of the State, including the metropolitan, suburban, and upstate areas. We already have several different classifications. We do not see the need for adding more classifications on the basis of urban versus suburban areas at this time.

Your committee recommends that no action be taken on this resolution. As a point of clarification, there was some concern by people in the upstate area that they were paying higher premiums because the metropolitan areas had so many claims against them. This is not true. In looking over this, each area paid just about as much income in premiums as went out in losses. No one group is subsidizing another.

The House, after discussion, voted not to adopt resolution 72-14.

Resolution 72-25, Protection of Physicians, Hospitals, and Blood Banks from Liability in Connection with Administration of Blood

Introduced by Medical Society of the County of Albany

WHEREAS, Blood and its components are indispensable in saving life and promoting health; and

WHEREAS, Blood has been stated to be "unavoidably unsafe"; therefore be it

Resolved, That the Medical Society of the State of New York support legislation protecting physicians, hospitals, and blood banks from liability in connection with the administration of blood, its components, and products unless negligence is proved; and be it further

Resolved, That the Medical Society of the State of New York oppose legislation in relation to declaring void waivers of implied warranty of fitness of blood for use, executed by recipients of blood transfusions.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D Sherman, Jr., M.D., chairman.

There is already legislation in New York State which protects physicians against liability for the proper administration of blood. Specifically, the transfusion of blood is not construed to be the sale of a product, but is considered to be the administration of a service. In discussions with our legal counsel, it does not appear that any patient-waiver regarding immunity would be valid; therefore, we recommend disapproval of this resolution.

The House voted not to adopt resolution 72-25.

Resolution 72-26, Compulsory Arbitration Agreements in Liability Actions

Introduced by Thomas Bumbalo, M.D., (Pediatrics); Donald Hall, M.D., (Obstetrics and Gynecology); Norman Kanof, M.D., (Dermatology); John Lambert, M.D., (Psychiatry); Philip Landers, M.D., (Ophthalmology); Herbert Lansky, M.D., (Pathology); George Liberman, M.D. (Family Practice); Samuel Madell, M.D., (Radiology); Howard Rasi, M.D., (Plastic and Reconstructive Surgery); Perrin Snyder, M.D., (Urology); Victor Tofany, M.D., (Anesthesiology); Paul Walczak, M.D., (Surgery); John R. Williams, M.D., (Internal Medicine); and I. Melbourne Greenberg, M.D., (Neurosurgery)

WHEREAS, There is a very evident need for resolution of the professional medical liability problem; therefore be it

Resolved, That the Medical Society of the State of New York explore the possibility of compulsory arbitration agreements in the settlement of liability suits.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

Your reference committee recommends approval of this resolution with the deletion of the word "compulsory" and the addition of the following "entered into voluntarily, but the results of which are binding on both parties, in accordance with the rules and regulations of the American Arbitration Association."

The resolution as amended would then read as follows:

Resolution 72-26, Arbitration Agreements in Liability Actions

WHEREAS, There is a very evident need for resolution of the professional medical liability problem; therefore be it

Resolved, That in regard to settlement of liability suits, the Medical Society of the State of New York explore the possibility of arbitration agreements entered into voluntarily, but the results of which are binding on both parties, in accordance with the rules and regulations of the American Arbitration Association.

The House, after discussion, voted to adopt resolution 72-26 as amended.

Resolution 72-27, Education of Public in Effect of Escalating Professional Medical Liability Insurance Costs on Ultimate Cost of Health Care

Introduced by Thomas Bumbalo, M.D., (Pediatrics); Donald Hall, M.D., (Obstetrics and Gynecology); Norman Knof, M.D., (Dermatology); John Lambert, M.D., (Psychiatry); Philip Landers, M.D., (Ophthalmology); Herbert Lansky, M.D., (Pathology); George Liberman, M.D., (Family Practice); Samuel Madell, M.D., (Radiology); Howard Rasi, M.D., (Plastic and Reconstructive Surgery); Perrin Snyder, M.D., (Urology); Victor Tofany, M.D., (Anesthesiology); Paul Walczak, M.D., (Surgery); John R. Williams, M.D., (Internal Medicine); and I. Melbourne Greenberg, M.D., (Neurosurgery)

WHEREAS, The cost of medical care is rapidly escalating; and

WHEREAS, The cost of professional liability insurance is also rapidly escalating; and

WHEREAS, These costs are ultimately passed on to the consumer; therefore be it

Resolved, That the Medical Society of the State of New York promote, via all available channels, an educational program to advise the public of the escalating costs of medical care and professional medical liability insurance and the relationship to present and future health-care costs.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

Your reference committee amended the *Resolved* portion of resolution 72-27 by adding the following: "but because of the concern of some of our members that improper publicity may stimulate the development of additional suits, we recommend that any public statements be prepared jointly by the Division of Public Affairs and the Professional Medical Liability Insurance and Defense Board." The *Resolved* portion of the resolution would then read as follows:

Resolved, That the Medical Society of the State of New York promote, via all available channels, an educational program to advise the public of the escalating costs of medical care and professional medical liability insurance, and the relationship to present and future health-care costs, but because of the concern of some of our members that improper publicity may stimulate the development of additional suits, we recommend that any public statements be prepared jointly by the Division of Public Affairs and the Professional Medical Liability Insurance and Defense Board.

Your reference committee recommends adoption of resolution 72-27 as amended.

The House voted to adopt resolution 72-27 as amended.

Resolution 72-28, Abolition of Contingency Fees

Introduced by Richmond County Medical Society

WHEREAS, The cost of medical malpractice insurance continues to rise; and

WHEREAS, Contingency fees constitute a major causative factor in the escalation of malpractice costs; and

WHEREAS, The contingency fee is contrary to the best interests of the Community which must not only pay for the increasing cost of the insurance but also for all those other indirect medical costs instigated by the practice of defensive medicine; therefore be it

Resolved, That the Medical Society of the State of New York publicize the impact of the contingency fee on the health costs to the community; and be it further

Resolved, That the Medical Society of the State of New York make every effort to have introduced into the Legislature of the State of New York a bill that would abolish the contingency fee in medical liability actions.

Resolution 72-52, Abolition of Contingency Fee System in Medical Liability Suits

Introduced by Bronx County Medical Society

WHEREAS, Patients who have suffered disability through medical malpractice only receive a percentage of allowed monetary settlement; and

WHEREAS, The threat of malpractice suits colors physicians' attitudes in their fight against disease and in the care of patients; and

WHEREAS, Medical malpractice insurance costs deter new and young physicians from private practice and community service; and

WHEREAS, Costs of nuisance cases to malpractice insurance carriers is prohibitive causing large premium costs to physicians; therefore be it

Resolved, That the Medical Society of the State of New York take appropriate action to encourage legislative action to abolish the contingency fee system in medical malpractice suits.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

Since both of these resolutions deal with the abolition of the contingency fee system, they were considered simultaneously.

Your committee feels that this is an important subject, but as a practical matter, one that would be almost impossible to implement at the present time. However, your committee does feel that some modification in the presently existing contingency fee arrangement would be most desirable. Therefore, it recommends that these resolutions be referred to the Professional Medical Liability Insurance and Defense Board. Specifically, we recommend that the Appellate Division of the Supreme Court of the State of New York, which has jurisdiction over this matter, consider modification of the present fee structure so that there is always a reasonable relationship between services rendered and the size of the legal retainer.

The House, after discussion, voted to amend this portion of the reference committee report by deleting the words, "Professional Medical Liability Insurance and Defense Board. Specifically, we recommend" and substituting therefor the following words: "Counsel with the recommendation . . . be urged to."

The report would then read as follows:

> That these resolutions be referred to Counsel with the recommendation that the Appellate Division of the Supreme Court of the State of New York, which has jurisdiction over this matter, consider modification of the present fee structure so that there is always a reasonable relationship between services rendered and the size of the legal retainer.

The House then voted to adopt this portion of the reference committee report as amended, thus referring to Counsel with recommendations, resolutions 72-28 and 72-52.

Resolution 72-81, Cancellation of Professional Medical Liability Policy

Introduced by Medical Society of the County of Queens

WHEREAS, A physician cannot practice medicine without professional liability insurance; and

WHEREAS, Such insurance contracts carry a clause that they may be cancelled by the insurance carrier on ten days' notice; therefore be it

Resolved, That the Medical Society of the State of New York make every effort to effect a change in the interval of notification of cancellation of professional medical liability insurance from the present ten-day notice to one of three months.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

In a discussion of this resolution, it became clear that the ten-day notice is only for nonpayment of premiums, and that, legally, professional liability insurance cannot be terminated without a forty-five-day notice. As a matter of practicality in New York State, no policies are cancelled without at least sixty days notice; therefore, your committee recommends disapproval of this resolution.

The House voted not to adopt resolution 72-81.

Resolution 72-98, Professional Medical Liability Insurance Review

Introduced by Medical Society of the County of Suffolk

WHEREAS, It is recognized that the Professional Medical Liability Insurance and Defense Board should be involved with rating a member charged with alleged malpractice; and

WHEREAS, The Professional Medical Liability Insurance and Defense Board, as presently constituted, is empowered to recommend cancellation of a member's malpractice insurance; and

WHEREAS, Malpractice coverage for certain members has been revoked after hearings by the Board; therefore be it

Resolved, That no member's malpractice coverage shall be terminated until an alleged case is completely reviewed by an appropriate review committee of the component county medical society; and be it further

Resolved, That the decision of the component medical society's review committee shall take precedence over any decision by similar committees established for this particular purpose.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

In a discussion of this resolution, it should be noted that our insurance carrier is the only one in the country which allows termination decisions to be made by a medical society board. We believe that this Board always acts with extreme care, and that further, there is an appeal mechanism to the Council of the State Medical Society. We do not believe it to be in the best interests of the individual physician, nor of our professional liability program, that a further review be added at the county level. However, we urge that the Board notify the individual county society prior to final termination of a member's insurance. Parenthetically, it should be noted that termination rarely occurs; there were only approximately 9 cancellations in 1971. Your committee, therefore, recommends disapproval of this resolution.

The House, after discussion, voted not to adopt resolution 72-98.

Resolution 72-83, Per Capita Geographic Repre-

sentation of Members of Medical Society of the State of New York
Introduced by Medical Society of the County of Kings

WHEREAS, Democratic representation has been decided by the Supreme Court of the United States to mean that one man shall have one vote; therefore be it

Resolved, That the concept of one man, one vote prevail in the election of delegates to the American Medical Association by the Medical Society of the State of New York; and be it further

Resolved, That the House Committee on Constitution and Bylaws implement this concept by appropriate changes in the wording of the Constitution and Bylaws to include the following principles:

1. Election of American Medical Association delegates by each county medical society of such number of delegates as the number of its American Medical Association members may entitle it;
2. Where the number of American Medical Association members in any county medical society is not enough to entitle it to an American Medical Association delegate, such county society to join with other contiguous regional county societies in the election of American Medical Association delegates to which the region may be proportionately entitled; and
3. Provision that not more than one quarter of the number of American Medical Association delegates to which the State may be entitled be excluded from this method of election and be elected by the Medical Society of the State of New York House of Delegates on an "at-large" basis.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

After considerable discussion at the hearing and in executive session, your committee feels that this resolution is worthy of your favorable consideration, and, therefore, recommends approval of this resolution.

The House, after discussion, voted to approve resolution 72-83 in principle.

The House, after further discussion, then voted to refer resolution 72-83 to the House Committee on Constitution and Bylaws.

Resolution 72-89, The Concept of Direct Election and Accountability of Elected Delegates

Introduced by Onondaga County Medical Society

WHEREAS, There has been expressed in some areas of the State and at previous meetings of the House of Delegates a feeling that organized medicine is not always responsive to the individual practicing physician; and

WHEREAS, There is a fundamental responsiveness of elected delegates to their constituents; and

WHEREAS, There has been a steadily decreasing number of members to the American Medical Association and, therefore, representation in the American Medical Association's House of Delegates from this State; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York approve in principle the concept of direct election and accountability of the Councilors of the Medical Society of the State of New York and its delegates to the American Medical Association while preserving in so far as possible adequate representation from rural suburban and urban areas; and be it further

Resolved, That the Committee on Constitution and Bylaws prescribe the mechanism and the necessary Bylaw changes which implement this concept.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION, POLICIES, AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

After consideration, your committee recommends the following substitute resolution:

WHEREAS, There has been expressed in some areas of the State and at previous meetings of the House of Delegates a feeling that organized medicine is not always responsive to the individual practicing physician; and

WHEREAS, There is a fundamental responsiveness of elected delegates to their constituents; therefore be it

Resolved, That the Medical Society of the State of New York approve in principle that each district branch elect one councilor and that three councilors-at-large be elected by the House of Delegates at the annual meeting; and be it further

Resolved, That the Committee on Constitution and Bylaws prescribe the mechanism and the necessary changes in the Bylaws which implement this concept.

The House, after discussion, voted not to adopt the substitute resolution.

The House, after further discussion, voted to amend the original resolution 72-89 by deleting the second *Resolved* and substituting the following second *Resolved:*

Resolved, That this be referred to the Council for study and report back to the House of Delegates in 1973.

The House then voted to refer resolution 72-89 as amended to the Council for study and report back to the House in 1973.

Resolution 72-29, Improved Liaison with House Staff and Medical Students

Introduced by Westchester County Medical Society

WHEREAS, The county medical society is the acknowledged focal point of physician-membership participation by playing a key role in assisting its membership to be informed on vital issues; and

WHEREAS, The extent to which county medical societies are successful in obtaining membership participation will significantly determine the future of medical practice; and

WHEREAS, There is an urgent need to assure meaningful participation by younger physicians, especially at house staff level; therefore be it

Resolved, That the Medical Society of the State of New York urge its county medical societies to initiate the mechanism to permit interested house staff and medical students to participate meaningfully in county medical society programs and activities.

REPORT OF REFERENCE COMMITTEE ON ORGANIZA-

TION. POLICIES. AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-29.

REPORT OF REFERENCE COMMITTEE ON ORGANIZATION. POLICIES. AND LEGAL MATTERS: The following report was presented by Charles D. Sherman, Jr., M.D., chairman.

I would like to bring to the attention of the House that we have had some confusion about exactly how the Constitution and Bylaws can be changed and how it may be effected. Some resolutions are brought in without specific wording and with a request that they be referred to the House Committee on Constitution and Bylaws for exact wording and deliberation. I think that before next year, this matter should be clarified so that anyone bringing in a resolution knows exactly what to do. I move adoption of this report as a whole as amended.

The House voted to adopt the report of the reference committee as a whole as amended.

Public Health and Education

Commission on Public Health and Education

To the House of Delegates, Gentlemen:

Members of the Commission on Public Health and Education are:

Richard D. Eberle, M.D., *Chairman*	Onondaga
John D. States, M.D.	Monroe
Peter S. Battaglia, M.D.	Niagara
William Antopol, M.D.	New York
Kenneth B. Olson, M.D.	Albany
Charles E. Rogers, M.D.	Nassau
Charles A. Bertrand, M.D.	Westchester
Frank C. Maxon, M.D.	Albany
Marvin L. Bloom, M.D.	Erie
William A. Bauman, M.D.	New York
Irving G. Frohman, M.D.	Queens
Stephen M. Ayres, M.D.	New York
Milton Helpern, M.D.	New York
Samuel Wagreich, M.D.	Bronx
Charles Weller, M.D.	Westchester
Bruce E. Chamberlain, M.D.	Onondaga
Edward C. Hughes, M.D.	Onondaga
Ralph S. Emerson, M.D.	Nassau
Allison B. Landolt, M.D.	Westchester
Arthur H. Dube, M.D.	Onondaga
Edward J. Lorenze, III, M.D.	Westchester
Harry S. Lichtman, M.D.	Kings
Edward C. Hughes, M.D.	Onondaga
Hugh F. Leahy, M.D.	Albany

The Commission, composed of the chairmen of its component committees, held its meeting with the officials of the New York State Department of Health in Albany, on July 15, 1971. This was the first meeting of the Commission held since the appointment of your chairman who, in his opening remarks, welcomed the chairmen of the various committees comprising the Commission and their counterparts in the State Health Department. He stated that this annual meeting presented an opportunity to exchange ideas of mutual interest and concern to develop points of contact where further investigation and cooperation can be effected.

Hollis S. Ingraham, M.D., Commissioner of Health of the State of New York, observed:

> We have been working together for a good many years and this relationship has been very productive. In addition to the natural community of interest, the history of the last dozen years indicates that we are more and more dependent on one another. We have always recognized we do things in the Health Department through the practicing medical profession, and it seems as if our interdependence is going to be even greater due to the legislation adopted in the past year concerning such things as physicians' assistants and not-for-profit medical corporations. We are going to have to close ranks and work even more closely together in the years ahead. . . .Our biggest handicap is the limitation of funds available since many programs were rather seriously cut back this year, thereby restricting efforts on a local and statewide basis.

The following is a brief report of some of the activities of the committees within this commission:

Continuing Education. In September, 1970, an allday conference on Continuing Education was held at the Hospital for Special Surgery. A report of this meeting was published in the August 1 issue of the ***New York State Journal of Medicine.*** This meeting, as you will see in the report of the Committee on Continuing Education to the 1971 House of Delegates and the report to the House of Delegates of the committee's actions during 1970, commits the State Medical Society to a greater effort in continuing education. To that end there has been Council support for the new program.

On September 30, 1971, a meeting of representatives from the New York State Department of Health, medical school deans, Regional Medical Programs, State Medical Society, Interspecialty Committee, and two members of the committee as well as the chairman, Marvin L. Bloom, M.D., was held at the Hospital for Special Surgery, New York City. Robert Lee Patterson, Jr., M.D., surgeon-in-chief of the Hospital and a member of this committee, was the host at the meeting, as well as at the dinner following at the Union Club. At this meeting, the details of the formation of a new New York State Council on Continuing Medical Education were discussed. It was felt that such a Council should (1) be set up as soon as possible, (2) have equal representation from the various organizations involved, and (3) be funded through the Empire State Medical, Scientific and Educational Foundation.

Alcoholism and Drug Abuse. The Committee on Alcoholism and Drug Abuse cooperated with the State Health Department in the revision of the *Desk Reference on Drug Abuse,* which is now in its second edition. The committee also cooperated in the production of a movie prepared by the New York State Health Department, illustrating the management of actual drug abuse cases treated in the emergency room of Beth Israel Hospital. The narrated film, entitled "What Did You Take?," depicts patients with symptoms of overdoses and/or reactions to multiple drugs and shows a professional audience how to deal with patients with acute drug abuse symptoms.

This committee has also cooperated in a State-wide program for the education of physicians on drug abuse symptoms. The following statement by Donald C. Walker, M.D., of the New York State Department of Health, summarizes the Joint Drug Abuse Professional Education Program of the State Medical Society and the State Health Department:

> The Joint Drug Abuse Professional Education Program of the Department and the Medical Society of the State of New York was launched in September, 1970.
>
> The Department supplied honoraria for the instructors in this project while the State Medical Society paid their travel expenses. During the course of the year, more than 6,000 comprehensive training kits were distributed to those attending the sessions.
>
> The second phase of this professional education project will feature the presentation of the Department's film on the management of emergencies encountered in drug abuse, "What Did You Take?" Emphasis at first will be on the distribution of the film to the professional staffs of New York State hospitals. A knowledgeable physician will serve as a discussion leader for each showing. A comprehensive guideline has been prepared for these moderators, and a brief information sheet will be distributed to the audiences. Those viewing the film will be encouraged to use the Department's revised edition of its *Desk Reference on Drug Abuse* for further and more detailed review of diagnosis and treatment. The second edition of this *Reference* has now been mailed to all physicians and hospitals in New York State.

Aging and Nursing Homes. The Aging and Nursing Homes Committee is concerned with the conflict between the Federal and State guidelines for medical practice in nursing homes. As an example, the State Hospital Code requires a physician to visit once a month. Also, the Federal definition of skilled nursing needs has all but eliminated Medicare patients from nursing homes of the State. The periodic medical review of all patients in nursing homes and mental hospitals, as demanded in the *Federal Register,* February 15, 1971, is untenable, impractical, and impossible to implement. The Aging and Nursing Homes Committee's report presents the problems which permit only 2.5 per cent of New York State nursing home patients in Medicare category and 80 per cent in Medicaid category, leaving 17.5 per cent of patients paying their own way.

Cancer. The Cancer Committee asked for wide dissemination of the film on quackery prepared by the American Cancer Society entitled, "Journey Into Darkness." It has also sponsored a letter to all physicians in the State from the Commissioner of Health, and the president of the State Medical Society, urging physicians to take advantage of the value of occult blood in the stool for the diagnosis of cancer of the gastrointestinal tract. The committee is most anxious to have some kind of reporting system on cancer for New York City in order that Statewide cancer statistics can be obtained.

Data Processing in Medicine and Health Care Technology. The committees on Data Processing in Medicine and Health Care Technology have set up guidelines regarding confidentiality of medical information on computers and guidelines for the development of acceptable multiphasic health testing programs. Subjects related to medicine raised by these two committees resulted in the decision of the chairmen to have an all-day general session on computers in medicine, using the General Session's allotted time in the morning, and using the time for the Section on Data Processing in Medicine in the afternoon. These committees feel it is important that physicians become informed of the ramifications of the use of computers in the medical field.

Preventive Medicine. The Committee on Preventive Medicine sponsored a letter signed by the president of the State Medical Society and the Commissioner of Health regarding the epidemic of venereal disease. The letter included a discussion of modern treatment of gonorrhea and syphilis.

Health Manpower. The Health Manpower Committee became deeply involved in the recommendation of guidelines for physicians employing physician's assistants. Its report also discusses the resolutions the 1971 House of Delegates referred to it and made note of the Legislature's increase in aid to medical schools.

It became clear during the discussions of this committee that there is need for further communication between county medical societies, medical schools, and the prospective and actual students within a county area. Concerning physician recruitment for areas in need of a physician, there are grants by certain county legislatures within Section 610(a) of the Education Law, special regents scholarships for medical students who agree to practice in areas of shortage, and further assistance through new Federal funds, and the extension of the Health Professions Educational Assistance Act. These need much more publicity than has been previously given.

Accident and Injury Prevention. The Committee on Accident and Injury Prevention advocates the reduction of from 0.15 per cent to 0.10 per cent alcohol levels in the blood as indication for legal intoxication and 0.07 per cent as indication for legal impairment. Recent legislation reduces the level to 0.12 per cent for intoxication.

General. There is much information available to physicians in the reports of all the committees which make up the Commission on Public Health and Education. Only a few have been outlined briefly. It is recommended that these reports be read in detail by both members and nonmembers of the House of Delegates. As one can see from these reports, there has been much cooperation with the New York State Department of Health. The Commission is appreciative of the excellent assistance of Miss Dorothy Smith who, as usual, has been faithful and efficient in coordinating the affairs of the Commission.

Respectfully submitted
Richard D. Eberle, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH

AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman:

We are gratified to read the remarks of Hollis S. Ingraham, M.D., pointing out the necessity for close cooperation between the Medical Society of the State of New York and the Department of Health State of New York. This seems particularly important at this time when there appears to be a growing tendency toward establishing major policy changes by administrative directive.

The House voted to adopt this portion of the reference committee report.

Accident and Injury Prevention

To the House of Delegates, Gentlemen:

The members of the Committee on Accident and Injury Prevention are as follows:

John D. States, M.D., *Chairman*	Monroe
Harold Brandaleone, M.D.	New York
Francis J. Gilroy, M.D.	Broome
James E. Holmblad, M.D.	Schenectady
George Lim, M.D.	Oneida
Leslie Fisher, M.D.	Albany
Caldwell B. Esselstyn, M.D.	Albany

The committee met on February 15, in conjunction with the annual meeting of the State Medical Society. Caldwell B. Esselstyn, M.D., an invited guest, was present and has since become a member of the committee.

A total of 250 legally blind drivers are licensed in New York State because they have central vision, but are classified as blind because of a peripheral visual field of less than 20 degrees. An inquiry, which was approved by the Council of the Medical Society of the State of New York, was made of the Commissioner of Motor Vehicles concerning the accident and violation rates of these drivers. It appears that a requirement on peripheral vision should be added to the driver-licensure tests.

The committee concurred with a recommendation of the Medical Advisory Board that the waiting period for relicensing following successful treatment of patients with seizure disorders be reduced to one year. The State Medical Society subsequently approved this recommendation.

The committee reviewed the recommendation of the Medical Advisory Board concerning suspension of licenses of patients who have had myocardial infarctions and recommended that passenger-car operators be suspended for two months and bus drivers for six months, with the exception of school-bus drivers who could be allowed to drive after two months. These recommendations should serve only as guidelines for the New York State Department of Motor Vehicles and should not become mandatory rules because of the additional administrative expense. Furthermore, this guideline appears to be unnecessary because most patients convalesce for at least two months and so are not considered to be a hazard.

Alcohol control programs initiated in New York State with Federal funding were reviewed and will be watched with interest. The Medical Advisory Board's recommendation that statutory test levels on blood, urine, and breath be reduced to 0.10 to be considered legal intoxication and 0.07 for legal impairment was strongly supported and subsequently approved by the Council of the State Society. Present State law permits only one chemical test to be made on a given sample. The committee recommended that multiple drug tests be permitted on blood, urine, or breath samples to identify intoxication with drugs other than alcohol.

Emergency health services committees are being established throughout New York State under the sponsorship of the Department of Health of the State of New York under the direction of Dr. Esselstyn. These committees will coordinate the emergency health services in local communities and hopefully will upgrade the services and permit statewide data collection. Federal matching funds support these committees. New York State has trained 4,600 emergency medical technologists and hopes to have 10,000 trained by the spring of 1972. This program is being supported by funds from the U.S. Department of Transportation. Standards for ambulance services hopefully will be extended for presently controlled commercial ambulance services to volunteer services and municipally operated services. Hospitals are being encouraged to resume ambulance services. Blue Cross funding arrangements consider this to be a legitimate hospital expense. Certification of mobile cardiac resuscitation units may be necessary, but, as yet, no certification program exists. The Department of Health of the State of New York is interested in developing standards for personnel and equipment.

Use of helicopters for the transportation of automobile accident victims has been closely examined by the Department of Health of the State of New York for the year 1970. An experimental eight-day test was conducted in Albany, and only one helicopter run during this period proved to be superior to ground emergency transportation. The result of the State test is that helicopters are extremely expensive and are not more efficient nor faster than ground transportation except in special situations. They have proved to be useful in secondary transfers between medical facilities and for the delivery of human organs for transplantation surgery.

The committee reviewed the personal experiences of the members and concurred with the results of the New York State study. For special services, helicopters are available from the New York State Police; the U.S. Air Force at Griffiths Air Force Base, Rome, New York; the New York State Conservation Service; Civil Defense; Nassau County Police; and Plattsburgh and Schenectady National Guard Airports. A commercial helicopter service is reported to be under development at the old Roosevelt racetrack on Long Island and may be operational by July 1, 1971.

Hospitals with more than 100 beds are now required by State law passed in 1966 to maintain emergency departments. Many have minimal facilities and would like to discontinue their emergency departments completely. Classification of emergency departments according to their medical capabilities appears to be desirable and necessary. The committee believes that this can best be done by national organizations, such as the American College of Surgeons.

Snowmobile accidents have increased at an alarming rate, but licensure and operator control, which began January 1, 1971, appear increasingly to be the responsibility of snowmobile operators. Improved means of identification and patrolling appears to be necessary.

Respectfully submitted,
John D. States, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The report of this committee was reviewed and accepted. The reference committee wishes to emphasize the following recommendations:

1. Addition of a requirement for peripheral vision to driver licensure tests.
2. Extension of State law to permit multiple drug tests on blood, urine, or breath samples to identify intoxication with drugs other than alcohol.
3. Classification of emergency departments in hospitals according to their medical capabilities, preferably by interested national medical organizations.

The House voted to adopt this portion of the reference committee report.

Aging and Nursing Homes

To the House of Delegates, Gentlemen:

The members of the Committee on Aging and Nursing Homes are as follows:

Peter S. Battaglia, M.D., *Chairman*	Niagara
Marcelle T. Bernard, M.D.	Bronx
Edward J. Lorenze, III, M.D.	Westchester
Morris B. Miller, M.D.	Westchester
Leon M. Rothman, M.D.	Kings
George M. Warner, M.D., *Adviser*	Albany

The committee considered important issues regarding long-term care needs of the elderly, especially those requiring institutional care, and the roles of physicians and organized medicine in relation thereto. These include the following:

1. *Issue:* What are the roles of physicians in providing medical care and in supervising the care furnished by other provider professions to sick elderly people in nursing homes and health related facilities?

Response: The committee feels that each physician has ultimate responsibility and accountability for the medical and medically related care of each of his patients who is in an institution. Each physician should carry out his functions ethically, responsibly, to the best of his ability, and within the framework of reasonable standards and regulations. Should he be dissatisfied with governmental, institutional, or other criteria for physician services, he should express his views through his professional organization and other appropriate avenues, continuing at the same time to carry out his defined roles in behalf of each of his institutionalized patients.

The care furnished in institutions by other provider professions should continue to be furnished on request or with consent of each patient's personal or alternate physician-of-record, and such care should be provided under his direction or supervision. The kind and degree of such direction and supervision should be determined by the medical policies of each facility and the circumstances of each such service.

2. *Issue:* Federal Title 19 regulations on "skilled nursing homes" are a threat to the continuing certification of 150 nursing homes having 5,500 beds as Medicaid providers as of January 1, 1972. State agencies and the Governor have requested modifications of Federal regulations to extend currently tight time deadlines and related inflexibilities. What is the attitude of the State Medical Society on this matter?

Response: The committee recognizes the severe and continuing shortages of nursing-home beds for the care of many patients, including large numbers of Medicaid beneficiaries, who need this type of care. We also recognize the even more critical shortages of health-related facilities and other alternates to inpatient (inresident) care in health institutions (alternates such as home health services and protective environment housing) and the needs for achieving an appropriate balance among health care facilities and services in each community. Accordingly, and without going into technical details of Federal regulations and of Federal-State relations, we recommend support of amended requirements that will permit the continued certification of nursing homes whose services continue to be needed in each community, so long as each facility provides services in accordance with standards and as safe a setting as is reasonable and practical.

3. *Issue:* Periodic medical review and medical inspection regulations under Medicaid require that peer review, quality of care, utilization review, and referral and follow-up functions be performed at least once yearly or more often by medical review teams on behalf of each Medicaid beneficiary in every skilled nursing home and for each Medicaid beneficiary sixty-five years of age and older in each psychiatric hospital in New York State. What are the views of the medical profession regarding these requirements?

Response: The committee views these regulations as requiring activities that are: largely unnecessary; duplicative of other functions now being performed by State agencies, health care facilities, and other parties; much too costly in terms of presumed benefits; extremely burdensome in terms of manpower resources; and designed to achieve goals that can be reached through other more practical and feasible ways. A resolution has been forwarded by the committee on this subject.

4. *Issue:* Report G of the Council on Medical Services of the American Medical Association gives the AMA's position regarding the White House Conference on Aging. Does the committee concur with this policy statement as adopted by the AMA House of Delegates at its 1971 annual convention?

Response: The committee concurs with and suggests that AMA Report G be a guide for the activities and discussions by physicians from New York State who will participate in the November White House Conference on Aging.

5. *Issue:* The Social Security Administration in December, 1970, instructed its Part B fiscal intermediaries to exercise special care in making payments under Part B to physicians who visit and care for Medicare beneficiaries in nursing homes. When such patients are not otherwise receiving Part A benefits for care in extended care facilities, the physician must document his reasons for visiting a patient more often than once monthly or for seeing only one patient during a visit to a nursing home. The effect, regardless of intent, seems to have been to cause additional paper work, other annoyances, and some hostility by physicians toward the third-party payment agencies and the Federal government. What are the facts and the views of organized medicine in New York State?

Response: Although there are impressions that these Medicare policies are having deleterious effects, the facts are not sufficient for the committee to express an informed opinion. The committee recommended that approval be sought for a brief questionnaire of county medical societies on this matter.

Other topics considered and discussed for information purposes included: utilization review and its relation to long-term care services, community care of mentally impaired elderly people, needs for improving clinical and related skills of physicians who care for elderly and chronically ill persons, definition of "medical necessity" among elderly people in nursing homes and other institutions compared with medical necessity in younger patients, and miscellaneous subjects.

Respectfully submitted,
Peter S. Battaglia, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee has considered and heard discussion on this entire report. We wish to call particular attention to the necessity for reconciling the conflict between Federal and State guidelines. The reference committee feels this is a vital issue and deserves the diligent attention being given it by the committee.

The House voted to adopt this portion of the reference committee report.

Alcoholism and Drug Abuse

To the House of Delegates, Gentlemen:

The members of the Committee on Alcoholism and Drug Abuse are as follows:

William Antopol, M.D., *Chairman*	New York
Stanley E. Gitlow, M.D.	New York
Susan E. Hanson, M.D.	Monroe
William L. Holt, Jr., M.D.	Albany
Allison B. Landolt, M.D.	Westchester
Francis J. Loperfido, M.D.	Bronx
Stephen Nordlicht, M.D.	New York
Joseph B. Robinson, M.D., *Adviser*	Albany
Donald C. Walker, M.D., *Adviser*	Albany

Norman S. Moore, M.D., director, Division of Scientific Activities, summarized the report regarding the role of this committee in the drug abuse program which was presented to the Council of the Medical Society of the State of New York on March 25. This report outlined the policies set up to combat the problem of drug abuse which have been approved by representatives of the State Departments of Education, Health, and Mental Hygiene; Narcotic Addiction Control Commission; and the Division for Youth.

Dr. Moore also outlined a joint venture of the Health Department of New York State and the State Medical Society on the subject of education of physicians regarding drug abuse. For this purpose Hollis S. Ingraham, M.D., Commissioner of Health of the State of New York, appointed an ad hoc committee consisting of Robert P. Whalen, M.D.; Joseph B. Robinson, M.D.; Franklyn B. Amos, M.D.; James J. Quinlivan, M.D.; Donald C. Walker, M.D.; John E. Gainor, M.D.; Nathaniel C. Webster, M.D.; Leonard L. Heimoff, M.D.; Henry Brill, M.D.; Harold H. Borgstedt, M.D.; William J. Alsever, M.D.; Norman S. Moore, M.D.; and William Antopol, M.D. A special Committee on Drug Abuse was designated by the Public Health Council, consisting of Norman S. Moore, M.D.; Herman E. Hilleboe, M.D.; Kenneth A. Riland, O.D.; and Howard A. Rusk, M.D. Also appointed was an ad hoc committee on Professional Education in Drug Abuse, consisting of William D. Alsever, M.D.; William Antopol, M.D.; Harold H. Borgstedt, M.D.; Henry Brill, M.D.; John E. Gainor, M.D.; Leonard L. Heimoff, M.D.; and Nathaniel C. Webster, M.D.

Donald C. Walker, M.D., of the Office of Medical Manpower, Department of Health of the State of New York, with the assistance of the committees mentioned, compiled a *Desk Reference on Drug Abuse* which has been sent to every physician in New York State to assist them in recognizing and treating various aspects of the drug abuse problem. It is expected that within the next few months a second and revised edition of this *Desk Reference* will be distributed to physicians. In addition to the *Desk Reference*, Dr. Walker also directed the production of a film entitled "What Did You Take? (The Drug Abuse Emergency)." The scenes are functional and kaleidoscopic, having been taken of actual patients in the emergency room of a hospital as well as in the physician's office. Besides demonstrating diagnostic criteria and methods of treatment of the effects of drug abuse, this film can serve as an excellent broad-based demonstration for paramedical personnel. It might be of special value to show it to high-school and college students since these groups will be impressed by and comprehend the ludicrous and inappropriate reaction of persons while under the influence of the various drugs, an actuality which they could scarcely imagine without viewing the film, and this could serve to discourage experimentation with drugs.

Your chairman wishes to take this opportunity to thank the members of this committee and to commend Dr. Moore for his assistance and advice as well as the excellent performance of his ad hoc committee, and Dr. Walker for his efforts in the collation of the outstanding desk reference and in the coordination of the multipurpose film. Thanks are also due to members of the ad hoc committee for their collaborative efforts in these activities. The great strides which they have made coincide precisely with the goals and functions of this committee.

Legal right of physicians to treat heroin addicts in private practice. Since the size of the addict population overwhelmingly exceeds the available hospital beds, the committee agreed unanimously on the urgent need for administering narcotics to patients on an ambulatory basis and attempting to detoxify them under similar conditions. The method chosen must be sufficiently flexible to meet the patient's needs and comfort while still maintaining adequate medical control to eliminate the desire for and possible use of additional narcotic drugs obtained surreptitiously. The Medical Society of the State of New York is on record that every effort should be made, through proper channels, to remove the legal restrictions which prevent effective treatment of addicts by physicians in their private offices, clinics, and hospitals. If private physicians were to treat addicts, it would be effective if such physicians were associated with and had the "back-up" support of an effective ongoing program with its available multidisciplinary ancillary services. In fact, the physician's office and his addict patients can serve as a branch unit of the central parent program. This association will also facilitate physician cross-coverage.

Immediate availability of beds for detoxification. Despite considerable controversy concerning medical value of detoxification based on the high rate of recidivism, it does reduce, albeit temporarily, the increasing daily dose requirements of the addict. Thus, for indeterminate intermittent periods after detoxification, the addict will be sheltered from the wasteland of narcotic activity. During this time he will not be subject to so intense and desperate a drive to obtain the excessive amounts of money to pay for his enormous predetoxification narcotic requirements. In addition, the period during and after detoxification can serve as a "stopgap" until the patient is accepted in an effective therapeutic program.

If methods were available for more rapid detoxification—these are now under investigation and probably will be successful—the absolute number of patients receiving the benefits of inhospital treatment for addiction could increase to at least double or triple the number without the need for acquiring additional hospital beds and the increased cost thereof.

Permission for specially trained physicians to treat addicts in their offices. The committee discussed a bill for certification of physicians to treat narcotic addicts and administer narcotic drugs, which was then being considered by the New York State Legislature. This bill would direct the Commissioner of Mental Hygiene to formulate rules and regulations for the certification of physicians competent to treat narcotic addicts; and, in accordance therewith, to certify physicians who would have the right to prescribe and administer narcotic drugs. If the physician were associated with an acceptable ongoing program, the effectiveness and safety of such a program would be potentiated.

It was pointed out that there are legal obstacles to screening the urine of high-risk populations for narcotics.

Examination of urine for screening of high-risk populations for narcotics and other drugs would be helpful in seeking out addicts. However, besides invasion of privacy, it was indicated that obtaining urine specimens in the course of routine physical examinations, when there is no suspicion of narcotic use, would be fraught with legal obstacles in the event such analyses revealed the presence of a drug, since the results of the contemplated procedures would be subject to "turnover to the authorities." In addition, drugs administered legally for therapeutic purposes might confuse the legal significance of the chemical test findings. The results in all likelihood would be inadmissible as evidence since this would be a violation of the Fourth Amendment which protects against unreasonable search and seizure. In addition, the courts zealously protect individual right and frown on "roundabout methods" on the part of officials. The question of the legal right and civil liberties of the individual person was the subject of much discussion by the committee. Since this is a committee to study drug abuse and since this information could provide fruitful and meaningful demographic data relating to the incidence of the narcotic abuse in various populations as well as significant secondary relationships to the non-narcotic population, we must look to our colleagues in the legal profession for their counsel and expertise to provide us with a means to obtain these data and yet not impinge on individual civil rights.

With regard to school children, the Board of Education could be required to mandate semiannual physical examinations of each pupil by a State-licensed physician, including tests for drug abuse and addiction, with notification to the parents and the Health Department if further medical assistance is required. The limitations already mentioned are to be considered in relation to this effort. The legal problem will be even more difficult in the case of children because the law is especially solicitous of minors, even when parental permission is obtained.

Change of classification of addiction from crime to illness. It is perfectly clear that all efforts to prevent or treat narcotic addiction have had little impact or have failed. Inherent hazards of narcotic addiction were well recognized long before the Harrison Narcotic Act was passed in 1914. Despite the Harrison Act, the number of "hard drug" addicts and the medical case load have risen steadily for over half a century, at a rate far surpassing the population explosion. It is obvious that this legislation has been a failure. Regardless of what collateral inferences may be drawn, narcotic activity still maintains the whip hand. The fundamental and possibly chilling conclusion is that our present guides, methods, and remedies, with possibly a single exception, are unproductive and ineffective. Treatment from the medical point of view has greater flexibility. As better programs appear, others which are not so effective fade out.

In view of this, perspectives of the narcotic problem must be reassessed and critically altered, attacking addiction not from the facade of crime primarily as does the Harrison Act which has a fixed perspective, but rather as an illness requiring medical care which has greater flexibility. The law enforcement agencies should be oriented toward preventing entry of narcotics into the nation and its distribution throughout the 50 states. In this fashion the legal and medical functions, which presently are at cross purposes with therapeutic efforts, will be nonexistent, thus eliminating the barrier between both these disciplines.

The efforts of physicians should be no less ambitious than those of the malevolent persons bent on illegally maintaining this human problem. As a last resort, in the face of hopelessness and failure, a wide avenue for medical therapeutic action should be opened.

This position should not be construed to reflect perjoratively or maliciously on the law enforcement agencies. Theirs is a most difficult position; they have incurred some unjust criticism because their activity is mission oriented requiring enforcement to the letter of the law just as it is written and without the slightest deviation. In addition, they are expected to pursue this function with obviously limited budget and manpower. There is no certainty, even with limitless funds, that this malady can be aborted—short of total interruption of the international illicit trade in narcotics or by eliminating the tolerance and dependency properties of the narcotic drugs. I am sympathetic with the law enforcement staff, but their assigned task is an impossible one, at least in the light of present knowledge and conditions.

Proposed legislation for amendment to Public Health Law concerning reclassification of marihuana. Abuse of "hard drugs," such as heroin, and the use of marihuana pose two separate and distinct entities, problems which should not be treated identically. The former is a serious threat to society as well as to health; the latter has a questionable and as yet undetermined status. In view of our lack of knowledge relative to marihuana, the hazard of permitting its free and open use is great, at least for the present. Lacunae in our knowledge are vast; pertinent and serious questions relative to its toxic effects remain unanswered to such an extent that it would not be prudent to take a position on any of the questions now before the public forum without submitting marihuana to considerably more scientific evaluation.

One premise is clear; marihuana has no therapeutic use in clinical medicine. Any material of this class should, above all others, undergo at least the same rigid testing required of any useful drug intended for human use. The fact that it is not a legal drug should not exempt it from the precautionary methods required for determining potential toxicity in a drug which is legally sanctioned. From an ecologic point of view, because of its burgeoning use, the lack of such clearance for safety might open a Pandora's box. The matter of safety has highest priority and certainly must be decided before marihuana receives "medical blessing." Even with a therapeutic drug of known benefit, assumption of safety is never justified. There are instances in which apparently innocuous substances were later found to be responsible for disastrous effects. The development of retrolental fibroplasia and blindness after excessive oxygen inhalation in premature infants is an example of unexpected peril due to a ubiquitous substance. The recent tragedy of thalidomide also taught us that a drug which was essentially harmless to most persons could produce deformities in a particularly vulnerable population. Neither eagerness nor inertia, neither the magnitude of the undertaking nor its cost, should be permitted to deter appropriate detailed scientific investigations.

It has become clear that the marihuana which is marketed as "grass" varies in potency from batch to batch, reflecting its delta-4-tetrahydrocannabinol content. Until recently this active principle was not available for study, but at present a large number of ongoing investigations indicate that the substance is not without harmful and even dangerous effects. In fact, at this point reassessment of older opinions is necessary because the substance hitherto was considered to be of a nonthreatening nature.

I am sorry to circumvent or even avoid the question to which everyone is seeking an answer. The arguments for and against the use of marihuana are loud and long because we do not have the basic facts. Simplistic judgments often perpetuate themselves even though they are unreal and incorrect. Any law which might now be created would not have a scientific basis for either acceptance or for enforcibility.

The committee members discussed the numerous poorly supervised addiction treatment centers which have mushroomed throughout the State and which provide less than adequate and proper treatment. The methods of coping with these must await the decision of the Department of Health of the State of New York which already has this problem under consideration. (Since the last meeting of our committee the largest of these "treatment" centers has been closed.)

In last year's report we stressed the need for simultaneously conducting basic research on the mechanisms involved in drug addiction. This situation must again be emphasized. With the rapidly increasing addict population, the point is rapidly approaching when we will be unable to cope with the sheer numbers requiring treatment. This simple fact indicates that the problem of addiction cries out for a cure rather than the varieties of symptomatic treatment. It is bad enough that it costs more to treat than to cure; even our methods of therapy are being questioned at all levels. At present we can only offer temporary respite from the rough waves. Without seeming overenthusiastic, I am pleased to report that the results of a number of promising investigations relative to the deletion of tolerance of and dependency on narcotic drugs have appeared in the recent literature. In the light of present knowledge we cannot offer a cure but can only help the addict to live with his ailment. Until the time when the riddle of tolerance and addiction is solved, we can only employ the currently acceptable modes of therapy, which of course cannot substitute for a cure.

Respectfully submitted,
William Antopol, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

We note with regret the lack of any reference to the problem of alcoholism. Your reference committee suggests that this committee be split into two separate autonomous parts, one on alcoholism and the other on drug abuse.

The reference committee notes that this committee has cooperated with the New York State Department of Health in the revision of the *Desk Reference on Drug Abuse*, and in the production of a movie, "What Did You Take."

The recommended change in the classification of addiction from crime to illness is noted with approval.

The House voted to adopt this portion of the reference committee report.

Audio-Visual Aids

To the House of Delegates, Gentlemen

The members of the Committee on Audio-Visual Aids are as follows:

Kenneth B. Olson, M.D., *Chairman*	Albany
Wilbur M. Dixon, M.D.	Broome
James J. Quinlivan, M.D.	Albany

The committee has been fairly active during the year July 1, 1970, through June 30, 1971. Because of budget restrictions few new films have been added to the Film Library. Any member of the Medical Society of the State of New York who has a film, or knows of one, he feels should be included in the film library, is asked to write to the committee chairman. The film will be reviewed by the committee and depending on the review and the availability of funds, the film will be included in the Film Library of the Department of Health of the State of New York.

There are a number of film cassettes available which fit the Mark IV projector. Should there be sufficient demand, it is possible that voluntary societies, such as the

American Cancer Society and the American Heart Association, would make film cassettes from motion picture films.

The following information will aid in the evaluation of the committee's activity in the last year: Total number of films shipped from May 1, 1970, to April 30, 1971, was 29,974; showings (reported) 62,520; and attendance (reported) 1,830,262.

There has been increased usage by private physicians and medical schools. From May 1, 1970, to April 30, 1971, 16 new medical films were added to the library. Because of budget restrictions, there is relatively little chance for expansion of the film program or for purchase of new films. There has been necessary reduction in the field of exploration of the use of films.

It is estimated that 90 per cent of the films shown at the film exhibit at the annual State Medical Society's convention are already incorporated in the film library.

The committee wishes to express its appreciation to Joseph Avonovich, supervisor of the film library, who truly keeps the professional and public film medical library in operation at the Department of Health of the State of New York. Without his devoted services, the film library would not function adequately.

Respectfully submitted
Kenneth B. Olson, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

This report was read with interest.

The House voted to adopt this portion of the reference committee report.

Cancer

To the House of Delegates, Gentlemen:

The members of the Committee on Cancer are as follows:

Charles E. Rogers, M.D., *Chairman*	Nassau
Daniel Burdick, M.D.	Onondaga
Richard G. Cooper, M.D.	Erie
John W. Hirshfeld, M.D.	Tompkins
Richard H. Lange, M.D.	Schenectady
Daniel G. Miller, M.D.	New York
Arthur A. Stein, M.D.	Albany
Herbert Volk, M.D.	Bronx
Sidney L. Arje, M.D., *Adviser*	New York
Peter Greenwald, M.D., *Adviser*	Albany
Walter T. Murphy, M.D., *Adviser*	Erie
Guy F. Robbins, M.D., *Adviser*	New York
Charles D. Sherman, Jr., M.D., *Adviser*	Monroe

In an effort to press forward the program begun by the previous chairman, Charles D. Sherman, Jr., M.D., as well as to implement the work of Roald N. Grant, M.D., the committee focused its attention on the cancer quackery problem in New York State. Richard H. Lange, M.D., has done a splendid job in preparing a source-brochure on various aspects of quackery. In addition, we hope that next year our Legislature will enact a law equal to the California law. A copy of a model Cancer Remedy Act, prepared by the Medical Affairs Department of the American Cancer Society, as well as a report by Louis F. Saylor, M.D., director of the California State Department of Health, concerning ten years' experience with the California law, was studied. The committee seeks the help of all members of the Society in securing the presentation and passage of this legislation.

A cooperative project is underway with the American Cancer Society to further educate both the professional and nonprofessional citizens of New York State concerning the magnitude and importance of the quackery problem. The Council of the State Medical Society requested that the American Cancer Society's film, "Journey Into Darkness," be given wide distribution; the committee sent a memorandum to presidents and chairmen of cancer committees of county medical societies asking them to call this film to the attention of their members. A list of the Divisions of the American Cancer Society which have this film for distribution (with addresses and telephone numbers) has also been sent to each county society.

At the annual meeting of the State Medical Society, the committee cosponsored with the New York State Interagency Council on Critical Health Problems an antismoking exhibit. It was felt that the time and money spent on the booth did not produce the desired yield. This was not due to lack of effort on the part of the presenters, but rather because of lack of enthusiasm by the viewers.

Action was taken on three resolutions originated and sponsored by this committee and passed by the House of Delegates last February. In summary these were: (1) the broadening of the age limits for the Papanicolaou smear requirements to include all female adults admitted to hospitals where clinically indicated and the lowering of the two-year interval to one year (referred to the Commissioner of Health); (2) the encouragement of physicians in New York State to use routine testing for occult blood as a screening procedure, (a letter to the membership on this is planned); and (3) the introduction of a resolution concerning quackery, including both education concerning it and legislation against it (referred to the Committee on State Legislation).

The committee has continued to work closely with the New York State Cancer Programs Association and has received outstanding support for its projects from the organization. The committee views membership in this organization as highly desirable for those physicians of the State who have a special interest in cancer.

This committee wishes to acknowledge the fine cooperation afforded it by the New York State Department of Health, under Hollis S. Ingraham, M.D., Commissioner, and particularly the excellent assistance and advice from Peter Greenwald, M.D., and the various members of the Bureau of Cancer Control.

Of grave concern to the committee is the fact that even better data concerning cancer could be made available if New York City were included in the law mandating that cancer is a reportable disease to the New York State Health Department.

A copy of Public Health Law 2401–04, and an excerpt from a 1939 legislative document have been studied. In essence, our State Health Department is held back from doing the superb job it is capable of doing by lack of information concerning about 45 per cent of the State's population suffering from cancer.

The committee asked the Commission on Public Health and Education to give all possible aid and support to efforts to amend the law to include New York City with respect to reporting of cancer cases.

The addition in the peer review mechanism of specific screening of charts of patients with cancer diagnoses is considered laudable and necessary by the committee. This could be accomplished by appointing persons especially interested and knowledgeable in the field of cancer to a peer review committee all the way from the hospital to the State level. Such reviews would serve to disclose shortcomings in the treatment of patients with cancer and, hopefully, to improve their care.

The committee continues its interest in improving the radiation therapy conditions, in carcinogens in food and other consumer products, and in implementing the Guidelines for Cancer Care, the so-called Cole Commission Report.

Respectfully submitted,
Charles E. Rogers, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee strongly endorses the recommendation of the Cancer Committee to give all possible aid and support to efforts to amend the State Law to include New York City with respect to reporting of cancer cases.

The House voted to adopt this portion of the reference committee report.

Cardiovascular Disease

To the House of Delegates, Gentlemen:

The members of the Committee on Cardiovascular Disease are as follows:

Charles A. Bertrand, M.D., *Chairman*	Westchester
Joseph T. Doyle, M.D.	Albany
Francis L. Giknis, M.D.	Schenectady
Abraham Jezer, M.D.	Bronx
Gabriel P. Seley, M.D.	New York

As a follow up to a report given three years ago regarding the use of telephone conferences, we should like to state that we have successfully continued to use this type of conference set up. This is convenient for a committee of six members, although it might be awkward for a larger committee. A telephone conference has the advantages of excellent attendance, lack of travel on the part of the committee members, reduced cost, and the recording of excellent minutes.

At the recent meeting of the committee in March, much time was spent discussing a report in a newspaper about open-heart surgery. Actually, one of the heart surgeons objected to this article and requested the State Medical Society to support his position. However, about five months elapsed before a final decision was made; although the committee met three weeks after receiving the request, a report had to be presented to the Executive Committee and to the Council. It is the opinion of this committee that a mechanism should be established whereby queries such as this may be handled within several days.

The article, taken from a report in a medical journal concerning the use of filters in open-heart surgery, grossly distorted one point in stating that air embolism and resulting brain damage was a sometimes fatal complication in approximately 50 per cent of these surgical procedures. After this article was published, many patients cancelled their scheduled surgical procedures because of the possible occurrence of brain damage. The committee was informed on June 8, 1971, that the Council had approved the following:

> It is the policy of the State Medical Society that the president and the executive-vice-president are the only two people authorized to speak for the Society; when a reply is necessary, specialists in the field will be selected (as they have been in the past) to provide information; and the Society, as a rule, does not get involved in clinical medicine or disputes involving two different viewpoints concerning scientific matters.

It is possible, however, for physicians, as individuals to refute statements on matters of a scientific or clinical nature.

Respectfully submitted,
Charles F. Bertrand, M.D., Chairman

REPORT OF THE REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The report of this committee is noted with interest.

The House voted to adopt this portion of the reference committee report.

Chronic Pulmonary Diseases

To the House of Delegates, Gentlemen:

The members of the Committee on Chronic Pulmonary Diseases are as follows:

Frank C. Maxon, Jr., M.D.	Albany
Henry J. Brock, M.D.	Buffalo
Joseph J. Fusco, M.D.	Columbia
Gabriel P. Seley, M.D.	New York
Marshall Henry Williams, Jr., M.D.	Bronx

The members of this committee have conferred by correspondence and telephone, and this report summarizes the consensus of the committee on chronic pulmonary diseases.

Tuberculosis hospitals. The closing of tuberculosis hospitals in the State of New York has required a reorganization of the current regulations pertaining to care of tuberculosis in the general hospital and consideration of regulations under which patients with tuberculosis may be treated in extended care facilities. This committee previously requested that representatives from the State Medical Society be included on an advisory committee to evaluate this problem within the Department of Health of New York State. Hollis S. Ingraham, M.D., Commissioner of Health of the State of New York, has appointed the chairman of the Committee on Chronic Pulmonary Diseases to serve as ex officio member of such a group.

The chairman will perform his duties in this capacity to the best of his ability and confer with his committee members when necessary.

This committee feels that specific attention must be given to the types of cases which will be eligible for care in general hospitals as well as those which will be acceptable for extended care facilities. Development of well-organized outpatient facilities and staffing must be a corollary consideration. Broad recommendations in regard to prophylaxis also must be considered and such services must be made generally available to all groups known to be a hazard of tuberculous activation.

Physician training. Training of physicians in pulmonary disease is strengthened through the efforts of the local teaching institutions and the Tuberculosis and Respiratory Disease Association in the Buffalo area. A program in the Albany area sponsored by the Regional Medical Program and the Tuberculosis and Respiratory Disease Association was successful last spring. At the present time, a course in pulmonary physiology is in the planning stage for the New York City area, under the cosponsorship of the New York State Tuberculosis and Respiratory Disease Association, the New York Trudeau Society, and the New York State Chapter of the College of Chest Physicians. Further efforts in this direction will be encouraged. It is hoped that suggestions may come from the Committee on Continuing (Postgraduate) Education of the State Medical Society to assist with the future planning in this direction.

Restrictions in radiologic procedures. Last year the House of Delegates of the State Medical Society decided that the problem of chest specialists being restricted from participating in radiologic diagnostic procedures for chest diseases could best be handled on a local basis. This committee would like to reemphasize the possibility that this might become a problem and would recommend that the county medical society, in areas where such restriction may occur, give support to qualified specialists in pulmonary diseases so that they may have access to all aspects of radiologic diagnostic procedures of the chest.

The Medical Society of the State of New York should give all-out support to programs to reduce air pollution as previously recommended. The health hazards of smoking cigarets must constantly be brought to the attention of the medical profession as well as to the general public. Any support to the tuberculosis and respiratory disease associations in this regard should be extended. One member of this committee feels that a concerted effort should be made to encourage all members of the State Medical Society to abstain from smoking cigarets.

Respectfully submitted,
Frank C. Maxon, Jr., M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

Your reference committee accepts this report with great interest.

The House voted to adopt this portion of the reference committee report.

Continuing (Postgraduate) Education

To the House of Delegates, Gentlemen:

The members of the Committee on Continuing (Postgraduate) Education are as follows:

Marvin L. Bloom, M.D., *Chairman*	Erie
I. Jay Brightman, M.D.	New York
William C. Felch, M.D.	Westchester
Phillip I. Levitan, M.D.	Suffolk
Ward L. Oliver, M.D.	Albany
Malcolm I. Page, M.D.	Otsego
Robert Lee Patterson, Jr., M.D.	New York
Theodore J. Prowda, M.D.	Oneida
Charles D. Sherman, Jr., M.D.	Monroe
M. Theodore Tanenhaus, M.D.	Kings
Franklyn B. Amos, M.D., *Adviser*	Albany
Donald C. Walker, M.D., *Adviser*	Albany

During the past year, continuing medical education has come into focus as a key to continuing control of the medical profession by the medical profession.

There are powerful forces at work which would take over regulatory control of medicine. Within the past month, a *New England Journal of Medicine* editorial advocated the acceptance of PSRO (Professional Standards Review Organizations) which would have all records of ambulatory and hospital care monitored by nonprofessional hands. At the Federal level, the PSRO concept has received serious consideration. At the State level, the Department of Education has this year promoted legislation to mandate continuing education for all physicians.

This committee had been concerned simply with the mission to improve the postgraduate educational process. But in recent months, the committee has had to confront these external developments, pointing out that:

1. The present continuing education is obsolete;
2. To mandate continuing education would obstruct the profession by enforcing an obsolete educational process;
3. PSRO would not be competent to monitor medical records;
4. The need for PSRO would be obviated by installing peer review, differentiated according to specialties and integrated with an improved continuing education system;
5. The way to improve continuing education would be to invoke a new Statewide system, supported by the major sponsors of postgraduate education, and sponsoring participants would include: (*a*) the medical society, (*b*) the medical schools, (*c*) the regional medical programs, (*d*) the differentiated specialty societies, and (*e*) the New York State Department of Health.

Representatives of these groups would share a coordinative function in a central council. All physicians would affiliate with a Statewide network of learning-resource centers at hospitals.

The committee held a meeting in September, 1970, with representatives of the Statewide medical school deans, the regional medical programs, the professional specialty societies, and the New York State Department of Health at the Hospital for Special Surgery, New York City, whose chief of service is Robert Lee Patterson, Jr., M.D., a distinguished member of our committee. An edited transcript of the proceedings, which were largely extemporaneous, appeared in the August 1, 1971, issue of the ***New York State Journal of Medicine.***

It was the consensus that the State Medical Society should take the initiative in invoking a new Statewide system for continuing education which would involve full and equal participation on the part of all five groups represented. It was decided to invite three representatives from each group to a meeting in 1971 to see if operations of a central council for the Statewide system could be initiated. At this invitation conference in September, 1971, it was decided that the central council should begin work. Thereafter, a Statewide network of learning-resource centers at hospitals will be implemented, for affiliation with all practicing physicians, for learning opportunities supervised and organized by specialty organizations, and with better communications for information retrieval and peer review conducted by specialties.

Whatever the chosen branch of medical practice, assurance of optimum performance depends on continued learning. Of course, there are other factors. But this is sine qua non.

The medical profession has fostered and accepted continuing education, perhaps far more than any other profession. Year by year excellent available learning opportunities have proliferated, mostly in the form of short lecture courses. These courses have become recognized and credited as the cornerstone of acceptable continuing medical education. To a lesser extent, being applicable to fewer persons, other activities have been credited, such as teaching, supervised clinical learning in favorable situations, research, and various individual arrangements. Therefore, flexible options have been developed for participation.

For the greater number of physicians, constant reading and the daily challenging stimulus of clinical medicine have sufficed to assure continued competence. Many are able to profit more than adequately from consultations, teaching, hospital conferences, review committees, and postgraduate activities—particularly within specialties.

But, increasing concern has been voiced about a minority whose competence has been questioned. There are physicians who are not exposed to peer criticism, whose records are not examined, who are not hospital staff members, and who do not accept any of the recognized continuing education options. This minority group has become a target for reform; evoking proposals for restrictive regulatory procedures, which would include all physicians.

There is danger that the current heady reform atmosphere could have regrettable consequences which would be quite harmful to continuing education, assurance of competence, and the care of the sick. It could enforce a maze of regulations designed to monitor professional performance but administered by nonmedical personnel, such as PSRO. In continuing education, it could block improvement by demanding adherence to an obsolete system.

The question is, should the main thrust to improve medical care, by assuring competence, be through imposition of punitive regulation or through provision for an optimum educational-informational process?

A *New England Journal of Medicine* editorial reflects about "Continuing Assessment of Medical Performance."[1] Dr. Mueller observes that there has been increasing discussion about physician reexamination, recertification, and relicensure. He mentions being witness to deliberations about such procedures, which suggested that they should be decided by the results of academic examinations based on continuing education courses. Very few informed individuals would quarrel with the editorial's conclusion that such an approach would not be sound, and that evaluation should be based on the records of actual clinical performance rather than on academic responses. But, most of the same observers would disagree with the bland statement that "such recertification examinations will probably require objective outside (lay) examiners acquainted with medical practices, even though unacquainted with specific medical knowledge"!

Everyone can agree that the main objective is to achieve optimum medical care by every possible means. The assurance of continuing professional competence is everyone's goal. But, exception would be taken to evaluation of professional records by nonprofessionals.

In a critical spirit, physicians find the present postgraduate system both inadequate and obsolete, stressing that educational-informational needs must be provided adequately before imposing evaluation procedures. Without belaboring the issue of "outside (lay) examiners," the more constructive issue to provide optimum learning opportunities and communications for physicians should be dealt with before debating evaluation technics.

After reviewing the same general problems contained in the editorial in the *New England Journal of Medicine*, the State Medical Society's Committee on Continuing Education has proposed drastically different strategy and tactics. In the first place, the committee rejects the assumption that the present continuing education system is adequate. The committee submits that to examine performance before providing optimum educational opportunity would be inappropriate, to say the least. Available resources should be used to improve education and communications; both are observed to be provided suboptimally at present.

The present continuing education system is fragmented. It lacks differentiated planning and coordination for the specialties. It would benefit from placing greater emphasis on learning opportunities within the context of practice than on lecture courses. More skillful organization of available knowledge and communications could facilitate solution of clinical problems, beyond anything possible at present. The amount of pertinent medical information is formidable, and even in the most favored circumstances, the individual clinician faces relatively laborious access to what he should be learning to maintain his general competence, or to data he needs for solving specific problems.

It would be unreasonable to expect physicians to have so much data at their fingertips or to have the time regularly to research information needed for optimum clinical problem solving.

Authoritative identification of differentiated specialty needs (by a coordinated Statewide system) could provide annual curricula and learning materials. These would afford visible goals for more efficient and organized individual study. Innovative deployment of medical communications could make data more immediately accessible for clinical problem solving. The continuing education process should be integrated into daily clinical practice.

To improve the system would require collaboration from all major forces concerned, as explained.

Working toward a Statewide approach, the committee has asked the medical schools, regional medical programs, the New York State Department of Health, and the professional specialty societies to join the medical society as partners. In addition, it is planned to invite simultaneous input from national sources and liaison with the licensing authority, the New York State Department of Education.

Representatives of the five educational sponsors met, in September, 1970; a protocol of the extemporaneous discussion was published in the ***New York State Journal of Medicine.***[2] At that meeting, it was agreed to explore the possibility of creating a new Statewide continuing education system. This would include a Statewide network of learning-resource centers, where all physicians would affiliate. A central council, composed of 3 representatives from each of the 5 major participants, has been considered as a mechanism for coordination and for liaison with national bodies and regulatory authorities.

Given an operative Statewide system to improve medical education and medical communications, the goal of optimum medical care could be approached. Sound criteria and procedures for evaluation would be incorporated in the system-design from the outset, providing a demonstration that the medical profession has the vision, the will, and the vigor to precipitate effective action. It would involve a new dimension in cooperative planning, reorganization of local and Statewide resources, and a deliberate confrontation with the forces who threaten to impose punitive external mandates.

Every physician would have an interface with an effective, new, centrally coordinated informational-educational medical network of learning-resource centers. The Statewide system would be differentiated according to specialties, both at the point of physician contact and centrally.

The perfection of a peer review mechanism has not made adequate headway. It would have a much better chance if it were to be involved as the evaluation instrument of a new Statewide continuing education system, differentiated and supervised by specialty groups and coordinated centrally by the same specialties. Physicians relate and respond best to their specialty organizations.

In a constructive way, the evaluation sector of organized Statewide continuing education would preempt the reason to create professional service review organizations. These have been advocated by the *New England Journal of Medicine* editorial,[1] by government planners, and in bills before Congress. If enacted, PSRO would place in lay hands regulatory and punitive authority over medical practice.

There is no time to wait, however watchfully. In American history no profession has ever been so close to losing authority over its own affairs, including the educational process.[3] Only forceful constructive action, acceptable to society, would suffice to counter the forces at work to assume authority over the practice of medicine.

By reorganizing the educational process in the way described, peer review would emerge as a natural concomitant, obviating the need to impose external regulation (PSRO). To take such a critical forward step would place the profession in a more favorable posture, more in tune with socioeconomic realities, and provided with the kind of sophisticated support structure (educational-communications) it requires to supply optimum medical care.

Respectfully submitted,
Marvin L. Bloom, M.D., Chairman

References

1. Mueller, C. B.: Proposals for a recertification examination structure, New England J. Med. 284: 1378 (May-June) 1971.

2. Bloom, M. L.: Initiation of cooperative statewide planning to improve continuing medical education system, ***New York State J. Med.*** 71: 1847 (Aug. 1) 1971.

3. Himler, G.: The anatomy of our melancholy, New England J. Med. 284: 1406 (June 24) 1971.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends that this report be required reading for members of the State Medical Society to appreciate the background and necessity for a plan of continuing medical education, such as that promulgated by the committee.

By organizing the educational process as described, peer review would emerge as a natural concomitant, obviating the need to impose external regulations (PSRO).

The reference committee notes with satisfaction that a New York State Council on Medical Education is in the process of formation.

The House, after discussion during which it was suggested that this be given the widest distribution, not only in the State but to the AMA, voted to adopt this portion of the reference committee report.

Data Processing in Medicine

Members of the Committee on Data Processing in Medicine are as follows:

William A. Bauman, M.D., *Chairman*	New York
William J. Burke, M.D.	Westchester
Ralph L. Engle, Jr., M.D.	New York
Alvin H. Freiman, M.D.	New York
Elemer R. Gabrieli, M.D.	Erie
Terence W. Murphy, M.D.	Westchester
Leon Pordy, M.D.	New York
Charles Weller, M.D.	Westchester
William J. Mueller, *Adviser*	Onondaga

The guidelines of the committee regarding confidentiality and liability of computer-processed medical information were approved by the Medical Society of the State of New York.

The committee also recommends that the several health agencies in New York State develop proficiency in data processing so that health personnel and patients can be assured that skill and caution are exercised in handling medical data stored in computers.

The committee warns that there may be exploitation of physicians, patients, and health agencies by purveyors who stress the glamour of computers and automation. Evaluation of the merits of such proposed systems is difficult. Members of our committee are available for consultation.

We look forward to more complete representation by enlarging our committee. We will continue to act as a forum for computer information exchange and will engage in an active program of data processing education for members of the State Medical Society.

Respectfully submitted,
William A. Bauman, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee notes that guidelines have been established concerning confidentiality and liability of computer processed medical information, and that these guidelines have been approved by the Council.

The House voted to adopt this portion of the reference committee report.

Disaster Medical Care

To the House of Delegates, Gentlemen:

The members of the Committee on Disaster Medical Care are as follows:

Irving G. Frohman, M.D., *Chairman*	Queens
William G. Abel, M.D.	Suffolk
Russell Weaver Greenhalgh, M.D.	Onondaga
Robert C. Kessler, M.D.	Monroe
Patrick E. O'Hara, M.D.	Broome

The announcement this spring that the State Civil Defense Commission was to be abolished caused concern because of the potential impact on disaster medical plans of communities. The Department of Transportation was designated as the State's natural disaster coordinating agency, in addition to which we have been assured that it would function in hostile and civil disturbance situations. The State-wide warning and communication systems were transferred to the division of State Police. The Office of General Services has been made responsible for fall-out shelter protection. The Division of Military and Naval Affairs became responsible for radiologic protection and civil air patrol. Provision for medical defense stockpiles was transferred to the Department of Health. State aid programs to counties and cities were terminated. The medical defense stockpile, which was not funded recently, prior to the economy drive, is to be liquidated. The extent of this liquidation, I am certain, will be disclosed by Caldwell B. Esselstyn, M.D., director, Bureau of Emergency Health Services.

In this State with a population of 18 million people, there are approximately 60 federally-owned, 200-bed packaged disaster hospitals. Will these potential 12,000 beds continue to be available under our stringent economy? Will this State, formerly a leader in civil defense, be required to depend on external aid in the event of major calamities, such as the catastrophic east coast hurricane predicted around Labor Day of this year? The Federal government has also experienced budgetary limitations and available supplies may be less plentiful.

New York State has been able legislatively to restrict the Woodstock type of rock and roll festival for more than 5,000 overnight campers. We are still faced with the potentially disastrous consequences of massive rock and roll performances lasting less than one day, which are utilized for communal narcotization. As an example, on June 5, 7 persons buying tickets for the July 9 Shea Stadium "concert" were taken to the hospital because of overdose of drugs. With the capacity of 55,000 in this city-owned stadium, a narcotic disaster, with possible deaths, was visualized. Preventive actions were stimulated by concerned committee chairmen of the Medical Society of the County of Queens, Public Health, Disaster, and Addiction, along with the District Attorney's Office and Police Department. Of the numerous cases treated at the Shea infirmary, only 10 had to be removed to the hospital. One nineteen-year-old patron was found dead in a nearby pool. Are these tragedies to be condoned by our various echelons of government or can effective regulation be instituted?

The American Red Cross has included the subject of drug abuse in their Advanced First Aid Course, and it can be included in the standard course. A 1971 booklet "Drugs and Their Abuse" is available at a cost of five cents from the Red Cross and is recommended to all concerned. Other publications related to disasters include: "Partnership in Disaster Preparedness," a speech by J. E. Davis, U.S. Civil Defense Director, published in the Winter 1971 issue of the *Defense Industry Bulletin* and reprinted in *Military Medicine*, May, 1971, p. 506; our New York State Health Department's "Organization and Planning for the Medical Aspects of Civil Disturbance Disasters," January, 1969, ***New York State Journal of Medicine;*** and "Medical Disaster Planning," Holloway, March 1 and 15, 1971. Publications by the New York State Health Department indicate that an outstanding job has been done by that organization in keeping people alert and prepared for these emergencies.

Dr. Esselstyn has reported that the State will be left with 16 packaged disaster hospitals of which only 14 are ready to go into use since, within the past two weeks, 2 of these hospitals have been relieved of this responsibility. The Federal government feels it will be able to allocate 4 additional packaged disaster hospitals to the State.

Respectfully submitted,
Irving G. Frohman, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee notes that the State Civil Defense Commission has been abolished, and its numerous functions have been distributed among the various departments and agencies of the State of New York.

The House voted to adopt this portion of the reference committee report.

Environmental Quality

To the House of Delegates, Gentlemen:

The members of the Committee on Environmental Quality are as follows:

Stephen M. Ayres, M.D.	New York
Eric J. Cassell, M.D.	New York
Stanley I. Fishman, M.D.	Kings
Verne M. Marshall, M.D.	Ontario
William E. Mosher, M.D.	Erie
Dwight F. Metzler, *Adviser*	Albany

The committee has reviewed the medical evidence presented in the Federal air quality criteria documents and believes that it is a fair statement of the presently known information relating environmental pollution to human health. Since the criteria are based on health effects, the committee believes it is the responsibility of the practicing physician to work for the implementation of control procedures which will limit pollutant emissions to levels prescribed by those documents. In the year ahead, it is planned to study and prepare position papers on the following important aspects of environmental control:

1. Development of a Statewide transportation sys-

tem which will efficiently transport people and materials within the State but reduce automotive congestion and emissions.

2. Collection of information aimed at persuading the State to develop an integrated power-policy which will minimize pollutant emissions, but yet will insure the adequate provision of electrical power throughout the State.

3. Study of the general ecologic and personal hazards of phosphates and other detergents in order that sensible legislation in this area may be supported.

4. Consideration of means for the testing and evaluation of home air pollution control devices, making such information available to the practicing physician.

While realizing these goals to be ambitious, the committee believes that future environmental control measures enacted by the State Legislature may be positively influenced if the State Medical Society adopts a strong and united position.

Respectfully submitted,
Stephen M. Ayres, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The recommendations of this committee are heartily endorsed by the reference committee.

The House voted to adopt this portion of the reference committee report.

Forensic Medicine

To the House of Delegates, Gentlemen:

The members of the Committee on Forensic Medicine are as follows:

Milton Helpern, M.D. *Chairman*	New York
John F. Edland, M.D.	Monroe
Martin F. Hilfinger, Jr., M.D.	Onondaga
Herbert Lansky, M.D.	Erie
Leslie I. Lukash, M.D.	Nassau
John C. Sherman, M.D.	Saratoga
Arthur A. Stein, M.D.	Albany

The committee continues to be concerned with trying to improve and make more uniform the official investigation of all deaths that have medical-legal implications throughout the State. A questionnaire concerning this has been sent to all county medical examiners and coroners and to date there has been a 71 per cent return. A preliminary analysis of these data points up the uneven manner in which this work is being performed.

Although 88 per cent of autopsies ordered by the coroners with an elective coroner system are performed by board certified pathologists who work at their direction and report back to them, the arrangement is not too satisfactory because the work is not the primary interest and concern of the pathologist since he, unlike a medical examiner, does not have a total responsibility for the investigation from start to finish. Even though he is a qualified pathologist he is usually called on only to carry out the technical procedure of the autopsy which alone does not provide all the answers to medicolegal questions arising out of the death.

A basic provision in medical examiner systems is that the medical examiner must be a physician and also a pathologist with a primary interest and responsibility for the investigation of the circumstances at the scene, for the decision about the need for an autopsy and its performance, for the determination of the cause and manner of death, and for the reporting of findings and conclusions to appropriate agencies. Medical examiners are appointed civil servants and are not elected by popular vote.

The questionnaire attempted to determine, out of the total death rate of the counties, how many of the deaths are being reported to the medical examiner's or the coroner's office to obtain some idea of the number of more subtle deaths, as well as those of an apparently suspicious or violent nature are being reported; and to ascertain from those reported, how many are being accepted for complete investigation and postmortem examination. Important criteria of an effective official medicolegal death investigation service are not only the percentage of accepted deaths autopsied, but also the percentage of the total deaths reported and accepted for investigation. The study is not yet complete and additional pertinent data are being collected.

The committee feels that the establishment of a medical examiner system in all jurisdictions of the State would be a progressive step. However, adequate budgetary provisions and the present unavailability of pathologists and other scientific personnel for this important official work pose serious problems.

It is the committee's opinion that a practical solution would be the setting up of medical examiner's systems on a regional basis, with each of the counties comprising a district sharing the expense in proportion to the population. This plan is now being explored by members of the committee. The need for and importance of providing a well-organized medical examiners system and the advantage of such a system of official investigation of deaths were dramatically demonstrated by the recent fatal occurrence at Attica prison.

The committee is grateful to Norman S. Moore, M.D., director of Scientific Activities, and Hollis S. Ingraham, M.D., State Commissioner of Health, for their assistance and advice and for reaffirming the willingness of the New York State Department of Health to provide budgetary assistance to individual counties and groups of counties for the establishment of medical examiner systems.

The Ninth Annual Symposium on Forensic Sciences will be held at the Office of the Chief Medical Examiner, 520 First Avenue, New York City, on April 14 through 16, 1972.

Respectfully submitted,
Milton Helpern, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee supports with great vigor the proposed establishment of a medical examiner system on a regional basis in all jurisdictions of the State.

The House voted to adopt this portion of the reference committee report.

General Practice

To the House of Delegates, Gentlemen:

The members of the Committee on General Practice are as follows:

Samuel Wagreich, M.D., *Chairman*	Bronx
Max Cheplove, M.D.	Erie
G. Alex Galvin, M.D.	Tompkins
George G. Hart, M.D.	Essex
Joseph F. Palmieri, M.D.	Suffolk
Joseph B. Robinson, M.D., *Adviser*	Albany

The committee and the New York State Academy of Family Practice are involved at the present time in setting up family practice departments in the State-supported medical schools. The chairman wishes to remind the Commission that the Academy is deeply involved in continuing medical education, being one of the first organizations to foster this concept for its members, and has continued its interest in strengthening this area whenever and wherever feasible.

We are trying to broaden our membership to include more young people, especially members of the Student American Medical Association. We are involved with the American Board of Family Practice and with recognition of the specialty of family practice in Workmen's Compensation which will tie in with the Council of the Medical Society of the State of New York. Our membership is deeply and vitally concerned with malpractice problems and the need for legislation and policing, both internally and externally.

Also we are involved as members of the State Medical Society in many problems that concern the private practice of medicine.

Respectfully submitted,
Samuel Wagreich, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

The report of this committee is noted with interest by the reference committee.

The House voted to adopt this portion of the reference committee report.

Health Care Technology

To the House of Delegates, Gentlemen:

The members of the Committee on Health Care Technology are as follows:

Charles Weller, M.D., *Chariman*	Westchester
Leo Gitman, M.D.	Kings
Robert E. Westlake, M.D.	Onondaga
Ralph E. Schlossman, M.D.	Queens
Donald Binder, M.D., *Adviser*	Albany

The objective of the committee is to study and evaluate existing and future technologic advances which are applicable to the delivery of health services and to develop guidelines for appropriate and efficient use of such tools as may relate to the clinical practices of medicine.

The following recommendations made by the committee were approved by the Council at its meeting on October 21, 1971:

1. The committee recommends the adoption of the following resolution after its review by the legal department of the State Medical Society.

> Whereas, Physicians may receive unsolicited reports from multiphasic health testing or other centers; and
>
> Whereas, These unsolicited reports may be on people in whom the physician has not established a physician-patient relationship; therefore be it
>
> *Resolved,* That the physician who received an unsolicited report from a testing center on a person with whom a proper physician-patient relationship has not been established, and the physician does not wish to establish such a relationship, the physician should send a letter to the patient by certified or registered mail (return receipt requested) denying the existence of the physician-patient relationship, and a copy of this letter with the unsolicited report to the center of origin.

2. The committee recommended that the following Guidelines for the Development of Acceptable Multiphasic Health Testing Programs become the official guidelines of MSSNY.

1.0 Definition and Methodology

1.1 Multiphasic health testing programs are simply preliminary medical data acquisition methods, often utilizing automated technics with the assistance of allied health professionals, the resulting data are then evaluated by a physician as an aid in defining the patient's health problems in relation to patient management.

1.2 The systems used should be designed to condense and validate medical data as acquired, provide capsulated summaries, and may suggest interpretations of any abnormalities.

1.3 The testing systems criteria should include reliability, accuracy of output, saving of professional allied health professionals' time, have adequate utilization, and be available and customized for its local needs.

1.4 For professional value and economic feasibility, the test selected ideally should be: simple, safe, easy to interpret, inexpensive, quick to perform, and have acceptable sensitivity, specificity, high predictive value, and patient acceptance.

1.5 The system should establish individual, ethnic, and geographic variations of normal and abnormal patterns.

1.6 The program must be appropriately accredited for quality control.

1.7 The objectives of the program must be clearly defined from the beginning, and the testing programs used should be designed to meet such varying objectives as health maintenance, diagnostic services, and management of on-going illnesses, such as chronic disease or compensated asymptomatic disease.

2.0 Relationship to Existing Health Care Delivery System

2.1 Any multiphasic health testing program must be integrated into the existing or newly developed comprehensive and continuing medical care system.

2.2 Methods should be developed to evaluate the long-term effects of the program on illness and on need and demand for health services.

2.3 The program should, when possible, be used to serve otherwise unmet needs in the delivery of health services.

2.4 The local medical profession must be involved in the planning and development of the program.

3.0 Ethical Considerations of Multiphasic Programs

3.1 Operation of the testing program must be under the supervision of qualified physicians.

3.2 The testing program should be designed and conducted primarily for the patient's benefit.

3.3 The confidentiality of patients' data must be maintained.

3.4 The principle of free-choice-of-physician by a patient is desirable in all testing programs.

3.5 The multiphasic testing program shall not be considered to function as the patient's physician.

The committee discussed means of communicating technologic advances to the physician members of the State Medical Society. It was suggested that a full-day program on the basic fundamentals on the use of computers in medicine be given at the next MSSNY annual meeting in February, 1972, in conjunction with the Committee on Data Processing. The chairman will contact the chairman of that committee for further discussion.

The committee recommended that active liaison be established with the New York State Health Department, and this committee is to develop means for registration and quality controls for multiphasic and similar health centers.

Respectfully submitted,
Charles Weller, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee urges that the membership acquaint themselves with the legal opinion outlined in the report submitted by this committee on receipt of unsolicited reports from testing centers.

The reference committee also notes that guidelines for the Development of Acceptable Multiphasic Health Testing Programs have been established.

The House, after discussion, voted to adopt this portion of the reference committee report.

Health Manpower (Annual)

To the House of Delegates, Gentlemen:

The members of the Committee on Health Manpower are as follows:

Bruce E. Chamberlain, M.D., *Chairman*	Onondaga
Stephen W. Blatchly, M.D.	Tompkins
Myron E. Carmer, M.D.	Wayne
James C. Dunn, M.D.	Erie
Arthur Howard, M.D.	Fulton
Robert V. Schatken, M.D.	Delaware
Robert B. Wallace, M.D.	Oneida
Franklyn B. Amos, M.D., *Adviser*	Albany

The chairman is grateful to the members of the committee for their participation.

The committee met on July 8. Among the topics discussed was the status of grants by county legislators for professional education (Sec. 610 (a) of the Education Law of New York State). An updated report is being compiled with the assistance of Edward D. Coates, M.D., of the New York State Department of Health. This will be published and distributed. Greater publicity of the availability of these scholarships is urged again through county medical societies. The committee also recommended that the State Medical Society distribute to county medical societies copies of the 1971 New York State Law which provides special Regents Scholarship Funds to medical students.

It has also recommended that county medical societies be made aware of a listing of students from the various geographic areas who are attending medical colleges in New York State. Such a listing could be developed through cooperation with the deans of medical colleges and the staff of the State Medical Society.

The committee notes that 11 counties outside of New York City have taken advantage of the Education Law, Section 610(a) in an effort to increase the number of practicing physicians. This law authorizes them to provide loans to medical students in attendance at an approved school of medicine in the United States, as well as hospital interns and residents. The following counties offer scholarships: Allegany, Chautauqua, Delaware, Fulton, Genesee, Livingston, Orleans, St. Lawrence, Schuyler, Wayne, and Wyoming. A total of 44 students are enrolled, ranging from 12 in Wayne County to 0 in Delaware County, whose program has just started. No M.D. has yet completed the program but Genesee and Wyoming have residents and interns enrolled. All counties expect their participants to return to practice in their county for at least one year for each year paid.

However, each county has a forgiveness clause that allows a student to repay the scholarship money if he does not return to the county to practice.

A total of $256,471 has been granted with Wyoming County leading with $86,971, followed by Fulton County at $39,000, and Wayne County at $36,000. The amount granted per student varies from $1,000 to $5,000 per year. Allegany, Chautauqua, Fulton, and Wayne Counties have no limit. The average student receives $3,000 per year.

Resolution 71-59, "Licensure of Service-Trained X-Ray Technologists," had been referred by the 1971 House of Delegates, to both this committee and the Committee on Nursing and Allied Health Professions. This problem has already been solved by the New York State Department of Health.

The committee noted the substance of the law on physician's associates passed as part of the Governor's 1971 Health Legislation. The committee urged the Council to implement the recommendations made in its report to the 1971 House of Delegates. A list of physician representatives from the State Medical Society to serve on the Governor's Advisory Council on Physician's Associates was submitted to President Himler. A cross representation was recommended to include (1) a physician in a teaching program; (2) three actively practicing physicians (one family-practice rural, one family-practice urban, and one specialist); and (3) one representative-at-large from the State Medical Society.

A supplementary report will be prepared for the House of Delegates.

Respectfully submitted,
Bruce E. Chamberlain, M.D., Chairman

Health Manpower (Supplementary)

To the House of Delegates, Gentlemen:

The committee wishes to commend members of the State Medical Society for their responsiveness to the manpower questionnaire which was distributed with the biennial registration form. The return was 93 per cent. This information has been taped by the Health Planning Commission, and the analyses are already being utilized for manpower studies throughout the State, especially in areas with shortages of physicians.

The committee was requested to review the application prepared by the South Bronx area of New York City for assignment of personnel of the National Health Service Corps. A telephone conference of committee members resulted in a recommendation to endorse the program of the State Medical Society.

The chairman attended a special interdepartmental conference on physician's associates held in Albany, on January 6. Discussion emphasized the utilization of physician's associates and regulations-bearing relationships between the Departments of Health and Education.

James Dunn, M.D., attended a Special Institute on the Physician Associate and Specialist Assistant, sponsored by the New York State Hospital Association, on January 19, in Albany. The emphasis of the conference was on the function of these personnel in the institutional setting, interstaff relationships, and others.

Respectfully submitted,
Bruce E. Chamberlain, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

This report calls attention to the fact that there are county legislatures which have appropriated funds for grants and loans to medical students who have agreed to practice in these counties for at least one year for each year paid.

Guidelines are being set up for physicians' assistants in New York State. The committee feels that in setting up these guidelines special precaution should be taken to preclude the delegation of unwarranted medical responsibility to these persons which exceed their training and judgment.

The House voted to adopt this portion of the reference committee report.

Maternal and Child Welfare

To the House of Delegates, Gentlemen:

The members of the Committee on Maternal and Child Welfare are as follows:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Walter L. Freedman, M.D.	Westchester
Robert M. George, M.D.	Oneida
George J. Lawrence, Jr., M.D.	Queens
Curtis J. Lund, M.D.	Monroe
Jacqueline A. Mauro, M.D.	Albany
R. Richard Murray, M.D.	Tompkins
Clyde L. Randall, M.D.	Erie
Ralph M. Schwartz, M.D.	Kings
M. Leon Tancer, M.D.	New York

As chairman of the Maternal and Child Welfare Committee and the Central New York Maternal and Perinatal Mortality Study, I respectfully submit the following report of the activities of the committee during the past year and present the program for the coming year.

The report for the past year follows.

Maternal deaths. Analysis of maternal deaths has continued. Although not all of the death reports have been received for 1970 at this time, it appears that the number of deaths has decreased. The following conditions have been reported:

> Pulmonary embolism, including amniotic fluid and blood clot embolization, accounted for most of the deaths reported.
>
> There were an unusual number of deaths signed out as cardiac arrest. They were generally associated with some operative procedure or complication of labor.
>
> Also, an unusually large number of deaths were recorded as resulting from heart disease (9 deaths).
>
> Rupture of the uterus, which always accounts for many deaths each year, caused 7 deaths. Many of these could have been prevented, if recognition had been accomplished.
>
> It was astonishing to note that 3 deaths occurred from ectopic pregnancy. Either the patient died unoperated or had a massive hemorrhage. All cases were probably preventable.
>
> Cerebral accidents, rather infrequently the cause of maternal death, were recorded in 3 patients.
>
> There were two cases of septic abortion, both self-induced.
>
> Sepsis was responsible for 4 deaths. These resulted from infection initiated in organs other than the genital organs.
>
> Another rare cause of death occurred in 2 patients, namely acute yellow atrophy of the liver. These cases will be reviewed more thoroughly later.
>
> A complete report of all maternal deaths will be prepared when all of the case reports have been received.

Perinatal deaths. Perinatal deaths have been reviewed during the past year. This analysis is rather disappointing because records in hospitals are incomplete, and it is almost impossible to correlate enough substantial information to draw valid conclusions. However, it is apparent that the largest number of infant deaths occurred in the preterm, low birth-weight infant and those having congenital anomalies of various organs. Many of these are related to the high-risk group of patients. Educational programs should be promoted to educate the physicians and the public that preconceptional study and therapy is necessary in these patients.

Research. An interesting and important portion of the work has been related to study of the placenta and its relationship to fetal death, and the effect of contraceptive agents on the generative organs.

Placental studies. Some interesting histologic and biochemical studies are in progress concerning the placenta as it relates to the high-risk patient and fetal death. Normal placentas and placentas from patients in the high-risk group have been studied. In the latter type of placenta, we have noted the deposition of material in the villi and surrounding the villi which apparently interferes with the to and fro exchange of materials used for fetal nutrition. The character of this material has not been determined. It appears as an unusual type of glycoprotein or mucopolysaccharide. This substance is being studied both biochemically and histochemically.

There is also an increase in large round cells resembling cytotrophoblasts, which ordinarily disappear or become superficial cells after the mid-portion of pregnancy. These cells contain glycogen ordinarily not found in the placenta at term. Infants born with placentas of this type have diminished glycogen in the liver and heart muscle. This deficiency contributes to fetal death before birth or infant death directly after birth. It is hoped that sufficient evidence will be obtained to report these findings during the next year.

Contraceptives. With the wide use of oral contraceptives, there has been some indication that these substances may have an adverse effect on the tissue of the generative organs. The committee, through its research, has studied the effect of these substances on the following types of tissue.

1. Endometrium: It is apparent from this report that endometrial tissue is affected after long usage of the oral contraceptives—certain ones having a more profound effect than others. Although it has been noted that recovery of endometrial function occurs after cessation of the contraceptive drugs, there are some patients where function does not return and permanent infertility may result.

2. Uterine cervix: Specimens have been studied in organ culture after the addition of the oral contraceptives. Although cellular changes have been observed after these substances have been in contact with the cervical tissue for seven to ten days, cancer has not been produced. However, the cellular changes are quite significant, and further study is necessary. Clinically, cervical erosion occurs more often in women on prolonged use of the agents.

3. Breast tissue: Specimens of breast tissue have been studied in organ culture. No report is available at this time.

These studies are carried out in cooperation with the Department of Pathology and the Department of Biochemistry at the Upstate Medical Center, a relationship which has been most encouraging.

Abortion. During the past ten months, the committee has analysed the abortions which have been reported. During the first three-month period, reporting came from about 41 per cent of the hospitals. Since that time the number of hospitals sending in the reports has increased, and a more complete list has been obtained. Reports have also been received from physicians' offices and clinics where the procedure is being done. All cooperating hospitals were sent a three-month and a six-month report. A complete report will be prepared at the end of the twelve-month period (June, 1971).

The chairman of the committee testified before the Senate Committee on Health, Executive Session on Possible Health Problems Presented by the Current Abortion Law, February, 1971, in Syracuse (Table I).

There was a significant increase in the incidence of complications, such as hemorrhage, infection, perforation of the uterus, shock, anesthetic problems after the twelfth week of pregnancy, and particularly after the twentieth week of pregnancy.

Some interesting conclusions can be drawn from the abortion review.

1. The incidence of complications increases when the procedure is performed in the later days of pregnancy.

2. The true picture of complications cannot be accurately evaluated because the follow-up cannot be obtained due to the shortness of hospital stay. It has been recorded that 2 deaths have occurred out of the state following the performance of abortion in New York State.

TABLE I. Data from report on abortion law

	Per Cent		
Area	Ages (Years)	Marital Status	Ethnic Group
Upstate	Under 25 (66.7)	Single (49.2)	No record
New York City	Under 25 (60)	No record	White (72.4) Negro (23.2) Puerto Rican (4.4)

3. The incidence of abortion has been higher in the white than in the Negro population and in the white middle class. This is an interesting notation for further population relationships.

4. The institution of "abortion centers" in the State has created economic as well as unethical money-making services provided by lay groups. Legislation should be passed to prohibit such service.

It is the opinion of the chairman that these studies should be continued for another year at which time some definitive conclusions can be drawn.

Records. It has been almost impossible in many cases of maternal deaths and perinatal deaths to analyze and draw valid conclusions because of inadequate, incomplete, and noncomparable terms and records. The chairman is convinced that some type of new record keeping must be proposed and even mandated if vital statistics are to be meaningful and accurate. To this end the committee has been working along this line of endeavor.

The committee recommends standardization of terminology. The chairman has completed the study on this, and material will be published in September, 1971. The committee hopes to promote the standardization in all hospitals and physicians' offices.

To have good records which are comparable in terminology, as well as recording, standardization of prenatal, labor, and summary forms should be used universally. The chairman has been preparing such forms in cooperation with the American Medical Association, The American College of Obstetricians and Gynecologists, and the American Academy of Pediatrics. It is hoped that these forms will be completed in the next few months.

The committee is also working on standardization of birth certificates, and these are also being discussed with the American Medical Association, The American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, the U.S. Bureau of Vital Statistics, and the New York State Department of Health.

The committee proposes the following:

1. Continue to analyze the maternal death records of the State and place the information on punch cards.

2. Inasmuch as the perinatal study has not been as productive as hoped for, the committee has decided to choose several hospitals in the State, seek their cooperation, and analyze each perinatal death for a period of six months. The hospitals will be provided with record forms. The completed records will be photostated and sent to the committee for analysis. After the six months period is over, the results and suggestions will be given to the hospital personnel concerned. When each hospital survey is completed, another hospital in another area

will be started. Hospitals will be chosen where the perinatal mortality rate has been higher than usual.

3. Analysis of the abortion reports should be continued for another year. More hospitals are reporting, and some definitive results should be recorded during this interval.

4. The committee will continue to work and complete prenatal, labor, and summary records in cooperation with the American Medical Association, The American College of Obstetricians and Gynecologists, and the American Academy of Pediatrics.

5. Terminology, which will be published under the auspices of The American College of Obstetricians and Gynecologists, should be promoted for use in every hospital and medical school. Part of the function of the committee will be to promote the use of this terminology in hospitals, medical schools, and by physicians.

6. Research will be directed toward attempting to find out what the new mucopolysaccharide or glycoprotein is composed of and determining its effect on placental function. Work must be continued on the effect of oral contraceptives on cervical and breast tissues. Research will also continue on adenocarcinoma of the uterus which possesses the same type of glycoprotein as the abnormal placenta, although the chemical constituent of this substance has not been isolated as yet. This work will be conducted in association with the Department of Biochemistry of the Upstate Medical Center, using 2 postgraduate students for the technical work. The work will be conducted under the supervision of Dr. Ross Jacobs of the Department of Biochemistry.

7. **Continuing medical education.** During the past years, the committee has held meetings in various districts of the State with the consultant and local physicians interested in general improvement of obstetric care. Although these meetings have been successful, only a few physicians in comparison with the number practicing obstetrics have been exposed to the meeting and educational presentation. Articles have been written which, although presenting a complete treatise on the subject, have been too long for easy reading.

A survey conducted among physicians concerning continuing medical education revealed that many physicians consider reading to be the best method for obtaining new information. Therefore, a new type of education process will be attempted this year in the form of articles in the ***New York State Journal of Medicine*** noted as "Obstetric Forums." These will be published in each issue of the ***Journal*** and will be concise, accurate, and to the point. They will be about a page and a half long. Arrangements have been made with Henry I. Fineberg, M.D., and William Hammond, M.D., editor of the ***Journal*** to publish these forums. The following is a list of forums being prepared:

Cerebral Hemorrhage: A complication of pregnancy (report of 49 cases)
Pulmonary Embolism: Report of 106 cases
What is Prenatal Care?
Ectopic Pregnancy: Report of 44 cases
Obstetric Records and Conclusions
Perinatal Mortality: Status Quo
The High-Risk Obstetric Patient: Guidelines
Ruptured Uterus: Report of 86 cases
Abortion: Its complications
Effect of Oral Contraceptives on Future Conceptions
Sterility—Clomophine—Results
Amenorrhea in the Teenager.

Respectfully submitted,
Edward C. Hughes, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee notes with interest the report of this committee.

The House voted to adopt this portion of the reference committee report.

Medical Aspects of Sports

To the House of Delegates, Gentlemen:

The members of the Committee on Medical Aspects of Sports are as follows:

Ralph S. Emerson, M.D., *Chairman*	Nassau
Albert B. Accettola, M.D.	Richmond
Frederick H. Grabo, M.D.	Oneida
Donald T. Kasprzak, M.D.	Clinton
Joseph J. Kaufman, M.D.	Wayne
Alexius Rachun, M.D.	Tompkins

Advisory Committee

Mr. J. Kenneth Hafner	Albany
James A. Nicholas, M.D.	New York
Max M. Novich, M.D.	Perth Amboy, N.J.
Anthony J. Pisani, M.D.	New York
M. Laurens Rowe, M.D.	Monroe
Mr. William Stein	New York

The Fourth Annual Medical Aspects of Sports Symposium was held in New York City on February 13, 1971. The theme of the program was "Safety and Prevention of Injuries to the High School Athlete." In spite of the city-wide garage attendants' strike, approximately 600 guests attended. The subject was broad and stimulating. The general reaction from the audience was that this program even exceeded our previous efforts. A critique was held immediately following the symposium, and suggestions were recorded to improve subsequent sessions.

The program for the February 12, 1972, Symposium has been developed and consists of three general topics: (1) a panel discussion on Drugs and Drug Abuse in Sports, (2) the first Girls Sports Program, and (3) Physical Conditioning and Rehabilitation, which will include a new program developed by Joseph Abraham, M.D., and the Eastern State Trainers' Association.

Your committee members participated in many state, national, and international sports medicine programs. We have received many requests for the proceedings of our symposia. Most of our articles have been abstracted in national sports reviews. We are recognized as not only having the largest but also one of the best programs in the country. We have encouraged and assisted in the development of regional sports programs to disseminate the safety aspects in high school athletics.

We have participated and acted as consultants to the New York State Public High School Athletic Association, State Department of Education, and the Education Council for School Research and Development in the following programs:

1. The modified football rules program has included approximately 65,000 participants. The principles

have been expanded to include the junior high school athletic programs in baseball, lacrosse, soccer, basketball, swimming, track and field, wrestling, and swimming.

2. The 5-10-5 preseason conditioning program has included 51,000 participants. It was so successful it has been accepted by the Central Committee (governing body) of the New York State Public High School Athletic Association.

3. The modified football shoe project (disk heel; shortie cleats) of 61,000 varsity football participants is the largest study in the country. It will undoubtedly have an impact on the type of football shoe used in the future.

It should convince the sports world that "the conventional cleat must go."

4. An exciting study was begun last year by J. K. Hafner, of our Advisory Committee, correlating the severity of injury in terms of the length of time lost with: action at the time of block, field location of the injury, prior history of injury, and the player position. A total of 14,372 players participated in this program in 1970. When this study is completed and published, it will undoubtedly be received with great interest throughout the country.

The committee is proud to be a member of this dedicated, visionary, and innovative team who are engaging in pioneering research in the safety aspects of high school athletics.

Our committee wishes to thank the staff of the State Medical Society, especially Norman S. Moore, M.D., director, Division of Scientific Activities; Miss Dorothy Smith, his secretary; Guy Beaumont and Richard Klemfuss of the Division of Communications; and J. Richard Burns, J.D., assistant executive vice-president, for their invaluable assistance during the past year.

As chairman, I would like to express my appreciation to the members of the committee and the advisory committee.

Respectfully submitted,
Ralph S. Emerson, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee is gratified by the overwhelmingly favorable response of the membership and the public to the fifth annual symposium of this committee and strongly urges continuance of these symposia.

The House voted to adopt this portion of the reference committee report.

Mental Health

To the House of Delegates, Gentlemen:

The members of the Committee on Mental Health are as follows:

Allison B. Landolt, M.D., *Chairman*	Westchester
Gurston D. Goldin, M.D.	New York
Jack Hammond, M.D.	Richmond
Edith M. Jurka, M.D.	New York
John P. Lambert, M.D.	Westchester
Stephen Nordlicht, M.D.	New York

Your committee continues to cooperate with other organizations interested in mental health.

At the committee meeting held in April, several legislative bills which had been before the State Senate and Assembly for action, were reviewed. During the spring, our committee was involved in discussions with many of the New York State legislators concerning these bills. Our committee opposed 12 bills, taking the position that they were too specialized and parochial to be considered psychiatrically sound.

In the past, the committee has been opposed to the proposed recodification of the Mental Hygiene Law. However, there is a strong feeling emerging in favor of endorsement, and the committee is reconsidering its position.

Your chairman attended the meeting of the Economics Committee of the State Medical Society to give the psychiatric viewpoint for the Interspecialty Committee. It was agreed at the time that insurance reimbursement should tentatively be based on the California Relative Value Scale until we can develop our own statistics in this State. Much work needs to be done to bring psychiatry to the same level of involvement and commitment in various State reimbursement schedules as medical and surgical programs.

The chairman of this committee attended the annual meeting of the Commission on Public Health and Education held in Albany in July and noted the importance of close cooperation with other medical specialties. This is particularly significant in the problem of plumbism. All in all, the one-day session was most edifying and stimulating.

The Annual Conference on Mental Health was held in Chicago, on September 24 and 25. The topic for discussion was "National Health Insurance, Implications for Mental Health." After considerable debate, the consensus was that every effort must be made to encourage the inclusion in any state and Federal legislation of insurance coverage for mental disorders equal to coverage for any other disease, without special limitations. Evidence was presented showing that the cost of mental illness can be insured in an actuarially sound manner. None of the present bills before Congress include proper coverage for mental disorders.

The various State Medical Society representatives were exhorted to contact Federal legislators to make our concern known. It was further considered that any legislation should follow the American Psychiatric Association guidelines.

Insurance reimbursement for treatment of alcoholism and drug addiction and for treatment of neurologically and mentally handicapped persons under the catastrophic illness concept was also considered to be feasible. This committee feels that the House of Delegates of our State Medical Society should go on record in favor of the inclusion of full insurance coverage for mental disorders in any Federal health insurance legislation, thus covering mental illness on the same basis as any other disorder.

The meeting of the New York State District Branch of the American Psychiatric Association, held at Tuxedo, on September 18, was attended by John P. Lambert, M.D., a member of this committee. At the conference it was agreed that a greater public relation effect should be made to disseminate information to all psychiatrists regarding the various facets of Federal and State legislation pertaining to mental health.

A committee will be set up to act as an advisory body to the legislators in the various counties, and its members will be invited to the meetings of the Psychiatric Association, at which time problems will be discussed. This is necessary, particularly when the Legislature is in session.

The committee appreciates the close relationship with the Committee on Alcoholism and Drug Abuse of which your chairman is a member.

We wish to thank Norman S. Moore, M.D., director, Division of Scientific Activities, who attended our meetings, for his invaluable advice and counsel. We are most appreciative of the devoted assistance of Miss Dorothy M. Smith, whose secretarial labors have helped us function most effectively.

Respectfully submitted,
Allison B. Landolt, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee endorses the position taken by this committee that mental disorders should be covered on the same basis as other illnesses in any Federal health insurance plan.

The House voted to adopt this portion of the reference committee report.

Metabolic Diseases

To the House of Delegates, Gentlemen:

The members of the Committee on Metabolic Diseases are as follows:

Arthur H. Dube, M.D., *Chairman*	Onondaga
Marshall Clinton, M.D.	Erie
Ann B. Wright, M.D.	Dutchess

The committee has met and reviewed the following subjects: (1) diabetes teaching programs, (2) special beds for patients in hospitals for metabolic diseases, and (3) diabetes detection drives.

We feel that most hospital teaching regarding diabetes is haphazard with great variation from hospital to hospital and even from floor to floor. Special teaching tapes and manuals are available, but often there is no coordinated drive to supply a particular group of teaching materials to the patient.

We would recommend that each hospital have a specially trained nurse assigned to teaching care of diabetes and to coordinate the program, and also have a special area in the hospital for patients with metabolic diseases to facilitate the use of coronary and respiratory units which are now standard in many hospitals. In the general field of metabolic diseases, highly technical tests with laboratory support are mandatory. Instruction and family counseling are highly specialized and could be best carried out within the setting of a special metabolic unit.

Diabetes detection drives fall short of the mark. The yield is much higher if proper tests are carried out in families of diabetic patients. A screening test such as the one-hour glucola test should be made available at low cost at a designated hospital to be carried out throughout the year. Additional screening tests could be added, such as uric acid, cholesterol, and blood urea nitrogen, if the program was in great enough demand and the cost reasonable.

In this regard, the committee is not overly optimistic because of the lack of funds and grants to hospitals to carry out these tests.

Respectfully submitted,
Arthur H. Dube, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

The report of this committee was read and noted with interest by the reference committee.

The House voted to adopt this portion of the reference committee report.

Physical Medicine and Rehabilitation

To the House of Delegates, Gentlemen:

The members of the Committee on Physical Medicine and Rehabilitation are as follows:

Edward J. Lorenze, III, M.D., *Chairman*	Westchester
Peter S. Battaglia, M.D.	Niagara
William H. Georgi, M.D.	Erie
Milton Lowenthal, M.D.	New York
Milton B. Spiegel, M.D.	Kings
Samuel S. Sverdlik, M.D.	New York

The committee took note that the basic revision (S. 350) of the statutory provisions for physical therapy in the New York State Education Law provided for the administration of physiotherapy by a duly licensed and registered physician. It is our understanding that this has been changed by the addition of "and may be upon the oral prescription of a physician." The State Medical Society had objected to the omission of the provision for an oral prescription and was responsible for the law being amended to include it.

The committee continued to be in favor of resolution 68-59, "Rehabilitation Services in Extended Care Facilities," introduced by the Section on Physical Medicine and Rehabilitation, which requested the "Medical Society of the State of New York to urge the Commissioner of Health to require that all rehabilitation services rendered to Medicare and Medicaid beneficiaries in nursing homes and extended care facilities be ordered and supervised by either a physiatrist or an orthopedist." (See ***New York State Journal of Medicine,*** June 1, 1968)

It should be noted that the House of Delegates ultimately amended this to read "be ordered and supervised by a licensed physician." In any event, this has not been included in the Code.

We support the recommendation of the Committee on Aging and Nursing Homes, that Chapter 5 of the New York State Hospital Code be amended to include a provision for facilities to have a professional board which sets suitable professional standards, rules and regulations, thus, in fact, establishing an organized staff program.

The committee has discussed the changes in the State laws governing nursing homes to provide for a mandatory position of medical director to serve in a medical consultative and administrative role for purposes of organizing and establishing professional programs of care. This does not imply a direct service to patients, but rather establishes professional administrative responsibilities. The committee approves of this concept and feels that it will go toward the development of an organized health care staff and programs with rules and regulations for each nursing home.

The committee, with the aid of Max N. Howard, M.D., director of the Society's Division of Medical Services, extensively explored the Relative Value Schedules, with particular emphasis on their application to the development of Workmen's Compensation fee schedules.

It was suggested that the Committee on Physical Medicine and Rehabilitation proceed to develop a relative value schedule for physiatrists.

Bruce E. Chamberlain, M.D., chairman of the Committee on Health Manpower, has suggested that problems relative to health manpower affecting physical medicine and rehabilitation, be discussed. The chairman has been in contact with Dr. Chamberlain and will work toward setting up a joint meeting.

Respectfully submitted,

Edward J. Lorenze, III, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The report of this committee is noted with interest.

The House voted to adopt this portion of the reference committee report.

Preventive Medicine

To the House of Delegates, Gentlemen:

The members of the Committee on Preventive Medicine are as follows:

Harry S. Lichtman, M.D., *Chairman*	Kings
Subcommittee on Infectious Diseases	
Thomas S. Bumbalo, M.D.	Erie
Subcommittee on Community Health	
Leonard L. Heimoff, M. D.	Bronx
Subcommittee on Hospital Epidemiology	
Max Milberg, M.D.	Kings
Subcommittee on Tropical Diseases	
Howard B. Shookhoff, M.D.	New York
Subcommittee on Venereal Disease	
Bruce P. Webster, M.D.	New York
Burton Allyn, M.D.	Rockland
Harry A. Feldmann, M.D., *Adviser*	Onondaga

The committee is comprised of five subcommittees, and at its meeting in April considered the following subjects:

Sickle cell disease. The committee unanimously approved Bill 1069A, an amendment to the Public Health Law, which is a request for State aid for "a research program to determine the cause, method of treatment, and cure of sickle cell anemia." The committee has appealed to the State Medical Society's Committee on Legislation for consideration and approval, and to the Council for its support. In addition, the committee recommended to the Council that each county medical society be requested to establish a committee to study the problem within its county. Unfortunately, the Council disapproved this recommendation, stating that it felt it unwise for county medical societies to set up a committee for every clinical disease.

However, sickle cell disease has become a rather important problem in counties having a high percentage of Negroes in the population. More Negroes have sickle cell disease than leukemia, 1 out of 500 Negroes has sickle cell anemia, and 1 out of 10 has sickle cell trait. Should carriers of sickle cell trait marry, 1 out of 4 of their children will develop sickle cell anemia. A number of deaths have recently been reported and diagnosed by postmortem examination.

The Medical Society of the County of Kings has a Committee on Sickle Cell Disease and is trying to alert the community to this problem. According to Joseph B. Robinson, M.D., of the New York State Health Department, this is an important problem since New York State has approximately 2 million Negroes, and although much is being done as far as funds and research are concerned, a greater effort is called for in view of the large population susceptible to the disease. Recently enacted legislation has given the Commissioner of Health the authority to develop rules and regulations regarding this condition. This legislation is presently being studied by the State Health Department in order to make recommendations to the Commissioner regarding implementation. It is felt that this effort should concentrate basically on hospital admissions and preschool testing.

Since it is felt that the Council of the State Medical Society did not have the pertinent information, Henry I. Fineberg, M.D., executive vice-president, suggested that this problem be resubmitted to the Council for consideration.

The committee, therefore, has submitted to the Council for reconsideration the following report made by your chairman at the annual meeting of the Commission on Public Health and Education:

> I spoke on this subject because of the study in depth made by the Committee on Preventive Medicine and its firm conviction that the Council should take favorable action on Bill 1069A introduced in the Senate on January 6, 1971. In addition, the committee recommended to the State Medical Society that each county medical society be requested to establish a committee to study the problem of sickle cell disease within its county, which the Council voted to disapprove. My plea is that both matters be reopened for discussion and approval.
>
> Sickle cell disease results from an abnormality of the hemoglobin (sickle cell Hb. S) found in blood genetically transmitted by parents according to the Mendelian Law, affecting the black population.
>
> Sickle cell anemia occurs when a child inherits two sickle cell genes, one from each parent. The incidence in the United States, according to various studies made, is 1 in 500 blacks.
>
> Sickle cell trait occurs when the child inherits the gene from only one parent. The trait is estimated to occur about 1 out of each 8 to 12 American blacks. In Africa some areas show an incidence from 20 to 40 per cent of sickle cell disease.
>
> The dangers of sickle cell disease is death prior to the twentieth year. The dangers of sickle cell trait are great with the stress of anesthesia and high altitudes, excessive exertion, parenthood, and transfusions to infants.
>
> Deaths due to sickle cell trait may be more frequent than previously appreciated and that early identification of such persons by appropriate screening tests is imperative.

(Editorial: vol 282, #20, page 1155, *New England Journal of Medicine*.

The Committee on Preventive Medicine has requested reconsideration by the Council as follows:

1. That legislation in 1972 regarding Sickle Cell Anemia, similar to Senate Bill 1069A of 1971, be approved by the Council and supported by the Legislative Committee of the State Medical Society.
2. Each county medical society should be requested to establish a committee to study the problem of sickle cell disease within its own county.

Lead poisoning. The committee voted to recommend to the New York State Health Department that local health departments throughout the State be urged to develop programs for lead poisoning in all children between the ages of one and six years in deprived areas within their jurisdiction.

Dr. Ingraham has reported to the committee that considerable progress has been made on the lead poisoning program, but a shortage of funds has hampered it.

Hepatitis. The following recommendations have been made by the committee for widespread circulation among physicians and hospitals in New York State:

1. Hospital personnel have a higher incidence of Australia antigen than the general public. The recommendation is to use such donors with great discretion.
2. The incidence of hepatitis carriers among voluntary donors is much less than donors in commercial blood banks.
3. Hospitals should make efforts to obtain blood from patients seeking elective surgery prior to hospital admission for their use if found necessary.
4. Support should be given Assembly Bill 4948 creating a State commission to study the problems of blood transfusions in New York State.
5. Blood banks should be mandated to require a hepatitis history, physical examination and test for Australia antigen from each blood donor.
6. Facilities for training technical and professional personnel in the most effective technics available for the detection of carriers of hepatitis virus must be expanded throughout the State.

Tetanus hyperimmunization. Frequent tetanus boosters may produce a state of hyperimmunization with its attendant potential hazards and complications. Physicians should not be pressured by requests from sources such as parents, school nurses, and summer camp owners to give this antigen more frequently. The only excuse for a booster dose sooner than the time interval mentioned is a recent tetanus-prone wound where the last booster given was twelve months prior to the accident.

Venereal disease. The committee held a meeting with representatives of the State Health Department, the State Education Department, and members of the Committee on Public Relations of the State Medical Society. It was decided to send the Society's Mobile Education Unit to the various colleges in the State during the summer of 1971. Plans for a film strip to be shown were discussed, as was the question of additional financing by a pharmaceutical company. The latter idea is to be followed up.

The New York State and New York City Health Departments were represented at the International Symposium of Individuals Interested in the Venereal Disease Problem, held in St. Louis, on April 15 and 16. Attendance at this meeting from upstate New York was poor. Methods of control utilized in various parts of the country were compared and plans of attack outlined.

At the request of the Governor, a meeting was held in Albany on April 26, with James McKenzie-Pollock, M.D., of the American Social Health Association representing the chairman of the Subcommittee on Venereal Disease. Support of the problem was expressed by two State senators who attended the meeting.

The National Commission on Venereal Disease, Bruce P. Webster, M.D., chairman, is meeting regularly in Washington to discuss a national strategy.

The Committee on Preventive Medicine feels that venereal disease, as well as sickle cell disease, should be given wider publicity among physicians, since venereal disease is reaching epidemic proportions and only 30 per cent of the cases are being reported nationally. The inability of health officers to do follow-up investigations of carriers and contacts, because of failure to report cases, has contributed to the spread of venereal disease. On May 28, George Himler, M.D., president, and Hollis S. Ingraham, M.D., commissioner of health, sent out a joint letter to all physicians in the State urging them to report all cases of venereal disease and enclosing a summary of data on current diagnosis and treatment technics.

The New York State Department of Health has been able to obtain funds in the supplemental budget for the venereal disease program, and, as with many of the programs, legislation has been provided and action is being taken within the established monetary limits.

It has been reported that the incidence of syphilis is high in the upstate area while the converse is true of gonorrhea.

Australia antigen. Australia antigen testing is required throughout the State, and the New York State Health Department Laboratories are monitoring the efficiency of such tests.

The committee feels that much more can be done to transmit information on the various programs, especially on venereal and sickle cell diseases, to the physicians if they were to be included in continuing medical education programs in the field of public health and preventive medicine.

Respectfully submitted,
Harry A. Lichtman, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

This report, which discusses sickle-cell disease, lead poisoning, hepatitis, tetanus hyperimmunization, and venereal disease deserves the careful study of the membership.

The House voted to adopt this portion of the reference committee report.

Rural Medical Service

To the House of Delegates, Gentlemen:

The members of the Committee on Rural Medical Service are as follows:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Edward A. Barrett, M.D.	Orleans
Stephen W. Blatchly, M.D.	Tompkins
Alfred A. Hartmann, M.D.	Franklin
Erich Hirsch, M.D.	Ontario
Rudolph F. Hust, M.D.	Otsego
Stuart A. Winning, M.D.	St. Lawrence
Hugh M. McChesney, M.D., *Adviser*	Oswego
James J. Quinlivan, M.D., *Adviser*	Albany

Background

Ten years ago, the Board of Trustees and the Council of the Medical Society of the State of New York became alarmed at the reported shortage of physicians in rural New York and appointed a Committee on Rural Health to study the problem. Edward C. Hughes, M.D., was appointed chairman.

The committee, in cooperation with Dr. Bert Ellenbogen, professor of Rural Sociology at Cornell University, studied many small rural areas in respect to their medical coverage. Five years later a follow-up study was performed which revealed that there had been a marked decrease in the number of physicians in the areas. On the basis of these findings, reported by Dr. Ellenbogen to the Board of Trustees of the Medical Society of the State of New York and to the Council, the Committee on Rural Health was given the specific charge of developing a valid method of determining: first, the needs of medical coverage in Upstate New York; second, the specific location of these shortages; and third, the type of medical services needed in specific areas.

It was the opinion of the committee and the Society that data should be obtained for each area in the State before any new type of health care could be provided on a modern basis. To that end the project committee, with Dr. Hughes as chairman, undertook to develop a model which would provide a way and a means for accurately assessing these health care problems.

The investigation included the study of: (1) the physician or the provider of medical care; (2) the leaders of the communities; and (3) the consumers of medical services in each area.

This model was designed to obtain the thoughts and support of physicians and the needs and desires of consumers. The method designed was pretested in three areas of comparable size near the regional medical base (Syracuse, New York). Research instruments were prepared and the pilot projects administered by Community Medical Services, the research arm of the Rural Medical Services Committee of the State Medical Society.

Community Medical Services' staff is currently composed of:

Edward C. Hughes, M.D., Director
Dorothy J. Walker, Planning Director
    MRP (Masters of Regional Planning)
    PhD (Social Science)
John E. MacDonald, Project Director
    MA (Medical Sociology)
    Methods Specialist
Nancy E. Cochrane, Administrator
    AS
Virginia L. King, Secretary

During the first two years of this project, the research instruments were pretested and validated.

Results of these initial studies were published in a limited edition (1,500 copies) which was distributed to physicians, community leaders, and government officials in June, 1971. The publication was entitled *Rural Health Planning: a basement membrane model.* This portion of the study was funded by the Avalon Foundation with supplemental assistance from the State Medical Society and the Sears Roebuck Foundation.

As these preliminary studies were being completed, the Public Health Services' Bureau of Health Manpower Education, Division of Manpower Intelligence, became interested in the project and prepared an application for funding which supported the study initiated during the past year and currently in progress. It is expected that funds will be forthcoming for 1971–1972 in order that the project can be completed, the model fully tested, and a comparative analysis written which will be of value to providers, consumers, and planners of medical care in rural areas throughout the country.

During the past year considerable progress has been made in refining the method of assisting areas with critical health delivery problems. As contracted with the Public Health Service, the current project focuses on the Central New York region, involving 14 of the countries served by the Regional Medical Program and Upstate Medical Center. A working relationship between the Regional Medical Program, Upstate Medical Center, and the State Medical Society is essential for achieving coordinated health-care planning and delivery systems. Specific medical care needs in the area can be determined by utilizing the model described; educational programs are supplied by the Regional Medical Program; future manpower comes from the Medical Center.

To date:

1. An indepth sociomedical analysis has been completed of the Old Forge trading area in northern Herkimer County—an area with a unique set of health care problems. The document, "A Study of Medical Services and Facilities in the Adirondack Preserve" was prepared for and presented to the Town of Webb Board of Supervisors, the Town of Webb Health Center Fund, Inc., the Town of Webb Planning Board, and the Town Council of the Village of Old Forge.
2. A survey of the health problems of St. Lawrence County was conducted and a written analysis "A Study of Medical Services and Facilities in the North Country" was prepared for and presented to medical providers and consumers in a six-town area. This county has a population of approximately 110,000 and has critical health services delivery problems, in addition to economic problems.
3. Survey arrangements are underway in a third area of the North Country where there are approximately 16,000 people. It is difficult to establish the type of health services needed in this area, as well as what is economically feasible.

Survey area determinations were made from the results of a regional survey in which a postcard questionnaire was sent to all villages, hamlets, and unincorporated areas with populations of 25 to 5,000 within the 14 counties. There were 579 questionnaires distributed: 176 postcards were returned "Yes" and 130 marked "No," in relation to interest in survey participation.

What does this project accomplish?

1. It accumulates the thoughts, suggestions capa-

bilities, medical experience, and health status of physicians.

2. It determines the socioeconomic and medical status of an area, village by village and town by town.

3. It determines the educational, religious, and recreational advantages of a community or an area.

4. It determines the hopes, desires, requests, demands, and thoughts of consumers concerning medical care.

5. It determines the travel patterns of the people, helping to establish viable locations for community health centers, and points a way for creating a means of redistributing medical manpower.

6. It determines the type of medical practice which should be established for an area, based on accurate demographic data which is procurable through no other source.

7. It provides a profile of communities or areas seeking medical assistance, which will give young physicians insights into the requirements of specific communities.

8. It determines the number of individuals available to participate in health care such as nurses, technicians, and physician's assistants.

9. It determines the type of financing a community can afford, whether it be fee-for-service or other methods of paying for medical care and resources.

10. It brings together citizens from all walks of life and stimulates interest in community health problems. In some instances the working together breaks down village and town rivalries, as all join for a common cause.

There are other advantages to be derived from this coordinated approach. Conclusions in the Old Forge study are an example of the specific function which this indepth approach provides for a specific community and its residents.

Community Medical Services' plans for the next years

1. *Completion of the third study area* and preparation of the community report. It is essential that a third study area be completed to adequately conclude the regional project initiated through the Public Health Service.

2. *A Comparative study of the three areas surveyed* is considered imperative as the final phase of this project if findings on rural health are to be made available nationally. Specifically, in relation to this rural health project a comparative study of three geographically different areas will be most productive. Conclusions regarding rural health problems cannot be made, logically, on the basis of study of one area alone. Study of a single area, or two areas, may generate hypotheses which would be of interest for further study but may not be used to provide statistically meaningful answers to the problem of rural health in general.

Through a comparative study, we hope to define variables and situations which may be common to rural areas generally, and also to define those factors which are unique to any given area and which may thus not be generalized.

If the purpose of this project is to do more than "survey" people, we should be concerned with the generation of a theory of rural health care which will describe what characteristics of people and/or communities, and physicians, are involved in providing a solution to health-care problems. That is, why do some communities have a physician, why can some communities keep a physician while others cannot, and why do certain physicians practice in rural areas while others do not? If there is more than chance or personal will involved, it should be possible to arrive at some answers to these questions. Comparative study will show whether or not factors noted in one community are actually different from what would be expected by chance, and will help to develop a "grounded theory" in relation to the health problems of rural areas.

3. *A Survey of first, second, third, and fourth-year medical students, interns, and residents* at Upstate Medical Center to determine reactions toward practice of medicine in rural communities is also planned.

Respectfully submitted,
Edward C. Hughes, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION. The following report was presented by Samuel H. Madell, M.D., chairman.

This committee is continuing its study of the shortages of medical services in Upstate New York and has prepared several documents to date.

The House voted to adopt this portion of the reference committee report.

School Health

To the House of Delegates, Gentlemen:

The members of the Committee on School Health are as follows:

Hugh F. Leahy, M.D., *Chairman*	Albany
George F. Cunningham, M.D.	Suffolk
Edward M. Di Tolla	New York
Robert A. Hoekelman, Jr., M.D.	Monroe
Sidney Leibowitz, M.D.	New York
Norman B. Schell, M.D.	Nassau

The committee held one meeting and several telephone conferences.

Perhaps our outstanding new concept in school health services is to coordinate the school health program with a neighborhood health service. This consists of a coordinated program made up of health personnel, educational personnel, and community agencies, such as boards of education, P.T.A. groups, and other parties interested in health services. This new concept would operate as a multiscreening process concentrating on those children who are particularly in need of health care. The nature of the screening would primarily depend in large part on age, for example in the nursery, search would be made for congenital defects; in the preschool period, for auditory and visual defects; in the elementary school, for learning defects; and in the older groups, for personality disorders. This type of service is now being given in some of the larger metropolitan areas with good results. It is readily admitted that the plan is not suitable for all localities; but the concept is a good one and should be borne in mind. In the future, school health services may be supervised by a health coordinator rather than a school physician.

Questions have been raised regarding Article 19, Section 904, of the Education Law, which states: "If parents or guardians are unable or unwilling to provide the necessary relief and treatment for such pupils, such fact shall be reported by the principal or teacher to the medical inspector, whose duty it shall be to provide relief for such pupils." Does this mean the school physician should treat an ear abscess, pneumonia, or meningitis? Of course, this is not done now. We have asked the New York State Departments of Education and Health for an official opinion by counsel on this matter. Presently, no treatment is prescribed in most schools, but some pediatricians feel treatment is indicated, especially in large ghetto areas.

The question of categorizing all schools in the State has been raised. This has been done in State, private, community, technical, agricultural colleges, and others listing number of teachers, students, socioeconomic status, number of classrooms, and so on. Through information already available on census cards, information could also be gained about health education, health services, and health environment (including building, lighting, heating, and so on).

The committee is not happy to report that the recent Education Law change in school examinations from annual to periodic (kindergarten, first, third, seventh, and tenth grades) has not produced the beneficial effects that had been desired. Some physicians still use the "assembly line" procedure instead of utilizing their increased time to offer better services. Perhaps this is due to the fact that some school districts have drastically reduced the school physicians' salary. The number of physicians still practicing "old style" is small, but we would like to reduce it to zero.

A number of objections have been raised concerning financial arrangements for school physicians. One of the main objectives of the committee is for closer liaison between the State Health Department, the State Education Department, the American Academy of Pediatrics, and the Medical Society of the State of New York.

Respectfully submitted,
Hugh F. Leahy, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee is distressed to note that the recent Education Law change in school examinations from annual to periodic (kindergarten, first, third, seventh, and tenth grades) has not produced the beneficial effect that had been desired.

The House voted to adopt this portion of the reference committee report.

Abortion

To the House of Delegates, Gentlemen:

The Special Committee on Abortion comprises the following:

Carl Goldmark, Jr., M.D., *Chairman*	New York
Edward C. Hughes, M.D.	Onondaga
Bernard J. Pisani, M.D.	New York
Clyde L. Randall, M.D.	Erie
Locke L. MacKenzie, M.D.	New York

The committee met in Atlantic City, on June 23, to consider "whether doctors doing abortions should have to pay a surcharge on their malpractice premiums." Statistics for nine months, prepared by the H. F. Wanvig Company, were studied. After much deliberation and discussion, it was decided that it was too soon to foresee a trend in an increase in the number of suits because of abortions.

It was, therefore, decided to hold another meeting in the Fall to reconsider the problem when a larger experience and more valid figures to project a trend in the suits on abortion cases would be available.

Respectfully submitted,
Carl Goldmark, Jr., M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The report of this committee was received and reviewed.

The House voted to adopt this portion of the reference committee report.

Resolution 72-12, Continuing Education for Physicians

Introduced by Nassau County Medical Society

WHEREAS, The Nassau County Medical Society is strongly in favor of continuing postgraduate education in all disciplines of medicine; and

WHEREAS, The Medical Society of the State of New York and its component member, the Nassau County Medical Society, are unalterably opposed to the concept of relicensing and recertification of physicians; and

WHEREAS, Relicensing and recertification single out and exert unjustified and unnecessary hardship on a single profession; and

WHEREAS, The medical profession firmly believes that its varied specialty groups maintain and encourage high educational standards for its respective members; therefore be it

Resolved, That the Medical Society of the State of New York urge all physicians to participate in a program of continuing medical education; and be it further

Resolved, That the Committee on Continuing Medical Education proceed immediately to formulate a program of continuing education for members of the Medical Society of the State of New York.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee approved the intent of this resolution and accepts it for information but notes that the State Medical Society is currently formulating a program for continuing education as pointed out in the report of the committee.

The House voted to file resolution 72-12.

Resolution 72-34, Methadone Maintenance Treatment

Introduced by Medical Society of the County of Kings

WHEREAS, A methadone maintenance treatment program should be far more inclusive than the mere dispensation of this medication; and

WHEREAS, An adequate program demands not only proper supervision with adequate supplementary laboratory services but also such other ancillary services as vocational counseling and rehabilitation; therefore be it

Resolved, That the Medical Society of the State of New York recommend that the methadone maintenance treatment of narcotic addiction be confined to facilities having a full range of ancillary personnel and appropriate structure for supervision and control; and be it further

Resolved, That the Medical Society of the State of New York forward this resolution to the House of Delegates of the American Medical Association for adoption at its June, 1972, meeting.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends referral of this resolution, via the Council, to the Committee on Drug Abuse.

The House voted to refer resolution 72-34 via the Council to the Committee on Drug Abuse.

Resolution 72-35, Regional Bacteriologic Service for Diagnosis of Gonorrhea

Introduced by Broome County Medical Society

WHEREAS, The New York State Department of Health, in its attempts to control the spread of gonorrhea in the State, has given physicians a fine transport medium for culture of the gonococcus; and

WHEREAS, Unfortunately a majority of these arrive at Albany too late, or in a deteriorating condition, for meaningful study; and

WHEREAS, Since most communities have approved laboratories fully capable of providing this service without delay; therefore be it

Resolved, That the Medical Society of the State of New York recommend that the State Health Department provide funds to local laboratories to carry out the bacteriologic investigation necessary.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-35.

Resolution 72-36, Repeal of New York State Abortion Law and to Urge Law to Forbid Abortion Except to Safeguard Life of Mother

Introduced by Vincent J. Tesoriero, M.D., as an individual

WHEREAS, The act of abortion by a physician is a denial of his oath and his traditional role and dedication to the preservation of life; and

WHEREAS, The science of genetics has established that the fertilized human ovum has all the characteristics of a human being; and

WHEREAS, The statutes of New York State and the City of New York provide that in the case of an abortional act resulting in a fetal death, a fetal death certificate must be filed; and

WHEREAS, The Internal Revenue Service has ruled that if a fetus lives for a period of one hour, that fetus may be legally claimed as a personal exemption deduction; and

WHEREAS, These two governmental positions constitute an official admission of the death of a human being; therefore be it

Resolved, That the Medical Society of the State of New York go on record as requesting that the 1970 Abortion Law be repealed; and be it further

Resolved, That the Medical Society of the State of New York request that the New York State Legislature enact a law to forbid abortion except to safeguard the life of the mother.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee disapproved this resolution for the outright repeal of the New York State Abortion Law. For the information of the House, we note that the vote to disapprove this resolution was 4 to 1.

The reference committee unanimously agrees that utmost diligence and controls should be maintained to assure optimum medical care concerning these procedures.

The House, after discussion, voted not to adopt resolution 72-36.

Resolution 72-37, Discontinuance of Routine Smallpox Vaccination

Introduced by Bronx County Medical Society

WHEREAS, The U.S. Public Health Service's Advisory Committee on Immunization Practices and the Committee on Infectious Diseases of the American Academy of Pediatrics have recently recommended that the United States discontinue routine smallpox vaccination; and

WHEREAS, For the first time, the risk of acquiring a major infectious disease has declined to a level where universal vaccination is no longer needed; and

WHEREAS, The Public Health Service recommendation calls for selective vaccination for those at particular risk; travelers who might be exposed to smallpox abroad, and hospital and other medical personnel who would be at special risk of exposure if a case of smallpox were imported; and

WHEREAS, Primary smallpox vaccination carries a low risk of severe complications and death; and

WHEREAS, Now that routine vaccination is unnecessary these adverse reactions need no longer occur; therefore be it

Resolved, That the Medical Society of the State of New York strongly recommend to the New York State Commissioner of Health and the New York State Legislature that routine smallpox vaccination no longer be a requirement for school entry; and be it further

Resolved, That steps to effect this recommendation be taken at the current legislative session in Albany; and be it further

Resolved, That bona fide proof of smallpox vaccination be required for a person going to or coming from an area where smallpox is known to exist.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends referral of this resolution, via the Council, to the Committee on Preventive Medicine.

The House, after discussion, voted to refer resolution 72-37, via the Council, to the Committee on Preventive Medicine.

Resolution 72-38, Opposing the "Indications and Warnings" on All Sulfonylureas Recommended by Food and Drug Administration

Introduced by Bronx County Medical Society

WHEREAS, The position taken by the Food and Drug Administration on sulfonylureas is in contradiction to its own Advisory Committee; and

WHEREAS, The position taken by the Food and Drug Administration on sulfonylureas is unjustified; and

WHEREAS, The position taken by the Food and Drug Administration on sulfonylureas constitutes a distinct interference with the practice of medicine and the welfare of patients; and

WHEREAS, There is obviously a controversy within the Food and Drug Administration; and

WHEREAS, The decision of the Food and Drug Administration in issuing the October, 1970, information bulletin, "Diabetes Prescribing Information" is potentially deleterious to people who would benefit from the use of tolbutamide; therefore be it

Resolved, That the Medical Society of the State of New York support the petition of the Coordinating Committee of the Committee on the Care of The Diabetic to the Commissioner of Food and Drug Administration, as follows:

1. That the recommendations contained in the October, 1970, Food and Drug Administration *Current Drug Information Bulletin* entitled "Diabetes Prescribing Information" be immediately rescinded and that notice of such rescission be distributed in exactly the same manner as the *Bulletin* was distributed.
2. That the recommendations which would change the indications and warnings section of the labeling of all sulfonylureas as stated in the June 23, 1971, Food and Drug Administration *Drug Bulletin* be rescinded and that notice of same be distributed in exactly the same manner as the *Bulletin* was distributed.
3. That the Food and Drug Administration use its best efforts to restore the confidence of patients in their physicians who use tolbutamide and the sufonylureas generally; and be it further

Resolved, That this resolution also be forwarded to the American Medical Association, the two New York State senators, and the congressmen from New York State.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends referral of this resolution, via the Council, to the Committee on Metabolic Diseases, and notes that no one appeared before the reference committee to give testimony on this resolution.

The House voted to refer resolution 72-38, via the Council, to the Committee on Metabolic Diseases.

Resolution 72-39, Safety Glazing in Hazardous Locations

Introduced by Rockland County Medical Society

WHEREAS, An alarming number of severe injuries and deaths have occurred annually in this State as a result of the shattering of ordinary glass in hazardous locations; and

WHEREAS, Mandatory State building codes have been enacted and enforced in many states requiring safety glazing in high-risk areas to provide the public greater safety and have been effective in reducing the number of deaths and severe injuries; and

WHEREAS, The American Medical Association has already expressed its concern in regard to this problem in the resolution of September 17, 1970; therefore be it

Resolved, That the Medical Society of the State of New York introduce appropriate legislation to insure that only safety materials (glass or plastic) be used in all hazardous locations, both in new construction and in the repair or replacement of previous construction.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION: The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends adoption of this resolution.

The House voted to adopt resolution 72-39.

Resolution 72-40, Rubella Vaccination and Immune-Status Testing in Females of Childbearing Age

Introduced by Bronx County Medical Society

WHEREAS, At present premarital syphilis serology is required in New York State; and

WHEREAS, The department of health laboratories of the City of New York indicate that less than 1 per cent of these examinations uncovers a positive result; and

WHEREAS, In contrast, 12 per cent of women of childbearing age lack immunity to rubella; and

WHEREAS, Syphilis is a treatable disease and can be controlled by therapy during the course of the illness and rubella is not treatable and when infection occurs in susceptible women during the first three to four months of pregnancy there is a high yield of seriously deformed infants; and

WHEREAS, Knowledge of rubella-immune status at the time of premarital examination may offer to the future bride an opportunity for rubella immunization or through simple education may help her avoid the agonizing decisions associated with maternal rubella; therefore be it

Resolved, That the Medical Society of the State of New York take appropriate action for the following four steps to become law in the State of New York:

1. Premarital Wassermann blood specimens should be split by the laboratory (private, city, or hospital) without the physician's specific request and a rubella titer be performed and reported back to the physician by the laboratory together with the VDRL result.
2. All prenatal patients should have a rubella screening test if it has not been done before.
3. All females entering high school undergo a rubella screening test.
4. Every postpartem clinic should establish a rubella innoculation program.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH

AND EDUCATION The following report was presented by Samuel H. Madell, M.D., chairman.

The committee was in unanimous agreement with the spirit of this resolution. However, the details of this resolution were deemed inadequate.

The reference committee, therefore, recommends referral of this resolution, through the Council, to the Committee on Preventive Medicine for clarification and recommendation.

The House, after discussion and after defeating a motion to refer, voted to adopt resolution 72-40.

Resolution 72-41, Beds in Mental Hospitals for Custodial Care of Elderly Patients

Introduced by Medical Society of the County of Oneida

WHEREAS, The Medical Society of the County of Oneida is concerned about the health care of all Oneida County citizens as well as the gradual increase of cost of the total health-care picture, such as hospital rates, ancillary rates, Medicare, welfare, and third-party insurance rates; and

WHEREAS, The hospital-bed census in Oneida County has been acute for the past four years and waiting lists of patients to be admitted to the acute-care hospitals exist each day because of the shortage of hospital beds; and

WHEREAS, The utilization review committees of the acute-care hospitals of Oneida County and the Mid-State Committee on Area-Wide Health Planning, Inc., are aware that 20 to 25 per cent of the acute-care hospital beds are occupied by patients over sixty-five years of age who are physically not capable of living alone after the spell of illness and either have no family or the family will not accept them; and

WHEREAS, These patients, therefore, remain in the acute-care hospitals for days and weeks occupying beds for custodial care; and

WHEREAS, The nursing-home beds in Oneida County are fully occupied and few in number as compared with the need; and

WHEREAS, Several nursing homes have been closed by the New York State Department of Health because of their failure to qualify for approval under existing requirements; and

WHEREAS, The cost to the Federal and county health-care programs for patients in acute-care hospitals is extremely high for custodial care; and

WHEREAS, There are two New York State mental health hospitals in Oneida County where there are many empty beds; and

WHEREAS, The cost of custodial care per patient in a New York State mental hygiene hospital would be one third to one half of the cost in acute-care hospitals; and

WHEREAS, The patient who is in the acute-care hospital bed for custodial care paid State taxes twenty-five to thirty years ago to help build the mental hygiene hospitals of today; therefore be it

Resolved, That the Medical Society of the State of New York urge the Governor and the Commissioner of Mental Hygiene to consider the utilization of these empty State hospital beds for the day and custodial care of certain patients who no longer require hospitalization in the regional acute-care institutions.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee notes that a similar resolution had been introduced to the House in 1971 and had been referred by the reference committee to the Committee on Mental Health, but no action had been forthcoming. Therefore, the reference committee recommends referral of this resolution, through the Council, to the Committee on Aging and Nursing Homes.

The House, after discussion during which the chairman withdrew the motion to refer, voted to adopt resolution 72-41.

Resolution 72-76, Adequate Funding for the New York State Department of Mental Hygiene

Introduced by First District Branch

WHEREAS, The Medical Society of the State of New York has always had an active interest in the adequacy and quality of health services to the people of this State; and

WHEREAS, The State, in 1971, seriously reduced appropriations for mental health and mental retardation programs; and

WHEREAS, The State has given higher priorities to highways, bridges, and buildings than to human services; therefore be it

Resolved, That the Medical Society of the State of New York convey to the appropriate officials and legislators its earnest request that the Department of Mental Hygiene receive a level of support sufficient to improve the present low level of service to mentally ill and retarded persons.

REPORT OF REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION The following report was presented by Samuel H. Madell, M.D., chairman.

The reference committee recommends adoption of this resolution.

The House voted to adopt resolution 72-76.

The House voted to adopt the reference committee report as a whole as amended.

Public and Professional Affairs

Commission on Public and Professional Affairs

To the House of Delegates, Gentlemen:

Members of the Commission on Public and Professional Affairs are as follows:

Paul M. DeLuca, M.D., *Chairman*	Broome
John H. Carter, M.D.	Albany
Charles N. Aswad, M.D.	Broome
Norton M. Luger, M.D.	Queens

This report will be necessarily brief since the detailed reports of the State Legislation Committee, Federal Legislation Committee, and Public Relations Committee are self explanatory. We call special attention, however, to the creation of the new Division of Legislation under the directorship of Martin J. Tracey, J.D., the venereal disease prevention education program being conducted in cooperation with colleges and secondary schools, and approval by the Council that position papers will be drawn up outlining the policies of the State Medical Society.

The chairman, on behalf of his colleagues on the Commission, wishes to express the sorrow we felt with the passing of C. Stewart Wallace, M.D., former chairman of this Commission, who at the time of his death was a special adviser to the Committee on Public Relations. "Skip" Wallace was always courageous in expressing his views which were on the side of projecting the Medical Society as a creative and responsive organization willing to meet the public and the press more than half way. His work in developing the "Guide for Cooperation for Doctors, Hospitals, and Reporters" and in publicizing comprehensive health planning throughout the State were notable efforts for which the Medical Society remains indebted. We will miss his counsel and friendship.

Respectfully submitted,
Paul M. DeLuca, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

The annual report of the Commission on Public and Professional Affairs, under the chairmanship of Paul M. DeLuca, M.D., was reviewed. This report was necessarily brief since it was an introduction to detailed reports of the chairmen of the Federal Legislation Committee, State Legislation Committee, and Public Relations Committee. We note with sorrow the passing of C. Stewart Wallace, M.D., former chairman of this commission, who devoted many years of distinguished service to the Medical Society of the State of New York.

The House voted to adopt this portion of the reference committee report.

Public Relations

To the House of Delegates, Gentlemen:

The members of the Committee on Public Relations are:

Norton M. Luger, M.D., *Chairman*	Queens
Clement J. Boccalini, M.D.	Nassau
Russell C. Johnson, M.D.	Westchester
Eli A. Leven, M.D.	Monroe
James R. Nunn, M.D.	Erie
Daniel F. O'Keeffe, M.D.	Warren
Thomas D. Pemrick, M.D.	Rensselaer
John A. Root, M.D.	Onondaga
John F. Spring, M.D.	Broome

Special Adviser: C. Stewart Wallace, M.D.*

Venereal disease has reached epidemic proportions in New York State. In recognition of this, during 1971 an educational program to combat venereal disease was launched with the encouragement of your committee. We met with the Subcommittee on Venereal Disease to discuss details of this program, and your chairman subsequently met with a similar group which also included officials of the Department of Health and the Department of Education of New York State. A survey was made of college health facilities. A State Medical Society Mobile Health Show unit subsequently visited 44 college campuses in New York State with an audiovisual presentation designed to convey facts that young people can readily understand. It advised them where to seek help. This initial program has been effective and has received wide publicity and the plaudits of educators without exception, including favorable comments from Catholic institutions.

The VD prevention program has been budgeted again for 1972, and greater emphasis will be placed on reaching high schools. Each regional representative will be equipped with a portable audio-visual unit for use in auditoriums and classrooms to supplement the traveling mobile unit. We plan further meetings with the Subcommittee on Venereal Disease to explore ways of broadening the program and attracting outside funds.

The two experimental conferences to improve communications between medical students, interns, and residents and the State Medical Society attracted larger audiences than anticipated. With promotion limited to New York County and downstate medical schools, 140 persons attended the panel discussion at the New York University School of Medicine, on October 20, in which AMA President Wesley W. Hall, M.D., and our president, George Himler, M.D., were among the participants. The topic "What Is The Future of Organized Medicine?" was also discussed in a similar conference at the University of Rochester School of Medicine and Dentistry, on October 27, attended by 84 physicians and students.

Your committee feels that holding conferences in a medical school setting should be continued, and that further experimentation should be encouraged. We believe meeting with medical students face to face in frank discussion is one effective way to interest future physicians in the State Medical Society. Formal representation of students in the State Medical Society is being studied by another committee.

At our May 17 meeting, Dr. Himler was invited to outline the progress made by the Foundations Committee so that the content and timing of public relations support for the proposed Statewide Institute could be gauged. A lengthy article by Dr. Himler was subsequently published in the December issue of the *News of New York*. More than 2,000 reprints were requested by the Health Insurance Council and other agencies, and distribution was also made to the press.

The committee discussed and later recommended to the Council that the State Medical Society compile a list of the county medical societies which have abortion referral services. The list was referred to the Special Committee on Abortions for disposition. It had been requested by the Attorney General to counteract the growth of commercial abortion referral services.

The Council approved a recommendation of this committee that position papers be drawn up by the State Medical Society to have on hand when answering inquiries from the press, the public, and the physicians. We believe this will be a valuable step in making more widely known the policies of the State Medical Society, and in minimizing any tendency of the press to turn to unauthorized sources for commentary on medical affairs.

Rather than duplicate details in this report, we call to your attention that staff activities of the Division of Public Affairs and its departments appear in the report of the executive vice-president.

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* Deceased December 28, 1971.

The committee deeply mourns the death of C. Stewart Wallace, M.D., on December 28, 1971. "Skip" was chairman of this committee for many years. At the time of his death, he was our special adviser, in addition to fulfilling responsibilities as a member of the Board of Trustees of the State Medical Society, and as a delegate to the AMA. He never withheld an opinion when it came to getting at the heart of public issues. It was always with his encouragement that the Society's public relations apparatus hit hard on such issues as health quackery, comprehensive health planning, and peer review. We will miss his forthrightness and friendship, and we hope to continue in the tradition he established.

Respectfully submitted,
Norton M. Luger, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS. The following report was presented by Alfred L. George, M.D., chairman.

The annual report of the Committee on Public Relations, under the chairmanship of Norton M. Luger, M.D., was reviewed in detail. Your reference committee took note of the special efforts made by this committee in their Venereal Disease Education Program. The State Medical Society Mobile Health Show unit visited 44 college campuses in New York State and is now visiting high schools. This program has been effective and has been receiving wide publicity and great praise.

The success of the two experimental conferences on communication with medical students, interns, and residents indicates that such conferences in medical school settings should be continued.

We commend the committee for its action, already approved by the Council, in recommending preparation of position papers on current issues to more effectively answer inquiries from the press, the public, and physicians.

The House voted to adopt this portion of the reference committee report.

Federal Legislation (Annual)

To the House of Delegates, Gentlemen:

The Committee on Federal Legislation is composed of the following members:

Charles N. Aswad, M.D., *Chairman*	Broome
Jacob Buchbinder, M.D.	Putnam
Robert B. Bryant, M.D.	Onondaga
Robert P. Coolidge, M.D.	Schenectady
Irwin Felsen, M.D.	Allegany
John G. Meagher, M.D.	Suffolk
George M. Saypol, M.D.	New York
Ethan L. Welch, M.D.	Monroe

Since the last session of the House, your committee has studied closely all bills introduced in Congress, especially in regard to national health insurance. The committee met in late April to act on directives of the House and to discuss pending Federal legislation mentioned in this report. At the time this report is being prepared, a meeting of the committee is scheduled to be held at the Country House, Syracuse, on November 10, the day before, and in preparation for, the Annual Conference of County Medical Society Legislation Representatives, on November 11. A supplementary report covering the meeting and the conference will be submitted to the House in February, 1972.

Committee meeting. Your committee met at State Medical Society headquarters on April 28. Your chairman presided. The first order of business was action on matters referred to the committee by the 1971 House of Delegates of the State Medical Society. The committee considered the following resolutions and disposed of them in the manner indicated:

Resolution 71-2, "Telephone Narcotic Orders,"—the committee voted that the chairman is to send a letter to the director, Division of Narcotics, U.S. Department of Justice, Washington, D.C., concerning this resolution, with copies to be sent to New York State congressmen. No definite response has yet been received in regard to this matter.

Resolution 71-1, "Advertisements in Mass Media on Mood-Changing and Analgesic Drugs,"—since a resolution was to be introduced at the annual meeting of the American Medical Association's House of Delegates, Atlantic City, in June, 1971, on this subject, no action was taken. We have been advised that the AMA House of Delegates adopted a substitute resolution.

Resolution 71-10, "Amendment to Social Security Act To Change Qualifying Dates,"—no action was taken on this resolution because of the pending introduction of a similar resolution at the AMA House of Delegates. We have also been advised that this resolution was adopted by the AMA House of Delegates.

Resolution 71-76, "Support of Continued Funding for Basic and Applied Research"—no action was voted on this resolution since it also was to be introduced at the AMA House of Delegates. We have also learned that this resolution was adopted with the amendment that the word "clinical" be inserted between "applied" and "research," wherever these words occur.

Resolution 71-3, "Repeal of Public Health Law Requiring Reporting of Drug Addiction," and *Resolution 71-4,* "Treatment of Drug Addiction"—no action was taken on these resolutions since the subject matter was then being considered by the State Medical Society's Committee on Alcoholism and Drug Abuse and Committee on State Legislation.

Health insurance. Before entering into a discussion of the several national health insurance bills pending before Congress, the committee considered the 10 basic principles, originally adopted by our House of Delegates several years ago and subsequently reiterated, what any legislation must contain regarding comprehensive health insurance, before approval will be granted by our State Medical Society. The committee voted unanimously to recommend to the Council the following resolution:

> *Resolved,* That the Council of the Medical Society of the State of New York direct, through a committee appointed by the president, a restudy of the ten basic principles regarding comprehensive health insurance programs adopted by the House of Delegates of the Medical Society of the State of New York to update them and to make them consistent with current thinking of the State Medical Society.

At its meeting on May 27, the Council referred this resolution to the Committee on Universal Health Insurance Law. A meeting was called by Walter T. Heldmann, M.D., chairman, on October 6, to consider the principles in question. Your chairman was invited to attend this meeting.

The committee unanimously agreed that since the original ten principles were developed in response to the need for evaluating New York State bills on universal health insurance of several years ago, revision was necessary to update the State Medical Society's policy on Federal bills currently under consideration.

Dr. Heldmann's committee developed a new statement of principles to be submitted to the Council. By using these new guidelines, if approved, your Federal Legislation Committee will be able to evaluate all universal health insurance bills in keeping with current State Medical Society policy.

Prior to our meeting materials had been sent to each member of the committee on the major national health insurance proposals. These included: (a) Medicredit (AMA), H.R. 4965, S. 987; (b) Kennedy Bill, S. 3, H.R. 22; (c) Javits's Bill, S. 836; (d) Burleson Bill, H.R. 4349; (e) Hall Bill, H.R. 177; (f) Dingell Bill, H.R. 48; and (g) Pell Bill, S. 703.

There was a great deal of discussion about the Kennedy Bill and Medicredit. The Nixon Bill which had just been introduced in the House of Representatives on the day before the meeting, received much consideration. The committee finally decided that it would take no action on any of the major health insurance proposals at that time. The consensus was that more study should be given to the proposals, especially the Medicredit Bill, the Kennedy Bill, and the Nixon Proposal. All bills will undergo considerable revision, and support by the State Medical Society should be withheld from any bill not meeting all the criteria set by the House of Delegates with any subsequent revisions. According to reliable reports, no action is expected to be taken on these bills during the 1971 session of Congress.

It appears that Congress will move rather deliberately into the field of national health insurance and perhaps take one step at a time. The substantial underestimation of Medicare and Medicaid costs, and the obvious impact on demand for health care which they caused, have made many in Congress wary of plunging into a big new program in the health field.

If the Congress does approach national health insurance on a step-by-step basis, a reliable source estimates that these steps would be only beginning steps. Some of these might take place during 1972. Some may not. It is possible that all of these and even a few more layers might be added in a presidential election year. At any rate, here are some steps which reliable sources believe may take place:

1. Replacing Medicaid with a federally-paid health insurance policy for the poor.
2. Some form of catastrophic illness insurance, which is the most popular health proposal on Capitol Hill at the present time.
3. Some form of utilization review and cost controls for Federal health programs which may take the form of peer review.
4. Probably some form of the Administration's bill which would require employers to pay most of the cost of health insurance for employes and their families.
5. A limited Federal subsidy for Health Maintenance Organizations (HMO) especially on an experimental basis and in areas where health services are below the average, such as urban slums and rural poverty areas.

At the time of submitting this statement, it has been reported that hearings will begin in October, 1971, by the House Ways and Means Committee, Hon. Wilbur Mills, chairman, on the question of national health insurance.

This will further focus on this issue as the prime domestic issue of the forthcoming 1972 presidential election year.

Procedure. The committee decided also to follow the same procedure adhered to during the previous years in considering Federal legislation, namely, to consider the actions taken by the AMA's Legislation Committee.

Speakers. Your committee had the privilege of having two guest speakers at its meeting. George Himler, M.D., our president, participated in the meeting and reported on his appearance before the public hearing conducted by Senator Kennedy in New York City on health care. He also alerted the committee to plans under consideration for the sponsoring of Federal legislation in the area of malpractice insurance. Kenneth G. Bugan, assistant director, AMA Department of Field Service, reported on latest developments in Washington and the American Medical Association's activities in regard to them.

Acknowledgments. Your chairman wishes to express to each member of his committee his personal thanks for the help they rendered to him in the discharge of his duties as chairman. He is also appreciative of the assistance rendered to him by C. Stewart Wallace, M.D., past chairman, and Paul M. DeLuca, M.D., present chairman, Commission on Public and Professional Affairs; Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president; Guy D. Beaumont, director, Division of Public Affairs, and Martin J. Tracey, J.D., coordinator, legislation activities.

Respectfully submitted,
Charles N. Aswad, M.D., Chairman

Federal Legislation (Supplementary)

To the House of Delegates, Gentlemen:

Your committee participated in the Annual Conference of County Medical Society Legislation Representatives which was held at the Country House, Syracuse, on November 11, 1971. On the previous evening, at the same motel, your committee held a meeting, in preparation for the conference.

At the December, 1971, meeting of the Council, Paul M. DeLuca, M.D., chairman, Commission on Public and Professional Affairs, at the request of your chairman, informed the Council that the participants in both the Federal Legislation Committee meeting and in the annual conference favored action by the State Medical Society in regard to one of the bills pending in Congress concerning national health insurance. He told the Council that the participants in both meetings had approved a motion which, in substance, favored the American Medical Association's Medicredit Bill.

The Council suggested that this motion be submitted by the Federal Legislation Committee to the 1972 session of the State Medical Society's House of Delegates. Your committee, therefore, submits the following recommendation to the House:

Although numerous bills on national health insurance have been introduced in Congress and the ultimate result probably will be the enactment of a bill reflecting a combination of some of these proposals, the Medical Society of the State of New York, at the present time, endorses, in principle, the Medicredit Bill, sponsored by the American Medical Association, as one of the methods for financing a national health insurance program, but not necessarily the sole and primary solution to the problem.

Committee Meeting. At its committee meeting on November 10, the members discussed the six new basic principles for comprehensive health insurance programs recently approved by the Council before deciding to recommend approval of the Medicredit program. After considerable discussion, the committee voted to approve these six basic principles.

The committee also heard an up-to-the-minute report on developments in the AMA concerning Federal legislation from its regional representative, Kenneth G. Bugan. Following Mr. Bugan's presentation, the committee discussed recommendations of the AMA Council on Legislation in regard to key health proposals pending in Congress.

The committee decided that the following bills were acceptable to the group and were submitted to the Council at its January, 1972, meeting, for its information.

The Council voted acceptance of these recommendations for information.

H.R. 7741—National Health Insurance Partnership Act of 1971. The Administration's "National Health Insurance Partnership Act of 1971" is composed of two principal parts: (1) a program to provide health benefits for employes and their families through the mandatory purchase of health insurance by employers (Basic Health Care Plan); and (2) a health insurance plan patterned after Medicare for members of low-income families with children (Family Health Insurance Plan). A different set of benefits is provided, respectively, under the two programs.

After considering the bill, the committee voted to support Medicredit. In comparing the two bills, the committee favored the uniform benefits provided under Medicredit. The committee also felt that a major defect in the Administration Program was the fact that a carrier would serve only as an intermediary and not as an underwriter.

S. 936—Coverage of Outpatient Drugs Under Medicare. This bill would amend Part A of the Medicare program so that beneficiaries would be entitled to drugs on an outpatient basis. The beneficiary would incur a copayment of $1.00 for each prescription furnished under the program. A formulary committee would be established, and drugs would be furnished in accordance with the formulary listing. Consistent with past actions on similar proposals, the committee recommended that this bill be opposed.

H.R. 578—U.S. Armed Forces Medical School. The committee considered two aspects of this bill, one providing for the creation of a U.S. Armed Forces Medical School, and the other for an Armed Forces Health Professions Scholarship Program. The creation of an Armed Forces Medical School was considered and opposed. Regarding the scholarship program, the committee considered the fact that the Council on National Security supports the scholarship program and suggests that the scholarship program would be a desirable substitute for a costly medical school. The committee, therefore, recommended support for the military scholarship program.

S. 1874—Children's Dental Health Act of 1971. This proposal would establish programs of grants for children's dental health programs. Grants would be made to state health agencies or to other nonprofit private agencies or institutions for the following: (1) projects for dental care for children of preschool and school age, including comprehensive, corrective, follow-up, and preventive services; (2) grants for water treatment programs, providing fluoridation of water sources designed to reduce the incidence of oral disease or dental defects; (3) grants to train auxiliary dental personnel; and (4) projects to promote effective use of auxiliary dental personnel. The committee was advised of strong support for this measure by the American Dental Association and the approval of it by the AMA Council on Legislation. The committee, therefore, recommended support of S. 1874.

H.R. 269—Blood: Donor Registration and Detection of Serum Hepatitis. This measure would require the Secretary of HEW to establish and maintain a registration system whereby any prospective donor of blood may be examined and issued an identification card if the donor does not have a history of previous disease or personal habits which might predispose him to be a carrier of the hepatitis agent. The identification card would be required before blood could be accepted from a person except in cases of critical need. Penalties would be provided for accepting blood in violation of this rule. A separate portion of the bill would require the Director of the Division of Biological Standards within the NIH to establish and maintain a research program for the discovery of a medical test to detect serum hepatitis prior to transfusion.

The committee recommended opposition to the portion of the bill creating a registration system. The identification card would only be meaningful at the time of its issuance, and the nation's blood supply would not be protected to any significant degree under such a system. The committee, however, voted to recommend support for the portion of the bill creating a research program for the development of a medical test for the detection of serum hepatitis.

H.R. 1633—Medical Deductions for Blood Donations. This bill would amend the income tax laws to allow as a charitable deduction a donation of blood or a body organ to nonprofit organizations or institutions. The dollar value of such contribution would be determined under regulations. The committee objected to the establishment of a dollar value for blood through the allowance of an income tax deduction and also was of the opinion that a tax incentive would not encourage voluntary blood donations, particularly in view of the fact that large numbers of donors claim a standard deduction and do not itemize their deductions. The committee also expressed concern as to the impact which the placing of a money value on blood might have on the legal question of whether blood is a service or a commodity. The committee, therefore, recommended opposition to the bill.

H.R. 8297—Personal Services as Charitable Con-

tributions. This proposal would amend the Internal Revenue Code to allow personal services as a charitable contribution deductible for income tax purposes. This would include services of lawyers, physicians, and others. The committee considered that in the past physicians have contributed their personal services for charitable purposes without the expectation of receiving tax deductions. The committee also felt that the bill would not have a positive effect in the provision of charitable services and might be subject to some abuse in its broad application. The committee, therefore, recommended opposition to the bill.

S. 2210—Draft Exemption for Physicians in Shortage Areas. This measure would amend the Military Selective Service Act to provide that physicians who agree to serve for a period of not less than four years in physician-shortage areas of the U.S. would be relieved from liability for military training and service. The committee considered previous MSSNY and AMA policy not to support measures designed to provide military equivalency for other services, but favoring financial or other incentives for practice in shortage areas. The committee noted the increased financial incentives in pending manpower legislation to encourage service in shortage areas, the existence of the current Emergency Health Personnel Act, and the current draft regulations deferring physicians who are essential in their community. The committee also was advised that new provisions in the draft law provide for studies which might lead to reduced military need for physicians, for example, through use of civilian physicians to supply services for dependents of servicemen. The committee, therefore, decided that incentives other than military service exemption should be offered to meet the need in shortage areas, and recommended opposition to the bill.

S. 2007—Economic Opportunity Amendments of 1971. This bill authorizes $5.9 billion to extend for two years the antipoverty programs authorized in the Economic Opportunity Act of 1964, and for the addition of new programs. The bill authorizes $2 billion for fiscal year 1973 for the operation of a program of comprehensive child development, with $100 million for 1972 for training of personnel and for planning and development of the program.

The committee was advised that the American Academy of Pediatrics was in support of this bill, but the committee viewed with concern the scope of this program in broadening governmental activities relating to child care and development. The committee also felt that there was merit to providing for research and demonstrations in child development efforts. Supporting in principle the objective of the bill to provide for appropriate comprehensive child-care development, the committee would recommend support insofar as it establishes such programs where need is proved and where private enterprise does not meet such need.

Annual Conference. In addition to discussing these bills, the committee at its November 10 meeting also made plans for its participation in the annual conference which was to be held on the following day. Each committee member took an active personal part in the program undertaking the responsibility of discussing these bills during the afternoon session, which was devoted to Federal legislation. Your chairman compliments the members on a job well done.

In regard to the annual conference held on November 11, your chairman also wishes to report that the portion of the program devoted to Federal legislation was a success. Visual aids were employed to set the theme of the conference. For the first time, a telephone method of communication between the nation's Capitol and the conference in Syracuse was utilized. An on-the-spot report direct from Washington, D.C., by means of speaker-phone, was presented under the caption "Legislation Hot Line." The participants in the conference were given the opportunity to hear key personnel of the AMA Washington Office staff of experts discuss matters currently going on in Congress. Led by Harry R. Hinton, director of the Washington Office, the group that presented reports included Paul R. M. Donelan, Esq., director, Government Relations Department; William J. Colley, Esq., director, Congressional Relations Department; Walter Harris, Congressional Relations Department representative; and James Foristal, Esq., Congressional Relations Department representative.

In addition to hearing these reports, the participants had the opportunity to ask questions of the reporters. On the whole, the program was an outstanding success and added immensely to the value of the Federal legislation session.

Acknowledgments. Your chairman wishes to express his sincere appreciation to Paul M. DeLuca, M.D., chairman, Commission on Public and Professional Affairs, for his counsel throughout the year and his thanks to Martin J. Tracey, J.D., and his secretary for their valuable assistance.

Respectfully submitted,
Charles N. Aswad, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

Your reference committee reviewed the annual and supplementary reports of the Committee on Federal Legislation, under the chairmanship of Charles N. Aswad, M.D.; these are excellent reports of accomplishments during the past year. The supplementary report brings us up to date on the status of Federal legislation of specific interest to physicians.

Of the many bills on national health insurance introduced in Congress, your reference committee agrees with your Federal Legislation Committee that the Medical Society of the State of New York endorses, in principle, the Medicredit Bill, sponsored by the American Medical Association, as one of the methods for financing a national health insurance program, but is not necessarily the sole and primary solution to the problem. May I also add that there was a resolution presented by the committee on the approval of the Medicredit Bill which is contained in their report.

In appearing before your reference committee, Dr. Aswad informed us that the Bennett Amendment, as introduced this year, has been altered to permit medical societies to become the peer review organizations. This was expressly prohibited in the 1971 version. This change is viewed with gratification.

The House voted to adopt this portion of the reference committee report.

State Legislation (Annual)

To the House of Delegates, Gentleman:

The Committee on State Legislation is composed of the following members:

John H. Carter, M.D., *Chairman*	Albany
Gerald L. Glaser, M.D.	Monroe
Herbert E. Joyce, M.D.	Erie
Henry W. Kaessler, M.D.	Westchester
Andrew W. Lawrence, M.D.	Suffolk
John J. Noonan, M.D.	Rensselaer
William J. Ryan, M.D.	Onondaga
Merritt F. Spear, M.D.	Clinton
Stanley Stark, M.D.	Kings
Richard E. Sullivan, M.D.	Broome

The final results of the five-month session, one of the longest in history, of the 1971 New York State Legislature were recorded when the thirty days allowed the Governor to act on the more than 1,500 bills left to him by the legislators ended at midnight, July 6, 1971. Notable among the actions taken by the Governor was the vetoing of a bill that would have permitted nurses to practice medicine and the signing into law of two bills granting immunity from suit to peer review committees and establishing a ban on disclosure of their proceedings and records. A barometer of the volume of business transacted was the fact that of the 15,000 bills introduced, one-tenth were passed and 1,200 of these were approved by the Governor, while about 300 were rejected.

As a result of this voluminous and often controversial activity, your committee, staff, and legislative counsel were extremely busy in presenting the medical profession's views to our legislators. The council was kept abreast of developments through progress reports submitted by your committee.

Plans are now under way for our participation in the 1972 session of the State Legislature which commences in early January. Since these plans will not be finalized until our Annual Conference of County Medical Society Legislation Representatives is held in Syracuse, on November 11, 1971, a supplementary report will be submitted to the house in February.

The following is a brief review of actions by the Governor on bills passed by the Legislature as well as bills which were acted on by the Legislature but failed to receive approval.

Actions by Governor

MSSNY bills become laws. Four bills pertaining to medical review committees and their records, initiated and supported by MSSNY, were signed into law. Two laws provide that physicians who serve as members of medical review committees of county or State medical societies shall not be liable in damages for actions and recommendations by them within the scope of their functions as such members, if without malice. Similar protection is given to societies in which committees function, (Chapters 995 and 1109, Laws of 1971). Two laws prohibit disclosure of the proceedings and records of medical review committees and hospital utilization committees, (Chapters 989 and 990, Laws of 1971). The reasoning behind the two sets of laws is that one set applied to the basic Education Law as it existed prior to September 1, 1971, and the other set applies to the law as it was changed following that date.

Nursing redefinition bill vetoed. The Governor's veto of two bills (A. 6164-A, Pisani, *et al.*; S. 1918-B, Laverne), which would redefine the practice of nursing, announced in his memorandum in which he quoted substantially the position of our State Medical Society, put a successful conclusion to our long and strenuous efforts to defeat the measures. In several memoranda to legislators and later communications to the Governor, our State Medical Society contended that the bills were so broad in scope as to permit nurses to practice medicine and, that, in view of their lack of training for such responsibility, this would result in a definite erosion of patient care.

Your representatives were most active in opposing the Laverne-Pisani Nursing Redefinition Bills. We met with both legislators, discussed our reasons for opposition at length, and submitted several memoranda outlining our views. The bills were amended, but not to our satisfaction. The amendment added to the proposed definition, the words "and executing medical regimens as prescribed by a licensed or otherwise legally authorized physician or dentist." The words permitting nurses to diagnose and treat, however, were not changed, and we continued our opposition to the bill, as amended, since it would allow nurses to practice medicine.

When we found that in spite of our vigorous opposition the bill was moving, Henry I. Fineberg, M.D., our executive vice-president, called an emergency telephone conference to enlist the aid of county medical societies. This conference alerted the regional representatives to contact all our county medical societies and the members of our panel of liaison physicians.

Telegrams were sent to all county medical society presidents and executive secretaries, as well as to all members of our panel of liaison physicians, urging them to voice their vigorous opposition to their senators and assemblymen. A follow-up memorandum was sent by Dr. Fineberg to all these persons and county medical societies, enclosing a copy of the bill and our memorandum in opposition. A similar statement was sent to the Governor.

Revision of Education Law. The Governor signed, without comment, a voluminous bill (S. 350, Laverne) which revises extensively provisions of the Education Law concerning admission to, and regulation of certain professions, including medicine, (Chapter 987, Laws of 1971). The new law is the final version of the perennial proposal which MSSNY had considered for many years. Since most of MSSNY objections to the measure had been met in part and a chapter amendment (S. 4120-B, Laverne) meeting MSSNY's objections to the procedure of the grievance committee structure, had passed the State Legislature, the State Medical Society took no position on S. 350. The chapter amendment (S. 4120-B, Laverne) also was signed into Law by the Governor (Chapter 994, Laws of 1971).

A complete report on these laws is being submitted to the House of Delegates by the Council Committee on Education Law Revision.

Physician's associates proposal approved. Nine separate proposals, including one sponsored by MSSNY, were introduced into the State Legislature providing for physician's assistants. The Governor's bill (S. 5703-Lombardi, *et al.*) which was, in general, acceptable to the State Medical Society, was the measure finally signed into law by the Chief Executive, (Ch. 1135). However, a chapter amendment to this law (A. 7075, Ginsberg) was vehemently opposed by MSSNY. The amendment, which was also signed into law (Chapter 1136, Laws of 1971), was opposed by our State Medical

Society on the grounds that it would emasculate the concept of physician's assistants and because it increased the Advisory Council from 10 to 12 members, in addition to the Chancellor of the State University, with only 5 physicians.

Nonprofit medical corporations. Legislation authorizing the creation of nonprofit medical corporations (S. 5704-A, Lombardi) was also approved by the Governor (Chapter 1139, Laws of 1971). Medical corporations organized under the new law are required to offer their services primarily in connection with a prepaid comprehensive health care plan and participating physicians must devote full time to the corporate enterprise.

MSSNY filed objections to the bill on the basic grounds, among others, that the bill set up a type of plan which has not yet proved to be a better vehicle for providing medical services than private practice and favored such corporations to the detriment of the private practitioner.

Abortion referral agencies. Three proposals, supported by our State Medical Society, relating to abortion referral agencies were made law, (Chapters 725, 776, 878, Laws of 1971). These new laws, in brief, would (1) ban abortion referral agencies operating for profit; (2) make it unlawful for a person or firm doing business in New York State to furnish a report of referral for abortion services or of an inquiry or request therefor to any person or governmental agency with certain exceptions; and (3) prohibit hospital or facility which delivers health care from granting or receiving discount to or from any medical referral service or in any manner split fees with a medical referral service.

Real estate tax exemption. Legislation vigorously opposed by our State Medical Society that subjects to "local option" the tax exemption of real property owned by certain nonprofit organizations, including medical societies, was signed by the Governor (A. 7228, Rules--Chapter 414, Laws of 1971). Another bill (A. 7227, Rules) was also made law (Chapter 417, Laws of 1971) and provides that all real property for which tax exemption is allowed shall be subject to service charges for police protection, fire protection, street and highway construction, maintenance and lighting, sanitation and water supply.

In a last minute development brought about by the crisis in New York City's fiscal situation, the bill (A. 7228) was passed by both houses. The bill was part of the tax package agreed on by the State Legislature's leaders and the City of New York. Prior to this arrangement, the bill was slated to die in committee.

Podiatry bills signed. Three bills which together establish the right of a licensed podiatrist to administer or prescribe narcotics were approved by the Governor (Chapters 997, 998, 999, Laws of 1971). The State Medical Society opposed all of these measures, despite their requirement that such right is conditioned on the podiatrist's certification by the Education Department in accordance with qualifications established by the Commissioner of Education.

Treatment of minors—parental consent. Several bills dealing with the treatment of minors without parental consent were introduced during the session, and one of these reached the Governor's desk (A. 6585). This bill which would have provided, in part, that any minor eighteen years or older, or has married, may give effective consent to medical, dental, and health services for himself, was vetoed by the governor.

Regents scholarships—shortage areas. A new statute approved by the Governor provides that at least 30 per cent of the total scholarships awarded annually for professional education shall be awarded to students beginning or engaged in professional study in medicine who agree to practice on completion of training in area in State designated as having shortage of physicians. (S. 3682-D, Chapter 964, Laws of 1971).

Blood—a service statute. Another favorable result of the session was the enactment of a bill supported by our State Medical Society and signed into law by the Governor before adjournment of the Legislature, which declares various activities incident to the providing of blood to be a public health service and not the sale of a commodity (Chapter 195, Laws of 1971). This measure affords hospitals and physicians some protection against damage actions arising from the providing of blood.

One chiropractic bill vetoed: others signed. The Governor vetoed a bill (S. 6792, Rules) which would have allowed an additional examination to an applicant for a chiropractic license who has been in practice between seven and fifteen years and has failed such an examination five times. He approved, however, other bills concerning chiropractic and opposed by the State Medical Society which: (1) provide that medical expense indemnity under the Insurance Law shall include reimbursement for care by licensed chiropractors (A. 3372, Flack—Chapter 982, Laws of 1971); and (2) stipulate that if an insurance policy includes reimbursement for service within the lawful scope of a licensed chiropractor, the subscriber would be entitled to reimbursement when a chiropractor performs such service (A. 3373, Flack—Chapter 983, Laws of 1971).

Also signed by the Governor was S. 6480—Chapter 991, Laws of 1971, which provides that a license to practice chiropractic shall not permit the holder to use diagnostic or therapeutic methods involving chemical or biologic means, or to utilize electrical devices except those approved by the board as essential to chiropractic practice.

Actions by legislature

During the session of the State Legislature some 19 proposals in connection with chiropractic were killed. All bills were strongly opposed by MSSNY. Among those defeated involved proposals on x-rays, clinical laboratories, and Workmen's Compensation.

MSSNY opposed bills—defeated. Principal among the bills opposed by MSSNY which did not pass the State Legislature was the Governor's perennial universal health insurance proposal.

Universal health insurance. The Governor sent to the legislature a universal health insurance program patterned after his 1970 proposal, "for study purposes," pending action by the Congress on President Nixon's recommendations in the same field. Noting that his own previous proposal had not been enacted, the Governor stated he is "heartened, nevertheless, that the principle of universal insurance is at last gaining ground where it is most appropriate—at the national level." This bill died in committee in both the Senate and Assembly.

Recodification of mental hygiene law. Following a study of the bill providing for the general recodification of the Mental Hygiene Law (S. 5641) by the chairman of our Committee on Mental Health, Allison B.

Landolt, M.D., several objections were found in the bill, and these were incorporated in the memorandum submitted to the Legislature. The bill passed the Senate but died in the Assembly.

Psychologists. Two bills relating to the licensing of psychologists (A. 5578-A, Biondo and A. 5579-A, Biondo), which would have given psychologists unlimited rights in treating any or all emotional disorders, were killed on the Senate calendar after winning Assembly approval. These bills, likewise, were vigorously opposed by the State Medical Society.

Workmen's Compensation. Two bills introduced late in the session involving Workmen's Compensation also were opposed and defeated. These bills (A. 7896; A. 8049, both Rules), would have authorized the chairman of the Workmen's Compensation Board to permit medical centers, jointly operated by labor and management, to provide medical services under the Workmen's Compensation Law on an outpatient basis.

Other bills defeated. Other bills also opposed by the State Medical Society and failing to come out of committee included one that would have established a State Board of Human Research in the Education Department (A. 1837, Stavisky); another measure that would have repealed the Metcalf-Hatch Act of 1952, which permits use of impounded animals for scientific tests (A. 109, Jerabek); and a proposal that would have extended inpatient hospital coverage under health insurance plans for laboratory and x-ray services to outpatient departments (A. 2064-A, Lerner).

Family physician. A draft of a bill that would set up a category known as the "family physician" the provisions of which would have made "family physician" an inferior category of practice by lowering the educational requirements necessary to become a "family physician" was circularized but not introduced. The State Medical Society strongly opposed this proposal.

MSSNY supported bills—not passed. Although the two bills sponsored by the State Medical Society pertaining to peer review committees and their records passed the State Legislature and were signed by the Governor, other items of the State Medical Society's 1971 State Legislation Program, despite vigorous efforts by representatives of our State Medical Society, failed to reach a vote in the Senate or Assembly. One of the proposals, namely, the so-called clinical laboratory bill (S. 4767-A, Hudson) which would have restored the physician's right to bill a patient for laboratory services performed in his behalf, was reported out of committee in the Senate, but died on the calendar of that house.

Other measures relating to a change in the statute of limitations in malpractice cases involving foreign bodies (A. 1790, Corbett), immunity from suit for hospital emergency room personnel (A. 3712, Lerner), and emergency rescue teams (A. 3713, Lerner) died in various committees to which they had been assigned. Medical Society of the State of New York's bill (A. 6729; S. 5523) to establish a new health manpower category of "physician's assistant" was left in committee as Governor Rockefeller's "physician's associates" proposal to the same end was approved by the Legislature and enacted into law.

Legislation Information Center. For the seventh consecutive year, the Legislation Information Center, directed by our coordinator, Legislation Activities, continued to be a vital factor in the implementation of the work of your committee. Once again, the center proved that it is a successful mechanism for supplying answers to inquiries regarding State and Federal legislation, and that it is a worthwhile tool for disseminating news about pending bills. To provide current information, the center maintains an up-to-date filing system for copies of important health-related bills filed both in Albany and in Congress.

When the center was first opened in 1965, much of its work took place during the session of the State Legislature. As in other areas of present-day living, change has expanded its activities which now are year-round. The center continuously furnishes answers to questions received not only by mail, but over the telephone and examines all projects pertaining to legislation, particularly public hearings. Notices of public hearings received by the center are quickly transmitted to key persons in our State Medical Society in order that our organization may take a position in regard to the subject of the hearings and to designate physicians knowledgeable in the subject to appear and testify at the hearings.

While the principal goal is to help individual physicians and county medical societies, assistance also was given to hospitals and allied health organizations. There has been a growing number of requests from other state medical organizations for copies of bills and other matters pending before our State Legislature and for extensive related information requiring a great deal of research. Also during the past year, a comparatively new field of action was intensified. Help was given to certain Council committees, such as the Committee on Education Law Revision and the Committee on Universal Health Insurance Law. The center assembled numerous materials involving bills and other printed material, duplicated and distributed them to members of the committees in cooperation with the chairman.

Capitol News. The most effective medium available to our State Medical Society in communicating between our State Medical Society's legislation committee and county medical society legislation chairmen, as well as members of our panel of liaison physicians and other key persons, is our weekly legislative bulletin, *Capitol News*. Twenty-one issues of this publication were mailed each week during the session of the State Legislature and following the completion of the Governor's thirty-day period. A strong indication of the value of this publication is the growing number of requests from individuals and groups to be added to the mailing list. For the fourth successful year, William W. Tyler, a former Associated Press correspondent in Albany, edited and prepared copy for the publication under the direct supervision of our coordinator, legislation activities.

Public hearings. A significant indication of the growing tendency of the State Legislature to extend its operations beyond the regular session on a continuing basis throughout the year was the large number of public hearings conducted by its committee. The State Medical Society played an active and important role in these meetings. On several occasions our representatives appeared in person and testified, and our coordinator, legislation activities, monitored many of them. Among the subjects on the agenda were abortion, venereal disease, treatment of minors and parental consent, child abuse, physician shortage, and standards for admission to hospital staffs.

In addition, private conferences were held with committee chairmen to discuss problems of major concern to the legislators, the public, and the medical profession. On one notable occasion, our president, executive vice-president, legal counsel, indemnity representative, and our insurance carrier's spokesman, met with Senator Tarky Lombardi, Jr., chairman, Senate Health Committee. The purpose of this meeting, held at the Capitol, was to explore problems relative to malpractice suits and the feasibility of utilizing legislation as a partial solution.

These public hearings and private conferences serve several valuable purposes. They furnish legislators with unique information they are seeking that is available only from doctors of medicine. They demonstrate to the legislators that physicians are not only able but willing to cooperate. They present exceptional opportunities for physicians and law makers to meet face-to-face and exchange views which can be mutually beneficial as well as helpful to the public.

Legislator contact program. To obtain as much help as possible from our physicians at the local level, your committee sponsored a contact program with State legislators. Participants in this project, known as the MSSNY Panel of Liaison Physicians, are doctors of medicine who are not only able, but willing, to talk personally to their own State assemblyman and senator in their homes, or offices, in their respective neighborhoods. The regional representatives of our State Medical Society were most helpful and very active in this project.

Committees. In an attempt to develop a well-rounded State Legislation Program, your chairman invited the chairmen of the various committees of our State Medical Society to submit their suggestions regarding the introduction of bills and their views on bills which might come before the State Legislature. While a few answers were received, there is room for considerable improvement. Your chairman is hopeful that, by continuing to request the cooperation of these chairmen year after year, ultimately sufficient replies will be received to reflect a considerable segment of the opinions held by the committees of our State Medical Society.

General. In addition to preparing numerous memoranda to be submitted to the committees of our State Legislature in Albany, our legislative counsel and his assistants were very active in contacting the leaders of the Legislature, the chairmen of key committees in both the Assembly and Senate, and other outstanding legislative representatives in behalf of our State Medical Society.

At State Medical Society headquarters, our coordinator, legislation activities, worked closely with your chairman and our legislative counsel in Albany. Continuous contact was maintained, particularly by telephone, especially during the hectic days of the session when several telephone contacts were made each day.

Acknowledgments. Since there has been a tremendous amount of work involved and numerous people have been engaged in our activities, our committee expresses its gratitude to all those who cooperated during the 1971 session. We are especially thankful to George W. Foy, Esq., Legislative Counsel, and his assistants, Gerard L. Conway, Esq., and John C. Rice, Esq., for the time and effort they devoted to our program. We also convey our thanks to Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president; C. Stewart Wallace, M.D., past chairman, and Paul M. DeLuca, M.D., present chairman, Commission on Public and Professional Affairs. A vote of thanks also goes to Guy D. Beaumont, director, Division of Public Affairs; our regional representatives, William Baltaks, Harry Dexter, Coleman Fineberg, and Gerald Sullivan; and Martin J. Tracey, J. D., coordinator, legislation activities.

Respectfully submitted,
John H. Carter, M.D., Chairman

State Legislation (Supplementary)

To the House of Delegates, Gentlemen:

To update our annual report, your committee submits the following supplementary report.

Committee meeting—annual conference. Your committee participated in two important meetings. On November 10, 1971, your chairman presided over a meeting of the committee which was held at the Country House, Syracuse. On the following day your chairman and the members of the committee took an active role in the Annual Conference of County Medical Society Legislation Representatives, which was held at the same location. Your chairman is pleased to report that both meetings were well attended and were most productive. Almost 100 persons were present at the annual conference, including county medical society legislation chairmen, members of our State Medical Society's Panel of Liaison Physicians, executive secretaries, representatives of specialty groups, and guests.

The annual conference was an all-day affair during which State legislation was discussed in the morning and Federal legislation during the afternoon. Paul M. DeLuca, M.D., chairman of our Commission on Public and Professional Affairs, presided, as overall chairman. Your chairman directed the morning discussions and Charles N. Aswad, M.D., chairman, Federal Legislation Committee, presided during the afternoon activities. During luncheon, Harry W. Albright, Jr., Esq., executive assistant to Governor Rockefeller, was our guest speaker. Mr. Albright, who formerly was associated with our legislative counsel in Albany, presented several constructive observations concerning our activities in the State Capitol, which we hope will be helpful to our committee and to those who participated in the conference.

The deliberations of your committee and the activities during the conference fell into four general categories: (1) analysis of proposed 1972 MSSNY State Legislation Program Bills; (2) discussion of other proposals including nursing bill and physician's associate bill; (3) suggestions received from county medical societies and others; and (4) proposed activities involving our new Division of Legislation.

The following proposals were approved by both the members of your State Legislation Committee and the participants in the annual conference.

1972 MSSNY State Legislation Program Bills. The following are changes in professional liability action procedures.

1. Reforms in Malpractice Litigation. *Statute of Limitations—Foreign Body Cases.* In an action against a physician for malpractice arising from a foreign object

being left in a patient's body, the time within which the action must be commenced shall be computed from the time the plaintiff discovers, or with reasonable diligence should have discovered, the presence of the foreign object, but in no event shall such period exceed four years from the date such malpractice occurred.

Immunity from Liability—Hospital Emergency Rooms and Rescue Teams (2 bills). (1) Physicians, surgeons, nurses, and employes trained in first aid, initial emergency medical aid procedures, or emergency treatment employed in a hospital emergency room; and (2) physicians, surgeons, nurses, or employes, who are members of an emergency rescue team of a hospital shall not be liable for injuries alleged to have been sustained as the result of treatment given to any person who is in immediate danger of death, unless it is established that such injuries were caused by gross negligence.

Additional Allowances to Defendants. If a judgment is entered in his favor, a defendant in a malpractice suit shall be entitled to costs, disbursements, and additional sums as the court deems feasible for counsel fees and other expenses necessarily incurred with respect to such action.

Reduce from Twenty-one years to Eighteen Years, the Age for Termination on Infancy Status. An amendment to the General Construction Law will provide that for the purpose of conferring rights, privileges and immunities, and for imposing duties and liabilities, the term infant shall mean a person who has not attained the age of eighteen years.

Mandatory Filing of Notice of Malpractice Suit with Court. This bill requires that at the time of service of a summons in a malpractice action a notice of the commencement of such action shall be filed with the appropriate court. The right to pretrial discovery procedures would be preserved. The filing of notice will place the case on the appropriate court calendar and start the suit on its way to a final decision.

2. Amendment to Nonprofit Medical Corporation Law to Include Medical Foundations amends the Public Health Law (Chapter 1139, Laws of 1971—S. 5704-A) to include medical foundations, such as those sponsored by medical societies. For the purposes of this law, a foundation shall be defined as a nonprofit association of physicians organized pursuant to the membership corporation law or the not-for-profit corporation law to provide medical care on a group basis utilizing the services and facilities of its individual members on a prepaid or contract basis.

3. Amendment to Physician's Associate Law to Increase Number of Physicians on Advisory Council amends the Public Health Law (Chapter 1136, Laws of 1971) to provide that the New York State Advisory Council on physician's associates and specialist's assistants, shall consist of the Chancellor of the State University and 14 members appointed by the Governor, including 7 physicians. The present laws provides for 12 members including 5 physicians.

4. Amendment to General Business Law Mandating Direct Billing of Services by Cinical Laboratories which will make it unlawful for a physician to bill or receive payments, reimbursement, compensation, or fee for clinical laboratory services, unless the person to whom a bill has been or will be rendered is furnished with an itemized statement indicating the physician's fee and the laboratory charge.

At the December 16, 1971, meeting of the Council, your chairman, on behalf of the committee, recommended that the Council approve these bills for introduction into the 1972 session of the State Legislature as MSSNY-endorsed bills, with the exception of the amendment to reduce the age for the termination of infancy status from twenty-one to eighteen years. We recommended that this bill should not be introduced as a MSSNY bill, but supported in principle in the form of an omnibus bill which is expected to be introduced into the State Legislature. The Council approved these recommendations.

Bills introduced. At the time this report is being written, four of the bills mentioned have been introduced in the State Legislature, and the others were expected to be introduced momentarily.

The four already introduced are:

Statute of Limitations—Foreign Body Cases (A. 8618–Corbett; S. 2982A–Flynn).

Immunity from Liability—Hospital Emergency Rooms and Rescue Teams (two bills) (S. 3179–Donovan; S. 3178–Donovan).

Amendment to General Business Law Providing for Itemized Bill for Clinical Laboratory Services Instead of Direct Billing by Laboratories (S. 4767B–Hudson).

Two bills which had been included in our original proposals were dropped. The first proposal concerned the posting of a bond before commencement of a malpractice suit. There was general agreement that the bill providing for additional allowances to defendants was a better way to approach the problem involved and that the bond bill would be duplicative. The second proposal would have provided for the enactment of a law placing a limitation on contingency fees. The consensus was that the better approach was through regulation by the courts rather than by enactment of legislation, particularly since the courts have been going in this direction. It was also felt that such legislation would antagonize the lawyers in the Legislature, since they might argue that physicians do not want the Legislature to control physicians' fees, but they want the Legislature to control lawyers' fees.

Other proposals. In addition to these recommendations on program bills, there was much discussion concerning the nursing bill and the physician's associates law. Your chairman and legislative counsel explained in great detail all the efforts that had been made by MSSNY in regard to the nursing bill during the 1971 session. Numerous questions were asked, and many comments were made by the participants.

Following an exhaustive discussion of the subject, at the request of the audience, an informal vote was taken. The overwhelming majority raised their hands in favor of the position taken by MSSNY. However, there was considerable support for the recommendation made from the floor that MSSNY should conduct negotiations with the nurses in regard to the coming session of the State Legislature and the expected reintroduction of a nursing bill.

The recently enacted physician's associate law also came in for thorough discussion. The activities of your committee and legislative counsel in regard to our own proposal and the proposal of the Governor were reviewed in great detail. In the course of the discussion, two aspects were considered, namely, the recently enacted law and the concept of physician's assistants.

In regard to the new law, there was general agreement that steps should not be taken to repeal the amendments to the law which had been sponsored by Assemblyman Martin Ginsberg, chairman, Public Health Committee of the Assembly. There was similar sentiment concerning the reintroduction of our own bill. As previously reported, there was agreement on the recommendation that MSSNY should sponsor a bill to amend the physician's associate law to increase the number of physicians on the Advisory Council.

In regard to the concept of the principle of physician's assistants, there was a great deal of opposition expressed. Your chairman pointed out that the proper procedure to reevaluating the position of the State Medical Society, was to introduce a resolution in the House of Delegates in February, 1972, concerning this subject. At the request of the audience, an informal vote was also taken in regard to this subject. In this instance, the overwhelming majority of the audience indicated that they did not favor the concept of physician's assistants.

Communications. The third general area covered during the committee meeting and the annual conference concerns several communications which had been received. The following actions were taken and were submitted to the council for its information and its approval where necessary, at its December 16, 1971, meeting.

1. Letter from Irving G. Frohman, M.D., chairman, Civil Defense Committee, Medical Society of the County of Queens, requesting MSSNY to inquire into the current status of medical civil defense in New York State. Legislative counsel reported that a preliminary investigation revealed that supplies had been buried in Upstate New York. Further investigation will be made concerning this matter.

2. Letter from Richard E. Passenger, M.D., president, Medical Society of County of Orange, in regard to proposing the posting of a bond in malpractice suits. As previously reported, the proposal of a bond was dropped in favor of additional allowances to defendants.

3. Letter from John P. Albanese, M.D., secretary, Bronx County Medical Society, recommending the introduction of legislation to the effect that the hemagglutination inhibition assay be performed in premarital examinations along with the usual serologic tests. The purpose of this legislation would be to identify the nonimmune females who would be at a risk if they contracted rubella and advise them appropriately regarding preventive measures.

We requested the Council to refer this matter to the Commission on Public Health and Education with a directive that the problem be studied and that specific proposals be submitted for possible introduction into the State Legislature.

The Council referred this matter to the Commission on Public Health and Education.

4. Letter from Burton Allyn, M.D., president, Medical Society of the County of Rockland, concerning the use of safety or shatterproof glass in areas such as sliding glass doors leading to patios and storm doors. We recommended that the Council also refer this problem to the Commission on Public Health and Education for study and specific recommendations for the guidance of your committee.

The Council referred this matter to the Commission on Public Health and Education for study and specific recommendations.

5. Letter from John P. Albanese, M.D., secretary, Bronx County Medical Society, stating that since the U.S. Public Health Service was suggesting that the administration of routine smallpox vaccine was no longer necessary, that appropriate action be taken. The general consensus was that no action should be taken until the Federal government and the State Health Department had acted. We recommend, however, that this matter be referred by the Council to our Commission on Public Health and Education for its opinion in consultation with the Health Department of the State of New York.

The Council referred this matter to the Commission on Public Health and Education for its opinion in consultation with the Health Department of the State of New York.

Division of Legislation. The final general area covered involved the proposed activities of our new Division of Legislation. Martin J. Tracey, J.D., new director, briefly outlined these activities and explained a plan for involving the members of our State Legislation Committee, as regional coordinators, working with the legislation chairmen of the county medical societies in their district branches. The plan met with general approval and should help to improve the efficiency of our operation during the 1972 session of the State Legislature.

State Legislature—1972 Session. Although the working operations of the New York State Legislature for the year 1972 were delayed because of the special session to consider the fiscal crisis, there was a great deal of activity in regard to State legislation as the year 1971 ended and the new year began.

Among these activities was the preparation and mailing of a "Hot Line" communication to every member of our State Medical Society alerting them to the fact that we had reliable information that a bill, which would impose a State-wide unincorporated business tax on professionals, might be considered at the special session. Implementing this "Hot Line," Martin J. Tracey, J.D., director of our new Division of Legislation, alerted each member of our State Medical Society's State Legislation Committee, personally, who agreed to contact the county medical society legislation chairmen within his district branch. This is in accordance with our new plan of activity known as our Coordinated Operations Program.

As a result of these and other activities in regard to the unincorporated business tax bill, an unusual number of telephone calls were received at State Medical Society headquarters. Physicians asked for additional information and also wanted to know who their senators and assemblymen were. This information was supplied, and we are confident that the legislators were contacted not only by many individual physicians, but by our county medical societies. The end result was that no bill calling for a State-wide unincorporated business tax on professionals was considered at the special session.

Another project involved the supplying of information requested by the chairman of the Senate Committee on Health, Sen. Tarky Lombardi. In a communication addressed to our president, George Himler, M.D., the senator had asked 19 questions in regard to malpractice in this State. After the questions were considered by our legal counsel, William F. Martin, Esq., and our indemnity representative, Frank W. Appleton, Esq., and others, our legislative counsel in Albany, acting with our director of the Legislation Division, sent a letter supplying the requested information to Sen. Lombardi.

A statement on behalf of our State Medical Society on the proposed New York State Controlled Substances Act which pertains to drugs also was prepared and submitted. Working in cooperation with the New York State Temporary State Commission to Evaluate the Drug Laws, of which Assemblyman Chester R. Hardt, is chairman, William Antopol, M.D., chairman of our State Medical Society's Committee on Alcoholism and Drug Abuse, made a study of the proposed law and submitted his recommendations to our Division of Legislation. The director, in consultation with our legislative counsel, sent a statement to Leon P. Polsky, counsel to the Temporary State Commission to Evaluate the Drug Laws, setting forth the State Medical Society's views on the proposed act.

Still another activity was the preparation and presentation of a statement on the recent revision of the State Education Law pertaining to professionals. Francis A. Stephens, M.D., a member of our State Medical Society's Education Law Revision Committee, represented our State Medical Society at a public hearing conducted on January 10, 1972, at the State Education Building in Albany. The public hearing was conducted by the Committee on Education of the Senate, headed by Sen. Thomas Laverne, and the Assembly Committee on Education, headed by Assemblywoman Constance Cook. This statement was prepared through the joint efforts of our legislative counsel and the director of our Division of Legislation.

At the time this report is being prepared. the State Legislature is just getting under way. Your chairman will present an oral report supplementing this written report at the reference committee meetings, concerning any developments which take place during this interval.

Our new program in which Mr. Tracey will be in Albany during the working days of the State Legislature, went into effect with the opening of the State Legislature. Although the legislators have spent little time in Albany to date, Mr. Tracey already has visited numerous offices of the legislators, has introduced himself to their staffs, and has spoken personally to many of them. He has established a base of operations at the DeWitt Clinton Hotel and has arranged for a telephone answering service. Mr. Tracey has been well received, and our new program appears to be off to a good start.

The first issue of *Capitol News* was published on January 10 with a slight change in format. To date, four issues have been published, and we look forward to another successful year for this valuable legislative bulletin.

Respectfully submitted,
John H. Carter, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

Your reference committee reviewed in detail the report of the Committee on State Legislation, under the chairmanship of John H. Carter, M.D., as published in the *Handbook*. Concurrently, the supplementary report, was also reviewed. It becomes immediately apparent that a tremendous volume of work has been accomplished by this committee throughout the year. Less apparent, but very obvious to the members of the reference committee, is the "crisis nature" of its activities.

The supplementary report defines the State Society's legislative program for the present session, and several bills have already been introduced. Your reference committee recommends that all physicians follow the progress of these and other forthcoming bills through their county society legislation committees.

Our new Division of Legislation, under the directorship of Martin J. Tracey, J.D., has outlined an aggressive program of contacting legislators in Albany. Also much involved will be members of the State Legislation Committee, who, as regional coordinators, will be working with legislation chairmen of the county medical societies. This should help to improve the efficiency of our legislative operations during the 1972 session of the State Legislature.

The reference committee also wishes to point out that in regard to the concept of physician's assistants or physician's associates, there are areas of controversy. This matter is being considered by another reference committee.

The House, after discussion, voted to adopt this portion of the reference committee report.

Definition of practice of nursing. Of particular concern to the medical profession of this State has been the redefinition of the practice of nursing under the revision of the State Education Law (Laverne–Pisani Bill) As this report was being prepared, agreement was finally reached between the State Medical Society, New York State Nurses Association, and the sponsors of the bill (Laverne–Pisani) as to acceptable wording regarding definition of the practice of nursing, which is as follows, and we are reading this verbatim (Material in brackets is deleted; material in italics is new):

> *Paragraph 6901. Definitions. As used in Section 6902:*
>
> *1. "Diagnosing" in the context of nursing means that identification of and discrimination between physical and psychosocial signs and symptoms essential to effective execution and management of the nursing regimen. Such diagnostic privilege is distinct from a medical diagnosis.*
>
> *2. "Treating" means selection and performance of those therapeutic measures essential to the effective execution and management of the nursing regimen, and execution of the prescribed medical regimen.*
>
> *3. "Human responses" means those signs, symptoms, and processes which denote the individual's interaction with an actual or potential health problem.*
>
> Paragraph 3. Section 6902 of such law, as amended by Chapter 994 of the Laws of 1971, and as thus renumbered by bill Section 1, is hereby amended to read as follows:
>
> 6902. Definition of practice of nursing. 1. The practice of the profession of nursing as a registered professional nurse is defined as [performing ser-

vice in the maintenance of health, prevention of illness, and care of the sick requiring the application of principles of nursing based on biological, physical, and social sciences, such as supervising and providing nursing care and treatment through observation of a patient's condition, recording such observations, applying appropriate nursing measures, and executing orders concerning treatment and medication issued] *diagnosing and treating human responses to actual or potential health problems through such services as casefinding, health teaching, health counseling, and provision of care supportive to or restorative of life and well-being, and executing medical regimens prescribed* by a licensed or otherwise legally authorized physician or dentist. A nursing regimen shall be consistent with and shall not vary any existing medical regimen.

2. *Nothing in this article shall be construed to confer the authority to practice medicine or dentistry.*

With these modifications, your reference committee urges approval and support of this bill by the Medical Society of the State of New York.

The House voted to adopt this portion of the reference committee report.

Education Law Revision

To the House of Delegates; Gentlemen:

The Committee on Education Law Revision consists of the following members:

Victor J. Tofany, M.D., *Chairman*	Monroe
Walter T. Heldmann, M.D.	Richmond
Robert B. King, M.D.	Onondaga
Stanley Stark, M.D.	Kings
Francis A. Stephens, M.D.	Albany
Donald C. Walker, M.D.	Albany

Following the 1971 session of the House of Delegates, your committee worked diligently to effectuate its recommendations on the proposed revision of the New York State Education Law. Our main thrust was to obtain modifications of the principal bill, S. 350 and (A. 359), which would amend the State Education Law in relation to the regulation of the practice of certain professions, including medicine. The bill was enacted into law and is now known as Chapter 987, Laws of 1971. At the same time, certain amendments to this law were also enacted. Some of these so-called "chapter amendments" were favorable to the interests of the State Medical Society.

The following is a brief explanation of the efforts made by your committee in the principal areas of concern and the ultimate outcome:

Definition. Under the old law, the practice of medicine was defined as diagnosing, treating, operating, or prescribing for any human disease, pain, injury, deformity, or physical condition. The House had approved seeking the deletion of the word "physical" and the addition of the words "or preventing." We succeeded in having the word "physical" deleted in one draft of the bill, but it was reinserted in the final version. In spite of all-out efforts by your committee to obtain change, the new law makes no basic change and retains the essence of the old definition.

Hearings. The House of Delegates recommended that an amendment be sought in the proceedings of professional misconduct cases so that a hearing could be held with the results being submitted to the Committee on Professional Conduct, which would then transmit its findings to the Board of Regents. Your committee's efforts in this regard were successful, and the new law contains such a provision. As a result, the objections of the Medical Society of the State of New York to a single board were withdrawn. The law as finally enacted makes provisions for a single board.

Crime. The original definition of "crime" was not acceptable to the State Medical Society. The term, however, was clarified and spelled out, as recommended by the House of Delegates, in the new law.

Utilization. The definition of "Utilization Committee" in the main bill was incomplete and did not reflect changes made in the law within the past few years. Your committee objected to this definition and recommended that changes be made. These changes were incorporated into the law as enacted. In addition, two bills which further enlarge on the definition were enacted into law at the request of our State Medical Society. These new laws grant protection from legal action to members of peer review committees of state and county medical societies and to the societies as groups when such committees function as parts of them, as well as granting protection to the records of such committees.

Unanimous vote. The House recommended that if all of these changes were made, objection to a four-fifths vote replacing the unanimous vote rule in grievance committee cases would be withdrawn. The law as finally enacted included the four-fifths-vote provision.

Your committee's efforts were complicated by the fact that the New York State Nurses Association attempted to amend S. 350 in regard to the sections pertaining to nursing. This amendment would have the effect of defining the practice of nursing as the practice of medicine. Our State Medical Society's strenuous opposition to this amendment resulted in success when the Governor vetoed the proposal.

Your chairman takes this opportunity to thank the members of his committee and to acknowledge the excellent cooperation and assistance rendered by our legislative counsel and by headquarter's staff members.

Respectfully submitted,
Victor J. Tofany, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

The report of the Committee on Education Law Revision, under the chairmanship of Victor J. Tofany, M.D., was reviewed. Your reference committee commends their successful efforts in the hearings in alleged misconduct cases, clarification of the definition of "crime," and in gaining immunity for peer review committees of State and county medical societies. We also commend their efforts, although unsuccessful, to clarify the definition of the practice of medicine.

The House voted to adopt this portion of the reference committee report.

Advisory Committee to the American Association of Medical Assistants, New York State Society

To the House of Delegates, Gentlemen:

The members of the Advisory Committee to the New York State Medical Assistants Association are as follows:

Walter F. Harrison Jr., M.D., *Chairman*	Warren
Edward C. Rozek, M.D.	Erie
Stanley Stark, M.D.	Kings
C. Stewart Wallace, M.D.*	Tompkins

We join our fellow physicians in mourning the death of "Skip" Wallace. He has been a friend of the American Association of Medical Assistants since the New York chapter was formed. He was an adviser at the time of his death in December, 1971.

The annual convention of the New York State Society was held in New York City in April, 1971. Mrs. Elvera Fisher, R.N., C.M.A., past president of the A.A.M.A., conducted the installation ceremony. George Himler, M.D., president of the Medical Society of the State of New York was guest speaker at the banquet.

One of the major functions of the New York State Society is to sponsor educational sessions. Three State seminars were held during this past year: one in Tarrytown, on September 26; one in Rochester on October 3; and one in Albany, on October 10. An adviser to the New York State Society served as moderator at each of these functions. These seminars were well organized, well attended, and well received.

The annual meeting of the national organization was held in Atlanta, Georgia, in November. Edward Rozek, M.D., was appointed to the A.A.M.A. certifying board at this meeting. Mrs. Ivy Reade, C.M.A., was elected secretary-treasurer of the certifying board. There were five other members of the New York State Society named to the A.A.M.A. committees. Wesley Hall, M.D., president of the American Medical Association, was guest speaker.

During the past year membership has dropped somewhat in the New York State Society. At the present time, there are less than 750 members. There are now 16 county-level societies with representation for a total of 18 New York State counties. Part of the reason for the drop in membership is related to the cost of conducting county-level society business.

The Bylaws provide for three delegates for a local chapter of 25 members. With the dues per member at $5.00, it is necessary for the local chapters to indulge in fund-raising activities to pay part of their delegates' expenses. The present aggressive administration is making efforts to correct this heavy financial burden by changing the Bylaws to lower the number of delegates from each county chapter.

The 13th Annual Meeting of the New York State Society is scheduled to meet from April 20 to 24, 1972, at the King's Grant Motor Inn at Plainview, New York. An ambitious program has been planned. Venereal disease, battered-child syndrome, and narcotic addiction control will be three of the topics to be discussed.

The A.A.M.A. is a most valuable organization to the practicing physician. It needs the full support of the physicians to help it to continue to grow.

The advisers make the following recommendations:

1. That the Medical Society of the State of New York continue to urge its members to advise their medical assistants to join and participate in the activities of the American Association of Medical Assistants, New York State Society, Inc. through their local chapters.
2. That the physicians of the Medical Society of the State of New York urge their assistants to form groups if there are none in their areas.
3. That the Medical Society of the State of New York urge its members to subsidize the A.A.M.A. by paying all or part of the medical assistants' dues in this organization.
4. That the Medical Society of the State of New York continue to provide communication facilities for the American Association of Medical Assistants, New York State Society, Inc., as heretofore, and to supply desk space and storage space at our new facility at Lake Success.

Respectfully submitted,
Walter F. Harrison Jr., M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS. The following report was presented by Alfred L. George, M.D., chairman.

The annual report of the Advisory Committee to the American Association of Medical Assistants, New York State Society, Inc., under the chairmanship of Walter F. Harrison, Jr., M.D., was reviewed, and testimony was heard from Ms Ivy Reade, past president, and Ms Anne Savarese, present president of the State Chapter. Significant in their testimony was clarification of membership requirements: the sole requirement being employment by a physician in either a clinical or administrative capacity.

Your reference committee strongly endorses the four recommendations of the Advisory Committee as listed in their report. The American Association of Medical Assistants is a most valuable organization to the practicing physician. It needs the full support of the physicians to help it to continue to grow.

The House voted to adopt this portion of the reference committee report.

Resolution 72-16, Classification of Physicians Deemed Incompetent to Practice Medicine by Reason of Mental Illness or Other Incapacitating Patterns of Behavior

Introduced by Medical Society of the County of Westchester

WHEREAS, In New York State physicians who are incompetent to practice medicine by reason of mental illness, alcoholism, drug addiction, or other incapacitating patterns of behavior are usually considered to be offenders against society rather than to be patients; and

WHEREAS, The present Education Law of the State of New York relegates these incapacitating medical disabilities to the category of professional misconduct with all its resulting penalties without differentiating between these disabilities and those criminal actions which rightfully belong therein; therefore be it

Resolved, That the Medical Society of the State of

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* Deceased.

New York make every effort to cause these medical disabilities to be removed from the section on professional misconduct of the Education Law of the State of New York; and be it further

Resolved, That the Medical Society of the State of New York encourage any and all suitable agencies to promote rehabilitation programs for physicians who are deemed incompetent by reason of mental illness, alcoholism, drug addiction, or other incapacitating patterns of behavior.

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

In testimony before your reference committee, it was brought out that the intent of this resolution was to avoid classification of physicians' acts resulting from incapacitating mental illness, alcoholism, drug addiction, and others, in the category of professional misconduct with all its resulting penalties without differentiating between these disabilities and those criminal actions which rightfully belong therein.

It was further brought out in the testimony before this reference committee that the Revised Education Law of the State of New York provides for some corrective procedures. Your reference committee feels that further clarification is necessary and recommends this resolution be referred to the Council for study by an appropriate committee.

The House after discussion and after defeating a motion to refer, voted not to adopt resolution 72-16.

Resolution 72-50, Legislation to Amend Section 612 of New York State Tax Law to Make Tax Benefits Available to Professional Service Corporations

Introduced by Medical Society of the County of Monroe

WHEREAS, For many years physicians and other professional practitioners were denied the right to incorporate and thus to receive the economic benefits of incorporation made available to the public generally; and

WHEREAS, The Legislature of the State of New York by the enactment of Chapter 974 of the Laws of 1970 extended to physicians and other professional practitioners the right to incorporate, it being the stated intent of said Chapter 974 to remove the inequities which heretofore existed in this regard; and

WHEREAS, Section 612 of the New York State Tax Laws as amended by Chapter 974 has resulted in the continuation of inequities insofar as said law limits certain tax deductions in the case of professional service corporations specifically to amounts which may be deducted for New York State Tax purposes by virtue of contributions made to an approved pension-for-profit plan while similar limitations do not apply to contributions made by other business corporations; therefore be it

Resolved, That the Medical Society of the State of New York encourage legislation to be introduced at the 1972 session of the New York State Legislature amending Section 612 of the New York State Tax Law to permit and make available to professional service corporations all of the tax benefits afforded other business corporations in New York State.

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

Your reference committee heard testimony indicating the obvious inequity in the present law. It also heard testimony indicating that to obtain passage of the original amendment to Chapter 974 in 1970, by the Legislature, we had to accept this inequity. We were further told that, in the present atmosphere of financial stringency in Albany, there would be no possibility of obtaining passage of any bill which would reduce revenues to New York State. Therefore, your reference committee recommends that the words "at the 1972 session of the New York State Legislature" be deleted and the words "when feasible" be substituted. The *Resolved* would then read as follows:

Resolved, That the Medical Society of the State of New York encourage introduction of legislation, when feasible, to amend Section 612 of the New York State Tax Law to permit and make available to professional service corporations all of the tax benefits afforded other business corporations in New York State.

The House voted to adopt resolution 72-50 as amended.

Resolution 72-53, Expansion of Papanicolaou Smear Requirements in New York State

Introduced by Bronx County Medical Society

WHEREAS, The present State law requires Papanicolaou smears to be performed within twenty-four hours of hospital admissions on all women between the ages of twenty-five and fifty-four years providing a Papanicolaou smear was not taken during the previous *three* years and providing there are no medical contraindications; and

WHEREAS, Health-care professionals should be uneasy about codification in law of clearly unhealthy exclusions, such as women under twenty-five years or over fifty-four years; and

WHEREAS, All available statistics show that women between eighteen and twenty-five years are at substantial risk of cervical carcinoma and that the risk of cervical cancer diminishes only slightly in women over fifty-four years; and

WHEREAS, Elderly women are at substantial risk of other cancers of the female genital tract detectable by cytologic examination; and

WHEREAS, Every layman knows that women should have "Pap tests" performed every year; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York make the following recommendations to the State Legislature for changes in the present code pertaining to the requirements of the performance of the Papanicolaou smear:

1. Make cytologic examination mandatory for all women over the age of eighteen years admitted to hospitals;
2. Exclude only women with medical contraindications or those who have had a negative test result within the previous twelve months; and
3. Require hospital record departments to maintain specific records of cytologic examination of women under this law.

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND

PROFESSIONAL AFFAIRS The following report was presented by Alfred L. George, M.D., chairman.

After considerable discussion, the reference committee recommends the following changes:

In the first Whereas delete the words, "State Law" and insert "State Health Department Regulation."

Delete the fifth Whereas.

Delete the entire *Resolved* portion and substitute the following:

> *Resolved*, That the House of Delegates of the Medical Society of the State of New York encourage physicians to make annual vaginal cytologic examinations on all women, with their consent, who are eighteen years of age and over, unless medically contraindicated.

The House voted to adopt resolution 72-53 as amended.

Resolution 72-77, Aggravation of Physician Shortage by the Presence of Unincorporated Business Tax in New York City

Introduced by Irving G. Frohman, M.D., as an individual

> WHEREAS, In Queens, with two million people, the current attrition rate of Queens County physicians is greater than the acquisition rate of new members; and
>
> WHEREAS, About 2,000 physicians are applying to Florida from New York City and others may follow because of the threat of the unincorporated business tax which would make practice in New York City impossible; therefore be it
>
> *Resolved*, That the Medical Society of the State of New York advise the elected officials and representatives of State and city of the resultant aggravation of physician shortages by removal, premature retirement, and declining entry here of medical practitioners; and be it further
>
> *Resolved*, That these elected persons be requested to take appropriate action to repeal the 4 per cent unincorporated business tax on the professions to avoid further decrease in available medical service to the public.

Resolution 72-78, Undesirability of Unincorporated Business Tax on New York City Professions

Introduced by Medical Society of the County of Queens

> WHEREAS, In 1971, New York State legislation made it permissive for only the City of New York to place an unincorporated business tax on professions which derive more than 80 per cent of unincorporated business income from personal service, wherein capital is not a material income-producing factor; and
>
> WHEREAS, This tax in effect places an additional 4 per cent income tax on self-employed professionals in the City of New York, as compared to employed or incorporated professionals; and
>
> WHEREAS, The foregoing constitutes class legislation discriminating against New York City self-employed, unincorporated professionals to deny them equal protection of the law; and
>
> WHEREAS, Professionals are thus dissuaded from establishing in New York City, while others are leaving the City to avoid this discrimination and inequitable deprivation of property; therefore be it
>
> *Resolved*, That the Medical Society of the State of New York actively support, as amicus curiae, any legal test of this application of an unincorporated business tax to the professions of New York City.

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS The following report was presented by Alfred L. George, M.D., chairman.

These two resolutions cover the same subject and, consequently, were considered together. After thorough discussion, your reference committee recommends that these two resolutions be combined into a substitute resolution as follows.

> WHEREAS, In 1971, New York State legislation made it permissive for only the City of New York to place an unincorporated business tax on professions which derive more than 80 per cent of unincorporated business income from personal services, wherein capital is not a material income-producing factor; and
>
> WHEREAS, This tax in effect places an additional 4 per cent income tax on self-employed professionals in the City of New York, as compared to employed or incorporated professionals; and
>
> WHEREAS, The foregoing constitutes class legislation discriminating against New York City self-employed, unincorporated professionals, to deny them equal protection of the law; and
>
> WHEREAS, Professionals are thus dissuaded from establishing in New York City, while others are leaving the City to avoid this discrimination and inequitable deprivation of property; therefore be it
>
> *Resolved*, That the Medical Society of the State of New York request the elected officials and representatives of the State and City to take appropriate action to repeal the 4 per cent unincorporated business tax on the professions.

The House, after discussion, voted to adopt the substitute resolution.

Resolution 72-79, Revision of Autopsy Statutes

Introduced by Medical Society of the County of Queens

> WHEREAS, Existing statutes covering autopsy consent frequently present serious difficulties for many families, administrative and professional personnel of hospitals, medical examiners, and coroners, and others; therefore be it
>
> *Resolved*, That the Legislature and the Governor of the State of New York be petitioned to amend the present statutes so that any one of equal rank of next of kin may give legal consent for autopsy, provided that no other kin in that category (who has been notified) make known any objections thereto; and be it further
>
> *Resolved*, That similar support be petitioned for amendment of the present Anatomical Gift Act so that the donor card now in use to implement this Act, when properly executed by the deceased before witnesses, be considered proper legal consent for an autopsy procedure, if a separate specific desire by the deceased is included with the donor card, whether or not organs and tissues are simultaneously donated or utilized for transplantation; and be it further
>
> *Resolved*, That similar support be petitioned for the enactment of a new and separate statute so that a

friend, assuming responsibility for the care and disposal of the remains of the deceased, may give legal consent for autopsy when no relatives are known or available, after appropriate diligent efforts to locate them have been properly recorded and no legal will, testament, or expressed wish to the contrary exists.

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

Your reference committee reviewed Section 4301, paragraph 2, of the Anatomical Gift Act, which follows:

> Paragraph 4301. Persons Who May Execute an Anatomical Gift.
>
> 2. Any of the following persons, in the order of priority stated, may, when persons in prior classes are not available at the time of death, and in the absence of actual notice of contrary indications by the decedent, or actual notice of opposition by a member of any of the classes specified in paragraphs (a), (b), (c), (d), or (e) give all or any part of the decedent's body for any purpose specified in section 4302 of this article:
>
> (a) the spouse,
> (b) an adult son or daughter,
> (c) either parent,
> (d) an adult brother or sister,
> (e) a guardian of the person of the decedent at the time of his death.

Extensive testimony was heard on resolution 72-79 from Alfred A. Angrist, M.D., and Milton Helpern, M.D. After consideration and consultation with these authorities, the following substitute resolution is submitted:

> WHEREAS, Existing statutes covering autopsy consent frequently present serious difficulties for many families, administrative and professional personnel of hospitals, medical examiners, coroners, and others; therefore be it
>
> *Resolved,* That The Medical Society of the State of New York petition the Legislature and the Governor of the State of New York to amend the present statute for consent of autopsy to conform to the same provisions as outlined in the Anatomical Gift Act, Section 4301, Paragraph 2, with the exception of "(e), a guardian of the person of the decedent at the time of death." Persons who may execute a consent for autopsy: (a) the spouse, (b) an adult son or daughter, (c) either parent, or (d) an adult brother or sister.

The House voted to adopt this portion of the reference committee report and the substitute resolution as proposed by the reference committee.

Resolution 72-99, Condemnation of the Denial of Human Rights to Soviet Jewish Physicians and Professionals

Introduced by Abraham W. Freireich, M.D., as an individual

> WHEREAS, It is reported that Jewish physicians and professionals who make application to emigrate from the Soviet Union, lose their jobs, have their children expelled from universities, and are forced to exist on very low incomes, or no income at all; therefore be it
>
> *Resolved,* That the Medical Society of the State of New York express its condemnation of the denial to Soviet professionals of their right to emigrate, with resulting loss of professional status and rights as physicians.

REPORT OF REFERENCE COMMITTEE ON PUBLIC AND PROFESSIONAL AFFAIRS: The following report was presented by Alfred L. George, M.D., chairman.

In regard to resolution 72-99, your reference committee is deeply concerned with the problem of oppressed minorities everywhere. However, we feel this type of resolution is not appropriate for action by the House of Delegates and recommends its referral to the Council.

The House voted to refer resolution 72-99 to the Council.

The House voted to adopt the reference committee report as a whole as amended.

Standards of Medical Care

Commission on Standards of Medical Care

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee noted that the chairman of the Commission on Standards of Medical Care did not submit an annual report this year. We wish to point out that it is stated in the Supplementary Report of the Executive Vice-President that the Commission on Standards of Medical Care has been deactivated and its committees assigned to other staff members.

At this time, the reference committee wishes to express its appreciation of the service of Samuel Z. Freedman, M.D., as the director of the Division of Standards of Medical Care. We will miss his knowledgeable expertise in our problems and in the deliberations of the Society.

The House, after discussion, voted to adopt this portion of the reference committee report.

Ethics (Annual)

To the House of Delegates, Gentlemen:

The Committee on Ethics consists of the following members:

Joseph G. Zimring, M.D., *Chairman*	Nassau
Charles A. Gwynn, M.D.	Onondaga
Frank LaGattuta, M.D.	Bronx
John Sauer, M.D.	New York

The committee has received many letters from individual physicians and county medical societies, not only from New York State but from many other states, requesting that some action be taken on the commercial abortion referral agencies located in New York State. All of these complaints were referred to the Attorney General's Office of the State of New York for future investigation and action.

A letter was received from an upstate county medical society asking whether or not it was ethical for physicians to bid against each other for a salaried position. The county medical society was told that a contract was unfair or unethical when "there is underbidding by physicians in order to secure the contract."

The committee received a letter from "Patient Credit Reference, Inc." which described a method of listing the names of patients in particular areas who have not fulfilled their financial obligations to members of the medical and dental professions. These names would then be available to all participating physicians and dentists.

It was the opinion of the committee that this system of credit rating patients was unethical, and that this should be publicized. The Council approved the recommendation of the committee.

A physician inquiring about the ethics of a physician "who accepts reasonable payment from an outside laboratory to whom he refers specimens for the services of himself and/or his office staff;" was told that this practice was unethical. An ethical doctor of medicine will not or does not accept rebates from commercial organizations on services that are rendered both by himself and the commercial institution.

A letter from a hospital asking whether or not it was ethical to permit chiropractors to send patients to hospitals for radiographic studies was answered by quoting Chapter II, Section I, of the *Principles of Professional Conduct of the Medical Society of the State of New York*. This section relates to the association between physicians and cultists.

We received several inquiries from both medical and lay organizations regarding bank credit cards. All were referred to the ruling approved by the House of Delegates in 1966 and reaffirmed in subsequent years. The American Bar Association also ruled this year on the use of credit cards for payment of legal fees. They support the position taken by the Medical Society of the State of New York, "that it is unprofessional for a lawyer to subscribe to credit card plans. . . as a means of enabling clients to pay his legal fees."

A letter from a county medical society questioning the use of a physician's name to dignify a business solicitation was received. The committee answered by quoting from the AMA *Judicial Council's Opinions and Reports*, paragraph 51, Section 7, which states that it is "demeaning to the medical profession for a physician to permit the use of his name or professional status in the promotion of commercial enterprises." The committee found two other examples of this type of promotional advertising; one concerned a physician advocating his colleagues to buy stock of a newly formed bank and another concerned an advertisement of a commercial product. Both of these cases were referred to the local county medical societies for investigation and action.

There were many inquiries from members of the State Medical Society which were referred to the local county medical societies for interpretation and action. Among those were questions concerning advertising for patients by a medical clinic; referral of patients by a commercial organization to physician; type of contract between hospitals and groups of physicians; use of facilities of a hospital pathologic laboratory for private use by the pathologists; use of signs in commercial buildings, and many others.

The committee met on August 20 to revise the *Principles of Professional Conduct of the Medical Society of the State of New York*. A copy of the revisions was sent to the House Committee on Constitution and Bylaws.

The committee would like to express its appreciation to Samuel Z. Freedman, M.D., director, Division of Standards of Medical Care; to Lynn R. Callin, M.D., chairman, Commission on Standards of Medical Care; to J. Richard Burns, J.D., assistant executive vice-president; and to Miss Catherine H. Renze, secretary to Dr. Freedman, for their assistance.

Respectfully submitted,
Joseph G. Zimring, M.D., Chairman

Ethics (Supplementary)

To the House of Delegates, Gentlemen:

A question on whether a physician who had been incorporated could list himself both under "professional" and "business" listings of the telephone company's "Yellow Pages" was submitted to the committee by a county medical society. The committee replied by stating that the physician may add the letters "P.C." after his name and may choose which listing he prefers, but cannot have a listing in both sections of the "Yellow Pages."

Another question referred to us was whether or not it was ethical for a commercial optical firm to acquire the optical records of patients of a retired ophthalmologist. The question was answered by stating that not only was it unethical, but that it was a violation of the Regulations of the Commissioner of Education.

Many complaints have been received against the advertising being used by a commercial diagnostic center. The center is advertising to members of a commercial insurance carrier that they would be given complete medical examinations at no cost to them, while nonmembers would be charged a minimal fee. The insurance carrier was contacted. They stated "that there is nothing that we can do to stop this clinic from carrying on in this manner." This matter is still being investigated by this committee.

The Committee on Ethics wishes to acknowledge the wonderful assistance given the committee in its attempts to curb the various types of advertising used by many clinics and physicians, especially the President's Message in a recent issue of the *Westchester Medical Bulletin* by Katherine L. Friedmann, M.D., President of the Westchester County Medical Society.

Respectfully submitted,
Joseph G. Zimring, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee reviewed the annual and supplementary reports of the Committee on Ethics. They have had an extremely busy year. Some of the problems referred to the committee were questions regarding commercial abortion agencies, patient credit rating, rebates from laboratories, association of physicians' names with commercial enterprises, and others of complex nature.

The Committee on Ethics continues to be an active dynamic component of the State Medical Society, and much of the credit for this must be given to its chairman, Joseph G. Zimring, M.D.

The House voted to adopt this portion of the reference committee report.

Hospital and Professional Relations

To the House of Delegates, Gentlemen:

The Committee on Hospital and Professional Relations consists of the following members:

Bernard J. Pisani, M.D., *Chairman*	New York
John A. Billows, M.D.	Nassau
Rudolph R. Del Giacco, M.D.	Albany
Benjamin G. Dinin, M.D.	Westchester
Joseph J. Kaufman, M.D.	Wayne
Jason K. Moyer, M.D.	Broome
Edward W. Mullin, M.D.	Onondaga
Edward C. Rozek, M.D.	Erie
Joseph N. Silverstein, M.D.	Kings
Leon J. Taubenhaus, M.D.	New York

During the past year, the committee did not meet in formal sessions since few matters were referred to it. Since each meeting involves expenditure of a substantial amount of money, perhaps the corresponding savings should be appreciated.

Resolution 71-82, "Open Municipal Hospitals as Semiprivate Facilities," is concerned with a recommendation which, over the years, had been made by many physicians to the municipal authorities. At no time was any encouragement offered. During the last year, in view of the passage of the resolution, contact was again made. The negative response was so absolute that further "action" was considered to be futile.

Resolution 71-44, "Establishment of Objective Standards for Granting Hospital Privileges," passed by the House of Delegates, contained the following *Resolved:*

> That the Medical Society of the State of New York endorse the concept that all hospitals have public, objective standards based on professional competence for the granting of hospital privileges.

The original resolution contained two other *Resolveds* which were deleted on the advice of legal counsel. One *Resolved* recommended, "That an unsuccessful applicant be informed in writing of the reasons for denial of hospital privileges and have the right to appeal to a peer review group." The other *Resolved* suggested that "similar recommendations" be made to the Legislature. Your chairman hopes that this matter will be elucidated by the proponents so that "action" may be recommended.

At the 1971 convention our Subcommittee on Emergency Room Services reported on a questionnaire on "Emergency Room Services" which was sent to the hospitals in New York State. The subcommittee noted, "that the information obtained is of no specific value." The House of Delegates recommended that the Council consider a more detailed, indepth study for action in this field (emergency room services) and that the appropriate recommendations be made.

At the March 25 meeting of the Council, it was noted that an indepth study would be expensive, and also that studies in this field are numerous and detailed and are currently being pursued from many directions. The Council, therefore, decided that our subcommittee should collect information from the various studies and make it available to members of the State Medical Society. The bibliography is vast and continually growing. This is understandable since the "emergency room" has become a permanent institution and is rapidly taking the place of the physician's office, particularly on weekends, evenings, and other times when the physician is not readily available. Therefore, a simplistic report is impossible, and the committee can only offer its services in particular instances. Each hospital may have to approach the establishment of an emergency room facility in its own way and rely on its attending staff for advice and implementation.

The chairman wishes to extend sincere appreciation to Samuel Z. Freedman, M.D., director, Division of Standards of Medical Care, for his always valuable assistance and cooperation during the year.

Respectfully submitted,
Bernard J. Pisani, M.D., Chairman

Government Health Centers

To the House of Delegates, Gentlemen:

The members of the Government Health Centers Subcommittee are as follows:

Leonard L. Heimoff, M.D., *Chairman*	Bronx
Carl Goldmark, Jr., M.D.	New York
John Edward Lowry, M.D.	Queens
Thomas W. Mou, M.D.	Albany

The subcommittee had no matters referred to it this year; therefore, no meetings were held.

Respectfully submitted,
Leonard L. Heimoff, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee reviewed the report of the Committee on Hospital and Professional Relations chaired by Bernard J. Pisani, M.D. We note that although the committee did not hold any meetings this year, they resolved through correspondence the following issues: Resolution 71-82, "Open Municipal Hospitals as Semiprivate Facilities"; and Resolution 71-44, "Establishment of Objective Standards for Granting Hospital Privileges."

It was also noted that the recommendation made by the House of Delegates in 1971 that an indepth study of emergency room services be made was rejected by the Council because such a study would be expensive and studies in this area are numerous and detailed and are currently being pursued from many directions.

Your committee wishes to thank the chairman and the members for their participation in the work of this important committee.

The House voted to adopt this portion of the reference committee report.

Hospital-Based Physicians

To the House of Delegates, Gentlemen:

The members of the Committee on Hospital-Based Physicians are:

Victor J. Tofany, M.D., *Chairman*	Monroe

Alfred A. Angrist, M.D.	Bronx
Norman S. Blackman, M.D.	Kings
Robert P. Boudreau, M.D.	Onondaga
Francis B. Haber, M.D.	Chemung
Ian H. Porter, M.D.	Albany

The committee has had no matters referred to it and has had no meetings during the past year. Several problems have come to the attention of the chairman, but it appeared that these involved all segments of medicine and could not be interpreted as affecting only "hospital-based physicians." There has been much discussion of the definition of "hospital-based physician," since this definition has become more difficult in the light of present trends in the development of health-care delivery systems.

Historically, the Committee on Hospital-Based Physicians has concerned itself with what were considered to be the unique problems of a particular segment of the medical profession and who restricted their activities, predominately, to the hospital setting and also may have, and usually did have, some type of contractual arrangement with the hospital for the provision of administrative, teaching, research, and patient-care services.

In 1970 to 1971, the committee developed a set of guidelines for physicians entering into arrangements with hospitals for these professional services. These guidelines were developed on the basis of the *Principles of Professional Conduct* of both the Medical Society of the State of New York and the American Medical Association.

It has become evident during the past year that the affairs of previous concern to this committee actually involve all segments of medicine. This was lucidly demonstrated in the proceedings of the Interspecialty Committee when Section 86.11 (c), New York State Department of Health, Commissioner's Rules on Payment of Medical Services, was considered. The unanimous opinion of the Interspecialty Committee was that this matter concerned all in medicine and was not restricted to specialty groups or particular segments of medicine. While it was apparent that the Committee on Hospital-Based Physicians would endorse the recommendation of the Interspecialty Committee for unqualified opposition, your chairman felt that any consideration by this committee would be redundant.

The development of the Interspecialty Committee, itself, has demonstrated the effective manner in which that committee can handle such problems. Because of the manner in which this committee is constituted, with specialty-organization representation and its close communication with the Council, it offers an avenue for pursuit of those matters formerly assigned to the Committee on Hospital-Based Physicians.

With these things in mind, and without the considered opinion of the other members of the committee, your chairman recommends that the Committee on Hospital-Based Physicians be discontinued until such time as there is demonstrated a specific need for such a committee. I make this recommendation with the full realization that it runs counter to the bureaucratic, expansionist philosophy of the day, but nonetheless with deep conviction of its validity.

Your chairman wishes to thank the other members of the committee who generously offered to serve during the past year.

Respectfully submitted,
Victor J. Tofany, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE The following report was presented by James R. Nealon, M.D., chairman.

The reference committee notes that the Committee on Hospital-Based Physicians had no matters referred to it nor did it meet during the past year. Several problems came to the attention of the Chairman, but it appeared that these involved all segments of medicine and could not be interpreted as affecting only hospital-based physicians. The chairman believed that with the development of the Interspecialty Committee with its specialty-society organization, such matters relating to hospital-based physicians could be handled by this committee. However, your reference committee, during the hearing on this subject, heard strong testimony against the chairman's recommendation. There appear to be many existing problems for the Hospital-Based Physicians Committee to resolve, especially those concerning physicians and their contractual relations.

Your reference committee recommends that the Committee on Hospital-Based Physicians be continued in its present form.

The House voted to adopt this portion of the reference committee report.

Medical Review

To the House of Delegates, Gentlemen:

The Committee on Medical Review consists of the following members:

Charles M. Brane, M.D., *Chairman*	Westchester
Joel J. Brenner, M.D.	Nassau
Michael Brusilow, M.D.	Albany
Winfield L. Butsch, M.D.	Erie
James N. Capps, M.D.	Onondaga
Armand J. D'Errico, M.D.	Fulton
John H. Morton, M.D.	Monroe
Harold J. Safian, M.D.	New York
Ralph J. Schlossman, M.D.	Queens
Walter T. Zimdahl, M.D.	Erie

There has been no meeting of the committee in 1971. Activities in medical review decreased considerably in 1971, after the printing and distribution of the *Medical Review Manual.* The first printing of 500 copies has been exhausted, necessitating a second printing. Requests for the *Manual* still come in from time to time. No new review patterns have been added as planned, although a cholecystectomy pattern is ready for mailing to hospitals.

An article on "Study of Peer Review of Inhospital Patient Care," by Jacob Fine, M.D., and Mildred A. Morehead, M.D., M.P.H., was published in the August 15 issue of the ***New York State Journal of Medicine.*** A description of the medical review project on which this article is based is to be found in the 1970 annual report of this committee. The conclusions in the article were reached from a study of the following:

1. Although the quality of professional care in other

hospitals is not less competent in certain categories, the overall quality of professional care in the teaching hospital is clearly superior.

2. There are many highly competent physicians in community hospitals whose quality of performance is altogether satisfactory. But there is also a good deal of substandard performance in these institutions.

3. Approval for a training program in a nonteaching hospital does not assure better clinical performance.

4. Among the many reasons for inferior care, superficial study of the patient and loose standards of practice are the major ones.

5. The consensus of those involved in this project was that the method employed in evaluating a physician's performance is a practical one and could be generally adopted by hospitals as well as private and public agencies concerned with quality of medical care.

6. Although individual records can be assessed without the aid of the review patterns, the patterns are critically important for continuous or periodic review of an institution's material as a whole, even when it is selective. Without the review patterns the demand on the examiner's time would become so great that one might not be able to find enough competent reviewers.

7. It was also agreed that if bias in review is to be kept to a minimum, external as well as internal review is not only desirable but necessary and can be accomplished with the full cooperation of the medical profession if it is carried out with a clear understanding that review is an educational and self-disciplining duty, not a punitive exercise, as has long been evident in many teaching institutions.

8. The project analyst, a general surgeon, rated many records to get the experience of the examiner as an expert or as a nonexpert in the different categories. It is quite clear to the project analyst that the nonexpert should not be utilized whenever an expert can be obtained.

Your chairman recommends that the following items be discussed at the next meeting of the committee:

1. Whether the *Manual* should be expanded to incorporate further review patterns or procedures and diagnoses as originally planned, based on its use or its possible future use.

2. Whether or not the review patterns presently in the *Manual* should be modified.

3. Whether or not additional effort to promote its acceptance and use should be made by the Medical Society of the State of New York.

Your chairman wishes to extend his sincere appreciation to the members of the committee, to Samuel Z. Freedman, M.D., and to all who participated in the accomplishments of this committee.

Respectfully submitted,
Charles M. Brane, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee notes there have been no meetings of the Medical Review Committee in 1971. Activities in medical review decreased considerably after the printing and distribution of the *Medical Review Manual.* The committee recommended the reading of an article on "Study of Peer Review of Inhospital Patient Care," published in the August 15 issue of the ***New York State Journal of Medicine.*** This article is based on the medical review project mentioned in the 1970 annual report of the Medical Review Committee. The chairman has several recommendations for items to be discussed at future meetings of the Committee and feels the committee needs to be expanded with possibly full-time staff and certainly with added clerical help. We note with regret the resignation of Charles M. Brane, M.D., as chairman of this committee. Your reference committee wishes to commend Doctor Brane for the fine work he has accomplished during his term as chairman.

The House voted to adopt this portion of the reference committee report.

Nursing and Allied Health Professions

To the House of Delegates, Gentlemen:

The Committee on Nursing and Allied Health Professions consists of the following members:

Lester J. Candela, M.D., *Chairman*	Queens
Frank A. Baumann, M.D.	Broome
Clarke T. Case, M.D.	Oneida
Douglas S. Damrosch, M.D.	New York
Ramsdell Gurney, M.D.	Erie
Ralph F. Jacox, M.D.	Monroe
Joel E. Mandel, M.D.	Rockland
Frank C. Nichols, M.D.	Nassau
Vincent J. Tesoriero, M.D.	Kings

The spring meeting of the committee, attended by Henry I. Fineberg, M.D., was followed by a joint meeting with representatives of the New York State Nurses Association. The nurses were incensed at the impending passage of the Paramedical Assistants Bill which, apparently, gave them some justified concern regarding the relative "slots" allotted to the nursing profession versus the paramedical assistants in the health-care structure. Unfortunately, and incorrectly, they seemed to blame the situation on the medical profession.

Subsequent to this, there was an unprecedented drive for the passage of the "Nurse Practice Act" which would have created chaos both in and outside the profession because of the confusing similarity of the proposed definitions of the nursing profession compared with the medical profession. This effort was ill designed since it tended to result in an unintentional schism between the two professions.

The knowledgeable veto of the measure by Governor Rockefeller may have saved the day and laid the groundwork for a more satisfactory and realistic approach. Possibly, the outcome may be meaningful implementation of the "Joint Practice Act," reported by Jerome P. Lysaught, M.D., director of the National Commission for the Study of Nursing and Nursing Education, in "An Abstract for Action."

The healthy aim therein, again seems to be "back to the patient," the sphere in which both physician and nurse belong primarily. This is the status to date.

Respectfully submitted,
Lester J. Candela, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON STANDARDS

OF MEDICAL CARE The following report was presented by James R. Nealon, M.D., chairman.

The report of the Committee on Nursing and Allied Health Professions was concerned primarily with the "Nurse Practice Act" and the formation of the physician's associate or specialist's assistant. There appear to be a great many questions to be resolved concerning the relative position of the "physician's associate" and the nursing profession vis-a-vis the medical profession.

The House voted to adopt this portion of the reference committee report.

Peer Review Mechanisms

To the House of Delegates, Gentlemen:

The members of the Committee on Peer Review Mechanisms are as follows:

Ralph S. Emerson, M.D., *Chairman*	Nassau
Charles M. Brane, M.D.	Westchester
Lynn R. Callin, M.D.	Monroe
Lester J. Candela, M.D.	Queens
Richard D. Eberle, M.D.	Onondaga
Carl Goldmark, Jr., M.D.	New York
William A. Schwarz, M.D.	Richmond
Edward Siegel, M.D.	Clinton
Tiffany Lawyer, Jr., M.D.	Bronx

Peer review mechanisms continued to be of great interest in Congress. H.R. 1 which included provisions for review mechanisms passed the House of Representatives without fanfare. In the Senate, the Bennett Amendment was tacked on to the Senate version of H.R. 1. The Devine Bill was a modified version of the Bennett Amendment to meet some of the objectives of the American Medical Association. The AMA reintroduced the Peer Review Organization (PRO) version sponsored by Senator Clifford P. Hansen, Wyoming. These bills were moved to the back burner with the introduction of President Nixon's new economic policy. They will undoubtedly be reconsidered when the economic crisis is alleviated.

The State Legislature responded to the requests of the Medical Society of the State of New York by passing the immunity and disclosure bills which have been of great concern to members of peer review committees. These bills provide that: (1) "physicians who serve as members of medical review committees of county or state medical societies shall not be liable in damages for actions or recommendations by them within the scope of their functions as such members, if without malice"; and (2) "additional protection would be given to review committees, since the disclosure of the proceedings and records of hospital utilization committees and medical society review committees would be prohibited."

During the past year, members of our committee participated in peer review meetings at the local, State, and national levels. Your chairman was privileged to serve as a panelist and consultant at the National Conference on Peer Review sponsored by the American Medical Association and the American Society of Internal Medicine.

Function. Responding to the request of our president, George Himler, M.D., our committee prepared 2 articles outlining the functions of the State, regional, and county medical society peer review committees and offering specific recommendations. The purpose of these articles was to assist in the organization and functioning of peer review on a Statewide basis. Many areas of the State have effective peer review mechanisms. However, there are many undeveloped areas which need help. We hope the following suggestions will provide the blueprint to upgrade peer review mechanisms throughout the State.

MSSNY Peer Review Committee

1. To preserve quality medical care, emphasizing the educational aspect of peer review.
2. To advise regional PSRO (Professional Standards Review Organizations) regarding: (*a*) requirements of the law, and (*b*) comparison of other PSRO activities.
3. To collect, correlate, and distribute statistics.
4. To recommend representatives to a Statewide PSRO Council.
5. To act as a clearing house for: (*a*) evaluation of effectiveness of peer review, (*b*) appeal and adjudication mechanisms, (*c*) coordination of peer review—Statewide, (*d*) model programs, and (*e*) standardization and documentation of activities.
6. To act as a liaison with Federal and State government agencies, fiscal intermediaries, carriers, consumers, physicians, hospitals, AMA, and other professional organizations.
7. To publicize peer review activities.

The duties and functions of each PSRO would be to determine whether or not (1) health care services are medically necessary; (2) the quality of such services will meet professionally recognized standards of health care; and (3) proposed hospital or other health-care facilities' services could, consistent with the provision of appropriate medical care, be effectively provided on an outpatient basis or more economically in an inpatient-care facility of a different type.

In cases of any elective admission to the hospital or other health-care facility, or any health-care service consisting of extended or costly courses of treatment, PSRO would determine, in advance, whether or not such service, if provided by a particular health-care practitioner, or by a particular hospital, or by other health-care facility would meet the necessary medical and economic criteria. Each PSRO would publish from time to time the types and kinds of cases with respect to which such organizations would exercise their authority to make such advance determinations.

Each PSRO would be responsible for the regular review of patient care, utilizing to the greatest extent practicable in such patient profiles, methods of coding which will maximize confidentiality as to patient identity and assure objective evaluation. Profiles would be regularly reviewed on an ongoing basis with respect to each health-care practitioner and provider.

Hospital-care review would be performed only by physicians having active hospital staff privileges in at least one of the participating hospitals in his area. No physician would be permitted to review health-care services provided to a patient if he were directly or indirectly involved in providing such services, or if he or his family had directly or indirectly any financial interest in such institutions.

PSRO may make arrangements to utilize the services of practitioners or specialists in medicine, dentistry, or other types of health care who are in practice in the area;

to undertake professional inquiry before and after the services; to examine the records of practitioners or providers; and to inspect the physical facilities in which care was rendered or services provided.

To familiarize physicians with the PSRO functions and activities and to promote acceptance of such functions and activities by physicians, patients, and other persons, each PSRO would:

1. Encourage all physicians in the area to participate in the review activities;
2. Provide rotating physician membership on review committees;
3. Assure that membership on review committees would have the broadest representation feasible in terms of various types of practice; and
4. Utilize medical periodicals and similar publications to publicize the functions and activities of PSRO.

Each PSRO is authorized to utilize the services of, and accept the findings of, review committees of hospitals in the areas, but only when and only to the extent that such committees have demonstrated to the PSRO their capacity effectively and in timely fashion to review activities in such hospitals, including the medical necessity of admissions, services ordered, and lengths of stay. Similarly, PSRO could utilize the services of medical societies and similar organizations but only after they have demonstrated their capacity effectively and in timely fashion to perform such activities.

Each PSRO would apply professionally developed norms of care and treatment based on typical patterns of practice in their region (including typical lengths of stay for institutional care by age and diagnosis) as principal points of evaluation and review. The National Professional Standards Review Council and the secretary would provide such technical assistance as will be helpful in utilizing and applying such norms of care and treatment. If actual norms of care in an area were significantly different from regional norms, the local PSRO would be informed. If appropriate consultation and discussion indicates a reasonable basis for the usage of such unusual norms in the area concerned, the PSRO may apply such actual norms in such areas as are approved by the National Professional Standards Review Council.

Any norm for treatment of a particular illness of health condition would include:

1. The types and extent of the health care services which, taking into account differing but acceptable modes of treatment, are considered to be within the range of appropriate treatment of such illness or health condition, consistent with professionally recognized and accepted patterns of care; and
2. The type of health-care facility which was medically appropriate and could be most economically provided.

The National Professional Standards Review Council would provide for preparation and distribution of regional norms to be utilized. Each PSRO would specify the appropriate time for recertification of continued hospital care.

Each health-care practitioner, hospital, or other health-care facility would be obligated to assure that services would be rendered only when and to the extent necessary and would be of a quality meeting professionally recognized standards. If the claims for services were under review by the PSRO or had been disapproved prior to rendering the service, the agency or organization responsible for acting on the claim for services would be notified. Although it is not directly stated, it is implied that the claim would not be paid.

If there are repeated violations or failure to comply with the obligations, grossly or flagrantly violating the obligations, demonstrated unwillingness, or lack of capability substantially to comply, the PSRO would report and make recommendations to the Secretary through the Statewide Council. The Secretary of Health, Education, and Welfare would decide whether to exclude the provider permanently or for a prescribed period from eligibility to provide services under Medicare or Medicaid on a reimbursable basis. In lieu of exclusion in case of medically improper or unnecessary services, the Secretary might require, as a condition to continued eligibility of the practitioner or provider, payment to the government of an amount not in excess of the actual or estimated cost of the medically improper or unnecessary services provided, or (if less) $5,000. Such amount may be deducted from any sum owed by the government to the person from whom such amount is claimed. If the practitioner or provider is dissatisfied with the determination of a PSRO, he is entitled to a hearing by the Secretary, who would make a final determination.

County Medical Society or Regional Peer Review Committees

1. To urge and assist hospitals in establishing peer review committees and to cooperate in ongoing review.
2. To develop liaison with local government, fiscal intermediaries, carriers, consumers, and communication media.
3. To develop up-to-date U.C.R. fees with Relative Value Scale conversion factor as a guideline for evaluating individual cases in their respective areas.
4. To develop norms of patterns of care that would meet the professionally recognized standards of health care.
5. To develop close liaison with specialty organizations, such as American Academy of General Practice, American Society of Internal Medicine, American College of Surgeons, and others.
6. To utilize standard information review and summary forms.
7. To report summaries at regular intervals to the respective PSRO and the State Medical Society Peer Review Committee.
8. To develop prototype plans that will fit the demographic patterns of the area.

PEER REVIEW RECOMMENDATIONS

The following recommendations outline the status of PSRO in relation to the Devine Bill (H.R. 7182) and specify the duties of a peer review organization.

Status of PSRO. When the Bennett Amendment 851 to H.R. 17550 on Professional Standards Review Organizations (PSRO) appeared on the scene last Fall, there was great apprehension and concern by all providers of services. In spite of repeated efforts of the AMA to delete the objectionable features, the modified version of December 2, 1970, was most distasteful. A lengthy summary was presented to our House of Delegates in February, 1971, entitled "Supplementary Report of the Peer Review Committee" and appears in the June 1, 1971, issue of the ***New York State Journal of***

Medicine, page 1365. Fortunately, the Bennett Amendment died in Committee.

Recognizing that a structured peer review as detailed in the Bennett Amendment was merely a forerunner of things to come, the AMA held a National Workshop Conference on Peer Review on May 21 and 22, in Chicago. A comprehensive *Peer Review Manual* was completed for this workshop. The cost is $4.00 per copy and may be obtained by writing to the American Medical Association's Division of Medical Practice, Department of Insurance and Practice Management, 535 North Dearborn Street, Chicago, Illinois 60610.

Recommendation 1. Every county society and peer review committee member should obtain a copy of the *Peer Review Manual* and become knowledgeable regarding its contents.

PSRO 1971, Devine Bill H.R. 7182. PSRO was reactivated on April 5, 1971, with the introduction of the Devine Bill, H.R. 7182 of the 92nd Congress. It has been presented as a separate piece of legislation to enhance its chance of passage. The foundation and framework of a structured peer review are unchanged. It is in many respects a replica of the Bennett Amendment, but does reflect the valiant efforts of the AMA to delete many of the objectionable provisions of Amendment 851. It will undoubtedly shock the uninitiated in peer review who still view it as purely a grievance mechanism. The provisions of norms, patterns of care, profiles of utilization and charges, data input and retrieval, reports, immunity, and sanctions remain unchanged.

The Devine Bill gives priority for peer review to the practicing physicians. The National Professional Standards Review Council shall consist of 11 practicing physicians recommended by statewide PSROs and 3 members recommended by national organizations recognized by the HEW Secretary as representing practicing physicians. In the Bennett Amendment physicians would also be nominated by consumer groups.

The statewide professional review organization of the Bennett Amendment has been deleted. The Bennett version was objectionable since only 2 physicians would be designated by the State Medical Society, 2 physicians designated by the State Hospital Association, and 4 members selected representing the public. Therefore, the practicing physicians would probably be in the minority.

The advisory group to the Statewide Professional Standards Review Council of the Bennett Amendment has also been deleted. This was objectionable since the members of this group were nonphysician health-care practitioners, which would result in minority representation of practicing physicians on the combined Statewide Professional Standards Review Council and its advisory group.

H.R. 7182 eliminates the financial penalties of the Bennett Amendment but does retain sanctions of exclusions from the program for failure to comply with the regulations.

A new dimension added to the Devine Bill refers to the parameters of cost of health care. It seems reasonable to assume that the quality of care will be factored into the cost and quality review mechanism. This does not imply that it is undesirable, but it does represent a broader concept.

It is important to emphasize the immunity provisions of PSRO to exempt persons serving on these committees or individuals following the activity authorized by PSRO from violating any criminal law or to be civilly liable under any law of the United States or any state unless the information is (1) unrelated to the performance of the duties and functions of the organization, or (2) false and the person providing the information knew or had reason to believe the information was false. This is similar to the Bennett Amendment.

The Devine Bill is more palatable than the Bennett Amendment. It places the responsibility squarely on the medical profession for a trial period of twenty-four months. If the medical profession fails to carry out the provisions of the Bill, nonprofessional personnel will be assigned the task.

The consensus of the House Ways and Means Committee is reflected in H.R. 1 which was introduced by its chairman, Wilbur Mills, on May 24, 1971. The following from H.R. 1 will be of interest to peer review committees:

> Program review teams would be established in each state by the Secretary, (HEW) following consultation with groups representing consumers of health services, state and local professional societies, and the appropriate intermediaries and carriers utilized in the administration of Title 18 benefits. Both the professional and the nonprofessional members of the program review teams would be responsible for reviewing and reporting on statistical data on program utilization (which the Secretary would periodically provide). In addition the entire program review team would review cases involving overcharging; however, only the professional members of the program review teams would review cases involving the furnishing of excessive, inferior, or harmful services in order to assure that only professionals will review other professionals under this provision.
>
> It is not expected that any large number of suppliers of health services will be suspended from the Medicare program because of abuse. However, the existence of the authority and its use in even a relatively few cases is expected to provide a substantial deterrent.

The penalties for fraudulent acts and false reporting under Medicare and Medicaid carries a penalty of up to one year imprisonment, a fine of $1,000, or both. Under H.R. 1: "the penalty for such acts, as well as false statements or representations of material facts in any application for payment under the Medicare and Medicaid programs, would be a fine of $10,000, and one year of imprisonment, or both."

As of July 1, 1971, H.R. 1 has passed the House of Representatives by a wide margin. Senate hearings will start in early July, 1971, and politics will probably determine the outcome. If H.R. 1 fails, the Devine Bill is ready for consideration.

Should either of these bills pass, it would apply primarily to Medicare and Medicaid. However, with the pressures for a national health insurance program, it is conceivable that the review mechanisms would be applicable to almost the entire population of the country. If this premise is correct, we must take urgent steps to develop a program that would meet the provisions of this or similar legislation.

CHP areas for each PSRO. Since New York State is so large and represents a diversified demographic population that it is impractical to consider one PSRO for the entire State, the following are suggested:

Recommendation 2. New York State be divided into regions corresponding to the CHP districts where feasible with one PSRO in each area.

Recommendation 3. Each representative on the State Medical Society Peer Review Committee act as liaison with the local area and assist in the coordination and development of their PSRO. We suggest he enlist the support of the foundations, medical societies, interspecialty societies, especially American Society of Internal Medicine, because of their expertise, hospital associations, insurance carriers, and government agencies in developing a structured program.

Certified hospital admissions program (CHAP). Hospital costs and services represent sixty cents of every health-care dollar. Since these services are the best documented and have been developed in varied degrees of sophistication of inhospital review activities, such as utilization review, medical and surgical audit, and admissions, medical records, and sundry efficiency committees, it would seem to be logical that this action would make an impact on cost of inhospital care. Furthermore, the experiences of the Sacramento Foundation in California and the Colorado Foundation have demonstrated CHAP to be a practical approach. The program is outlined in appendix G of the AMA *Peer Review Manual.*

Recommendation 4. Each PSRO area consider establishing a certified hospital admissions program as a joint effort of the involved parties.

Criteria studies in peer review. Many medical societies and hospitals have not developed the methodology for review of disease entities. Since this is time consuming and has been done by other organizations, it is impractical to duplicate the entire process.

Recommendation 5. The PSRO areas utilize the experience and expertise of established programs outlined in appendix D of the *Peer Review Manual* of the AMA.

Data sources. It is obvious that the complexities of hospital review studies inherent in a PSRO program cannot be done by reviewing individual charts alone and that modern technology of computer data processing must be utilized.

Recommendation 6. All hospitals be encouraged to develop their own data-processing program or subscribe to one of the available sophisticated programs of computerized medical record information systems referred to in appendix E of the *Peer Review Manual* of the AMA. The requirements for hospital review are outlined in the supplementary report of the Peer Review Committee to the House of Delegates, February, 1971.

Mobilization and organization of PSROs. It is incumbent on each PSRO to prove that they have the experience, expertise, and willingness to serve as an area group. The Secretary of Health, Education, and Welfare will decide on the basis of performance whether or not they have that competence.

Recommendation 7. The State Medical Society peer review member, county medical societies, and foundations should coordinate all component health resources in their respective areas to function as a unit to qualify as a PSRO.

Standardization of forms. When PSRO develops and matures as a nationwide system, there will undoubtedly be national standardized forms. In the interim each area should develop standardized forms to report and develop relevant data and to prove that they are a well-organized cohesive unit. Sample forms for medical society reviews are in appendix F of the AMA *Peer Review Manual.*

Recommendation 8. Medical societies, foundations, hospitals, and others, should develop standardized forms in their respective PSRO areas.

Publicity. When peer review is well established and functioning properly in the respective areas, the public should be apprised of organized medicine's efforts to upgrade the quality of medical care and to preserve the health-care dollar.

Recommendation 9. The medical profession should utilize all the communication news media to publicize the communication news media to publicize the peer review program to assure quality medical care and to the peer review program to assure quality medical care and to control health-care costs as a public service.

Norms, profiles, and patterns of care. Numerous criteria for use in peer review have been developed to serve as guidelines for review mechanisms (appendix D of AMA *Peer Review Manual*). These should be used to evaluate norms of care in the respective geographic area.

Patterns of care will vary in different areas. The common denominator is the appropriateness of medical care, bearing in mind reasonable cost parameters of the disease. It is important for the physician to document the symptoms and treatment to develop valid statistics. The treatment should conform to acceptable standards of the area.

Fee profiles will undoubtedly be a part of a national health insurance program. Since reasonable reimbursement for services rendered is essential for a viable and healthy medical profession, each area should develop the usual, reasonable, and customary charges either as a fee range or conversion factor in a recognized relative value scale, such as the California Relative Value Scale (1969).

Continuing education. Peer review is essentially an educational process and a method of preserving quality medical care. Abnormal patterns of care may be "kicked out" by computers, but judgment is a human equation, and judgments can only be made by peers at the local level. It should be based on honesty and common sense with the welfare of the patient the determining factor.

The Medical Society of the State of New York, the medical schools, and the New York State Health Department are devising a master plan for continuing education. Peer review should be an integral part in this program and could serve a beneficial function for both the patient and the physician.

Institute for Research and Development. The State Medical Society is planning an Institute which would be the nerve center for electronic data processing. This is important and timely. We desperately need a mechanism to collect, process, and evaluate the data inherent in the mechanics of PSRO. This would be done at one center for the entire State and would eliminate for the various PSROs the expense and duplication involved in a project of this magnitude.

MSSNY Peer Review Committee. This committee would assist the PSROs in developing and mobilizing, on a State level, the support of the State Hospital Association, State Health Department, medical schools, interspecialty societies, insurance carriers, Federal agencies, and the AMA. The committee would act as liaison with the various PSROs and the Institute. In conjunction with the Institute, it would review the relevant data of "gigo" for statistical analysis. It would coordinate the various programs to conform with Federal regulations.

Conclusion. There is increased evidence that Congress will assign the responsibility of peer review of professional services to organized medicine through the practicing physicians. The final determination will depend on our response to this opportunity and challenge.

Recommendation 10. That this report if approved by the Council be sent to the county medical societies for implementation.

No one can predict with certainty the ultimate course of peer review. If nonprofessional persons control the process, costs will probably have top priority at the expense of quality. If the medical profession responds with active leadership, being mindful of costs but emphasizing quality of care, we will be rendering a valuable service not only to the public but also to our profession.

Since peer review is essentially an educational process, the logical course would appear to be a factoring in of peer review in continuing medical education. With our legislators demanding relicensure or credits in a continuing medical education program, peer review offers a positive approach.

The following article on "Peer Review and Continuing Medical Education" was published in a surgical society publication and is included for your information.

CONTINUING MEDICAL EDUCATION AND PEER REVIEW

As government assumes an increasing role in financing the cost of medical education and health care, it extracts its "pound of flesh" in terms of rules, regulations, and supervision for all who enjoy the government carrot. This is not an arbitrary action of our legislators, since the Supreme Court has ruled that what the government finances, it must regulate. This is a bitter pill for the medical profession since physicians are basically rugged individualists.

In the past few decades we have seen the most prolific scientific and technological advances in history. What we were taught in medical schools and residency training programs are soon outdated. We must utilize our training in deductive reasoning and acquired judgment to assimilate the plethora of scientific advances. This can only be done by continuing medical education.

Government is aware of the trend of overspecialization resulting from the scientific explosion. It is also aware of the tunnel-vision effect and fragmentation of our services in the total picture of patient care. It is not surprising that most of the national health insurance bills before Congress include a provision for mandatory continuing medical education. Some of our legislators are advocating periodic relicensing.

The American Medical Association, American College of Surgeons, American Academy of General Practice, American Society of Internal Medicine, American Urological Society, American Academy of Orthopedics, and our medical schools have responded with voluntary assessment examinations, seminars, and sundry meetings in developing programs of continuing medical education. We urge all physicians to arrange their schedules to participate in these programs.

Self-assessment examinations and seminars focus on the quality of care which is unquestionably our main goal. However, it evades the issues of cost and quantity (appropriateness) of care which is of great concern to government and the public. We may have the highest quality of care, but if the cost and quantity are too great, we as a profession will price our product beyond the reach of the public. This is our dilemma in 1971, and unless we can surmount the cost and quantity factors in the seventies, we will be government employees by the eighties.

Our medical schools and affiliated hospitals rate high on quality but rate low in the cost and quantity of care as reflected in the per diem cost and length of stay statistics. In New York City per diem rates in our voluntary hospitals vary from $82 to $210 with our university-affiliated hospitals in the higher brackets. The high-cost hospitals claim research, residency training programs, increased services, and specialized technology account for the high per diem rates. This may be true, but many are asking if this price spread is necessary? In Philadelphia the State Insurance Commissioner has requested education and research be deleted in calculating the Blue Cross reimbursement formula. There is growing concern this concept may spread throughout the country and cripple our residency training programs.

In the private practice of medicine outside of the residency training hospitals, we find various gradations from excellent to marginal in terms of quality, cost, and quantity of care. The vast majority of physicians render a very commendable and dedicated service in terms of quality but are subjected to the same stresses in terms of cost and quantity as in the teaching hospitals.

This does not imply the medical profession is a major factor in the escalating per diem rates. However, it does focus on the role of the physician since he directs the patient into the hospital, prescribes his workup and treatment and determines to a large extent his length of stay and disposition. There are many reasons beyond our control for the excessive quantity and cost components, such as defensive medicine, because of malpractice premiums and claims, social reasons of insufficient extended care facilities, and economic considerations of the patients' insurance policy being structured to inhospital care. In spite of these factors there is much that can be and must be done to squeeze the fat out of the health-care dollar.

Peer review offers a practical approach because it includes quality, cost, and quantity controls. It supplements the continuing education program by an on-going and retrospective review of patient care. It will develop standards of the appropriateness (quantity) of care and will monitor the cost of care regarding fees and the total cost per disease entity. It will document the quality reviews that many have been doing in fragmentary fashion for many years without fanfare. By everyone serving on the committee in rotation, it tends to instill a cost consciousness and broad perspective of total patient care. It will maintain quality control within the medical profession and not allow government to usurp our prerogative. It accepts the challenge of government that the patient receive the appropriate care but no more. It does require education in a different context expressed by Aristotle: "It is by education I learn to do by choice what other men do by the constraint of fear."

Peer review is an educational process. It involves assessment of ourselves and others. It will meet the request of government and our critics and improve the image of the physician in the eyes of the public. It is an integral component of a continuing educational process to strive for excellence and improve the end product of patient care. This is the goal of the medical profession and why we have specialty organizations.

Peer review should be an integral part of our entire clinical medical education process whether it be in the medical schools, residency training programs, hospital conferences, or medical society review committees. Quality review has top priority. However, we must constantly review the quantity and cost of care. Was the hospitalization necessary? Were the diagnostic tests necessary? Was there a well-conceived plan of treatment? Was the reason for the workup and treatment documented? These should be routine bread and butter questions for every case. It would make us think and might save unnecessary expenditures. We must give more thought to the total cost of the treatment of the disease entity, such as hospitalization, workup, drugs, length of stay, extended care, and physician charges. It will require self-discipline by the physicians or regulation by the government.

Peer review will measure the end product of the physicians' knowledge as reflected in how he treats his patient. The physician should receive credits for continuing medical education by serving on these committees. Since improving the quality of medical care is the goal of the specialty organizations, they should participate actively by determining what are the appropriate standards in their respective discipline and area. The specialty societies should have active peer review committees to act as consultants to medical societies, and their members should constantly emphasize these standards in their residency training programs and staff conferences.

Peer review is the heart of the foundations, the Institute, and the proposed Statewide continuing medical education programs. Without effective peer review these well-conceived programs cannot succeed. The members of our committee will assist in developing and coordinating peer review activities within the framework of the proposed recommendations. The initiative and motivation must come from the local level, and time is running out. Therefore, we urge serious consideration of the proposed recommendations in this report.

Respectfully submitted,
Ralph S. Emerson, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

The Committee on Peer Review Mechanisms has submitted a lengthy report covering 5 pages in the *Delegates Handbook* and containing 10 recommendations. The recommendations were reviewed individually, and your reference committee concurs with these recommendations. This report reflects the tremendous amount of work and enthusiasm of Ralph Emerson, M.D., and his committee. We believe that this report should be made available to all county medical societies for their guidance.

The House voted to adopt this portion of the reference committee report.

Resolution 72–1, Medical Care Foundation Education Program

Introduced by Medical Society of the County of Monroe

WHEREAS, Foundations for medical care have proved to be an effective mechanism for dealing with third-party agents on behalf of physicians; and

WHEREAS, Foundations have proved to be beneficial to the public welfare by controlling cost and quality of health care and by improving accessibility of care; and

WHEREAS, Foundations are dependent on third-party agents willing to underwrite the foundation-sponsored insurance program; and

WHEREAS, The lack of public knowledge of the foundation movement is one of the main impediments to its development; therefore be it

Resolved, That the Medical Society of the State of New York embark on an organized effort to acquaint industrialists, labor unions, legislators, health planners, and the public with the advantages of foundations.

The following memorandum from the Medical Society of the County of Monroe, Inc., is included for information.

MEDICAL FOUNDATIONS IN NEW YORK STATE

American medicine has been criticized on several fronts: the three key issues are cost, accessibility, and quality of care. Two concepts have emerged as methods for answering criticisms relating to these concerns. One is the prepaid group practice on a salary basis with its many variations, and the other is the foundation for medical care.

The Monroe County Medical Society has taken the route of the medical care foundation, and the proposal for an institute at the State Medical Society level is an evolution we heartily support in order that the foundations and physicians in practice who believe in the fee-for-service system may better coordinate their efforts and become most effective.

Foundations are based on the purpose of promoting, developing, and encouraging the distribution of medical services by its members to the people at a cost reasonable to both patient and physician; to preserve unto its members, the medical profession at large, and the public freedom of choice to both the physician and patient; to guard and preserve the physician-patient relationship and its benefits; to protect the public health; to work and study in cooperation with prepaid health care plans that provide for periodic and realistic budgeting of medical care; and which subscribe and provide for the freedom of selection and guarantee of the physician-patient relationship.

Many diverse groups are planning the future of medical care. Government is now legislating rewards for closed-panel salaried groups and denying the same reward to the fee-for-service practitioner. Physicians cannot ignore these activities. No matter how illogical and poorly founded criticism is against the present medical system, problems do exist.

Costs. Costs seem to be escalating with no end in sight. Many claim the physician has no stake in the rising cost spiral and that risk is undertaken by individuals, insurors, or the government. The physician generates cost, but his actions frequently are controlled by economic and regulatory forces, and many times he does not have input or control at the decision-making level to help alleviate costs.

Accessibility. A maldistribution of physicians creates an imbalance in health-care delivery. Rural and inner city populations are under-serviced and under-staffed resulting in poor health care.

Quality. Peer review means different things to different people, depending on their position. Claims review, utilization, under-utilization, medical care standards, third-party regulations all contribute.

Lack of system. A "nonsystem" and a "cottage industry" are popular phrases in health planners' lingo. A structure whose goals provide solutions to these three problems and a structure which can be identified by those in a consumers group seeking help for the solutions, is essential. Unfortunately medical society structure is not enough. The group-practice or closed-panel approach is a system or structure readily identifiable.

Foundations. The foundation approach to medical care provides the basic elements on which to build a mechanism to attempt to answer these problems. The goal is accessibility and quality care for all, delivered at a reasonable cost.

Foundations recognized that all is not sour in medical care; others also seem to recognize this. Roger O. Egeberg, M.D., former under-secretary of U.S. Department of Health, Education, and Welfare, indicated that the administration of the United States recognized the need to build on the best of the medical system and not replace it entirely, such as the use of the health maintenance organization (HMO) concept. Mr. Harry Schwartz of the *New York Times* wrote in the *Saturday Review* about the fallacy of condemning the whole medical system and offering simplistic solutions. The February issue of *Harvard Law Review*, in an article on the role of prepaid group practice noted, "If substantial change in the delivery system does occur, the chief rival of prepaid group practice is likely to be the medical foundation plan."

Foundations maintain the elements in our present system considered by many to be desirable. Freedom of choice by patients and by physicians and a personal physician-patient relationship is a keystone to satisfactory early disease detection, patient confidence, and continuity of care. Medicine directed toward the needs of the patient is clearly present in the existing system.

Even the fee-for-service system has value. Mr. Sidney Garfield, in a review of the needs in our health-delivery system noted in the context of our present lack of enough medical personnel, the fee acts as an entry valve, keeping the worried well and the well people from over-utilizing available services.

Foundations can approach the problem of cost in several ways. Initially, by sponsoring ambulatory prepayment care, there is potential for reduction of need for hospitalization as well as potential for early detection of disease. Innovative prepayment mechanisms, including the capitation system, disbursed through the fee-for-service system, can be accommodated. Through a foundation, physicians are closely involved in the reasons for rising costs and are in the best position to initiate change. Data never before available can be accumulated. Statistics will allow pinpointing of areas where cost controls can be applied. Peer review for quality has been effective in instituting savings.

Foundations can approach the problem of risk incentive to control medical costs; this has been done by several foundations on the west coast. The Sacramento foundation has introduced the certified hospital admission program designed to reduce time in hospitals. The program has been successful in containing the escalation of costs, principally by reducing or eliminating hospital time.

No system at present answers the problems of under-serviced areas. There are several facets to the accessibility problem. The first is a numerical problem with poor distribution of physicians, both as to location and limited numbers of primary-care physicians. Approximately one third of the physicians are not involved in direct patient care. The second is amount of time consumed with the patient with functional illness and as a corollary time consumed in tasks not requiring the training and skills obtained by the physician.

There is also a greater demand by patients because of government programs and greater insurance coverage. To solve these problems, the profession must be better organized. That we could distribute patients more effectively was revealed in a recent survey in Rochester of primary-care physicians, which indicated that with proper planning we could accommodate from 7,000 to 10,000 more patients without expanding. Reasons for patients not gaining access to our present health-care system includes: reluctance of physicians to enter a relationship on only a crisis basis, inability to get patients and physicians together at the appropriate convenient time, and unreasonable reimbursement formulas. We anticipate a foundation program to match patients with physicians. Such a program needs to include language matching, transportation, and social service follow-up. Second, we need further to explore the role in placement of physician expanders. Third, multiphasic screening for the functionally well-patient and chronically ill patient with follow-up by trained ancillary medical personnel. These provide some solutions.

The ability of the medical profession to organize into an identifiable system and still retain the benefits of autonomous action is a key to the open-panel approach of the foundation. We see such a system interconnected via processing equipment so that medical, economic, and social information necessary for proper patient care is accessible to all. Data processing within office terminals can eliminate the flow of paper bogging down present informational exchange whether it be medical information or insurance forms. This also would substantially reduce the cost of medical care once the system is organized and under way. The institute in New York State offers such hope. Expansion of this type of program within the legal boundaries of priviledged information will give even the most remote physician a communication potential that is as good as that existing in the tightest group practice.

We need to maintain medical care at a very personal level. We need to reorganize ourselves but not destroy our present medical-care system. The system has accomplished a great deal in improving the health of this nation. It has embraced every advance in the prevention of disease. It has insisted on wide distribution of preventative and therapeutic measures. Those who portray the future of medicine in terms of abysmal failure are unfairly judging the excellent health record that has existed.

What is called for is a revision, not a revolution, in medical care. A choice of systems should be available.

The future of organized medicine in America will depend entirely on its ability to organize. The structure must not be a sham based totally on principles of self interest. Physicians must be willing to accept changes which have demonstrated ability to improve health care.

Based on these concepts we state that the development of foundations is the major hope and avenue for resolution of some of the problems facing the physicians in the State of New York. Physicians from the Monroe Plan have discussed the foundation movement in 15 or more county medical societies in this State. Many of these societies are moving toward the establishment of foundations. We encourage the effective coordination of this effort; we encourage the provision of help to organize the foundations; we encourage an organized effort to acquaint the public with advantages of the foundation movement, and we also encourage the immediate implementation of a State institute with a promise of making this foundation program effective in New York State.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends adoption of this resolution.

The House voted to adopt resolution 72-1.

Resolution 72-2, Aid and Advice to Encourage Organization of Medical Care Foundations

Introduced by Medical Society of the County of Monroe

WHEREAS, Foundations for medical care meet the present day need of health consumers for prepayment and for budgeting of health care; and

WHEREAS, Such foundations attempt to reduce costs and to improve quality of care by peer review mechanisms; and

WHEREAS, Foundations prove the flexibility of the traditional system for providing health care by adapting to the needs of today; therefore be it

Resolved, That the House of Delegates request the Council of the Medical Society of the State of New York to take all reasonable measures to foster and encourage formation of properly organized foundations for medical care by individual counties and district branches; and be it further

Resolved, That the Medical Society of the State of New York give all possible effective aid and advice to component medical societies desirous of establishing foundations for medical care.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends adoption of this resolution.

The House voted to adopt resolution 72-2.

Resolution 72-3, Support for Implementation of New York Institute for Research and Development in Health Care to Coordinate Medical Foundation Activities.

Introduced by Medical Society of the County of Monroe

WHEREAS, An institute is being organized for the purpose of establishing a health-data system; and

WHEREAS, Such an institute will aid in establishing standards for quality of care, especially in office practice; and

WHEREAS, The institute would complement local health-care delivery systems by analyzing and interpreting data submitted to it; and

WHEREAS, The institute would provide technical advice in setting up local medical care foundations; and

WHEREAS, The institute could act as intermediary between physicians and third-party agencies in negotiations at super-regional levels; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York go on record as vigorously supporting the establishment of the New York State Institute for Research and Development in Health Care and the fulfillment of its projected role.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

The committee recommends adoption of resolution 72-3 with the addition of the following second *Resolved* as suggested by a representative of the Medical Society of the County of Monroe, Inc.

> *Resolved,* That to the extent possible, using existing staff, the Medical Society of the State of New York provide the Institute with staff support in its formative stages prior to its funding by outside sources.

Your reference committee recommends adoption of this resolution as amended.

The House, after discussion, voted to amend resolution 72-3 by the addition of the following *Resolved:*

Resolved, That the Bylaws of the Institute be referred to the Council for evaluation and suggested changes.

The *Resolved* portion of resolution 72-3, as amended by the reference committee and by the House, would then read:

Resolved, That the House of Delegates of the Medical Society of the State of New York go on record as vigorously supporting the establishment of the New York State Institute for Research and Development in Health Care and the fulfillment of its projected role; and be it further

Resolved, That to the extent possible, using existing staff, the Medical Society of the State of New York provide the Institute with staff support in its formative stages prior to its funding by outside sources; and be it further

Resolved, That the Bylaws of the Institute be referred to the Council for evaluation and suggested changes.

The House then voted to adopt resolution 72-3 as amended.

Resolution 72-49, Health Care Foundation for Second District Branch

Introduced by the Second District Branch

WHEREAS, There may perhaps be inadequacies in the delivery of health care in the geographic area of the Second District Branch; and

WHEREAS, It is appropriate that the health care needs of the community be evaluated by the Medical Society of the State of New York; and

WHEREAS, It is appropriate that the health manpower needs of the community also be evaluated; therefore be it

Resolved, That the Medical Society of the State of New York create as a pilot project a health-care foundation for the Second District Branch, whose purpose would be to define the existing health care needs of the community and to define the health manpower available within the Second District Branch, and such information would then be utilized to project the mechanisms to be developed for meeting the future community health-care needs as well as for providing the health-care manpower required to meet those needs; and be it further

Resolved, That such health-care foundation be created by the Medical Society of the State of New York as a research survey project with appropriate financial assistance and professional guidance from other interested parties.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends disapproval of this resolution because the research survey project described in the first *Resolved* would be too costly to undertake at the present time. The committee believes that there is sufficient information available from other sources on this subject.

The House voted not to adopt resolution 72-49.

Resolution 72-51, Educational Requirement of Physician's Associates and Specialist's Assistants

Introduced by the Medical Society of the County o Madison

WHEREAS, There exists today in many areas of the country and New York State a severe shortage of practicing physicians; and

WHEREAS, This shortage is denying the right o medical services to a large segment of our people; and

WHEREAS, To help eliminate this denial of medica service, a new health category of physician's associates and specialist's assistants has been legislated in New York State; and

WHEREAS. Since the nursing profession is now seeking a new definition accord for its members; and

WHEREAS. The nursing profession refuses to take a back seat to this new category of health personnel; therefore be it

Resolved, That the Medical Society of the State of New York make every effort to have the Education Law revised so that a candidate to be considered for admission to a course leading to a certificate or diploma of "Physician's associate or specialist's assistant," first must have an R.N. degree or an equivalent medical education as determined by the Advisory Council on Physician's Associates.

Resolution 72-51 was withdrawn by the proposer with the permission of the House.

Resolution 72-19, Reevaluation of Role of Physician's Assistant

Introduced by Medical Society of the County of Niagara

WHEREAS. Since time immemorial and historically, traditionally, and practically the professional nurse has been the physician's true assistant; and

WHEREAS. There is a critical shortage of adequately trained personnel in practically all categories of medical care, including nursing; and

WHEREAS. The institution of new categories of medical care personnel may well further reduce the number of applicants applying for positions in the already existing categories of medical care personnel; and

WHEREAS. The new category of medical personnel, the physician's assistant, has aroused anger and resentment in the profession of nursing; and

WHEREAS. Similar reactions may well arise in other paramedical categories as physician's assistants begin to appear; therefore be it

Resolved, That the Medical Society of the State of New York reevaluate its position on physician's assistant to determine whether or not this new category is required to provide adequate medical care and whether or not the existing categories of medical care personnel can be expanded to provide such care; and be it further

Resolved, That the Medical Society of the State of New York direct its delegation to the American Medical Association to submit a similar resolution to the American Medical Association's House of Delegates when it meets in June, 1972.

Resolution 72-20, Reevaluation of Nursing Education, Utilization, and Assignment in Delivery of Health Services

Introduced by Medical Society of the County of Niagara

WHEREAS. There are presently several categories of nurses: baccalaureate registered nurse, three-year diploma school graduate registered nurse, two-year community college associate degree registered nurse, and licensed practical nurse; and

WHEREAS. There is currently being developed another category of medical personnel called physician's assistant that duplicates many of the traditional functions of the categories of nursing mentioned; and

WHEREAS. There is considerable uncertainty in the minds of physicians concerning the adequacy of the curricula of the various nurse-training programs and their relevancy to their overall role in the medical arts; therefore be it

Resolved, That the Medical Society of the State of New York, through its appropriate committees, study the entire spectrum of the nursing arts to (1) redefine what constitutes the profession of nursing; (2) evaluate the various types of nursing curricula available; and (3) come forth with recommendations on how to make nurse-training more relevant to its needed and irreplaceable role in the medical arts and how to integrate and coordinate the existing programs into one program with progressive degrees of education in the nursing arts; and be it further

Resolved, That the findings of this study be referred to the appropriate committee of the State Legislature with the recommendation that it be incorporated into the State Education Law.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE. The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee considered these resolutions together and wishes to offer the following substitute resolution:

WHEREAS. There are presently several categories of nurses: baccalaureate, registered nurse, three-year diploma school graduate registered nurse, two-year community college associate degree registered nurse, and licensed practical nurse; and

WHEREAS. There is currently being developed another category of medical personnel called "physician's associates and specialist's assistants that duplicates many of the traditional functions of the categories of nursing mentioned; and

WHEREAS. There is considerable uncertainty in the minds of physicians concerning the adequacy of the curricula of the various nursing-training, physician's associates, and specialist's assistant programs and their relevancy to their overall role in the medical arts; therefore be it

Resolved, That the Medical Society of the State of New York, through its appropriate committees, study the entire spectrum of the nursing arts to (1) redefine what constitutes the profession of nursing; (2) evaluate the various types of nursing, physician's associate, and specialist's assistant curricula available; and (3) come forth with recommendations on how to make this training more relevant to its needed and irreplaceable role in the medical arts and how to integrate and coordinate the existing programs into one program with progressive degrees of education in the nursing arts; and be it further

Resolved, That the findings of this study be referred to an appropriate committee of the Medical Society of the State of New York with a request that said committee report to the Council the results of this study.

The committee recommends approval of the substitute resolution.

The House, after discussion, voted to amend the substitute resolution by adding after the words "New York" in the first line of the *Resolved* portion, the words "with the Nursing Association of New York State." The *Resolved* portion of the substitute resolution would then read:

> *Resolved,* That the Medical Society of the State of New York, with the Nursing Association of New York State, through appropriate committees, study the entire spectrum of the nursing arts to (1) redefine what constitutes the profession of nursing; (2) evaluate the various types of nursing, physician's associate, and specialist's assistant curricula available; and (3) come forth with recommendations on how to make this training more relevant to its needed and irreplaceable role in the medical arts and how to integrate and coordinate the existing programs into one program with progressive degrees of education in the nursing arts; and be it further
>
> *Resolved,* That the findings of this study be referred to an appropriate committee of the Medical Society of the State of New York with a request that said committee report to the Council the results of the study.

The House, after discussion, voted to adopt the substitute resolution as amended.

Resolution 72–88, Nursing and Paramedical Programs

Introduced by Medical Society of the County of Queens

WHEREAS, The New York State Nurses Association has been fostering a bill before the Legislature which defines Nursing, in essence, as "diagnosis and treatment, without medical supervision"; and

WHEREAS, Their concern appears to have been stimulated by the thrust of academic groups to develop a so-called "Primary Physician's Assistant" in various forms; and

WHEREAS, It is a proper concern of nurses that there may be an attempt to "edge-in" a level of healthcare personnel above the nurses rightful position; therefore be it

Resolved, That the Medical Society of the State of New York exert its interest, influence, and cooperation to assist the nurses in an acceptable redefinition of nursing, free of ambiguity of misleading impressions; and be it further

Resolved, That the Medical Society of the State of New York express its disapproval of the current type of paramedical programs, as proposed, with independent action and judgment by insufficiently trained "assistants," as a disruption to both medicine and nursing, but more significantly as a threat to quality medical care for the public; and be it further

Resolved, That this resolution be conveyed to the American Medical Association for additional action at the national level.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends disapproval of resolution 72-88.

The House voted not to adopt resolution 72–88.

Resolution 72–4, Formation of Hospital Efficiency Committee to Reduce Hospital Costs Without Reducing the Quality of Hospital Medical Care

Introduced by Medical Society of the County of Kings

WHEREAS, increasing costs of hospital care have provoked much adverse criticism by patients, trustees, legislators, government, and physicians; and

WHEREAS, Physicians, nurses, and hospital administrators are in the best position to evaluate significant waste, inefficiency, and dissipation of skills and money in hospital care; and

WHEREAS, Hospital utilization and peer review committees have not been sufficiently effective in containing or reducing the costs of hospitalization; and

WHEREAS, Greater effort should be expended to provide a more efficient manner of treating the patient while he is in the hospital; and

WHEREAS, Health professional personnel are most knowledgeable concerning the professional medical needs of patients and the quality of the hospital medical care rendered to the patient; therefore be it

Resolved, That the Medical Society of the State of New York urge the formation in each hospital of a hospital efficiency committee composed of health professional personnel, such as physicians, nurses, and hospital administrators, to study present hospital costs in their institutions with the specific objective of devising ways and means of reducing hospital costs without reducing the quality of hospital medical care given to the patient; and be it further

Resolved, That a copy of this resolution be submitted to the American Medical Association's House of Delegates at its meeting in June, 1972.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House, after discussion, voted not to adopt resolution 72–4.

Resolution 72–5, Granting of Subpoena Power to County Medical Societies

Introduced by Nassau County Medical Society

WHEREAS, Peer review is a critical function and one which many agencies of government have strongly suggested that medical societies initiate; and

WHEREAS, Peer review is also a function which major insurance carriers demand of medical societies; and

WHEREAS, The public has delegated and expects physicians to evaluate and control the quality and quantity of services rendered by their colleagues; and

WHEREAS, The authority and the potential to police its membership has been given to medical societies; and

WHEREAS, The authority the medical society exerts over its physician-members is not based on legal but moral and professional suasion; and

WHEREAS, Medical societies are helpless in those instances where they cannot affect review and compliance with its recommendations for those physicians who are not members of its component society; and

WHEREAS. Such compliance and objective effect can only be obtained if a medical society had the right of subpoena; therefore be it

Resolved, That the Medical Society of the State of New York use its good offices to secure subpoena rights for the Board of Censors and peer review committee of county medical societies.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee strongly recommends disapproval of resolution 72-5.

The House voted not to adopt resolution 72-5.

Resolution 72-17, Appointment of Physicians as Full-Voting Members of Hospital Governing Bodies

Introduced by Medical Society of the County of Oneida

WHEREAS. The present and future health care in the hospital sector is viewed with increasing apprehension; and

WHEREAS. The Medical Society, as well as the hospitals, is concerned with providing a comprehensive health system which will supply the largest number of people with health care at the lowest cost; and

WHEREAS. It is felt that this may only be accomplished by placing physicians in a position to help map out policy and administration at its most effective level, namely, the governing body of an individual hospital; and

WHEREAS. The hospital governing body has the overall responsibility for the conduct of the hospital in a manner compatible with the hospital's objective of delivering a high quality of patient care; and

WHEREAS. The excellence of hospital management is not solely the responsibility of the governing body and administration, since the medical staff must be concerned with and bear responsibility for the quality and efficacy of the total management of the hospital; and

WHEREAS. It was brought out in the outstanding survey of Governor Rockefeller's "Governor's Committee on Hospital Costs," chaired by former HEW Secretary Marion Folsom, that hospitals are million-dollar businesses run by devoted laymen and businessmen without any training or background in medicine, public health, and the medical needs of the area they serve; and

WHEREAS. These various skills must supplement the principles of good business practice; and

WHEREAS. By training, experience, and background physicians are best prepared to guide the direction of medical care and can provide a central core of know-how that will best fit the needs of hospitals designed primarily to provide a valuable service to the community; and

WHEREAS. The American Medical Association, the Joint Commission on Accreditation of Hospitals, and the American College of Surgeons have recommended appointment of members of the medical staff to hospital governing bodies and have so stated, as follows:

> Where legally permissible, physicians actively practicing in the community who are voting members of the medical staff shall be eligible for, and should be accorded, membership in hospital governing bodies and their action committees, with full voting privileges, in the same manner as are other knowledgeable and effective individuals. They should be nominated by the medical staff and they should be willing and able to serve; therefore be it

Resolved, That the Medical Society of the State of New York endorse the position that there be physician representation on all hospital governing bodies as recommended by the American Medical Association, the Joint Commission on Accreditation of Hospitals, and the American College of Surgeons; and be it further

Resolved, That each hospital governing body be so informed with the recommendation that its constitution and bylaws be amended to include the procedure for appointment of physicians as members of the said hospital governing body.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-17.

Resolution 72-18, Psychiatric Departments in General Hospitals

Introduced by Medical Society of the County of Westchester.

WHEREAS. It is the consensus of health-care professional personnel that no community general hospital should be regarded as rendering a complete service unless it accepts mentally ill patients for short-term hospitalization; and

WHEREAS. The need for short-term (up to four weeks) psychiatric inpatient services continues to be great; and

WHEREAS. Short-term hospitalization in the community general hospital is therapeutically advantageous and avoids (1) unnecessary hardship to patients and their families, (2) hospitalization in distantly located facilities, and (3) disenfranchisement of patients from prepaid hospitalization insurance benefits; and

WHEREAS. Alcoholism and drug abuse problems are major public health concerns, which must be considered as part of the responsibility of the community general hospital and require psychiatric treatment; therefore be it

Resolved, That the Medical Society of the State of New York assert that no community general hospital should be regarded as rendering a complete service unless it accepts mentally ill patients for short-term hospitalization; and be it further

Resolved, That the Medical Society of the State of New York encourage the general medical-surgical staffs, the administrators, and the boards of trustees of all community general hospitals to support implementation of this principle.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends the following changes in resolution 72-18: delete the fourth Whereas, and substitute the following for the first *Resolved*.

Resolved, That the Medical Society of the State of New York encourage community general hospitals to accept mentally ill patients for short-term hospitalization; and be it further

The House, after discussion, voted to adopt resolution 72-18, as amended.

Resolution 72-48, Peer Review and Transfer of Hospital Patients

Introduced by Nassau County Medical Society.

WHEREAS, Delayed transfer of hospital patients into extended care facilities and intermediate care facilities has increased the hospital stay and unnecessary hospital cost; and

WHEREAS, Some intermediate care facilities have been reluctant to accept Medicare and some Medicaid patients because of retroactive denial of benefits by the fiscal intermediary; therefore be it

Resolved, That the Medical Society of the State of New York go on record as approving the following procedure with regard to the transfer of hospital patients to extended care facilities and intermediate care facilities:

1. That all patients scheduled for transfer from hospitals to extended care facilities and intermediate care facilities be reviewed by the utilization review committee of the hospital as to the medical necessity of continued medical care in the extended care facility or intermediate care facility;
2. That approval by the utilization review committee be supporting evidence to the fiscal intermediary of the medical necessity of such care;
3. That specialty departments in the hospital and specialty society representatives of the county medical society (or foundation) peer review committee be utilized in adjudicating disagreements; and be it further

Resolved, That this recommendation be forwarded to the Bureau of Health Insurance of the Social Security Administration and the State Department of Social Services as a mechanism for expediting the approval and transfer of patients from hospitals to extended care facilities and intermediate care facilities; and be it further.

Resolved, That copies of this resolution be presented at the annual meeting of the American Medical Association House of Delegates, in San Francisco, in June, 1972.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends that paragraph 1 in the first *Resolved* be amended by adding after the word "patients," the words "of doubtful eligibility for insurance benefits."

The House, after discussion, voted not to adopt the proposed amendment.

The House then voted to adopt resolution 72-48.

Resolution 72-45, Use of Credit Cards in Medical Practice

Introduced by Charles F. Nicol, M.D., as an individual

WHEREAS, The American consumer has found it advantageous and convenient to pay for both goods and services through the use of a credit card; and

WHEREAS, Many providers of medical, dental, and hospital health-care services already utilize this system for payment; and

WHEREAS, The implementation of this system is strictly voluntary on both the part of the provider and the consumer; and

WHEREAS, The American Medical Association has declared that it is ethical for physicians to honor credit cards provided they do not result in advertising for solicitation of patients by physicians, in profit to the physician for other than professional services, in the exploitation of the patient, or the unnecessary increase in the cost of medical care; and

WHEREAS, There are credit card programs which meet the criteria established by the American Medical Association; therefore be it

Resolved, That the Medical Society of the State of New York go on record approving the following: A physician may ethically honor credit cards for the payment of his goods and services if the credit card program meets the requirements established by the American Medical Association and is approved by his own county medical society.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

The House of Delegates of the Medical Society of the State of New York has in the past gone on record as disapproving the use of credit cards in the practice of medicine. During the hearings on this resolution, the majority of discussants in the reference committee were opposed to the resolution, including the chairman of the Committee on Ethics. Therefore, your reference committee recommends disapproval of this resolution.

The House, after discussion, voted not to adopt resolution 72-45.

Resolution 72-46, Undesired Practice of Medicine by Hospitals

Introduced by First District Branch

WHEREAS, The rebate or transfer of fees is prohibited by Section 6514 of the State Education Department; and

WHEREAS, The principles of the code of ethics forbids such transfer and rebate of fees; and

WHEREAS, Physicians in this State have been voluntarily rebating fees to hospital corporations; and

WHEREAS, Increasing numbers of physicians are being coerced to rebate fees to hospital corporations; therefore be it

Resolved, That the Medical Society of the State of New York secure outside legal counsel at the earliest practical date to institute legal action to stop the practice of medicine by hospital corporations.

Resolution 72-91, Adjudication of the Legality of the Practice of Medicine by Hospital Corporations

Introduced by First District Branch

WHEREAS. The Courts of the State of New York have determined that by hiring physicians, and by collecting and sharing their professional fees, hospital corporations share their professional responsibilities; and

WHEREAS. This constitutes the professional practice of medicine by hospital corporations; and

WHEREAS. The professional practice of medicine by hospital corporations is not in the public interest as it weakens the personal and private relationships between the physician and his patient which are essential for the best medical care; and

WHEREAS. The State Education Law prohibits the professional practice of medicine by any person or corporate entity without proper qualifications, education, examination, and licensure; and

WHEREAS. The legality of the professional practice of medicine by corporate hospital entities has not been formally challenged in the State of New York nor legally adjudicated; therefore be it

Resolved, That the Council of the Medical Society of the State of New York forthwith, and without delay, appropriate the necessary funds and retain special legal counsel to seek a final and authoritative adjudication of the legality of the practice of medicine by hospital corporations.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE The following report was presented by James R. Nealon, M.D., chairman.

These resolutions were considered together since their intent is similar. Resolution 72-91 is substituted for both of these resolutions and is amended by inserting the words "not to exceed more than $5,000" in the *Resolved* portion after the word "funds." Therefore, the amended *Resolved* will read as follows:

> *Resolved,* That the Medical Society of the State of New York forthwith, and without delay, appropriate the necessary funds, not to exceed $5,000, and retain outside legal counsel to seek a final and authoritative opinion of the legality of the practice of medicine by hospital corporations.

The reference committee recommends approval of the resolution as amended.

The House, after discussion, voted not to adopt resolution 72-91, as amended.

Resolution 72-47, Hospital Practice of Medicine
Introduced by Second District Branch

WHEREAS. The hospital emergency room is designed for the treatment of life-threatening conditions; and

WHEREAS. Hospital emergency rooms are generally staffed by physicians who are oriented toward the treatment of acute conditions not comprehensive and family care deserved by patients; and

WHEREAS. Hospital emergency rooms, at the present time, generally are believed to be overutilized; therefore be it

Resolved, That the Medical Society of the State of New York request the Associated Hospital Service of New York to revoke those provisions of its new rider to its contracts with "community rated" subscribers which allows paid-in-full benefits for 30 visits per year per subscriber, per member of his family, to the outpatient department of a member hospital for serious and sudden illness which has occurred during the previous twelve hours, including such conditions as choking, nausea, hiccups, hives, and others; and be it further

Resolved, That the Medical Society of the State of New York request the Associated Hospital Service to define that portion of its hospital contract discussing accidental injury, emergency surgery, and sudden and serious illness which states "... hospital service in this section *includes services of physicians arranged for by the hospital,* on a basis approved by Associated Hospital Service"; and be it further

Resolved, That the Medical Society of the State of New York make formal its view on the hospital practice of medicine in utilizing physicians, both licensed and unlicensed, for the rendering of medical care.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends the following changes in resolution 72-47:

In the first *Resolved,* change the word "revoke" to "revise"; in the second *Resolved,* change the word "define" to "redefine"; and delete the third *Resolved.*

The House, after discussion, voted to amend the resolution as amended and presented by the reference committee by adding the following:

> *Resolved,* That the Medical Society of the State of New York declare its desire to retain the private practice of medicine and respectfully request that the Associated Hospital Service and the United Medical Service jointly discuss an alternative for the patient by United Medical Service providing "parallel coverage" with a maximum allowance for treatment rendered in a physician's office.

The *Resolved* portion of the resolution would then read:

> *Resolved,* That the Medical Society of the State of New York request the Associated Hospital Service of New York to revise those provisions in its new rider to its contracts with "community rated" subscribers which allows paid-in-full benefits for 30 visits per year per subscriber, per member of his family, to the outpatient department of a member hospital for serious and sudden illness which has occurred during the previous twelve hours, including such conditions as choking, nausea, hiccups, hives, and others; and be it further
>
> *Resolved,* That the Medical Society of the State of New York request the Associated Hospital Service to redefine that portion of its hospital contract discussing accidental injury, emergency surgery, and sudden and serious illness which states "... hospital service in this section *includes services of physicians arranged for by the hospital,* on a basis approved by Associated Hospital Service; and be it further
>
> *Resolved,* That the Medical Society of the State of New York declare its desire to retain the private practice of medicine and respectfully request that the Associated Hospital Service and the United Medical Service jointly discuss an alternative for the patient by United Medical Service providing "parallel coverage" with a maximum allowance for treatment rendered in a physician's office.

The House then voted to adopt resolution 72-47 as amended.

Resolution 72-15, Specialty Listings of Physicians in "Yellow Pages" of the Telephone Directory

Introduced by Medical Society of the County of Westchester

WHEREAS, Present listing of physicians in the "Yellow Pages" of the telephone directory include the phrase "practice limited to (specific specialty)"; and

WHEREAS, Such listing may be misleading because the physician may not be certified by the American Board of the medical specialty; and

WHEREAS, Local medical societies have no control over listings in the "Yellow Pages"; and

WHEREAS, Patients seeing such listings may tend to self-diagnosis; therefore be it

Resolved, That the Medical Society of the State of New York urge its members to refrain from listing any specialty in the "Yellow Pages" of the telephone directory other than the M.D. classification; and be it further

Resolved, That the Medical Society of the State of New York discontinue its approval of physicians' specialty listings in the "Yellow Pages" of the telephone directory.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee heard testimony from several county society representatives regarding problems associated with the listing of a physician's specialty in the "Yellow Pages." Since there is no mechanism to control the accuracy of these listings, and since this has been a function and prerogative of the local county medical society, the committee feels the listing of physicians should be left to the discretion of the local county medical society. Therefore, the reference committee recommends disapproval of resolution 72-15.

The House voted not to adopt resolution 72-15.

Resolution 72-80, Invasion of Physician-Patient Relationship Prior to Treatment by Required Unauthorized Consultation by Third-Party Insurance Carrier

Introduced by Medical Society of the County of Queens

WHEREAS, A letter dated January 19, 1972, from the Storeworkers Security Plan to its members stated that many of them had undergone operations which were not necessary, although no certified proof of this charge was given; and

WHEREAS, This union plan has mandated a presurgical examination of the members by another surgeon without his consent or desire; and

WHEREAS, An arrangement has been made between this union and the Departments of Surgery of New York Hospital and North Shore Hospital for confirming surgical consultations; therefore be it

Resolved, That the Medical Society of the State of New York deplore and condemn the invasion of the physician-patient relationship prior to treatment by required unauthorized consultation by third-party insurance carriers; and be it further

Resolved, That the parties involved, specifically the Storeworkers Security Plan, be so notified.

REPORT OF THE REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends approval of resolution 72-80.

The House voted to adopt resolution 72-80.

Resolution 72-82, Opposition to Lay Health Service Organizations

Introduced by Medical Society of the County of Monroe

WHEREAS, The formation of health service corporations is now becoming legal in New York State; and

WHEREAS, There has been an attempt made in the Genesee region of New York State to establish a health service corporation under lay control which would collect and disburse all fees paid by all third-party agencies for health care; and

WHEREAS, The corporation would use this power to control all health care and would reduce the delivery of health care to the level of a public utility; therefore be it

Resolved, That the Medical Society of the State of New York go on record as opposing the formation of undemocratic and monopolistic master organizations in the health field; and be it further

Resolved, That the Medical Society of the State of New York go on record as favoring the policy of optimal involvement of consumers, producers, and third-party agencies in health care planning

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee wishes to amend the resolution by changing the second Whereas to read as follows:

WHEREAS, There has been an attempt made in New York State to establish health service corporations under lay control which would collect and disburse all fees paid by all third-party agencies for health care.

The committee also recommends further amending the resolution by changing the first *Resolved* to read as follows:

Resolved, That the Medical Society of the State of New York go on record as opposing the formation of these master organizations in the health field.

The reference committee recommends approval of the resolution as amended.

The House, after discussion, voted to amend the first *Resolved* as amended by the reference committee by adding the words "tending to total control without adequate physician representation" following the words "Master organizations in the health field."

The *Resolved* portion of the resolution would ther read as follows:

Resolved, That the Medical Society of the State of New York go on record as opposing the formation o those master organizations in the health field tend ing to total control without adequate physician representation; and be it further

Resolved, That the Medical Society of the State of New York go on record as favoring the policy of optimal involvement of consumers, producers, and third-party agencies in health care planning.

The House then voted to adopt resolution 72-82 as amended.

Resolution 72-44, Designation of Nurse-Midwives as Obstetrical Physicians' Assistants
Introduced by George T. C. Way, M.D., as an individual

WHEREAS, The Medical Society of the State of New York has indicated its general approval of the concept of physician's assistant; and

WHEREAS, Each medical specialty, because of its own particular nature, must require different training and experience in those who will serve as a physician's assistant; and

WHEREAS, The field of obstetrics is most fortunate in that the concept of nurse-midwife is already in existence; and

WHEREAS, Certain educational facilities within the State of New York are currently functioning in further educating graduate nurses in this particular field; and

WHEREAS, The need for obstetrical physician's assistants has been acutely aggravated by the elimination of the rotating internship in the upstate community hospital; and

WHEREAS, Within the legislative and administrative codes of the State there is yet no definitive description of how nurse-midwives may become obstetrical physician assistants; therefore be it

Resolved, That the Medical Society of the State of New York make every effort to effect either through legislative action or administrative decree whatever descriptive change that is necessary so that trained nurse-midwives may legally serve as obstetrical physician's assistants; and be it further

Resolved, That the legislative or administrative definition be of such a nature that the trustees of community hospitals will readily accept these trained individuals as an essential part of an adequate obstetrical team.

REPORT OF REFERENCE COMMITTEE ON STANDARDS OF MEDICAL CARE: The following report was presented by James R. Nealon, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-44.

The House voted to adopt the reference committee report as a whole as amended.

Medical Services

Commission on Medical Services

To the House of Delegates, Gentlemen:

The members of the Commission on Medical Services are as follows:

G. Rehmi Denton, M.D., *Chairman*	Albany
Robert E. Westlake, M.D.	Onondaga
Robert D. Fairchild, M.D.	Onondaga
John R. Williams, Jr., M.D.	Monroe
John H. Morton, M.D.	Monroe
Robert P. Jessup, M.D.	Nassau

The Commission consists of the Committee on Economics, the Committee on Medical Care Insurance, Interspecialty Committee, Committee on Workmen's Compensation, and the Committee on Occupational Health. These committees are assigned to the Division of Medical Services with Max N. Howard, M.D., assuming the directorship on January 1, 1971. Mr. George P. Farrell, the previous director, retired in March, 1971.

The Subcommittee on Liaison with Veterans Affairs was discontinued, since it has been inactive.

The reports from the committees comprising this Commission follow. There has been a marked increase in the workload of these committees resulting from the greater participation of third-party agencies in the health care programs.

Respectfully submitted,
G. Rehmi Denton, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

The annual report of the Commission on Medical Services is received. Your reference committee would like to take this opportunity to recognize the untiring and cooperative efforts of Max N. Howard, M.D., director of the Division of Medical Services, and to thank G. Rehmi Denton, M.D., for his outstanding leadership in coordinating this complex commission.

The House voted to adopt this portion of the reference committee report.

Economics

To the House of Delegates, Gentlemen:

The Economics Committee is composed of the following:

Robert E. Westlake, M.D., *Chairman*	Onondaga
Dallas E. Billman, M.D.	Steuben
Jeff J. Coletti, M.D.	Nassau
William C. Felch, M.D.	Westchester
Alfred L. George, M.D.	Genesee
Robert G. Hicks, M.D.	New York
Harold N. Schwinger, M.D.	Kings
Herbert J. Wright, Jr., M.D.	Schenectady
Francis A. Stephens, M.D.	Albany
Allan H. Bruckheim, M.D.	Westchester

As of this report, four meetings were held during the year, on February 14, March 31, May 26, and September 15.

Relative value scale. The year has been an extremely busy one, the committee having set a goal for completing the Relative Value Scale study and its preparation in final form for submission to the House of Delegates at the annual meeting in February, 1972. The completed study by Peat, Marwick, Mitchell and Company was received in February, 1971; however, since of the 9,800 questionnaires mailed to physicians and various specialty groups throughout the State, only 1,350 (13.8 per cent) usable returns were sent in. Its validity has been challenged by several groups, and it has been decided that, in cooperation with the Interspecialty Committee, it be subjected to further critical analysis to determine whether or not, in fact, the relative values arrived at reflect the prevailing practices. At each of the meetings, members of the Interspecialty Committee joined in the discussions and the planning for this reevaluation.

Although the sampling received by Peat, Marwick, Mitchell and Company was small, their tabulated results were tested against the statistical formulas, and only those which proved to be statistically valid have been accepted. Also any changes submitted by the respective specialty groups would have to meet the same tests for validity. The disparity of charges, even in the same geographic areas of the State, was noted. The data to be submitted will have to be tested to determine if it is usable or if it should be modified.

Although 25 representatives of the various specialty groups have met with this committee during the past two years, the creation last year of the Interspecialty Committee simplified and improved, considerably, the lines of communication between them and the Economics Committee. At all sessions it was stressed that at this time we are concerned only with establishing a Relative Value Scale and not concerned with conversion factors or dollar sums.

The studies carried out by the various specialty groups are summarized in the report of the Interspecialty Committee and need not be repeated here.

As the progress reports were submitted by the Interspecialty Committee in the course of the year, problem areas were identified and steps for their solution proposed. The cooperation between the two committees has been most satisfactory, and the chairman expresses his appreciation to all concerned.

At the time this report is being written, there are still some areas in which problems remain to be resolved, but the number of problems is getting fewer. Although there still remains a tremendous amount of work to be done to prepare the final format, we are optimistic that the goal of completing the study by February, 1972, will be attained.

In accordance with the Council's decision, the committee, at its meeting on March 31, decided to take no action on any Statewide retirement health insurance plans, since these are made available to the physicians throughout the State by the respective county societies and district branches.

Resolutions. *Resolution 71-39,* "Cost of Hospitalization":

> *Resolved,* That the Medical Society of the State of New York join with other interested organizations to undertake a study of hospital charges and charges for the technical components of x-ray and laboratory examinations and recommend methods to promote uniformity of such charges based on actual cost and sound principles of pricing and billing and consistent with good quality medical care.

The committee questioned whether it should or could undertake a study of this scope which would require considerable personnel and expenditure. This matter has been discussed properly by liaison committees of the insurance carriers, Blue Cross, Blue Shield, and the government, they being involved with and in possession of the basic cost factors that determine laboratory charges. When such a group requests it, we will be pleased to cooperate.

Resolution 71-45, "Laboratory Test Batteries Utilizing Automated Equipment":

> *Resolved,* That the Medical Society of the State of New York deplore and condemn any method of charging for multichannel laboratory determination which fails to transmit the economic advantages of automation to the patient.

This committee deplores and condemns any method which does not reflect in lowered costs to the patient, when this is attained.

Resolution 71-41, "Current Procedural Terminology":

> *Resolved,* That the Medical Society of the State of New York urge that this five-digit system be adopted and used by all physicians and third parties to provide a more accurate description of services, logical sequential listing, and ample room for expansion.

This was acted on. With particular reference to the Relative Value Scale study, the AMA five-digit code, current procedural terminology, has been used.

The committee members were to consider, for future discussion, the effect that Health Maintenance Organizations and other capitation health-care-delivery systems will have in the field of medical economics.

At the September 15 meeting it was decided that after completion of the Relative Value Scale project, a review mechanism to update and modify the scale as the situation warranted, should be instituted and that such properly was the function of the Economics Committee working in close liaison with the representatives of each Statewide specialty group through the Interspecialty Committee.

Acknowledgments. The chairman wishes to express his appreciation to the members of this committee: to G. Rehmi Denton, M.D., chairman, Commission on Medical Services; John R. Williams, Jr., M.D., and members of his Interspecialty Committee, for their attendance at the meetings and their praiseworthy cooperation in dealing with the detailed and complicated matters that were presented to us during the year. He further wishes to thank George P. Farrell, the previous director, for his efforts and the assistance he has continued to render since his retirement in April, 1971. The chairman also expresses his appreciation to Max N. Howard, M.D., director of the Division of Medical Services and to his secretary, Mrs. Clementine Thompson, for their fine cooperation and the lengthy hours the work of this committee has required of them.

Respectfully submitted,
Robert E. Westlake, M.D., Chairman

Economics (Supplementary)

To the House of Delegates, Gentlemen:

Since writing the annual report, the committee met on November 10.

Relative Value Scale. In view of the differences recorded on the questionnaire responses between various regions, concerning both relativity and dollar values, the question was raised as to whether or not there should be more than one relative value scale for the State. It was agreed that more than one scale would be impractical; that the relative value scale would be established on the median-dollar values; that the median values in almost all instances were based on an adequate sampling that establishes statistical validity; and that the units in the relative value scale be firm without any deviation in range.

The variations in the relativity between corresponding procedures in different areas within the State, as well as from state to state, were noted. Max Howard, M.D., director, Division of Medical Services, reported that he had been corresponding with various state societies on this subject and that only recently had received a communication from the California Medical Association asking for an expression of interest in a meeting of all state groups dealing with relative value scales. He had replied that such a meeting for an exchange of experiences and thoughts was most desirable. The committee agreed but felt that such activity should be coordinated under the aegis of the American Medical Association.

A motion was unanimously approved that we introduce a resolution into the House of Delegates of the American Medical Association to the effect that either through a new or already existing committee the activities of the various state groups working in the field of relative value scales be brought together.

It was noted that the radiologists had presented to the American Medical Association a revised terminology which had received official acceptance, and, accordingly, we would substitute this terminology in our relative value scale.

The committee was asked to decide, at this time, whether or not to continue to consider the Peat, Marwick, and Mitchell studies in its future deliberations. The differences between the studies made by the Interspecialty Committee and the Peat, Marwick, and Mitchell figures were discussed, and in view of the more factual figures we have obtained, based on a larger and more representative sampling, it was decided that we would proceed on the basis of our own survey in the future.

It was also agreed that our relative value scale would be developed in five sections: medicine, surgery, radiology, pathology, and anesthesiology, and that there would be a different conversion factor for each section.

Resolutions. Resolution 71-57, "Blue Cross and Prehospital Diagnostic Evaluation," was discussed. It was noted that action had been taken by the State Medical Society. For the record, the committee voted its approval of the resolution and the attempts to have it implemented.

Resolution 71-71, "Hospital Preadmission Diagnostic Work-up," was discussed at some length with the observation that in some areas the *Resolved* portions were already being effected by agreement with the Blue Shield Plans. It was noted that the Joint Commission on Accreditation of Hospitals has accepted the concept contained in the *Resolved* and had circulated a notification to this effect to the hospitals. The question was raised as to whether or not the County Medical Society Reference Committee of the Blue Shield Plans was properly informed of this resolution. It was agreed that our representative to the Blue Shield Plans will follow up this matter.

The committee was informed that the Medical Care Insurance Committee was considering a similar problem; that one meeting had already been held with the representative of the New York State Department of Insurance to discuss the problem; and that another meeting with this representative was scheduled to be held in January, 1972. The committee expressed its agreement with the resolution, and further action is to be deferred pending developments in the Medical Care Insurance Committee.

Respectfully submitted,
Robert E. Westlake, M.D., Chairman

Economics (Second Supplementary)

To The House of Delegates, Gentlemen:

For five years this committee has worked toward the production of a document which would describe the usual fee structure in the State. A succession of relative value studies from other sources has been used to provide a basis for median fee schedules used in negotiations and reviews.

Two years ago a study, under the joint sponsorship of the Medical Society of the State of New York through its Empire State Medical, Educational and Scientific Foundation and of the combined Blue Shield Plans of New York State, was conducted. This was accomplished with this committee as technical adviser. This committee, in turn, had the advice of representatives of specialty societies from the beginning.

The study of charging habits of physicians in New York State, made by Peat, Marwick, Mitchell & Company, was delivered to the Society in February, 1971. It produced a Statewide median fee schedule converted to relative values, which the study's statisticians stated was valid. It recommended modifications of relativity to improve the validity for four areas: (1) Upstate-urban; (2) Queens; (3) New York and Kings Counties; and (4) The Bronx. However, the committee and specialty societies considered that the data concerning the ranges of charges showed such disparity, even within a given area, that the median schedules failed to describe charging habits satisfactorily.

The committee began in March, 1971, to evaluate the data acquired with the assistance of the Interspecialty Committee. Max N. Howard, M.D., director of the division of Medical Services of the State Society, has coordinated the review by specialty societies and as the need became evident he also coordinated the acquisition of new data to test the validity of the study.

In general, the Peat, Marwick, Mitchell & Company study did produce a valid framework for a Relative Value Scale based on median fees. However, the study did not produce useful information about the range of charges; therefore, the committee was grateful to discover that existing and newly formed specialty societies were willing and, indeed, anxious to help in the development of an acceptable, documented Relative Value Scale. The committee has met regularly with representatives of the Interspecialty Committee as the work progressed.

All concerned have agreed that a relative value scale, without ranges and unified for the entire State, can be a useful guide for physicians, third-party agencies, and patients.

The committee believes that Statewide relative value scales could be used as the basis for regional relative value scales developed by county societies, their foundations or guilds, or by groups of county societies.

The schedule now nearing completion, will be based on the American Medical Association's Current Procedural Terminology, using five digits. The State scale can be updated as specialty societies restudy, redefine, and improve their terminology and statistical evidence. By the use of appropriate modifications, a truly local fee schedule could be produced in each area of the State.

Therefore, this committee recommends the following:

1. The Medical Society should, as soon as the current study is finished, convert to our own New York State Relative Value Scale, 1972, for fee schedule negotiations with all third-party agencies, for appeals and review committee actions, and for peer review functions.
2. Until the New York State Relative Value Scale is published, the Medical Society of the State of New York should use the approved schedule of the respective State specialty societies.
3. The sections of our New York State Relative Value Scale should be reviewed yearly by the specialty societies, through the Interspecialty Committee, with submission of any proposed changes to the Commission on Medical Services through the Economics Committee.

Respectfully submitted,
Robert E. Westlake, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee reviewed the annual report and two supplementary reports of the Economics Committee. We concur in their recommendation that the State Medical Society introduce a resolution into the House of Delegates of the American Medical Association to the effect that various state groups working in the field of relative value scales be brought together.

It is further noted that the committee has decided to use the more factual figures recommended by the Interspecialty Committee in arriving at a final relative value scale rather than the original report of Peat, Marwick & Mitchell. We are pleased to note that a target date of May, 1972, has been set for its completion by the Interspecialty Committee. We note the opinion of the Economics Committee that median-fee schedules fail to describe charging habits satisfactorily and must permit local variations from region to region to be practical and useful. However, the Economics Committee recommends that the units in the relative value scale be firm and without deviations in range.

Your reference committee endorses the following recommendations of the Economics Committee:

1. The State Medical Society should, as soon as the current study is finished, convert to our own New York State Relative Value Scale, 1972, for fee schedule negotiations with all third-party agencies, for appeals and review committee actions, and for peer review functions.
2. Until the New York State Relative Value Scale is published, the Medical Society of the State of New York should use the approved schedules of the respective State specialty societies.
3. The sections of our New York State Relative Value Scale should be reviewed yearly by the specialty societies, through the Interspecialty Committee, with submission of any proposed changes to the Commission on Medical Services, through the Economics Committee.

The reference committee commends Robert E. Westlake, M.D., chairman, and his committee for their excellent and superior efforts on this subject.

The House, after discussion, voted to adopt the reference committee report.

Resolution 72–67, Endorsement of Principle of AMA Medicredit Bill

Introduced by Paul M. DeLuca, M.D., as an individual

WHEREAS, Several bills are now pending in Congress providing for the establishment of a national health insurance plan to be administered by the Federal government; and

WHEREAS, One of these, or a combination of some of them, may be approved by Congress and ultimately become the law of the land; and

WHEREAS, Such a law will vitally affect not only the practice of medicine in the future but also the delivery of health services and the health of the people; and

WHEREAS, The medical profession should play a prominent role in the formation of any national health plan in which its members will be the principle providers of services; and

WHEREAS, One of the bills now before Congress is sponsored by the American Medical Association as the representative national organization of the medical profession; and

WHEREAS, The Medical Society of the State of New York should take a constructive, positive position on the national health insurance proposals now pending in Congress; therefore be it

Resolved, That although numerous bills on national health insurance have been introduced in Congress and the ultimate result probably will be the enactment of a bill reflecting a combination of some of these proposals, the Medical Society of the State of New York, at the present time, endorse, in principle, the Medicredit Bill, sponsored by the American Medical Association, as one of the methods for financing a national health insurance program, but not necessarily the sole and primary solution to the problem.

The House voted to adopt resolution 72–67.

Resolution 72–33, Physicians and Wage and Price Control under Phase II

Introduced by Bronx County Medical Society

WHEREAS, Physicians recognize the need for preventing inflation and protecting the value of the dollar; and

WHEREAS. All segments of the population should be involved in this effort on an equitable basis; and

WHEREAS. All differential treatment accorded physicians under present price regulations is inequitable in that any adjustment in physicians' fees is limited to 2.5 per cent and is further restricted by limitation to allowable cost increases, and further negatively restricted by adjustment for increased productivity; and

WHEREAS. Other segments of the working population are regulated by a higher percentage of allowable increase; and

WHEREAS. Physicians, because of their long period of training sustain an earning power delay and because of this delay and also the high degree of skill inherent in their professional work they require relevant income; and

WHEREAS. The differential treatment accorded physicians under wage and price regulations is inequitable and constitutes unequal treatment under the law and may even be unconstitutional; therefore be it

Resolved, That the Medical Society of the State of New York oppose the discriminatory treatment accorded physicians by the wage and price regulations and request that equity be established for physicians under those regulations; and be it further

Resolved, That a copy of this resolution be sent to the following: the Cost of Living Council, the Wage Board, the Price Commission, and the Advisory Committee on Health Care Costs.

Resolution 72-68, Limitation of Fee Raises under Phase II

Introduced by Medical Society of the County of Schenectady

WHEREAS. The 2.5 per cent limit on raising of fees by physicians is not the same limit permitted workers in many fields, such as other service organizations, which is clearly discriminatory; and

WHEREAS. This limit on raising fees will prevent wage increases to the many persons whom physicians employ; and

WHEREAS. The increase in the cost of medical care is not due to unreasonable increase in physicians' fees but due to increased cost of hospitalization, drugs, and ancillary services; and

WHEREAS. The Medical Society of the County of Schenectady, Inc., State of New York, objects to this discriminatory ruling of the United States Federal Price Commission; therefore be it

Resolved, That the Medical Society of the State of New York urge that the limit of 2.5 per cent on physicians' fees be completely removed; and be it further

Resolved, That a copy of this resolution be sent to the chairman of the U.S. Federal Price Commission.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee discussed these two resolutions and submits the following substitute resolution:

WHEREAS. All segments of the population should be equally involved in the efforts to combat inflation; and

WHEREAS. Physicians as a group are being discriminated against in current regulations; and

WHEREAS. The mandatory posting of a sign relating to fees is demeaning and unprofessional; therefore be it

Resolved, That the Medical Society of the State of New York declare its opposition to the treatment accorded the medical profession by the wage and price regulations; and be it further

Resolved, That a copy of this resolution be sent to the Cost of Living Council, the Wage Board, the Price Commission, and the Advisory Committee on Health Care Costs, and to the American Medical Association.

The House voted to adopt the substitute resolution.

Resolution 72-69, Eligibility of Medicare Recipients

Introduced by Bronx County Medical Society

WHEREAS, the Department of Health, Education, and Welfare gives a Medicare recipient a valid registration card during the year when he registers; and

WHEREAS. Many of the registration cards are not current, but three, four, or five years old; and

WHEREAS. A physician, when treating such a Medicare patient has no way of knowing whether or not the patient is currently eligible for medical coverage and, therefore, often is not reimbursed because the recipient's coverage has lapsed; therefore be it

Resolved, That the Medical Society of the State of New York use its influence to persuade the Department of Health, Education, and Welfare to issue registration cards to Medicare recipients each year to insure their current eligibility for medical care.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee has grave doubts regarding the workability of this resolution, but we recommend its approval and referral to the Council.

The House voted to adopt resolution 72-69 and to refer it to the Council.

Resolution 72-8, Relative Value Scales and Fee Schedules

Introduced by Nassau County Medical Society

WHEREAS. Resolution 69-70 of the 1969 meeting of the House of Delegates established a policy that conversion factors for the *Relative Value Scale* would be applied on a geographic basis; and

WHEREAS. Fee schedules are being established by a number of foundations throughout New York State; therefore be it

Resolved, That the Medical Society of the State of New York adopt the policy that relative value scales utilized by county medical societies, foundations, insurance carriers, and government conform to the current *Relative Value Scale* endorsed by the Medical Society of the State of New York; and be it further

Resolved, That the policy of varying conversion factors based on the socioeconomic factors of the different geographic areas be continued.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution with the following amendments to the first *Resolved:* delete the words "the current" and "endorsed" and add the words "in general" after the word "conform" and the word "approved" following the word "scale." The *Resolved* portion of the resolution would then read as follows:

> *Resolved,* That the Medical Society of the State of New York adopt the policy that relative value scales utilized by county medical societies, foundations, insurance carriers, and government should conform in general to a relative value scale approved by the Medical Society of the State of New York; and be it further
>
> *Resolved,* That the policy of varying conversion factors based on socioeconomic factors of the different geographic areas be continued.

The House, after discussion, voted to adopt resolution 72-8 as amended.

Interspecialty

To the House of Delegates, Gentlemen:

The Interspecialty Committee is composed of the following:

John R. Williams, Jr., M.D., *Chairman*	Monroe
Internal Medicine	
Thomas S. Bumbalo, M.D.	Erie
Pediatrics	
Donald W. Hall, M.D.	Erie
Obstetrics and Gynecology	
Norman B. Kanof, M.D.	New York
Dermatology	
John P. Lambert, M.D.	Westchester
Psychiatry	
Philip H. Landers, M.D.	Broome
Ophthalmology	
Herbert Lansky, M.D.	Erie
Pathology	
George Liberman, M.D.	Kings
General Practice	
Samuel H. Madell, M.D.	New York
Radiology	
Howard B. Rasi, M.D.	Kings
Plastic Surgery	
Perrin B. Snyder, M.D.	New York
Urology	
Victor J. Tofany, M.D.	Monroe
Anesthesiology	
Paul M. Walczak, M.D.	Erie
General Surgery	
I. Melbourne Greenberg, M.D.	Nassau
Neurosurgery	

This committee has had an extremely active year, and hopefully we have helped to resolve some problems. Our three major thrusts have been (1) establishing better lines of communication between the various specialty societies and the Medical Society of the State of New York, (2) helping the Economics Committee develop a relative value scale, and (3) helping to establish a Council on Continuing Medical Education.

In regard to our first function, as a communications committee, it seems that we have been able to get the considered opinions of the various boards of trustees of the specialty societies and communicate these to the Council of the State Medical Society whenever we were asked. We have also been able to effectively communicate to the State Medical Society problems raised by the various specialty societies.

Second, when it became apparent to the Economics Committee that the Peat, Marwick, Mitchell & Company survey may not truly reflect the charges of physicians in New York State, probably because (*a*) physicians in general were not familiar with the definitions, since they have never really used the system, and (*b*) the small number of responses, this committee was asked to help develop a relative value scale. We approached this problem with fear and trepidation, but have made a good deal of progress. The primary-care physicians, the pediatricians, and internists, and the family practitioners, each appointed 2 members to a committee which has met several times and has developed a questionnaire that they felt would reflect over 85 per cent of the charges of each group. The questionnaire contained only 12 questions for each group. We received approximately a 50 per cent response from each of the groups and believe we have statistically significant figures indicating what these various groups charge for the most commonly performed procedures. Hopefully, well before the annual meeting, agreement will have been reached and a relative value scale for medicine will be complete. The other specialty societies have also developed relative value scales, some of these by questionnaires, others by using national, state, or local relative value scales. While the problem of relating the various surgical schedules one to the other has still not been resolved, hopefully it too will be ready before the annual meeting.

The third major problem of helping to develop a Council on Continuing Medical Education has been discussed at great length by this committee on numerous occasions. The members of the committee have taken the ideas and proposals of Marvin L. Bloom, M.D., and his committee on Continuing (Postgraduate) Education back to their respective Boards of Trustees and have in all instances secured their approval for support in implementing such a program. In addition, each of the specialty societies has formed a committee on continuing medical education, and a subcommittee of the Interspecialty Committee has been formed consisting of the chairman of each respective committee in the specialty societies. This subcommittee has met and organized and is ready to proceed as soon as this council is duly formed. Your chairman has met with Dr. Bloom and his committee and with the three other partners who were to set up the Council on Continuing Medical Education. It is extremely hopeful that this organization will be functioning by the time of the annual meeting, and that it can make New York State a leader in this field.

The following other items have been considered by the committee:

Prepaid and health maintenance programs. The difficulty of obtaining true costs in prepaid and health maintenance organization programs was discussed. In view of the pressures being exerted toward the establishment of such plans, it was felt that efforts to obtain such cost figures should be so that meaningful comparisons with other health-care delivery systems could be made.

Blue Shield. The committee discussed a proposal by Blue Shield requesting physicians to accept a reduction in their fees on full-payment benefit plans, pending further study of such coverage. A motion was unanimously passed that the Interspecialty Committee is unalterably opposed to any paid-in-full medical insurance plan that permits alteration of an already agreed on fee schedule by percentage reduction on the part of the carrier without prior negotiation with the participating physicians. This resolution was called to the attention of the Economics Committee and the Medical Care Insurance Committee.

The committee also discussed a letter from the New York State Health Department, signed by William F. McCann, assistant commissioner, concerning interpretation of Section 86:11 (c), pertaining to changes in the way medical services could be billed for in-hospital patients when covered by Medicaid or Article 9-C Corporations, mainly Blue Cross and Blue Shield. We believe that we played an important role in persuading the State Health Department to alter this interpretation.

Acknowledgment. The committee would like to express its appreciation to Max N. Howard, M.D., director of the Division of Medical Services, for his devotion and suggestions that have made the work of our committee so much easier. We would also like to acknowledge the services of our secretary, Mrs. Clementine Thompson.

Respectfully submitted,
John R. Williams, Jr., M.D., Chairman

Interspecialty (Supplementary)

To the House of Delegates, Gentlemen:

Since writing the annual report, this committee held two additional meetings, on October 17 and 31.

Relative Value Scale. A special subcommittee meeting of representatives of Internal Medicine, Pediatrics, and Family Practice was held on October 17 to resolve the problem of these groups correlating the use of the *Relative Value Scale* with the definitions in the *AMA Current Procedural Terminology* to reflect the differences in "usual and customary" fees of each of these groups which were noted in the survey they recently conducted of their membership. Differences were noted among the three groups in scope of examination and the time involved, such as comprehensive initial examination. It was, therefore, agreed that there could not be a common charge for each group. It was resolved, without dissent, that each group would use that definition and line item in the *Current Procedural Terminology* that would approximate its customary fee charges. In this manner, the *Relative Value Scale* relationship would remain constant, but the actual line item used would clarify the difference in procedures and time.

A meeting of the entire committee was held on October 31, at which time the proposed changes in Section 86.11 (c), Rules and Regulations of the Health Department of the State of New York were discussed. The committee felt that the revisions in the language, as proposed by Hollis Ingraham, M.D., Commissioner of Health, (*Hot Line* communication, October 19, 1971) was unacceptable and, in fact, contains the objectionable features of the original wording. Therefore, it was recommended to the Council that it continue to vigorously oppose, by every possible means, both the original and revised variations of the changes and that each county medical society be urged to register its firm protest.

It was also recommended that the committee members be given the names of the Advisory Committee of the New York State Department of Health so that they can be contacted and be made aware of the objectionable features of the proposed change in 86.11 (c). Also Interspecialty Committee members, whose societies have already submitted letters or who propose to do so, were requested to send copies of this correspondence to our president, George Himler, M.D. The committee further expressed its satisfaction with the aggressive manner in which Dr. Himler and the State Medical Society have opposed the proposed change.

The remainder of the lengthy meeting was devoted to the discussion of the *Relative Value Scale.* The differences in relativity between procedures in the various geographic areas of the State were noted. The question of whether or not there should be such differences between standard procedures was discussed. The representatives of the various specialty societies reported on the progress that had been made in their respective sections. Considerable progress had been made since the previous meeting, but much still remained to be done. The various groups were urged to complete the studies as soon as possible.

Continuing Medical Education. A progress report on the development of the continuing medical education program was given. The Committee on Continuing Medical Education had decided that The Empire State Medical, Scientific and Educational Foundation, Inc., would be the funding agent, and the Interspecialty Committee would be one of the five groups that would constitute the Continuing Medical Education Committee.

It was approved that the three members who are to represent the Interspecialty Committee would be a primary-care physician, a surgeon, and one to represent the pathologists, radiologists, anesthesiologists, and physiatrists; the chairman of the Interspecialty Committee would be the chairman of this subcommittee. Also, any program that is developed must be geared to the practicing physician in the field.

Chiropractors. The problem of chiropractors' attempts to enlarge the scope of their practice and to gain recognition was discussed. It was noted that their request to be included in the Medicare program had been rejected by the Department of Health, Education, and Welfare on the grounds that they had no accrediting agency. It was recommended that State Legislators be invited to attend programs on quackery which are conducted by the various medical societies.

Liaison with Legislation Committee. Dr. Williams reported on the arrangements that had been made for establishing liaison with the Committee on Legislation. He suggested that the various specialty societies establish committees on legislation so that we could be more effective in conveying our opinions to the legislators.

A discussion was held on establishing a closer relationship between the various sections of the Medical

Society of the State of New York and the corresponding scientific groups.

Respectfully submitted,
John R. Williams, Jr., M.D., Chairman

Interspecialty (Second Supplementary)

To the House of Delegates, Gentlemen:

The Interspecialty Committee met on February 12.

Paul Walzcak, M.D., chairman, Subcommittee Surgical Specialties, reported the results of his committee meeting held just prior to the full committee assembly. He noted that decisions had been arrived at, two of them tentative, establishing base procedures for each of the surgical specialties that would be used to interrelate all the procedures to be included in the Section on Surgery of the *Relative Value Scale.*

Reports on present status of sections other than surgery were rendered. The internal medicine group is in the process of trying to reword the items they consider to be unworkable definitions as they now appear in the *AMA Current Procedural Terminology.*

The chairman stressed that each section must also prepare introductory remarks to precede their sections in the relative value scale. It was further stressed that the Economics Committee had set a deadline of May 1, 1972, for the submission of all material to it.

A letter by the president of the New York State Society of Anesthesiologists covering a resolution his organization had passed requesting that the HEW rules be modified to the effect that nonparticipating physicians receive copies of payments for their services made directly to patients so that errors made in the course of such evaluations resulting in under-reimbursement of the patients can be detected and corrected. It was noted that this matter was already on the agenda of the Medical Care Insurance Committee. The Interspecialty Committee approves and supports the intent of this resolution and that this be conveyed to the Medical Care Insurance Committee.

The Interspecialty Committee was asked to prepare criteria that could be used by the New York Institute for Research and Development for Health Care to develop a mechanism for peer review. We agreed to accept this responsibility.

Each specialty society was asked to form a peer review committee, and the chairman of each such committee would serve on a subcommittee of the Interspecialty Committee to develop these criteria.

Respectfully submitted:
John R. Williams, Jr., M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

We note that in the first year of its existence the Interspecialty Committee has been very active in establishing communication between the specialty groups of the State Medical Society, in assisting the Economics Committee in obtaining data for the development of a relative value scale, and in developing a Continuing Medical Education Committee program.

The committee has established liaison with the Legislation Committee, and is in the process of preparing criteria which could be used by the New York State Institute for Research and Development for Health Care to develop a mechanism for peer review.

Your reference committee expresses its thanks to John R. Williams, Jr., M.D., chairman, and his committee members.

The House voted to adopt this portion of the reference committee report.

Universal Health Insurance

To the House of Delegates, Gentlemen:

The members of the Committee on Universal Health Insurance are as follows:

Walter T. Heldmann, M.D., *Chairman*	Richmond
Allan E. Bloomberg, M.D.	Bronx
Eli A. Leven, M.D.	Monroe
Daniel F. O'Keeffe, M.D.	Warren
Philip R. Roen, M.D.	New York
Joseph F. Shanaphy, M.D.	Richmond
Robert E. Westlake, M.D.	Onondaga

The year 1971 was a rather quiet period as far as universal health insurance legislation on a State level was concerned. A bill (S. 6537–Rules), sponsored by the New York State Administration, similar to the bill supported last year by the Governor, was introduced. In the meanwhile, there was an upsurge of interest on a national level with the introduction of more than a dozen bills in Congress. Among these were proposals sponsored by the Nixon Administration, Senator Kennedy, Senator Javits, the American Medical Association, as well as by other groups and individual persons.

Due to these developments on a national scale, there was no concerted effort on the part of the Governor or his administration to have the bill sponsored by him enacted into law. As a result, the bill died in committee in both the Senate and Assembly. At the time the Governor sent his proposal to the Legislature, he noted his own previous proposal had not been enacted into law but pointed out that he was "heartened, nevertheless, that the principle of universal health insurance is at last gaining ground where it is most appropriate—at the national level."

In order that the members of the House may be aware of the thinking of some of the proponents of present-day proposals for universal health insurance, your committee would like to point out some of the provisions of the measure sponsored by the Governor (S. 6537–Rules).

S. 6537—Legislative findings. For example, section 1 of the bill entitled, "Legislative findings and purposes," reads as follows:

> It is hereby found and declared that basic health protection is denied to many of the inhabitants of the State as the result of inefficient management and resultant higher costs of delivery and financing of health services. Avoidable suffering continues to occur as the result of an anachronistic health care system throughout the nation which often operates to provide priority to patients on the basis of ability to pay rather than actual need for service. Inequities and hardships which result from such a priority system are further aggravated by duplication, waste, overlap, and poor coordination in the system at a time when health manpower and resources are in short

supply. It is further found and declared that absence of effective organization of the private health care system throughout the nation also threatens to deny to the inhabitants of this State their fundamental right to health care, which, together with education and equality of opportunity, are keys to individual happiness and fulfillment in this State and nation. Removal of financial barriers to health care services, and improvement of the present system and economies of delivery of medical and hospital services, are matters of vital concern affecting the public health, safety, and welfare.

It is further found and declared that in order to provide for the protection and promotion of the health of the inhabitants of the State, the New York State health insurance corporation should be established to have responsibility for the development and administration of the State's policy with respect to a rational and coordinated system of financing health service benefits.

It is the purpose of this act to encourage the development of a single system of health service benefits, to which beneficiaries contribute within their means, and which will create and enhance a sense of self-reliance and underscore individual dignity. A single system of such health benefits, inclusive of both hospital and medical services, greatly simplifies and makes more efficient the delivery and utilization of these services, assures that there will be maximum public awareness of the health benefits to which the individual is entitled, and also provides better accountability on the part of carriers and providers entrusted with the funds used to provide such services.

It is also the purpose of this act to utilize the valuable management skills of the commercial and nonprofit insurance industry, coupled with State standards, to develop comprehensive health care plans providing integrated medical and hospital services.

Health insurance corporation. Another important provision is that which provides for the creation of the New York State Health Insurance Corporation, to administer the program. This section provides for benefits, individuals covered, methods of premium payments, and the like. These provisions are almost identical to the provisions of the bill introduced in 1970. The critique prepared by my predecessor, as chairman of this committee, Ralph S. Emerson, M.D., and his committee, were applicable to the 1971 version, since the provisions were very similar. This critique was submitted to the House last year and was published in our ***New York State Journal of Medicine.***

Two special provisions. There are, however, two special portions of the 1971 version of the Governor's perennial proposal which your committee should like to call to the attention of the House as a matter of great importance to members.

1. *Board of Trustees.* The bill provided that the aforementioned corporation should be administered by a board of 14 trustees. Five of these would be the commissioner of health, the superintendent of insurance, the commissioner of social services, the commissioner of commerce, and the chairman of the State consumer protection board. Eight trustees would be appointed by the Governor with the advice and consent of the Senate. Of these 8 trustees, 1 would be representative of hospitals, 1 would be representative of the health professions, at least 4 would be private citizens representative of the interests of consumers or purchasers of health services, and no more than 2 would be representatives of carriers. The final member would be the executive director of the corporation and secretary of the board. From this brief description it is clear that the health profession was limited to one representative, and he did not have to be a doctor of medicine.

2. *Medical fees.* The bill contained the following language in regard to fees:

> 1. The corporation shall appoint not less than seven regional councils with a defined geographical jurisdiction to be known as regional medical councils. Each such council shall consist of nine members appointed by the corporation, including at least three members representative of consumers of health services and two members representative of purchasers of health services. The corporation shall designate a member of each regional council to act as chairman thereof. Each regional council shall consider and advise the corporation relating to the establishment of schedules of fees for designated medical services in the region payable by carriers. All such schedules of fees recommended by a regional council shall take effect subject to approval by the corporation. A regional council may hold public hearings with respect to any of its functions.
>
> 2. Upon approval and adoption by the corporation of the fees recommended by a regional council, no carrier shall pay to any provider for services in furnishing any of the medical services provided in this act, an amount in excess thereof, nor shall any provider furnishing such service charge, request, or exact a payment in excess of the approved fee therefor.

An analysis of these provisions shows that the entire program might be administered by a board which has no physician member, and that medical fees would be fixed by regional councils which had no physician representation. The bill did not provide for negotiation of fee schedules with representatives of the health or medical care providers.

In brief, therefore, although the 1971 version of the Governor's bill did not necessitate the usual all-out efforts to defeat it because it was introduced "for study purposes" for the reasons outlined, your committee was opposed to the measure for the reasons set forth.

Basic principles reexamined. To carry out a directive of the Council referred to your committee, a meeting was held on October 6, in the Council Chambers of the State Medical Society headquarters. This directive required us to make "a restudy of the ten basic principles regarding comprehensive health insurance programs adopted by the House of Delegates of the Medical Society of the State of New York in order to update them and to make them consistent with current thinking of the State Medical Society."

It was the consensus that the following "Ten Basic Principles—Comprehensive Health Insurance Program," approved by the House of Delegates were outmoded.

1. It should be patterned after Title 18 A and B (PL 89-97), utilizing coinsurance, but not deductibles.
2. Private insurance carriers should be utilized.
3. The State and Federal governments should utilize Medicaid funds to pay health insurance premiums.
4. The State should assist in the payment of health

insurance premiums for the near-indigent segment of the population.

5. There should be cost sharing by the employer and employe to pay insurance premiums.

6. There should be tax incentives for the remainder of the population to purchase insurance.

7. The insurance program should not disrupt the existing pattern of practice by altering the principles of freedom of choice, fee for service, and usual and customary fee concepts. Flexibility in the delivery and financing of health care in deprived areas to promote efficiency and to effect economy is acceptable, provided quality medical care is maintained. In deprived areas, fixed fee schedules negotiated with the appropriate county medical societies would be acceptable.

8. Basic minimum health benefits should be specified and should include parallel coverage for medical and diagnostic services in the hospital and in the doctor's office to keep institutional use and costs at a minimum.

9. Catastrophic health insurance coverage should be an integral part of the program.

10. Peer review mechanism through county medical society committees should be an integral part of the program.

These principles had been developed as guidelines for the evaluation of State legislation pertaining to universal health insurance, particularly the perennial introduction of the Governor's Universal Health Insurance Plan. They have been used in recent years as the basis for our critique of these bills and have enabled us to set forth our objections to these annual proposals.

Since the approval of the ten basic principles by the House, numerous new aspects of the entire problem had developed. There were pending in Congress more than a dozen major proposals for national health insurance, as previously mentioned, and your committee felt that a new set of principles, much broader in concept and less specific in content, should be adopted. After a thorough review of the current ten basic principles, and considerable discussion concerning new suggestions, your committee unanimously adopted the following new principles, submitted them to the Council at its October 21, 1971, meeting, and the Council approved them.

Six basic principles. To obtain the approval of the Medical Society of the State of New York, legislation providing comprehensive health insurance should contain the following six basic principles:

1. The plan should preserve the right of every person to select his own physician and health-care institution. The program should permit a doctor of medicine and his patient to maintain a direct and professional relationship.

2. The program should enable the individual person to have a free choice of protection plan, which could be in the form of an insurance policy purchased from a company, membership in a prepayment plan, or membership in a prepaid group practice plan. The plan should be universally available to all persons, with coverage provided for the poor.

3. The program should contain benefits sufficiently broad enough to enable the individual person to receive comprehensive health care, while removing the specter of catastrophic expense of illness. Such coverage should include parallel coverage for medical and diagnostic services in the physician's office as well as institutional care.

4. The cost of the program, which should be designed to meet America's health-care needs, should be kept at a reasonable and realistic level. This goal should be achieved by utilizing a system of cost sharing between government and recipients, based on the recipients' ability to pay. The program should be further maintained on a sound financial basis with the aid of coinsurance and deductibles.

5. Peer review should be an integral part of the program.

6. Flexibility in the delivery and financing of health care to promote efficiency and to effect economy is acceptable, provided quality medical care is maintained. Fee schedules negotiated with the appropriate medical societies would be acceptable.

Acknowledgments. Your chairman wishes to express his appreciation to the members of his committee for their cooperation, especially for their advice and counsel concerning the proposed new principles governing the evaluation of proposed universal health insurance laws. He also desires to thank the administration and staff of the State Medical Society, particularly to Martin J. Tracey, J.D., coordinator, Legislation Activities.

Respectfully submitted,
Walter T. Heldmann, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee reviewed carefully the report of the Committee on Universal Health Insurance and recommends that the House reaffirm the action of the Council in approving the following six basic principles to obtain the approval of the Medical Society of the State of New York for legislation providing comprehensive health insurance:

1. The plan should preserve the right of every person to select his own physician and health-care institution. The program should permit a doctor of medicine and his patient to maintain a direct and professional relationship.

2. The program should enable the individual person to have a free choice of protection plan, which could be in the form of an insurance policy purchased from a company, membership in a prepayment plan, or membership in a prepaid group practice plan. The plan should be universally available to all persons, with coverage provided for the poor.

3. The program should contain benefits sufficiently broad enough to enable the individual person to receive comprehensive health care, while removing the specter of catastrophic expense of illness. Such coverage should include parallel coverage for medical and diagnostic services in the physician's office as well as institutional care.

4. The cost of the program, which should be designed to meet America's health-care needs, should be kept at a reasonable and realistic level. This goal should be achieved by utilizing a system of cost sharing between government and recipients, based on the recipients' ability to pay. The program should be further maintained on a sound financial basis with the aid of coinsurance and deductibles.

5. Peer review should be an integral part of the program.

6. Flexibility in the delivery and financing of health care to promote efficiency and to effect economy is acceptable, provided quality medical care is maintained. Fee schedules negotiated with the appropriate medical societies would be acceptable.

Walter T. Heldmann, M.D., chairman, appeared before the reference committee and announced that the Council will not reappoint this committee. Its function in the future will be the responsibility of the Federal Legislation Committee. We wish to take this opportunity to commend Dr. Heldmann and his committee for its past efforts.

The House, after discussion, voted to adopt this portion of the reference committee report, thereby reaffirming the six basic principles.

Medical Care Insurance

To the House of Delegates, Gentlemen:

The Committee on Medical Care Insurance is composed of the following:

Robert D. Fairchild, M.D., *Chairman*	Onondaga
Harold W. Bales, M.D.	Monroe
Lucius H. Bugbee, Jr., M.D.	Chautauqua
Irving Cramer, M.D.	Oneida
Sidney I. Etkin, M.D.	Albany
Albert S. Lyons, M.D.	New York
Samuel H. Madell, M.D.	New York
Monte Malach, M.D.	Kings
William A. Schwarz, M.D.	Richmond
Joseph F. Shanaphy, M.D.	Richmond
H. Gregory Thorsell, M.D.	Chautauqua
John R. Williams, Jr., M.D.	Monroe

The committee held two meetings during the year, on June 8 and September 16.

Resolutions. Resolution 70-76, "Reimbursement for Radiological Services by Blue Shield Instead of Blue Cross," was considered. By correspondence with Mr. Malcolm MacKay, deputy superintendent of the State Insurance Department, his representative, Mr. Robert Lomicky, supervising actuary, was present. Also present were Harold N. Schwinger, M.D., chairman of the Insurance Commission of the American College of Radiology; and Mr. William Stronach, executive director of the American College of Radiology.

Following lengthy and indepth discussions and after all viewpoints were explored, the representatives of the American College of Radiology felt that Blue Shield and not Blue Cross should cover professional component services; that radiologic procedures performed in the offices of radiologists were less costly than procedures in hospital outpatient departments; and that services performed in private offices would result in shorter or averted periods of hospitalization, leading to a decrease in overall costs.

Mr. John Clancy, president of Blue Shield of Central New York, stated that coverage could be expanded if approved by the State Insurance Department. Mr. Lomicky expressed the concern of his department that the proposals do not result in increased premiums without increased benefits.

The radiology representatives were requested to present factual data to support their position at another meeting to be held in September to discuss this matter further. Also, representatives of the Blue Cross plans will be invited to attend this meeting.

Resolution 71-11, "Third-Party Committee," was considered. One of the *Resolveds* called for the establishment of a standing committee of the State Medical Society to advise and negotiate with health insurance carriers on such questions as program improvement, utilization and quality of services, reimbursement, and other pertinent matters. A subcommittee consisting of one or more members would be designated to discuss the subjects as they arose.

Resolution 71-12, "Opposition to the \$2,500/\$4,000 and \$4,000/\$6,000 Contracts-UMS," was discussed. There was general agreement that the State Medical Society should make known to the Superintendent of Insurance of the State of New York our opposition to the continuance of the \$2,500/\$4,000 contract after January 1, 1972.

Resolution 71-15, "Third-Party Programs; No Income Ceiling; Service Benefits Contracts with Fixed-Fee Schedules," was discussed. It was generally agreed that the issues raised were valid and action should be taken. To accomplish this, it was decided to invite a representative from Group Health Insurance, Inc., to attend the next committee meeting to discuss this matter.

Resolution 71-41, "Current Procedural Terminology," was discussed. The committee agreed to use this terminology with the understanding that any future modifications by the American Medical Association would axiomatically pertain. The committee recommended to the Council that the State Medical Society inform all third-party agencies that this terminology has been adopted by the State Medical Society.

Resolution 71-71, "Hospital Preadmission Diagnostic Work-Up," was approved by the committee with a recommendation to the Council that it also be referred to the committees on Hospital and Professional Relations, and Economics, for their evaluation.

The problem created by the more stringent criteria used by the Department of Health, Education, and Welfare for its approval of patient care in extended care facilities was discussed at the September 16 meeting. Various communications from T. Franklin Williams, M.D., chairman, Committee on Chronic Illness and Aging, Monroe County, had been previously mailed to all members of the committee. The discussion brought out that the new criteria had been established by fiat and was creating severe problems, hindering the transfer of patients from the "acute" to the "extended" care facilities. This means increased hospitalization costs to the patients.

During discussion, it was found that the problem might not be universal, since in Onondaga County, through its Utilization Review Committee, apparently no problem had developed; but in Rochester the problem was acute with a considerable number of cases not approved. It was further pointed out that the public was being misinformed as to their coverage when such was withdrawn arbitrarily. The committee decided to develop the scope of the problem by sending a questionnaire to each county medical society, and if the factual data warrants it, the subject is to be pursued further through the regional director of the Department of Health, Education, and Welfare. Also the public is to be informed of the problem. It was also decided to obtain clarification of the terms "extended care facilities" and "nursing homes," as applied by governmental agencies.

The change in the Rules and Regulations of the Commissioner of Health of the State of New York, Section 86.11 (c) were discussed. The members were informed of the actions already taken by the State Medical Society to protest this change. The committee unanimously voted to express its strong opposition to Section 86.11 (c) and to recommend to the Council that it take appropriate action to implement this decision. It further recommended to the Council that each component county medical society and all other medical society groups be urged to register similar protests and that the entire membership of the State Medical Society be informed of the problem and the actions being taken.

Resolution 71-15, "Third-Party Programs; No Income Ceiling; Service Benefits Contracts with Fixed-Fee Schedules," was discussed. George W. Melcher, Jr., M.D., president of Group Health Insurance, Inc., joined the meeting for discussion of this resolution. He gave a lucid and comprehensive description of the development of Group Health Insurance, Inc., its modus operandi, and its goals. At present it insures 1.5 million people, mostly in the greater New York area but also covers upstate, Long Island, and New Jersey. The Board of Directors consists of 50 per cent physicians and 50 per cent lay people, for a total of 36 or 38. They write various types of policies with varying premiums and operate on a fixed-fee schedule for each policy. Ninety-five per cent of their coverage is on an experience-rated basis and largely covers employed persons. They arrive at their fees by analysis of the fees submitted by physicians, the competitive market, and what is available. They found a considerable discrepancy between what physicians said were their fees and what they actually charged their patients. He stressed that Group Health Insurance, Inc., was not simply a conduit for monies, but he felt it had a part to play in the utilization as well as the quality of medical care rendered. He failed to see how the Group Health Insurance, Inc., plan created a "financial hardship for other subscribers," as mentioned in resolution 71-15. Subscribers could purchase broader coverage if they so desired, and physicians had the option of either being a participating physician or not. Approximately 65 per cent of its payments were made to participating physicians, and of these only 40 per cent represented paid-in-full benefits. He also mentioned that Group Health Insurance, Inc., had been developed as an alternative to Greater New York Health Insurance Plan groups.

Following a question and answer period, when it was pointed out that Medicare fees are higher than Group Health Insurance fees, Dr. Melcher replied that this is not a government program, and that they have not been able to reflect some of the variations in practice that relate to some circumstances. In reply to the statement that Group Health Insurance regulates a doctor's fees irrespective of the patient's income, Dr. Melcher stated that for inhospital services the physician is obligated to accept Group Health Insurance fees if the patient uses semiprivate or ward facilities, but in private facilities the physician may charge his usual fees.

The question of the use of the broad term "full coverage" by Group Health Insurance in its releases to the public and the subscriber not being factual was discussed. Dr. Melcher stated they were in the process of revising the wording to clarify what coverage the subscriber had.

Dr. Fairchild expressed the committee's appreciation to Dr. Melcher for his cooperation in conferring with us. This matter will again be discussed.

Resolutions 71-28, 71-31, 71-32, and 71-33, "Medicare Fiscal Intermediaries," were considered together, as the composite resolution prepared by the Reference Committee on Medicare and Medicaid which was adopted by the House of Delegates. It was agreed that the State Medical Society notify the intermediaries that the lack of progress in improving administrative services has been prejudicial and has worked hardships on both patients and physicians and that it recommend to the Council to inform the American Medical Association and the Social Security Administration of the inequities in the present reimbursement formula.

Resolution 70-76, "Reimbursement for Radiologic Services by Blue Shield instead of Blue Cross," was not included on this agenda because the material from the representatives of the Radiological Society had been received too late. This material is to be sent to Mr. Robert Lomicky, supervising actuary for the Superintendent of Insurance of the State of New York, with the request that he attend the next meeting of the committee to further discuss this matter.

Blue Shield. Only a progress report can be given due to the time element involved in accumulating data following the period ending December 31, 1971 (Tables I and II see page 1527).

Approval of Blue Shield Plans. The committee recommended the annual approval of all Blue Shield Plans in the State of New York for the year 1971.

Acknowledgments. Your chairman wishes to express his appreciation to the members of the committee for their cooperation, to Max N. Howard, M.D., director of the Division of Medical Services, for his assistance and guidance, and to Mrs. Clementine Thompson for her secretarial assistance.

Respectfully submitted,
Robert D. Fairchild, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES The following report was presented by Daniel Friedman, M.D., chairman.

The committee reported that in regard to resolution 70-76, they were unable to comply with the intent of the resolution because of the failure of approval by the New York State Insurance Department. A complicating factor in these negotiations has been the difference in the method of payment for the services of physicians since an increasing number of physicians are full-time salaried employes of hospitals and, therefore, their services are part of hospital costs and reimbursed by Blue Cross rather than by Blue Shield.

Resolution 70-11, "Third-Party Committees." We note that the Council has instructed the Medical Care Insurance Committee to assume this function of a third-party committee.

Resolution 70-15, "Third-Party Programs; No Income Ceiling; Service Benefits Contracts with Fixed-Fee Schedules." This matter is still unresolved.

Your reference committee takes note of the problem created by the U.S. Department of Health, Education, and Welfare in laying down stringent requirements for transfer of patients from hospital to extended care facilities and the increased hospital costs that this has caused. We urge that the State Medical Society's Committee on Aging and Nursing Homes address itself to this problem.

We applaud the recommendation of the committee and the action of the Council with regard to the proposed changes in the Rules and Regulations promulgated by the Commissioner of Health in regard to Section 86:11(c).

The reference committee thanks Robert D. Fairchild, M.D., chairman, and his committee for their untiring efforts in the work of this committee.

The House voted to adopt this portion of the reference committee report.

Resolution 72-9, Medical Insurance Coverage of the Newborn Infant

Introduced by Thomas S. Bumbalo, M.D., Delegate, Section on Pediatrics

WHEREAS, It is recognized that the nation's most valuable resource is its children; and

WHEREAS, It is recommended that every infant receive good medical care in the earliest period of life; and

WHEREAS, The private insurance industry, including some Blue Shield plans, in many policies exclude newborn infants from coverage for the first fourteen days of life; and

WHEREAS, Certain health problems in children are readily identified and best treated in the first days of life, and, consequently, this exclusion does not benefit the child nor the family; therefore be it

Resolved, That the Medical Society of the State of New York vigorously support the eradication of all exclusion clauses which pertain to the newborn infant and recommend complete coverage of the newborn infant from the moment of birth in all health insurance policies sold in New York State.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee approves this resolution and recommends its adoption.

The House voted to adopt resolution 72-9.

Resolution 72-10, Complete Coverage of Newborn Infants by Potential National Health Insurance Programs

Introduced by Thomas S. Bumbalo, M.D., Delegate, Section on Pediatrics

WHEREAS, Many forms of national health insurance coverage are currently being proposed; and

WHEREAS, These proposals do not take sufficient cognizance of any special priorities for children; and

WHEREAS, Children are our most important national resource and must have first priority; and

WHEREAS, Failure to strive for optimal health for all children allows developmental problems to go undetected and permits an unhealthy child to become an unhealthy adult and a burden on both society and an overburdened health-care system; therefore be it

Resolved, That the Medical Society of the State of New York recommend that children receive priority in the development of health insurance programs; and be it further

Resolved, That there must be recognition of and inclusion of ambulatory aspects of comprehensive pediatric care in any national health insurance program that is adopted.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee amended the first *Resolved* as follows: insert the words "infants and" after the word "recommend," and substitute the words "every consideration" for the word "priority." The *Resolved* portion would then read:

Resolved, That the Medical Society of the State of New York recommend that infants and children receive every consideration in the development of health insurance programs; and be it further

Resolved, That there must be recognition of and inclusion of ambulatory aspects of comprehensive pediatric care in any national health insurance program that is adopted.

Your reference committee recommends adoption of resolution 72-10 as amended.

The House voted to adopt resolution 72-10 as amended.

Resolution 72-23, Health Insurance Forms ID Cards

Introduced by Second District Branch

WHEREAS, One of the major bottlenecks in the physician's office involves the completion of the necessary forms associated with the delivery of medical care; and

WHEREAS, Each form completed requires certain basic informational data about the patient required by the interested third party; and

WHEREAS, Industry has learned to save time and expense by placing this required data onto a uniform raised-letter identification card; therefore be it

Resolved, That the Medical Society of the State of New York urge that all third-party carriers, including Medicare, the Department of Social Services, Blue Cross, Blue Shield, Group Health Insurance, Inc., issue to their subscribers appropriate identification cards which would then be used for imprinting the necessary insurance information on to a standard form of the Health Insurance Council; and be it further

Resolved, That the Medical Society of the State of New York propose this plan to the Commissioner of Insurance of the State of New York and to the Commissioner of Health of the State of New York and all other interested parties as being one of the major steps toward more efficient delivery of health care.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SER-

VICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-23.

Resolution 72-63, Hospital Practice of Medicine by Blue Cross

Introduced by M. Theodore Tanenhaus, M.D., Delegate, Section on Family Practice

WHEREAS, Associated Hospital Service, through its recently proposed coverage for emergency medical services by hospital emergency rooms, is a direct attempt at the hospital practice of medicine and of the corporate practice of medicine by a hospital; and

WHEREAS, The Associated Hospital Service definition of emergency room care has been broadened to encompass almost all medical conditions that might arise; and

WHEREAS, This practice does not represent either a free choice of physician or continuing comprehensive medical care; and

WHEREAS, The Medical Society of the State of New York should present its concern about the hospital practice of medicine; therefore be it

Resolved, That the Medical Society of the State of New York request the Associated Hospital Service to withdraw coverage for emergency medical services by hospital emergency rooms and to allow another more appropriate agency, for example, Blue Shield, to cover this.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee wishes to amend this resolution by substituting the following *Resolved:*

Resolved, That the Medical Society of the State of New York request the Associated Hospital Service (1) to administer and promulgate its emergency medical services program in such a way as to avoid the improper utilization of emergency room hospital facilities, and (2) to reevaluate the criteria for such care and to make them more stringent so that coverage will be limited to bona fide emergency situations.

The House voted to adopt resolution 72-63 as amended.

Resolution 72-66, Blue Shield and Emergency Care Coverage

Introduced by Leo Swirsky, M.D., as an individual

WHEREAS, Blue Cross has by State law the right to pay for emergency care in the outpatient department of a hospital on all Blue Cross policies; and

WHEREAS, Parallel coverage is not provided for these same emergencies, that is constipation, headache, and others, in a physician's office; therefore be it

Resolved, That the Medical Society of the State of New York request Blue Shield to make every effort to provide in all contracts whether or not there is home and office coverage the exact same benefits under the exact same conditions for the exact same reimbursements.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-66.

Resolution 72-21, Voluntary Elective Sterilization under Medicaid

Introduced by Broome County Medical Society

WHEREAS, The Commissioner of Health has indicated that all people in the State of New York are entitled to equal all-inclusive health care; and

WHEREAS, The New York State Social Services Department has denied payment for voluntary elective sterilization for persons enrolled in public assistance programs; therefore be it

Resolved, That this House of Delegates instruct the Medical Society of the State of New York to negotiate with the New York State Social Services Department to make available voluntary elective sterilization to public-assistance patients under the Medicaid Law.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-21.

Resolution 72-85, Medicaid Payments for Abortions

Introduced by Charles D. Sherman, Jr., M.D., as an individual

WHEREAS, A recent ruling by the court of appeals prevents the State of New York from allocating Medicaid funds for abortion except when the mother's life is threatened; and

WHEREAS, The Legislature of the State of New York will be considering the question of whether the State should release Medicaid funds for abortion; and

WHEREAS, The restriction on Medicaid funds for abortion prevents the full and equal application of abortion laws; therefore be it

Resolved, That the Medical Society of the State of New York support legislation that would specifically allow the use of Medicaid funds for any abortion procedure allowed by law.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-85.

Resolution 72-30, Medicaid Fee Schedule

Introduced by Medical Society of the County of New York

WHEREAS, The present Medicaid fee schedule for services rendered by physicians is inadequate and inequitable; and

WHEREAS. There has been redress in the fee schedule for other providers, such as pharmacists, optometrists, dentists, and others, but not for physicians; and

WHEREAS. Medicaid patients are seen in hospital outpatient departments and emergency rooms and hospitals are reimbursed many times the fee paid to physicians for identical services; and

WHEREAS. To improve the quality of medical care and lower the cost of such care, it is necessary to encourage the increased participation and involvement of the private practitioner in the Medicaid Program; therefore be it

Resolved, That the Medical Society of the State of New York take necessary measures to cause the State Legislature to correct these inequities and permit regional differential payments to attract physicians to deprived areas.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends adopting this resolution with the *Resolved* portion amended to read as follows:

Resolved, That the Medical Society of the State of New York request the State Legislature to correct the inadequate and inequitable Medicaid fee schedule for services rendered by physicians and permit differential payments to attract physicians to deprived areas.

The House voted to adopt resolution 72-30 as amended.

Resolution 72-31, Medicaid: Transfer of Payment Procedures from Department of Social Services
Introduced by Medical Society of the County of New York

WHEREAS. The Department of Health and the Department of Social Services jointly administer the Medicaid Program in the City of New York; and

WHEREAS. The dual responsibility and divided authority have created conflicts between the two departments which impede the administration of the Medicaid Program in the City of New York; and

WHEREAS. The Department of Social Services of the City of New York has continued to demonstrate inefficiency and mismanagement in the reimbursement of physicians for medical services to Medicaid patients; and

WHEREAS. The recent Grand Jury findings have confirmed the waste, chaos, and continued mismanagement and inefficiencies in the Department of Social Services, long indicated by the component medical societies, the Coordinating Council, and the First District Branch in the City of New York in regard to reimbursement of physicians for medical services to Medicaid patients; therefore be it

Resolved, That the Medical Society of the State of New York take all necessary steps to have the State Legislature remove the Department of Social Services, City of New York, from participation in the Medicaid program; and be it further

Resolved, That payment of providers of the Medicaid Program in the City of New York be placed with a nonprofit, nongovernmental intermediary.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman

Your reference committee recommends approval of this resolution with the following amendments in the *Resolved* portion:

First *Resolved*, add the words "and State" between the words "City" and "of New York," and insert the words "as the fiscal agent" for the words "from participation." In the second *Resolved*, delete the word "nonprofit," and add the words "and State" after the word "City" and insert the word "fiscal" after the word "nongovernmental." The *Resolved* portion would then read as follows:

Resolved, That the Medical Society of the State of New York take all necessary steps to have the State Legislature remove the Department of Social Services, in the City and State of New York, as the fiscal agent in the Medicaid program; and be it further

Resolved, That payments of providers of the Medicaid Program in the City and State of New York be placed with a nongovernmental fiscal intermediary.

The House voted to adopt resolution 72-31 as amended.

Resolution 72-70, Undue Interference in the Practice of Medicine
Introduced by Thomas S. Cotton, M.D., as an individual

WHEREAS. Several communications have been received by staff physicians of St. James and Bethesda Hospitals, Hornell, New York, from the Steuben County Department of Social Service questioning the reasons for their prescribing certain medications to Medicaid patients; and

WHEREAS. In reviewing these cases, there appears to be no question of either incompatibility of drugs or of incompetency of the physician; and

WHEREAS. The practice of an accountant clerk requesting specific written justification for medication from a physician is judged by the staffs to be highly improper; and

WHEREAS. The requesting of such information even by a physician completely isolated from the charts and records of such a patient when complete information is available is considered a poor review method; and

WHEREAS. Each doctor already spends far too much valuable time on needed paper work without adding useless superfluities; therefore be it

Resolved, That the Medical Society of the State of New York review the undue interference in the practice of medicine by the New York State Department of Social Services.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D. chairman.

Your reference committee recommends disapproval of this resolution because it feels that this problem is amenable to administrative procedures on a local level.

The House voted not to adopt resolution 72-70.

Resolution 72-7, National Health Insurance and Implications for Mental Health

Introduced by Medical Society of the County of Westchester

WHEREAS, National health insurance may become public policy; and

WHEREAS, Present health insurance programs do not provide adequate coverage for mental illness; and

WHEREAS, Congressional proposals for national health insurance severely limit protection for psychiatric disorders; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York urge that any legislation pertaining to health insurance include provisions for benefits for treatment of mental diseases comparable to those provided for other illnesses; and be it further

Resolved, That a copy of this resolution be submitted to the American Medical Association's House of Delegates for their approval.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

The reference committee recommends the adoption of the following substitute for resolution 72-7:

WHEREAS, Some health insurance programs do not provide adequate coverage for mental illness; and

WHEREAS, Some congressional proposals for national health insurance programs also discriminate against patients suffering from nervous and mental disorders; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York affirm that all insurance programs, all regulations, and all legislation pertaining to health insurance must include provisions that benefits for hospitalization and treatment of mental illness be identical to those provided for somatic illness; and be it further

Resolved, That a copy of this resolution be submitted to the State Commissioner of Insurance; and be it further

Resolved, That a copy of this resolution be submitted to the American Medical Association's House of Delegates for their approval.

The House voted to adopt the substitute resolution.

Resolution 72-90, Notification of Physician by Medicare Carriers of Payments Made Directly to Patients

Introduced by Howard B. Rasi, M.D., Delegate, Section on Plastic Surgery

WHEREAS, When Medicare payments are sent directly to the patient, no duplicate is sent to the physician; and

WHEREAS, Errors are frequently made in Medicare payments and these result in less than the correct amount being received by the patient; and

WHEREAS, This results in a payment grossly unfair to the patient who cannot know what payment he should have received; and

WHEREAS, This situation causes severe resentment toward the physician by the patient who fails to realize that an error has been made and merely assumes that he has been overcharged by the physician; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York energetically petition the U.S. Department of Health, Education, and Welfare to correct this situation by requiring each Medicare carrier to send duplicate statements to the physician whenever payment is made to the patient; and be it further

Resolved, That a copy of this resolution be submitted to the American Medical Association's House of Delegates for its approval at its meeting in June, 1972.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

The reference committee recommends approval of this resolution with the following substitute first *Resolved:*

Resolved, That the Medical Society of the State of New York request the Bureau of Health Insurance of the Social Security Administration to require each Medicare carrier to send duplicate statements to the physician whenever payment is made to the patient.

The House voted to adopt resolution 72-90 as amended.

Workmen's Compensation

To the House of Delegates, Gentlemen:

The members of the Council Committee on Workmen's Compensation of the Division of Medical Services are as follows:

John H. Morton, M.D., *Chairman*	Monroe
Ray A. Elliott, Jr., M.D.	Albany
Burton P. Hoffman, M.D.	Westchester
John A. Kalb, M.D.	Broome
Robert Katz, M.D.	New York
George Lim, M.D.	Oneida
Walter W. Miner, M. D.	Nassau
Asa Paul Ruskin, M.D.	New York
Loring W. Wood, M.D.	Erie
Leonard Weitzman, M.D.	Suffolk

Two formal meetings of the committee were held on April 2 and June 18 with excellent attendance.

On April 2 the revised guidelines for rating applicants by the respective county workmen's compensation committees were reviewed, approved by the Council, and issued in May. The purpose of these guidelines is to establish uniform criteria throughout the State for the evaluation of physicians applying for authorization to treat workmen's compensation claimants.

Resolutions. *Resolution 71-40,* "Establishment of Specialty Rating and Code Letters for Specialty of Family Practice":

Resolved, That this House of Delegates request that the Council *immediately* notify the Chairman of the Workmen's Compensation Board, as presently required by New York State Law, that the Medical Society of the State of New York endorse the establishment of a separate Workmen's Compensation Specialty Rating as well as appropriate new code letters for the Specialty of Family Practice.

This resolution received considerable attention at both meetings, as well as discussions with representatives of the American Academy of Family Physicians. On April 2 the committee approved that both a special designation and appropriate increase in fees be requested. However, in keeping with the resolution, only the special designation request was made to the Advisory Committee on the Medical Fee Schedule and Allied Problems of the Workmen's Compensation Board. Early in the year this request was rejected. Subsequently, on our petition, the Advisory Committee agreed to hear two representatives from the American Academy of Family Physicians, and they appeared and presented their position on September 16. The request was formally denied on October 14, for the following reasons:

1. Multiple ratings in major specialties should not be granted (page 10 of the 1970 fee schedule); 2. Family practice is not a specialty involved to a great degree with occupational injuries or diseases.

Resolution 71-13, "Workmen's Compensation Fees":

Resolved, That the Medical Society of the State of New York petition the Workmen's Compensation Board to reimburse anesthesiologists on a fee structure that is based on the Relative Value Guide of the New York State Society of Anesthesiologists.

In view of the ongoing negotiations for a changeover to a relative value scale in 1972, it was decided that this resolution be effected through these negotiations.

Resolution 71-60, "Fee for Attendance at Workmen's Compensation Hearings":

Resolved, That the Medical Society of the State of New York urge the Workmen's Compensation Board to keep hearings involving physicians to an absolute minimum.

This was forwarded to the chairman of the Workmen's Compensation Board. On October 14 the chairman referred the resolution to the Workmen's Compensation Board's Advisory Committee requesting an opinion. To implement this resolution, it was agreed that a recommendation would be made that the substance of this resolution be brought to the attention of the supervising referee with the request that he pursue the matter with all the referees. In regard to the second *Resolved:* "That the Medical Society of the State of New York request the chairman of the Workmen's Compensation Board to set a fee of no less than $100 for physicians' attendance at hearings," action was postponed with the understanding that this would be made a part of the ongoing negotiations on the fee schedule.

C-4 forms. The Council committee considered proposals for simplification of C-4 forms; the five recommendations agreed on have been submitted to the Advisory Committee on the Medical Fee Schedule and Allied Problems, and they have these under consideration.

Refusal of physicians to accept cases. A request by the New York County Workmen's Compensation Bar Association that the Medical Society of the State of New York join them in investigating their complaint that many physicians refused to accept workmen's compensation cases was rejected. We challenged the claim that many physicians refused to accept workmen's compensation cases and requested that they present specific data to support their statement that a problem existed. Six months have intervened since this subject was broached; no data have as yet been forwarded to us.

In the closing hours of the 1971 State Legislative session, a bill was introduced that would amend the Workmen's Compensation Law to authorize treatment of workmen's compensation claimants by joint labor-management medical centers. The Medical Society of the State of New York felt that this was detrimental to the quality of care rendered to such patients and mobilized its resources to prevent its passage. The bill was referred back to committee and never came to the floor. We should be alert to the probability that it will be reintroduced.

The committee both formally and informally, concerned itself with many other problems that came to its attention either via members of the committee or of the Society. Most of these were dealt with in a direct manner that led to their resolution and assisted members of our Society.

The director of the Division has begun a series of articles in the ***New York State Journal of Medicine*** relating to frequently occurring problems in the workmen's compensation field which, it is hoped, will avert difficulties.

The director attended eight meetings of the Advisory Committee on the Medical Fee Schedule and Allied Problems. Among the subjects that were discussed at such meetings were the designation of Family Practice as a distinct class, the complaints of carriers concerning physicians and vice versa, the problem of double billing where the hospital contracts cover a physician's services. Perhaps the most important subject has been that of the new workmen's compensation fee schedule due in July, 1972. The State Medical Society insists that this be prepared on a relative value scale basis, a changeover of major proportions that has entailed and will still entail a great deal of work, not only by the staff of the Medical Society of the State of New York but also by the insurance carriers. As of this moment, we are meeting considerable resistance to our request. but we hope we shall overcome.

Arbitrations. During the preceding twelve months, 74 arbitration sessions were held throughout the State. Sixty-three were held in the Greater New York area. A total of 1,522 cases were submitted for arbitration. Disputed medical bills amounted to $375,130.77. Postponements deferred the settlement of 277 cases, and 1,024 cases were settled by arbitration. A total of 221 cases were settled without arbitration.

Acknowledgment. The chairman expresses his appreciation to all the members of the committee who have given so freely of their time and efforts. He also expresses his thanks to the director of the Division of Medical Services, Max N. Howard, M.D., and to the administrative assistant, Miss Alice E. Wheeler, for their industry and their cooperation.

Respectfully submitted,
John H. Morton, M.D., Chairman

Workmen's Compensation (Supplementary)

To the House of Delegates, Gentlemen:

A meeting of the Council Committee on Workmen's Compensation was held on October 22.

Max N. Howard, M.D., reported on the progress of the negotiations for a workmen's compensation fee schedule based on a relative value scale by the Advisory Committee on the Medical Fee Schedule and Allied Problems of the Workmen's Compensation Board. The problems that had arisen were discussed and a summary of our present position given. The concept of a Workmen's Compensation Board relative value scale is new to the insurance industry, and in an attempt to clarify the subject Dr. Howard met with Mr. Victor Rahhal, secretary of the Medical and Claims Committee of the New York Compensation Insurance Rating Board, who subsequently, at his request, addressed this committee. In the discussions, the latter group put considerable stress on quality control as well as on the expensiveness of a program.

The peer review program of the State Medical Society was discussed at length. Recognizing that the activities of the profession in this field will have to be considerably augmented in keeping with the various health insurance plans that include such mechanisms in their programs, it was pointed out that workmen's compensation committees of the county medical societies are in an advantageous position to note problems that call for peer review. The activities of such committees have largely been concerned with the dollar aspects, and the point was made that we should also be concerned with the quality and utilization aspects of medical care rendered. Emphasis was placed on the need to call attention to those few physicians who are chronic offenders, for example, the ad infinitum administration of diathermy treatments. Judicious exercise of the peer review function should be stressed, nor should the Workmen's Compensation Committee replace the designated peer review committee of the county medical society but rather refer the documented care to the latter committee.

It was approved that when the medical care rendered by a physician is questioned at a Workmen's Compensation Board arbitration hearing, the members of that committee (the three physicians) should, at their discretion, refer the matter to the county medical society peer review committee.

In regard to the Guidelines established earlier this year to assist the workmen's compensation committees of the county medical societies in evaluating and rating physicians applying for authorization to treat workmen's compensation claimants, it was noted that there had been no reaction from the county medical societies. However, our attention had been called to the fact that ratings were being forwarded to the Workmen's Compensation Board that seemed at variance with generally accepted criteria with a significant recent increase of such cases referred to the Medical Appeals Unit; the latter reversed the recommendations from the county medical societies in a greater than average number of cases. This function of evaluating candidates should rest primarily with the county medical societies and having their recommendations reversed in any considerable number is undesirable, and steps to resolve this should be taken. Particularly disturbing to the Workmen's Compensation Board administration was the granting of different ratings by different committees to applicants with apparently equal qualifications.

It was agreed that a meeting of the various Workmen's Compensation chairmen to iron out this problem was indicated.

To establish better communication between the county medical society workmen's compensation committees and our State Committee and attain greater uniformity in regard to the problems mentioned, as well as other problems, it was decided that an annual meeting of the chairmen would be desirable. The most appropriate time would be at the annual meeting of the Medical Society of the State of New York and questionnaires will be sent to the chairmen both to determine their interest in such a meeting, and suggestions as to topics to be covered. Along the same line it was decided that the minutes of the State committee would be forwarded regularly to the county workmen's compensation committee chairmen.

Problems attending third-party actions in workmen's compensation cases were explored. Particular consideration was given to usual-and-customary fees versus the fixed-fee schedule and the furnishing of reports to attorneys. Copies of a symposium on this subject that appeared in the March 1, 1968, ***New York State Journal of Medicine*** were furnished to the members of the committee. Clarification from counsel regarding the problems raised was to be sought.

Resolution 71-60 regarding minimizing the required attendance of physicians at Workmen's Compensation Board hearings and setting of a fee of $100 when such attendance is necessary was discussed. The chairman of the Workmen's Compensation Board has referred the resolution to the Advisory Committee for their recommendations. That portion of the resolution dealing with limiting doctors' attendance to true need was resolved by the chairman of the Advisory Committee stating that he would call this to the attention of the Supervising Referee with the expectation that the latter would pursue this with all the referees. As to the increase in fees, this was deferred to be made a part of the presently ongoing negotiations of a new fee schedule.

Respectfully submitted,
John H. Morton, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman

Your reference committee notes the efforts by the Workmen's Compensation Committee to implement resolution 71-40, "Establishment of Specialty Rating of Family Practice." They have thus far been unsuccessful. Among the reasons given by the Advisory Committee on the Medical Fee Schedule and Allied Problems of the Workmen's Compensation Board was, "Family Practice is not a specialty involved to a great degree with occupational injuries or diseases." Your committee feels that this statement is absurd. We urge continuing efforts by the Workmen's Compensation Committee which should be strongly supported by the Council to achieve the aims of this resolution.

The revised Workmen's Compensation Fee Schedule on a relative value scale is still in the process of being formed. Negotiations have been suspended because of an impasse and the refusal of insurance carriers to accept this concept.

The reference committee noted that peer review in the field of Workmen's Compensation will be an eventuality. We endorse this principle provided the State Medical Society assumes this responsibility.

We are pleased to note the cooperation of the Supervising Referee of the Workmen's Compensation Board with regard to resolution 71-60, "Fee for Attendance at Workmen's Compensation Board Hearings," minimizing the required attendance of physicians at Workmen's Compensation Board hearings.

Your reference committee wishes to commend John H. Morton, M.D., chairman, and his committee, for their fine efforts throughout the year.

The House, after discussion, voted to adopt this portion of the reference committee report.

Resolution 72-64, Reaffirmation of Resolution 71-40 Concerning the Establishment of Workmen's Compensation Code Letters for the New Specialty of Family Practice

Introduced by M. Theodore Tanenhaus, M.D., Delegate, Section on Family Practice

WHEREAS, Resolution 71-40, "Establishment of Specialty Rating and Code Letters for Specialty of Family Practice" had instructed the Council of the Medical Society of the State of New York to request of the Workmen's Compensation Board that code letters be established to recognize the new Specialty of Family Practice; and

WHEREAS, The Advisory Committee for the Workmen's Compensation Board has duly denied this after repeated requests only on a purely economic rather than factual basis; and

WHEREAS, Recognition of this specialty has been afforded by the American Medical Association, the State Department of Health, and the Joint Commission on Accreditation of Hospitals; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York request the Council to resubmit this desire of recognition as stated in resolution 71-40, "Establishment of Specialty Rating and Code Letters for Specialty of Family Practice" to the Workmen's Compensation Board for favorable action.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-64.

Resolution 72-22, Workmen's Compensation and Prearbitration Payment

Introduced by Broome County Medical Society

WHEREAS, The procedure for arbitrating a dispute over submitted fees between the physician and the compensation carrier involves a considerable waiting period of from two to three years, which is sufficient to compile an adequate number of such problems to warrant the expense of an arbitration meeting; and

WHEREAS, Our experience with two insurance carriers has revealed a consistent practice of withholding the entire or a major portion of the fee rather than the amount of the disputed portion of the fee during this waiting period; therefore be it

Resolved, That the House of Delegates instruct the Workmen's Compensation Committee of the Medical Society of the State of New York to inform the Workmen's Compensation Committee of the State of New York of the arbitration practices of these insurance carriers, and to request the Workmen's Compensation Board of the State of New York to investigate and notify these carriers of the need for equitable, prearbitration payment as practiced by the majority of compensation carriers in New York State.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-22.

Resolution 72-24, Elimination of Required Arbitration Fee

Introduced by Suffolk County Medical Society

WHEREAS, Compensation fees for family physicians for routine office visits are below reasonable and customary fees; and

WHEREAS, The fee which the physician must pay to put a bill in for arbitration is $5.00, which is the major portion of a routine visit; and

WHEREAS, This $5.00 fee makes it unreasonable and financially unfeasible to arbitrate a small fee; therefore be it

Resolved, That the Medical Society of the State of New York in consultation with the New York State Academy of Family Physicians enter into discussion with the Workmen's Compensation Board for the elimination of this fee.

Resolution 72-32, Compensation Case Hearings

Introduced by Second District Branch

WHEREAS, Compensation fees for family physicians for routine office visits are below reasonable and customary; and

WHEREAS, The fee which the doctor must pay to put a bill in for arbitration is $5.00, which is a good portion of a routine visit; and

WHEREAS, This $5.00 fee makes it unreasonable and financially unfeasible to arbitrate a small fee; therefore be it

Resolved, That the Medical Society of the State of New York take appropriate steps to eliminate such a fee.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee discussed these two resolutions, found them identical, and recommends the following substitute resolution:

WHEREAS, Compensation fees for family physicians for routine office visits are below reasonable and customary fees; and

WHEREAS, The fee which the physician must pay to apply for arbitration is $5.00, which is the major portion of a routine visit; and

WHEREAS, This $5.00 fee makes it unreasonable and financially unfeasible to arbitrate a small fee; therefore be it

Resolved, That the Workmen's Compensation Board be notified that we recommend that an arbitration fee of 5 per cent be required from the carrier and 5 per cent from the physician with no minimal fee.

The house voted to adopt the substitute resolution.

Resolution 72-71, Fees for Treatment of Multiple Injuries in Workmen's Compensation Cases

Introduced by Medical Society of the County of Queens

WHEREAS, The present fee schedule limits the fees for treatment of a patient with multiple injuries to twice the amount payable for the greatest injury; and

WHEREAS, A patient with multiple injuries is usually much worse off than is indicated by the sum of the individual injuries, and actually requires more rather than less care; therefore be it

Resolved, That the Workmen's Compensation Board be requested to remove the present limitation on the total fee.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-71.

Resolution 72-72, Workmen's Compensation Board Hearings

Introduced by Medical Society of the County of Queens

WHEREAS, It is almost an impossibility to park in downtown New York City near the Workmen's Compensation Board building and thus the physician from Queens is required to use the subway on an average of one hour each way, plus an average of one hour for the hearing itself, therefore making great demands on his time; and

WHEREAS, Branches of the Workmen's Compensation Board in the different counties would make such loss of travel time unnecessary; therefore be it

Resolved, That the Medical Society of the State of New York petition the Workmen's Compensation Board to establish branches in the different counties to make loss of time in traveling unnecessary; and be it further

Resolved, That the fee for the hearing itself be raised to $75; and be it further

Resolved, That if the establishment of such branches in the different counties is not feasible, the fee for attendance at the hearing be raised to $150 to compensate for the three hours required.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends that resolution 72-72 be approved with the following amendments:

In the second *Resolved* "$75" be deleted and "a minimum of $100" be substituted therefor; and the following *Resolved* be substituted for the third *Resolved:*

Resolved, That where travel time is more than one hour, a minimum fee of $150 be established.

The *Resolved* portion of the resolution would then read as follows:

Resolved, That the Medical Society of the State of New York petition the Workmen's Compensation Board to establish branches in the different counties to make loss of time in traveling unnecessary; and be it further

Resolved, That the fee for the hearing itself be raised to a minimum of $100; and be it further

Resolved, That where travel time is more than one hour, a minimum fee of $150 be established.

The House voted to adopt resolution 72-72 as amended.

Resolution 72-73, Compensation Fee Schedule

Introduced by the Medical Society of the County of Queens

WHEREAS, The original fee schedule promulgated by the Workmen's Compensation Board about forty years ago had fees fixed at a low level for the treatment of low-income workmen and has not been raised adequately to keep up with the cost of living or with the costs of a physician's practice; therefore be it

Resolved, That the Medical Society of the State of New York continue to negotiate with the Workmen's Compensation Board to revise the schedule drastically upward to make the fees comparable to our usual and customary fees.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends disapproval of this resolution because of on-going negotiations with the Workmen's Compensation Board.

The House voted not to adopt resolution 72-73.

Resolution 72-74, Authorization for Treatment of Patient in Workmen's Compensation Case

Introduced by Medical Society of the County of Queens

WHEREAS, Authorization for expenditure of more than $35 for examinations and treatment, such as specialist's consultation, surgical procedure, x-ray film, physical therapy, and others must be obtained from employer, carrier, or referee; and

WHEREAS, Such a fee limit has borne no relation to fees for many years; therefore be it

Resolved, That the Medical Society of the State of New York make every effort to effect an increase in the fee limitation for unauthorized treatment of patients under Workmen's Compensation from $35 to $100.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution with the following substitute *Resolved* portion:

Resolved, That the Medical Society of the State of New York make every effort to effect legislation to increase the fee limitation for treatment prior to authorization of patients eligible under Workmen's Compensation from $35 to $100.

The House voted to adopt resolution 72-74 as amended.

Resolution 72-75, Fees for Treatment of Higher Paid Employes Hospitalized in Self-Chosen Deluxe Accomodations in Compensation Cases
Introduced by Medical Society of the County of Queens

WHEREAS, The law permits a higher paid employe, such as an officer of a corporation, to obtain deluxe facilities if hospitalization is required and to pay the difference between the Workmen's Compensation Board schedule payment and the regular hospital rate; therefore be it

Resolved, That the Workmen's Compensation Board permit such employe to be treated as a private patient at his request under a schedule of the physician's usual and customary fees with reimbursement to the patient by the insurance carrier at the regular compensation fee.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends disapproval of this resolution because it is illegal to bill a patient in compensation cases.

The House voted not to adopt resolution 72-75.

Resolution 72-84, Compensation Fees for Treatment of Higher Paid Employes
Introduced by Medical Society of the County of Queens

WHEREAS, The original fee schedule was called a minimum fee schedule, with low fees for the treatment of low-income workmen which stated that the treatment of higher paid employes, such as an officer of a corporation, could be charged for at a higher rate; and

WHEREAS, This has been changed over the years, so that the opportunity to charge higher fees for the treatment of higher paid employes has been taken away; therefore be it

Resolved, That the Medical Society of the State of New York petition the Workmen's Compensation Board to restore the physician's right to charge higher fees for the treatment of higher paid employes.

REPORT OF THE REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution with the addition to the *Resolved* portion of the words "to the carrier" inserted between the words "fees" and "for." The *Resolved* portion would then read as follows:

Resolved, That the Medical Society of the State of New York petition the Workmen's Compensation Board to restore the physician's right to charge higher fees to the carrier for the treatment of higher paid employes.

The House voted to amend the reference committee report to call for adoption in principle of amended resolution 72-84.

The House then voted to adopt in principle resolution 72-84 as amended.

Resolution 72-87, Treatment of Workmen's Compensation Cases in ILA Union Health Centers
Introduced by Howard B. Rasi, M.D., Delegate, Section on Plastic Surgery

WHEREAS, The International Longshoreman's Association is trying to obtain authorization to treat Workmen's Compensation cases in Union Health Centers; and

WHEREAS, This is in direct opposition to the concept of free choice of physician; therefore be it

Resolved, That the House of Delegates of the Medical Society of the State of New York go on record as being unalterably opposed to authorization of the International Longshoreman's Association to treat Workmen's Compensation cases in Union Health Centers; and be it further

Resolved, That a copy of this resolution be sent to the chairman of the Workmen's Compensation Board and to the New York State Department of Labor.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution.

The House voted to adopt resolution 72-87.

Occupational Health

To the House of Delegates, Gentlemen:

The following are members of the Committee on Occupational Health of the Division on Medical Services:

Robert P. Jessup, M.D., *Chairman*	Nassau
James J. Brandl, M.D.	Erie
George S. Craft, M.D.	New York
Thomas J. Doyle, M.D.	New York
Walter J. Gerstle, M.D.	Nassau
Frederic W. Holcomb, Jr., M.D.	Ulster
Robert Katz, M.D.	New York
Thomas D. Rizzo, M.D.	Westchester
Herbert F. Wendelken, M.D.	Richmond

The committee met on January 25, at the offices of the State Medical Society.

A discussion in depth was held regarding experiences with the newly enacted Williams-Steiger Occupational Safety and Health Act (OSHA) which became effective on April 28, 1971. The experiences, either personal or by report, of the inspections and citations, with or without penalties, were recounted. The United States Chamber of Commerce had reported in December, 1971, that during the first six months of enforcement of OSHA only 21 per cent of the work establishments inspected were found to be in compliance with the law, and that $350,000 in penalties were assessed against business firms. The inexperience of inspectors, the inequities of penalties, the problems arising from employes failing to comply with formulated safety procedures and the use of the Act as a political ploy by dissident unions were noted. There was consensus that the Act had a commendable goal which physicians should support. It was expected that with the knowledge gained during the initial period of implementation OSHA would become an effective mechanism for maintaining and improving the working environment.

The committee discussed how OSHA would affect the general membership of the State Medical Society. Recognizing that the greatest number of employes worked for small firms who depended on local practitioners for any medical services they require, and that the latter had little, if any, experience in the field of occupational medicine, it was deemed desirable to institute an informational program, such to be disseminated through periodic articles in the ***Journal*** of the State Medical Society. The content of such articles was discussed. It is hoped that these will stimulate interest in the field of occupational medicine and lead to greater involvement of the part-time industrial physician with emphasis on his visiting the plants he services to become acquainted with the nature of the work performed and any attendant health hazards. As the inspection procedures under OSHA increase in coverage and in sophistication, the penalties resulting therefrom will undoubtedly result in employers seeking the advice of physicians and, with this in mind, the proposed program should prepare the latter to participate meaningfully.

This led into a broader discussion of the purposes of the State Medical Society's Committee on Occupational Health, the absence of similar committees on the county society level, and the challenge of whether or not there was need for such. There was general agreement that particularly now that OSHA will increase activity in the practice of occupational health, the committee should not only continue but intensify its activities.

It was approved that to establish better liaison with the county medical societies, the minutes of the Occupational Health Committee be sent to the chairman of each county medical society committee on occupational health, if such exists, or in its absence, to the executive secretary. Further, we would request that the minutes of any of their committees active in this field be forwarded to us to enable their problems to be made known and, where indicated, develop the assistance of the State Medical Society in resolving them.

It was proposed that a more "sensational" type of program be developed for presentation at the Annual Meeting of the Medical Society of the State of New York that would draw greater attendance and spark interest by the membership of the Society. It was further suggested that an annual exhibit relating to occupational health be set up at the convention.

Respectfully submitted,
Robert P. Jessup, M.D., Chairman

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

The Committee on Occupational Health states that its report is for information only and recommended that, because of the Williams-Steiger Occupational Safety and Health Act, which became effective on April 28, 1971, this committee should not only continue but intensify its activities. We concur in its recommendation to institute an informational program to be disseminated through periodic articles in the ***Journal*** of the State Medical Society.

The reference committee wishes to thank Robert P. Jessup, M.D., chairman, and his committee for their efforts during the past year.

The House voted to adopt this portion of the reference committee report.

Resolution 72-92, Medical Care for the Poor
Introduced by Medical Society of the County of Queens

> WHEREAS, The medical profession has had a long and continuous interest in the care of the poor; and
>
> WHEREAS, Despite many and varied programs to provide health care for the poor involving the expenditure of large sums of money, such as Medicaid, Office of Economic Opportunity, and others, the health of the poor remains a continuing source of concern, leaving large numbers of people without adequate health care; and
>
> WHEREAS, Programs to fill these gaps in medical care continue to be formulated by governmental and lay bodies; therefore be it
>
> *Resolved,* That the Medical Society of the State of New York establish a commission whose purpose it will be to study the problems of provision of health services for the poor and to formulate a program to provide such health services which can be recommended to the legislature for enactment into law.

REPORT OF REFERENCE COMMITTEE ON MEDICAL SERVICES: The following report was presented by Daniel Friedman, M.D., chairman.

Your reference committee recommends approval of this resolution with the following amended *Resolved:*

> *Resolved,* That the Council of the Medical Society of the State of New York establish a committee whose purpose it will be to study the problems of provision of health care services for the poor and to formulate a program to provide such services which can be then recommended to the Legislature for enactment into law.

The House voted to adopt resolution 72-92 as amended.

The House then voted to adopt the reference committee report as a whole as amended.

TABLE I. Plans operation, 1971

Location	Earned Premium Income	Claims Expense	Operating Expense	Participating Physicians
New York	$139,500,000	$124,600,000	$21,436,000	20,838
Buffalo	38,663,888	37,054,717	4,571,258	2,000
Rochester	23,757,035	21,273,963	2,094,218	1,535
Albany*	15,671,100	14,561,800	2,011,200	1,200
Syracuse*	12,765,000	12,957,000	1,482,000	1,540
Utica	7,212,239	7,202,673	909,719	796
Jamestown*	1,460,000	1,210,000	190,000	109
Totals	$239,029,262	$218,860,153	$32,694,395	28,018

* Estimated.

TABLE II. Comparative membership in Blue Shield and Blue Cross plans

	Membership		Per Cent	Increases	
Location	Blue Shield	Blue Cross	of Members	Blue Shield	Blue Cross
New York	6,221,000	8,498,000	73.20	47,192	40,753
Buffalo	958,555	978,536	97.95	13,228	19,718
Rochester	812,250	834,730	97.30	1,648	1,042
Albany	512,123	544,287	94.09	29,377	28,861
Syracuse	421,800	522,800	80.68	5,852	5,798
Utica*	309,472	293,609	91.32	6,976	6,112
Jamestown	57,617	61,720	93.35	313	208
Watertown	. . .	45,282	. . .	. . .	4,378
Totals	9,292,817	11,778,964	78.80	114,586	106,454

* Utica Plan serves Watertown area for Blue Shield Members. Watertown Blue Cross members added to Utica Blue Cross members in calculating percentage.

Proposed Amendments to Constitution and Bylaws

Proposed amendments to the Constitution and Bylaws of the Medical Society of the State of New York were referred to the House Committee on Constitution and Bylaws and will be acted on at the 1973 annual meeting of the House of Delegates.

The proposed amendments are as follows:

72-57. Polling Membership Between Meetings of the House of Delegates

Introduced by Medical Society of the County of Orange

WHEREAS, The Council of the Medical Society of the State of New York is constitutionally empowered to carry out the resolutions made at the annual convention by the House of Delegates; and

WHEREAS, The Council has always faithfully and diligently followed the instructions contained in these resolutions; and

WHEREAS, The fluidity of the present situations requires changing of laws and ideas pertaining to medical practice; therefore be it

Resolved, That the Council, at its discretion, poll the membership-at-large or at least the Delegates to the Medical Society of the State of New York by mail to ascertain opinions where there has been no direction by the House of Delegates.

72-58. Revision of Dues for Members Age Sixty-Five or Over

Introduced by Medical Society of the County of Orange

WHEREAS, At present, life membership is only extended to those seventy years of age or permanently disabled members; and

WHEREAS, Many members now are either retiring completely or limiting their practice at age sixty-five; therefore be it

Resolved, That the Medical Society of the State of New York extend, on individual application, some form of reduction of dues or life membership to members either retiring completely or limiting their practice at age sixty-five.

72-59. Osteopathic Physicians

Introduced by Second District Branch

WHEREAS, Several osteopathic physicians have expressed interest in joining the Suffolk County Medical Society, or the Suffolk Chapter, American Academy of Family Physicians; and

WHEREAS, The membership in either Society is restricted to members who are eligible for membership in the Medical Society of the State of New York; therefore be it

Resolved, That the Medical Society of the State of New York make the appropriate changes in its Constitution and Bylaws to allow osteopathic physicians membership, at the discretion of the local county medical society.

Resolution 72-60. New Classification for Retired Members

Introduced by Broome County Medical Society

WHEREAS, With the inclusion of physicians under FICA and its varying retirement age schedules, physicians may elect to retire from practice at an earlier age; and

WHEREAS, Physicians who elect to retire, while still in good health but are younger than seventy years of age, must continue to pay yearly dues to maintain Medical Society of the State of New York membership or else apply for remission of dues on grounds of financial hardship; therefore be it

Resolved, That the Constitution and Bylaws of the Medical Society of the State of New York be so changed that the criterion for retirement be as follows:

1. Active members in good standing for a period of twenty-five years; and
2. Complete retirement from active practice and such retired members after twenty-five years of active Society membership shall not be subject to dues or assessments but shall be accorded all the rights and privileges of active membership.

72-61. Osteopathic Physicians

Introduced by Suffolk Chapter, American Academy of Family Physicians

WHEREAS, Several osteopathic physicians have expressed an interest in joining the Suffolk County Medical Society, or the Suffolk Chapter, American Academy of Family Physicians; and

WHEREAS, The membership in either Society is restricted to members who are eligible for membership in the Medical Society of the State of New York; therefore be it

Resolved, That the Medical Society of the State of New York make the appropriate changes in its Constitution and Bylaws to allow osteopathic physicians to become members on the recommendation of the local county medical society.

Resolution 72-62. Constitutional Amendment to Require Prior Approval of the House of Delegates for any Special Assessment, Tax, or Levy on the Membership of the Medical Society of the State of New York

Introduced by Norman S. Blackman, M.D., as an individual

WHEREAS, The Council of the Medical Society of the State of New York acted entirely within its legitimate constitutional rights in levying a special assessment on the membership to help pay for the Society's new building; and

WHEREAS, This action, nevertheless, caused concern among many of the members of the Society; and

WHEREAS, The House of Delegates of the Medical Society of the State of New York had not been given the opportunity to approve this special levy prior to its enactment; therefore be it

Resolved, That the Constitution of the Medical Society of the State of New York be amended to provide that any special assessment, tax, or levy placed on the members by the Council must receive prior approval of the House of Delegates.

72-93. Amendment to Constitution and Bylaws Regarding Duties of Officers

Introduced by Walter T. Heldmann, M.D., as an individual

WHEREAS, The House Committee on Constitution and Bylaws was charged at the 1971 meeting of the House of Delegates to do a complete study and revision of the Constitution and Bylaws of the State Medical Society; and

WHEREAS, The results of its deliberations were published in the January 1, 1972, issue of the ***New York State Journal of Medicine*** and in the Delegates' *Handbook;* and

WHEREAS, The House, at its session on Sunday, February 13, 1972, accepted the draft submitted by the House Committee on Constitution and Bylaws, and, in accordance with the Bylaws, the said draft will lie over until the next annual meeting of the House; and

WHEREAS, The section in the draft dealing with the duties of the officers is not acceptable; and

WHEREAS, The changes desired to be made in the draft must be submitted at the current annual meeting, since they involve a change in the Bylaws and therefore must be held over for a year; therefore be it

Resolved, That Paragraph 4, Section 2, Article 5, of the proposed revision of the Constitution and Bylaws of the Medical Society of the State of New York be amended to read: "He shall be an ex officio member of all boards, commissions, and committees with voice and with vote with the exception of the Judicial Council, the Nominating Committee, and the Board of Trustees, wherein he shall have voice"; and be it further

Resolved, That paragraph 5, Section 1, of Article VII, Judicial Council, of the proposed revision be amended to read: "The President, Secretary, Executive Vice-President, Assistant Executive Vice-President, and the Counsel of the Society shall sit with the Judicial Council with voice, but without vote."

72-94. Amendment to Constitution, re Election of Delegates from County Medical Societies

Introduced by Lester R. Tuchman, M.D., as an individual

WHEREAS, Under present provision of the Constitution of the Medical Society of the State of New York for the election of representatives to the House of Delegates, eight members from Schuyler County may elect one delegate, while 264 members from New York County are required to elect a delegate; and

WHEREAS, Thirty-three counties have fewer than 100 members but are automatically entitled to a delegate; therefore be it

Resolved, That the Constitution of the Medical Society of the State of New York be amended by deleting from Chapter II, subsection (a) of Article II, which reads: "Each component county society shall be entitled to as many delegates as there shall be State Assembly Districts in such county at the time of election, but each county medical society shall be entitled to elect at least one delegate," and substitute the following:

"(a) Each county society shall be entitled to at least one delegate; (b) A county society shall be entitled to one delegate for each 100 members."

72-95. Amendment to Constitution and Bylaws Regarding Election of Delegates from County Medical Societies

Introduced by Albert H. Douglas, M.D., as an individual

WHEREAS, The present membership of the Medical Society of the State of New York totals approximately 27,000; and

WHEREAS, The present membership of the House of Delegates constitutes approximately 1 delegate per 100 members; and

WHEREAS, The provision of Chapter II, Section 1, subsections (a) and (b) of the Bylaws do not provide for fair and equitable representation of the membership of the Medical Society of the State of New York; therefore be it

Resolved, That the Bylaws of the Medical Society of the State of New York be amended by adding to the last sentence of Chapter II, subsection (b), the following: "and a county with fewer than 25 members shall be entitled to half a vote for each designated delegate of such a county."

72-96. Amendment to the Constitution and Bylaws

Introduced by Gerald D. Dorman, M.D., and Lester R. Tuchman, M.D., as individuals

WHEREAS, The First District Branch of the Medical Society of the State of New York has 13,395 members, while three districts have fewer than 1,000 members, three districts between 100 and 2,000 members, and two districts between 2,000 and 3,000 members; and

WHEREAS, This disproportion represents an inequity; therefore be it

Resolved, That Article XI of the Constitution of the Medical Society of the State of New York be changed by deleting the following: "The First District Branch shall comprise the members of the Medical Societies of the Bronx, Kings, New York, Queens, and Richmond" and substitute therefor the following: "New York County members shall comprise the First District Branch; Bronx County members shall comprise the Tenth District Branch; Kings County members shall comprise the Eleventh District Branch; Queens County members shall comprise the Twelfth District Branch; and Richmond County members may opt to be included in Districts I, X, XI, or XII."

72-97. Osteopathic Physicians in the Medical Society of the State of New York

Introduced by Seventh and Eighth District Branches

WHEREAS, The American Medical Association has amended its Bylaws so that qualified doctors of osteopathy may be admitted to active membership in that organization; and

WHEREAS, The action of the American Medical Association is a necessary first step toward the desirable objective of ending the coexistence of osteopathy as a separate discipline of medical education and for the delivery of medical services; and

WHEREAS, A number of state medical societies have amended their constitutions so that doctors of osteopathy who have been given unlimited licenses to practice medicine may apply for full active membership in such state medical societies; therefore be it

Resolved, That the Bylaws of the Medical Society of the State of New York be changed as follows:

Chapter 1, section 1: Insert the words "or osteopathic" after the word "medical" in the first sentence each time it appears.

Chapter 1, Section 7: Insert the words "or osteopathic" after the word "medical" in the first sentence.

The amended sentences will then read as follows:

Chapter 1, Section 1: Active and junior membership shall be limited to graduates of recognized medical or osteopathic schools who have completed not less than four satisfactory courses of at least eight months each in a medical or osteopathic school in the United States of America or Canada registered as maintaining at the time a standard satisfactory to the medical licensing authorities of the State of New York, or in a medical or osteopathic school in a foreign country maintaining a standard not lower than that prescribed for medical or osteopathic schools in the State.

Chapter 1, Section 7: Junior members shall be those members who have been graduated from medical or osteopathic college not more than five calendar years, not counting temporary United States Military or United States Public Health Service, or who have not completed their continuous residency training, and licensed by the State of New York.

72-100. Structuring of the Nominating Committee from Nominations Submitted by District Branches

Introduced by First District Branch

WHEREAS, The structure of the nominating committee, by district branches, is intended to allow local input and wide representation on a Statewide basis; and

WHEREAS, The present policy allows such appointments to be made solely at the discretion of the president without prior consultation with the district branches; therefore be it

Resolved, That Chapter 9, Section 4, of the Bylaws of the Medical Society of the State of New York be amended by adding the phrase: "on nomination from respective district branches." Section 4 will then read as follows: "The Nominating Committee shall be appointed by the president on nominations from the respective district branches."

Elections

Tellers

Tellers were the following:

Vincent J. Manzella, Westchester, *Chairman*
Maurice J. Elder, St. Lawrence
William C. Stein, Jr., Niagara
Robert C. Webster, Monroe

. . . Speaker Way announced that, under the supervision of the tellers, members of the staff would count the ballots . . .

Nominations

. . . Speaker Way introduced Walter Scott Walls, M.D., chairman, who presented the report of the Nominating Committee.

President
Edward Siegel, Clinton
President-Elect
Thomas F. McCarthy, Bronx
Vice-President
Thomas S. Bumbalo, Erie

Secretary
Carl Goldmark, Jr., New York
Assistant Secretary
Joseph G. Zimring, Nassau
Treasurer
Albert M. Schwartz, New York
Assistant Treasurer
Mary H. Spalding, New York
Speaker
George T. C. Way, Dutchess
Vice-Speaker
Samuel Wagreich, The Bronx
Councilors (four for three years)
Lynn R. Callin, Monroe
Richard D. Eberle, Onondaga
Warren A. Lapp, Kings
Keith O. Guthrie, Jr., New York
Trustees
(For five years)
James M. Blake, Schenectady
George Himler, New York*
(For two years to fill the unexpired term of Waring Willis, deceased)
Reid R. Heffner, Westchester
Delegates to the AMA
Edgar P. Berry, New York
Thomas S. Bumbalo, Erie
Lynn R. Callin, Monroe
Bruce E. Chamberlain, Onondaga
John L. Clowe, Schenectady
Arthur H. Diedrick, Westchester
Richard D. Eberle, Onondaga
Henry I. Fineberg, Queens
Thomas M. Flanagan, Chenango
Abraham W. Freireich, Nassau
Carl Goldmark, Jr., New York
Walter F. Harrison, Jr., Warren*
Walter T. Heldmann, Richmond†
Milton Helpern, New York
Joseph J. Kaufman, Wayne
David Kershner, Kings
George Liberman, Kings
John Edward Lowry, Queens
James A. Moore, Albany
Samuel Wagreich, Bronx
Walter Scott Walls, Erie

Balloting

... The nominees for president-elect, vice-president, secretary, assistant secretary, treasurer, assistant treasurer, speaker, vice-speaker, councilors (four for three years) and trustee (one for two years to fill unexpired term) were unopposed and were elected by a single ballot cast by the secretary ...

... Assistant Secretary Zimring called the official roll for the following members of the House to cast their ballots:

OFFICERS, COUNCILORS, TRUSTEES

George Himler
Edward Siegel
John Edward Lowry
Carl Goldmark, Jr.
Joseph G. Zimring
Thomas F. McCarthy
Albert M. Schwartz
George T. C. Way
Samuel Wagreich
James M. Blake
Lynn R. Callin
Richard D. Eberle
Warren A. Lapp
Bernard J. Pisani
John H. Carter
George L. Collins, Jr.
Paul M. DeLuca
Ralph S. Emerson
G. Rehmi Denton
Arthur H. Diedrick
Albert H. Douglas
Milton Gordon
Milton Helpern
Walter Scott Walls
Edward C. Hughes
Walter T. Heldmann
Joseph J. Kaufman

PAST PRESIDENTS

Arthur J. Bedell
Carlton E. Wertz
Edward T. Wentworth
Renato J. Azzari
Thurman B. Givan
Henry I. Fineberg
Norman S. Moore
John M. Galbraith
George A. Burgin

COMMISSIONER, NEW YORK STATE DEPARTMENT OF HEALTH

Hollis S. Ingraham

DISTRICT DELEGATES

Vincent I. Bonafede
Marvin Brown
John T. Donovan, Jr.
Leonard L. Heimoff
Jason K. Moyer
Francis X. Dever
Lee R. Tompkins
Irving Weiner
Leonard Weitzman

SECTION DELEGATES

Thomas S. Bumbalo
Edwin I. Cleveland
Thomas J. Doyle
Henry Fleck
Constantine D. J. Generales
Donald W. Hall
Albert H. Harris
William E. Hermance
Frederic P. Herter
Norman B. Kanof
Robert Katz
Philip H. Landers
George E. Leone
Garra L. Lester
Frederick Lee Liebolt
Samuel H. Madell
Charles F. Nicol, Jr.
Arthur Q. Penta
James F. Phillips
Howard B. Rasi
William J. Staubitz
M. Theodore Tanenhaus
Victor J. Tofany
John R. Williams, Jr.

DELEGATES FROM COMPONENT COUNTY SOCIETIES

Albany (4)
Charles M. Landmesser
James A. Moore
John J. Phelan, Jr.
Francis A. Stephens

Allegany (1)
Irwin Felsen

Bronx (12)
Carl R. Ackerman
John P. Albanese
Marcelle T. Bernard
Alan L. Goldberg
Isaiah Gross
Charles M. Kapp
Frank LaGattuta
Tiffany Lawyer, Jr.
Francis J. Loperfido
Joseph C. Polifrone
Alvin D. Yasuna
Saul Zucker

Broome (3)
Sterling W. Boyd
John A. Kalb
John F. Spring

Cattaraugus (1)
Francis M. Bohan

Cayuga (1)
Frank T. Moran

Chautauqua (2)
Lewis Foster Kibler
Herbert A. Laughlin

Chemung (2)
R. Scott Howland
Henry B. Marshall

Chenango (1)
Thomas M. Flanagan

Clinton (1)
George I. Starr

Columbia (1)
Rosewell D. Shaw

Cortland (1)
William J. McAuliffe

Delaware (1)
Thomas E. Lavell, Jr.

Dutchess (3)
Richard D. H. Flahert
James K. Keeley
Frank C. Starpoli

Erie (9)
Guy S. Alfano
Carmelo S. Armenia

---

*Nominated from the floor.
† Withdrawn.

Virgel H. F. Boeck*
Martin J. Downey, Jr.
Kenneth H. Eckhert
Herbert E. Joyce
James R. Nunn
Charles E. Wiles
Walter T. Zimdahl

Essex (1)
George G. Hart

Franklin (1)
Alfred A. Hartmann

Fulton (1)
Armand J. D'Errico

Genesee (1)
Alfred L. George

Greene (1)
Edwin G. Mulbury

Herkimer (1)
Harold T. Golden

Jefferson (1)
Thomas P. Hamilton, Jr.

Kings (23)
Lawrence Ames
Joseph C. Amico
Norman S. Blackman
Matthew Brody
John J. Flynn
Joseph R. Fontanetta
Vincent J. Geraci
Alfred P. Ingegno
David Kershner
Vincent A. Lacovara
David R. Levine
George Liberman
Harry S. Lichtman
A. W. Martin Marino, Jr.
Martin Markowitz
Bentley D. Merrim
Hubert S. Pearlman
Louis Pellman
Ralph M. Schwartz
Bernard Seligman
Milton B. Spiegel
Stanley Stark
Leo J. Swirsky

Lewis (1)
Louis A. Avallone

Livingston (1)
John W. Stoll

Madison (1)
Theodore J. Prowda

Monroe (6)
William B. Forsyth
Gerald L. Glaser
Eli A. Leven
John H. Morton
Charles D. Sherman, Jr.
Robert C. Webster

Montgomery (1)
Alton J. Spencer

Nassau (12)
John A. Billows
Clement J. Boccalini
Jeff J. Coletti
Samuel Cytryn
Sears E. Edwards
Leo Fishel
Abraham W. Freireich
John P. Glaubitz
Robert P. Jessup
Joseph H. Kinnaman
Leslie I. Lukash†
John D. Mountain**

New York (25)
Seyton G. Bentham
Edgar P. Berry
Charles R. Blair
Edward A. Burkhardt
George D. Cannon
Irwin J. Cohen
George S. Craft
Gerald D. Dorman
Lawrence Essenson
John A. Finkbeiner
Keith O. Guthrie, Jr.
Robert E. Kaufman
Barbara F. Lipton
Albert S. Lyons
William F. Mitty, Jr.
James R. Nealon
Richard B. Nolan††
Stephen Nordlicht
Richard N. Pierson, Jr.
Oma H. Price
William B. Rawls
George M. Saypol
Mary H. Spalding
Clifford L. Spingarn
Meyer Texon

Niagara (2)
Glenn E. Jones
William C. Stein, Jr.

Oneida (3)
Clarke T. Case
Robert H. Cross
Robert B. Wallace

Onondaga (5)
Robert B. Bryant
Bruce E. Chamberlain
Charles A. Gwynn
John A. Root
Robert E. Westlake

Ontario (2)
Robert M. Price
Philip M. Standish

Orange (3)
William S. Montgomery
Harold Sobel
Orin A. Wahl

Orleans (1)
Edward A. Barrett

Oswego (1)
Marcus A. Wuerschmidt

Otsego (1)
Rodman D. Carter

Putnam (1)
Garrett W. Vink

Queens (16)
Alfred A. Angrist
Sol Axelrad
Lester J. Candela
Franz L. Ebstein
Murray Elkins
Harry H. Epstein
John L. Finnegan
Irving G. Frohman
Jacob Savin Garber
Arthur Gordon
Edith Gutmann
Norton M. Luger
Victor H. Raisman
Ralph E. Schlossman
Lester R. Tuchman
William F. F. Werner

Rensselaer (2)
John J. Noonan
Thomas D. Pemrick

Richmond (3)
Albert B. Accettola
William A. Schwarz
Joseph F. Shanaphy

Rockland (3)
Frank E. Ciancimino
Ralph J. Greenberg
Lionel Zemek

St. Lawrence (1)
Maurice J. Elder

Saratoga (1)
Hans Schein

Schenectady (3)
John L. Clowe
Milton F. Gipstein
Stephen J. Grey

Schoharie (1)
Ward L. Oliver

Schuyler (1)
Joseph Y. Roberts

Seneca (1)
David L. Koch

Steuben (2)
Thomas S. Cotton
Wayne C. Templer

Suffolk (7)
Daniel Friedman
John G. Hansen
James A. Holleran
Andrew W. Lawrence
Phillip I. Levitan
William C. Porter, Jr.
Milton Rosenberg

Sullivan (1)
John M. Stirna, Jr.

Tioga (1)
Keun H. Park

Tompkins (2)
Stephen W. Blatchly
George G. McCauley

Ulster (2)
Milton M. Grover, Jr.
Frederic W. Holcomb, Jr.

Warren (1)
Walter F. Harrison, Jr.

Washington (1)
John E. Glennon

Wayne (1)
James M. Flanagan

Westchester (8)
William P. Clark
Katharine L. Friedmann
Reid R. Heffner
Russell C. Johnson
Allison B. Landolt
Warren W. Leeds
Vincent J. Manzella
Robert A. Mayers

Wyoming (1)
Bruno J. Tryka

Yates (1)
William G. Roberts

Report of Tellers

. . . Speaker Way called on Vincent J. Manzella, M.D., chairman, to give the report of the tellers, as follows:

Trustee for five years:	
James M. Blake, M.D.	123
George Himler, M.D.	118
Delegates to the AMA	
John L. Clowe	237
Joseph J. Kaufman	233
Walter Scott Walls	231
Henry I. Fineberg	220
David Kershner	203
Abraham W. Freireich	186
Samuel Wagreich	173
Arthur H. Diedrick	172
John Edward Lowry	135
Milton Helpern	133

. . . These 10 were declared elected as delegates to the

*Alternate delegate serving for Charles D. Bauer, delegate.
†Alternate delegate serving for Perry R. Mandel, delegate.
**Alternate delegate serving for Ray S. Crampton, delegate.
†† Alternate delegate serving for John A. Lawler, delegate.

AMA, their two-year terms of office start on January 1, 1973 . . . ,

Carl Goldmark, Jr.	122
James A. Moore	90
Lynn R. Callin	77
Thomas S. Bumbalo	54
George Liberman	47
Edgar P. Berry	33
Walter F. Harrison, Jr.	30
Richard D. Eberle	11
Thomas M. Flanagan	3
Bruce E. Chamberlain	2
John P. Glaubitz*	2

. . . These eleven were declared elected alternate delegates to the AMA, their two-year terms of office start on January 1, 1973.

*Write in.

Closing Proceedings

Thanks to Committees and Staff

. . . Speaker Way thanked the convention committees and the members of the staff who had worked so hard at the convention as follows:

Henry I. Fineberg, M.D., executive vice-president; J. Richard Burns, J.D., assistant executive vice-president and annual meeting coordinator; Eugene S. Dombrowski, comptroller and assistant annual meeting coordinator for dinner-dance sales; George W. Forrest, Jr., assistant to the executive vice-president, Woman's Auxiliary, and dinner-dance coordinator; William Hammond, M.D., editor, ***New York State Journal of Medicine;*** Max Howard, M.D., director, Division of Medical Services; Norman S. Moore, M.D., director, Division of Scientific Activities; and Martin J. Tracey, J.D., director, Division of Legislation.

House of Delegates: Gretchen Wunsch, executive assistant; Mary Politano, coordinator; Samuel Pakula, stenotypist; *secretaries and workroom staff*—Eileen Cronnelly, Judith Epstein, Alice Wheeler, Catherine Renze, Dorothy Smith, Marion Lee, Elizabeth Hirsch, Sally B. Haas, Lillian Hagan, Catherine Farrell, Nancy Dorin, Despo Photenas, and Dorothy Hart, recorder. *Registration:* Mary Singer, coordinator; Beatrice Duckfield, Florence Bambek, Barbara Homenick, and Lynda Errico. *Production:* Charles Struzinski, coordinator; Theodore White and Jacques Charlier.

Press Room: Guy D. Beaumont, supervisor; Richard Klemfuss, Barton Hickman, Thomas Walsh, Coleman Fineberg, Harry Dexter, Gerald Sullivan, Sylvia Chin, Bess Kurzner, Eleanor Tralli.

General Registration: Robert Miller, coordinator; Jack O'Brien, assistant coordinator; and Evelyn DeMarco.

Dinner-Dance Sales: Catherine Farrell, Carol Tessitore, and Marie Harvey.

Scientific Program: Mollie Pesikoff, coordinator; Clementine Thompson, and Lila Gerber.

Technical Exhibits: Camille M. Cunningham, manager; Cathleen Thayer, Florence Rania, and Alice Cowley.

Journal and Directory Booths: Frances Casey, Florence Tracy, Christine Morgan, and Elizabeth Smith.

Physicians' Placement Bureau Booth: Evelyn Clark.

Convention Committee: Bernard J. Pisani, M.D., convention and scientific program chairman; Arthur H. Diedrick, M.D., dinner-dance chairman; Albert H. Douglas, M.D., scientific awards and scientific exhibits chairman; and Kenneth B. Olson, M.D., scientific motion pictures chairman.

Staff of the Americana: James R. Heimbaugh, Robert Kielt, Luke Baars, Frank Marino, and Edward Kane.

American Medical Assistants Association, New York State Society: The speaker expressed his thanks to members of AMAA, NYSS, who gave so generously of their time.

Thanks to the Speaker and Vice-Speaker

. . . The House gave a rising vote of thanks to Speaker Way and Vice-Speaker Wagreich for their just and excellent handling of the meeting . . .

Adjournment

. . . Speaker Way adjourned the House at 11:20 A.M. on Thursday, February 17, 1972, sine die . . .

Medical Society of the State of New York

Minutes of the
1972 House of Delegates

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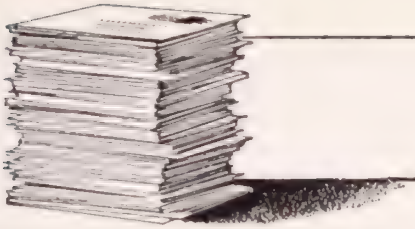

Letters to the Editor

Changing doctor-patient relationship

To the Editor: The changing moral structure of American society, the loss of family cohesiveness, the rise in cost of living, and the demands of our economy have been of marked importance in changing the relationship the physician has developed over many years with his patients. The legal profession and the public's awareness of malpractice and negligence laws have caused the physician to be defensive rather than share a problem with his patient and attempt to solve that problem.

Historically, the general practitioner lived and practiced in a community to which and for which he devoted his strength, his time, and his love. His total availability for problems of both a professional and general nature provided great satisfaction and fulfillment to the community despite his limited knowledge of many unusual problems. The generalist considered referring problem cases to specialists if he felt the need. Now, the patient frequently seeks treatment from a specialist as his primary physician and has lost the total single relationship with one physician. The patient is probably receiving better medical care and the same concerned attitude of the physician toward the patient that he did years ago.

However, since the patient does not have a single long-standing relationship with one physician, he looks on the physician as another entrepreneur with whom he comes in contact, who provides a service for a fee. Rather than a professional relationship of trust, respect, and confidence, more patients treat the relationship as a business arrangement with strict demands and, often, lack of understanding. Family and patients expect modern technology to provide immediate cure and restore full function after injury or other abnormal conditions.

Factors

What then are the factors that have led to the deterioration of the physician-patient relationship, and what do we foresee for the future of this important aspect of medicine and the American way of life?

The physician himself must share in the burden of this problem. He has been overworked, secondary to the shortage of physicians, and has been unable to provide completely some of the important social and psychologic assistance to the patient that is frequently needed. A person can only accept the unknown, often mystical treatment, if he has confidence and believes in the healer; this cannot be developed by the mere acceptance of a prescription.

Medical practice has deteriorated in some of the clinics where a personal physician is nonexistent and a continuum of physician-patient relationship does not exist. The physician who can develop a proper patient relationship can eliminate the mysticism that often causes confusion and doubt in the mind of the patient. The physician can then pursue the original premise of the art of medicine, treating a person rather than a disease entity.

There are multiple problems relating to developments in communication that have altered the physician-patient relationship. Although there has been an increase in sophistication of the American public in an attempt to understand disease and illness, it has become apparent that misinterpretations are prevalent. Although it is undesirable to maintain a total mystique of diagnosis and treatment, partial knowledge may lead to total lack of understanding and possible mistrust on the part of the patient. Too frequently, either the patient is reluctant to question the physician regarding this lack of understanding or the physician is not responsive to the difficulties encountered by the patient. This appears to be a cause of malpractice suits, which as in many of these legal problems are not specifically negligence actions nor actions of poor practice but rather are the results of illness or injury that are not amenable to absolute cure.

There are multiple factors that have led to a crisis in medical practice based on this malpractice dilemma: the deterioration of the physician-patient relationship and the changing attitude of the American public concerning legal action and recovery for damages, based on the defendant's being insured and thus not considered personally liable. Frequently, a person desires to gain rapid economic benefits with no consideration of the ethics involved or of the specific cause of injury and the validity of the occurrence of actual negligence. If the patient does not recover totally and is left with a scar, a limp, or has lost some function, he considers the cause to be an obvious lack of adequate treatment rather than the result of severe injury or illness.

As proponents of larger settlements, many in the legal profession who specialize in negligence work have lost sight of the ethical aspect of justice in the pursuit of economic benefits. Since attorneys control state and Federal legislative bodies, there has been little effort to change the concept of contingency fees. Thus, if a larger settlement is obtained, the attorney gains greater economic benefits.

Solutions

What then are some of the solutions that are available and should be developed to attempt to stop the deterioration of the physician-patient relationship? With regard to the problem of malpractice that is plaguing the medical profession today, it is certainly important that physicians be competent and that competence be maintained. The peer review committees stablished by local medical societies are of utmost value in this respect and should be maintained and strengthened. Continuing education programs provided by most of the specialty societies and medical colleges are valuable and should be an absolute requirement.

The legal profession must change its attitude toward this problem. A person who has been the victim of negligence must be able to obtain adequate remuneration as a result of injuries sustained. However, this must be accomplished reasonably and appropriately. Rather than a discourse of words and legal interpretations, justice would certainly prevail if a board consisting of members of the highest caliber from both the legal and medical professions would provide adequate reimbursement to those people who are deserving. Thus, most of the emotional trauma of a trial with the ensuing legal difficulties would be eliminated. With the threat of malpractice eliminated, except for cases in which true negligence had been performed, the physician could practice medicine without fearing legal entanglements. He would not hospitalize a patient to escape being cited for lack of appropriate care when he can obtain adequate laboratory studies in the hospital, and would avoid unnecessary consultations, if he were to practice without fear of being sued. With these fears set aside, the physician can then attempt to revert to the time when the physician was a healer with a close relationship to his patient and community. Although the practice of medicine has become more scientific, we must maintain the art of medicine. We must provide a marriage of human empathy and equanimity with technologic advances and scientific knowledge.

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Further studies on environmental pollution by disposable diapers

To the Editor: In a letter to the editor, I reported in the February 1, 1971, issue of the ***New York State Journal of Medicine*** that a study of 100 middle-class mothers revealed 82 planned to use disposable rather than nondisposable or cloth diapers for their infants.[1] These women used an average of five diapers daily, and over a one-year period this amounted to 149,650 diapers.

Our study also showed that the average garbage pail holds 100 diapers, so that over a one-year period, 1,360 garbage pails were needed to dispose of "paper" diapers. Also one man on an eight-hour shift with New York City's sanitation department handled about 500 pails.

It was concluded from our study of the New York State birth rate in 1968, which was 302,713, that if a comparable number of mothers at that time used disposable diapers, 18 sanitation men in New York State would spend their time daily only picking up pails containing an "expendable commodity."[2]

The purpose of our original study was to emphasize that man knowingly contaminates his own environment and to educate the public with the hope that air and environmental contamination generally could be reduced. In New York State where large portions of waste are burned, confusion still exists concerning the effects of inhalants on the lung, even though it is known that such waste is generally detrimental to people.[3] Mothers, therefore, are contributing to their own discomfort by continuing to use disposable diapers, since these are ultimately burned by sanitation departments which pick up such waste.

Results of new study

We have continued the study for an additional year. The results of our new study are quite discomforting. While we have kept in mind the lowered birth rates throughout the United States, as much as 15 per cent according to some reports, the increase in number of mothers who use disposable diapers is disconcerting.

We quizzed 100 new mothers on diaper usage for their newborn infants. A total of 92 women in the group used disposable diapers. The daily usage rate did not change; it remained at an average of five diapers. Thus, we now have 460 diapers daily being placed in garbage pails, in contrast to 410 diapers one year ago for a group of similar size. These additional 50 diapers a day placed in pails which hold, generally, 110 diapers have added one pail to the sanitation department's pick-up every other day and also added to the air pollution when such garbage is ultimately burned.

During this study, we decided to discuss this aspect of the problem with "new" mothers. Of the 100 mothers studied, 92 were, therefore, made aware of their contribution to environmental pollution.

The responses were interesting and are grouped as follows:

1. Twenty mothers shrugged their shoulders and refused to discuss the problem further.
2. Thirty stated they would continue to use disposable diapers.
3. Forty-two discussed the problem and stated they would consider not using disposable diapers if (1) all government institutions stopped using them, (2) sale of such diapers was discontinued, (3) pressure from advertising was stopped, and (4) reusable diaper services lowered their fees.

The members of the latter group cynically added that they did not expect any forceful effort to be made in any of the areas mentioned which would stop the use of disposable diapers.

Shortly after my first article appeared in the ***Journal,*** I received a letter from New York City's environmental protection administrator, Mr. Jerome Kretchmer,[4] in which he stated that hospitals in New York City dispose of 21 pounds of waste per patient per day, much of it disposable items!

Conclusions

One hundred middle-class mothers from February 1, 1971, to February 1, 1972, used more disposable diapers than in the previous year.

More garbage pails were used daily to rid communities of disposable diapers during 1971 to 1972 than in the previous year, thereby continually adding to the already heavy burdens of sanitation departments.

Even when made cognizant of their contributions to the pollution of our planet, mothers appeared to be indifferent to not using an expendable commodity, because of (1) government agencies use of them, (2) advertising pressure, and (3) confusion over costs in dollars.

I must emphasize again that mothers can help greatly to reduce air and environmental pollution by using nondisposable, washable, and reusable diapers.

I must add that, purely as an observer, it appears to me that man is bent on destroying himself. Like the lemmings in the Arctic which appear to have no control over their self-destruction by drowning, mothers in part add to their own destruction by using disposable items.

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The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
July 1–31	May 10
August 1–31	June 10
September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25
November 1–15, 1972	September 10, 1972
November 16–30, 1972	September 25, 1972
December 1–15, 1972	October 10, 1972
December 16–31, 1972	October 25, 1972

NEW YORK CITY AREA

June 15 and 22, 1972
11:00 a.m., Thursdays

Williamsburgh General Hospital
757 Bushwick Avenue
Brooklyn

Lecture Schedule

June 15
Pelvic Inflammation Disease
BERNARD SICURANZA, M.D.

June 22
Mortality Conference
SOL GLOTZER, M.D.

Moderator: WILLIAM LE STRANGE, M.D.

SATURDAY, JUNE 17

9:00 a.m.–10:30 a.m.

The Page and William Black Post-Graduate School of Medicine and the Division of Cardiothoracic Surgery of the Mount Sinai Medical Center
Fifth Avenue and 100th Street

The Lilienthal Memorial Lecture

PULMONARY INSUFFICIENCY: THE CONSERVATIVE RADICAL APPROACH

J. DONALD HILL, M.D.
The Institute of Medical Sciences
of Pacific Medical Center, San Francisco

NO FEE

June 17 / 24, 1972
9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine
The Mount Sinai Medical Center
Fifth Avenue and 100th Street

RHINOPLASTY AND OTOPLASTY

SIDNEY FEUERSTEIN, M.D.
Mount Sinai School of Medicine

FEE: $400

June 18 and 25, 1972
9:30 a.m.–12:00 noon, Sundays

Albert Einstein College of Medicine
1300 Morris Park Avenue
Bronx

Continuing Education Program

SURGERY

Write or call: MRS. FRIEDA FAGIN, Registrar, above address. Tel. (212) 430-2822

June 20 and 27, 1972
8:00 a.m., Tuesdays

Community Hospital of Brooklyn
2525 Kings Highway
Brooklyn

Newer Concepts in Medicine Lectures

June 20
Review Highlights of Previous Lectures
G. POLLACK, M.D.

June 27
Anemias—Primary and Secondary
M. HIRSCHHORN, M.D.

Moderator: GEORGE POLLACK, M.D.

TUESDAY, JUNE 20

9:00 a.m.

Queens Hospital Center Affiliation
Long Island Jewish-Hillside Medical Center
9th Floor Auditorium, Triboro Hospital
Parsons Boulevard and 82nd Street
Queens

Division of Pulmonary Medicine

1. **Massive Hemoptysis in TB Treated with Extra-Pleural Pneumothorax Therapy**
   W. PHILLIPS, M.D.
2. **Acute Hydrocarbon (Gasoline) Aspiration Pneumonia**
   D. COHEN, M.D.

WEDNESDAY, JUNE 21

Noon

Downstate Medical Center
4th Floor Pediatric Library
Room B4-462, State University Hospital
445 Lenox Road
Brooklyn

Research Pediatric Seminars

EFFECTIVENESS OF Hb, Hct and MCHC IN THE DETECTION OF IRON DEFICIENCY ANEMIA

SOLOMON V. RAJKUMAR, M.D.

4:00–5:30 p.m.
Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine
1625 St. Peters Avenue
Conference Room
Bronx

NATURAL HISTORY OF BILATERAL BUNDLE BRANCH BLOCK

NICHOLAS P. DePASQUALE, M.D.
Lenox Hill Hospital

NO FEE CREDIT: $1\frac{1}{2}$ Hours AAFP

June 26 / 29, 1972
9:00 a.m.–5:00 p.m., Monday–Thursday

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

Continuing Education Course

NEUROBIOLOGICAL ASPECTS OF MATURATION AND AGING

DR. DONALD H. FORD WITH INVITED LECTURERS

FEE: $20 CREDIT: 28 Elective hours AAFP

To register, please contact CHARLES M. PLOTZ, M.D., Dir., Continuing Education, above address.

TUESDAY, JUNE 27

9:00 a.m.

New York Infirmary
Toscanini Room
Stuyvesant Square East and 15th Street

MODERN MANAGEMENT AND TREATMENT OF ACUTE STATUS ASHTMATICUS

H. HAROLD GELFAND, M.D.
Roosevelt Hospital

FUTURE EVENTS

July 1, 1972 / for Six Months

Brooklyn Eye and Ear Hospital
29 Greene Avenue
Brooklyn

CLINICAL FELLOWSHIP IN SURGERY OF THE CORNEA (Offered to applicants who have completed at least three years of residency training in ophthalmology)

For further information, please contact: A. BENEDICT RIZZUTI, M.D., Dir., of the Corneal Service, above address.

September 5 / 15, 1972
9:00 a.m.–6:00 p.m., Tuesday thru Friday

The Page and William Black Post-Graduate School of Medicine and the Department of Ophthalmology of the Mount Sinai Medical Center
Fifth Avenue at 100th Street

TEMPORAL BONE SURGERY

HARRY ROSENWASSER and SIMON C. PARISIER, M.D.'s
Mount Sinai School of Medicine

FEE: $600

(Course Repeated Monday, February 19, 1973 thru Saturday, March 2, 1973.

September 30 / November 18, 1972
10:00 a.m.–5:00 p.m., seven Saturdays

Columbia University P & S
Department of Psychiatry
630 West 168th Street

MEDICAL HYPNOSIS (BASIC)

HERBERT SPIEGEL, M.D., with A. A. BRIDGER, M.D.

FEE: $175

For information, please write to:
MELVIN D. YAHR, M.D., Associate Dean, above address

October 23 / 27, 1972

The Memorial Hospital for Cancer and Allied Diseases and Sloan-Kettering Institute for Cancer Research
444 East 68th Street

One-Week Course

CANCER CHEMOTHERAPY

Enrollment is limited, and applications should be submitted as soon as possible to IRWIN H. KRAKOFF, M.D., at the above address.

FEE: $150

ALBANY AREA FUTURE EVENT

October 30 and 31, 1972

The New York State Department of Health
Birth Defects Institute

HUMAN TERATOGENESIS

DWIGHT T. JANERICH, Director
Epidemiology and Population Genetics
Chairman
Birth Defects Institute
Symposium III

BUFFALO AREA

June 15 / 29, 1972
7:30–9:30 p.m., Thursdays

Heart Association of Western New York and Continuing Medical Education
State University of New York at Buffalo
Sisters of Charity Hospital—Palmer Hall

CARDIAC CLINICS AND PHYSICAL EXAMINATION OF THE CARDIAC PATIENT

June 15
Auscultation—Diastolic A-V Valve Murmurs
Aortic Regurgitation Murmur and
Austin Flint Murmur
Pulmonary Regurgitation Murmur with

High Pressure in Pulmonary Artery (Graham Steell)
With Normal Pressure in Pulmonary Artery
Case Presentations

June 22
Auscultation
Pericardial Friction Rubs and Knocks
Case Presentations

June 29
Auscultation
Test Tapes and Exercises
Case Presentations

FEE: $25 for full course

WHAT GOES ON will present workshops in chronological order throughout the course.

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE REGIONAL MEDICAL PROGRAM FOR WESTERN NEW YORK

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

BUFFALO AREA FUTURE EVENT

August 1972

The Department of Pediatrics, School of Medicine
State University of New York at Buffalo
2211 Main Street

PROGRAM IN SCHOOL HEALTH

1. **Manifestations of Disease Identifiable by School Health Personnel**
2. **Advances in Prophylaxis and Therapy of These Diseases**
3. **The Learning Process**
4. **Behavior**

FEE: $60

For time and program, please contact Continuing Medical Education, above address.

LAKE GEORGE AREA

July 5 / 10, 1972

International College of Surgeons
United States Section
Sagamore Hotel
Bolton Landing, Lake George

SYMPOSIUM IN GENERAL SURGERY, OB.GYN., AND ALL SURGICAL SPECIALITIES INCLUDING RADIOLOGY, PATHOLOGY AND ANESTHESIOLOGY

Reservations should be made directly to Mr. James Feyco, General Manager, above address.

RENSSELAER COUNTY

THURSDAY, JUNE 15
11:00 a.m.–1:30 p.m. (Luncheon Meeting)

Rensselaer County Academy of Medicine
St. Mary's Hospital
1st So. Conference Room
Troy

Medical Grand Rounds

GASTROENTEROLOGY

KURT J. ISSELBACHER, M.D.
Massachusetts General Hospital

FUTURE EVENT

THURSDAY, SEPTEMBER 14
11:30 a.m.

Rensselaer County Academy of Medicine

UROLOGICAL PROBLEMS IN INFANTS AND SMALL CHILDREN

W. HARDY HENDREN, M.D.
Massachusetts General Hospital

SUFFOLK COUNTY

June 1–8–15, 1972
9:00–11:00 p.m., Thursdays

Suffolk County Chapter of AAFP
Southside Hospital
Bay Shore

COURSE ON RESPIRATORY DISEASES

ROBERT SCHICK and WALTER DEL GAUDIO, M.D.'s

Program will include the following:

1. **Scope and Indications for Inhalation Therapy**
2. **Application and Interpretation of Respiratory Function Tests and Blood Gases**
3. **Management of Emphysema and Chronic Obstructive Lung Disease**
4. **Acute Obstruction Emergencies**

Fee: $5

June 6 / 27, 1972
9:00–11:00 a.m., Tuesdays

Suffolk County Chapter of AAFP
Suffolk Academy of Medicine
850 Veterans Memorial Highway
Hauppauge

CORONARY CARE REVIEW COURSE

Panelists: KURT ESSER, DAVID FARR, HARVEY LERNER, STUART ROSNER, LEONARD STEIN, M.D.'s

FEE: $10

Category credits pending on both of above courses

SYRACUSE AREA

June 16 and 17, 1972
8:30 a.m., Registration

Coronary Heart Disease Committee
New York State Heart Assembly
Syracuse University
Gifford Auditorium, H.B. Crouse Hall

THE PATIENT WITH A MYOCARDIAL INFARCTION AND PRE AND POST HOSPITAL PHASE OF MYOCARDIAL INFARCTION

Write for Program, New York State Heart Assembly, 3 West 29th Street, New York, N.Y. 10001.

OTHER STATES

MASSACHUSETTS

June 19 / 30, 1972

Massachusetts Institute of Technology
Cambridge, Massachusetts

Two-week Summer Course in

DESIGN AND ANALYSIS OF EXPERIMENTS IN THE PHYSICAL, MEDICAL, AND INDUSTRIAL SCIENCES

Conducted by Professors
HAROLD FREEMAN and PAUL BERGER

Write: Director of the Summer Session, Room F19-356, M.I.T., Cambridge, Mass. 02139.

WASHINGTON, D.C.

August 1 / 3, 1972

The U.S. Civil Service Commission
Washington, D.C.

Computers in Medicine

SEMINAR ON ADP IN MEDICINE FOR ADMINISTRATIVE PERSONNEL

(Seminar on ADP for Clinical Personnel is scheduled for January 24 / 26, 1973)

Specific details about either of these seminars may be obtained from the ADP Management Training Center, U.S. Civil Service Commission, Washington, D.C. 20415. The telephone is (202) 632-5650.

TORONTO, CANADA

August 28 / 30, 1972

Panamerican Conference on Medical Education
Toronto, Canada

EDUCATIONAL RESEARCH FOR DECISION-MAKING

Write: Marna Robertson, Conference Secretariat, Medical Sciences Building, Room 6275, University of Toronto, Toronto 5. Tel. (416) 928-4896.

PHYSICIANS' PLACEMENT

NEW YORK CITY, N.Y. Medium size hospital needs a Board Certified Anesthesiologist to join 4 others on a fee for service basis.

CONTACT: ANDREW D. KERR, JR., M.D., 55 East End Avenue, New York, N.Y. 10028.

CORNING, N.Y., Steuben County. G.P. and Internist.

CONTACT: Professional Development Committee, Corning Hospital Medical Staff, Corning, N.Y. 14830. Tel. (607) XF 6-4611.

CROGHAN, N.Y., Lewis County. G.P.

CONTACT: MR. BERNARD BERGMANN, Village of Croghan, N.Y. 13327.

CUBA, N.Y., Allegany County, needs a G.P. and Specialists in Ob/Gyn and Internal Medicine.

CONTACT: MR. GERALD B. COLE, Adm., Cuba Memorial Hospital, Cuba, N.Y. 14727. Tel. (716) 968-2000.

ELMONT, N.Y., Nassau County. Solo Pediatrician for very active diversified practice. Good income guaranteed. Salary first year, leading to early partnership.

CONTACT: ALBERT SHERWYN, M.D., 2266 Dutch Broadway, Elmont, N.Y. 11003. Tel. (516) PR 5-0493.

FULTON, N.Y., Oswego County. G.P.

CONTACT: Administrator, Lee Memorial Hospital, Fulton, N.Y. 13069.

GENESEO, N.Y., Livingston County. Internist and/or Pediatrician to help form a group practice.

CONTACT: RALPH C. PARKER, M.D., University of Rochester Medical Center, 260 Crittenden Blvd., Rochester, N.Y. 14620. Tel. (716) 275-4540.

GREENE, N.Y., Chenango County. G.P. for Clinic.

CONTACT: JAMES GILROY, M.D., N. Chenango Street, Greene, N.Y. 13778. Tel. (607) 656-4115.

HERKIMER, N.Y., Herkimer County. Two G.P.'s and a Specialist in Ob/Gyn.

CONTACT: MR. JOHN SYMONS, Adm., Herkimer Memorial Hospital, 690 West German Street, Herkimer, N.Y. 13350. Tel. (315) 866-3330.

HIGHLAND FALLS, N.Y., Orange County. Family physician needed.

CONTACT: A. H. MARGOLIS, M.D., 22 Wyandotte Avenue, Highland Falls, N.Y. 10928. Tel. (914) 446-4066.

HILTON, N.Y., Monroe County, needs Family physicians.

CONTACT: ROBERT BLODGETT, M.D., Village of Hilton, N.Y. 14468. Tel. (716) 392-4114.

HOLLAND PATENT, N.Y., Oneida County. G.P.

CONTACT: MR. RENO A. B. VENTRE, Chm., Holland Patent Physicians Committee, P.O. Box 177, Holland Patent, N.Y. 13354. Tel. (315) 865-4233.

HUDSON, N.Y., Columbia County, needs a Pediatrician for Community and Hospital.

CONTACT: STANLEY BARDWELL, M.D., 848 Columbia Street, Hudson, N.Y. 12534. Tel. (518) 828-9721.

ITHACA, N.Y., Tompkins County. Internist needed. Immediate hospital privileges.

CONTACT: C. L. SPRINKLE, M.D., 304 N. Geneva Street, Ithaca, N.Y. 14850. Tel. (607) AR 2-1360.

LITTLE FALLS, N.Y., Herkimer County. Specialists in Anesthesiology, G.P. and Pediatrics.

CONTACT: MR. RICHARD S. QUINLAN, Little Falls, N.Y. 13365. Tel. (315) 823-1000.

MAINE, N.Y., Broome County. G.P. partnership.

CONTACT: MORRIS EBER, M.D., 2 Church Street, Maine, N.Y. 13802. Tel. (607) 862-3251.

MARGARETVILLE, N.Y., Delaware County. Anesthesiologist interested in G.P. or P.T. Emergency Room Service.

CONTACT: MR. KOIT LILLEP, Adm., Margaretville Hospital, Margaretville, N.Y. 12455.

MASSENA, N.Y., St. Lawrence County. G.P., Internist and Pediatrician.

CONTACT: JOHN CLOUGH, M.D., 176 Maple Street, Massena, N.Y. 13662. Tel. (315) 769-6227. (call collect)

MEDICO (A service of CARE) needs two G.P.'s for assignment in Uganda for a period of 2 years commencing June 1, 1972.

CONTACT: LEONARD J. COPPOLD, Dir., Contact Personnel, MEDICO, 660 First Avenue, New York, N.Y. 10016. Tel. (212) 683-3110.

MEDINA, N.Y., Orleans County. Medical Director, Internists, Pediatricians, Family Medicine Specialists, and G.P. needed for developing group practice at community hospital site. Newly expanded 116 bed hospital servicing 37,000. N.Y. State license required.

CONTACT: JOHN HAMILTON, M.D., Medina Memorial Hospital, 500 Ohio Street, Medina, N.Y. 14103. Tel. (716) 798-2000.

Newark, N. Y., Wayne County, needs an Ob/Gyn Specialist, Internist and Family Medicine. Major expansion program will increase Service Areas and bed capacity to accomodate 234 patients.

CONTACT: MRS. SOPHIE P. ZIEGLER, Adm., Newark-Wayne Community Hospital, Inc. Driving Park Avenue, Newark, N. Y. 14513. Tel. (315) 331-2011.

EVENT RECEIVED AFTER DEADLINE DATE

BUFFALO AREA

June 23 and 24, 1972
8:30 a.m. Registration

Deaconess Hospital of Buffalo
Department of Gynecology and Obstetrics
1001 Humboldt Parkway

A SYMPOSIUM ON FETAL MONITORING

FEE: $35

Contact the Department of Gynecology and Obstetrics, at the above address.

Today you have your own.

If you're around 40 or 45, you've probably had quite a bit of clinical experience vith Orinase.

Maybe as much as 14 years.

And that means you know quite a it about it.

On the one hand, you know that diet nd weight control are the initial and essential oundations for the management of adult-nset, non-ketotic diabetes. When these neasures prove satisfactory, no additional herapy is indicated. On the other hand, you now that if these measures fail the addition of Orinase to the regimen can often help lower blood sugar. Orinase lowers blood sugar as effectively today as it did when you first prescribed it.

You also know the importance of close monitoring of the patient. Although uncommon, severe hypoglycemia may occur if the dosage is not tailored to suit his requirements.

In short, Orinase is a drug you're familiar with, and probably have confidence in.

And that may be the best recommendation Orinase can have.

Orinase®

0.5 g. tablets

(tolbutamide, Upjohn)

cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

Although usually not serious, gastrointestinal disturbances (nausea, epigastric fullness, and heartburn) and headache appear to be dose related and frequently disappear with reduction of dose or administration with meals. Allergic skin reactions (pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions) are transient, usually not serious, and frequently disappear with continued administration. Orinase should be discontinued if skin reactions persist. Recent reports indicate that long-term use of Orinase has no appreciable effect on body weight.

Orinase appears to be remarkably free from gross clinical toxicity: crystalluria or other renal abnormalities have not been observed; incidence of liver dysfunction is remarkably low and jaundice has been rare and cleared readily on discontinuation of drug (carcinoma of the pancreas or other biliary obstruction should be ruled out in persistent jaundice); leukopenia; agranulocytosis; thrombocytopenia; hemolytic anemia; aplastic anemia; pancytopenia; and hepatic porphyria and porphyria cutanea tarda have been reported.

Supplied: *0.5 g. Tablets*—bottles of 50, 200, 500, and 1,000, and cartons of 100 in foil strips.

For additional product information, see your Upjohn representative or consult the package insert.

The Upjohn Company, Kalamazoo, Michigan 49001

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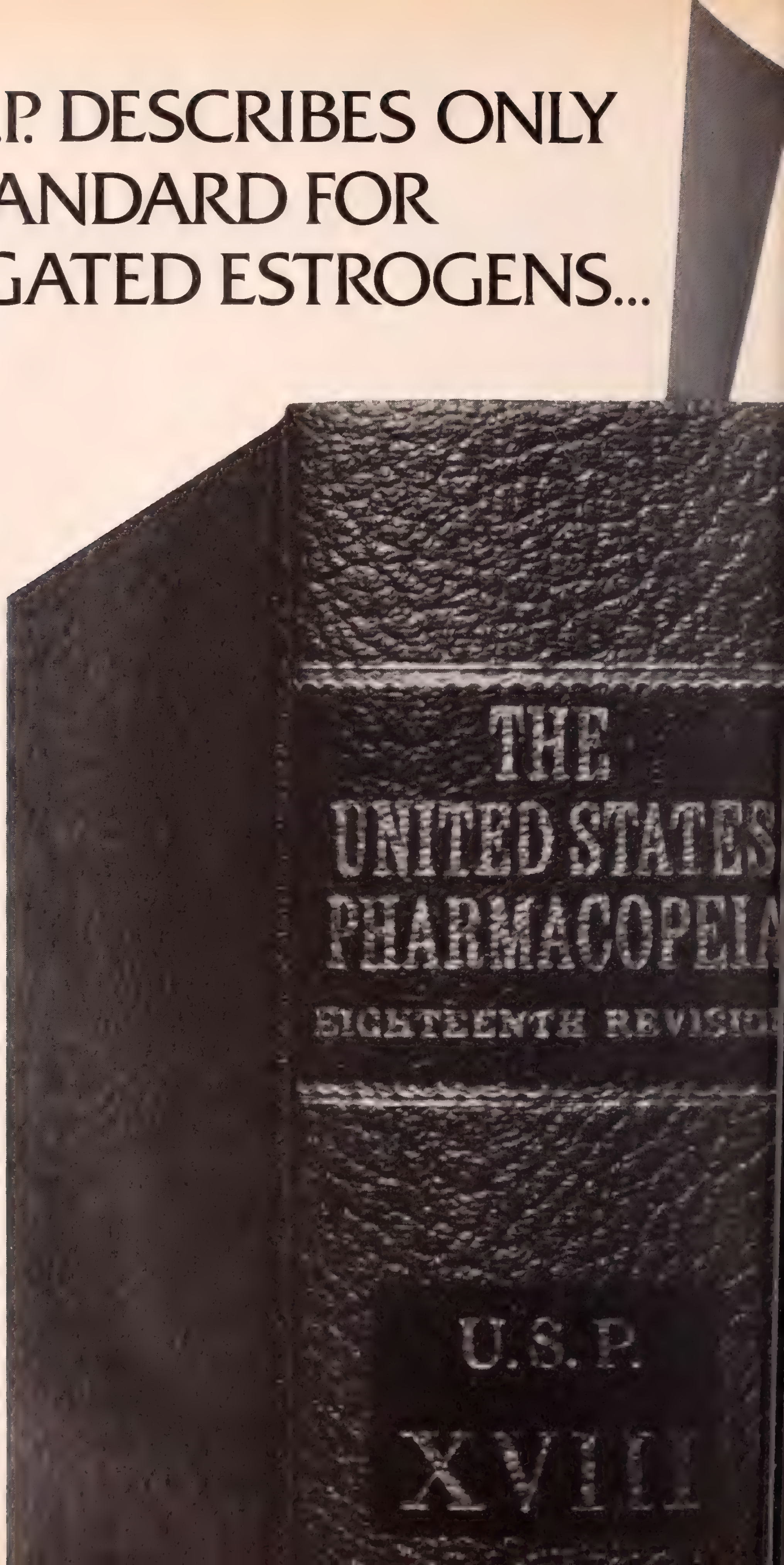
THE U.S.P. DESCRIBES ONLY ONE STANDARD FOR CONJUGATED ESTROGENS...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UNITED STATES
PHARMACOPEIA
EIGHTEENTH REVISION
U.S.P.
XVIII

...THE PREMARIN® STANDARD
(CONJUGATED ESTROGENS TABLETS, U.S.P.)

In the latest edition of the United States Pharmacopeia—*an "official compendium" of drug potency, quality, and purity*—there is now a clear distinction made between conjugated estrogens and other estrogens. And of the leading estrogen preparations available today, PREMARIN is the only one whose composition meets all of the U.S.P. specifications for conjugated estrogens.

We're of course gratified that the United States Pharmacopeia has included conjugated estrogens in the U.S.P. XVIII, and that PREMARIN meets the U.S.P. standard for conjugated estrogens. But, above and beyond meeting all of the U.S.P. specifications, PREMARIN continues to be manufactured with natural estrogens exclusively and contains no synthetic supplement.

For more than 28 years it has been manufactured under the strictest quality control to assure consistency in product potency, activity and stability. For more than 28 years it has been the research standard in its field. For more than 28 years it has been the most widely prescribed agent of its kind.

PREMARIN. Assurance of quality for you and your patients.

BRIEF SUMMARY
(For full prescribing information, see package circular.)
PREMARIN® (Conjugated Estrogens Tablets, U.S.P.)

Indications: PREMARIN provides specific replacement therapy in the management of estrogen deficiency states, notably in the menopause and postmenopause.

Precautions: *In the female:* To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.

Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

Estrogen Deficient Atrophic Vaginitis, Kraurosis Vulvae, and Pruritus Vulvae—1.25 mg. to 3.75 mg. daily, or more, cyclically—depending on the tissue response of the individual patient.

How Supplied: PREMARIN (Conjugated Estrogens Tablets, U.S.P.). No. 865—Each *purple* tablet contains 2.5 mg. No. 866—Each *yellow* tablet contains 1.25 mg. No. 867—Each *red* tablet contains 0.625 mg. No. 868—Each *green* tablet contains 0.3 mg.

Bottles of 100 and 1,000. The 1.25 mg. potency also available in unit dose package of 100.

AYERST LABORATORIES
New York, N.Y. 10017
Ayerst.
7149

PREMARIN® (Conjugated Estrogens Tablets, U.S.P.) continues as the standard for conjugated estrogen therapy

New York State Journal of Medicine

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Prompt relief of pain is a lot of what the practice of medicine is all about... East or West.

In much of the Far East, the analgesic efficacy of Empirin® Compound with Codeine would probably be measured against acupuncture, an ancient and traditional therapeutic system.

In America, codeine sets such a high standard for oral analgesia, that it has become a criterion in terms of which other major oral analgesics are most often measured.

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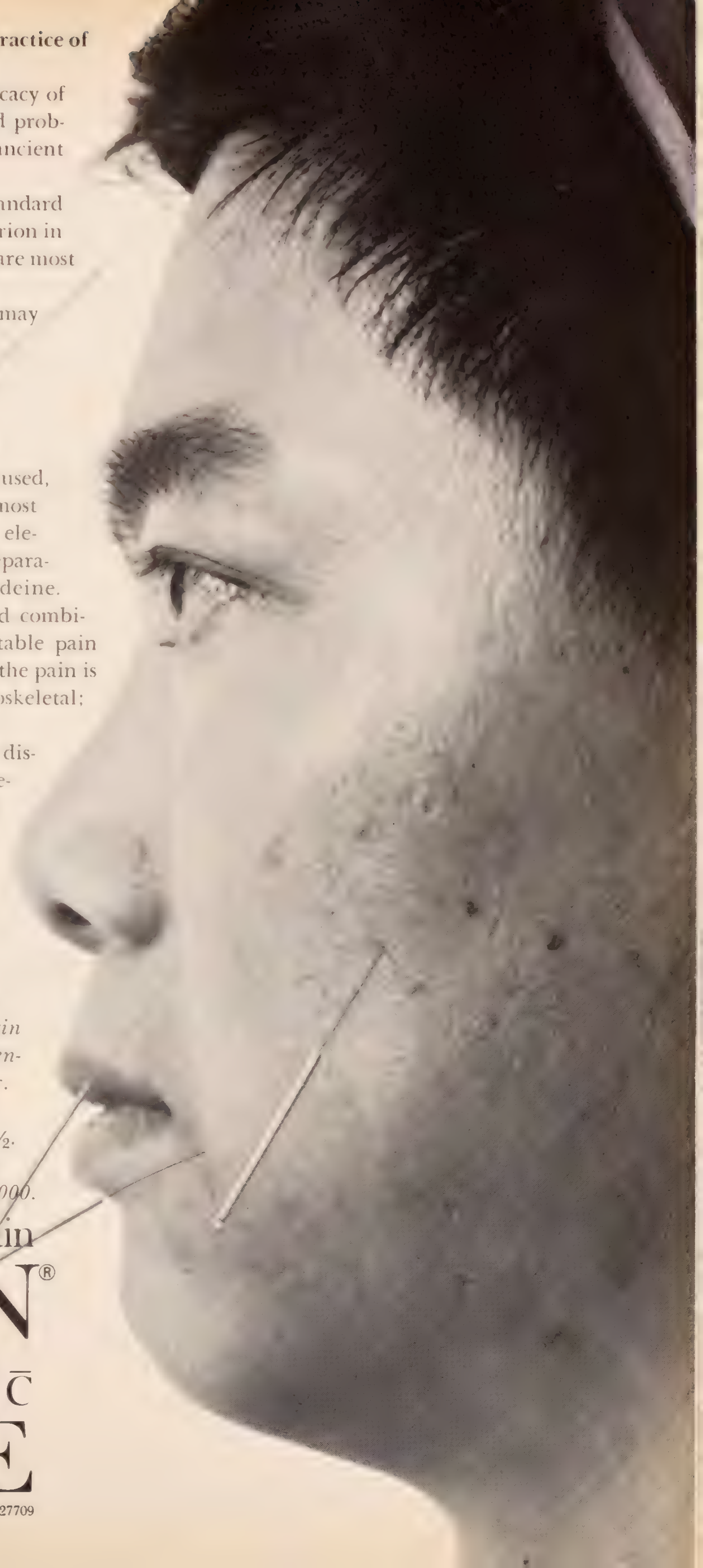

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Composition: VASODĪLAN tablets, isoxsuprine HCl, 10 mg. and 20 mg. **Indications:** In cerebral vascular disorders for relief of symptoms due to vascular insufficiency associated with various conditions such as arteriosclerosis and hypertension. In peripheral vascular disorders for relief of symptoms such as intermittent claudication, coldness, numbness, pain and cramping of the extremities—in the management of arteriosclerosis obliterans, diabetic vascular diseases, thromboangiitis obliterans (Buerger's disease), Raynaud's disease, postphlebitic conditions, acroparesthesia, frostbite syndrome and ulcers of the extremities (arteriosclerotic, diabetic, thrombotic). **Dosage and Administration:** In peripheral and cerebral vascular disorders—10 to 20 mg. three or four times daily. **Contraindications and Cautions:** There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding. **Adverse Reactions:** On rare occasions, oral administration of the drug has been associated in time with the occurrence of severe rash When rash appears, the drug should be discontinued. Occasional overdosage effects such as transient palpitation or dizziness are usually controlled by reducing the dose. **Supplied:** Tablets, 10 mg.—bottles of 100, 1000, 5000 and Unit Dose; 20 mg.—bottles of 100, 500 and Unit Dose. **References:** (1) Clarkson, I. S., and LePere, D. M.: Angiology *11*:190-192 (June) 1960. (2) Horton, G. E., and Johnson, P. C., Jr.: Angiology *15*:70-74 (Feb.) 1964. (3) Dhrymiotis, A. D., and Whittier, J. R.: Curr. Ther. Res. *4*:124-128 (April) 1962. (4) Whittier, J. R.: Angiology *15*:82-87 (Feb.) 1964.

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140/90 is normal blood pressure...or is it?

An extensive study based on nearly 4 million life insurance policies suggests that a blood pressure reading of 140/90 requires close medical supervision.

Study Findings. Twelve years ago the Society of Actuaries reported on an extensive study based on the lives and deaths represented by almost 4 million life insurance policies. From this vast survey—"The Build and Blood Pressure Study"[1]—insurance experts concluded that:

- Blood pressure above 140/90 is accompanied by increased morbidity and requires close medical attention.
- Even small increments in either systolic or diastolic blood pressure progressively and steeply shorten life expectancy.

Other Studies. Studies conducted with large numbers of patients since that time have echoed the above findings. Two studies published in 1970—the VA Cooperative Study Group on "Effects of Treatment on Morbidity in Hypertension"[2] and the "Framingham Study"[3]—suggest that treatment of even mild hypertension may, over time, offer significant benefits to the patient.

Another Point of View. Although a growing body of studies suggests that treatment of mild hypertension is warranted, medical opinion is not unanimous. Some clinicians recommend that drug treatment for mild hypertension be reserved for patients with additional risk factors such as smoking, high cholesterol levels, heart or kidney involvement, or a family history of vascular disease. Dr. Walter M. Kirkendall stated this position in his recent paper "What's With Hypertension These Days?"[4] Discussing the management of hypertension in patients with a sustained diastolic pressure up to 100 mm Hg, he said: "Generally, I do not recommend antihypertensive therapy unless patient's blood pressure approaches the upper limit for the group and a number of adverse factors exist, such as male sex, family history of vascular disease, youth, evidence of heart or kidney involvement."

The Build
and
Blood Pressure
Study

Drug Therapy for Hypertension. Although opinion varies on when to start drug therapy for mild hypertension, many physicians agree that treatment should start with a thiazide diuretic such as HydroDIURIL. For the adult patient, the usual starting dosage is 50 mg b.i.d. Dosage adjustments are recommended as the patient responds to treatment. The patient whose therapy begins with HydroDIURIL frequently can continue to benefit from it, because HydroDIURIL usually maintains its antihypertensive effect even when therapy is prolonged.

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Therapy to Start With

For a brief summary of prescribing information, please see next page.

---

1. Society of Actuaries, *The Build and Blood Pressure Study*, 1959.
2. Veterans Administration Cooperative Study Group on Antihypertensive Agents, "Effects of Treatment on Morbidity in Hypertension," JAMA *213*:1143-1152, Aug. 17, 1970.
3. Kannel, William B., *et al.*: "Epidemiologic Assessment of the Role of Blood Pressure in Stroke—The Framingham Study," JAMA *214*:301-310, Oct. 12, 1970.
4. Kirkendall, Walter M.: "What's With Hypertension These Days?" Consultant, Jan. 1971.

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Drug Therapy for Hypertension. Although opinion varies on when to start drug therapy for mild hypertension, many physicians agree that treatment should start with a thiazide diuretic such as HydroDIURIL. For the adult patient, the usual starting dosage is 50 mg b.i.d. Dosage adjustments are recommended as the patient responds to treatment. The patient whose therapy begins with HydroDIURIL frequently can continue to benefit from it, because HydroDIURIL usually maintains its antihypertensive effect even when therapy is prolonged.

CONTRAINDICATIONS: Anuria; increasing azotemia and oliguria during treatment of severe progressive renal disease. Known sensitivity to this compound. Nursing mothers; if use of drug is deemed essential, patient should stop nursing.

WARNINGS: May precipitate or increase azotemia. Use special caution in impaired renal function to avoid cumulative or toxic effects. Minor alterations of fluid and electrolyte balance may precipitate coma in hepatic cirrhosis.

When used with other antihypertensive drugs, careful observation for changes in blood pressure must be made, especially during initial therapy. Dosage of other antihypertensive agents, especially ganglion blockers, must be reduced by at least 50% because HydroDIURIL potentiates their action.

Stenosis and ulceration of the small bowel causing obstruction, hemorrhage, and perforation have been reported with the use of enteric-coated potassium tablets, either alone or with nonenteric-coated thiazides. Surgery was frequently required, and deaths have occurred. Such formulations should be used only when indicated and when dietary supplementation is impractical. Discontinue immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occurs.

Thiazides cross placenta and appear in cord blood. In women of childbearing age, potential benefits must be weighed against possible hazards to fetus, such as fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

The possibility of sensitivity reactions should be considered in patients with a history of allergy or bronchial asthma. The possibility of exacerbation or activation of systemic lupus erythematosus has been reported for sulfonamide derivatives, including thiazides.

PRECAUTIONS: Check for signs of fluid and electrolyte imbalance, particularly if vomiting is excessive or patient is receiving parenteral fluids. Warning signs, irrespective of cause, are dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances. Hypokalemia may develop (especially with brisk diuresis) in severe cirrhosis; with concomitant steroid or ACTH therapy; or with inadequate electrolyte intake. Digitalis therapy may exaggerate metabolic effects of hypokalemia, especially with reference to myocardial activity. Hypokalemia may be avoided or treated by use of potassium chloride or giving foods with a high potassium content. Similarly, any chloride deficit may be corrected by use of ammonium chloride (except in patients with hepatic disease) and largely prevented by a near normal salt intake. Hypochloremic alkalosis occurs infrequently and is rarely severe. In severely edematous patients with congestive failure or renal disease, a low salt syndrome may occur if dietary salt is unduly restricted, especially during hot weather.

Thiazides may increase responsiveness to tubocurarine. The antihypertensive effect of the drug may be enhanced in the postsympathectomy patient. Arterial responsiveness to norepinephrine is decreased, necessitating care in surgical patients. Discontinue drug 48 hours before elective surgery. Orthostatic hypotension may occur and may be potentiated by alcohol, barbiturates, or narcotics.

Pathological changes in the parathyroid glands with hypercalcemia and hypophosphatemia have been seen in a few patients on prolonged thiazide therapy. The effect of discontinuing thiazide therapy on serum calcium and phosphorus levels may be helpful in assessing the need for parathyroid surgery in such patients. Parathyroidectomy has elicited subjective clinical improvement in most patients, but has no effect on hypertension. Thiazide therapy may be resumed after surgery.

Use cautiously in hyperuricemic or gouty patients; gout may be precipitated. May affect insulin requirements in diabetics; may induce hyperglycemia and glycosuria in latent diabetics.

ADVERSE REACTIONS: Rare reactions include thrombocytopenia, leukopenia, agranulocytosis, aplastic anemia, cholestasis, and pericholangiolitic hepatitis. Nausea, vomiting, diarrhea, dizziness, vertigo, paresthesias, transient blurred vision, sialadenitis, purpura, rash, urticaria, photosensitivity, or other hypersensitivity reactions may occur. Cutaneous vasculitis precipitated by thiazide diuretics has been reported in elderly patients on repeated and continuing exposure to several drugs. Scattered reports have linked thiazides to pancreatitis, xanthopsia, neonatal thrombocytopenia, and neonatal jaundice. When adverse reactions are moderate or severe, the dosage of thiazides should be reduced or therapy withdrawn.

For more detailed information, consult your MSD Representative or see the Direction Circular. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486

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Letters to the Editor

Hospitalization in acute addictive states

To the Editor: Charles E. Cherubin, M.D., in his concise and knowledgeable article, "Acute Addictive States," in the October 15, 1971, issue of the ***New York State Journal of Medicine,*** outlined some of the problems the emergency room physician may encounter in this particular area.

I would like to comment on two points. One is the fact that the patient with acute opiate poisoning, more specifically heroin, should not be discharged "after several hours" following his apparent recovery. I believe that he should be observed for twenty-four hours. The patient who has recovered from acute methadone poisoning should remain under observation for forty-eight hours as evidenced by the rash of untimely deaths of several relatives of patients on methadone maintenance which occurred several years ago and was amply reported by the press.

Concerning barbiturate poisoning, one has to keep in mind that as the patient is coming out of coma caused by an overdose, he may have convulsions which are part of an acute withdrawal syndrome which then necessitates a judicious reintoxication and a subsequent slow withdrawal process in the hospital. In such a situation, an acute overdose may mask a chronic addiction.

PERCY MASON, M.D.
37 East 67th Street
New York, New York 10021

Dextrothyroxine

To the Editor: Dextrothyroxine was put into clinical use during the past decade as a cholesterol-lowering agent with the promise that it avoided the side effects of nervousness, sweating, and palpitation which limited the utility of the natural thyroid hormone, levothyroxine, as an antiatherogenic agent. A plethora of clinical reports seem to contradict this promise.

Adverse reactions similar to those of ordinary thyroid medication occur during dextrothyroxine therapy with considerable frequency. It has been postulated by several authors that the unnatural isomer (*a*) has a common metabolic pathway with the levo- form (several of which, including thyropyruvic acid which is an intermediary of both thyroxines,[1] have thyroidal effects by metabolic tests), and (*b*) may indeed be converted in the body to levothyroxine.

Since the only definitive report of occurrence (*a*) was made by Roche and Michel[1] many years ago, we have repeated and confirmed their work in animals. The details of these experiments will be given elsewhere. What is of interest to the clinician is that thyropyruvic acid has been found to form in liver brei incubated with either dextro- or levothyroxine, and that rats to which either of these isomers are given subcutaneously excrete the pyruvic acid intermediary in both bile and urine. Thus, there is strong presumption that thyropyruvic acid is systemically extant after dextrothyroxine or levothyroxine administration.

The thyroxines are amino acids; we made several unsuccessful attempts to induce conversion by purified enzymes. During the course of these studies an article by workers at Albert Einstein College of Medicine was published.[2] A unique enzyme, 3,5 dinitrotyrosine aminotransferase was isolated from the liver. It converts the thyroxines to thyropyruvate. Hence, the chain of evidence for possibility (*a*) has been completed.

Insofar as possibility (*b*) is concerned, conversion of unnatural to natural thyroxine seems to have been connoted by clinical observation. Current methods for direct measurement of levothyroxine levels in blood depend on "titrating" the unoccupied binding site on plasma protein. Since such sites are highly specific and an unnatural amino acid like dextrothyroxine would not affix to them, we have no other explanation for the rise in plasma thyroxine level after dextro- administration than that the latter is converted in vivo to one of the normal thyroid elaborates, levothyroxine.

Possibility (*b*) is, in fact, almost a certain biochemical consequence of (*a*). The conversion of thyropyruvic acid, whose formation we can affirm after dextrothyroxine, to levothyroxine is a simple transaminase reaction which likely can be executed by the natural level of serum glutamic pyruvic transaminase. We suggest to physicians that there may be aberrations in dextrothyroxine performance in persons with elevated serum glutamic pyruvic transaminase.

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New York, New York 10003

ROBERT D. BARNARD, M.D.
95 Salem Hill Road
Lakewood, New Jersey 08701

References

1. Roche, J., and Michel, R.: Nature and metabolism of thyroid hormones, Recent Progr. Horm. Res. **12:** 1 (1956).
2. Hechtman, P., Schimmel, S. D., and Soffer, R. L.: A soluble 3,5-dinitrotyrosine aminotransferase from rabbit liver which catalyzes the transamination of thyroid hormone, Biochem. & Biophys. Res. Comm. **43:** 1395 (1971).

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Medical Meetings

Postgraduate Course on cancer for internists

The American College of Physicians will sponsor a four-day postgraduate course on "Perspectives in Cancer Medicine" at the Roswell Park Memorial Institute, Buffalo, on June 26 to 29.

The postgraduate course is one of 27 the College holds annually in the United States and Canada. Their purpose is to give specialists an opportunity to review their knowledge in a particular area of interest and to keep informed of new developments in the basic and clinical sciences that affect their practices. The courses have been held annually since the mid-1930s.

During the four-day course, special emphasis will be given to the internist's need to keep abreast of advances in related fields, such as radiotherapy and surgery, as well as to be up-to-date in his knowledge about chemical treatment of cancer. Lectures and discussions will also include new evidence of immunologic response against one's own tumor and how to utilize this as therapy. The course will also include molecular biology, cellular kinetics, and genetics.

The course is directed by James F. Holland, M.D.; H. James Wallace, Jr., M.D., is codirector.

Nutrition conference to be held at Cornell

The New York State Nutrition Institute will hold its biennial conference on July 6 and 7 in Morrison Hall Auditorium, Cornell University, Ithaca, sponsored by the Graduate School of Nutrition and the Colleges of Agriculture and Human Ecology.

The following topics will be discussed: Policy, Programming and Program Evaluation for Improved Nutrition; Recent Advances in Nutritional Research; and Changing Nutritional Concepts.

Registration fee is $7.50 (banquet fee of $6.25 is optional). For further information and registration contact Nutrition Institute, Graduate School of Nutrition, Savage Hall, Cornell University, Ithaca, New York 14850.

American Health Congress to meet

The first annual American Health Congress is to be held at Chicago-McCormick Place, Chicago, Illinois, on August 7 through 10. Joseph T. English, M.D., president of the New York City Health and Hospitals Corporation, and James L. Hayes, president and chief executive officer of the American Management Association, will be guest speakers.

Dr. English will speak on "Quality—Commitment or Compromise." He will discuss the deficiences in the present system from both the professional and public viewpoints; whether or not health-care leaders have demonstrated an honest desire to attain quality medical care, and suggest specific steps that might be taken to improve health care.

Mr. Hayes will speak on "Effectiveness of Operation: The Goal of Management," which will deal with the concept of operational effectiveness in a systems framework, stressing needs identification, setting of objectives, and output as the measure of effectiveness.

Program on school health

A program on School Health will be given on August 14 to 18 by the Department of Pediatrics, School of Medicine, State University of New York at Buffalo, and the Buffalo Board of Education. The program is intended for school physicians, school nurses, school social workers, school psychologists, and counselors.

The program's aims are to stimulate school health personnel in matters of recognizing and preventing disease, understanding behavior of young people, and dealing with some of their problems. The meeting will also provide a means for collaboration between school health personnel and specialists in various fields. The faculty, who has had considerable immediate experience with school children, will discuss topics, such as recognizing diseases, management of common diseases, prophylaxis, health education, school performance, and normal and abnormal behavior.

A fee of approximately $60 will be charged for the program. For further information contact Continuing Medical Education, State University of New York at Buffalo, 2211 Main Street, Buffalo, New York 14214.

Postgraduate course on reconstructive handsurgery

The Educational Foundation of Plastic & Reconstructive Surgeons, Inc., is sponsoring a postgraduate course on reconstructive surgery of the hand on November 2 through 4. The course will be an indepth symposium on the fundamental principles of reconstructive hand surgery with special emphasis on anatomy, surface coverage, and advanced technics. Guest speakers will include Paul Lendvay, F.R.C.S., F.R.A.C.S., honorary associate plastic surgeon; and Earl Owen, F.R.C.S., F.R.C.S.E., F.R.A.C.S., of Prince of Wales Hospital and Prince Henry Hospital, Sydney, Australia.

Registration fee is $150 for physicians and $50 for residents. For further information contact James W. Smith, M.D., 4 Sutton Place, New York, New York 10022.

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

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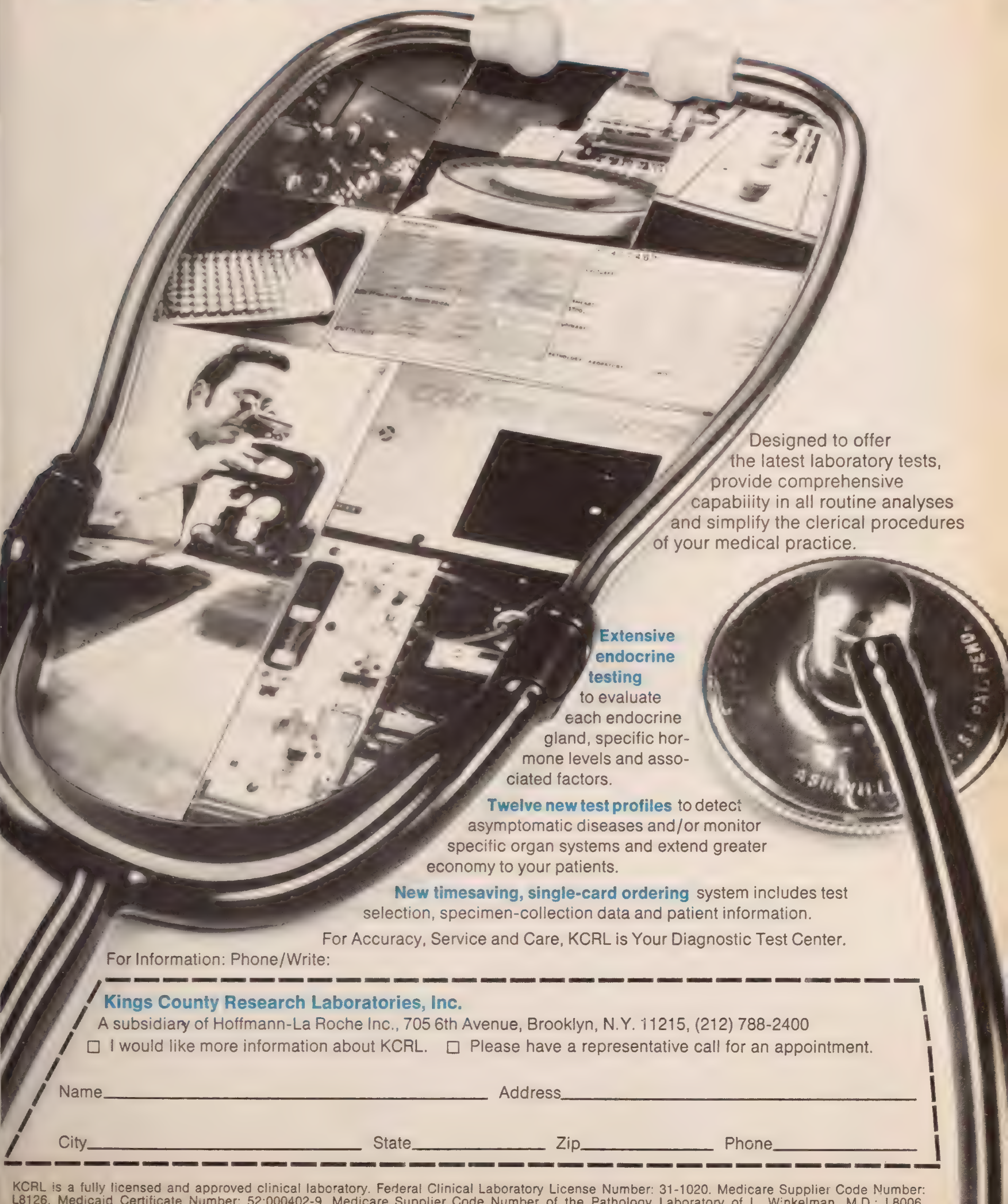

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Books Received

*The following books were received during the month of April, 1972.**

Advances in Forensic and Clinical Toxicology. By A. S. Curry, M.A., Ph.D. Quarto of 280 pages, illustrated. Cleveland, Ohio, CRC Press, 1972. Cloth, $32.50.

Cancer Chemotherapy II. The Twenty-second Hahnemann Symposium. Edited by Isadore Brodsky, M.D., S. Benham Kahn, M.D., under the General Editorship of John H. Moyer, M.D. Quarto of 478 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $29.50.

The Principles and Practice of Medicine. Eighteenth edition. Edited by A. McGehee Harvey, M.D., D.Sc., Richard J. Johns, M.D., Albert H. Owens, Jr., M.D., and Richard S. Ross, M.D. Quarto of 1,650 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Cloth, $24.50.

Changing Concepts in Cardiovascular Disease. Edited by Henry I. Russek, M.D., and Burton L. Zohman, M.D. Octavo of 469 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $23.75.

Neoplasms of the Gastrointestinal Tract. By William C. Lowe, M.D., M.Sc. Quarto of 347 pages, illustrated. Flushing, N.Y., Medical Examination Publishing Co., 1972. Cloth, $20.

Artificial Organs and Cardiopulmonary Support Systems. Edited by Felix T. Rapaport, M.D., and John P. Merrill, M.D. (Reprinted from the December 1971 issue (Volume III, Number 4) of the quarterly journal *Transplantation Proceedings*). Quarto of 186 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $15.

The Alcoholic Patient in Surgery. By Albert B. Lowenfels, M.D. Octavo of 268 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $14.

The Electrogenic Sodium Pump. By G. A. Kerkut and Barbara York. Octavo of 182 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $12.50.

Injuries to the Major Branches of Peripheral Nerves of the Forearm. By Morton Spinner, M.D. Quarto of 141 pages, illustrated. Philadelphia, Pa., W. B. Saunders Company, 1972. Cloth, Approx. $10.

Progress in Community Mental Health. Volume II. Edited by Harvey H. Barten, M.D., and Leopold Bellak, M.D. Octavo of 290 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $9.75.

Sudden and Unexpected Deaths in Infancy (Cot Deaths). Report of the Proceedings of the Sir Samuel Bedson Symposium held at Addenbrooke's Hospital, Cambridge on 17 and 18 April, 1970. Edited by Francis E. Camps, M.D., and R. G. Carpenter, M.A. Quarto of 129 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paperback, $9.50.

The House Physician's Handbook. Third edition. By C. Allan Birch, M.D. Duodecimo of 257 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1972. Paperback, $7.50.

Medicine and the Artist. Third enlarged edition. 137 Great Prints, Selected with Commentary by Carl Zigrosser. Quarto of 175 pages. New York, N.Y., Dover Publications, Inc., 1970. Paperback, $3.75.

The Medical Clinics of North America. Volume 56 Number 2, March 1972. Symposium on Clinical Immunology. Guest Editor, Jules Harris, M.D. Quarto, illustrated. Philadelphia, Pa., W. B. Saunders Company, 1972. Published bimonthly (6 numbers a year). Cloth, $21. per year.

A Decade of Progress. The United States Army Medical Department. 1959–1969. Prepared and published under the direction of Lieutenant General Hal B. Jennings, Jr., Surgeon General, United States Army. Editor in Chief, Colonel William S. Mullins, MSC. Editor for A Decade of Progress, Rose C. Engelman, Ph.D. Octavo of 214 pages, illustrated. Washington, D.C., Historical Unit, Walter Reed Army Medical Center, 1971. Cloth, $2.25.

Television and Growing Up: The Impact of Televised Violence. Report to the Surgeon General United States Public Health Service from the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Octavo of 169 pages, illustrated. Rockville, Maryland, National Institute of Mental Health, 1971. Paperback, Approx. $2.50.

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*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

Abstracts

Korns, R. F., and Fasce, C. F.: Community outbreak of infectious hepatitis; Assays of SGOT and Australian serum hepatitis antigen, ***New York State J. Med.*** 72: 1583 (June 15) 1972.

Blood samples of over 1,000 pupils in the centralized school in Waterville, New York were taken shortly after it was recognized that hepatitis had been festering in the village for seven months. Samples were analyzed for levels of serum glutamic oxaloacetic transaminase and for Australian antigen. SGOT levels were found to decline with age, but this was apparently unrelated to the presence of hepatitis in the population. Assays for Australian antigen yielded negative results also.

Bandler, M.: Rectal bleeding in Crohn's disease of colon, ***New York State J. Med.*** 72: 1585 (June 15) 1972.

Because of the confusion arising in the diagnosis of Crohn's disease of the colon and its differentiation from chronic ulcerative colitis, the author stresses the need for dependence on histologic material as well as clinical and roentgenographic features. He describes these features at length and places great emphasis on the importance of rectal bleeding as a manifestation of Crohn's disease. Twelve illustrative cases in which bleeding was symptomatic are cited.

Smith, L. H. E.: Abnormal glucose metabolism in myocardial infarction, ***New York State J. Med.*** 72: 1592 (June 15) 1972.

The glucose metabolism of 52 patients who had recently suffered myocardial infarction was studied. All patients were under the age of sixty. Excluding 11 patients who were known diabetics, 41 patients had normal fasting blood sugar test results. Of these, 34 had abnormal glucose tolerance test results. Only 7 of the total of 52 patients had completely normal test results, and 2 of these were found to have renal glycosuria. The author suggests that coronary artery disease may be a problem associated with the development of diabetes.

Albanese, A. A., Lorenze, E. J., Orto, L. A., Wein, E. H., Zavattaro, D. N., and De Carlo, R.: Nutritional and metabolic effects of some newer steroids; VI. serum ribonuclease, ***New York State J. Med.*** 72: 1595 (June 15) 1972.

Patients receiving therapeutic doses of anabolic steroids or corticosteroids were studied to test the relationship of ribonuclease measurements to nitrogen balance. All of the studies indicated that there is an inverse relationship between nitrogen balance and blood RNase levels. Thus, in cases where there is no significant increase in the number of circulating leukocytes, plasma RNase determinations provide a better index of protein metabolism than the traditional nitrogen balance procedure.

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1. Gordon, E. E. and Haas, A., Indust. Med. & Surg. 28:217, May, 1959.

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Abstracts in Interlingua

Korns, R. F., e Fasce, C. F.: Epidemia de hepatitis infectiose in un communitate; Evalutationes del "SGOT" e del antigeno australian in le serum in le hepatitis, ***New York State J. Med.*** 72: 1583 (15 de Junio) 1972.

Monstras de sanguine in plus de 1.000 studentes del schola centralisate de Waterville, Nove York, esseva obtenite pauc depost del recognoscentia del hepatitis presente per septe (7) menses in iste citate. Le monstras esseva analysate pro determinar le nivellos del SGOT e le reaction seric al antigeno australian. Le prime esseva trovate declinante con le etate, mais iste, apparentemente, non esseva relationate con le presentia del hepatitis in le population. Le evalutationes con le antigeno australian etiam dava resultatos negative.

Bandler, M.: Hemorrhagia rectal in le morbo Crohn del colon, ***New York State J. Med.*** 72: 1585 (15 de Junio) 1972.

Debite al confusion existente in le diagnose del morbo Crohn del colon e su differentiation del colitis ulcerative chronic, le autor accentua le necessitate de depender del material histologic e del characteristicas clinic e roentgenographic del morbo. Le autor describe in detalio e da emphase al importantia del hemorrhagia rectal como un manifestation del morbo Crohn. Dece-duo (12) casos illustrative in que le hemorrhagia esseva un symptoma es describite.

Smith, L. H. E.: Metabolismo anornal del glucosa in le infarto myocardial, ***New York State J. Med.*** 72: 1592 (15 de Junio) 1972.

Le metabolismo del glucosa esseva studiate in 52 patientes, omne infra 60 annos, con infarto myocardial recente. Con le exclusion de in 11 diabetic, le glycemia ante alimentation esseva normal in 41 patientes. De iste, le test del tolerantia al glucosa esseva anormal in 34. Solmente en septe (7) del total de 52 patientes, le tests esseva complemente normal, e in duo (2) de iste esseva trovate glycosuria renal. Le autor suggere que le morbo coronari pote esser un problema associate al disvelopamento del diabetes.

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Albanese, A. A., Lorenze, E. J., Orto, L. A., Wein, E. H., Zavattaro, D. N., e De Carlo, R.: Effectos nutritional e metabolic de alicun steroides recente. VI. Ribonucleasa seric, ***New York State J. Med.*** 72: 1595 (15 de Junio) 1972.

Le patientes tractate con doses therapeutic de steroides anabolic o corticosteroides esseva studiate pro etablir le relation inter le nivellos del ribonucleasa seric e le equilibrium del nitrogeno. Omne studios indicava que existe un relation inverse inter le equilibrium del nitrogeno e le nivellos sanguine del ribonucleasa. In consequentia, in le casos in que non existe un augmento significative del numero del leucocytos circulante, le determinationes del ribonucleasa seric provide un indice melior del metabolismo del proteinas que le procedimento traditional pro le evalutation del equilibrium del nitrogeno.

Correlation of intelligence and blood pressure

Francis Wilkie and Carl Eisdorfer have recently published the results of an interesting study measuring the possible relation between blood pressure and aging as measured by the Weschler Adult Intelligence Scale (*Science* **172:** 959, [May 28] 1971). Diastolic pressure was used, since it correlates highly with systolic pressure and is less sensitive to minor fluctuations. It was found that diastolic hypertension was related to significant intellectual loss over a decade among subjects first examined in their sixties. Such loss was not found in subjects in their age groups who had normal, or mild elevations of, diastolic pressure. Of those initially examined at seventy to seventy-nine years of age, none with hypertension completed the follow-up program, and those with normal and mildly elevated blood pressure showed some intellectual decline over the ten-year period. At the initial examination, hypertension was related to lower intelligence scores only among those subjects who later failed to complete the follow-up program.

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Month in Washington

House-Senate differences and time pressures may well stall congressional action this year on the three major health measures before the lawmakers: national health insurance, health maintenance organizations (HMOs), and the Social Security amendments to Medicare and Medicaid.

The death knell for national health insurance in this Congress may have been rung by House Ways and Means Committee chairman Wilbur Mills (Democrat, Arkansas) who now says he doubts if he will hold even executive sessions on the controversial measure.

The Medicare-Medicaid amendments (H.R.1) which contain the professional standards review organization plan (PSRO), Medicare for the disabled, and other amendments to the Social Security Law, seem to face a rocky, uphill road in the Senate. One of the many controversial measures in the bill is Senator Huey Long's (Democrat, Louisiana) catastrophic protection measure. To date Chairman Long has failed to sell the catastrophic proposal to a majority of his fellow members of the Senate Finance Committee. To make Long's road even tougher to travel, are grumblings from Mills in the House that he will not buy the catastrophic proposal, nor PSRO as presently written. But Long is a wiley maneuverer and the chances that the Senate can come up with a version of H.R.1 satisfactory to the House are still not completely dead.

Not yet quite counted out this year are the HMO proposals in both the Senate and House. Senator Edward Kennedy (Democrat, Massachusetts) insists he is going to push hard and swiftly for his sweeping HMO plan, but Administration and House health lawmakers view Kennedy's plan as too expensive and too rigid. Settling these differences and working out a satisfactory compromise in limited time remaining for Congress might be difficult.

The Administration says the Kennedy HMO bill could cost individual persons $600 a year, a family of four $2,400. The Kennedy plan was also criticized for the scope of benefits proposed and for too rigid requirements on what makes up an HMO by HEW Secretary Elliot Richardson.

Testifying before Kennedy's health subcommittee, Richardson compared the individual cost of $240 a year estimated in the Administration bill with the $600 estimate for Kennedy's plan. The senator challenged the figure, suggesting that it would be closer to $400.

Richardson said "tight restrictions" in the senator's measure "would exclude individual-practice HMOs or medical foundation plans in urban areas from Federal support, and this would create a severe disincentive to their formation."

The HEW secretary also took issue with Kennedy's plan for an HMO trust fund to cover the costs of premiums for people who can not afford them. Provisions for Federal financing of health services should not be included in a health-delivery-systems bill but in a national health insurance proposal, Richardson said. "Moreover, the earmarking of particular Federal tax receipts for specific purposes is inconsistent with the basic principles of good budget management."

Kennedy's bill would go beyond the Administration bill by requiring that HMOs provide mental health and dental care among other benefits.

"The approach in your bill is over-elaborate," Richardson said. "The more comprehensive the benefit package, the fewer the organizations will qualify," he said. "That is why the Administration bill has taken a general-benefit approach."

* * *

The American Medical Association has urged Congress to observe a "flashing yellow light of caution" before rushing into large-scale HMO programs.

Testifying before the House Subcommittee on Health and Environment were John R. Kernodle, M.D., Burlington, North Carolina, vice-chairman of the AMA Board of Trustees, and Russell B. Roth, M.D., Erie, Pennsylvania, speaker of the Association's House of Delegates.

Dr. Kernodle said that "considerable funds have already been allocated for HMOs. We urgently need to evaluate these initial efforts."

The North Carolina group-practitioner told the subcommittee that the AMA favors a pluralistic system of medical care. "We believe different methods of medical care should be allowed to compete freely in the marketplace to satisfy varying public demands," he said.

> We strongly believe that no one method of medical care can satisfy all. No one method of care should be imposed and no one method should be so heavily subsidized or otherwise encouraged as to undermine the working of free choice.
>
> Believing in a pluralistic approach we feel that HMOs merit trial. But the basis should be limited, experimental. The possible benefits to health in terms of service rendered and their possible efficiencies in terms of cost reduction should then be objectively measured against the possible shortcomings and deficiencies.

Dr. Kernodle noted that the Administration has made 110 planning and development grants and is requesting $27 million in a supplemental budget for this year and $60 million next year to speed these programs.

"Conceivably," he said, "the HMO could solve some of our problems. But that is not yet proved .... HMOs could represent a giant step backwards to a type of contract medicine the public rejected half a century ago."

Dr. Kernodle said that even in recent years contract

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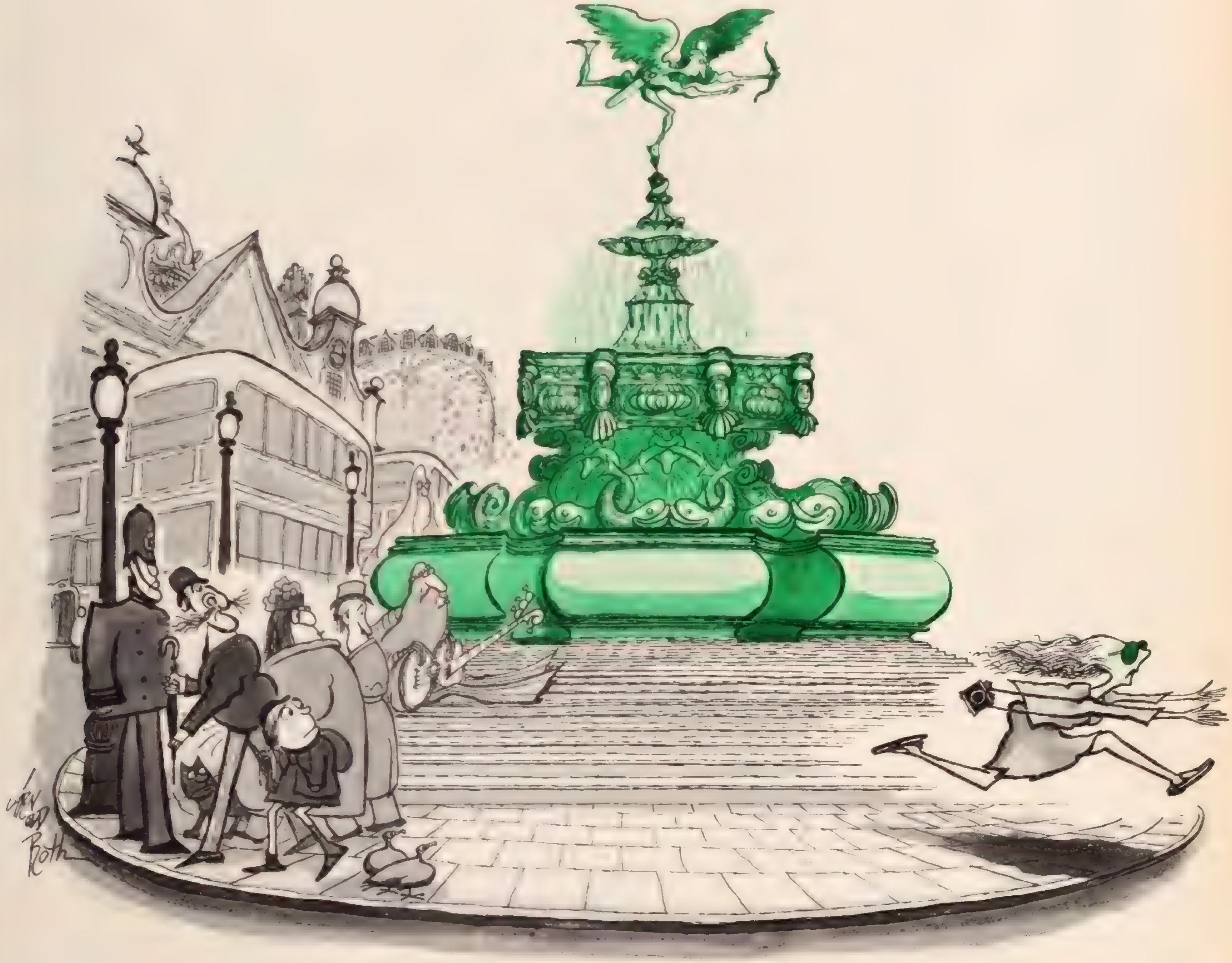

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medicine has had a "sobering record of failure—the passing of the Rip Van Winkle group in Hudson, New York, declining enrollments in the Community Health Association of Detroit, and the Inter-County Hospital Plan of Johnstown, Pennsylvania—all these signals flash a bright yellow caution light."

The AMA official questioned "the ability of the HMO to fulfill the public hope for the kind of medical care they want at a low cost."

"We question too that the type of practice offered in an HMO will attract a substantial segment of the medical profession," he added.

"I hope I have suggested that there is much reason to proceed with caution. We should first gain experience with test models, and see if they fly before we order a whole fleet.

"Considerable funds have already been allocated for HMOs. What is urgently needed now is a sound, objective mechanism with which to evaluate the initial efforts."

In his testimony, Dr. Roth also urged the subcommittee members to be cautious in expanding HMO programs. He said:

> The Federal government has already made some 110 grants for planning and for feasibility studies for HMOs. But the results of these studies and plans are as yet unknown in terms of the quality and extent of the services which can be provided, their accessibility to beneficiaries, the cost of providing them, and their acceptability to consumers and providers alike.
>
> We believe that the present range of federally funded experimentation is quite adequate to provide most of the desired answers in a few years. On the other hand, we believe that the announced goal of having HMOs available to 80 per cent of the population within a decade is indefensible overpromise.
>
> We further propose a moratorium on the funding of additional planning for, or subsidy of, HMO operation until existing experimental programs can be evaluated in terms of quality of service, efficiency, availability, and economy.

* * *

Mobile x-ray equipment should not be used for general population surveys for tuberculosis and other chest diseases, says a statement by the American College of Chest Physicians, American College of Radiology, and the Food and Drug Administration.

The equipment used in many parts of the country "is not productive as a screening procedure for chest disease detection," the statement says.

The joint statement supersedes a 1958 policy declaration by the U.S. Surgeon General that said mass chest x-ray examinations should be conducted "selectively" with groups "at high risk of tuberculosis infection."

The new policy was indicated "in large part by the fact that tuberculosis is now almost nonexistent in many regions of the country," said Merlin K. DuVal, M.D., HEW Undersecretary for Health and Scientific Affairs. "The use of mobile equipment, which requires relatively higher levels of x-ray exposure than fixed equipment, simply cannot be justified." Records of the number of mobile x-ray units still being used are not available. Twenty-eight states had registered one or more x-ray vans for use in 1970, but several of these have since discontinued use of the epuipment. The 1970 information will be updated after July 1, 1972, the FDA's Bureau of Radiological Health said.

The new policy recommends full size x-ray film when x-ray screening of selected population groups is essential. The recommendation is intended to discourage the use of photofluorographic equipment that uses a fluoroscope screen in combination with miniature photographic film.

* * *

In hopes of retaining and attracting sufficient numbers of physicians in the armed forces without resorting to a continuation of the physician draft, the Administration offered Congress a special pay program under which military physicians could earn above $40,000 a year.

Under the plan, the military services are authorized to give physicians as much as $17,000 a year in extra pay. This would be on top of $350 a month above the base pay for their rank after two years of service.

The bill also continues the special pay provision now in effect, which would expire when the draft ends, of $100 a month additional for the first two years of service. At present, the $100 a month is increased to $350 a month in steps after two years of service. However, the bill speeds the process up by inaugurating the $350 monthly special pay immediately after two years. The $17,000 continuation pay is a maximum, and most physicians would not receive this amount. Thus after two years, a military physician could earn at most the salary of his rank, plus $350 a month, plus $17,000 a year.

The bill also provides that officers commissioned by the public health service corps could receive up to four months additional pay per year over their military rank salary for signing up.

* * *

Federal researchers reported that findings from recent national surveys challenge the view that the prescribing habits of American physicians may contribute to the rising incidence of drug abuse.

Mitchell Balter, Ph.D., and Jerome Levine, M.D., of the National Institutes of Mental Health say: "Our data indicate that most private practitioners, if anything, err in the conservative direction," in prescribing psychotherapeutic drugs. They see little likelihood that physicians contribute to drug abuse by creating physical dependence among their patients.

Less than half of those surveyed who showed "high levels of psychic distress" had used any psychotherapeutic medication obtained on prescriptions during the past year.

In the study, 43 per cent of the men and 54 per cent of the women who had used prescription psychotherapeutic drugs during the past year had a high level of psychic distress, indicating treatment had been necessary.

Other general findings include:

1. No evidence for claims that Americans are chronic users of psychotherapeutic drugs.
2. Americans are conservative in their attitudes toward using tranquilizers. Most agreed that doctors

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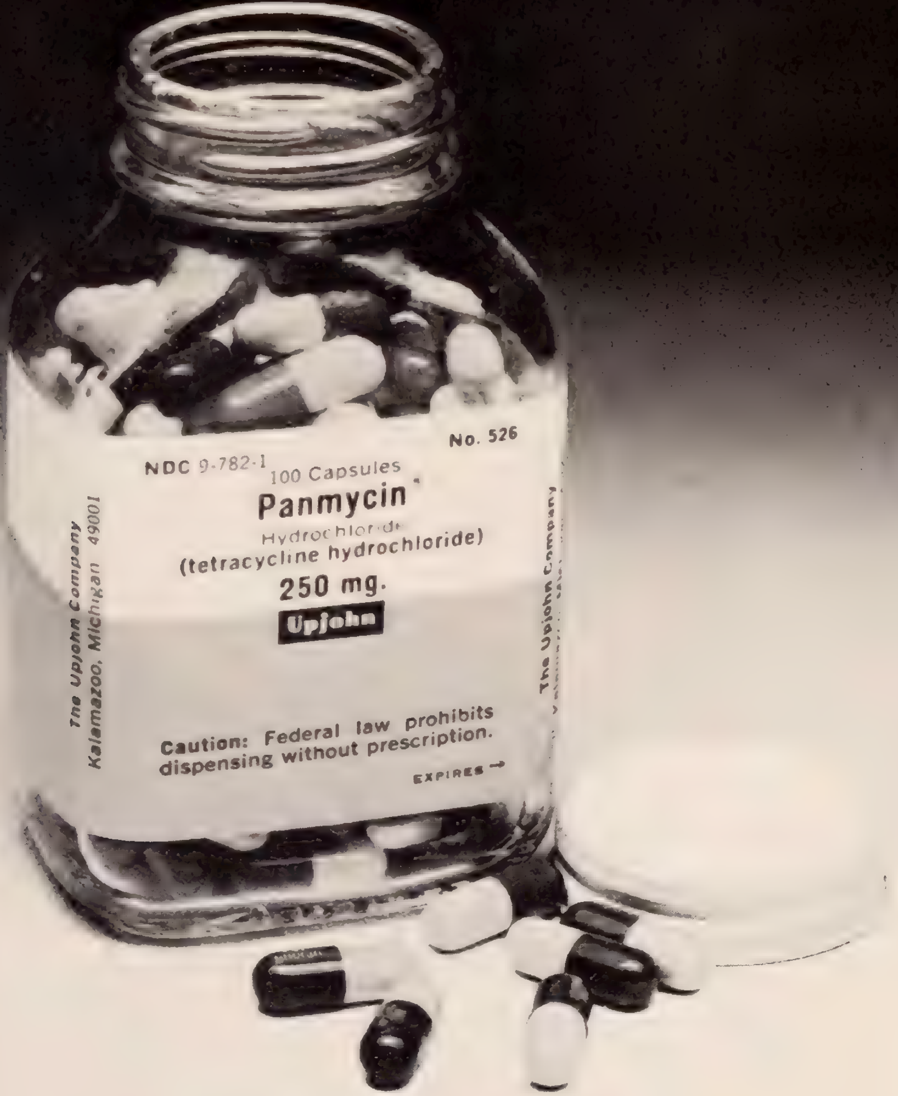
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prescribe such drugs more than they should and they felt it is better to use willpower to solve problems, which tranquilizers may cover up.

3. Despite national differences, the rate of prescriptions filled in the United States is similar to rates found in several European countries. That is slightly more than 5 prescriptions per person per year.

The conclusions were drawn from NIMH-sponsored studies designed to gather data on prescriptions filled in U.S. drugstores, on the prescribing behavior of private physicians, and on patterns of drug acquisition and usage among adults.

Alcoholic fatty liver

Most chronic alcoholics develop fatty infiltration of the liver, whereas the incidence of alcoholic cirrhosis in this group is only 5–10 per cent. Since the prognosis in fatty infiltration is very different from cirrhosis, accurate diagnosis is important. In trying to establish clinical and laboratory criteria for fatty liver, Paul Devenyl, M.D., *et al.* (Am. J. Gastroenterology **54:** 597 [Dec.] 1970) studied biopsies from the livers of 100 actively drinking alcoholics, as well as relevant routine laboratory determinations. Of the 100 biopsies, 65 per cent showed fatty liver, 1 per cent showed cirrhosis, and 30 per cent were normal. Thus, fatty infiltration of the liver is by far the most common abnormality in these patients and should be diagnosed clinically. In addition to a reversible hepatomegaly, a transient abnormality in at least 2 of the 3 tests (serum glutamic oxaloacetic transaminase, serum glutamic pyruvic transaminase, and sulfobromophthalein) indicates the presence of fatty liver with reasonable certainty in recently drinking alcoholics, although normal values will not rule out fatty infiltration of the liver.

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Valedictory

Farewell address given by the editor to the Associate Editorial Board of the *Journal* at their annual dinner on December 15, 1971

In 1972 the ***Journal*** will be seventy-two-years-old and so will I.

I have always believed that a sensible poker player leaves the game while he is still ahead. It seems to me that three years as Assistant Editor and twelve years as Editor is a reasonable length of time to serve, and so I have requested and been granted retirement as of July 1, 1972.

The ***Journal*** as an institution has a life of its own and will go on only because of its usefulness to its readers. This is the way it has developed over the years, beginning under the editorship of Dr. Peter Warbass of Brooklyn and continuing through a long line of successors, both individuals and committees. Many individuals laid the groundwork for the ***Journal.*** Nathan Van Etten, M.D., and Orin Wightman, M.D., were two editors who became presidents of the Medical Society and did much to guide the ***Journal*** in its early days.

It was my privilege to know two recent editors, George Kosmak, M.D., who was editor from 1945 to 1952 and Laurance Redway, M.D., who was editor from 1952 to 1960. These two men brought the ***Journal*** into modern times and laid the foundation for a truly critical review of the quality of material published. Both, polished gentlemen of the old school, were different in their approach, Dr. Kosmak was a benevolent dictator. He knew a good article when he saw one and could be pretty sarcastic about a poor one. He worked practically single-handed, but he did start to raise the level of the ***Journal.*** Dr. Redway on the other hand was a calm man, a good classical scholar, with impeccable literary taste. He began expanding the Associate Editorial Board and brought in several new disciplines. He put me on the editorial board as a consultant for geriatrics. As the editorial board grew the quality of the ***Journal*** improved. I would like to say here as I have so often said in the past, that it is your critical judgment on the articles submitted which gives the ***Journal*** its standing.

When I became editor, I felt the need for a closer liaison on the ***Journal*** with the medical schools of the State. I arranged for the appointment of a faculty member from each of the schools to the Associate Editorial Board. This has worked out well. We are getting some fine articles from the different departments of the medical centers which might have gone elsewhere. Further innovations were the addition of Section material. The dialogue method was introduced in the Radiology-Pathology Conferences, the "Shadow and the Substance." These are an excellent teaching mechanism and provide a sort of live C.P.C.

Medical Arts and Letters provide short biographic accounts of famous and infamous characters of medical interest.

The Quarterly Review of Drugs is timely, authoritative, and of much importance to all the readers.

The Special Article Section was devised to present important matters tangential to medical practice. The ground rules here are that the articles be not mere expressions of opinion but reports based on sound research and documented experience. They are engaging increased reader interest.

The ***Journal*** has been through three economic depressions in my time—two as a result of wars and one as a result of the Kefauver Investigation of the Drug Industry. We are in a depression now, which will undoubtedly last through Phase 2 of the Administration's economic regulations. Our advertising men are constantly combing the country for new business and recommitments. It is discouraging for them, but we must all be patient. Such times have passed before and will pass again. If we keep the book up, keep improving it, we have nothing to fear.

It seems obvious from our questionnaires of last year that the members of the Medical Society want the ***Journal*** because it is interesting and useful to them. I recapitulate here the results of the two questionnaires which went to 3,750 members. There were 1,640 returns, a rate of 43.7 per cent. This is statistically workable. Favorable reactions to the ***Journal*** were 1,475 or 90 per cent of the total. Unfavorable reactions were 165 or 10 per cent. Those who made comments amounted to 558 and of those 302 or 85 per cent were favorable and 82 or 15 per cent were unfavorable. The degree of interest in the various sections of the ***Journal*** showed the top five to be in this order: Scientific Articles, Recent Advances, Editorials, Case Reports, Quarterly Review of Drugs.

To our printers, The Mack Printing Company, of Easton, Pennsylvania, we owe a great debt of gratitude. They went through a long, serious printer's strike a few years ago but managed by farming out to print our ***Journal*** throughout the strike. We didn't miss an issue. They have gone through a change of size and printing method with the ***Journal,*** making it seem effortless. If class means "grace under stress," they have it.

Alvina Lewis and her successor, Elizabeth Smith, have been invaluable to me. Their management of detail, so ably done, smoothed the way for me and made the editor's life a happy one. Thanks is also due to our staff of copy editors who do the intricate copy reading so well. Theirs is a major contribution. Thanks are also due Bob Miller for his skill in inserting the ads in the pages and handling the enormous detail involved in the advertising pages, which are our lifeline, also for his business management of the annual Medical Communications Day.

The members want the ***Journal,*** and they want it to be good. The House of Delegates has mandated that we make the ***Journal*** the finest scientific publication possible. We try. To Alfred Angrist, my able successor, I pass on this commitment.

On this last occasion that we meet under these circumstances, I leave you with a warm feeling of affection for all you have done for the ***Journal*** and for me.

William Hammond, M.D., Editor

William Hammond, M.D., an old friend to all of us, took his initial medical training in Canada at McGill. Not content with that, he took further training at Johns Hopkins and then at the Massachusetts General in Boston.

He became an outstanding internist, but was never content to rest back on the acclaim of his patients and colleagues; fifteen years ago he began his association with the ***New York State Journal of Medicine,*** serving as editor-in-chief for the last twelve years.

You have only to compare the ***Journal*** as it was fifteen years ago and now to realize how much it owes to him. A survey by the National Library of Medicine reveals that it is the only state journal listed among the top ten medical periodicals requested for reference. Dr. Hammond initiated new departments, and assembled a loyal advisory editorial board who have functioned enthusiastically for him, led by his example of gentlemanly patience and precise scholarship.

The measure of his achievement must be made in the light of his other simultaneous undertakings, successively in two years carrying the presidency of the American Geriatrics Society and then the American Medical Writers' Association, both jobs national in scope.

In recognition of his achievements it is a pleasure to announce as president of the Metropolitan New York chapter of the American Medical Writers' Association that Dr. Hammond has received its award for Editor of the Year. It is no coincidence that during Dr. Hammond's tenure the ***New York State Journal of Medicine*** has also received the award of Journal of the Year. Had it not seemed nepotism, I suspect both he and it might have received awards many times over.

We all regret that Dr. Hammond will be less active on the many fronts where he has helped and inspired us all.

Hans Zinsser, M.D.
111 Fort Washington Avenue
New York, New York 10032

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Special Restrictions (see back of page):

Tyramine-containing foods (e.g. aged cheese) should be avoided. (For further listing of foods, see back of page.)

If alcohol is used, it should be used cautiously and in reduced amounts.

Patients should be warned against the concurrent use of non-prescription medications (particularly cold preparations and antihistamines), or prescription drugs without physician's consent.

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Brief Summary
EUTRON™

pargyline hydrochloride and methyclothiazide

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INDICATIONS. EUTRON (pargyline hydrochloride and methyclothiazide) is indicated in the treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. *It is not recommended for use in patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone.*

Because of the potent diuretic properties of methyclothiazide, the combination is particularly suited for use when congestive heart failure or other conditions requiring diuretic therapy coexist with hypertension, or when edema attributable to antihypertensive therapy develops.

As discussed in regard to dosage and administration, it is desirable to establish the dosage requirements for EUTRON by the administration of Eutonyl and Enduron separately.

CONTRAINDICATIONS. 1. Pargyline therapy is contraindicated in patients with pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure.

2. Pargyline should not be administered to those with malignant hypertension, or to children under twelve years of age because significant clinical information concerning the use of the drug in these conditions is not available.

3. In general, the following drugs or agents are contraindicated in patients receiving pargyline hydrochloride:

a. Centrally acting sympathomimetic amines such as amphetamine and its derivatives (also found in anorectic preparations).

Peripherally acting sympathomimetic drugs such as ephedrine and its derivatives (also found in nasal decongestants, hay fever preparations and cold remedies).

b. Aged and natural cheese (e.g., Cheddar, Camembert, and Stilton), and other foods (e.g., pickled herring, Chianti wine, pods of broad beans, chicken livers, chocolate and yeast products), which require the action of bacteria or molds for their preparation or preservation, because of the presence of pressor substances such as tyramine. Banana peels are also contraindicated. Cream cheese, processed cheese, and cottage cheese can be allowed in the diet during EUTRON therapy, since their tyramine content is inconsequential.

In some patients receiving EUTRON, tyramine may precipitate an abrupt rise in blood pressure accompanied by some or all of the following: severe headache, chest pain, profuse sweating, palpitation, tachycardia or bradycardia, visual disturbances, stertorous breathing, coma, and intracranial bleeding (which could be fatal). A phenothiazine derivative or phentolamine may be administered parenterally for treatment of such an acute hypertensive reaction.

c. Parenteral administration of reserpine or guanethidine may cause hypertensive reactions from sudden release of catecholamines. Parenteral use of these drugs is contraindicated during, and for at least one week following, treatment with EUTRON.

d. Imipramine, amitriptyline, desipramine, nortriptyline, or their analogues should not be used with pargyline. The use of these drugs with monoamine oxidase inhibitors has been reported to cause vascular collapse and hyperthermia which may be fatal. A drug-free interval (about two weeks) should separate therapy with EUTRON and use of these agents.

e. Methyldopa or dopamine, which may cause hyperexcitability in patients receiving pargyline, should not be given.

f. Other monoamine oxidase inhibitors should not be added to a EUTRON regimen since they may augment the effects of pargyline.

4. Methyclothiazide is contraindicated in patients with a known sensitivity to methyclothiazide and/or other thiazide diuretics. It should not be used in patients with severe renal disease (except nephrosis) or complete renal shutdown. Thiazide diuretics should not be used in the presence of severe liver disease and/or impending hepatic coma. Hepatic coma has been reported as a consequence of hypokalemia in patients receiving thiazide diuretics.

WARNINGS

A. PATIENTS

1. PATIENTS SHOULD BE WARNED AGAINST THE USE OF ANY OVER-THE-COUNTER PREPARATIONS, PARTICULARLY "COLD PREPARATIONS" AND ANTIHISTAMINES OR PRESCRIPTION DRUGS WITHOUT THE KNOWLEDGE AND CONSENT OF THE PHYSICIAN.
2. PATIENTS SHOULD BE CAUTIONED ON THE USE OF CHEESE (SEE CONTRAINDICATIONS) AND ALCOHOLIC BEVERAGES IN ANY FORM.
3. PATIENTS SHOULD BE WARNED ABOUT THE LIKELIHOOD OF THE OCCURRENCE OF ORTHOSTATIC HYPOTENSION.
4. PATIENTS SHOULD BE INSTRUCTED TO REPORT PROMPTLY THE OCCURRENCE OF SEVERE HEADACHE OR OTHER UNUSUAL SYMPTOMS.
5. PATIENTS WITH ANGINA PECTORIS OR CORONARY ARTERY DISEASE SHOULD BE ESPECIALLY WARNED NOT TO INCREASE THEIR PHYSICAL ACTIVITIES IN RESPONSE TO A DIMINUTION IN ANGINAL SYMPTOMS OR AN INCREASE IN WELL-BEING OCCURRING DURING TREATMENT WITH EUTRON.

B. PHYSICIANS

1. WHEN INDICATED THE FOLLOWING SHOULD BE CAUTIOUSLY PRESCRIBED IN REDUCED DOSAGES:
   a. ANTIHISTAMINES
   b. HYPNOTICS, SEDATIVES OR TRANQUILIZERS
   c. NARCOTICS (MEPERIDINE SHOULD NOT BE USED)
2. DISCONTINUE EUTRON AT LEAST TWO WEEKS PRIOR TO ELECTIVE SURGERY.
3. IN EMERGENCY SURGERY THE DOSE OF NARCOTICS OR OTHER PREMEDICATIONS SHOULD BE REDUCED TO 1/4 TO 1/5 THE USUAL AMOUNT. CLINICAL EXPERIENCE HAS SHOWN THAT RESPONSE TO ALL ANESTHETIC AGENTS CAN BE EXAGGERATED IN PATIENTS RECEIVING EUTRON. THEREFORE THE DOSE OF THE ANESTHETIC SHOULD BE CAREFULLY ADJUSTED.
4. PARGYLINE HYDROCHLORIDE MAY INDUCE HYPOGLYCEMIA.
5. CARE SHOULD BE EXERCISED IN USING EUTRON IN PATIENTS WITH ADVANCED RENAL FAILURE.

The possibility of sensitivity reactions to methyclothiazide or pargyline should be considered in patients with a history of allergy or bronchial asthma.

There have been several reports published and unpublished, concerning nonspecific small bowel lesions consisting of stenosis with or without ulceration, associated with the administration of enteric-coated thiazides with potassium salts. These lesions may occur with enteric-coated potassium tablets alone or when they are used with nonenteric-coated thiazides, or certain other oral diuretics.

These small bowel lesions have caused obstruction, hemorrhage and perforation. Surgery was frequently required and deaths have occurred.

Available information tends to implicate enteric-coated potassium salts although lesions of this type also occur spontaneously. Therefore, coated potassium-containing formulations should be administered only when adequate dietary supplementation is not practical, and should be discontinued immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported for sulfonamide derivatives, including thiazides.

EUTRON does not contain added potassium.

USE IN PREGNANCY

Pargyline Hydrochloride. Safe use of pargyline during pregnancy or lactation has not yet been established. Before prescribing pargyline in pregnancy, in lactation, or in women of childbearing age, the potential benefits of the drug should be weighed against its possible hazard to mother and child.

Methyclothiazide. Thiazides should be used with caution in pregnant women and nursing mothers since they cross the placental barrier and appear in cord blood and in breast milk. The use of thiazides may result in fetal or neonatal jaundice, bone marrow depression and thrombocytopenia, altered carbohydrate metabolism in newborn infants of mothers showing decreased glucose tolerance, and possible other adverse reactions which have occurred in the adult. When the drug is used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus.

PRECAUTIONS

Pargyline Hydrochloride. The therapeutic response to a variety of drugs may be changed, or exaggerated, in patients receiving a monoamine oxidase inhibitor such as pargyline hydrochloride. Caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers and narcotics (meperidine should not be used), should be used cautiously and at reduced dosage in patients who are taking pargyline.

Pargyline has not been shown to damage the kidney or liver. However, laboratory studies including complete blood counts, urinalyses, and liver function tests should be performed periodically. The drug should be used with caution in the presence of liver disease. All patients with impaired circulation to vital organs from any cause including those with angina pectoris, coronary artery disease, and cerebral arteriosclerosis should be closely observed for symptoms of orthostatic hypotension. If hypotension develops in these patients, EUTRON dosage should be reduced or therapy discontinued since severe and/or prolonged hypotension may precipitate cerebral or coronary vessel thromboses.

The hypotensive effect of pargyline may be augmented by febrile illnesses. It may be advisable to withdraw the drug during such diseases.

Since pargyline is excreted primarily in the urine, patients with impaired renal function may experience cumulative drug effects. Such patients should also be watched for elevations of blood urea nitrogen and other evidence of progressive renal failure. If such alterations should persist and progress, the drug should be discontinued.

An increased response to central depressants may be manifested by acute hypotension and increased sedative effect. Pargyline also may augment the hypotensive effects of anesthetic agents and surgery. For this reason, the drug should be discontinued from at least two weeks prior to surgery.

In the event of emergency surgery smaller than usual doses (1/4 to 1/5) of narcotics, analgesics, sedatives, and other premedications should be used. If severe hypotension should occur, this can be controlled by small doses of a vasopressor agent such as levarterenol.

Pargyline therapy should not be used in individuals with hyperactive or hyperexcitable personalities, as some of these patients show an undesirable increase in motor activity with restlessness, confusion, agitation and disorientation. Clinical studies have shown that pargyline may unmask severe psychotic symptoms such as hallucinations or paranoid delusions in some patients with pre-existing serious emotional problems. This can usually be controlled by judicious administration of chlorpromazine intramuscularly, or other phenothiazines, the patient remaining supine for one hour after administration.

Pargyline should be used with caution in patients with Parkinsonism, as it may increase symptoms. In addition, great care is required if pargyline is administered in conjunction with anti-parkinsonian agents.

In experience to date, pargyline has not been associated with eye changes or optic atrophy as reported with the use of some hydrazine monoamine oxidase inhibitors. However, patients receiving this drug for prolonged periods should be examined for any changes in color perception, visual fields, fundi, and visual acuity.

Clinical reports state that certain individuals receiving pargyline for a prolonged period of time are refractory to the nerve-blocking effects of local anesthetics, e.g., lidocaine.

Methyclothiazide. Thiazide therapy should be used with caution in patients with severely impaired renal function because of the possibility of cumulative effects. Caution is also necessary in patients with severely impaired hepatic function or progressive liver disease.

Thiazide drugs may reduce response to levarterenol. Accordingly, the dosage of vasopressor agents may need to be modified in surgical patients who have been receiving thiazide therapy.

Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effect of the drug may be enhanced in the sympathectomized patient.

All patients should be observed for clinical signs of fluid or electrolyte imbalance, including hyponatremia ("low-salt" syndrome). These include thirst, dryness of the mouth, lethargy and drowsiness.

Hypokalemia may occur during therapy with methyclothiazide. In such cases supplemental potassium may be indicated. Potassium depletion can be hazardous in patients taking digitalis. Myocardial sensitivity to digitalis is increased in the presence of reduced serum potassium and signs of digitalis intoxication may be produced by formerly tolerated doses of digitalis. Hypochloremic alkalosis may occur following intensive or prolonged thiazide therapy. Replacement of chloride may be indicated in such cases.

Thiazides may decrease serum P.B.I. levels without signs of thyroid disturbance.

ADVERSE REACTIONS. Generally side effects should not be severe or serious when the recommended dosages are used, and necessary precautions are observed. If side effects are severe or persist in spite of symptomatic treatment, the dosage should be reduced or the drug withdrawn. See also Warnings and Precautions.

Pargyline Hydrochloride. The most frequently occurring side effects are those associated with orthostatic hypotension (dizziness, weakness, palpitation, or fainting). These usually respond to a reduction of dosage. Patients should be warned against rising to a standing position too quickly, especially when getting out of bed. Severe and persistent orthostatic hypotension should be avoided by reduction in dosage and/or discontinuation of therapy.

Mild constipation, fluid retention with or without edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence and delayed ejaculation, rash and purpura, have also been encountered. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Gain in weight may be due either to edema or increased appetite. Drug fever is extremely rare. In some patients reduction of blood sugar has been noted. Although the significance of this has not been elucidated, the possibility of hypoglycemic effects should be borne in mind. Congestive heart failure has been reported in patients with reduced cardiac reserve.

Methyclothiazide. Side effects that may accompany thiazide therapy include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesias, weakness, skin rash, photosensitivity. Jaundice and pancreatitis also have been reported.

Blood dyscrasias, including thrombocytopenia with purpura, agranulocytosis and aplastic anemia, have been reported with thiazide drugs.

Thiazides have been reported, on rare occasions, to have elevated serum calcium to hypercalcemic levels. The serum calcium levels have returned to normal when the medication has been stopped. This phenomenon may be related to the ability of the thiazide diuretics t lower the amount of calcium excreted in the urine.

Elevations of blood urea nitrogen, serum uric acid, and blood sugar have occurred with the use of thiazide drugs. Symptomatic gout may be induced.

Although not established as an adverse effect of methyclothiazide, it has been reported that thiazide diuretics may produce a cutaneous vasculitis in elderly patients.

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COMMUNITY OUTBREAK OF INFECTIOUS HEPATITIS

Assays of SGOT and Australian serum hepatitis antigen

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Blood samples of over 1,000 pupils in the centralized school in Waterville, New York, were taken shortly after it was recognized that hepatitis had been festering in the village for seven months. Samples were analyzed for levels of serum glutamic oxaloacetic transaminase and for Australian antigen. SGOT levels were found to decline with age, but this was apparently unrelated to the presence of hepatitis in the population. Assays for Australian antigen yielded negative results also.

The occurrence of 2 deaths from hepatitis in adult siblings from Waterville, New York, during February, 1970, stimulated a more intensive investigation of the smoldering outbreak of infectious hepatitis known to have been in progress in that village and adjacent communities since August, 1969. Extensive case-finding efforts identified a total of 87 clinical cases, essentially all icteric, with onsets during the period August 1, 1969, through March 31, 1970. Epidemiologic appraisal of the data seemed clearly to exclude a common source for the outbreak, and spread appeared to have been by person-to-person contact. No sharp peak of incidence was noted, although onset of most of the cases occurred from November 15 to March 15. The age distribution of the cases was as follows: Under five years, none; five to nine years, 27; ten to fourteen years, 16; fifteen to nineteen years, 19; over twenty-five years, 25.

Survey of school children

Attention was focused on the Village of Waterville (estimated population 1,500) because of the 2 deaths in residents and because infectious hepatitis appeared to have been concentrated in the centralized school in that community. The school had 1,322 pupils with 33 cases of icteric hepatitis having onsets as follows: August, 1; September, 1; October, 2; November, 6; December, 7; January, 11; February, 5; March, 0.

Because of public concern about the outbreak, and with the hope of better defining the extent and type of infection, arrangements were made to obtain blood samples from a small group of cases, household contacts, and noncontacts. The extent of community interest was demonstrated by the fact that 1,147 of the 1,322 pupils presented themselves for bleeding on March 24, as did 105 faculty members. The results of studies of these blood specimens are presented in Table I.

Results

Table I lists the SGOT (serum glutamic oxaloacetic transaminase) levels by year of age of the school children studied, divided into patients diagnosed as cases of infectious hepatitis, household contacts of such patients, and those with no known direct contact with the disease. The tabulation illustrates the decline in SGOT levels in blood of persons from six to eighteen years of age in each of the three groups. The levels are almost identical among the three categories, suggesting that the levels of SGOT, which were undoubtedly elevated during acute illness, had returned to normal in most instances. Most of the patients had experienced the onset of hepatitis more than two months prior to bleeding, and all of them had had it over one month prior to bleeding.

These data call attention to the variation by age in SGOT levels, a point of some clinical interest that has been observed previously.[3-7] The 33 icteric cases among children in this school were distributed by grade as follows: Kindergarten, 3

TABLE I. SGOT levels by year of age in recovered cases of infectious hepatitis, household contacts, and other school children, Waterville, 1970. All samples were assayed by the method of Morgenstern *et al.*[1] with serum-based L-aspartate:2-oxoglutarate aminotransferase for standardization. Values are in Karmen optical density units at 25°C. using the assay procedure of Karmen[2]

	Cases			Household Contacts			No Known Contact		
Age (Years)	Mean	Standard Deviation	Number	Mean	Standard Deviation	Number	Mean	Standard Deviation	Number
6	. . .	. . .	1	37	8.2	6	35	4.2	49
7	35	3.4	5	34	5.1	12	35	9.1	80
8	38	8.5	4	32	3.3	14	34	5.8	85
9	34	5.0	4	35	6.9	14	34	6.2	74
10	. . .	. . .	1	31	3.1	12	32	5.9	103
11	30	3.5	2	37	2.4	5	33	4.8	81
12	. . .	. . .	1	29	3.9	11	29	4.9	86
13	. . .	. . .	1	28	2.7	6	27	4.8	89
14	24	7.1	3	24	4.4	9	25	4.9	92
15	. . .	. . .	. . .	25	2.4	5	27	4.5	87
16	. . .	. . .	1	25	3.5	7	26	7.0	56
17	27	. . .	2	26	4.0	8	26	4.3	49
18	. . .	. . .	. . .	27	7.2	4	25	5.0	20
TOTALS			25			113			951

(not bled); first grade, 3; second grade, 11; third grade, 2; fourth grade, 2; fifth grade, 2; sixth grade, 2; eighth grade, 3; ninth grade, 1; eleventh grade, 2; and twelfth grade, 2. Thus, in the grade school, housed in a separate building, 22 cases occurred among 693 pupils (six to twelve years of age), and in the high school only 8 cases occurred among 629 pupils. It would seem that the decline in SGOT levels with age reflects a normal, perhaps physiologic, effect and is not related to the recent presence of infectious hepatitis in this population.

During the course of these studies, the blood of 27 cases and 45 household contacts was examined for Australian serum hepatitis antigen by immunodiffusion technics. Results were negative in all instances. It should be added, however, that most of these patients were recovered from their illnesses, the median interval from onset to date of bleeding being eighty-two days. Two patients were in the second and thirteenth day of illness at the time of bleeding, the latter being one of the two deaths in the outbreak. Thus, this study may add still another example to the outbreaks of infectious hepatitis found to be unassociated with Australian antigen, summarized recently by Szmuness and Prince,[8] and augmented by another instance from New Delhi.[9]

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RECTAL BLEEDING IN CROHN'S DISEASE OF COLON

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Because of the confusion arising in the diagnosis of Crohn's disease of the colon and its differentiation from chronic ulcerative colitis, the author stresses the need for dependence on histologic material as well as clinical and roentgenographic features. He describes these features at length and places great emphasis on the importance of rectal bleeding as a manifestation of Crohn's disease. Twelve illustrative cases in which bleeding was symptomatic are cited.

Granulomatous disease of the alimentary tract was first described nearly forty years ago by Crohn, Ginzburg, and Oppenheimer.[1] The initial group of cases had lower small-bowel involvement, and, therefore, the entity was named regional ileitis. As other portions of small bowel were found to be involved in subsequent patients, the name change to regional enteritis was adopted.[2] It soon became apparent that granulomatous changes could involve other portions of the gastrointestinal tract, a fact well documented by British investigators who were among the first to describe colonic involvement.[3,4] The terms applied to this colonic disease have been varied, adding to the confusion found in the literature. Regional enteritis of the colon is the term used by authors, emphasizing its relationship to its small-bowel counterpart.[5]

Others have preferred the name granulomatous colitis, thus drawing attention to the frequent noncaseating sarcoid granulomas found in affected segments of the bowel.[6-8] However, granulomas may not always be found in regional enteritis; therefore, some authors have adopted the name "Crohn's disease of the colon" which serves to distinguish this entity from chronic ulcerative colitis without pointing to any specific etiologic factor or histologic picture.[4,9] Chronic ulcerative enteritis, ileocolitis, regional colitis, segmental colitis, and transmural colitis are other anatomically descriptive names applied to the same condition.[10,11]

Crohn's disease of the colon is an uncommon disease of unknown cause whose recognition has been obscured by the confusion in terminology found in the literature. Granulomas are not consistently found in Crohn's disease of the colon. Various authors report from 50 to 81 per cent of their cases exhibiting the typical histologic findings.[4,8,9,12] Investigators have commented on the inconsistency of the histologic findings. In some cases granulomas were absent on first surgical specimens but were found during subsequent recurrences; conversely, granulomas which had been present initially were replaced by progressive fibrosis.[13,14]

If Crohn's disease is classified as one of the granuloma-producing diseases of the colon, we must also consider trauma, vascular injury, radiation, foreign bodies, chronic specific inflammations, such as tuberculosis, syphilis, actinomycosis, lymphogranuloma inguinale, and parasitic disorders, such as schistosomiasis and amebiasis, all of which may cause similar granulomatous lesions.

It is probable that most cases of Crohn's disease of the colon at one point in their pathologic evolution pass through a stage during which granulomatous lesions are present. What creates most of the confusion is that in most cases there is also mucosal involvement resulting in ulceration; if this happens in the nongranulomatous stage of the disease, the ulceration may erroneously lead to a diagnosis of chronic ulcerative colitis, a far more commonly occurring disorder.

Ulcerative colitis itself is really a descriptive term; it literally encompasses several disease entities which can be classified as follows: (1) acute or chronic ulcerative colitis, (2) Crohn's disease of the colon, with or without granulomas, (3) ischemic ulcerations, (4) uremic ulcerations, (5) septicemia with ulceration, and (6) partial intestinal obstruction with stasis ulcers.

It is for these reasons that the diagnosis of Crohn's disease of the colon and its differentiation from chronic ulcerative colitis depend not only on histologic material but also on set clinical and roentgenographic features.

The purpose of this report is to review the classic, clinical, histologic, and roentgenologic features of Crohn's disease of the colon with particular emphasis on rectal bleeding and its relationship to the clinical course, therapy, and prognosis of the disease. Patients included in the study came from the Jewish Hospital and Medical Center of Brooklyn and selected cases seen in private practice between December 31, 1964, and December 31, 1969. Diagnoses will be based on the triad of clinical, histologic, and radiographic criteria to be enumerated and discussed.

Incidence

Crohn's disease of the colon is a disease of young adults, most patients acquiring the illness in their late teens or early twenties. Onset after the age of forty is less common.[6,8] The overall statistics appear to favor both sexes equally. There may very well be a family tendency exhibited.[15]

Clinical features of Crohn's disease of colon

The course of the illness is usually progressive and continuous. Patients usually complain of abdominal crampy pain and diarrhea with loose stools having very little mucus. There may also be fever, malaise, nausea, and vomiting. Weight loss is usual and may be quite marked. Gross blood in the stool is reported as unusual even in patients with severe diarrhea and, when it occurs, is supposedly intermittent. Gross rectal bleeding usually is reported as confined to patients with rectal and sigmoid involvement. It is of interest that there is a higher incidence of bleeding in patients in whom granulomas have been demonstrated.[16]

Physical findings may include pallor, emaciation, pyrexia, diffuse abdominal tenderness, palpable tender colon, abdominal masses, and clubbing of the fingers.

Fistulization is extremely common with Crohn's disease of the colon and small intestine. Perianal and perirectal fistulas are more common than internal fistulas, but these, too, are found with involvement of the vagina, bladder, stomach, duodenum, uterus, buttocks, loin, and abdominal wall.

Perianal fissures, abscesses, and ulcerations, as well as anal strictures, are common and frequently diagnostic. It is of interest that anal infections may precede Crohn's disease of the colon, sometimes by four to five years.[15]

Extracolonic manifestations such as episcleritis, synovitis, skin lesions, and arthritis have been described as less commonly found than in chronic ulcerative colitis by some authors.[8]

Some have never seen pyoderma in Crohn's disease of the colon,[9,15] while still others find arthritis, pyoderma, iritis, stomatitis, and thrombophlebitis more frequently in Crohn's disease than in chronic ulcerative colitis.[16]

Sigmoidoscopy

Sigmoidoscopic examination findings may be entirely normal in nearly 50 per cent of patients with Crohn's disease of the colon who do not have rectal involvement[9]; on the other hand, the picture may be indistinguishable from that of chronic ulcerative colitis with diffuse friability of the rectal mucosa.[16] As a rule, islands of normal mucosa are seen with patchy aphthous-appearing, punched-out mucosal ulcers. Pus in the lumen is common, but there is much less bleeding during endoscopy than is commonly seen with chronic ulcerative colitis.[15] Longitudinal and horizontal fissures with overhanging edges of edematous mucosa give rise to the so-called cobblestone appearance. Blunting of the valves of Houston is not confined to Crohn's disease of the colon. There may be rigidity of the rectal wall and narrowing of the lumen. Strictures are usually transmural and, therefore, cannot be dilated as easily as those of chronic ulcerative colitis.

Fistulas are common and extend from the crypts to the perirectal or ischiorectal spaces where abscess formations occur. Fistulas may lead to the perianal skin with extensive local ulcerations which may be so extremely large as to lead to destruction of the anal sphincter.

Anal fissures with local edema, discoloration, and anal tags are commonplace.

Pathology

Macroscopic examination. The entire colon may be involved, but segmental involvement of the colon with normal intervening portions is also common (Table I).[9] Small-bowel involvement with the terminal ileum the most frequent site has been reported in 20 to 85 per cent of cases.[9,16,17]

There is thickening and edema of the mesentery. Regional lymph nodes are usually enlarged. The serosa appears dull and granular. The intestinal wall itself feels thickened and stiff. The diffuse transmural involvement is probably responsible for the narrowing and constriction of involved segments, with dilation of intervening normal loops of bowel. Internal and external fistulas are common. Mucosal ulcers form longitudinal furrows which may extend over long portions of bowel with intervening mucosal ridges; transverse, narrow, and deep fissures may intersect, giving enhancement to the cobblestone effect and contributing to the origin of the previously described fistulas.

Microscopic examination. All layers are involved initially with edema and, subsequently, fibrosis. The mucosa shows edematous thickening. Hyperplastic follicles of lymphoid tissue are com-

TABLE I. Anatomic classification of 15 cases of Crohn's disease of colon

Type	Number of Cases
Most or all large intestine	
With ileum involvement	9
Without ileum involvement	3
Segmental strictures	
Single	0
Multiple	0
Distal colon	
Sigmoid, rectum, and anal canal	3

mon, with diffuse inflammatory infiltrates also present. The classic crypt abscesses of chronic ulcerative colitis may rarely be found. Granulomatous changes may be present, either as sarcoid-like, noncaseating epithelial granulomas or as less well-formed aggregates of epithelioid mononuclear and multinucleated Langhans' type giant cells.

Typical granulomas may be found in anal lesions and may line the frequently found fistulous tracts. Twenty-five per cent of patients have lymph nodes exhibiting granulomas, usually when they are also found in the colon itself.[16] Granulomas do not correspond to disease severity.[16] They may come and go and tend to start in the mucosa, to be found later in the submucosa as well as peripherally.

Mucosal ulcerations have been described as an early finding of great significance leading to submucosal and muscularis extension as fissures[7]; on the other hand, other investigators have usually attributed ulceration to preceding lymphocytic aggregations and, therefore, appearing somewhat later in the disease process.[18]

Roentgenographic features

The roentgenographic features which help to identify Crohn's disease of the colon and to distinguish it from chronic ulcerative colitis are presented in the following outline:

1. Segmental distribution, more on right than on left side of colon
2. Universal distribution in colon frequently associated with involvement of terminal ileum
3. Nodular irregular pattern after evacuation of barium
4. Rectum often normal
5. Transverse ulcerations
6. Horizontal ulcerations
7. Cobblestone effect due to edema between ulcerations
8. Tiny discrete ulcers in early cases associated with small irregular nodules
9. Ulcers may be collar stud in nature with coalescence producing barium line parallel to lumen
10. Intramural abscesses
11. Strictures
12. Irregularity of contour with asymmetric involvement and pseudodiverticula
13. Skip lesions
14. Fistulas common in ileum, less so in colon
15. Fissures penetrating and giving "spiking" appearance
16. Shortening of colon is rare
17. Infrequent toxic dilatation of the colon
18. Complete absence of carcinomatous changes (one or two exceptions in the entire literature)

TABLE II. Age distribution of 15 cases of Crohn's disease of colon

Age Groups (Years)	Number of Cases
10 to 20	4
21 to 30	4
31 to 40	1
41 to 50	1
51 to 60	3
61 to 70	1
71 to 80	0
81 to 90	1

TABLE III. Presenting symptoms in 15 cases

Symptoms	Number of Patients
Abdominal pain	10
Diarrhea	9
Weight loss	7
Bright red blood in stool	6
History of recent bright red blood in stool	3
Vomiting	4
Anorexia	3
Lethargy	3
Nausea	2
Tenesmus	1
Fecal incontinence	1

It can be stated that roentgenographic severity does not necessarily reflect the intensity of the clinical picture.

Case study material

Despite careful perusal of radiologic and pathologic archives, only 15 cases were found which fulfilled the criteria previously outlined. It is quite possible that because of the great confusion in nomenclature some cases might inadvertently have been described and classified as chronic ulcerative colitis.

There were 8 males and 7 females among the cases. Two of the females were Negro. The youngest patient was eleven years old, the eldest eighty-one. Forty per cent were over forty years of age (Table II).

The presenting features of Crohn's disease of the colon included weight loss, anorexia, tenesmus, diarrhea, fecal incontinence, abdominal crampy pain, rectal bleeding, nausea, vomiting, and lethargy in the frequency illustrated in Table III.

It is of interest that 3 patients in whom no history of rectal bleeding was elicited had positive re-

TABLE IV. Bleeding in Crohn's disease of colon

Authors	Total Cases	Cases of Bleeding	Severity
Localio[18]	30	1	Massive
Janowitz, Lindner, and Marshak[8]	60	0	*
Farmer, Hawk, and Turnbull[16]	87	45	Moderate
Lennard-Jones, Lockhart-Mummery, and Morson[15]	?	33 per cent	*
Jones, Lennard-Jones, and Young[19]	11	3	Slight
Barnett, Mora, and Varner[6]	20	8	*
Tarkunde and Patankar[20]	3	0	*
Lockhart-Mummery and Morson[9]	75	34	*
McGarity *et al.*[7]	15	2	Massive
McGovern and Goulston[21]	30	0	*

* Severity not mentioned.

sults in the guaiac tests of stools on admission. Thus, 80 per cent of all patients exhibited rectal bleeding.

Physical examination revealed abdominal tenderness, usually along the course of the colon, in 7 patients, fever in 6, and severe pallor in 2. One patient each exhibited the following signs: pedal edema, loss of anal sphincter tone, tachycardia, hypotension, abdominal mass, vaginal discharge, arthritis, clubbing of the fingers, erythema nodosum, and clinical ascites.

Sigmoidoscopy revealed the rectum to be free of disease by all criteria in 6 (40 per cent) of the patients, a somewhat lower figure than that mentioned by others.[17] Five patients had fistulas in ano; there was 1 spontaneous rectovaginal fistula. Four patients had lower rectal strictures, 3 had polypoid anal growths, 2 had anal ulcers, 1 had anal fissures, and 1 had multiple perianal abscesses.

The high incidence of anal lesions has been previously described and was obvious in this group of cases. Of the 10 patients with anal lesions, 3 had Crohn's disease confined to the colon while 7 also had ileal involvement. This complication, therefore, appears to be more frequent when small-bowel involvement is present.

Despite many biopsies performed, only 2 anal lesions were diagnostic, with characteristic sarcoid-like granulomas on microscopic examination. Biopsies revealing negative findings, however, have no significance, since the typical granulomas are so scattered and variable in appearance.

It is of some interest to interpret the chronology and location of involvement according to classifications previously adopted using both radiographic and anatomic criteria (Tables I and IV).[9,17]

The fact that only 1 case of small-bowel involvement following initial colonic disease was found may reflect the short interval since discovery of the initial lesion in the 15 patients. No patients had colonic strictures as the only finding. Sixty per cent of the cases had ileal involvement, a figure higher than most quoted statistics (Table V).[9]

TABLE V. Types of involvement in 15 cases of Crohn's disease of colon

Types	Number of Cases
Colon alone	6
Simultaneous small bowel and colon	6
Colon at site of ileocolic anastomosis*	2
Initial colonic with subsequent small bowel	1
Initial small bowel with subsequent colon	2

* Two cases also had other portions of colon involved.

TABLE VI. Indications for surgery in 7 cases

Indications	Number of Cases
Fistulas	4
Persistent clinical symptoms despite medical management	3
Massive bleeding	2
Obstruction due to adhesions	1

Treatment in most cases initially has involved medical management with adequate rest, supportive psychotherapy, a low-residue diet, tranquilizers, salicylazosulfapyridine (Azulfidine), anticholinergic preparations, and topical and systemic steroids. Broad spectrum antibiotics have been used when indicated by superimposed infections. Blood transfusions and parenteral iron preparations are frequently required because of anemia secondary to blood loss.

Surgical intervention is usually indicated when there is failure of response to medical management, intestinal obstruction, massive hemorrhage, fistula formation, abscess formation, abdominal masses, septic clinical course, toxic dilatation, or perforation of the colon. No cases of toxic dilatation or free perforation were seen, although these have been described in the literature.

Seven patients in this series underwent surgery. In all cases a positive pathologic diagnosis was made. Indications for surgery in the 7 patients are listed in Table VI. Three of these patients have had one previous operation; 1 patient has had two prior operations for Crohn's disease of the colon. There have been no deaths.

It has been stated that there is a 50 per cent recurrence of active disease after surgery. Sixty-five per cent of recurrences appear within two years and 85 per cent within five years; these recurrences may well be skip lesions which were missed on initial study. There is a consensus in the literature that patients having an ileostomy and total colectomy are less likely to have any recurrence of disease than those having a resection and anastomosis, a fact borne out by the patients presented.[22]

The type of surgery performed was usually dictated by the extent and site of disease involvement. Three patients underwent ileostomy and subtotal colectomy with a normal rectum left in situ. One patient had a total colectomy with an abdominoperineal resection; 1 patient had lysis of adhesions. Three patients had segmental resections with anastomosis.

To gain further insight into the importance of bleeding in Crohn's disease of the colon, the cases associated with bleeding will be discussed in more detail.

Case reports

Bright red blood in stool on admission

Case 1. A sixty-two-year-old man was admitted on October 5, 1967, with a two days' history of rectal bleeding. Eight years before he had had a segment of the left colon removed because of rectal bleeding. Six years later a total colectomy and ileostomy, with preservation of the rectum, was performed for similar symptoms. On examination of the tissue by the pathologist, it was found to be characteristic of Crohn's disease of the colon. The patient had been on steroids for one year because of uveitis. He had a long history of arthritis. The patient's hematocrit on admission was 32. No studies were performed by his physician during the present admission; however, two years before, the rectum was described as showing edema, friability, and multiple ulcerations. The patient was administered ACTH intravenously for three days with cessation of bleeding.

Observation. It appears inadvisable not to remove a diseased rectum.

Case 2. A twenty-year-old white male was first admitted on July 2, 1969, with a twenty-four-hour history of black stools and bright red rectal bleeding. There had been anorexia, lethargy, severe diarrhea, and a 45-pound weight loss over the preceding fifteen months. He was extremely pale and had tenderness in the left iliac fossa. His hematocrit, which had been 33 on admission, rapidly fell to 25. Bleeding continued for one week during which period he required four transfusions of whole blood. A sigmoidoscopy revealed a normal mucosa with blood oozing from above. A barium enema revealed classic involvement of the last foot of ileum and the ascending colon to the hepatic flexure. The patient was placed on salicylazosulfapyridine and prednisone. Discharged after sixteen days, he returned two weeks later with another moderate bleeding episode of bright red rectal blood. He received one unit of whole blood. Started on intravenous ACTH, he stopped bleeding and remained clinically well.

Observation. Bleeding per rectum may be present in the absence of rectal involvement. It may have originated in either the right colon or the terminal ileum. Bleeding may be controlled by steroids but may yet occur while the patient is on maintenance therapy.

Case 3. A twenty-one-year-old white male, admitted on September 9, 1969, gave a history of rectal bleeding for one week. He admitted noting diarrhea over the past three months, with occasional lower abdominal cramps. On examination he was febrile at 102°F., dehydrated, and with tenderness in both iliac fossae. His hematocrit dropped rapidly from its initial value of 38 to 26. Five units of blood were required on the fourth hospital day when the patient suddenly exhibited diaphoresis, tachycardia, and hypotension. Sigmoidoscopy revealed a deep posterior fissure with a sloughing base. The rectum itself was free of disease; blood was coming from above the reaches of the scope. Roentgenographic studies revealed involvement of the terminal ileum and colon, except for the rectum and sigmoid colon. The patient was placed on salicylazosulfapyridine, phenobarbital, diphenoxylate (Lomotil), and intravenous ACTH with complete cessation of bleeding within eight hours. Diarrhea, fever, and abdominal pain rapidly disappeared.

Observation. Massive bleeding may occur in the absence of rectal involvement and may show a dramatic response to steroids.

Case 4. This twenty-four-year-old white male was seen in my office on February 6, 1968, because of bright red rectal bleeding of three months' duration during his bowel movements. The patient had no diarrhea. His history was classic. Ten years earlier he had had an appendectomy. One year later a "bypass" procedure was performed for Crohn's disease of the ileum. Eight years ago an ileovesical fistula was excised. Seven years ago his anastomosis was revised. Five years ago he was admitted for bleeding per rectum. At that time his hematocrit was 28. He received one unit of whole blood. Sigmoidoscopy revealed no abnormality. He had no further bleeding until recently. His hematocrit when performed in my office was 36. A barium enema revealed no evidence of involvement. Sigmoidoscopy now revealed an extensive cobblestone effect with multiple small bleeding ulcerations of the rectum. For the first time the patient was now placed on rectal steroids. His bleeding stopped after one week of therapy. Rescoping after one month of therapy revealed a normal rectal mucosa with no evidence of disease.

Observation. Bleeding in Crohn's disease may originate in ileum or rectum. Rectal involvement may respond well to local steroid therapy.

Case 5. A twenty-seven-year-old male was admitted on August 26, 1966, with a two months' history of bloody diarrhea, up to 10 bowel movements per day, abdominal cramps, a 17-pound weight loss, weakness, and fever. Similar symptoms had been present about seven years earlier. The patient was pale. There was marked tenderness in the left iliac fossa. The hematocrit was 38. Sigmoidoscopy revealed multiple perianal fistulas and a stricture at 3 cm., above which the mucosa appeared normal. A barium enema revealed extensive involvement of the entire colon and distal ileum. Steroids were not used. The patient had a subtotal colectomy and ileostomy with the rectum left in situ.

Observation. Moderate bleeding was again noted with a relatively disease-free rectum.

Case 6. A fifty-six-year-old female was admitted on October 5, 1968, with a history of five bloody diarrheal stools daily for several weeks. The patient had had a "by-pass" operation at thirty-four years of age. Eight years ago rectal surgery for fistulas was performed. The patient had been on oral steroids for four years. Sigmoidoscopy revealed a stricture at 2 cm., above which the mucosa was ulcerated and edematous. A barium enema revealed a recurrence of involvement of the terminal small bowel and colon at the previous anastomatic site and skip areas of involvement at the splenic flexure and sigmoid. During surgery the sigmoid was resected and a reversed jejunocolic anastomosis was successfully performed.

Observation. The patient had bleeding under steroid management. The disease appears to be more relentless when small-bowel involvement is early and more extensive, a fact previously commented on by Lindner.[23]

Cases with prior history of rectal bleeding

Case 7. A twenty-seven-year-old female was admitted on April 3, 1966, for elective surgery for multiple recurrent labial and rectal abscesses. At the age of seventeen the patient had been admitted because of bloody diarrhea, fever, and weight loss of four months' duration. A barium enema at that time had revealed the terminal ileum, cecum, transverse colon, and splenic flexure to be involved. She was placed on salicylazosulfapyridine. Six years later an ileostomy and resection of the transverse and ascending colon were performed. The patient was placed on steroids. Sigmoidoscopy on admission in 1966 revealed rectal involvement with classic findings. An abdominoperineal resection was performed. Classic granulomatous involvement was noted in the rectum.

Observation. Rectal involvement is not always present early and, when it does come, may not be accompanied by bleeding.

Case 8. An eighty-one-year-old man had a one year's history of anorexia, weight loss, and diarrhea with occasional blood staining. He complained of tenesmus and fecal incontinence. Rectal examination revealed absence of normal sphincter tone. Sigmoidoscopy revealed extensive ulcerations and polypoid changes in the rectum. His hematocrit was 35. A barium enema revealed involvement of the descending colon, sigmoid, and rectum with skip areas, fissures, and sinus tracts. The patient improved greatly when placed on phthlylsulfathiazole (Sulphathalidine), diphenoxylate, and oral prednisone.

Observation. This is the oldest patient in the series. His response to medical management was good. Localized disease is supposedly more common in the older patient.[7]

Case 9. This fifty-one-year-old male was admitted on November 30, 1968, with a one-year history of diarrhea, frequent bloody stools, weight loss, and abdominal pain. There had been no blood in the stools for the past two weeks, but bleeding followed a sigmoidoscopy which revealed a diffuse hard narrowing, extensive petechial hemorrhages, and edema of the rectum. A rectal biopsy was diagnostic. A barium enema confirmed rectal, sigmoid, and descending colon involvement only. A segmental resection was performed.

Observation. Steroids were never used.

Cases with laboratory confirmation of blood in stools

Case 10. An eleven-year-old Negro girl was admitted on July 17, 1968, with a two months' history of weight loss, diarrhea, and vaginal discharge. Her hematocrit on admission was 23. Guaiac tests of stools were repeatedly positive for blood. Sigmoidoscopy revealed multiple perianal fistulas and a rectovaginal fistula. The mucosa was edematous with the presence of a low rectal stricture. A rectal biopsy was diagnostic. A barium enema confirmed extensive colon involvement.

Observation. Extremely young patients may not be aware of bleeding.

Case 11. An eighteen-year-old female was admitted on May 8, 1968, with a one-year history of abdominal cramps, fever, diarrhea, and anorexia. Examination revealed tenderness in the right iliac fossa. Her hematocrit was 29. Results of repeated stool studies were all strongly guaiac positive. Sigmoidoscopy disclosed no abnormality. Roentgenographic studies revealed involvement to be confined to the midascending and transverse colon. The patient improved on steroids but has been lost to follow-up studies.

Case 12. A thirty-eight-year-old female was admitted because of vomiting for forty-eight hours and abdominal cramps of one week's duration. She had had diarrhea for the past year following a "by-pass" anastomosis for Crohn's disease of the ileum and colon. The patient had had "colitis" as a child. Physical examination revealed extensive clubbing and erythema nodosum. Sigmoidoscopy revealed rectal involvement with a rectovaginal fistula. Several stools were positive for blood. Roentgenographic studies confirmed involvement of the rectum and small bowel at the anastomatic site where there were some obstructive features. The patient was relieved through conservative treatment. She was discharged on supportive measures.

Comment

It is apparent that rectal bleeding as a manifestation of Crohn's disease of the colon is much more common than is usually described (Table IV). It appears that it may be a manifestation of involvement in the ileum, colon, or rectum. It may occur early or late in the course of the disease. Bleeding may be slight, moderate, or massive and is usually one of the presenting complaints. The bleeding usually responds to the general measures used to control the disease itself. Steroids have been used for control of bleeding with great success in most cases; however, some patients will bleed despite the use of steroids. Oral or parenteral adrenal corticosteroids are indicated, depending on the urgency of the situation. Rectal instillation of steroids have proved useful when the disease is confined to the rectum. In some cases bleeding may be so massive as to necessitate the use of immediate surgical resection of the involved segment. It is also apparent that rectal bleeding cannot be used clinically to differentiate Crohn's disease of the colon from ulcerative colitis.

In a disease having an unknown cause which is chronic, has a low mortality rate, but is usually progressive until complications necessitate surgical intervention, which, frequently may be unsuccessful in many cases, some manifestations such as obstruction, extensive inflammation, and bleeding may be controlled by the use of steroids, thus postponing surgery until the development of other more serious complications, such as fistulization or abscess formation.

Summary

Crohn's disease of the colon and its clinical, pathologic, and roentgenographic features are discussed. The importance of frequency, type, severity, and management of rectal bleeding is elucidated.

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ABNORMAL GLUCOSE METABOLISM IN MYOCARDIAL INFARCTION

The glucose metabolism of 52 patients who had recently suffered myocardial infarction was studied. All patients were under the age of sixty. Excluding 11 patients who were known diabetics, 41 patients had normal fasting blood sugar test results. Of these, 34 had abnormal glucose tolerance test results. Only 7 of the total of 52 patients had completely normal test results, and 2 of these were found to have renal glycosuria. The author suggests that coronary artery disease may be a problem associated with the development of diabetes.

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It has been an accepted fact for some years that diabetes mellitus is associated with the premature onset of arteriosclerosis. Myocardial infarction has also been recognized as occurring with greater frequency under these circumstances. An interest in this matter was further stimulated by a number of patients who presented themselves with acute myocardial infarction and who had a very high frequency of abnormal glucose metabolism as judged by the three-hour glucose tolerance test. The striking feature in most was the presence of a normal fasting blood sugar. The interesting question presented itself: is coronary artery disease associated with the state of latent diabetes?

A prospective study was begun to evaluate glucose metabolism in all patients under age sixty seen by the author in Auburn, New York, with acute myocardial infarction. The study itself was initiated in October, 1962. The arbitrary age limit of sixty was chosen as a point below which myocardial infarction might be assumed to have occurred prematurely. The study was continued until March, 1967, when 52 cases had been accumulated. The following criteria were selected as requirements for inclusion in the study:

1. Age under sixty.
2. Under the care of the author in the hospital at the time of the infarction.
3. Diagnosis of myocardial infarction established by both serial changes on the electrocardiogram and serial transaminase changes.
4. Onset of myocardial infarction between October, 1962, and March, 1967.
5. Patients not receiving oral diuretics.

No cases were excluded for any reason if they met these requirements. No cases were included if seen only in consultation for another physician; nor were any cases included as the result of review of old hospital records. Each case was selected in advance while the patient was hospitalized for acute infarction. The patients were hospitalized in either one of the two community hospitals in Auburn, New York.

Materials and methods

All determinations of blood sugar were made by the Cayuga County Laboratory using a Technicon analyzer, employing a modification of the determination of blood glucose as proposed by Hoffman.[1] Criteria for normality and abnormality of glucose tolerance were as described by Duncan.[2] The three-hour glucose tolerance test using 100 Gm. of glucose was done usually during the fourth week of hospitalization with the patient in as stable a condition as possible; most patients had already begun ambulation and were receiving a regular hospital diet containing about 200 Gm. of carbohydrate. The test was omitted in 3 patients during the acute recovery phase and was done shortly after discharge. The glucose tolerance test result was considered abnormal if the two-hour level was over 120 mg. per 100 ml. and/or the one-hour level was over 180 mg. per 100 ml. Eleven of the patients included in the study were known to have diabetes and were not subjected to the glucose tolerance test. The remaining 41 patients had no prior knowledge of their having diabetes nor any error in glucose metabolism on entry into the study. One, however, had had renal glycosuria for many years.

TABLE I. Clinical laboratory results of 52 patients during recovery phase after heart attack

Sex	Age (Years)	Date of Coronary (Month/Year)	Fasting Blood Sugar (Mg. per 100 ml.)	Glucose Tolerance Test 2 Hour Level (Mg. per 100 ml.)	Cholesterol (Mg. per 100 ml.)	Protein Bound Iodine (Micrograms per 100 ml.)	Uric Acid (Mg. per 100 ml.)	Remarks
M*	51	1/64	81	128	263	...	...	...
F	54	2/67	70	131	350	6.5	3.5	...
F	56	9/64	77	204	210	...	...	...
M	49	10/62	92	160	224 313	7.9	9.6	...
M	58	1/65	80	130 (1 hr 269)	182	...	...	...
M	36	3/65	71	132 (1 hr 204)	254	5.4	...	...
M	51	12/62	90	126	262	...	...	Glycosuria
M	47	5/64	95	246	369	5.3	7.3	...
F	60	10/66	84	200	198	...	...	On thyroid
F	56	12/63	125	D†	256	4.6	...	Known diabetic
F	40	5/65	86	204	266	5.1	...	...
M	59	3/67	53	140	280	4.4	7.4	...
M	47	2/66	67	129	290	3.7	6.5	Glycosuria
M	53	3/64	64	169	293	...	...	...
M	53	11/65	98	208	...	...	...	...
M	41	3/66	86	160	260	4.5	6.8	...
M	56	9/64	110	222	188	3.9	...	...
M	48	6/66	76	169	184	2.6 3.8	5.8	...
M	52	10/62	97	128	224	...	...	...
M	57	8/66	154	D†	...	...	...	Known Diabetic
F	56	5/65	63	210	356	...	...	...
M	48	4/63	79	111	209	5.7	...	Normal with renal glycosuria
F	43	2/63	84	180	...	3.6	...	...
M	58	7/65	80	152	176	4.5	...	...
M	51	12/63	81	170	254	4.0	4.3	...
M	45	11/64	109	D†	...	...	...	Known diabetic
M	54	1/67	227	D†	...	...	...	Known diabetic
M	50	9/66	74	128	225	2.8	5.3	...
M	37	5/63	119	142	305	4.0	4.3	...
M	48	3/66	71	190	216	4.3	...	...
F	56	4/65	133	370	200	...	...	Known diabetic
M	54	12/65	100	D†	...	...	...	Known diabetic
M	48	1/63	85	111	222	3.1	...	Normal
M	44	4/65	118	229	256	4.9	...	...
M	44	7/65	85	160	218	4.3	...	...
F	60	11/64	69	60	338	3.6	...	Normal
M	57	10/63	213	D†	...	...	...	Known diabetic
F	54	4/64	102	150	309	6.0	...	...
M	42	1/64	73	162	204	...	...	...
M	44	7/63	98	136	260	....	...	...
M	54	9/64	66	164	242	4.2	...	...
M	49	3/65	68	214	292	...	...	...
M	51	3/67	63	86	210	4.9	7.4	Normal
F	47	5/63	249	D†	...	...	...	Known diabetic
M	57	12/62	117	D†	...	...	...	Known diabetic
M	60	8/62	116	174	...	...	...	...
F	49	6/66	90	200	230	4.3	...	...
M	58	10/63	95	D†	321	6.8	...	Known diabetic
M*	39	11/63	73	85	275	4.6	...	Normal
M*	55	12/64	86	110	248	...	...	Normal
M	55	10/66	133	D†	234	4.0	5.5	Known diabetic
M	56	1/63	78	96	198	...	...	Normal with renal glycosuria

* Done 3 to 4 months following the infarction.
† Diabetic.

Results

Of the 52 patients, 40 were males and 12 were females. The average age was fifty-one. Excluding the 11 known diabetics, the remaining 41 had normal fasting blood sugars. Of these, 34 demonstrated abnormal glucose tolerance test results. The average two-hour level for the entire group of 34 was 171 mg. per 100 ml. The average fasting blood sugar for all the nondiabetic patients was 85 mg. per 100 ml. Only 7 of the total of 52 were found to have completely normal results. Of further interest is the fact that 2 of the 7 normal patients were found to have renal glycosuria (Table I).

Comment

This series of cases is presented with the intention of demonstrating two points. The first is the correlation of abnormal glucose metabolism with myocardial infarction in younger patients. In this series, 87 per cent of the patients demonstrated this abnormality. As has been noted, it has always been known that diabetes predisposes patients to coronary artery disease. However, with these findings, the possibility of a much more basic association is offered. Coronary artery disease may not merely be a part of the vascular degeneration caused by long-standing diabetes. It may be that the coronary artery disease is a concomitant problem associated with the development of the diabetic state. This series demonstrates that the majority of patients with what may be termed premature coronary artery disease have a basic metabolic error. The error in these cases, either latent or clinical diabetes, may be associated with the development of coronary artery disease. Interestingly, the majority of patients were latent diabetics and had not reached the stage of overt or clinical diabetes. The second point emphasized is that the abnormality is not detected by a fasting blood sugar test. Of the 41 patients with normal fasting blood sugars, 34 were found to have abnormal glucose tolerance test results.

A difference in interpretation of these results should be mentioned at this point. Datey and Nanda[3] have shown that a number of patients with myocardial infarction will have a transient abnormality found by glucose tolerance tests and that if followed over several months and years, a return to normal will be noted in some. Cohen and Shafrir[4] feel that this abnormality of glucose metabolism is a reflection of a reaction to stress, and that a state of latent diabetes does exist even though a stressful situation was required to bring out the change. The cases noted here had passed the immediate stress reaction phase and were well into a convalescent phase. Testing was not done during or immediately following any period of stress. Fabrykant and Gelfand[5] demonstrated abnormal glucose metabolism in patients with angina. Herman and Gorlin[6] have shown a striking correlation of the prediabetic state with coronary artery disease and even retinal and renal lesions characteristic of diabetes.

Decreased glucose tolerance with advanced age has been well documented in studies such as that by Streeten *et al.*[7] This does not appear to apply as a cause of the abnormalities in this group of patients. In fact, 19 of the 47 abnormal patients included were fifty years of age or less, and 3 were forty or less. Cholesterol values were included in the majority of patients to demonstrate the lack of association of abnormality in this group. Cholesterol determinations were done for all patients with normal glucose tolerance, and only 1 had a high value (Table I).

Summary

An abnormality of glucose metabolism can be demonstrated in a large percentage of patients under the age of sixty shortly after an acute myocardial infarction. The age group was selected arbitrarily to include those under sixty in whom some cause other than the normal aging process might be suspected in the production of coronary artery disease.

A second point, and one to be stressed, is that this abnormality is not demonstrated by fasting blood sugar tests. The ultimate cause or mechanism of this relationship remains obscure.

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NUTRITIONAL AND METABOLIC EFFECTS OF SOME NEWER STEROIDS

VI. Serum ribonuclease

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Patients receiving therapeutic doses of anabolic steroids or corticosteroids were studied to test the relationship of ribonuclease measurements to nitrogen balance. All of the studies indicated that there is an inverse relationship between nitrogen balance and blood RNase levels. Thus, in cases where there is no significant increase in the number of circulating leukocytes, plasma RNase determinations provide a better index of protein metabolism than the traditional nitrogen balance procedure.

The accurate assessment of protein status, protein requirements, biologic value of dietary proteins, and the effect of various agents on protein metabolism has long posed a major problem in nutrition research. Ever-growing concern with world-wide present and future protein hunger has served as a constant challenge in the search for simple yet practical criteria of protein nutrition. A number of thorough reviews which describe the advantages and disadvantages of various biochemical criteria, including measurement of nitrogen balance, blood amino acids, urinary amino acids, urea and creatinine excretion, and blood protein levels have been published.[1-6] The common denominator and stimulus to these continuing efforts have been the practical inconveniences of the classic nitrogen balance method, which has long been accepted as the method of choice despite its many well-known biochemical shortcomings.

A new approach is now indicated by the newer knowledge of the biochemical relationships of tissue DNA and RNA (deoxyribonucleic acid and ribonucleic acid) content to protein biosynthesis.[7] The nutritional regulation of these processes was revealed by the investigations of Munro and Clark[8] who found that the RNA content of normal liver cells of rats varied with the ingested amount of protein and the amino acid profile of the protein. Subsequent investigations by Allison *et al.*[9] indicated that the DNA and RNA content of liver and muscle rat tissues is an intimate function not only of protein reserves in various body tissues but also of the nutritive value of dietary proteins. In addition to these changes in tissue composition, these investigators found the B.V. (biologic value) of proteins to be reflected in the RNase (ribonuclease) activity of the serum. The serum RNase to serum protein ratio was highest in animals fed lysine-deficient wheat gluten (B.V. = 52), lowest in animals fed egg protein (B.V. = 100), and intermediate in the sera of animals fed casein (B.V. = 69) and cotton seed flour (B.V. = 73). Further, the positive correlation between ribonuclease activity and growth intensity of homogenates of mammalian placental tissues has been clearly demonstrated by Brody.[10] The foregoing observations lend strong support to the hypothesis of Lang[11] that levels of serum RNase activity might serve as a criterion of the anabolic-catabolic ratio prevailing in biologic organisms during the growth, maturity, and aging phases of the life span.

Consideration of these and other reports prompted us to attempt an evaluation of serum RNase levels as criteria of protein nutrition in man.[12] To this end, nitrogen balance data obtained in metabolic studies were correlated with parallel blood RNase measurements. The results presented in this report indicate that blood RNase determinations may afford a practical and useful parameter of the effects of anabolic steroids and corticosteroids on human protein metabolism.

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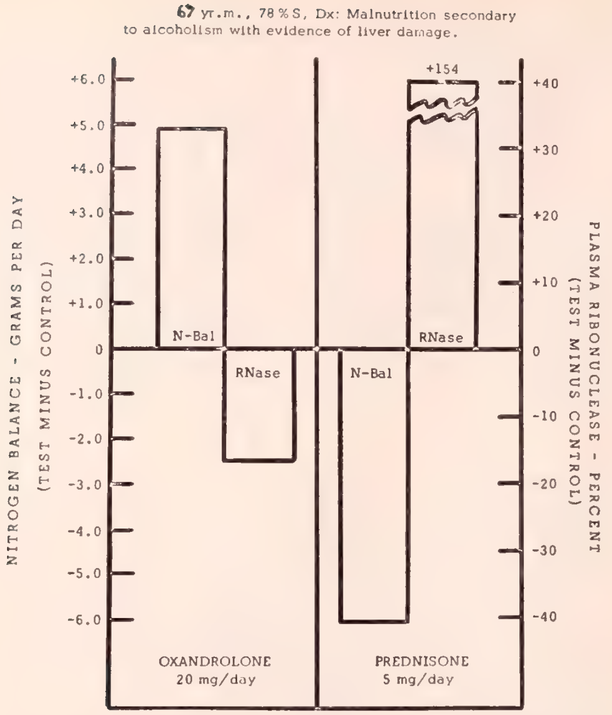


FIGURE 1. Blood RNase levels as criterion of protein metabolic effects of anabolic steroids and corticosteroids.

Procedures and methods

The metabolic and nitrogen balance procedures and biochemical methods employed in our investigations have been described in detail in previous publications.[13] Determinations of blood ribonuclease levels were done by a modification of the method described by Zytko and Cantero[14] which included a quantification of reaction absorption at 260 nanometers in terms of highly purified ribonuclease (Boehringer-Mannheim) standards. Under these conditions no difference was found between RNase value of sera or plasma derived from the blood of the same subjects. However, the determination must be done within three hours of collection time.

Results

On the basis of the foregoing observations, we attempted to determine the usefulness of blood RNase as a criterion of the metabolic effects of anabolic steroids and corticosteroids. The results of one such study are illustrated in Figure 1. It is clear that the inverse relationship between nitrogen balance and plasma RNase levels found in previous studies occurred in these trials. Attention is called to the fact that the protein catabolic effects of 5 mg. per day of prednisone in terms of nitrogen loss and plasma ribonuclease increase are far greater than the nitrogen retention increase and plasma ribonuclease decrease induced by the administration of 20 mg. per day of oxandrolone.

These results prompted us to evaluate plasma RNase change as a parameter of protein metabolism in a series of long term oxandrolone-placebo double blind assays of approximately two years duration with 21 healthy, normal females, seventy-six to eighty-nine years of age. In these trials, a dosage of 10 mg. per day was selected because of the planned duration of the study and the age of the subjects. Typical results with the steroid and its placebo are shown in Figure 2. As in the short assays, the inverse relationship of RNase and nitrogen balance was found to prevail in both test and placebo determinations. Examination of these data shows that the cumulative positive nitrogen balance during oxandrolone therapy (Fig. 2A) was far greater than that found with the placebo (Fig. 2B). The downward shifts in nitrogen retention which occurred at about the same time in both subjects were not related to any recorded illnesses or significant changes in body weight.

Following these encouraging observations, plasma RNase measurements were done systematically as a part of our metabolic studies on blood samples of adult male and female subjects receiving anabolic steroids and corticosteroids for a va-

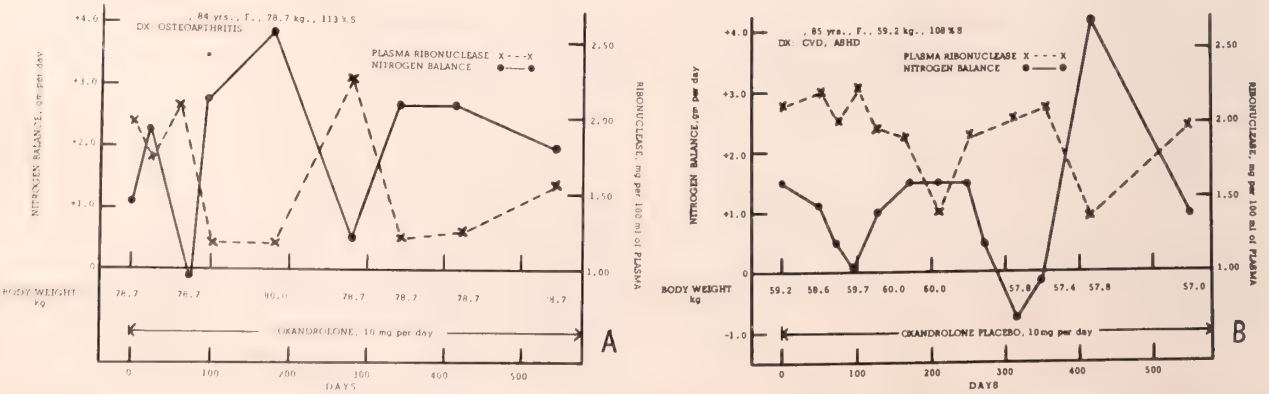


FIGURE 2A and B. Long-term effects of oxandrolone and its placebo on plasma RNase levels and nitrogen balance in 2 patients.

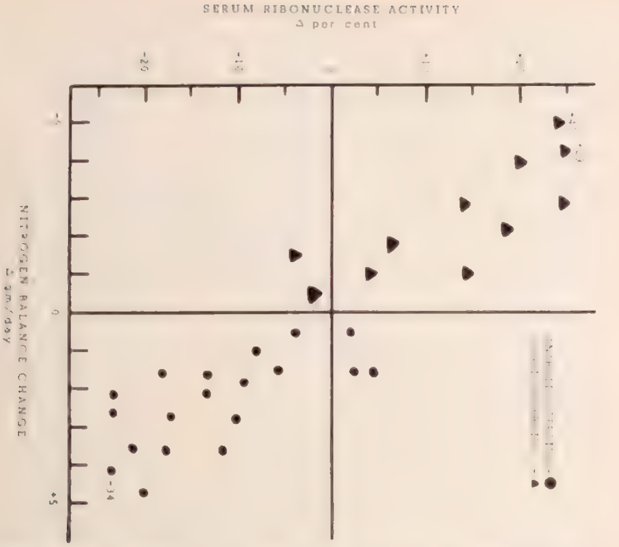
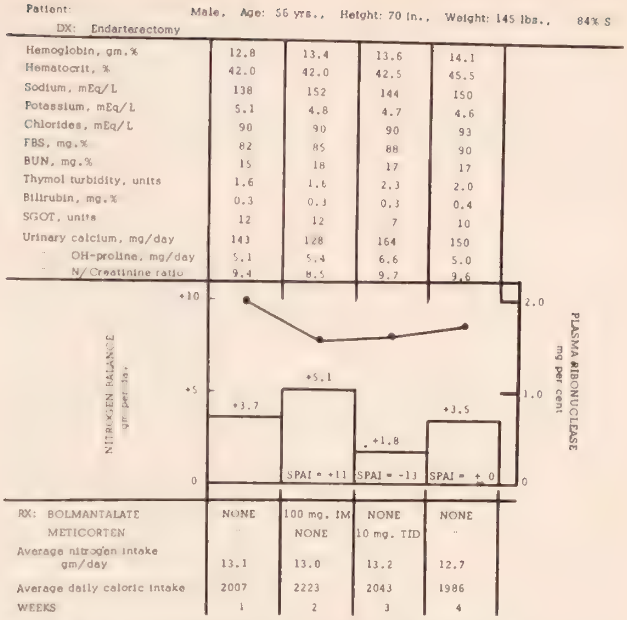
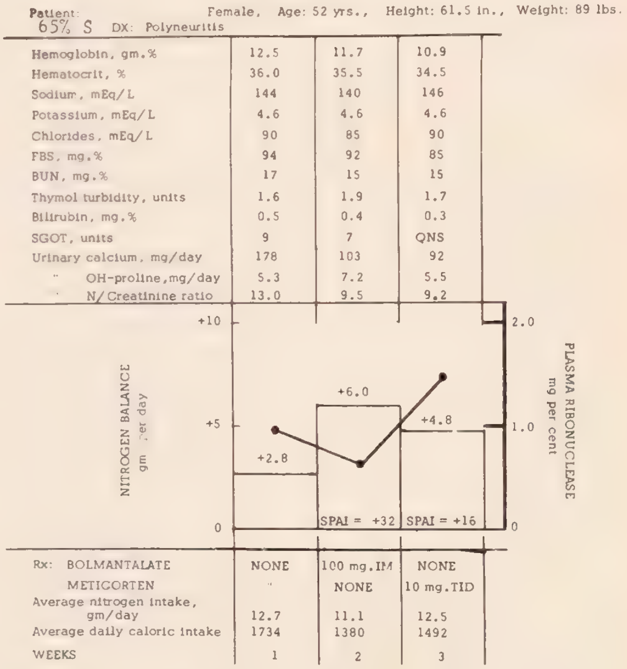


FIGURE 3. Effect of nitrogen balance changes on serum RNase levels of man


Patient: Male, Age: 56 yrs., Height: 70 in., Weight: 145 lbs., 84% S
DX: Endarterectomy

Hemoglobin, gm.%	12.8	13.4	13.6	14.1
Hematocrit, %	42.0	42.0	42.5	45.5
Sodium, mEq/L	138	152	144	150
Potassium, mEq/L	5.1	4.8	4.7	4.6
Chlorides, mEq/L	90	90	90	93
FBS, mg.%	82	85	88	90
BUN, mg.%	15	18	17	17
Thymol turbidity, units	1.6	1.6	2.3	2.0
Bilirubin, mg.%	0.3	0.3	0.3	0.4
SGOT, units	12	12	7	10
Urinary calcium, mg/day	143	128	164	150
" OH-proline, mg/day	5.1	5.4	6.6	5.0
" N/Creatinine ratio	9.4	8.5	9.7	9.6
RX: BOLMANTALATE	NONE	100 mg. IM	NONE	NONE
METICORTEN	"	NONE	10 mg. TID	"
Average nitrogen intake gm/day	13.1	13.0	13.2	12.7
Average daily caloric intake	2007	2223	2043	1986
WEEKS	1	2	3	4

FIGURE 4. Relationship of plasma RNase levels to nitrogen balance in a convalescent patient receiving bolmantalate or prednisone.


Patient: Female, Age: 52 yrs., Height: 61.5 in., Weight: 89 lbs.
65% S DX: Polyneuritis

Hemoglobin, gm.%	12.5	11.7	10.9
Hematocrit, %	36.0	35.5	34.5
Sodium, mEq/L	144	140	146
Potassium, mEq/L	4.6	4.6	4.6
Chlorides, mEq/L	90	85	90
FBS, mg.%	94	92	85
BUN, mg.%	17	15	15
Thymol turbidity, units	1.6	1.9	1.7
Bilirubin, mg.%	0.5	0.4	0.3
SGOT, units	9	7	QNS
Urinary calcium, mg/day	178	103	92
" OH-proline, mg/day	5.3	7.2	5.5
" N/Creatinine ratio	13.0	9.5	9.2
Rx: BOLMANTALATE	NONE	100 mg.IM	NONE
METICORTEN	"	NONE	10 mg.TID
Average nitrogen intake, gm/day	12.7	11.1	12.5
Average daily caloric intake	1734	1380	1492
WEEKS	1	2	3

FIGURE 5. The anticorticocatabolic effects of anabolic steroids in a convalescent female subject.

riety of clinical reasons. It is clear from the data collected in Figure 3 that the RNase shifts under conditions of these substances are also inversely related to changes in nitrogen balance. In other words, reduced formation of body proteins frequently associated with corticosteroid therapy is clearly reflected by an increase in circulating RNase. As previously shown, the reverse relationship obtains during anabolic steroid therapy.

As part of our investigations on the anticorticocatabolic activity of anabolic steroids, the foregoing procedures were applied to metabolic studies in which varying combinations of these agents were given. The results of such an assay with parenteral anabolic steroid, bolmantalate, are shown in Figure 4. It will be noted that during the second week, the injection of 100 mg. of bolmantalate was associated with a significant increase in nitrogen retention and a marked fall in plasma RNase. During the third week when the patient was given 30 mg. of prednisone per day, a sharp fall in nitrogen balance occurred with a small rise in RNase which continued into the fourth week when prednisone administration was discontinued and nitrogen retention improved. This finding shows that the catabolic effects of the corticosteroid were diminished, but not completely overcome by cessation of medication.

The results of another study on the anticorticocatabolic activity of anabolic steroids are collected in Figure 5. Here again, as in the previous assay, the postulated inverse relationship of nitrogen balance to the plasma RNase response to the catabolic activity of prednisone was far greater than that indicated by the decrease in nitrogen balance. It appears from these findings that the plasma RNase measurement provides a more dynamic criterion of protein metabolism than the cumbersome nitrogen balance procedure.

Comment

The unique position of the "ribonucleases" in the biosynthesis of proteins for the "wear and tear" processes of the body justifies a careful con-

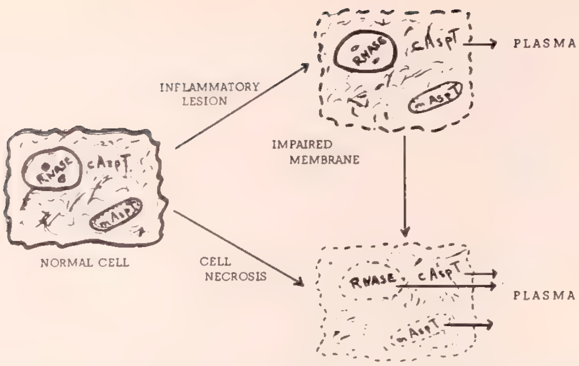


FIGURE 6. Diagrammatic representation of release of intracellular and nuclear enzymes after inflammatory reaction or cell necrosis.

sideration of their biochemical characteristics. However, the metabolic significance and mechanism of change in blood RNase levels remains to be clarified. It is well known that blood RNase is immunologically different from organ ribonucleases, that is, liver, kidney, brain, heart, testes, and pancreas. Available evidence also suggests that some serum RNase may originate from leukocytes.[15] It appears unlikely that circulating RNase could arise from intracellular or transport ribonucleases, since these substances apparently cannot penetrate membranes of normal, healthy mammalian cells. However, several investigators have suggested that "worn-out" forms of intracellular ribonucleases may penetrate walls and accumulate in the blood. The likelihood that some serum RNase may also originate from the nuclei of cells necrotized by a variety of catabolic processes associated with aging and acute diseases has been shown by several investigators.[16–19] These observations suggest that in reversible inflammatory processes, characterized by increased membrane permeability, cell sap enzymes are more likely to be released into the circulation than mitochondrial enzymes.[20] In acute or chronic catabolic conditions, however, destruction of large numbers of cells will be followed by the appearance of mitochondrial enzymes in the serum as shown in Figure 6. These views are supported by the statistically significant positive correlation of increased serum RNase activity with the progressive catabolism of age found in man by Sved *et al.*[21] recorded in Table I. Statistical analyses of these data showed the regression factor of serum RNase with age to have an exceptionally high probability. However, it will be seen that pregnant women had a significantly lower value than expected. It can be speculated that this exception arises from the high anabolic activity prevailing in the female during pregnancy, which may well arise from reactivation of some hormonal processes.[22,23] Other investigations have amply confirmed that resting serum RNase values of normal, healthy males and females increase significantly with advancing years which has been attributed to metabolic deterioration of reduced physical activity (Fig. 7).[24–26]

Examination of the literature reveals that several biochemically fundamental processes may be related to the age-induced increase in blood RNase activity. Of these, the well-known age-associated decrease in basal oxygen consumption should be considered because of the importance of an adequate supply of oxygen to all life-sustaining metabolic reactions.[27] As shown in Figure 7, oxygen consumption, measured as calories per square meter per hour, falls sharply from birth to maturity (twenty to twenty-five years) and thereafter declines slowly with age.[28] This phenomenon may be interpreted either as a progressive loss of functioning cells, or as a deceleration of metabolic processes in cells remaining at higher ages. Either interpretation portends an increased catabolism or decreased anabolism which finds metabolic expression in the direct age-related increase in serum ribonuclease.

Further thought on possible causes of reduction in basal oxygen consumption with age suggested examination of red blood cells, which in vivo normally undergo dissolution after circulating for approximately one hundred and twenty days.[29] Many enzyme systems of the red cells are known to decrease in activity with age of the cells. The transaminase activity of young cells has been found to be two- to threefold greater than in old cells.[30] However, the approximately tenfold difference in creatine content of young and old red cells has firmly established this component as a sensitive and reliable index of red-cell age and erythropoietic activity.[31] In consideration of these relationships, creatine and hematocrit measurements were done on blood samples of healthy, normal males and females ranging in age from forty to

TABLE I. Serum ribonuclease activity in normal persons*

Group	Number Of Subjects	Age: Mean (Years)	Age: Range (Years)	Ribonuclease Mean ± SE	Expected Ribonuclease†
Old	124	78.3	68–103	201.5 ± 2.2	200.7
Young	73	32.9	20– 50	152.6 ± 1.8	154.4
Pregnant	32	25.5	. . .	124.2 ± 2.0	148.4

* Ribonuclease Activity = optical density × 1000 at 260 millimicrons.
† Expected Ribonuclease = 1.29 × age + 120.1

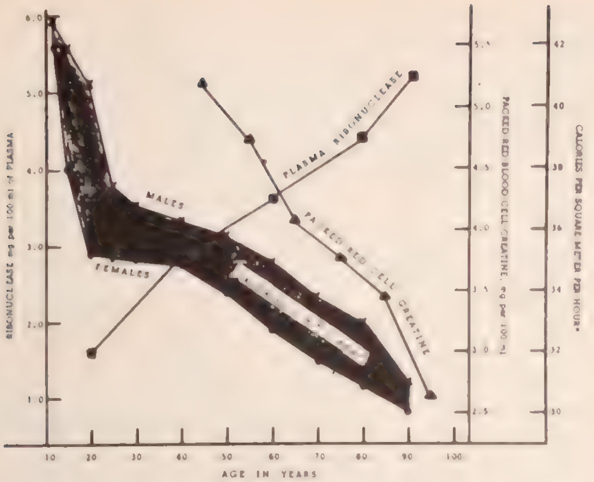


FIGURE 7. Relationship of age to plasma RNase, packed red-cell creatine, and oxygen consumption

TABLE II. Effect of age on oxygen consumption and urinary nitrogen

Number of Subjects	Age (Years)	Mean Age (Years)	Average Body Weight (Kilograms)	Oxygen Consumption (Milliliters per Minute per Kilogram)	Urinary Nitrogen (Milligrams per Kilogram)
26	21–30	25	83	3.36	170
22	66–93	80	63	2.92	97

ninety-four years. The measurements, which are also shown graphically in Figure 7, point to statistically significant decrements in red-cell creatine with advancing years in the presence of relatively constant hematocrit levels. These findings suggest a relative accumulation of old, less viable, red cells with increasing age, which would have a reduced oxygen-bearing capacity closely reflected by the decrease in basal oxygen consumption. Inasmuch as previously noted metabolic processes of the body are either primarily or secondarily influenced by oxygen supply, it can be deduced with reason that reduced oxygen availability associated with decreased red blood cell function may result in an increased catabolism-anabolism ratio.[32]

The age interdependence of metabolic rate (measured as basal oxygen consumption) and total protein nitrogen utilization is indicated by our data in Table II. These findings are supported by the experiments of Schulze,[33] who compared the nutritive values of wheat and milk proteins in 36 elderly patients (aged sixty to ninety-two years) and found that the minimal nitrogen expenditure in the aged decreases in proportion to the basal metabolic rate, and that the phenomenon was not due to impairment of intestinal absorption of proteins in the elderly. In this frame of reference it becomes clear that the increase in plasma RNase and decrease in red-cell creatine affords new and convenient criteria for either anabolic or catabolic protein states. Of these two parameters, changes in plasma RNase levels have proved in our metabolic studies to be more sensitive to changes in protein status than levels of packed red blood cell creatine. However, this measurement would appear to be useful as an alternate criterion for the determinations of oxygen consumption.

Summary

Serum ribonuclease levels as a criterion of protein nutrition in man have been evaluated. Nitrogen balance data obtained in metabolic studies by classical procedures have been correlated with parallel blood ribonuclease (RNase) measurements. Trials with patients receiving anabolic steroids or corticosteroids therapeutically were conducted to test the relationship of RNase measurements to nitrogen balance. An inverse relationship between nitrogen balance and blood RNase levels was found to prevail in all of the studies. Thus, changes in blood RNase levels have proved clinically useful in the evaluation of the protein anabolic effects of anabolic steroids, catabolic effects of corticosteroids, and anticorticocatabolic activity of anabolic steroids. This criterion of metabolic activity was also found to be particularly valuable in long-term studies with anabolic steroids. It appears from these observations that in the absence of a significant increase in circulating leukocyte count plasma RNase determinations provide a more dynamic and practical index of protein metabolism than the cumbersome nitrogen balance procedure.

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A series of review articles dealing with medical progress

Recent Advances in Medicine and Surgery

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MAMMARY CARCINOGENESIS

Influence of parity and estrogens

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There is ample evidence that estrogens are involved in mammary carcinogenesis.[1] It is therefore appropriate to question whether the widespread contraceptive use of estrogens might increase the incidence of mammary carcinoma. To date no such adverse effects have been observed. On the contrary, it has been reported that the type and incidence rates of breast lesions are not different among women taking estrogens.[2] Nevertheless the lack of an "epidemic" increase in breast cancer associated with the widespread contraceptive use of estrogens does not rule out the possibility that subgroups of women might have distinctive susceptibilities to the carcinogenic influence of estrogens. It should be noted in this connection that MacMahon *et al.*[3] and Fraumeni *et al.*[4] have shown that parity and age at first pregnancy are significant variables in regard to the risk of breast cancer. Accordingly we have sought information bearing on the relationship between parity, estrogens, and breast cancer.

We now report on a study of parity and estrogen pretreatment in a consecutive series of patients with benign and malignant breast lesions. The findings suggest that distinctive relationships exist between parity and breast cancer in estrogen-treated women.

Materials and methods

In an attempt to obtain data bearing on the relationship between parity estrogens and mammary carcinogenesis we have examined the characteristics of consecutive patients with benign and malignant breast lesions from the files of an individual surgeon specializing in breast diseases (H.P.L.). The use of a single source of cases minimizes variability in clinical criteria for operative interference. Furthermore, this surgeon routinely records information regarding parity and prior hormonal therapy in addition to other details of the patient's family and personal history. Finally, the fact that all pathologic examinations were done at the same institution provided additional guarantee of uniformity in criteria of diagnosis.

A consecutive series of patients treated at Flower and Fifth Avenue Hospitals from January 1, 1966, to January 1, 1972, were identified. The hospital charts of all patients with breast cancer and all patients thirty years of age and older who had benign breast lesions were examined and the following data recorded: type of breast lesion (benign, malignant, precancerous mastopathy), age at reference lesions, gestational history, prior breast disease, prior estrogen therapy, and date and duration of prior estrogen therapy. From these data it was possible to determine the incidence of prior estrogen therapy in subgroups of patients with benign and malignant breast disease and to compare the relative incidence of nulliparas among patients with benign and malignant breast lesions and the cancer-benign relationship in women with and without prior estrogen therapy. Unfortunately, the charts did not contain information regarding the age at first parity. However, a special effort was made to obtain such data for the estrogen-pretreated patients so as to explore in greater detail the relationship between estrogens, breast lesions, and parity.

In the present study prior estrogen therapy is defined as continuous treatment for a minimum of twelve months. The duration of treatment varied from one to more than twenty-five years before the appearance of the breast lesion. In most of the patients in whom breast lesions developed be-

TABLE I. Parity characteristics of benign and malignant breast lesions by age and prior estrogen therapy

	Age (Years)					
	<50			>50		
Parity	Estrogen Treated	No Estrogens	Estrogen Treated (Per Cent)	Estrogen Treated	No Estrogens	Estrogen Treated (Per Cent)
Benign lesions						
Nulliparous	9	64	12	9	24	26
Parous	30	189	14	14	39	26
TOTALS	39	253	13	23	63	27
Per cent nulliparous	23*	25*	. . .	39	38	. . .
Malignant lesions						
Nulliparous	14	27	34†	14	38	27
Parous	9	71	11†	14	93	13
TOTALS	23	98	19	28	131	18
Per cent nulliparous	61*	28*	. . .	50	29	. . .

* Per cent nulliparous; estrogen therapy and cancer versus no estrogen therapy and cancer, no estrogen therapy—benign, estrogen therapy—cancer ($x^2 = 14.8$, $P < 0.005$).

† Per cent estrogen therapy; nulliparous versus parous ($x^2 = 9.2$, $P < 0.003$).

fore the age of fifty the "estrogens" included a variety of oral contraceptive pills. In the older patients the estrogens were given for the menopausal syndrome. Here, too, diverse preparations were used. In all but a minority (<15 per cent) the treatment was continuous to the time of surgery. The designation nullipara implies the absence of any full-term gestation. More than 90 per cent of the nulliparous women were nulligravida.

Results

The majority of breast cancers in both parous and nulliparous women appeared within one to ten years after starting estrogen treatment, namely, 21 of 28 in nulliparous women and 18 of 23 in parous women. In only 1 nulliparous woman and 3 parous women did the cancer appear more than twenty years after estrogens were started. In fact, all but 1 of the cancers in nulliparous women and 3 of the cancers in the parous women were seen within sixteen years after the start of the estrogen therapy. The benign lesions appearing in estrogen-treated women were also concentrated within the first ten years after the start of estrogen treatment, namely, 55 of 62.

The distribution of patients according to parity, age, and prior estrogen therapy is indicated in Table I. The majority of patients with benign or malignant breast lesions, without a history of prior estrogen therapy, were parous in both age groups. Particularly noteworthy is the similarity of the per cent nulliparity in the nonestrogen-treated patients less than fifty years of age, namely, 28 per cent for the cancer patients and 25 per cent with benign lesions. A similar incidence (23 per cent) of nulliparity was also found in the estrogen-treated patients with benign lesions. In contrast, the incidence of nulliparity among the younger estrogen-pretreated patients with breast cancer was increased more than twofold, that is, 61 versus 28 per cent. The observed difference in distribution of parity in the estrogen-treated patients with cancer as compared with that of the nonestrogen-treated patients with cancer and in the estrogen pretreatment and nonestrogen pretreatment patients in the benign category is highly significant as judged by chi-square testing.

Since the benign and malignant lesions were consecutively collected over the same time period, it is appropriate to examine the incidence of prior estrogen treatment in the two groups. As shown in Table I in patients having breast lesions before age fifty years, prior estrogen therapy was decidedly more frequent among nulliparous patients with breast cancer than among parous patients with breast cancer, namely, 34 per cent as compared with 11 per cent. It will also be seen that the younger patients with benign lesions showed no such parity-related differences in regard to prior estrogen treatment. The per cent incidence of prior estrogen treatment in these two groups of patients with benign lesions was the same as that of parous women with breast cancer. The increased frequency of prior estrogen treatment in the nulliparous cancer patients is highly significant as judged by chi-square testing.

The older cancer patients (over fifty years) show similar trends in regard to differences in the per cent incidence of nulliparity between the estrogen-treated and nonestrogen-treated groups (50 versus 29 per cent, respectively, and in regard to the per cent incidence of prior estrogen therapy in parous and nulliparous patients (27 versus 13 per cent, respectively). However, the magnitude of these differences is below the level of significance ($x^2 = 4.96$, $P > 0.025$, < 0.046).

The older patients with benign breast lesions appear to have a higher frequency of nulliparity and prior estrogen treatment than analogous younger individuals. It will be noted, however,

TABLE II. Parity characteristics of benign and malignant breast lesions in estrogen-treated women

	Age (Years)			
	<50		>50	
Parity	Number	Per Cent	Number	Per Cent
Benign lesions				
Nulliparous	9	24	9	45
Parous (>28 years)	3	8	3	15
Parous (<28 years)	26	68	8	40
TOTALS	38	100	20	100
Malignant lesions				
Nulliparous	14	61	14	54
Parous (>28 years)	4	17	7	27
Parous (<28 years)	5	22	5	19
TOTALS	23	100	26	100

TABLE III. Parity characteristics of patients with breast cancer with estrogen pretreatment

Age at Cancer (Years)	Age at Estrogen Initiation (Years) <45	>45	Total
<50	15/5*	3/0	18/5 (78)†
50 to 59	3/0	9/2	12/2 (86)
60 plus	2/0	6/3	8/3 (72)
TOTALS	20/5 (80)	18/5 (78)	38/10 (79)

* Nulliparous and parous more than twenty-seven years of age: parous less than twenty-eight years of age.

† Figures in parentheses represent per cent.

that the older patients also lack any estrogen-related differences in parity or parity-related differences in estrogen pretreatment.

Table II provides further details regarding the parity history of patients with benign and malignant lesions of the breast who had prior estrogen therapy. In this table we have divided the parous women according to age at first parity. Since such information had not been routinely recorded at the time of surgery, a special effort was made to obtain these data. Our efforts in this regard were successful in 40 of 44 parous patients with benign lesions and 21 of 23 parous women with breast cancer.

Thirty-four of the 40 estrogen-treated parous patients with benign lesions were parous before age twenty years. On the other hand in patients with breast cancer with a prior history of estrogen therapy, late and early parity were more equally represented. The differences in distribution of age at parity between the total estrogen-treated ever-parous cancerous and benign groups appear highly significant ($x^2 = 9.4$, $P < 0.003$).

When one includes the nulliparous patients, the distribution of the estrogen-pretreated patients with breast cancer less than fifty years of age is even more distinctive. Only 22 per cent of the estrogen-pretreated patients with cancer had attained parity before age twenty-eight years in contrast to values of 56 per cent for the malignant group without estrogen pretreatment. The parity distribution of the estrogen-treated breast cancer series is significantly different from that of the non-estrogen-treated cancer series and the benign series with prior estrogen treatment.

In Table III we have presented the parity characteristics of patients with breast cancer according to the age at initiation of estrogen therapy as well as the age at cancer. Almost all of the patients taking estrogens before age forty-five did so for contraceptive purposes, while those starting estrogens after forty-five years of age were largely in the menopausal period. In both age groups the great majority of the women were nulliparous beyond twenty-seven years of age. In short, breast cancers developing in estrogen-treated women appear to occur preferentially in those women who were nulliparous beyond age twenty-seven.

The data of Table II may also be used to examine the relative incidence of cancer among consecutive breast lesions according to parity characteristics of the patients. In the absence of estrogen treatment the per cent of the malignant lesions is the same in both parous and nulliparous women. In both parity groups the cancers comprise approximately one quarter of the breast lesions arising before age fifty and approximately 40 per cent of each series regardless of age. In the total series of breast lesions arising in estrogen-treated women the relative incidence of malignant lesions is similar (46 per cent) to that found in the total series of breast lesions arising in women lacking estrogen pretreatment. However, as seen in Table IV the relative incidence of cancer in estrogen-pretreated

TABLE IV. Relative incidence of cancer among consecutive breast lesions in estrogen-treated women by age and parity

	<50 Years			Totals		
Parity	Cancer	Benign	Cancer (Per Cent)	Cancer	Benign	Cancer (Per Cent)
Nulliparous	14	9	61	28	18	61
Parous >28 years	4	3	57	11	6	65
Nulliparous and parous >28 years	18	12	60	39	24	62
Parous <28 years	5	26	16	10	34	23
TOTALS	23	38	38	49	58	46
Total, no estrogen pretreatment	98	253	28	229	316	42

patients shows distinct variations with parity, namely, cancer accounted for only 21 per cent of the breast lesions in estrogen-pretreated women who were parous before age twenty-eight, whereas 62 per cent of the breast lesions were cancerous in those estrogen-pretreated women who were nulliparous beyond the age of twenty-seven. It thus appears that breast lesions arising after estrogens are three times as likely to be malignant in women who were nulliparous beyond the age of twenty-seven than in women who were parous before that age. It is also evident that breast lesions are more likely to be malignant in nulliparous women who have received estrogen treatment than in nulliparous women without such pretreatment, namely, 61 versus 26 per cent in patients less than fifty years of age and 61 versus 40 per cent in the respective series regardless of age.

Precancerous mastopathy. In this report care was taken to exclude in situ carcinoma and those less atypical lesions of the type previously shown to have precancerous potential.[5] While the number of such cases is small, it is interesting to note that the relationship between parity and estrogen treatment is similar to that found for invasive cancers. Of 18 women without prior estrogen treatment only 3 were nulliparous. This contrasts with 2 nullipars among 3 women having prior estrogen treatment. It is noteworthy that the parous woman was first parous at the age of thirty-six years. Data regarding the influence of parity and estrogens on the incidence of precancerous mastopathy would be most pertinent to a better understanding of the role of these factors in mammary carcinogenesis.

Comments

Arthes, Sartwell, and Lewison[6] and Vessey, Doll, and Sutton[7] have recently examined the question of possible carcinogenic influences of oral contraceptives. In their studies no attempt was made to subdivide their data according to parity characteristics. The conclusion in both studies was that a history of contraceptive pills was not significantly more frequent among patients with breast cancer than among patients with benign breast lesions or age-matched hospital patients. The present data are in agreement with this conclusion, namely, a history of prior estrogen (contraceptive) pills is not significantly different among the total series of younger patients with breast cancer from among the total series of younger patients with benign lesions. On the other hand, our data show distinctive differences when the series are subdivided according to parity. A prior history of estrogens was some three times as frequent among nulliparas with breast cancer before the age of fifty than among age-matched nulliparas with benign lesions or parous women with breast cancer or benign lesions.

The importance of parity characteristics in regard to the risk of breast cancer has been amply documented by MacMahon *et al.*[3] Their data were derived from seven different geographic areas. In the control group nulliparity varied from 9 to 27 per cent with an average value of 19 per cent. In the patients with breast cancer nulliparity varied from 16 to 35 per cent with an average value of 25 per cent. It appears from these data that nulliparity is some one and one-third times as frequent in patients with breast cancer as compared with the controls. In the present study the incidence of nulliparity in patients with breast cancer without estrogen treatment was similar (29 per cent) to the value reported by MacMahon *et al.*[3] However, the incidence of nulliparity was also similar in patients with benign breast lesions, with and without prior estrogen therapy. Considered together it appears that nulliparity is somewhat more frequent among patients with benign and malignant breast lesions than among the general population of hospitalized women without breast cancer but is not noticeably different between series of women with benign breast lesions as compared with malignant breast lesions. However, it does appear from the present study that women who are nulliparous beyond the age of twenty-seven do respond to estrogens differently from women who are parous before this age. Whereas the majority (62 per cent) of breast lesions in the former group are cancerous, the great majority (77 per cent) of breast lesions in the latter are benign. Furthermore, the relative incidence of cancer among breast lesions in nulliparous women with estrogen pretreatment exceeds that found in nulliparous women without estrogen pretreatment.

The present findings suggest the need for basic investigations of the differential effect of estrogens on parous and nulliparous women. Such differential responses of parous and nulliparous women might reflect local and/or systemic differences. It is possible that prior pregnancy might alter the estrogen-binding sites of mammary parenchymal cells making them less sensitive to the carcinogenic effects of estrogens, or it might be that hormone homeostatic mechanisms in normal parous women inactivate or compensate for exogenous estrogen. Both of these alternatives could be tested by available technics. Kinetic studies of estrogen binding to mammary parenchymal cells and investigations of the influence of test doses of estrogens on sex steroid metabolism might identify the local and systemic factors involved in the differential response of parous and nulliparous women to estrogens.[8]

More pragmatically, however, there is a real urgency for determining the influence of estrogens on the risk of breast cancer according to parity. While the present findings are consistent with an increased risk of breast cancer in estrogen-treated nulliparous and late parous women, the design of this study does not provide a direct measurement of such risk. Such investigations are urgently needed in view of the widespread contraceptive use of estrogens. It is evident that an answer to this vitally important question is dependent on carefully taken and recorded medical histories. Unfortunately, information regarding parity, prior hormone therapy, age at first pregnancy, and so on, are not usually recorded in medical records. We submit that the recording of such information, particularly by physicians caring for patients with lesions of sex hormone target structures (endometrium as well as breast), is of more than academic interest.

The studies of MacMahon *et al.*[3] have documented the importance of the parity characteristics on the development of breast cancer. The present study suggests that parity characteristics may be equally important in regard to the carcinogenic effect of exogenously administered estrogens.

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Clinicopathologic Conference

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October 26, 1971
Conducted by JOHN T. FLYNN, M.D., and
BASIL MOUMGIS, M.D.
Discussed by HERMAN STEINBERG, M.D.

MULTIPLE GASTRIC NEOPLASMS FOLLOWED BY COLOVESICAL FISTULA

Case history

Aslan Siddiqui, M.D.: *First admission (three and one-half years prior to death).* A sixty-six-year-old white male office worker was admitted with a weight loss of 28 pounds over the preceding two years. The patient's health had been generally good most of his life; mild pulmonary emphysema was accompanied by minimal shortness of breath but aggravated by the consumption of three to four packs of cigarets per day. Three years prior to this first admission, he had had a skin lesion removed at another hospital, the diagnosis of which was not known.

Beginning two years prior to admission, the patient noticed onset of progressive mild weakness and inability to eat large meals. During that interval he lost weight from 135 pounds down to approximately 108 pounds; his appetite, however, had remained good and his bowel movements normal. There was no nausea, vomiting, specific food intolerance, or tarry stools.

The patient's father had died of carcinoma of undetermined nature.

Physical examination on admission revealed a blood pressure of 130/90 mm. Hg, the temperature was 98°F., and the weight 111 pounds. The patient was thin and in no acute distress. There was an increase in the anteroposterior diameter of the chest with scattered wheezes throughout and a few late inspiratory rales at the lung bases. The cardiac examination was not remarkable. The liver was enlarged 2 to 3 fingerbreadths below the right costal margin and was firm and nontender; no abnormal masses were palpable. Rectal examination revealed only a moderately enlarged prostate gland, without nodules. The stool was normal in color. The initial urinalysis showed a specific gravity of 1.016 and was otherwise normal. The hemoglobin was 8.6 Gm. per 100 ml., the hematocrit 29, and the white blood cell count 12,500, with 73 per cent mature polymorphonuclear leukocytes. Three stool specimens revealed trace positive to positive reactions on guaiac tests.

Roentgenographic examination of the chest revealed slight emphysema and old inflammatory changes in both lung fields. Findings on the intravenous pyelogram were normal except for evidence of an enlarged prostate; small calcific densities in the right upper quadrant were interpreted as evidence of cholelithiasis.

A barium enema revealed a large pedunculated polyp, approximately 3.5 cm. in diameter, in the lower descending colon; a second polypoid filling defect was noted just above this area, approximately 1 cm. in diameter.

The gastrointestinal series revealed a normal esophagus; there was marked thickening of the mucosa along the greater curvature of the stomach, with thickened folds at the junction of the fundus and body, extending into the distal portion of the stomach. There was rigidity of the gastric wall in the greater curvature aspect of the body of the stomach, suggesting shelf formation. The remainder of the stomach appeared pliable (Fig. 1).

The electrocardiogram was within normal limits.

Throughout his hospital course the patient's temperature remained normal and his weight unchanged. Gastroscopy was only partially successful because of lack of cooperation; there was evidence of enlargement of mucosal folds with diminution in peristalsis. After discontinuing cigarets the patient's appetite improved; following two transfusions his hemoglobin rose to 11 Gm. per 100 ml. and hematocrit to 39.

On the twentieth hospital day, at laparotomy, a large firm mass involving the proximal third of the stomach along the lesser curvature, measuring about 3 by 3 inches, was observed. The lesion apparently involved the entire thickness of the stomach wall. A second large ulcerating carcinoma more distal in the stomach at the greater curvature was observed within the corpus of the stom-

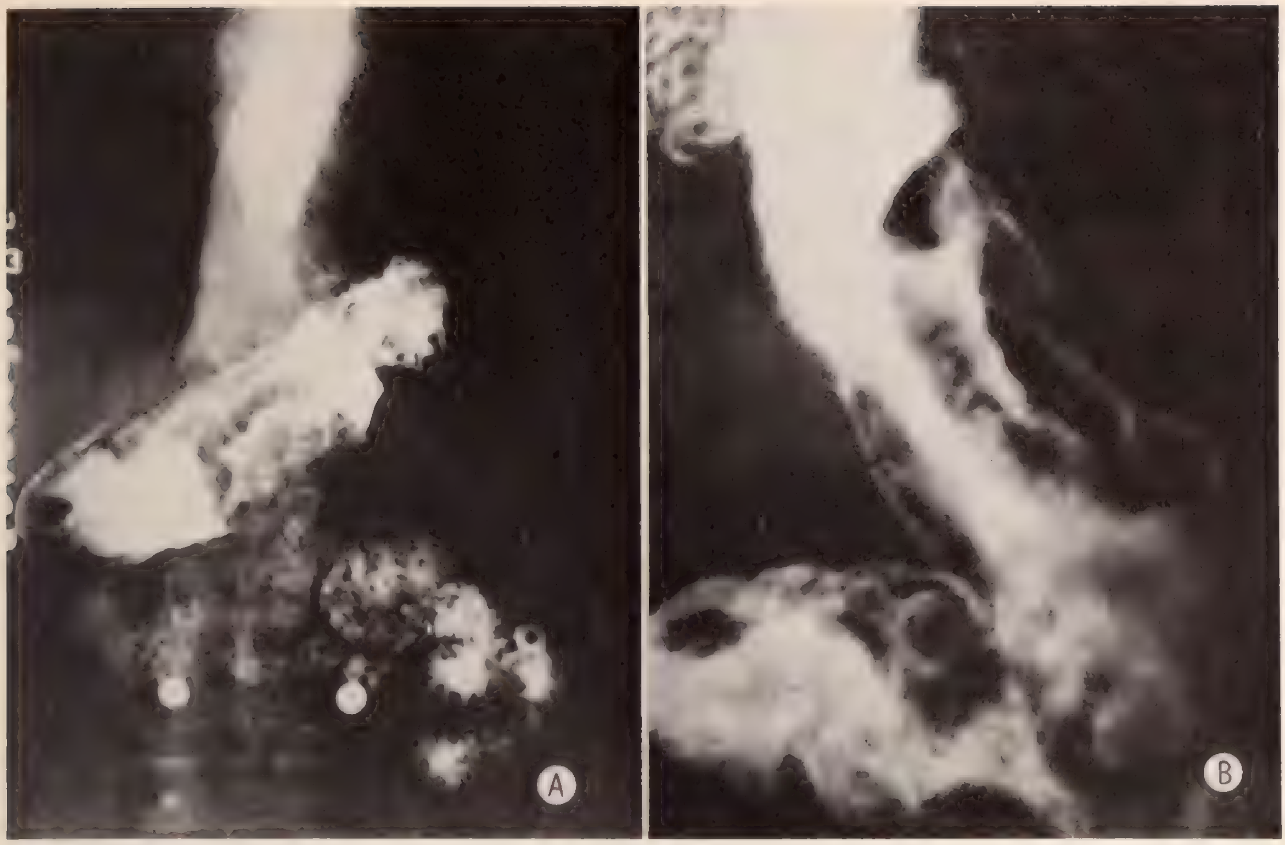

FIGURE 1. Barium study of stomach showing multiple filling defects in (A) posteroanterior and (B) right anterior oblique views.

ach. Both of these involved areas were freely movable and not fixed to surrounding tissues (Fig. 2). The liver was free of palpable metastases and there was no evident node enlargement. In the midsigmoid there was a palpable 3 by 4-cm. polyp, apparently on a pedicle. A total gastrectomy, jejunojejunostomy, and esophagojejunostomy were performed. Pathologic examination revealed multiple gastric carcinomas, with two ulcerative infiltrating carcinomas, one "villous adenoma" with carcinoma in situ, and another carcinoma in situ in the antrum. There was evidence of chronic gastritis and chronic esophagitis; no metastases were found in regional lymph nodes (Fig. 3).

The patient's postoperative course was uneventful; his temperature remained normal throughout. The hemoglobin remained at 9 to 10 Gm. per 100 ml. He was discharged asymptomatic on the thirty-eighth hospital day.

Second admission (three and one-half years later). In the interval, the patient had been well; he had been advised to have additional barium enemas and reevaluation of the polyp in the descending colon but had not followed this advice. In this interval also his brother had died of carcinoma of the lung.

Six months prior to the second admission the patient noted the onset of weakness and thereafter

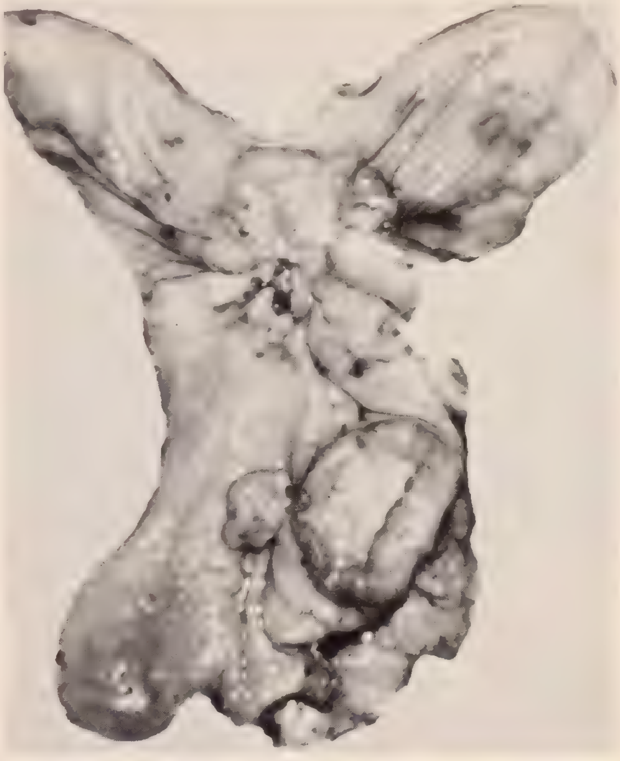

FIGURE 2. Resected stomach with neoplastic mass in upper (fundal) area, and two lower (antral) neoplasms, ulcerated and nonulcerated.

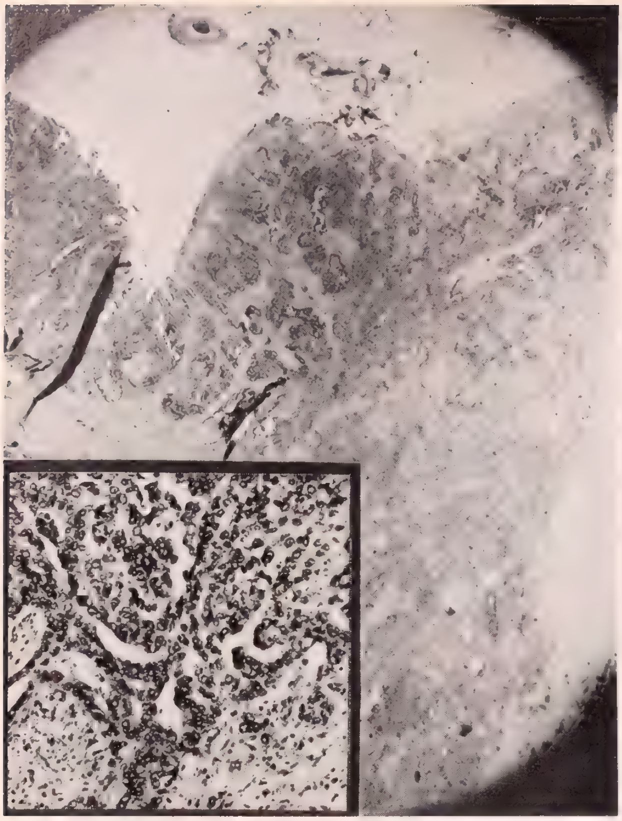

FIGURE 3. Low- and high-power views of infiltrating carcinoma in fundus of stomach.

lost approximately 20 pounds in weight. He denied nausea, vomiting, constipation, diarrhea, or tarry stools. Two weeks before admission he noticed that his urine was dark in color and was informed by his physician that he was passing blood in the urine.

Admission physical examination revealed a blood pressure of 120/70 mm. Hg, pulse 70, and respirations 20 per minute; temperature was 98.6°F., and weight 80 pounds. The patient was poorly nourished and dehydrated but not in acute distress. There was blepharitis of the right upper and lower eyelids; no icterus was evident. The lungs were clear to auscultation. The heart rhythm was regular, and no murmurs were audible. The gastrectomy scar was well healed; results of the abdominal examination were normal. The rectal examination revealed no abnormality except for moderate enlargement of the prostate.

The initial urinalysis revealed a specific gravity of 1.025 and a 3 plus finding in the test for albumin, with many white cells, many red cells, and many bacteria on microscopic examination. The hemoglobin was 14 Gm. per 100 ml., and the white blood cell count 12,600 with 78 per cent polymorphonuclear forms. The blood urea nitrogen was 23 mg. per 100 ml., the carbon dioxide content 17.5 mEq., the potassium 4.7 mEq., the sodium 142 mEq., and the chlorides 106 mEq. per liter. The total serum protein was 7 Gm. per 100 ml. (albumin 3.3 Gm., globulin 3.7 Gm.). The prothrombin time was 17 seconds (control 12.5 seconds). The BSP (Bromsulphalein) test revealed 0 per cent retention at forty-five minutes. Repeat urinalysis revealed a specific gravity of 1.030, with a 4 plus result in the test for albumin, and again many white blood cells, many red blood cells, and moderate numbers of epithelial cells per high-power field.

X-ray films of the chest revealed again only mild chronic pulmonary changes bilaterally. Barium enema revealed a filling defect at the junction of the descending and sigmoid colon, which appeared to be both annular and polypoid in nature with marked narrowing of the lumen (Fig. 4). The intravenous pyelogram revealed distortion and extrinsic pressure deformity along the superior aspect of the opacified bladder. An elongated ovoid collection of gas was observed in the right suprapubic region independent of the bladder, possibly related to the rectum or to the small intestine. The gastrointestinal series revealed the esophagojejunostomy; multiple biliary calculi were again noted.

The electrocardiogram revealed sinus bradycardia but no significant change since prior records.

With continued ampicillin therapy, the patient remained afebrile throughout his hospital stay. Intermittent gross hematuria persisted together with intermittent urinary retention and the passage of stool through the urethra. A cystogram with contrast medium introduced through the Foley catheter revealed a diffusely irregular bladder and a fistulous tract extending from the bladder to the sigmoid colon (Fig. 5). A soft-tissue density was outlined within the pelvis superior to the bladder and to the left of the midline. On the tenth hospital day the patient underwent a right transverse colostomy through a limited small right upper rectus incision; no metastases were visualized in the liver or in the parietal peritoneum. No additional exploration was carried out. Postoperatively the urine culture revealed predominant Klebsiella organisms. The blood urea nitrogen was 13 mg. per 100 ml., the carbon dioxide content 15 mEq. per liter. As the colostomy became functional, the amount of stool passed via the urethra diminished but did not disappear entirely.

By the fourth hospital week, swelling of the legs and a small sacral decubitus ulcer developed. The serum protein was reported as 4.5 Gm. per 100 ml. (albumin 2.1 Gm., globulin 2.4 Gm.). The urine culture showed Klebsiella species and Proteus mirabilis. In spite of the obvious infection, however, the patient remained afebrile.

By the fifth hospital week, the urine still drained fecal material; however, the blood urea nitrogen was 25 mg., the uric acid 7.7 mg. per 100 ml., and the carbon dioxide content 15 mEq. per liter. The white blood cell count was 19,200 with 80 per cent polymorphonuclear leukocyte forms.

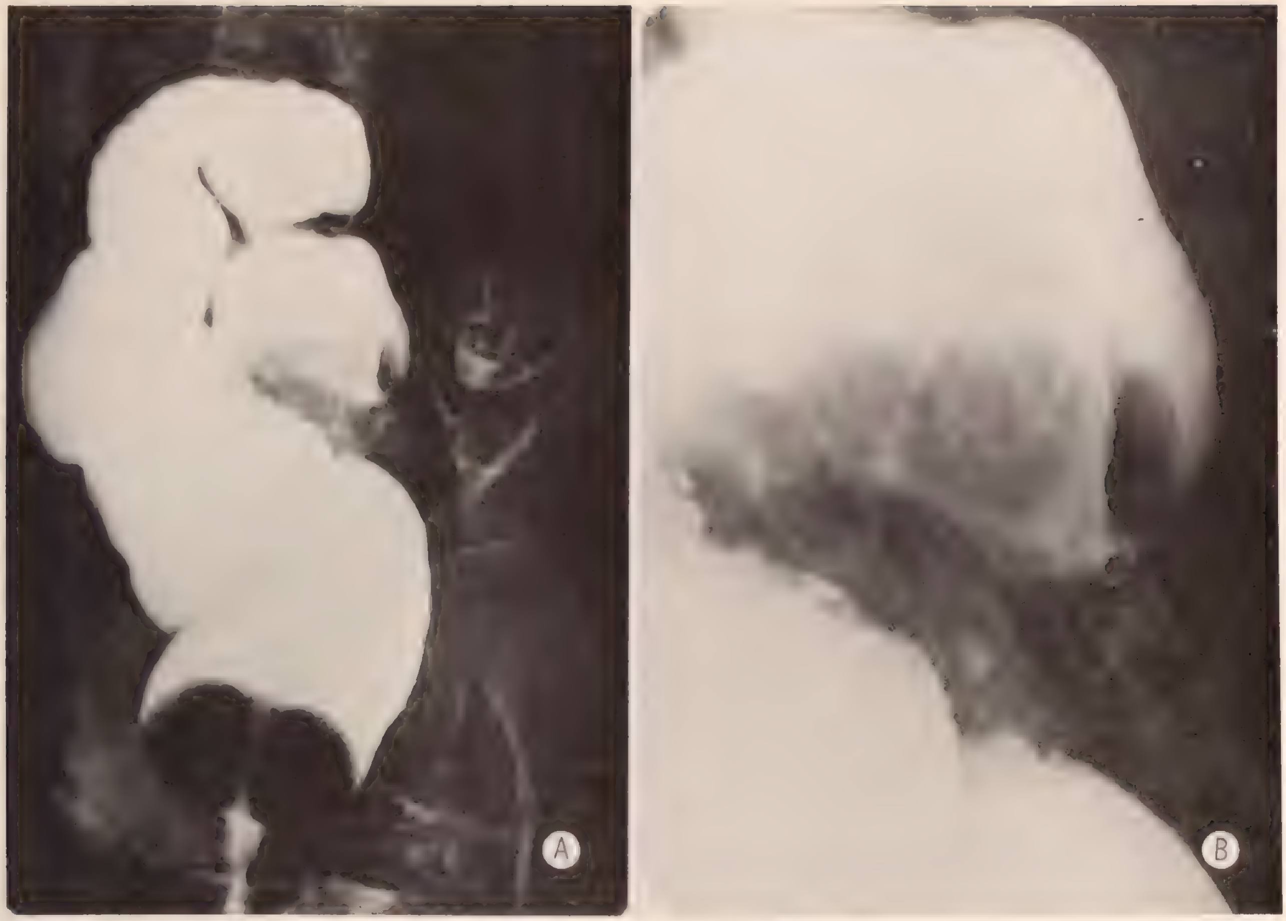

FIGURE 4. (A) Barium enema showing obstruction by polypoid defect. (B) Detail of polypoid defect in sigmoid colon.

In spite of intravenous fluids, hydration could not be maintained adequately; emaciation progressed together with increase in subcutaneous edema. The patient gradually lapsed into stupor, blood pressure became unobtainable, and he expired on the afternoon of the forty-third hospital day.

Discussion

Herman Steinberg, M.D.*: This is the story of a sixty-nine-year-old man who died three and a half years after a total gastrectomy for four cancers of the stomach. At the time of the original surgery there were no metastases noted, and three and a half years later he died with a colovesical fistula and apparent mild hyperchloremic acidosis. During the first admission a sigmoid polyp was found on the roentgenogram and confirmed by palpation during the first operation. For six months prior to his death he was troubled with anorexia and had begun to lose weight five and a half months prior to the demonstration of the colovesical fistula. At the time of his second admission he was said to have an enlarged prostate; he continued to have stool per urethra despite the transverse colostomy, and his hospital course was marked by continued anorexia in the face of a normal blood urea nitrogen. The prothrombin time was elevated. A normal liver was found at the time of transverse colostomy.

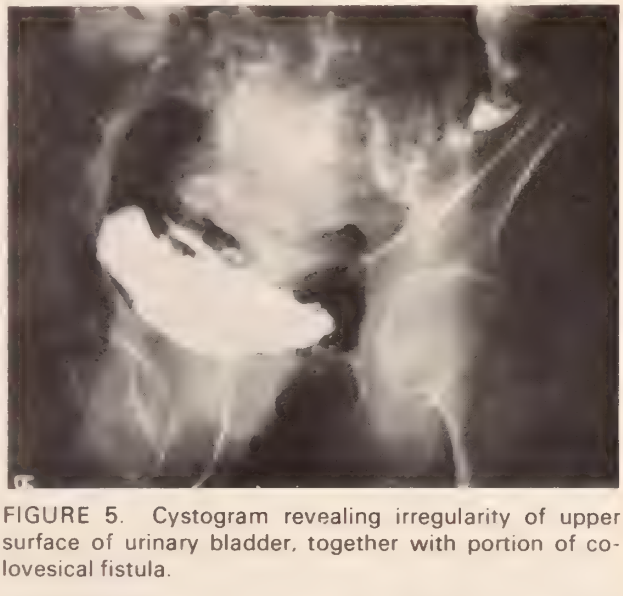

FIGURE 5. Cystogram revealing irregularity of upper surface of urinary bladder, together with portion of colovesical fistula.

May we review the x-ray films and pathologic findings during the patient's first admission?

Anthony Vasilas, M.D.: The gastrointestinal series during the first admission showed two large filling defects, one in the fundus about the cardia and one in the proximal portion of the body below the fundus on the greater curvature, with a large polypoid mass effect in the latter area (Fig. 1). A markedly thickened mucosa is present. The remainder of the stomach and the duodenal bulb were normal in appearance. Lymphosarcoma is a possibility here in addition to adenocarcinoma. The findings on the barium enema were described in the protocol, but unfortunately the films are not available.

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Dr. Steinberg: Dr. Payson, have you anything to add to the operative findings?

Benjamin A. Payson, M.D.: When we opened the stomach we found a large firm mass involving the proximal third of the stomach near the lesser curvature which was about 3 inches in diameter; the overlying serosa was obviously puckered and distorted, and there was thickening of the lesser curvature which suggested some extension of the neoplasm through the entire wall of the stomach. In spite of this though, the mass was freely movable and was not adherent to the pancreas posteriorly. In addition there was a second large ulcerating carcinoma located more distally in the stomach near the greater curvature which was also freely movable. I could find no enlarged nodes along the greater curvature, but in the area of the celiac axis there was some thickening along the left gastric artery which might have represented some slight enlargement of lymph nodes. The liver appeared to be free of palpable metastases, and there was no evidence of any omental or cul-de-sac metastases. Palpation in the midsigmoid area showed a 3 by 4-cm. polyp, apparently on a pedicle. We performed a total gastrectomy, together with an esophagojejunostomy and a jejunostomy. The patient withstood the procedure without difficulty and recovered well postoperatively.

Basil Moumgis, M.D.: The surgical specimen consisted of the resected stomach, together with adjacent lymph nodes (Fig. 2). In the stomach, there was a large fungating lesion with the central ulceration about 2 cm. beyond the proximal line of resection. On the anterior aspect toward the greater curvature about 5 cm. above the pylorus was a second polypoid ulcerating lesion. There was a third polypoid lesion on the anterior aspect of the stomach, separate and distinct from the other lesions. In addition, a cobblestone pattern with a suggestive sessile polyp was found in the antral area. On microscopic examination these two first lesions were adenocarcinomas infiltrating through the gastric wall into the muscularis; the third was described as a villous adenoma with in situ carcinoma; certainly it was an adenomatous polyp with areas of carcinoma in the surface (Fig. 3). The lesion in the area of the cobblestone pattern showed in situ carcinomatous changes. Lymph nodes from both greater and lesser curvature areas revealed no evidence of metastasis.

Dr. Vasilas: During the final admission, barium swallow showed a well-functioning esophagojejunostomy. The lung fields demonstrated mild chronic changes but no evidence of metastatic disease; the heart was within normal limits. On the intravenous pyelogram both kidney shadows are normal; there is a soft-tissue mass density in the lesser pelvis to the left of the midline which is causing extrinsic pressure on the bladder. A cystogram done the day after the barium enema again demonstrates the extrinsic pressure effect by this mass and a coarse trabecular pattern of the urinary bladder; a sinus tract is easily seen and was believed to be communicating between the bladder and the sigmoid colon (Fig. 5). Because of the presence of residual barium we cannot be certain about this direct communication, although the clinical findings clearly indicate its presence.

A barium enema demonstrated a completely obstructing process in the lower descending colon with shelf formation and central canal findings of an annula carcinoma (Fig. 4).

Dr. Steinberg: Dr. Vasilas, did you at any time suspect diverticula in the colon?

Dr. Vasilas: None were reported on the barium enema on the first admission; in the final study, the barium did not pass beyond the descending colon and so could not demonstrate diverticula proximal to that point. Barium from the gastrointestinal series eventually reached the colon but filled it irregularly and incompletely. No diverticula were seen, however.

Dr. Steinberg: On the final barium enema, you pointed out an annular constricting lesion; was there a polypoid lesion in addition?

Dr. Vasilas: No.

Dr. Steinberg: Were there skip areas of narrowing that you were aware of? And was there anything to suggest metastatic tumor to the sigmoid?

Dr. Vasilas: No.

Dr. Steinberg: Do you believe that the linear extent of this area of narrowing would be unusual for an intrinsic carcinoma of the colon?

Dr. Vasilas: No, the length is not unusual.

Dr. Steinberg: I shall address myself primarily to the two significant problems that have arisen here in this patient, namely, the cause of the colovesical fistula and the mild metabolic abnormality.

A number of causes of colovesical fistula are well documented, but diverticulitis of the colon is by far the most common cause. A ratio of between 6 to 1 up to 9 to 1 favors diverticulitis of the colon over any other lesion as the cause. Two other conditions not uncommonly lead to colovesical fistulas; the first is cancer of the colon, which this individual may well have had, and the other is Crohn's disease of the colon, the so-called transmural or granulomatous colitis. In 20 cases of colovesical fistulas reported by Ward *et al.*[1] from St. Luke's Hospital, 18 were due to diverticulitis, and 2 were due to cancer of the colon. It is remarkable that I could find no instance of cancer of the urinary bladder as causing this condition, although in all likelihood it has occurred. Another much less frequent cause of colovesical fistulas is radiation therapy; and, finally, an unusual cause, but one that should be considered seriously in this patient, is metastatic disease to the colon or to the urinary bladder with the development of a colovesical fistula. Despite their absence here on x-ray studies, one would have to consider colon diverticula as the first choice on a purely statistical basis. We know that diverticula may be present without roentgenographic evidence, and we might well be dealing with a solitary diverticulum in this patient.

Concerning possible primary cancer of the colon in this individual, we know that he had small sigmoid polyps three and a half years prior to death. This means to me that he probably is more disposed to cancer of the colon than an individual who has no polyps; it does not necessarily mean that the polyps degenerate into carcinoma. The polyps in this patient are described as pedunculated; and although they were substantial in size, described as 3 by 4 cm. in diameter, I would guess that they were not the cause of this man's problem. On the other hand, he could have had a primary carcinoma of the colon, although I would have expected such a bulky carcinoma to have bled and to have caused anemia, which this man did not have on his final admission. Crohn's disease can occur initially in patients past fifty years of age, but there is nothing here really to suggest such a condition. I again come back to metastatic disease, obviously from the stomach; the absence of metastatic disease in the lymph nodes on the first admission militates against the diagnosis but does not rule it out.

Influencing me toward a diagnosis of metastatic disease to the pelvis with colovesical fistulization is my desire for unitary diagnosis. I know that that type of reasoning is a little dangerous with elderly patients in whom so many different conditions can arise simultaneously, but I would give it some weight in the setting of a clinicopathologic conference. I had the advantage of looking through all of the colon films previously, and I perhaps convinced myself that some films did show skip areas of narrowing, with one film that was suggestive of a serosal implant. In an attempt to make a unitary diagnosis, I would favor the terminal picture as being due to metastatic disease from the stomach.

The metabolic abnormality, although mild, is sufficiently interesting to comment on. With a normal blood urea nitrogen and a carbon dioxide content of 15 mEq. per liter, a serum chloride of 110 mEq. per liter would permit me to suspect a mild hyperchloremic acidosis. It is true that starvation ketosis may result in a carbon dioxide content of 15 mEq. per liter, but usually the ketone bodies will replace the urinary chloride so that the serum chloride is ordinarily not so low.

What other conditions could give rise to hyperchloremic acidosis? A renal tubular acidosis is unlikely, although an obstructive uropathy and pyelonephritis may cause such a condition. However, the intravenous pyelogram did not show ureteral dilatation; furthermore, the serum potassium is normal. The patient, on the other hand, does have the anatomic prerequisites for a urinary-bowel exchange syndrome, not by the usual means of a ureterosigmoidostomy but via a colovesical fistula. I could find nothing in this regard in a brief review of the medical literature, and none of my urology colleagues could recall a hyperchloremic acidosis in patients with colovesical fistulas; but I wonder whether or not our surgical subspecialists might not have overlooked such an occurrence, unless especially interested in electrolyte problems. I offer the possibility here that the hyperchloremia is related to a urinary-bowel exchange with excessive chloride reabsorption in the lower colon in a patient who obviously also has a starvation acidosis.

I can only speculate as to the immediate cause of death. I do not believe he died of renal failure; one would think in terms of sepsis or perhaps pulmonary embolization.

In summary, I think that this man's colovesical fistula was secondary to metastatic disease from the stomach, although other possibilities would not surprise me, including diverticulitis and primary carcinoma of the colon. I think his mild hyperchloremic acidosis was contributed to by reabsorption of urinary chloride from the colon by way of the colovesical fistula. I wonder, too, as an incidental finding, whether or not some of the air shadows in the pelvic region are radiolucencies which may indicate abscess formation that may well have bridged the region between the bladder and the colon.

Harold H. Coppersmith, M.D.: Dr. Steinberg, anatomically how do you visualize metastatic disease from the stomach as a cause of this sequence of events? Is the initial event a spread to a lymph node or to an area like Blumer's shelf with invasion of both the colon and bladder?

Dr. Steinberg: It is not unusual for carcinoma of the stomach or of the pancreas to metastasize as serosal implants either to the pelvic floor (the so-called Blumer's shelf), or to bowel wall, as well as to mesenteric lymph nodes. I would think of metastatic disease in this patient in terms of serosal implants.

John T. Flynn, M.D.: Are you not a little puzzled by an interval of three and one-half years between these hospitalizations? Is that not a long time for gastric carcinoma metastases to make themselves clinically evident?

Dr. Steinberg: Cancer of the stomach, like cancer of the colon, can be a very slow growing lesion, particularly in older people. For example, I have seen linitis plastica, already symptomatic (in retrospect) permit the continuance of life for six years after its discovery. I have seen cancer of the colon continue to be symptomatic for five or six years. In 1954 I saw a diabetic patient with a year's history of obstructive gastric outlet symptoms; on x-ray film she clearly had cancer of the antrum; at the time of gastric resection she had lymph nodes positive for metastatic disease. She is still living and asymptomatic seventeen years later.

Seymour A. Fink, M.D.: First of all, the lesion in the skin which was removed at another hospital has not been further defined. Whenever we have a clinicopathologic conference with mention of the skin we have to think of melanoma and of metastatic disease.

Unfortunately, we tend to lump all carcinomas of the stomach together. Actually the polypoid lesions have a better prognosis than the scirrhous types of carcinoma of the stomach. Since this was a polypoid carcinoma of the stomach, I am not surprised that the patient survived as long as he did.

There are two ways that carcinoma metastasizes to the colon or to the small bowel, that is, by a mass of lymph nodes which involves the bowel by proximity and by serosal implant. Those usually appear on x-ray film differently from those in today's presentation because they are usually flat and without sharp intruding margins.

Diverticulitis and Crohn's disease would be most unusual in the absence of a history suggesting either of those conditions. We know nothing about the roentgenographic features of the mucosa just proximal to the area of narrowing of the colon, and I think it unwise to speculate on what might be there when we do not visualize the area. We do not know the length of the narrowing also because it is not filled; however, despite the narrowing, there is little proximal dilatation of the colon. We are left really with only an area of narrowing with what looks like an edge.

Two polyps were previously reported in the colon, one polyp with a stalk, the other not fully described. This raises the question as to whether or not the latter lesion was not really a polyp but rather carcinoma present de novo from the onset. At this stage of the game, at which we have a lesion which we believe is carcinoma, it matters little whether it is metastatic or primary carcinoma; because when the metastatic carcinoma goes through the serosa, involving the mucosa in this fashion, I do not see how one can distinguish a local primary lesion from metastatic disease at all.

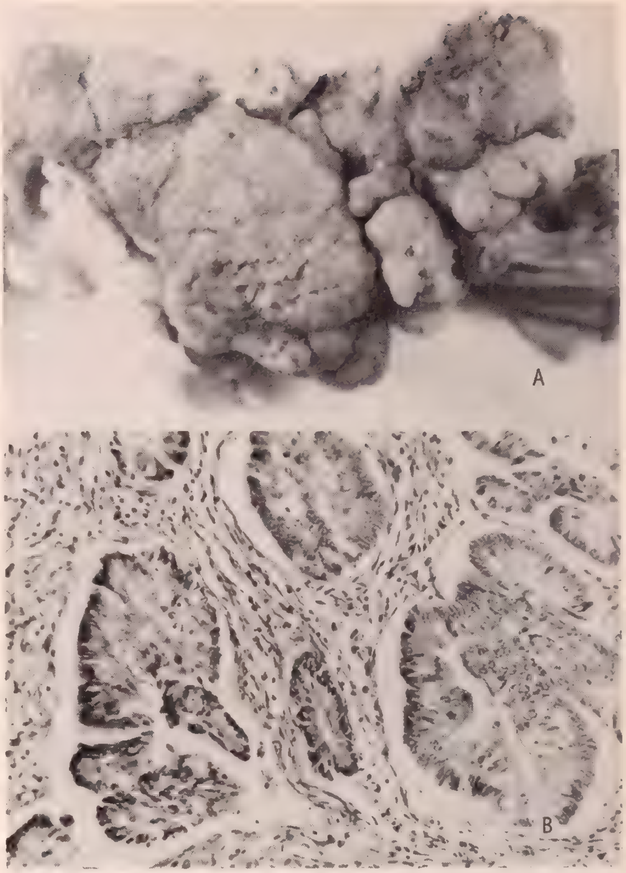

FIGURE 6. (A) Fungating polypoid lesion of sigmoid colon. (B) Malignant change within polypoid lesion.

I would vote for a primary carcinoma in the colon.

Clinical diagnoses

1. *Colovesical fistula with urinary tract infection and probable septicemia*
2. *History of multiple neoplasms of the stomach, probably with pelvic metastases, leading to colovesical fistula*
3. *Probable benign polyp of colon*

Dr. Steinberg's diagnoses

1. *Multiple malignant neoplasms of stomach, with pelvic metastases, colovesical fistula, and possibly local abscess formation*
2. *Mild hypochloremic acidosis, possibly secondary to urinary-bowel exchange syndrome*
3. *Polypoid lesion of colon, benign? malignant?*

Pathologic discussion

Dr. Moumgis: At autopsy there was evidence of a clean anastomosis of the esophagus to the jejunum with no evidence of recurrence of neoplasm. Microscopically, healing had taken place with a slight amount of chronic inflammation and residual suture material. The remaining small intestine was entirely normal, with no evidence of serosal implants that we could detect grossly. An

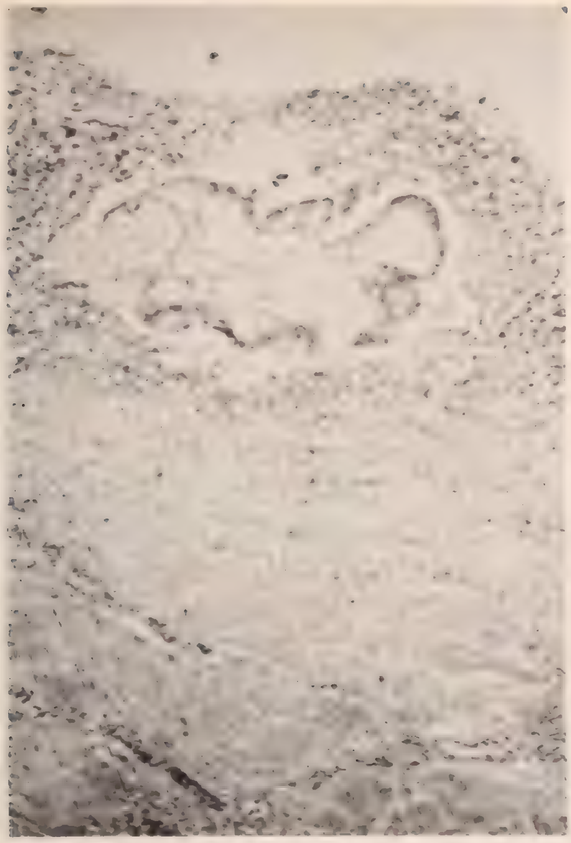

FIGURE 7. Invasion of outer portion of bladder wall by metastatic carcinoma from sigmoid.

apparently functioning colostomy was present with no lesions near it. In the sigmoid colon approximately 30 cm. from the anal orifice and adherent to the posterior aspect of the bladder, was a fungating polypoid lesion about 7 cm. in diameter (Fig. 6). It was not completely annular, but was very bulky, had invaded three fourths or more of the circumference of the bowel, and showed evidence of infiltration of the bladder wall (Fig. 7). We were not able to demonstrate an actual fistula, but there was a large mass of necrotic material between the bladder and the colon with microscopic evidence of carcinoma involving both organs. In the bladder in our sections the neoplasm extends into the muscularis but not into the mucosa. There were no other polyps in the colon and no diverticula. The only site of other metastasis was one of the pericolic lymph nodes; there is no evidence of metastasis to other organs of the body, including the liver.

The cause of death was probably sepsis, because at autopsy we found a very extensive confluent bronchopneumonia with a 2 to 3-cm. abscess in the right lower lobe, microscopic evidence of breakdown, and microabscesses in the areas of bronchopneumonia. We did not think that any of the lesions in the lung could be ascribed to emboli, although he did have prostatic venous plexus thrombosis.

Other autopsy findings included a not very extensive focal chronic pyelonephritis. The prostate was normal in size and microscopically showed changes of hyperplasia but not leading to obstruction of the urinary tract.

Dr. Fink: Since you did not find more than one massive polypoid lesion, would you speculate that possibly one of the earlier colon lesions overgrew the other?

Dr. Moumgis: Yes, but it would have to remain a speculation. The anatomic location of this mass is approximately in the area where the polypoid lesion was described on the barium enema on the first admission.

Dr. Coppersmith: Then I take it that this was a new tumor, not in any way related to the gastric neoplasms?

Dr. Moumgis: I do not believe that the terminal neoplastic disease had any connection with the earlier stomach lesions.

Dr. Flynn: This patient had multiple cancers in the stomach and yet apparently was completely cured by a gastrectomy. How often does multiple cancer of the stomach occur, and what is its clinical course? McNeer, Pack, and Ashley,[2] in their very interesting text on neoplasms of the stomach quote the experience at Memorial Hospital with 1,685 gastric cancers, both carcinoma and sarcoma, between 1931 and 1955. Multiple primary gastric carcinomas were found in only 23 patients, 20 with multiple adenocarcinomas only, and 3 with carcinoma combined with a sarcoma of some type. It was of some interest to note those cases in which the patient usually was cured in spite of the multiple carcinomas. If an adenocarcinoma was well established, even ulcerated and mildly invasive into the wall of the stomach, the prognosis was surprisingly good if so-called in situ carcinoma, that is, superficial carcinoma in the mucosa not extending very deeply with so-called Verse's plaques, was also found. In 4 cases with this combination of lesions, subtotal gastrectomies were performed, no metastases to lymph nodes were detected, and all 4 patients were cured over follow-up periods of eight to seventeen years. When the superficial adenocarcinoma was associated with polypoid cancers also multiple in nature, 2 of 3 such cases were five-year cures following subtotal gastrectomy. When an adenocarcinoma was associated with a second infiltrating carcinoma, however, the survival rate was small. In 8 such cases, metastases to the lymph nodes were present in 6 with only 1 five-year survival rate. So the infiltrating nature of the second, third, or fourth carcinoma abruptly lowers the survivability.

Our patient presented multiple carcinomas in stomach and colon. The Memorial Hospital experience included 5 cases of colorectal carcinoma, in which gastric carcinoma also occurred. The gastric carcinoma occurred as the initial neoplasm in 1 patient and followed the colorectal carcinoma in the other 4. One patient was cured of both cancers, but the other 4 did not survive for five years.

Dr. Steinberg: I wondered, too, about the coexistence of cancer of the stomach and cancer of the colon. Schottenfeld, Berg, and Vitsky[3] at Memorial believe on a statistical basis that there is no predisposition to either carcinoma in the other organ. However, in females there is an increased incidence of uterine carcinoma in patients who have preexisting colon cancer. One generation of a particular family has been shown to have increased incidence of both cancer of the stomach and cancer of the colon; in the preceding generation, one line had cancer of the colon, and the other line had cancer of the stomach. In other words, there is not a single gene that predisposes to susceptibility to both carcinomas occurring simultaneously.

Dr. Fink: The polypoid character of the colon neoplasm explains why there was no proximal dilatation of the bowel; it was not a typically stenotic annular lesion with a fibrous element.

The problem of "cure" of adenocarcinoma of the stomach also arises in this case; this patient cannot by the usual definition be said to be cured because he did not survive for five years after discovery of his carcinoma of the stomach. The problem is also one which involves the depth to which carcinoma extends through the submucosa and into the muscularis. This factor permits the Japanese to have such a high survival rate with their early carcinomas of the stomach.[4] In all Western countries where the usual type of carcinoma of the stomach is well advanced when it is first diagnosed, the average survival rate is 5 to 6 per cent over five years. With their early carcinomas of the stomach, the Japanese have a survival rate of more than 90 per cent, because they operate on patients in whom the carcinoma is limited entirely to the mucosa and has not extended significantly into the submucosa.

Dr. Flynn: Perhaps I used the word "cure" incorrectly in referring to this patient's gastric neoplasms. I should have said that no evidences of residual stomach neoplasm were found at autopsy three and one-half years after gastrectomy. But to refer again to the Memorial Hospital experience, McNeer, Pack, and Ashley[2] commented on a patient who was found on gastrointestinal study to have a small polypoid lesion of the stomach. The patient refused operation for two years but finally in 1947 submitted to laparotomy; the gross and subsequent histologic examination of the specimen revealed two superficial carcinomas quite similar to those of our patient, as well as innumerable foci of in situ carcinoma similar to Verse's plaques extending to the proximal line of the resection. Because of her seventy-one years, further operation was not advised. The patient was living and well in 1965; yearly examinations of the stomach in the nineteen-year interval failed to reveal any cancer on x-ray films. The patient graciously willed her stomach to science, but her health was flourishing at the age of ninety years.

Bernard M. Wagner, M.D.: Resistance to the spread of cancer varies so much from one individual to another and from one type of neoplasm to another. For example, active sinus histiocytosis in the nodes adjacent to the site of breast cancer is associated with a more favorable prognosis,[5] whereas this same histologic finding with gastric cancer does not appear to influence the prognosis significantly.[6] Probably the initial changes in gastric carcinoma are widespread in many areas throughout the gastric mucosa rather than confined to one spot. Why one particular area goes on to be a true cancer and the others do not is not known. This is especially true with cancer of the stomach in dogs. At the Animal Medical Center in New York, linitis plastica of the canine stomach is not unusual and presents very differently from that in man.

The animals can undergo subtotal gastrectomy with good results.

George Schreiber, M.D.: The autopsy findings only emphasize how truly regrettable was the patient's refusal to return for more complete evaluation of his one or two colon polyps, as he had been advised to do.

Final diagnoses

1. *Adenocarcinoma of colon, with metastases to pelvic tissues, bladder, and adjacent lymph nodes*
2. *Colovesical fistula, secondary to adenocarcinoma of colon, with secondary pyelonephritis*
3. *Multiple gastric neoplasms, without evidence of recurrence following gastric resection*
4. *Terminal extensive bronchopneumonia, with abscess formation.*

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Correlation Conferences in Radiology and Pathology

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ENLARGING ABDOMEN IN TEENAGE GIRL

Case history

Robert Heelan, M.D.: A sixteen-year-old girl was admitted because of an abdominal mass which was increasing in size. She had no previous hospital admissions. The patient had been well up to one year prior to admission when she noticed an increase in abdominal girth despite dieting. This abdominal fullness appeared to increase slowly in size for three months after which it diminished in size for several months. It then began to increase in size again and for two months prior to admission had been increasing steadily. The patient had no symptoms referable to her gastrointestinal or genitourinary tracts. Her last normal menstrual period had been two weeks prior to admission.

Physical examination disclosed a firm smooth mass which entirely filled the abdominal cavity and extended beneath both costal margins. On pelvic examination, the patient had a normal cervix and uterus, but it was impossible to delineate the source of the mass. Physical examination was otherwise unremarkable, and laboratory data were normal.

Nathaniel Finby, M.D.: It should be noted that this young girl was thought to be pregnant by her parents because of the increasing size of the abdomen. For this reason, and an unwillingness to confirm a pregnancy in their unmarried teenage daughter despite her denials of the possibility of pregnancy, medical advice was delayed until the abdominal mass was enormous.

Radiologic discussion

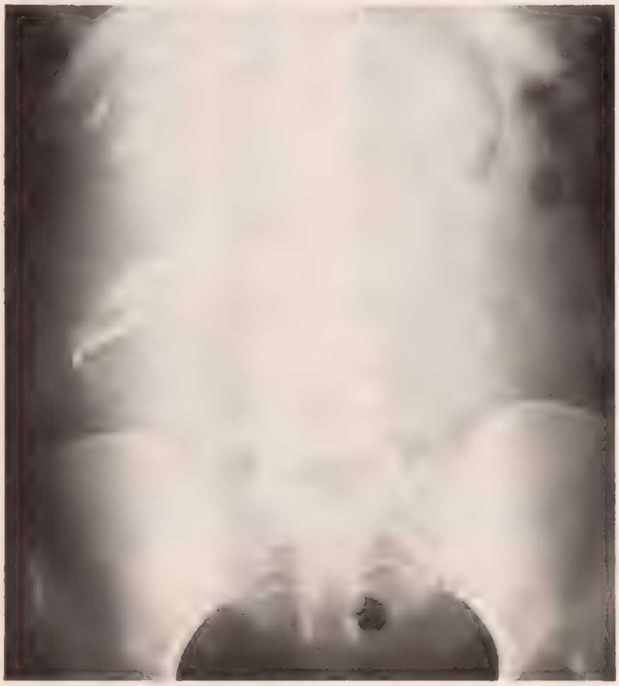

FIGURE 1. Roentgenogram of abdomen shows large soft-tissue mass rising out of bony pelvis and extending high into epigastrium. Intestinal contents displaced to left. There are several calcific densities in right upper quadrant of abdomen within mass. Some of these have appearance of teeth and one larger fragment suggests portion of mandible with unerupted teeth. There are few areas of relative radiolucency within mass but these are poorly defined.

Dr. Heelan: An abdominal film on admission demonstrated a large soft-tissue mass extending from the upper pelvis superiorly to the rib cage (Fig. 1). The mass appeared more prominent in the right hemiabdomen and pushed the transverse colon superiorly. It contained a large number of calcific densities having the appearance of teeth, and to the right of the third lumbar vertebra there was a long bony density which contained teeth embedded in it. In the vicinity of the calcific densities there were mottled areas of relative lucency which suggested lipid density within the mass.

Intravenous pyelography showed delayed excretion of the right kidney on the five-minute film with moderately dilated calyces (Fig. 2). Later films showed a dilated pelvis and ureter down to

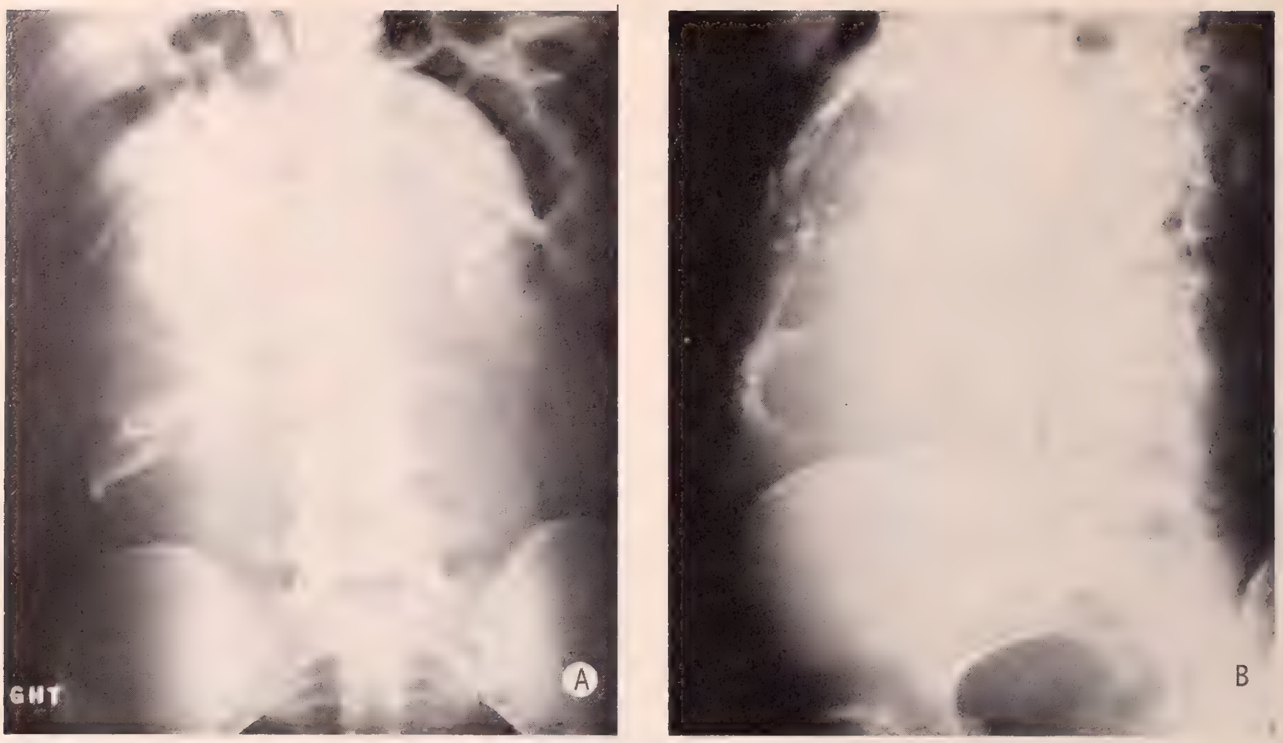

FIGURE 2. (A) Intravenous pyelogram in frontal projection shows left kidney to be of normal appearance. Right kidney shows hydronephrosis with dilatation of ureter to level of fourth lumbar vertebra. (B) Right posterior oblique projection again shows apparent obstruction of right ureter. Note appearance of teeth and fragment of mandible within mass in this projection.

the level of the third lumbar interspace. The left kidney and collecting system and the bladder were unremarkable.

Sonographic discussion

Lajos I. von Micsky, M.D.: The sonolaparograms reveal the well-distended bladder, vagina, uterus, a small sonolucent mass in the cul-de-sac, and a huge sonolucent mass occupying practically the entire abdominal cavity (Fig. 3). The uterus appears to be normally shaped, and it is in midposition. There is a small sonolucent mass in the cul-de-sac, 3 cm. in diameter, having the appearance of an ovarian cyst. It is well delimited toward the surrounding organs. The wall-content interface is smooth and sharp, and its internal texture, not counting several randomly distributed fine speckles, is generally sonolucent. The transonicity of the mass is moderate to good.

The large mass occupying the entire abdominal cavity measures 24 by 10.5 by 20 cm. The mass is well delimited toward the surrounding structures and tissue planes, and the wall-content interface is generally sharp and smooth. The acoustical architecture of the mass is quite complex; within a large cystic cavity there are several solid components of complex configuration and structure. The anterocranial portion of this cystic mass is occupied by a sono-opaque structure measuring 9 by 6 by 8 cm. The lowermost portion of this solid component shows a well-defined circular structure on its caudalmost aspect. The diameter of this structure is approximately 3 cm., and it appears to be a daughter cyst. Extending from this solid mass dorsally there are several well-defined aggregates of high-intensity echoes which may represent osseous components. The sharpness of the contour of the daughter cyst also indicates probable calcification. Other solid elements in the shape of papillary excrescences appear to occupy the right posterolateral aspect of the lower pole of the mass.

The sonographic impression was "huge ovarian teratoma."

Dr. Finby: Diagnostic ultrasound using the B-scan modality gives us "tomographic" slices delineating structures because of varying reflections of the ultrasound waves. In two or more projections, with serial scans at regular intervals, we can thus obtain a three-dimensional view of the abdomen.

In my opinion this diagnostic modality will play an ever-increasing role in diagnostic medicine as experience and technics are refined.

Diagnostic ultrasound, especially B-mode (tomographic) scans, in expert hands, has already replaced the need for most obstetric-gynecologic radiology.

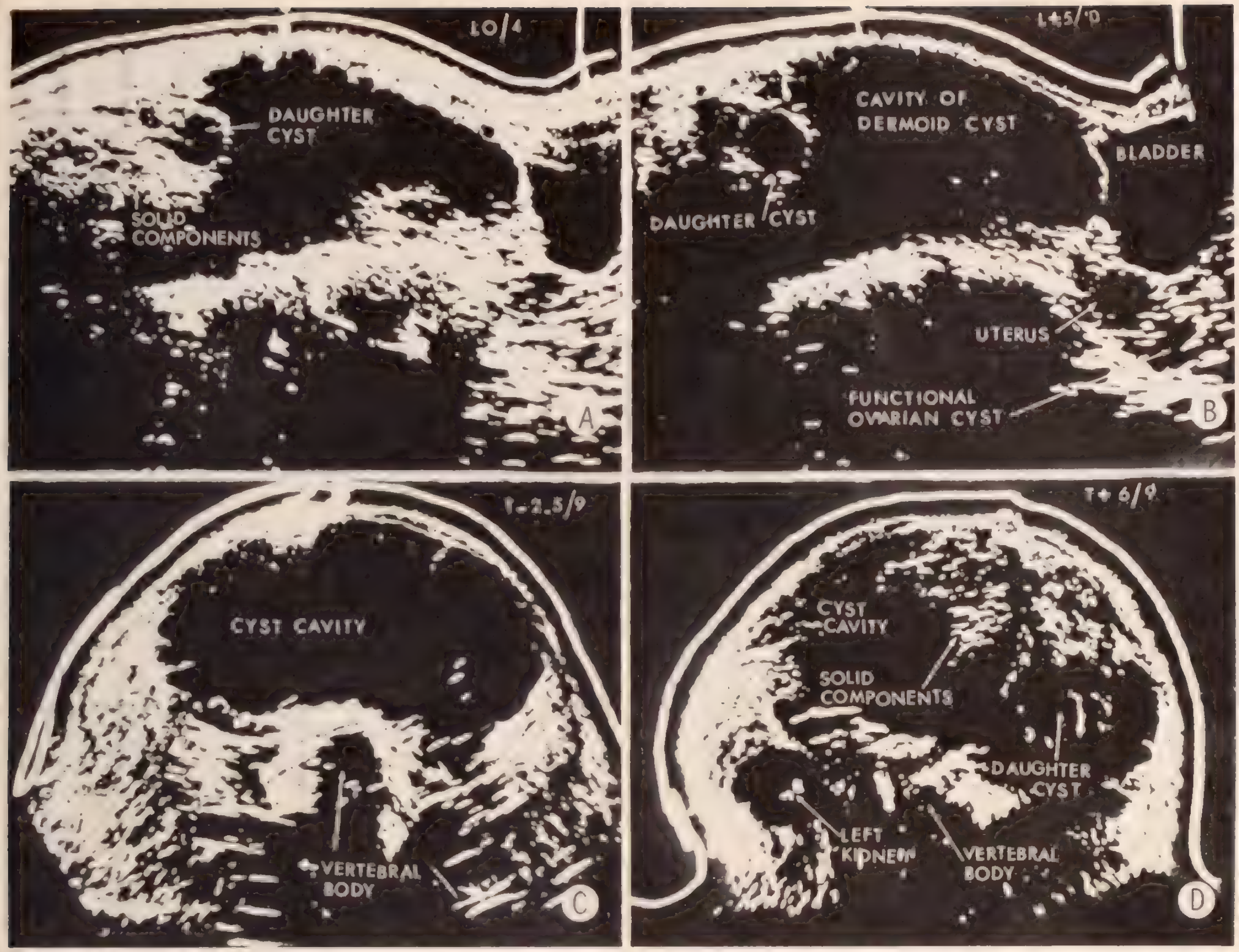

FIGURE 3. (A) Longitudinal ultrasound B-scan of abdomen in midline with pubis and bladder on right shows large poorly marginated sonolucent mass with acoustical echoes suggesting daughter cyst and solid components. Echoes beneath large sonolucent mass suggest that mass is filled with fluid or fat. (B) Longitudinal ultrasound scan immediately to right of midline shows enormous fluid-filled mass and partially outlines uterus and small ovarian cyst which are displaced downward and deep within pelvis. (C) Transverse ultrasound B-scan 2.5 cm. below umbilicus again shows enormous mass which is sonolucent and has appearance of large cystic cavity with poorly defined margins. (D) Shows transverse ultrasound B-scan 6 cm. above umbilicus. It shows solid components within mass high in abdomen and incidentally demonstrates left kidney.

Surgical discussion

Hugh F. Fitzpatrick, M.D.: The patient underwent laparotomy. There was a massive cystic mass arising from the left ovary occupying the entire abdominal cavity and extending up beneath both costal margins. Part of the mass appeared to be cystic, and 2 L. of serous fluid mixed with soft white semisolid material were aspirated before the mass could be delivered from the abdomen. There were small cysts of the right ovary, and the uterus appeared normal.

Dr. Finby: A roentgenogram of the postoperative specimen clearly shows the large mass containing many calcific structures (Fig. 4). A portion of bone having the appearance of a bizarre mandible was clearly visualized.

Pathologic discussion

Harold P. Gaetz, M.D.: The surgeon submitted to us a small, firm, white nodule labeled "peritoneal implant," and frozen-section microscopic examination revealed the benign nature of the patient's disease (Fig. 5A). In quick succession we received masses of clotted blood and "putty" as well as a partially collapsed 15 by 18-cm. cystic structure with a rent in the capsule which exuded similar material (Fig. 5B). Stretched over one aspect was a normal fallopian tube. Further inspection of the interior of the cyst revealed an edentulous germanitive ridge supported by a curved 15 by 4-cm. bone.

A fleshy tan-gray, solid area abutted the bone (Fig. 6).

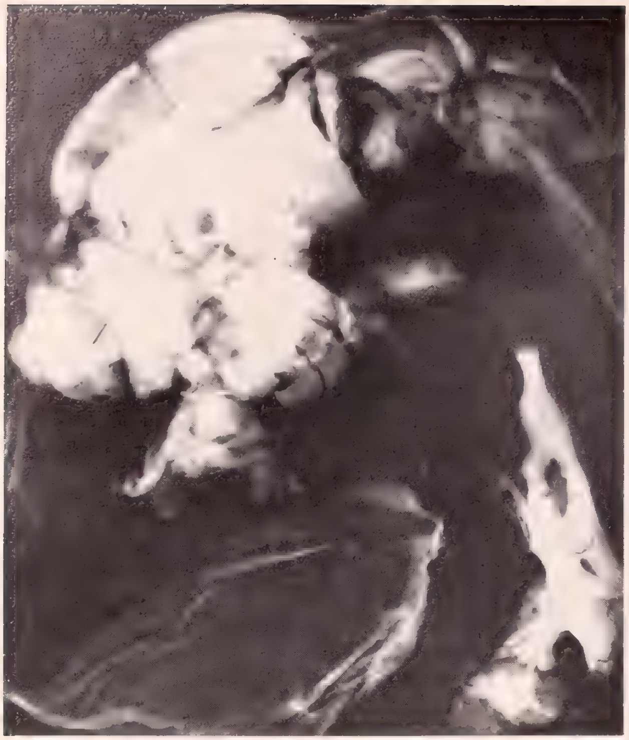

FIGURE 4. Roentgenogram of operative specimen after sectioning. Note nonhomogeneity of tissues, teeth, and section of mandible in right lower portion of film which suggests deformed mandible containing unerupted teeth.

Comment

Dr. Heelan: Benign cystic teratoma (dermoid cyst) of the ovary is defined as any combination of well-differentiated ectodermal, mesodermal, and endodermal elements. By various estimates they represent between 10 and 15 per cent of all ovarian neoplasms and are distributed along the line of migration of the germ cells. Malignant degeneration is rare, occurring in no more than 0.5 to 5 per cent of cases. They are most common in females of childbearing age and are occasionally bilateral.

Radiographically, in addition to the usual signs of a mass in the pelvis or abdomen, discrete calcifications, usually teeth but occasionally bone, are often noted. In the series of Burfield and Kemp[1] there were teeth or bone in 8 of 14 cases.

Dermoid cysts usually contain significant amounts of lipid substance, and the relative lucency of fatty portions of the tumor as compared with the water density of the surrounding tissues has been used as a criterion for the diagnosis of dermoid. Six of 14 patients in the aforementioned series were seen to have lipid densities in their tumors, as diagnosed by roentgenography.[1] Preoperatively, diagnosis was established in 10 of 14 cases on the basis of roentgenographic findings on plain films of the abdomen.

Dr. Gaetz: In general, dermoids (benign cystic teratomas) comprise 10 per cent of all ovarian tumors. There is reason to believe that in the younger-age group, twelve to twenty-one, the picture changes, and dermoids comprise 30 per cent of ovarian tumors.[2] As high as 4.6 per cent of dermoids have had preoperative spontaneous rupture. Torsion, trauma, and tumor (malignant degeneration) have been etiologically operative, and recently iatrogenic spillage (needlepuncture and aspiration) has been reported.[3] Only an anesthetic mortality rate exists now, while fibrous adhesions, sterility, or ectopic pregnancies may be complications.

Dr. von Micsky: Teratomas represent 5 to 10 per cent of all ovarian tumors and in 25 per cent of the cases are bilateral. They may be solid or cystic or may show great regional variations in consistency. In the common cystic variety, generally referred to as dermoids, the ectodermal ele-

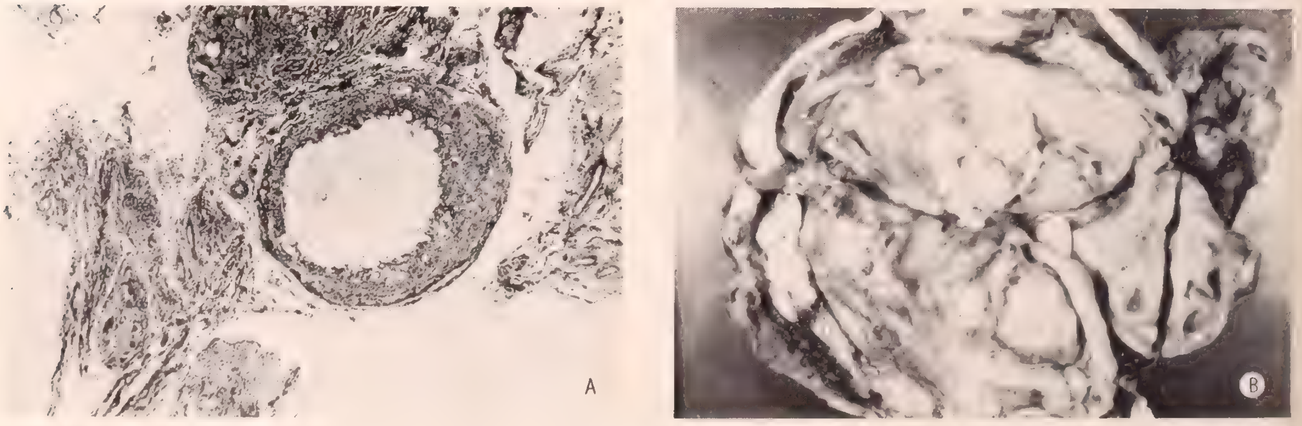

FIGURE 5. (A) Histologically, frozen section shows circumscribed areas of histiocytes and foreign body giant cells engulfing oily and keratin debris within lobules of omental fat. (B) Photograph of gross specimen shows that ovarian cystic teratoma is bilobed and cavity is partly lined by squamous (grey filmy areas) epithelium. Mandibular structure was identified.

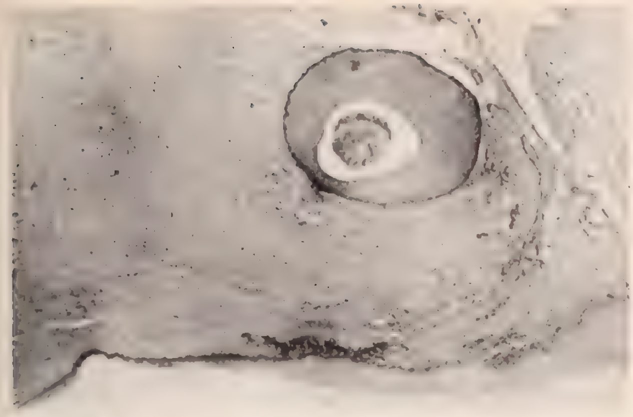

FIGURE 6 Microscopic section shows squamous and pseudostratified ciliated epithelium surmounting central nervous system type tissue

ments are dominating, and their contents consist of a greasy sebaceous material intermixed with hair. The occasionally present mesodermal elements are mostly represented by several teeth and attempts at formation of rudimentary maxillas. These tumors are of moderate size, generally are located high in the pelvis (float up because of the lipid content), and their long pedicle predisposes to torsion.

The macroscopic structure and the physical properties of their components are well reflected in the sonographic characteristics of these neoplasms. A relatively simple acoustical architecture, a thickened, frequently inhomogenous capsule (calcareous nodules), irregular (corrugated) wall-content interface, and an internal texture exhibiting uniformly distributed fine speckling with localized superimposition of variably shaped coarse and sono-opaque aggregates (osseous components) are the main features of their sonic phenotype. Scattering of both the searching and reflected sound beam is a function of the amount of hair present and can effectively counteract or completely annihilate the increased transmissivity due to the high-lipid content.

Teratomas are solid tumors showing a conglomeration of elements derived from all three germinal layers. Correspondingly, the primary acoustical features are an irregular, poorly transonic tumor with extremely complex gross architecture and bizarre internal texture.

While cystic teratomas are as a rule benign tumors, solid teratomas are generally malignant. The multiplicity and profound complexity of the solid components in the cystic varieties herald malignancy. If these characteristics are seen in a tumor which otherwise has the diagnostic ultrasound properties of a dermoid, or particularly if they are noted to develop progressively on serial scans, we are most probably dealing with malignant change which may occur in 3 per cent of cases.

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SPRAINED ANKLE

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The term sprained ankle, as used in this report, will refer to a rupture or partial tearing of one or more of the lateral ligaments of the ankle (Fig. 1).[1] This usually occurs with inversion stress and is associated subsequently with pain, swelling, and ecchymosis on the lateral side of the ankle and foot.

Diffuse tenderness involving the anterior and medial aspects of the ankle is indicative of an injury often involving more than lateral ligament tears and will be included in this discussion only to mention that this combination of medial and lateral ligamentous injury should be considered as more severe than isolated lateral ligament injuries. Confusion over lateral ligament sprains has been exemplified over the years by various descriptions of the pathology involved and the various means of treatment proposed.[2-13] Many authors have stated that the majority of ankle sprains have only minimal soft tissue injury to the periarticular tissues and the joint capsule and seldom have ligamentous rupture.[2,4,14]

Leriche felt that the essential lesion was secondary to an avascular disturbance invoked by way of reflex pathways. He advocated treatment consisting of local injection with procaine (Novocain) and immediate mobilization.[2,14] Other authors felt the most common cause was partial tearing of one or more ligaments with complete rupture being the exception.[3,4] Anderson and LeCocq[5] with Clayton[6] reported that the anterior talofibular ligament and/or the calcaneal fibular ligament was the most common tear in the severe lateral ankle sprain.

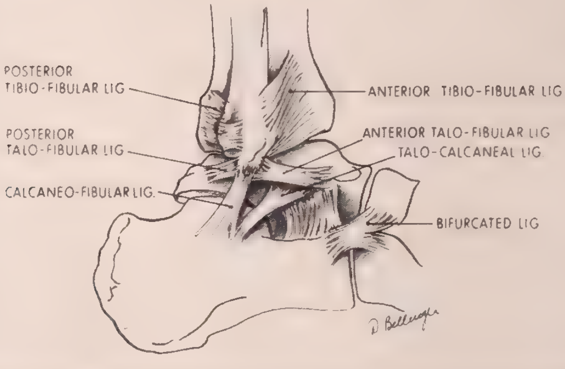
POSTERIOR TIBIO-FIBULAR LIG
POSTERIOR TALO-FIBULAR LIG
CALCANEO-FIBULAR LIG.
ANTERIOR TIBIO-FIBULAR LIG
ANTERIOR TALO-FIBULAR LIG
TALO-CALCANEAL LIG
BIFURCATED LIG

FIGURE 1. Lateral ligaments of the ankle.

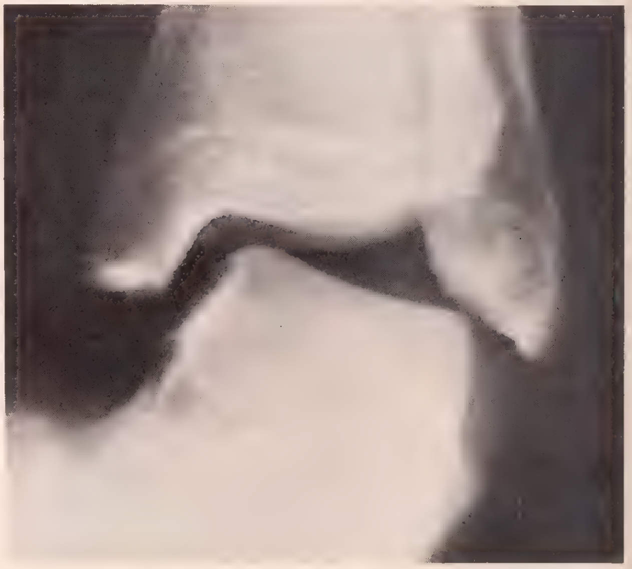

FIGURE 2. Talar tilt.

In more severe sprains, it has been demonstrated that there is a phenomenon called talar tilt, in which the talus can be forcibly rocked out of the ankle mortise (Fig. 2).[5,9] Goldstein,[7] Nevin and Post,[2] and Clayton, Miles, and Abdulla[8] have demonstrated that division of one or two of the three major lateral ligaments results in less than 15 degrees of talar tilt. When all three ligaments are cut and the adjacent joint capsule incised, a 30-degree or greater talar tilt can occur. However, my own recent personal experience with cadaver specimens has shown that incision of the anterior talofibular and fibulocalcaneal ligaments allows more than 15 degrees of talar tilt.

With complete rupture of the three major later-

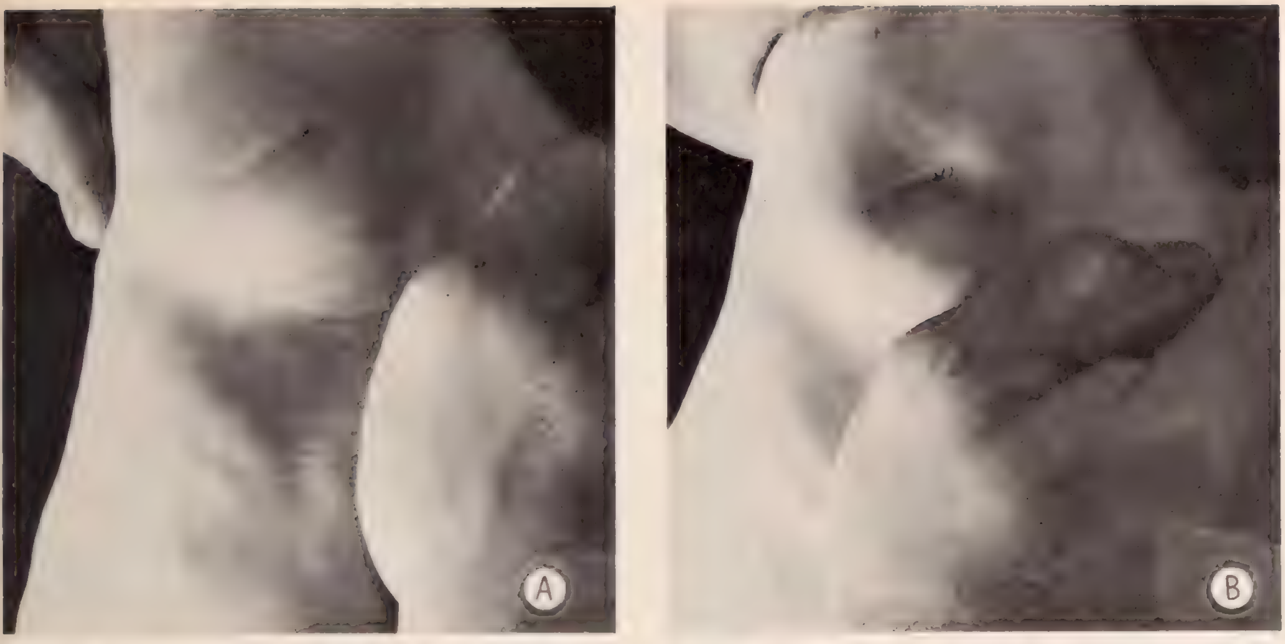

FIGURE 3. Anterior drawer sign. (A) Normal sinus tarsi dimple. (B) Anterior drawer sign dimple just anterior to lateral maleolus.

al ligaments, there is a temporary dislocation of the talus with resultant injury to the deltoid ligaments medially. Within the first few hours after these severe ankle sprains, one can see swelling on the medial side with tenderness. This is an important sign in the most severe sprain, since usually there is no swelling, ecchymosis, or tenderness medially in the lateral sprain.[7] Complete rupture of one or more of the ligaments occurs in at least 75 per cent of cases.[9-12] Isolated rupture of the anterior talofibular ligaments comprises about 65 per cent of ligament ruptures; 20 per cent show combined anterior talofibular and fibular calcaneal tears. In only 10 per cent of the cases is there an isolated posterior talofibular tear.[2-4,6,9-15]

Mechanism of injury

Broström[9-12] has reported the largest series of cases of ruptured ankle ligaments. Most of his patients stated that the injury was caused by forceful inversion and adduction of the foot in the weight-bearing position. In most cases a sprain occured when walking on level ground or stairs. This was associated with an intense, sudden, transient pain and subsequent swelling. Twenty-five per cent of his reported cases were unable to bear weight on the injured ankle.

In 1964, Nevin and Post[2] reported 20 cases of severe ankle sprains which were induced at the time of surgery in patients admitted for elective below-knee amputations. At the time of surgery prior to amputation, three types of stress were applied. The first stress was forcefully inverting the calcaneus so as to produce an inversion injury only; the second type of stress was induced with the midfoot in plantar flexion to produce a plantar flexion injury; and the third type was a combination of these two stresses. The authors felt that fresh hemorrhage could be utilized as a guide for showing sites of injury.

A pure inversion stress produced the following injuries to the lateral ligaments as the force was increased: (1) With mild force, partial interruption of the investing fascia and the vertical fibers of the calcaneal fibular ligament occurred. (2) As force was increased, longitudinal avulsion of the anterior component of the posterior talofibular ligament occurred. (3) With further increase in force, a partial interruption and avulsion of the anterior talofibular ligament occurred, resulting in increased anterior displacement of the talus, the so-called "anterior drawer sign" of the ankle (Fig. 3).[9-12] (4) With maximum force, complete separation of all lateral components and the lateral joint capsule occurred, resulting in anterior dislocation of the ankle and a talar tilt greater than 15 degrees. The sequence of events in the combination injury was very similar with the exception that the anterior talofibular ligament was the first major lateral ligament injury.[2]

In a separate study by Ruth,[13] 45 surgically treated ankle sprains were reported. All cases showed a single continuous tear involving the calcaneal fibular ligament, anterior talofibular ligament, and the anterior capsule of the ankle joint.

Diagnosis

In making the diagnosis of an ankle sprain, one should always make note of swelling.[7,9] This almost invariably occurs first at the site of the ruptured ligament and later becomes diffuse. Ecchymosis is present in roughly 50 per cent of the

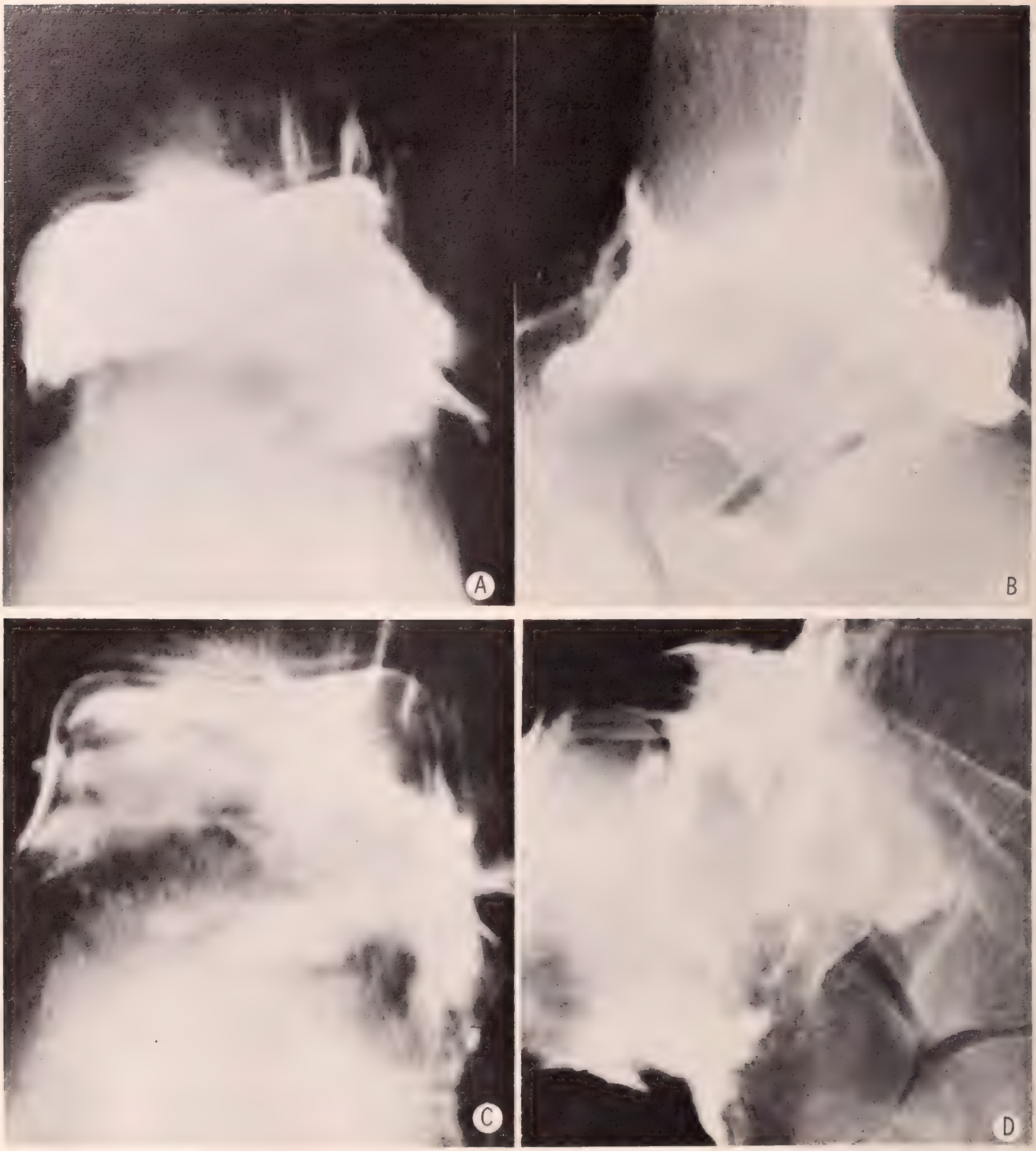

FIGURE 4. Arthrograms. (A) Anteroposterior view, normal. (B) Lateral view, normal. (C) Anteroposterior view, sprained ankle. Note extravasation of contrast medium into subtalar joint. (D) Lateral view, sprained ankle. Note extravasation of dye into subtalar joint, and contrast medium in peroneal sheaths showing rupture of calcaneal fibular ligament.

cases.[7,9] Tenderness is invariably present over the ruptured ligament. Instability of the ankle joint, as a rule, cannot be demonstrated on physical examination without the ankle being anesthetized, either with local or general anesthesia, unless the instability is severe or chronic.[7]

Under anesthesia one can demonstrate the "anterior drawer sign," which is forward gliding of the talus in response to pressure over the posterior aspect of the heel (Fig. 3).[9–12] This forward glide produces a distinct depression between the talus and lateral malleolus, proximal to the usual sinus tarsi dimple present laterally and anterior to the fibula.

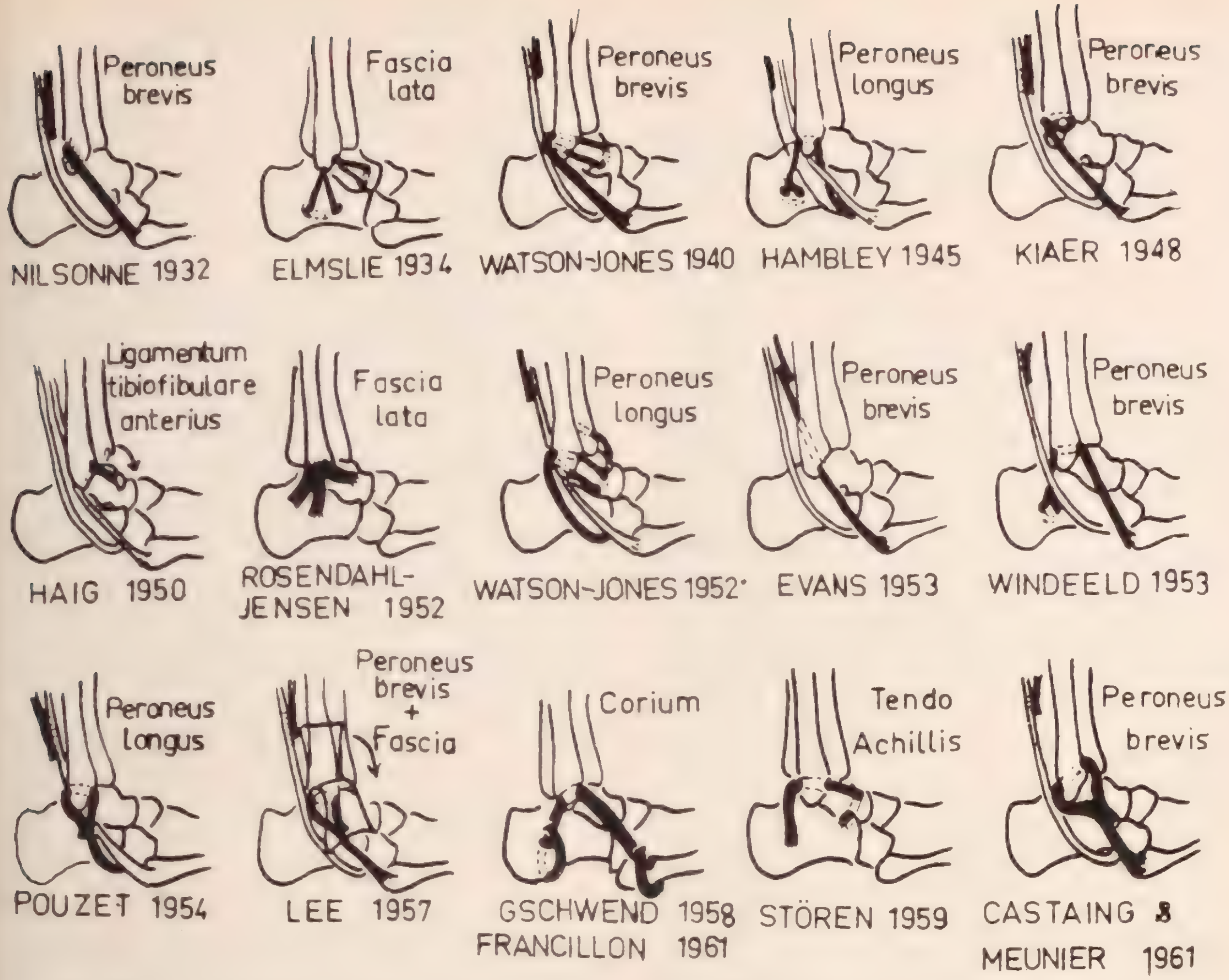
Peroneus brevis
NILSONNE 1932
Fascia lata
ELMSLIE 1934
Peroneus brevis
WATSON-JONES 1940
Peroneus longus
HAMBLEY 1945
Peroneus brevis
KIAER 1948
Ligamentum tibiofibulare anterius
HAIG 1950
Fascia lata
ROSENDAHL-JENSEN 1952
Peroneus longus
WATSON-JONES 1952'
Peroneus brevis
EVANS 1953
Peroneus brevis
WINDEELD 1953
Peroneus longus
POUZET 1954
Peroneus brevis + Fascia
LEE 1957
Corium
GSCHWEND 1958
FRANCILLON 1961
Tendo Achillis
STÖREN 1959
Peroneus brevis
CASTAING & MEUNIER 1961

FIGURE 5. Tenodeses carried out between lateral malleolus, fifth metatarsal, and calcaneous ligaments.[11]

By means of arthrography, it is now possible to diagnose and locate tears of lateral ankle ligaments.[9,10,16,17] In cases of severe sprains, one usually sees extravasation of the dye out of the ankle joint into the subtalar joint. Often this extravasation is specific when the calcaneal fibular ligament is torn. It will often traverse the peroneal tendon sheath proximally and distally, since these tendon sheaths are in close proximity to the calcaneal fibular ligaments (Fig. 4).[9,10,16-18]

Treatment

Treatment of the sprained ankle has varied markedly. Some authors have treated a mild sprain with simple compression dressing and allowed the patient to bear weight as tolerated with increase in weight bearing as desired.[2,14] Other authors have advocated more vigorous treatment consisting of casting of the foot in a neutral position for periods of up to six to eight weeks to allow ligamentous healing.[3,4,6,7] Several authors have recommended surgical repair of the lateral ligaments in acute injuries.[5,9-13]

The experience at the University of Rochester in treating college and high school athletes is that in the moderately severe sprain that does not demonstrate complete tear of all ligaments and in which the drawer sign is not present, four weeks of immobilization in plaster is usually adequate for relief of discomfort and return to normal function. When the drawer sign and talar tilt are demonstrated, then a minimum of six to eight weeks of plaster immobilization is advised.[7,9-12] Repeat examinations of those patients treated in this manner failed to demonstrate any drawer sign or talar tilt after adequate immobilization, and all athletes were able to return to competitive athletics.

In the treatment of the chronically sprained unstable ankle, many operations have been devised for the repair of patients with old ligament ruptures.[1,11,13,15,19] Figure 5 illustrates the various types of tenodeses carried out between the lateral malleolus, fifth metatarsal, and calcaneus. The purpose of all these various operations is to replace the calcaneal fibular ligament and in certain instances to restore the anterior talofibular and posterior talofibular ligaments.

Summary

An ankle sprain cannot always be viewed as a minor injury. It is often associated with major ligamentous rupture, which results in chronic instability of the ankle if unrecognized and inadequately treated.

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Case Reports

MULTIPLE MYELOMA AND PROLONGED STIMULATION OF RETICULOENDOTHELIAL SYSTEM *

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Plasma-cell dyscrasias connote proliferation of plasmacytic cells and subsequent elaboration of homogeneous "M-type" gamma globulin ("M" protein, "M" component, or paraprotein) in excessive quantities.[1] Multiple myeloma is the most common neoplastic form of plasma-cell dyscrasia. It has been suggested that chronic infection and other types of repeated antigenic stimuli to the reticuloendothelial system evoke ultimate development of plasma-cell dyscrasia and other lymphoid neoplasia.[2–4] Hyposensitization treatments have been mentioned as antigenic stimuli of the reticuloendothelial system which may provoke the emergence of a single clone of paraprotein-producing cells and subsequent autonomous growth.[5,6]

Two cases of plasma-cell dyscrasia which developed after a prolonged series of hyposensitization injections for bronchial asthma are reported.

Case reports

Case 1. A sixty-seven-year-old white woman was transferred to Rosewell Park Memorial Institute on April 8, 1968, with a diagnosis of multiple myeloma. Her chief complaint was severe mid-back pain of two months' duration. Laboratory and other investigations revealed high serum total protein of 15.6 Gm. with albumin 4.6 Gm. per 100 ml.; a monoclonal gamma spike in electrophoresis; and multiple osteolytic lesions in ribs, vertebrae, and calvarium with pathologic fractures of the ribs and collapse of the dorsolumbar vertebrae. There were 21 per cent abnormal plasma cells in a bone-marrow aspiration. The diagnosis of multiple myeloma was confirmed.

Immunologic studies revealed the immunoglobulin class to be G and light-chain type L. The urinalysis showed a negative result for Bence-Jones protein.

The patient, born in 1901, had bronchial asthma since 1949, fluctuating hypertension since 1969, atherosclerotic heart disease since 1958 for which she was taking digitalis, and a mild form of diabetes mellitus which was discovered shortly before her admission. She was said to be allergic to many substances, including peanut butter, chocolate, feathers, dogs, cats, ragweed, dust, pollen, flowers, plants, and flour. In 1959, after skin testing for hyposensitization, injections with allergen were started. The allergen vaccine consisted of a mixture of grasses, ragweed, sand fly, may fly, dust, and feathers. It was given to her once a week for three months starting in June, 1959, twice a month for the next fourteen months, and regularly once a month until three weeks prior to admission.

The patient was treated with bis-beta-chlorethyl nitrosourea which brought about symptomatic improvement only. She was discharged shortly thereafter. She was readmitted for short periods in May and December, 1968, for treatment of pneumonia. From November, 1968, until March 11, 1969, she received phenylalanine mustard without effect. She was admitted for the last time on July 17, 1969, because of profound generalized weakness, loss of appetite, and nonproductive cough. In the hospital, she had tachycardia and tachypnea and was febrile. She died on August 2, 1969.

Autopsy revealed multiple lytic lesions in the skull, ribs, and vertebrae, as well as pathologic fractures of the ribs. A large number of atypical plasma cells were present in the bone marrow at autopsy.

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Case 2. A fifty-nine-year-old white woman was admitted to Roswell Park Memorial Institute on February 10, 1970, with a diagnosis of metastatic carcinoma of the spine from an unknown primary source. History of her present illness started in December, 1968, when she fell from a chair and fractured ribs on her right side. After three weeks of rest at home, she continued to have pain in the rib cage and back and was admitted to another hospital on May 11, 1969. At that time, a hemoglobin level of 8.7 mg. per 100 ml. and the old fractures of the third and seventh ribs on the right side were noted. She was treated symptomatically and discharged.

She returned to the hospital three months later because of papular rash on the face, shoulder, and neck. Dermatitis venenata was diagnosed and treated with prednisone.

She was admitted for the third time on January 17, 1970, with complaints of increasing pain in the back radiating to the right leg. This was accompanied by muscle spasms in the back and the right leg. X-ray examination disclosed multiple fractures of the thoracolumbar spine and multiple radiolucent lesions in the proximal right femur.

Initial studies at the Institute confirmed the presence of multiple skeletal lesions plus compression of several thoracic and lumbar vertebrae. Pertinent laboratory data showed total protein was 5.7 Gm. per 100 ml. with 3.8 Gm. per 100 ml. of albumin. There was no spike noted in electrophoresis, and the test result for urinary Bence-Jones protein was negative. A bone biopsy of the right femur showed remarkable proliferation of abnormal and neoplastic plasma cells demonstrated by methyl green thionine stain.[7] Immunoelectrophoresis showed a slight-to-moderate increase in light chain type K immunoglobulin in the patient's urine (Bence-Jones protein). A diagnosis of multiple myeloma was confirmed and therapy initiated with l-phenylalanine mustard and prednisone.

The patient's past history revealed she had bronchial asthma since childhood. After skin tests, hyposensitization injections of house-dust extract were continued from 1947 to 1957. In 1963, skin tests were repeated, and the patient responded to many substances in addition to house dust and mold, including banana, pineapple, orange, grape, gum arabic, rice, and pork. A second course of hyposensitization injection was started using house dust and mold extracts given subcutaneously weekly for nineteen weeks, then biweekly for eight weeks, once every three weeks for twelve weeks, then once a month until the time of admission in February, 1970.

Special studies

Immunologic. Ragweed antigen was labeled with radioactive iodine I^{125}, and radioimmunodiffusion was carried out using goat antisera to human immunoglobulin G, A, M, D, and E; light-chain types K and L; and the patient's serum.[8] Sera from 2 persons, one with sensitivity against ragweed and the other without, were used as positive and negative controls. Specific binding of the labeled ragweed to the "M" protein in Case 1 was not demonstrated.

Retrospective study. Attempts were made to determine if there had been similar cases in the Institute and if there was any correlation between plasma-cell dyscrasia and bronchial asthma per se. Ninety-nine autopsies showing plasma-cell dyscrasia have been recorded in the Institute during the period from 1957 to September, 1970. Study of these revealed an additional case of multiple myeloma in which there was a preceding history of bronchial asthma. No history of hyposensitization injections was recorded for this patient. The incidence of recorded histories of patients with bronchial asthma who died of plasma-cell dyscrasia (2 of 99) was compared with that in patients who died with cancer other than plasma-cell dyscrasia (2 of 140) of the same age group and autopsied at the Institute. There was no significant difference.

Comment

It has been reported that "M" protein in plasma-cell dyscrasia has antibody activity in human beings, as well as in experimental animals.[9–14] The relevance of the binding activity observed in "M" protein is still unclear,[15] except for a case of immunoglobulin G myeloma reported by Seligmann *et al.*[11] in which both high anti-streptolysin-O activity of myeloma protein and a history of recurrent attacks of rheumatic fever were documented.

In Case 1, antibody activity of myeloma protein against ragweed was not demonstrated by radioimmunodiffusion study. The patient had received repeated hyposensitization injections for a period of over ten years in which ragweed extract was one of the antigenic agents. The hyposensitization mixture also contained extracts of sand fly, may fly, feathers, and house dust. Binding activity of the myeloma protein against these agents was not studied since the efficacy of iodination on these agents other than ragweed is in doubt. In case 2, "M" protein was not demonstrated in the patient's serum, and an effort to detect antibody activity could not be made.

In our review of 99 autopsies on patients with plasma-cell dyscrasia recorded in the Institute, we found no additional cases of plasma-cell dyscrasia following repeated hyposensitization for bronchial asthma. Penny and Hughes[5] found no plasma-cell dyscrasia in 30 asthmatic patients

TABLE I. Cases of plasma-cell dyscrasias following prolonged hyposensitization injection for bronchial asthma

Reports	Patient's (Age) Sex	Onset of Asthma Age (Years)	Hyposensitization Injection Given			Diagnosis (Age)	"M" Protein			Years Between Initial Injection and Diagnosis
			Allergens	Initial (Age)	Total (Years)		Class	Type	Antibody Activity	
Penny and Hughes[5]	(47) F	10s	Bacteria	39	4	47	IgG	L	Negative	8
Penny and Hughes[5]	(52) M	40	House dust, wool, Australial mixed grasses, weed, Mold	40	Not reported	52	IgD	K	Negative	12
Rosenblatt and Hall[6]	(50) M	Childhood	?, autogenous vaccine, dust, wool, Alternaria, bacteria	19	Not reported	50	IgM	Not reported	Not reported	31
Imahori and Moore (Case 1)	(67) F	48	Mixture of grasses, ragweed, sand fly, may fly, dust, feathers	57	10	67	IgG	L	Negative*	10
(Case 2)	(59) F	Childhood	?, house dust, Mold	37	17	59	Not detected	K(?)	Not done	22

* Antibody activity against ragweed only.

who had received repeated allergen injections for over five years; however, a longer period of antigenic stimulation may be necessary for neoplastic proliferation of plasmacytic cells to occur.[4]

Studies of negative or positive association of allergy with cancer in human beings are interesting. The occurrence of allergic disorders in patients with cancer has been reported to be less frequent than in patients without cancer, although more critical examination of this subject is necessary.[16-18] We found no difference between the incidence of bronchial asthma in patients with plasma-cell dyscrasia and its incidence in patients with other types of cancer. The figures in both groups are similar to those reported by MacKay[16] and, as with other cancer, the incidence of bronchial asthma in patients with multiple myeloma appears to be less than in patients without cancer.

There is new evidence that some neoplastic diseases of lymphoreticular tissue are extreme host responses to environmental insults combined with genetically determined susceptibility of patients.[4,19] Lymphomas often develop in children with congenital immunologic defects. Others with chromosome defects, both inborn and environmental, are susceptible to various leukemias[20]; and, theoretically, abnormal stimulation of lymphoreticular cells with allergens should induce plasma-cell dyscrasia in susceptible individuals.[19]

In conclusion, no causal relationships have been demonstrated between plasma-cell dyscrasia and repeated hyposensitization injections, but further clinical observations and investigations should prove to be interesting and useful (Table I).

Summary

Two cases of plasma-cell dyscrasia which developed after prolonged hyposensitization therapy were studied. Radioimmunodiffusion technics were used for the detection of antibody activity against an allergen (ragweed) used for hyposensitization treatment for a period of ten years; the results were negative.

The records of 99 autopsies of patients with plasma-cell dyscrasia included one with bronchial asthma but provided no evidence of prior prolonged hyposensitization. The incidence of bronchial asthma in patients who died of plasma-cell dyscrasia was not significantly different from the incidence in patients who died of other types of cancer. A causal relationship between repeated hyposensitization injections for bronchial asthma or bronchial asthma per se and the subsequent development of plasma-cell dyscrasia has not been established.

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CONGENITAL MALIGNANT MELANOMA

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Melanoma in newborn infants is uncommon, and malignant melanoma at birth is, indeed, a rarity. In general, this type is one of the less common malignant tumors, accounting for only 1.8 per cent of all tumors, according to Wilkinson and Paletta.[1] Ninety per cent of all melanomas are found in the skin. There are few melanomas which occur later from a pre-existing nevus of early life.

Lorétan and Delacrétaz[2] reported a case of an eight-year-old child with extensive congenital nevus formation, who died of metastases after surgical excision and radiotherapy. In this review of the literature, these authors found 49 cases of proved malignant melanoma in children under ten years old. Twenty-six (53 per cent) died of the tumor; 20 survived less than five years. In 11 children the tumor developed in large nevi that had cape, pants, or saddle distribution. The authors concluded that malignant melanoma has no better prognosis in children than in adults. They quote Greely *et al.* as reporting 56 cases of giant nevi, 6 occurring in children; over 10 per cent of the total were malignant tumors, and 4 of the 6 children died with metastases.

While melanoma does occur in Negroes, there is a predilection for dark-haired, fair-skinned persons. The tumors appear mainly in nonpigmented areas. This report concerns a neonate of Negro parents who was born with extensive nevus formation, including numerous melanomas showing malignant characteristics.

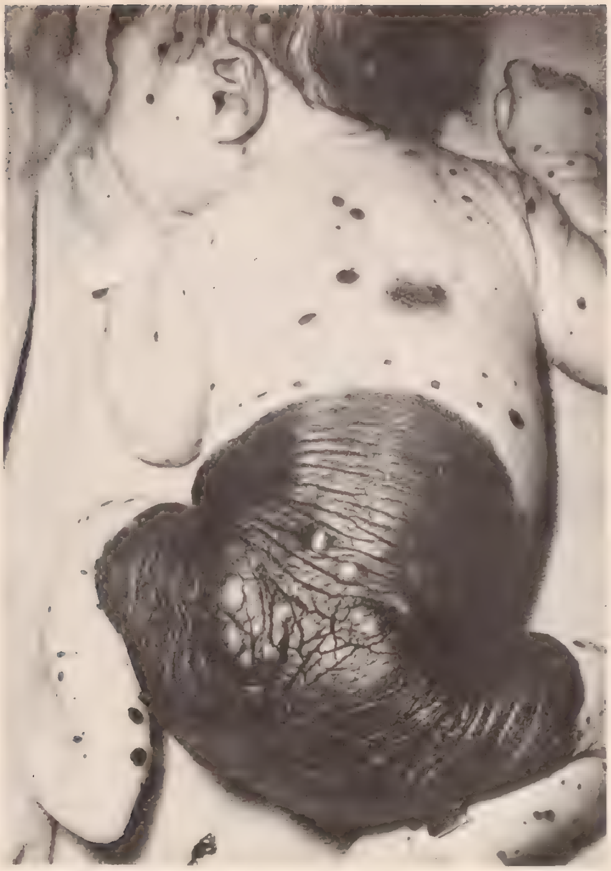

FIGURE 1. Infant's back showing "pants" distribution of melanoma with numerous cutaneous nodules.

Case report

An infant boy was born at full term to an eighteen-year-old primigravida Negro mother and Negro father. The mother had type B, Rh positive blood which showed negative serologic test results. She had had a urinary tract infection in the fifth month of gestation for which she was treated with tetracycline for one week. The pregnancy had been otherwise uneventful. The baby was delivered by low forceps after sixteen hours of labor, had a one-minute Apgar score of 10, weighed 6 pounds 14 ounces (3,110 Gm.), and was 19.5 inches (49.5 cm.) long. His head was 13 inches (32.5 cm.) in circumference, and chest circumference was 13 inches (32.5 cm.). His condition remained good, with strong cry, pink color, and normal Moro, suck, and grasp reflexes. Examination disclosed relatively fair skin from the waist caudad and below the thighs, with numerous flat deeply pigmented spots from 2 to 5 mm. in diameter scattered over the scalp, face, trunk, and extremities. From the waist down over the buttocks, perineum, and upper thighs there was a uniformly, deeply pigmented extensive area with sharply demarcated margin. Over the lumbosacral and buttock regions there were numerous firm cutaneous nodules which were visible and palpa-

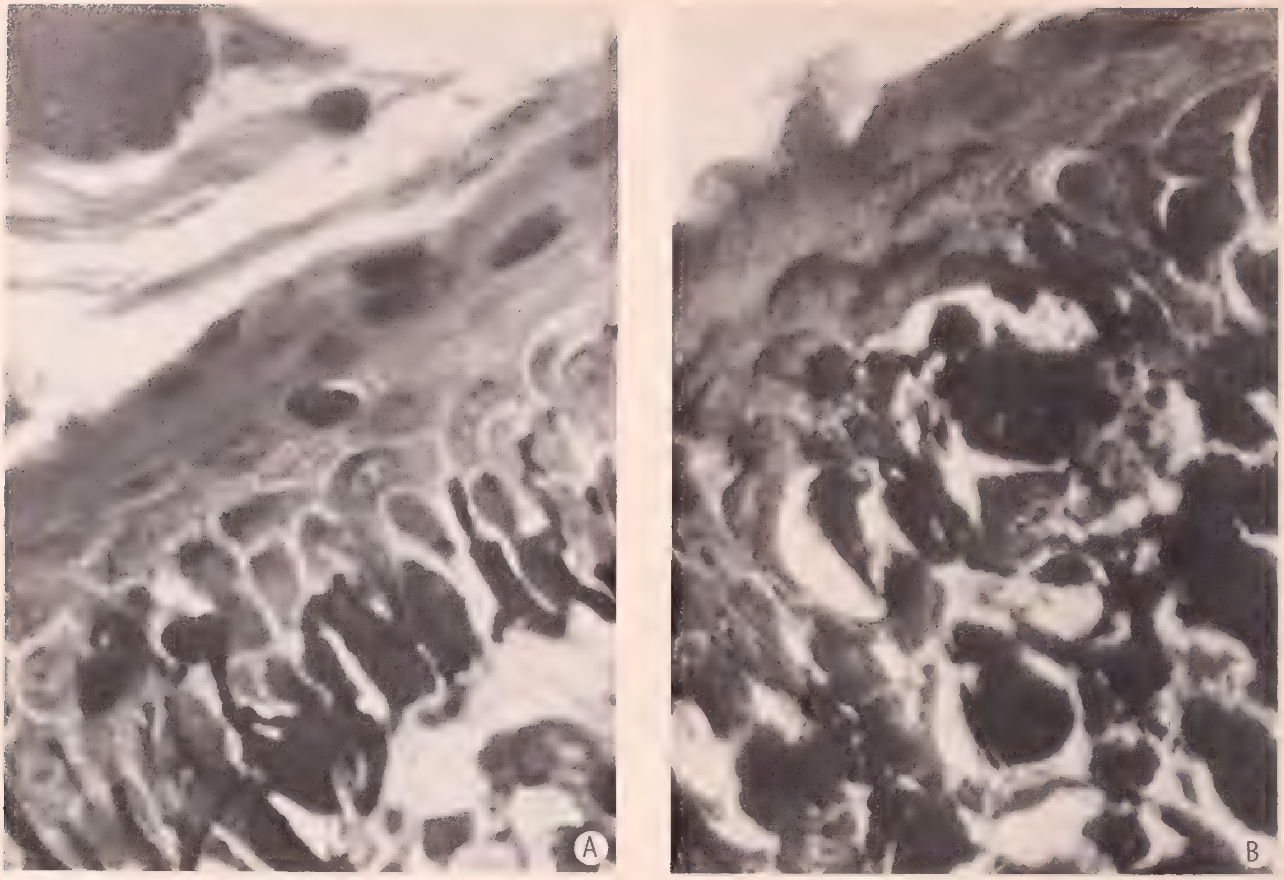

FIGURE 2. Biopsies of skin (A) on sixth day showing invasion of dermis by pigmented cells, suggesting malignant melanoma, and (B) on twelfth day showing melanotic cells invading interspace between papillary and reticular dermis.

ble (Fig. 1). The fontanelles were normal. The eyes were clear with normal conjunctivae and sclerae. The buccal membranes showed no pigment spots. The heart and lungs were normal. The abdomen was soft with neither masses nor hepatosplenomegaly. The genitalia were normal male with both testes fully descended.

The infant's course in the nursery was uneventful. After an initial weight loss to 6 pounds 13 ounces (3,090 Gm.), he regained his birth weight by the tenth day. On the sixth day a biopsy of a cutaneous nodule was performed and showed junctional activity suggesting malignant melanoma (Fig. 2A). Circumcision done on the sixth day yielded a foreskin that showed chronic, nonspecific inflammation and congestion. Another cutaneous nodule was removed on the twelfth day and again showed junctional activity suggesting malignant melanoma (Fig. 2B).

X-ray examination of the bones revealed no osteolytic or osteoplastic lesions. Blood count showed 7,600 white blood cells with 28 lymphocytes, 3 monocytes, 1 eosinophil, and 68 polymorphonuclear leukocytes; hemoglobin 11.8 Gm.; and hematocrit 37. Coombs' test result was negative. VDRL test result was nonreactive. Urinalysis showed normal findings. The infant was discharged from the nursery to his home at nineteen days of age, weighing 7 pounds 8 ounces (3,402 Gm.), and his condition has been followed in the clinic at monthly intervals.

At the time of this report the child was seven months old. His motor development and developmental level were normal for his age. His weight was 17 pounds 13 ounces (8,080 Gm.), length 27.25 inches (69.2 cm.), head 17.06 inches (43.5 cm.) circumference, and chest 16.25 inches (41.3 cm.) circumference. There was an increase in number and size of nodules over the lumbosacral, buttocks, and perineal areas. There was no superficial lymphadenopathy, and spleen and liver were not palpable.

Comment

Not all melanomas are malignant. While the history and examination of the lesion may be strongly suggestive, the proof of malignancy rests on the histologic examination of the tissue. Clark *et al.*[3] distinguish between three types of malignant tumors that affect the human dermal melanotic system. One is the superficial spreading melanoma which tends to form in an arc. The surface is elevated in irregular fashion from 2 to 4 mm. above the surrounding skin and may show discrete, circumscribed tumor nodules distinguishable from the remainder of the tumor. The nodules are smooth, pink, brown, or violaceous in color. Pigmentation within and around the nodules is usually pathognomonic of malignant disease. A second type of tumor is the nodular melanoma which may be a smooth, uniform nodule, an elevated blue-black plaque, or an exophytic ulcerated lesion. The third type is the lentigo maligne melanoma which covers a large surface of the body. It is flat and irregular in outline and shows various shades of brown.

Milton[4] notes that in older patients, as the lesions progress, they show progressive growth, color change, itching, bleeding on trauma, ulceration, and destruction of normal lines of the skin. The absence of hair on the lesions is usually indicative of malignant disease whereas hairy melanomas are mainly benign.

In this infant, it would seem that the existing lesions had characteristics of both the superficial spreading melanoma and the lentigo maligne described. The process had obviously been progressing for some time during gestation.

There are five levels of histologic invasion described by Clark *et al.*[3] Stage I is the in situ melanoma in which the tumor cells are above the basement membrane. In Stage II the neoplastic cells have penetrated beyond the basement membrane into the papillary dermis. Melanotic cells in the papillary body are unequivocal evidence of invasion. At Stage III the melanotic cells begin to accumulate at the interspace between the papillary and the reticular dermis. The neoplastic cells in Stage IV are seen among the lamellae of collagen characteristic of the reticular dermis. In Stage V the tumor invades the subcutaneous tissue.

In this infant, the pathohistologic report indicated invasion of neoplastic cells at Stage III.

The prognosis in malignant melanoma is always poor except in small lesions excisable before they metastasize. If surgery is not feasible, as in the extensive involvement in this child, there are, at this time, no known effective therapeutic modalities. The lesions have always been highly resistant to radiation or to chemotherapy with known drugs. The survival rate after the onset of malignant melanoma varies with a number of factors, as noted by Epstein, Bragg, and Linden.[5] Superficial lesions are less likely to metastasize than those that invade deeply. The smaller and more localized lesions can be excised surgically, with or without removing regional lymph nodes. The site of the lesion may be a factor. If the lesion is located near the midline of the body where lymphatic drainage is unpredictable and multiple, metastases may occur more rapidly and affect survival time. Five-year survival rate can be expected in 40.5 per cent of patients with malignant melanoma and no lymph-node involvement but only 14 per cent in those who have lymph-node metastases. Superficial spreading melanoma and lentigo maligne generally have a relatively long period of superficial growth. The advanced lesions, however, do metastasize to all organs and tissues, especially liver, brain, and heart through the lymphatic system and the blood.

Summary

A case is presented of a newborn Negro infant with extensive congenital nevus formation, including malignant melanoma proved by histopathologic study.

The types of malignant melanomas and degrees of tissue invasion are discussed.

With the present available modalities of treatment, such as surgery, radiation, and chemotherapy, the prognosis in a patient with extensive involvement is poor.

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PRIMARY SCLEROSING CHOLANGITIS

With agenesis of gallbladder and cystic duct

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Primary sclerosing cholangitis is an uncommon disease of unknown cause characterized by submucosal fibrosis of the extrahepatic biliary tree with or without involvement of the intrahepatic biliary radicles in the absence of trauma or malignant disease of the extrahepatic biliary tract. Various names, such as obliterative cholangitis or stenosing cholangitis, have been given to this disease. Atkinson and Carroll[1] and Bowen and Kirschner[2] and others believe it to be one of the autoimmune hypersensitivity reactions. However, Rolleston and Hayne in 1901[3] and Mathiew in 1924[4] have postulated the possibility that it is the late result of congenital biliary stenosis due to ascending cholangitis. Holubitsky and McKenzie[5] were able to collect 25 acceptable cases of sclerosing cholangitis in the literature of 100 reported cases. Warren, Athanassiades, and Monge[6] were able to collect 42 cases of sclerosing cholangitis from the Lahey Clinic, assumed the possibility of prolonged low-grade portal bacteremia to be the cause of this disease, and recommended the use of corticosteroids in its treatment. In 1966 Glenn and Whitsell[7] reported 7 cases of primary sclerosing cholangitis, and since then sporadic cases have been reported.

Although anomalies of the bile ducts and hepatic blood vessels are common, the congenital absence of the cystic duct and gallbladder is relatively uncommon in adults. In the newborn infant it is usually seen with other multiple anomalies which are incompatible with life. Monroe[8] was able to collect 181 cases of agenesis of the gallbladder from 1,352,000 autopsies performed by 799 pathologists, an incidence of 1 in 7,500 autopsies. A recent review by Frey, Bizar, and Ernst[9] reported 56 cases of proved agenesis of the gallbladder of which 13 were confirmed at operation and 43 at autopsy. Sanders, Flores, and Arriola[10] were able to collect about 200 cases of agenesis of the gallbladder in the world literature of which fewer than 100 cases have been found clinically by surgical exploration. Twenty-five per cent of the reported cases are found at autopsy in adults dying of unrelated causes, which clearly indicates the asymptomatic course of this entity and further decreases the chances of clinical diagnosis. At the Rochester General Hospital in 4,628 cases of cholecystectomy and cholecystostomy and 6,470 autopsies performed during the period 1954 to 1969 no agenesis of the gallbladder was found.

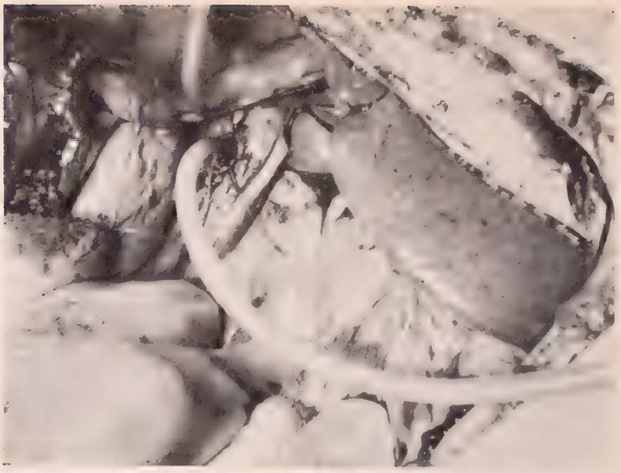
FIGURE 1. Operative photograph showing exposed common duct with T tube in place and absence of gallbladder and cystic duct.

Case report

A twenty-nine-year-old white female was admitted to Rochester General Hospital on September 7, 1969.

She had been seen by her family physician with a history of vague upper abdominal discomfort with flatulence and occasional intolerance of fatty foods of two months' duration not associated with nausea, vomiting, fever, or jaundice. The only medication the patient was receiving was norethynodrel-mestranol (Enovid), 5 mg. Repeat cholecystograms revealed a nonfunctioning gallbladder.

A provisional diagnosis of cholecystitis was made. At the time of admission she was in no distress, afebrile, and not jaundiced. Abdominal examination revealed no abnormalities whatsoever. Other systems were normal. Laboratory data were within normal limits. A clinical diagnosis of nonfunctioning gallbladder secondary to chronic cholecystitis with cholelithiasis was made.

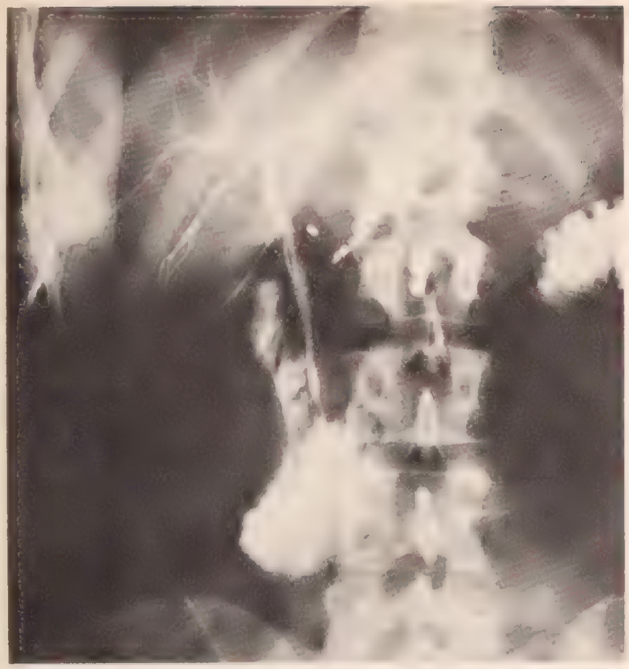

FIGURE 2. Intraoperative T-tube cholangiograph showing small but normal intra- and extraheptic biliary tree with no evident occult gallbladder and cystic duct.

Surgery on September 8, 1969, revealed absence of the gallbladder and the cystic duct. A careful and systematic search showed no evidence of the gallbladder even in the abnormal locations such as in the falciform ligament or left lobe of the liver. The foramen ovale was patent, and the porta hepatis was explored from the undersurface of the liver to the duodenum. The common duct was found to be thickened and cord-like and was about 6 to 7 mm. in diameter. No evidence of any rudimentary cystic duct or gallbladder was found in its course (Fig. 1). The other abdominal organs were found in normal place and relationship. A cholangiogram with needle puncture of the common duct was attempted but failed. Choledochotomy and T-tube cholangiograms were done using a number 8F T tube. The cholangiogram revealed normal branching of the intra- and extrahepatic biliary tree and no evidence of the cystic duct or the gallbladder (Fig. 2). The wall of the common duct averaged 3 mm. in thickness. No biopsy of the common duct was done for fear of jeopardizing the already narrowed common duct. The common duct was closed over the T tube and brought out through a separate stab wound. The postoperative course was uneventful. Repeat cholangiograms obtained one week after surgery were found to show normal findings. She was started on hydrocortisone postoperatively and continued on prednisone to date. She has been asymptomatic since surgery.

Comments

A preoperative diagnosis of agenesis of the gallbladder is impossible and the finding always comes as a surprise to the surgeon. Even at autopsy the diagnosis can be arrived at only after thorough dissection of the biliary tree which is impossible during surgery; hence, an intraoperative cholangiogram after thorough search for the gallbladder is mandatory to exclude an occult gallbladder. Agenesis of the gallbladder is usually associated with a dilated common duct having multiple stones. However, a normal-sized, cord-like, thickened common duct with intact mucosa and markedly narrowed extra- and intrahepatic biliary tree, with absence of gallstones, and negative subjective or objective evidence of previous surgery or cancer almost confirm the diagnosis of primary sclerosing cholangitis. The use of corticosteroids in primary sclerosing cholangitis is based on its anti-inflammatory effect, decreasing the thickness of the wall of the common duct and, hence, increasing the patency of the lumen of the common duct. If any doubt exists in making this diagnosis grossly, obviously a biopsy of the common duct has to be done.

Summary

A case of primary sclerosing cholangitis associated with agenesis of the gallbladder and cystic duct is reported.

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CHANGES IN STATE SOCIETY'S PROFESSIONAL MEDICAL LIABILITY INSURANCE PROGRAM

Effective July 1, 1972

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Chairman, Professional Medical Liability
Insurance and Defense Board

The statistics developed through the end of 1971 contain some good and some bad news.

First for the good news: On a State-wide basis, more cases were closed in 1971 than in 1970, and, furthermore, they cost less money. Eliminating reported events that were closed because no suit or claim developed, we show the following averages for cases closed during the past five calendar years:

1967	$ 7,704
1968	8,085
1969	8,879
1970	13,272
1971	10,112

Now for the bad news: During 1971 we set up more new cases than in 1970 (1,648 compared to 1,409). Furthermore, more of our old claims turned into suits during 1971 (we had 564 suits started in 1970 and 803 in 1971). While we closed more cases in 1971 than in 1970, we actually closed fewer suits, so that our backlog of suits grew from 2,203 in 1970 to 2,549 in 1971. In addition to the problem of the increasing backlog, the insurance carrier during 1971 felt that many of the older cases still pending had been underreserved. Reserves on open cases increased from $47,394,150 at the end of 1970 to $63,477,100 on December 31, 1971.

Some additional good news: Further statistics and details will be given to the Council in the annual report of the Society's actuary. Briefly, in spite of some unfavorable signs, the company has decided not to ask for a general increase as of July 1, 1972. Instead, a very careful study is being made of the relativities between territories and between specialties. The result will be some variation in rates for some specialties with the overall projection remaining approximately the same.

From time to time we hear the opinion expressed that upstate physicians are paying for the losses of New York City physicians. Actually, the figures show that the relationship is remarkably accurate. The picture changes slightly from year to year but, using cumulative figures from 1958 through December 31, 1971, we find that upstate has paid 20 per cent of the total premium collected and has incurred 22 per cent of the total paid and pending losses. This is in contrast to the metropolitan territory having paid 67 per cent of the premium and having incurred 62 per cent of the losses. Following a full discussion with actuaries from the insurance company and the Society's own actuary, it was recommended that no substantial changes be made in the relationship between territories this year. Instead, emphasis would be placed on the proper alignment of relativities between specialties.

Highlights

Highlights of the changes in specialties are as follows:

- The adverse experience in premium class 1A again warranted an increase but this is being held to 5 per cent.
- Class 1B and class 1 are being combined since the specialties in class 1 generally showed adverse experience while the specialties in 1B showed some improvement.
- The specialties of urology and otolaryngology without CPS are being lowered to premium class 2.
- The specialty of internal medicine has been developing an adverse loss experience and it was, therefore, decided to split this specialty into three parts. These three divisions of this specialty would all be placed in class 5 at a rate level between class 4 and old class 5. This would give us

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Report of the Professional Medical Liability Insurance and Defense Board, presented to the Council of the Medical Society of the State of New York, May 18, 1972.

an opportunity to study the loss experience within this specialty for a period of time before recommending any further changes. The three categories would be as follows:

1. Internal medicine, including cardiac catheterization
2. Internal medicine (excluding cardiac catheterization, but including cardiology, gastroenterology, rheumatology, tuberculosis and lung diseases, and endocrinology)
3. Allergy

- Physicians (other than internal medicine) in old class 5 will be placed in new premium class 6 with a reduction in premium.
- Old class 6 is being lowered to class 7, a new premium class.
- Pathologists and/or hematologists are being lowered to class 7.

As with any rate change, it is anticipated that the new rates will become effective on renewal following the date of the rate change. The company has asked that no policies with an effective date prior to July 1, 1972, be canceled and rewritten after July 1, 1972, to take advantage of any rate decrease, nor are policies to be canceled and rewritten in midterm prior to July 1, 1972, to avoid an increase.

The Board agrees with the reasonableness of this request.

Need for cooperation

While agreeing to forego an overall rate increase this year, the company does expect the cooperation of the Society in strengthening its underwriting policy. During 1971 there were 21,238 members insured and only 167 were "rated-up" (paying more than manual rates). The company feels that the number of rated-up policies should be increased and, to that end, additional underwriters will be used to review loss experience and make recommendations to the Board.

Once a physician is insured in the Society's program, the Board and the company are reluctant to cancel coverage. This is evidenced by the fact that during 1971 only 9 members were dropped from the insurance program due to unsatisfactory experience. While it is comforting for us to know that our insurance will not be stopped without the very careful consideration of our peers, we also wish assurance that we are not paying for losses of physicians whose loss experience, or type of practice, is such that they should not be insured in the plan. With this in mind, the underwriters will be on the lookout to make recommendations to the Board. We hope members will understand that when a colleague's coverage is discontinued it is only after careful deliberation by the Board and because it is considered to be in the best interests of the program as a whole.

The Board anticipates a substantial increase in its work load in the future and, therefore, suggests to the Council that the Board be increased from 7 to 9 members.

During 1972, our insurance carrier, Employers Insurance of Wausau, our county advisory committees, and our defense attorneys must make an all-out effort to stem the tide of the increasing backlog of cases—promptly settling cases that should be settled and pushing cases to trial when no settlement offer should be made. The company is reorganizing and increasing its malpractice staff in our State. We hope our county committees will make an extra effort to assist the carrier in lining up defense witnesses. A solution to the problem of handling the increase in litigation will have to be found.

The Board recommends acceptance of the new rate proposal effective July 1, 1972, and urges each member to read carefully the booklet titled *Treating the Malpractice Claims Epidemic* that has been distributed by the company.

COMPUTER SIMULATION OF MEDICAL LOGIC IN CLINICAL DECISION SUPPORT SYSTEM

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The physician confronted with each new medical problem begins his efforts by recalling recognized patterns of disease. The extent to which he provides successful care is determined by his store of information and the precision of his logic. From his observations he generates diagnostic impressions and commands or therapeutic orders, but the majority of intermediate steps taken to attain these ends are subliminal and unrecognized. Repeated observations of astute internists reveal that there are decision processes, either cognitive or subliminal, that can be defined. These decisions are not based on intuition. However, intuition is often used as a synonym for the "art of medicine," and because this "art of medicine" has long been considered a mystique of clinical decision making, only recently have attempts been made to analyze the patterns of diagnosis used by the physician.[1,2]

Most studies of computer-aided diagnosis have concentrated on attempts to make decisions using statistical technics based on probability as formulated in Bayes's theorem.[3-7] Our approach has been to simulate the physician's thought processes and logic. We have studied medical decision making and have characterized some of the patterns of medical logic related to the differential diagnosis of diabetes mellitus and carbohydrate intolerance. The patterns are not unique. They resemble those used by computer programmers and mathematicians, and the logic employed is not unlike classic set theory and cybernetics. Using this approach we have formalized medical thought processes into a data base acceptable to IBM's (International Business Machines') experimental clinical decision support system.[8] The system makes a preliminary diagnosis dependent on already acquired information, and then requests additional data from which definitive, multiple diagnoses can be made.

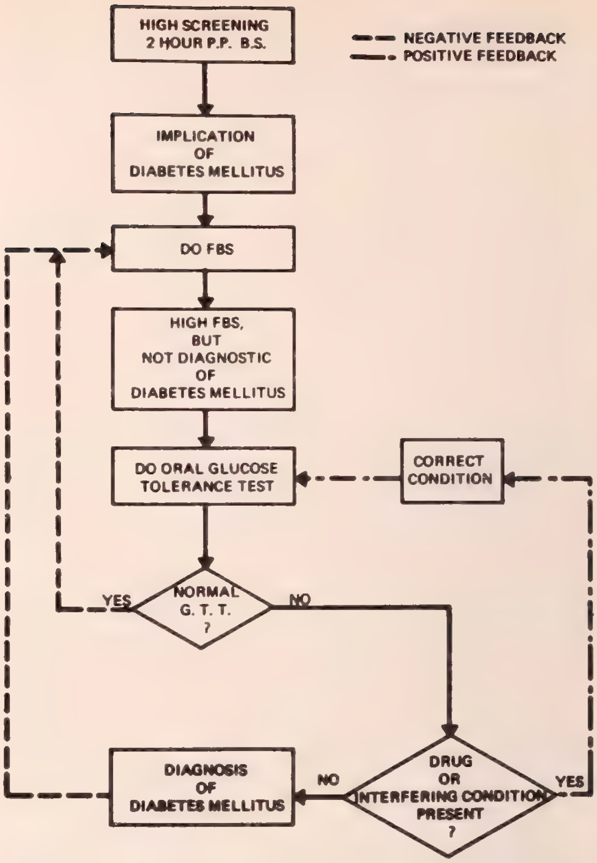
HIGH SCREENING 2 HOUR P.P. B.S.
NEGATIVE FEEDBACK
POSITIVE FEEDBACK
IMPLICATION OF DIABETES MELLITUS
DO FBS
HIGH FBS, BUT NOT DIAGNOSTIC OF DIABETES MELLITUS
DO ORAL GLUCOSE TOLERANCE TEST
CORRECT CONDITION
YES
NORMAL G.T.T. ?
NO
DIAGNOSIS OF DIABETES MELLITUS
NO
DRUG OR INTERFERING CONDITION PRESENT ?
YES

FIGURE 1. Sequence of data acquisition and patterns of logic in medical decision making.

Structure

In this report we examine a small segment of medical knowledge and identify the steps used to reach certain well-defined diagnostic or therapeutic conclusions. The technic of clinical decision making may best be described in terms of a network of connected nodes, rather than as a linear or simple branching pattern. The most important function of this network is its capacity for feedback. No node need be constituted as a terminal decision. The feedback is similar to an example used in Weiner's[9] book, *Cybernetics:*

> When the peripheral vision has picked up some object conspicuous by brilliancy or light contrast or color or above all by motion, there is a reflex feedback to bring it into the fovea. This feedback is accompanied by a complicated system of interlinked subordinated feedbacks, which tend to converge the two eyes so that the object attracting attention is in

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> the same part of the visual field of each and to focus the lens so that its outlines are as sharp as possible. These actions are supplemented by motions of the head and body, by which we bring the object into the center of vision, if this cannot be done readily by a motion of the eyes alone, ...[9]

Figure 1 shows this concept of feedback in a simple pattern of medical decision making. Patterns or sequence of decisions for different clinical situations vary, but the logic is always easily defined. In the illustration, a screening two-hour postprandial blood sugar is reported as significantly elevated, and a suspicion of diabetes mellitus is entertained. Because the fasting blood sugar then requested does not make a conclusive diagnosis, a glucose tolerance test is ordered. If the curve meets criteria set by the physician for chemical diabetes and no other condition is present, nor is the patient taking a drug capable of inducing carbohydrate intolerance, then the diagnosis of diabetes mellitus is made.

If we recognize some other cause of carbohydrate intolerance a second glucose tolerance test is performed after the offending condition is corrected. The patient's condition is observed as suspicious if the disease lingers. During this period diabetes mellitus is always considered "implicated," but the diagnosis cannot be made.

At the time of a patient's evaluation, additional thought patterns may be activated and may extend the scope of medical evaluation. The sequence of events crystallize and lead to multiple diagnoses. Let us say that a female patient during the childbearing years has three months of amenorrhea, a soft, blue cervix, and an enlarged uterus. She also has a fasting true blood sugar of 115 mg. per 100 ml. On the basis of the first set of findings a physician commonly requests an Aschheim-Zondek test. If the test result is positive, the diagnosis is made of pregnancy, a condition which reduces carbohydrate tolerance. A three-hour glucose tolerance test should follow. Observation of a third-hour level above 120 mg. per 100 ml. in a pregnant patient confirms the diagnosis of diabetes mellitus.

The decision of pregnancy complicated by diabetes mellitus is critical, for it initiates a series of steps that may drastically change the course of the patient's care during her pregnancy. Each of these steps can be defined according to our present understanding of diabetes. Intuition plays no role in handling the case, just knowledge of data and logic. The finding of a suspicious, but not diagnostic, glucose tolerance test result activates a different segment of our decisional network suggesting a repeat glucose tolerance test. Certainly one would be requested postpartum. In the event of a complicated pregnancy, or birth of a baby weighing more than 10 pounds, greater significance is added to the decision.

Each new bit of information changes our perspective of a patient. We may repeat studies, request additional information, or change a therapeutic approach. All are involved in the concept of feedback.

Language

If we design a network to characterize the structure of our clinical decision processes, a language must be used for communication over this network. Such a language can be expressed in terms of Boolean algebra or symbolic logic. A collection of related elements constitutes a set of Boolean variables. Each element has a particular qualifying property. Although unique, each element can be contained in a number of sets. Sets themselves behave as elements. Thus a group of sets may, in turn, be a subset of a larger set. For example, the larger set, human diabetes mellitus, can contain subsets such as retinopathy, neuropathy, and renal involvement as well as other subsets which formulate the definition of the disease as we know it.

All physiologic or pathologic conditions capable of inducing hyperglycemia may be elements or subsets in the more encompassing set, carbohydrate intolerance. Diabetes mellitus, acromegaly, Cushing's syndrome, pancreatitis, thyrotoxicosis, and cirrhosis are such subsets. Similarly, we can speak of all those clinical elements directing attention toward the diagnosis of diabetes mellitus as being a set. The symptom of generalized weakness may be an element in the set of clinical findings for diabetes mellitus or in the set for Cushing's syndrome as well as many other conditions.

Following the description of a particular series of sets, we may interrelate and manipulate them with Boolean operations. Let us assume that we have eliminated the diagnoses of all conditions or drugs that can cause carbohydrate intolerance.

Define A = the label of the set, "Diabetes premellitus —implicated"
B = the label of the set, "Diabetic G.T.T." (glucose tolerance test)
C = the label of the set, "Diabetes mellitus—diagnosis"
D = the label of the set, "Diabetes premellitus —diagnosis"

Define (U) as an operation which joins the elements of two sets. Then the set C equals the join (union) of set A and set B.

The operation of negation or complementation may be expressed by a bar (—) over the particular character of characters in question. The complement of the set of those people tested who have a diabetic glucose tolerance test result are those patients tested who do not have a diabetic result. Thus, $D = AU\bar{B}$

We intend to describe only a few of the many patterns encountered in the synthesis of medical logic. In addition to "union," sets may intersect (∩) and form a new set containing only members common to two subsets. These simplified representations are used for example only. The situation in real life is more intricate and depends on multiple combinations of variables and operations. The elementary patterns, however, can be defined precisely and simply.

Multiple pass phenomenon or iteration

When a physician confronts a diagnostic problem, his preliminary considerations are broadly based and he rarely reaches an immediate, definite conclusion. He sacrifices accuracy by including a great number of potential disease processes on the first pass.

Groups of historic facts, physical findings, and laboratory results in various combinations suggest several possible disease entities. The physician is aware that an individual diagnostic criterion carries different significance for different diseases. Thus, polyuria may attract a physician's attention to diabetes more than the presence of "recent visual difficulties," whereas polyuria may be equally important in directing attention to either diabetes mellitus or diabetes insipidus. Even though statistical data can be used to assign values to each of these symptoms, the physician ordinarily ranks or weighs the data to arrive at initial decisions. He does not rely on chance, probability, or the requirement to make the correct diagnosis with the first decision. After initial decisions are made, he substantiates or eliminates his first impressions through iterative processes.

Although the initial differential diagnosis may require a certain amount of subliminal statistical analysis, this is not the case for the first decision. A high level of clinical significance may be necessary to bring an implicated diagnosis to the level of awareness, but only a very low threshold need be exceeded to elicit a laboratory request for additional information. However, this test result may be the important factor in establishing a diagnosis.

The physican makes a decision to act because of new medical data. He eliminates certain conditions or opens new channels of investigation. He requests more information; when it is obtained, he redirects his diagnostic efforts. This iterative process continues until single or possible multiple diagnoses are made.

Computer simulation

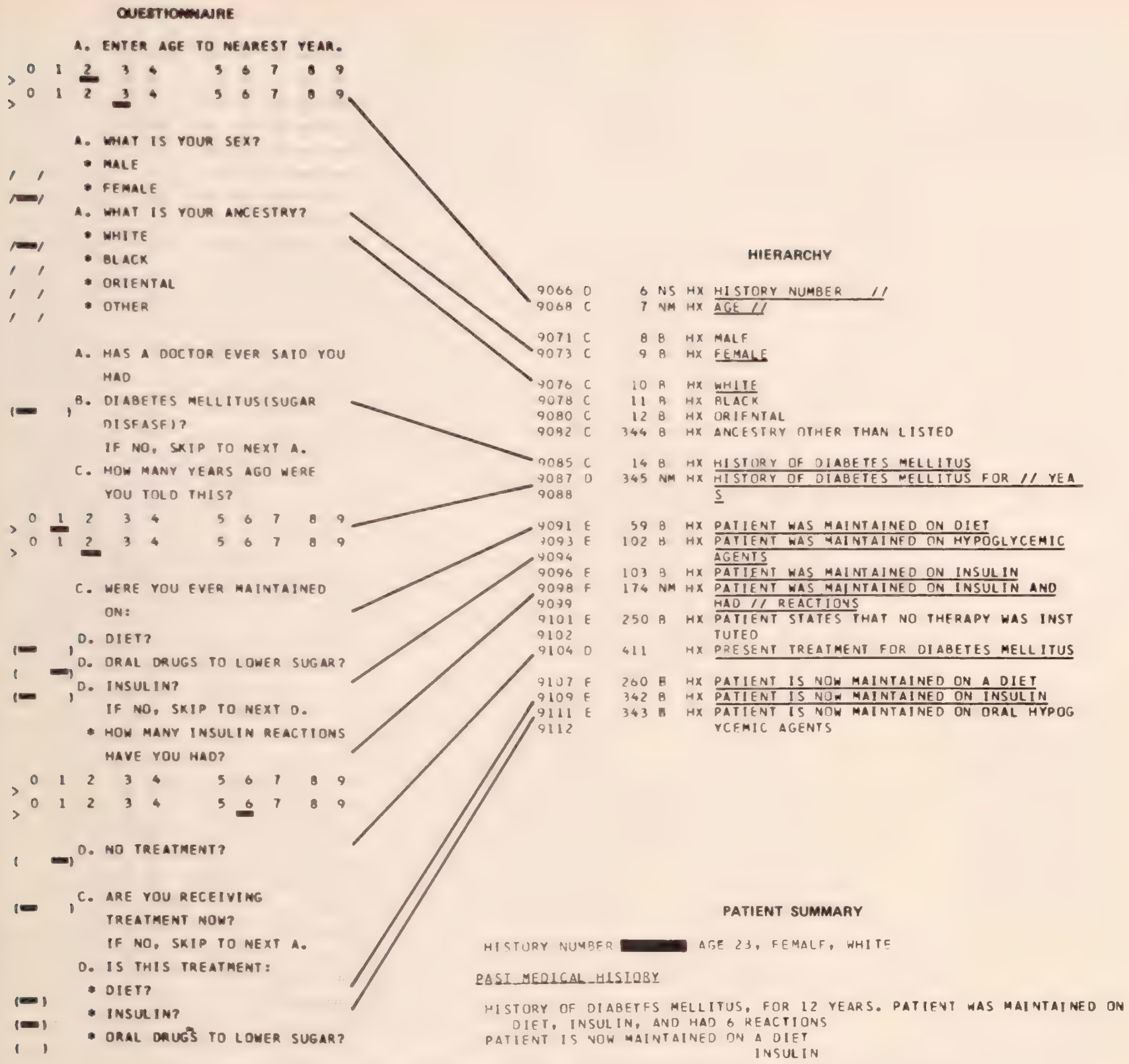
Under development at the advance systems development division of IBM is a set of experimental programs called the clinical decision support system. The system allows a computer to request, accept, and process patient data in accordance with instructions written by the physician. Data are entered into the computer system via a terminal such as a cathode ray tube or mark sense form reader. When mark sense forms are used, the history is obtained by an allied health worker who makes the appropriate entries on the questionnaire. The physician records his physical findings on a second questionnaire. Laboratory results can also be entered. The input information is converted into standardized nomenclature derived from a preconceived hierarchic list of medical terms. Each hierarchic term is part of a node for use in the network.

The node also contains the status of the answer to the questions such as "Has the patient ever smoked?" The node label is "smoked" and its status is either "yes" or "no." Multiple choice questions accept a status answer of "yes" or "no" to a number of nodes, each of which can be a potential member of several different decision sets. An example would be the response to the question: "What is your ancestry: white, black, oriental, or Indian?"

The node may have a value other than "yes" or "no"; it may be numerical. Age is representative of this type node. Textual data in response to a question can also be the "value" of a single node. The nodes are arranged in a hierarchy—an ordered list with major and minor categories—that contains all the text used for the description of a patient. Figure 2 illustrates the relationship between questionnaire, hierarchy, and a data printout summary. The information shown is derived from a segment of an actual patient questionnaire that has been answered so as to activate the underlined nodes. The activated nodes in turn produce a summary of the patient record.

A medical decision or diagnostic possibility is made on the basis of one of several combinations of elements (nodes). A straightforward technic lists just those elements (signs, symptoms, laboratory results) sufficient to render a decision. There are multiple ways of arriving at a primary diagnosis. Each way is a list of findings and each finding can be a component in a different list establishing a secondary diagnosis. These lists can be combined to make a symptom-disease matrix. The volume of entries in arrays of this sort soon becomes unwieldy and impractical for both the writer and the programmer.

In the clinical decision support system, a decision module is described by condensing the several lists into a single list containing all elements ever used to make a decision. The ability to regenerate the original lists is retained. Combinations of elements in the list (subsets) required to trigger the decision are identified by assigning numeric values to the elements. The numbers are added and their sum tested to see if it has reached or exceeded a threshold value. Since the threshold value can be exceeded by adding different combinations of elements, the decision can be made on the basis of different elements. In effect,



QUESTIONNAIRE

```
        A. ENTER AGE TO NEAREST YEAR.
>  0  1  2  3  4     5  6  7  8  9
         ▬
>  0  1  2  3  4     5  6  7  8  9
            ▬

        A. WHAT IS YOUR SEX?
         * MALE
/   /
         * FEMALE
/▬/
        A. WHAT IS YOUR ANCESTRY?
         * WHITE
/▬/
         * BLACK
/   /
         * ORIENTAL
/   /
         * OTHER
/   /

        A. HAS A DOCTOR EVER SAID YOU
           HAD
(▬    ) B. DIABETES MELLITUS(SUGAR
           DISFASF)?
           IF NO, SKIP TO NEXT A.
        C. HOW MANY YEARS AGO WERE
           YOU TOLD THIS?
>  0  1  2  3  4     5  6  7  8  9
      ▬
>  0  1  2  3  4     5  6  7  8  9
         ▬

        C. WERE YOU EVER MAINTAINED
           ON:
        D. DIET?
(▬    )
        D. ORAL DRUGS TO LOWER SUGAR?
(    ▬)
        D. INSULIN?
(▬    )
           IF NO, SKIP TO NEXT D.
         * HOW MANY INSULIN REACTIONS
           HAVE YOU HAD?
>  0  1  2  3  4     5  6  7  8  9
>  0  1  2  3  4     5  6  7  8  9
                        ▬

        D. NO TREATMENT?
(    ▬)

        C. ARE YOU RECEIVING
(▬    )
           TREATMENT NOW?
           IF NO, SKIP TO NEXT A.
        D. IS THIS TREATMENT:
         * DIET?
(▬)
         * INSULIN?
(▬)
         * ORAL DRUGS TO LOWER SUGAR?
(  )
```

HIERARCHY

```
9066 D      6 NS HX HISTORY NUMBER   //
9068 C      7 NM HX AGE //

9071 C      8 B  HX MALF
9073 C      9 B  HX FEMALE

9076 C     10 B  HX WHITE
9078 C     11 B  HX BLACK
9080 C     12 B  HX ORIFNTAL
9082 C    344 B  HX ANCESTRY OTHER THAN LISTED

9085 C     14 B  HX HISTORY OF DIABETES MELLITUS
9087 D    345 NM HX HISTORY OF DIABETES MELLITUS FOR // YEA
9088                S

9091 E     59 B  HX PATIENT WAS MAINTAINED ON DIET
9093 E    102 B  HX PATIENT WAS MAINTAINFD ON HYPOGLYCEMIC
9094                AGENTS
9096 E    103 B  HX PATIENT WAS MAINTAINED ON INSULIN
9098 F    174 NM HX PATIENT WAS MAINTAINED ON INSULIN AND
9099                HAD // REACTIONS
9101 E    250 B  HX PATIENT STATES THAT NO THERAPY WAS INST
9102                TUTED
9104 D    411    HX PRESENT TREATMENT FOR DIABETES MELLITUS

9107 F    260 B  HX PATIENT IS NOW MAINTAINED ON A DIET
9109 E    342 B  HX PATIENT IS NOW MAINTAINED ON INSULIN
9111 E    343 B  HX PATIENT IS NOW MAINTAINED ON ORAL HYPOG
9112                YCEMIC AGENTS
```

PATIENT SUMMARY

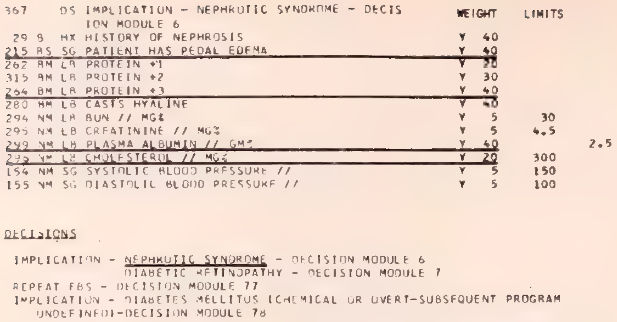
```
HISTORY NUMBER [redacted] AGE 23, FEMALF, WHITE

PAST MEDICAL HISTORY

HISTORY OF DIABETFS MELLITUS, FOR 12 YEARS. PATIENT WAS MAINTAINED ON
   DIET, INSULIN, AND HAD 6 REACTIONS
PATIENT IS NOW MAINTAINED ON A DIET
                              INSULIN
```

FIGURE 2. Relationship between questionnaire, hierarchy, and patient summary.

the numbering system permits regeneration of original lists, and at the same time provides a compact, nonredundant, manageable set of elements.

In addition to a diagnosis or intermediate decision, the module may be a statement requesting additional information, perhaps in the form of laboratory study. Figure 3 represents one particular pattern in which a set is capable of making a decision early in the system's network. In this case the decision is a statement or descriptor. The elements in these early subsets implicating disease processes or requesting additional information are empirically assigned high numeric values.

Feedback patterns are developed which eliminate certain diagnoses. If specific, well defined, and firmly established characteristics of disease are recognized, a final computer-assisted diagnosis can be made. Only results of accepted medical investigation are used in defining the decision modules subjected to the iterative process. For example, weights establishing abnormal response of blood sugar in the oral glucose tolerance test are based on criteria defined by the Wilkerson[10] point system. Allowance for the age factor is provided by modification of the computer program. The upper limit of normal in all determinations is raised 10 mg. per 100 mg. blood for each ten years above the age of fifty. Similar modification is made for fasting blood sugar and for two-hour postprandial blood sugar. In those decisions of medical practice based on opinion, not on logic, the system interdicts a conclusion.



```
367     DS IMPLICATION - NEPHROTIC SYNDROME - DECIS          WEIGHT   LIMITS
           ION MODULE 6
 29 B   HX HISTORY OF NEPHROSIS                              Y  40
215 BS  SG PATIENT HAS PEDAL EDEMA                           Y  40
262 BM  LB PROTEIN +1                                        Y  20
315 BM  LB PROTEIN +2                                        Y  30
264 BM  LB PROTEIN +3                                        Y  40
280 HM  LB CASTS HYALINE                                     Y  40
294 NM  LB BUN // MG%                                        Y   5      30
295 NM  LB CREATININE // MG%                                 Y   5     4.5
299 NM  LB PLASMA ALBUMIN // GM%                             Y  40             2.5
295 NM  LB CHOLESTEROL // MG%                                Y  20     300
154 NM  SG SYSTOLIC BLOOD PRESSURE //                        Y   5     150
155 NM  SG DIASTOLIC BLOOD PRESSURE //                       Y   5     100


DECISIONS

 IMPLICATION - NEPHROTIC SYNDROME - DECISION MODULE 6
               DIABETIC RETINOPATHY - DECISION MODULE 7
 REPEAT FBS - DECISION MODULE 77
 IMPLICATION - DIABETES MELLITUS (CHEMICAL OR OVERT-SUBSEQUENT PROGRAM
    UNDEFINED)-DECISION MODULE 78
```

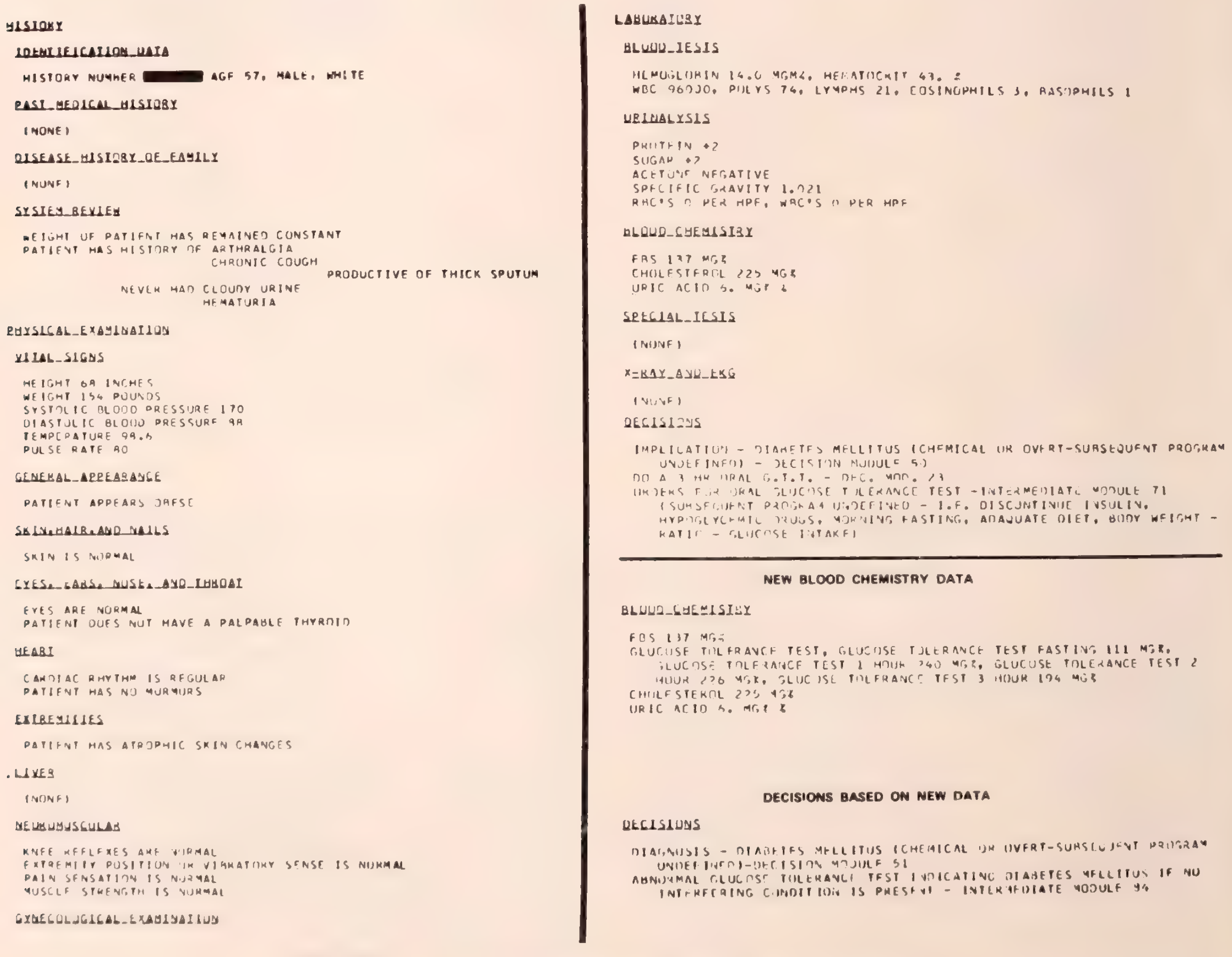
FIGURE 3. Relationship of a computer-generated decision to a set in which the threshold has been exceeded by activation of four nodes.

Results and conclusions

The medical applications program we designed crossed boundaries of several medical disciplines. It evaluates the differential diagnosis of patients with carbohydrate intolerance sequentially and in detail. Figure 4 illustrates an actual patient record printed out by the computer in this system. When the patient returns on subsequent visits to the physician, additional studies can be requested and performed. It is then possible for the summary to be revised and maintained on a current basis.

Thirty-two individual studies were completed on 18 patients. Each study consisted of new information acquired at a particular patient visit. The conditions evaluated were those that could cause carbohydrate intolerance. We selected normal subjects and patients receiving drugs capable of inducing carbohydrate intolerance. We evaluated both good and poor historians. Patient selection was made only for the purpose of testing the various components of this prototype system. No attempt was made to compare the physician's performance with that of the computerized automated program. A summary of the results obtained appears in Table I.

Several cases demonstrate situations frequently observed in clinical medicine decision making. Case 2 had previously been informed that she was diabetic. She had not been under recent medical care, but a urinary tract infection induced her to seek medical advice. Subsequent to satisfactory treatment of the problem, a glucose tolerance test helped confirm the diagnosis of dia-



```
HISTORY

 IDENTIFICATION_DATA

  HISTORY NUMBER [redacted] AGE 57, MALE, WHITE

 PAST_MEDICAL_HISTORY

  (NONE)

 DISEASE_HISTORY_OF_FAMILY

  (NONE)

 SYSTEM_REVIEW

  WEIGHT OF PATIENT HAS REMAINED CONSTANT
  PATIENT HAS HISTORY OF ARTHRALGIA
                         CHRONIC COUGH
                                    PRODUCTIVE OF THICK SPUTUM
                NEVER HAD CLOUDY URINE
                         HEMATURIA

PHYSICAL_EXAMINATION

 VITAL_SIGNS

  HEIGHT 68 INCHES
  WEIGHT 154 POUNDS
  SYSTOLIC BLOOD PRESSURE 170
  DIASTOLIC BLOOD PRESSURE 98
  TEMPERATURE 98.6
  PULSE RATE 80

 GENERAL_APPEARANCE

  PATIENT APPEARS OBESE

 SKIN,HAIR,AND_NAILS

  SKIN IS NORMAL

 EYES,_EARS,_NOSE,_AND_THROAT

  EYES ARE NORMAL
  PATIENT DOES NOT HAVE A PALPABLE THYROID

 HEART

  CARDIAC RHYTHM IS REGULAR
  PATIENT HAS NO MURMURS

 EXTREMITIES

  PATIENT HAS ATROPHIC SKIN CHANGES

.LIVER

  (NONE)

 NEUROMUSCULAR

  KNEE REFLEXES ARE NORMAL
  EXTREMITY POSITION OR VIBRATORY SENSE IS NORMAL
  PAIN SENSATION IS NORMAL
  MUSCLE STRENGTH IS NORMAL

 GYNECOLOGICAL_EXAMINATION
```

```
LABORATORY

 BLOOD_TESTS

  HEMOGLOBIN 14.0 MGM%, HEMATOCRIT 43. %
  WBC 9600O, POLYS 74, LYMPHS 21, EOSINOPHILS 3, BASOPHILS 1

 URINALYSIS

  PROTEIN +2
  SUGAR +2
  ACETONE NEGATIVE
  SPECIFIC GRAVITY 1.021
  RBC'S 0 PER HPF, WBC'S 0 PER HPF

 BLOOD_CHEMISTRY

  FBS 137 MG%
  CHOLESTEROL 225 MG%
  URIC ACID 6. MG% %

 SPECIAL_TESTS

  (NONE)

 X-RAY_AND_EKG

  (NONE)

 DECISIONS

  IMPLICATION - DIABETES MELLITUS (CHEMICAL OR OVERT-SUBSEQUENT PROGRAM
     UNDEFINED) - DECISION MODULE 50
  DO A 3 HR ORAL G.T.T. - DEC. MOD. 23
  ORDERS FOR ORAL GLUCOSE TOLERANCE TEST -INTERMEDIATE MODULE 71
     (SUBSEQUENT PROGRAM UNDEFINED - I.E. DISCONTINUE INSULIN,
     HYPOGLYCEMIC DRUGS, MORNING FASTING, ADAQUATE DIET, BODY WEIGHT -
     RATIO - GLUCOSE INTAKE)
```

NEW BLOOD CHEMISTRY DATA

```
BLOOD_CHEMISTRY

 FBS 137 MG%
 GLUCOSE TOLERANCE TEST, GLUCOSE TOLERANCE TEST FASTING 111 MG%,
    GLUCOSE TOLERANCE TEST 1 HOUR 240 MG%, GLUCOSE TOLERANCE TEST 2
    HOUR 226 MG%, GLUCOSE TOLERANCE TEST 3 HOUR 194 MG%
 CHOLESTEROL 225 MG%
 URIC ACID 6. MG% %
```

DECISIONS BASED ON NEW DATA

```
DECISIONS

 DIAGNOSIS - DIABETES MELLITUS (CHEMICAL OR OVERT-SUBSEQUENT PROGRAM
    UNDEFINED)-DECISION MODULE 51
 ABNORMAL GLUCOSE TOLERANCE TEST INDICATING DIABETES MELLITUS IF NO
    INTERFERING CONDITION IS PRESENT - INTERMEDIATE MODULE 94
```

FIGURE 4. Computer-generated medical record of Case 16.

TABLE I. Critical data used in generating computer-derived decisions

Input			Computer Generated Output			
Patient Number	Clinical Diagnosis	Medical Data	Patient Visit	Implicated Illness	Diagnosis	Request & Comment
1	Hyperlipidemia	Age-68, history of ASHD,* glycosuria, uric acid-9.5 mg. per 100 ml., Cholesterol-350 mg. per 100 ml. 2HrppBS†-129 mg. per 100 ml.	(1)	Diabetes mellitus Primary hyperlipidemia		Do GTT, Do lipid profile Patient has condition that may produce false positive GTT
2	Diabetes mellitus Urinary tract infection	Age-64, dysuria, polakyuria, history of diabetes mellitus in family, glycosuria FBS**-126 mg. per 100 ml.	(1)	Diabetes mellitus Urinary tract infection		Do GTT
		GTT: 0 Hours-130, 1-184, 2-164, 3-140 mg. per 100 ml.	(2)		Diabetes mellitus	
3	Diabetes mellitus Pulmonary infection Urinary tract infection	Age-45, dysuria, polakyuria, history of pulmonary infection. Father & mother are diabetic 2HrppBS-98 mg. per 100 ml.	(1)	Diabetes mellitus Pulmonary infection Urinary tract infection Diabetes premellitus		Do GTT
		GTT: 0-96, 1-140, 2-110, 3-92 mg. per 100 ml.	(2)		Diabetes premellitus	Repeat GTT
4	Pregnancy	Age-25, fetal heartbeats are heard, fetal motion is felt, glycosuria GTT: 0-68, 1-112, 2-124, 3-110 mg. per 100 ml.	(1)	Diabetes mellitus	Pregnancy	Follow patient with urines for sugar Repeat GTT postpartum GTT suspicious of diabetes if no interfering conditions
5	Pregnancy Diabetes mellitus	Age-28, fetal heartbeats are heard, fetal motion is felt, glycosuria GTT: 0-112, 1-164, 2-134, 3-122 mg. per 100 ml.	(1)		Pregnancy Diabetes mellitus	Repeat GTT postpartum
6	Cushing's syndrome	Age-39, weakness and loss of strength within last year, polydipsia, osteoporosis, six months of amenorrhea, patient's history of easy bruising, recent headaches, arthralgia, excess perspiration. Patient has abdominal, thigh, or upper arm striae. Patient has dorsal fat pad. Patient has thin skin 17 ketogenic steroids-20 mg. per 100 ml. in 24 hours.	(1)	Diabetes mellitus History of recent infection Cushing's syndrome Acromegaly		Do GTT after correcting condition Do dexamethasone inhibition test Do plasma growth hormone assay Patient has a condition that may produce a false positive GTT
7	Diabetes mellitus	Age-68, patient history is unreliable, history of vaginal pruritus, history of abortions, history of pneumonia, chole-	(1)	Diabetes mellitus Pulmonary infection Cushing's syndrome Cirrhosis		Do GTT Do dexamethasone inhibition test Patient has condition which may produce false

(*continued*)

TABLE I. *Continued*

Input				Computer Generated Output		
Patient Number	Clinical Diagnosis	Medical Data	Patient Visit	Implicated Illness	Diagnosis	Request & Comment
		cystitis, and diabetes mellitus, generalized weakness within past year. History of easy bruising and of poor wound healing. Appetite has decreased within last year. Weight has decreased more than 10 lb, patient states that stool is acholic and that there is diarrhea. Patient has pedal edema, glycosuria FBS-212 mg. per 100 ml. 2HrppBS-192 mg. per 100 ml.				positive GTT
8	Nondiabetic subject	Age-21, patient is taking oral contraceptives, vaginal pruritus, dysuria, cloudy urine 2HrppBS-145 mg. per 100 ml.	(1)	Diabetes mellitus Urinary tract infection		Do GTT Patient is taking drugs which may produce false positive GTT
		GTT: 0-88, 1-122, 2-108, 3-98 mg. per 100 ml.	(2)			
9	Diabetes mellitus	Age-31, history of diabetes, recent onset of blurred vision. Patient has microaneurysms of the retina 2HrppBS-202 mg. per 100 ml.	(1)	Diabetes mellitus Skin infection Diabetic retinopathy		Do FBS Patient has condition that may produce false positive GTT
		FBS-182 mg. per 100 ml.	(2)	Diabetes mellitus Diabetic retinopathy		Repeat FBS
10	Nondiabetic subject	Age-77, patient is taking chlorthiazide 2HrppBS-122 mg. per 100 ml.	(1)	Diabetes mellitus		Do GTT Patient is taking drug which may produce false positive GTT
		GTT: 0-84, 1-132, 2-92, 3-88 mg. per 100 ml.	(2)			
11	Diabetes mellitus	Age-27, dysuria, cloudy urine, 10 WBC/HPF[††] FBS-145 mg. per 100 ml.	(1)	Diabetes mellitus Urinary tract infection Recent infection		Do GTT Patient has condition that may produce false positive GTT
		GTT: 0-122, 1-176, 2-134, 3-105 mg. per 100 ml.	(2)		Diabetes mellitus	
12	Diabetes mellitus	Age-43, history of pneumonia, history of diabetes mellitus, 15 pound weight loss, diabetes mellitus in family FBS-121 mg. per 100 ml.	(1)	Diabetes mellitus Pulmonary infection		Do GTT
		GTT: 0-118, 1-172, 2-134, 3-102 mg. per 100 ml.	(2)		Diabetes mellitus	

(*continued*)

TABLE I. *Continued*

13	Diabetes mellitus Nontoxic diffusely enlarged thyroid	Age-57, pain in legs not related to exercise. History of tremor, weakness, increased perspiration. Has fine tremor, diffusely enlarged thyroid, wasted extremity muscles FBS-114 mg.	(1)	Neuropathy Thyrotoxicosis		Do I^{131} uptake, Do GTT after correcting condition Patient has a condition that may produce false positive GTT
14	Diabetes mellitus	Age-69, glycosuria 2HrppBS-280 mg. per 100 ml. FBS-184 mg. per 100 ml.	(1)	Diabetes mellitus		Repeat FBS
		Second FBS-156 mg. per 100 ml.	(2)		Diabetes mellitus	Repeat FBS
15	Diabetes mellitus	Age-23 2HrppBS-293 mg. per 100 ml.	(1)	Diabetes mellitus		Do FBS
		FBS-170 mg. per 100 ml.	(2)	Diabetes mellitus		Repeat FBS
		Second FBS-163 mg. per 100 ml.	(3)		Diabetes mellitus	Repeat FBS
16	Diabetes mellitus	Age-57 FBS-137 mg. per 100 ml.	(1)	Diabetes mellitus		Do GTT
		GTT: 0-111, 1-240, 2-226, 3-194 mg. per 100 ml.	(2)		Diabetes mellitus	
17	Pancreatic adenocarcinoma Postpancreatectomy	Age-63 2HrppBS-286 mg. per 100 ml.	(1)	Diabetes mellitus Postpancreatectomy		Do FBS Patient has condition which may produce false positive GTT
		FBS-166 mg. per 100 ml.	(2)	Diabetes mellitus Postpancreatectomy		Do GTT after correcting condition Repeat FBS Patient has condition which may produce a false positive GTT
		Second FBS-132 mg. per 100 ml.	(3)	Diabetes mellitus Postpancreatectomy		Do GTT after correcting condition Repeat FBS Patient has condition which may produce a false positive GTT
18	ASHD	Age-65 2HrppBS-142 mg. per 100 ml.	(1)	Diabetes mellitus		Do GTT
		GTT: 0-96, 1-210, 2-150, 3-100 mg. per 100 ml.	(2)			Repeat GTT GTT suspicious of diabetes if no interfering conditions

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* ASHD = Arteriosclerotic heart disease.
† 2HrppBS = 2 hour post prandial blood sugar.
** FBS = fasting blood sugar.
††† WBC HPF = white blood cells per high-power field.

betes mellitus. The fifth example describes a set of circumstances in which enough information had been accumulated to establish diagnoses of pregnancy and diabetes mellitus.

In Case 6, despite only slightly elevated twenty-four-hour urinary ketogenic steroids, there were enough findings to implicate Cushing's syndrome. Biochemical studies later comfirmed this clinical impression.

Cases 8 and 10 present situations in which the initial suspicion of diabetes mellitus was unsubstantiated. Glucose tolerance tests were performed and found normal.

Case 13 is interesting in that the diagnosis was unsuspected on initial evaluation. However, information was available which led to the recommendation of repeated blood glucose studies following the elimination or confirmation of thyroid disease. These requested studies eventually directed attention to the diagnosis of diabetes mellitus.

The supporting computer programs functioned satisfactorily, and the sequence of medical decisions evolved into a pattern of acceptable recommendations and diagnostic impressions. We have tried to demonstrate the ability of an automated system to simulate the thought processes of a practicing physician, and it is hoped that these studies will provide a better understanding of the manner by which a clinician arrives at a decision.

Summary

Using an experimental computer program developed by the advanced systems development division of IBM, a model of the physician's pattern of logic has been designed. It can be characterized in detail and tested against decisions made in actual clinical settings. Each computer generated decision constitutes a "module" and is based on a predetermined set of independent variables. The variables are called "nodes" and are available for use in any decision module within the system. The decision module in turn may be a descriptor or a recommendation. Because of the complexity of medicine, the system was limited to a prototype application for the differential diagnosis of carbohydrate intolerance, and this narrow segment of medical management was evaluated in moderate depth. Studies on patients with various types of carbohydrate intolerance demonstrated a capacity for computer-assisted medical decision making and diagnosis. The system appears to have flexibility, and can be expanded into other areas of medical management.

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SHOULD SMALLPOX VACCINATION BE DISCONTINUED?

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Since Jenner successfully performed his first vaccination in 1796, smallpox has been reduced from pandemic incidence to a total of 30,812 cases reported in 1970 from all of Africa, South America, Asia, and Europe. There has not been a documented case of this disease in the United States since 1947.

In 1968, from a total of 14,168,000 primary vaccinations and revaccinations in a population ranging in age from under one year to twenty years plus, a total of 8 deaths occurred from postvaccinial encephalitis and vaccinia necrosum. No deaths occurred in other complications including 66 cases of eczema vaccinatum, 141 cases of generalized vaccinia, and 149 cases of accidental infection.[1] Of a total of 106 contacts of vaccinated individuals, 60 developed eczema vaccinatum, of which 1 died; 2 developed generalized vaccinia, with no deaths; and 44 developed accidental infection, with no deaths. Of the total 14,168,000 primary vaccinations and revaccinations, plus the 106 contacts, there was a total of 9 deaths.[1]

Public Health Service statement

Based on these data the Public Health Service, in September, 1971, stated that "the risk of smallpox in the United States is so small that the practice of routine smallpox vaccination is no longer indicated in this country." It further announced:

> For most people in the United States, the probability of contacting smallpox is so small that the risk of complications from vaccination outweighs the benefits derived from it. For this reason, non-selective vaccination of the public is no longer justifiable. Vaccination should routinely be required only of people in special risk: travelers to and from countries where smallpox is still endemic and health services personnel who come into contact with patients.[1]

As of June, 1971, the following countries reported cases of smallpox: Botswana, Democratic Republic of the Congo, Ethiopia, India, Indonesia, Malaysia, Muscat, Oman, Nepal, West Pakistan, and Sudan. Vaccination will be required, as a condition to entry into the United States, from travelers who have been in the previously named countries within the preceding fourteen days. The Public Health Service also recommends that travelers to Brazil and to any country in Africa and Southeast Asia should be vaccinated against smallpox for their own protection.

Doubts

While the decisions of the Public Health Services, arrived at after careful study and consultations, appear to be logical and timely, many seasoned and capable clinicians doubt the wisdom and practicality of discontinuing routine, nonselective vaccination of children. Their doubts and concern are based on the awareness that in a relatively short time a whole generation of unvaccinated and unprotected population will result.

Until the present and future leaders of all governments honestly decide to lay down their arms of war forever, and until smallpox is completely eradicated from all countries in the world, in the not too distant future we would find ourselves vaccinating thousands of adult men and women called to arms or recruited to serve as consultants and advisors to nations that continue to report smallpox. It has been substantially documented that primary vaccination in adults is complicated by a higher incidence of complications and morbidity than in adults who were immunized against smallpox in childhood. Thirty-one of the 153 more serious complications reported by the Public Health Service in September, 1971, were in adults.

Another disturbing possibility to be considered if routine, nonselective vaccinations are discontinued is the inevitable short supplies of vaccine readily available if an emergency arose. Even recognizing that the Public Health Service will keep adequate stocks of vaccine in storage, if a case of smallpox is imported into any of our large cities the sudden demands for immediate vaccinations will result in confusion and panic. One needs only to recall the endless lines of frightened New Yorkers seeking immediate protection when, in 1947, an imported case of smallpox was reported in that city, followed by 12 subsequent cases and 2 deaths.

It has been reported that smallpox is not the highly contagious disease it was once thought to be. In the seventeenth century Sydenham also contradicted the contagiousness of smallpox, but nevertheless, epidemics and pandemics have been recorded in history from the time Eusebius first reported a Syrian epidemic in 302 A.D., until well after Jenner successfully performed his first vaccination in 1796.

The American Medical Association house of delegates, at its clinical meeting in December, 1971, expressed serious concern in debating two resolutions on universal smallpox vaccination. The report of the reference committee stated as follows:

> The mobility of our population and the increased ease of world travel, the possibility that discontinuance of an immunity program leaves the nation unprepared in the event that a virulent strain with a short-term incubation period is introduced and the experience following relaxation of the disease control programs leaves many questions unanswered.[2]

It was resolved by the house of delegates that the American Medical Association emphasize the importance of continued use of smallpox vaccination for those individuals who may be exposed to the disease including, but not limited to, the following: health personnel, travelers to and from endemic areas, and persons in the military services.

At the January 12, 1972, meeting of the Committee on Preventive Medicine of the Medical Society of the State of New York, it was unanimously resolved that this committee recommend to the House of Delegates of the Medical Society of the State of New York that routine, nonselective vaccination against smallpox not be discontinued. The committee also recommended that physicians continue to be alerted to the contraindications of smallpox vaccinations. Routine smallpox vaccination is contraindicated in infants under one year of age, children and adults with active or quiescent eczema, their contacts, and children and adults suffering from other skin disorders, food allergies, asthma, and open wounds. It was also decided that there exists a real need to publicize, repeatedly and effectively, these contraindications to smallpox vaccination.

Conclusion

Rather than recommend discontinuance of routine smallpox vaccination at this time, the Public Health Service should exert its resources to make available the attenuated smallpox vaccine CV1-78 recently developed by Kempe *et al.*[3] and Kempe.[4] This attenuated vaccine can be used for elective primary vaccination of allergic children. A more realistic and justified approach would be to exclude these children from smallpox immunization programs. Let them be "free loaders!" Another practical plan would be to use the attenuated vaccine for primary vaccinations and the standard strain smallpox vaccine for revaccinations.

At this time it would be more judicious to recommend that American medicine continue to evaluate smallpox immunization practices and the ramifications of curtailment or discontinuation of routine vaccination programs. This will provide the medical profession the needed guidance for acting in the best interests of the public it serves.

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HOSPITALS IN NEW YORK CITY AND PUBLIC HEALTH LAW

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There are four general categories of hospitals in existence in the City of New York. They are: (1) voluntary hospitals, (2) municipal hospitals, (3) Federal government hospitals, and (4) proprietary hospitals.

Voluntary hospitals

Voluntary hospitals are known as "nonprofit" hospitals or eleemosynary institutions. These hospitals were organized by public-spirited groups of citizens or religious groups to provide hospital care. The oldest voluntary hospital in the City of New York is the New York Hospital, which received its original charter from King George III in 1771 and recently celebrated its two hundredth anniversary. Voluntary hospitals were chartered by the State Board of Charities prior to about 1936, because of their eleemosynary character. After about 1936, the charter for voluntary hospitals was issued by the State Department of Social Welfare. To qualify for a charter as a voluntary hospital, an institution has to provide a ward service. In 1965, the Folsom Law was enacted to take effect on February 1, 1966, and this transferred the responsibility for supervising hospitals to the State Department of Health which was authorized to issue operating certificates. At the present time there are about 74 voluntary hospitals in New York City which have State operating certificates.

Municipal hospitals

Municipal hospitals were organized and supported by the City of New York. The first one, known as Bellevue, had its origin in an almshouse which was established by the colonial government of New Amsterdam in the early 1700s. Later, this group of institutions was known as Bellevue and Allied Hospitals. Following the absorption of the City of Brooklyn into Greater New York at about the turn of the twentieth century, the reorganization of the City government resulted in the establishment of the Department of Hospitals of the City of New York. This department had supervision of the present 18 hospitals until July 1, 1970, when the operation of these institutions was transferred to the Health and Hospital Corporation of the City of New York. These 18 municipal hospitals hold State operating certificates.

Federal government hospitals

Early in the nineteenth century, the U.S. Public Health Service was authorized to establish hospitals for seamen throughout the country, and the Marine Hospital located at Stapleton, Staten Island, was organized. Following World War I, the Veterans' Administration established hospitals throughout the country. At the present time there is a Veterans Hospital in The Bronx, in Manhattan, and in Brooklyn. There is also a U. S. Naval Hospital which is located in St. Albans in Queens. These hospitals do not have State operating certificates since they are under the control of their respective departments of the Federal government.

Proprietary hospitals

A proprietary hospital is an institution organized to render hospital care for profit. These institutions were licensed by the old Department of Hospitals, which has been absorbed into the Health and Hospital Corporation of the City of New York. They do not possess State operating certificates but do have licenses issued by the City of New York.

Accreditation of hospitals

In 1918, the American College of Surgeons established the hospital standardization program to encourage the adoption of a uniform medical record format that would facilitate the accurate recording of the patient's clinical course.[1] During the formative years, the standards were amended to reflect the intent of the American College of Surgeons to keep the program abreast of the increasing sophistication and complexity of hospitals. By 1951, the College of Surgeons decided that it was appropriate to broaden the base of support for the accreditation program. Accordingly, the Joint Commission on Accreditation of Hospitals was formed. The founding sponsors were the American College of Surgeons, the American College of Physicians, the American Hospital Association, the American Medical Association, and the Canadian Medical Association. The Canadian Medical Association discontinued its participation in the Joint Commission in 1959 when the Canadian Council on Hospital Accreditation was established. Until the passage of the Folsom Law in 1965, "approved hospitals" were those holding the certificate from the Joint Commission.

Article 28 and "Unit for Hospital Affairs"

Until February 1, 1966, the State of New York Department of Health did not actively enter into the health and hospital affairs of the City of New York, since it was exempted because of "home rule." For that reason the State jurisdiction ceased at the borders of New York City. Since Nassau and Suffolk Counties were beyond the limits of New York City, and since the nearest regional health director was located in White Plains covering Westchester County, Nassau and Suffolk Counties were placed under the control of the Westchester regional health director.

In the early 1960s Gov. Nelson Rockefeller and the State legislature established a commission under the leadership of Marion Folsom, the former secretary of the Department of Health, Education, and Welfare, of the Federal government, to investigate the delivery of health and hospital care in the State of New York. As the result of the findings of the Folsom Commission, Article 28 of the Public Health Law was developed and enacted in the State legislature, approved by the governor, to take effect February 1, 1966. One of the provisions of the "Folsom Law" was the establishment of the Unit for Hospital Affairs under the commissioner of health.[2] New York City lost its autonomy in hospital matters under Article 28. The Unit for Hospital Affairs was made responsible for the control of the quality of care and the requirements for hospital construction throughout New York State under the provisions of Article 28. In order for any hospital to operate in the State of New York, it is required to have a State operating certificate, issued by the commissioner of health. The issuance of this certificate to voluntary and municipal hospitals depends on their compliance with the requirements of Article 28. This article also empowers the City of New York to license proprietary hospitals which meet State hospital code standards.

The Unit for Hospital Affairs, which is some six years old, is now responsible for the quality of care given in the hospitals in the City of New York and for the surveillance of past and present hospital construction, to make sure that it complies with the requirements of the State hospital code.

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History of Medicine

JEWISH WELFARE IN COLONIAL TIMES

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Albert Deutsch, M.D.,[1] confirmed in a scholarly article that, for the most part, there was public provision for the sick poor in colonial times. Heaton[2,3] noted that in Dutch New Amsterdam and in colonial New York, "The care of the sick poor was part of the patchwork of provincial relief."

English settlers, influenced by the Elizabethan Poor Law of 1601, which required each parish in England to provide aid for the indigent, designated civil and ecclesiastic officers to administer poor relief.[4] To qualify for relief in colonial towns and parishes, it was necessary to possess "settlement rights," that is, uninterrupted residence of not less than three months to one year. Consequently, needy strangers were simply "warned out" of town; although some communities accepted the guaranty of an affluent inhabitant, or of the outsider's town of origin, for expense incurred. Masters of ships were even required to post bond for passengers or crew who might become public charges.[1]

The sick poor were usually nursed in their own homes. Occasionally they were boarded with a neighbor, a lay practitioner, or the physician; these hosts were meagerly compensated for their services. As towns grew, indigent sick came under the care of a paid physician. In the eighteenth century, poorhouses for the sick, aged, and infirm, and workhouses for the able-bodied poor unable to find work, were established. These were the beginnings of the great municipal hospitals.[1,3]

Religious groups such as the Quakers, and immigrant aid societies such as Scot's Charitable Society and Deutsche Gesellschaft, supplemented public responsibility for the sick poor. However, not one of the five Jewish communities in the colonial period applied to civil authorities for assistance in taking care of their needy.[5] Jewish welfare constituted a socioreligious function consistent with the injunction of Isaiah: "Deal thy bread to the hungry. Bring the afflicted poor into the house. When thou seeist the naked cover him."[6]

The scheme of Jewish welfare had its beginnings in remote times. A daily morning devotion in the Hebrew prayer book calls for the practice of charity, hospitality to wayfarers, visiting the sick, dowering the bride, and attending the dead to the grave; thus, charity was an essential part of religious worship.[7] Maimonides, from talmudic precepts, describes seven degrees of charity[8]:

1. He who gave to charity without knowing who was the recipient and without the recipient knowing the donor.
2. He who gave secretly, knowing the beneficiary but without the latter's knowing his benefactor.
3. He who gave not knowing the recipient, but without the recipient's knowledge of the donor.
4. He who gave (both knowing) without solicitation.
5. He who gave after he was asked.
6. He who gave insufficiently but without good grace.
7. He who gave with bad grace.

In action this meant ministering to the poor, the sick, the widow, the orphan, the aged, and extending a helping hand to the stranger.[4,9,10]

First Jews

Jews, like most colonists, left misery, hopelessness, and persecution, and arrived with very few resources in a strange, unfriendly country.[11] In September, 1654, the *St. Charles,* a French frigate, docked in New Amsterdam. On board were 23 Brazilian Jews who sought refuge. They constituted the first Jewish Community in the colonies.[12] When Dutch Brazil was reoccupied by Portugal in 1654, these Jews, despoiled of nearly all their possessions, left Recife on a Portuguese ship bound for Lisbon. The vessel was captured by a Spanish galleon, from which, fortunately, they were rescued by the French. The wanderers, forlorn, poor, and sick, were warned by Peter Stuyvesant that the "poor among them should not become a burden to the community but be supported by their own nation."[12]

Stuyvesant was not aware that these destitute exiles were once part of a proud and loyal Sephardic Jewish citizenry of the capital of Dutch Brazil which, in 1637, founded the first Hebrew congregation on the American continent, Zur Israel of Recife.[10] Its minute book affords abundant evidence of a Jewish community's concern with welfare. Its regulations provided for a "Gabay de Cativos," the treasurer of ransoms for Jews captured in the pirate-infested seas; a welfare fund (Sedaca) for aid to the poor raised by taxes, gifts, organized collections on Purim, and fines; a fund to help Jews residing in the Holy Land; and a fund to provide doweries for orphans and daughters of the poor. Specifically, private almsgiving was prohibited.[10] The congregation also assumed moral responsibility for its members: Daniel Gabilho, condemned to death in 1641, was freed when the congregation paid his fine of 15,000 guilders.[13]

Jewish charity

The Jewish population in the English colonies at the beginning of the Revolution was between two and three thousand. Its five congregations functioned under statutes not unlike those of Zur Israel of Recife. They provided for destitute strangers and established a charity fund (Taedaka) so that their poor should never become public charges or need non-Jewish charity. A Jew arriving in a city and needing help went to the synagogue and received it with only a promise "to repay when in my power." The congregation supplied money, clothing, and transportation. It also redeemed bond servants from servitude, an injunction that Roth[14] reminds us existed in the classic Roman period when it was regarded by Jews as a primary ethical duty to ransom those in capitivity. The Congregation Mikveh Israel of Philadelphia, organized in 1747, had a special fund, Exrath Orechim, to help needy strangers, the treasurer of which was the eminent patriot Hyam Salomon.[9] Sabato[15] states:

> A perusal of the minutes. . .shows that the cause of the poor and the stranger was not pleaded in vain. Widows were granted enough to prevent their being left without a shelter. A French lad in a state of destitution was enabled to return home comfortably and decently clad.

The minute book of the New York Congregation Shearith Israel, founded in 1680, gives ample evidence of expenditures for the needy, payments of physician's bills, and provisions for poor strangers who were boarded at the home of the beadle at community expense:[5,16]

> Pages 2, 3. If any person should happen to come to this place and should want assistance. . .allow- . . .Eight Shillings pr week. . . .And. . .assisting them with necessarys for their voyage.
>
> Page 26. For sending persons to their destination, 53 pounds.
>
> Page 32. For passages to London and to the Islands, 29 pounds.
>
> Page 43. For passages for Haim Abendanon and his family. . .Aron de Larah and David Piza to Barbados.
>
> Page 47. For sending people to foreign ports, 48 pounds.
>
> Page 60. For dispatching Rachel Colly to Curacao, and Wedu Serra and family to Barbados.
>
> Page 3. Those poor of this congregation that shall apply for Sedaca shall be assisted. And for Obras Pias (Pious works) 53 pounds to the poor of the city (p. 26).
>
> Page 46. Allow widow Judith Myers and Family Thirty pounds annually. . .and Eight Cord Wood.
>
> Page 47. For distribution among the poor, 48 pounds.
>
> Page 21. Hanah Louzado requests that the congregation send money and provisions, as she is ill in New Brunswick, New Jersey.
>
> Page 22. Bills from Andrew Judah, physician, for medical attention and medicine to the poor, 28 pounds.
>
> Page 72. The Elders provided 20 pounds per annum to teach poor children gratis: "Hebrew, Spanish, English, writing, & arithmetick." Also 40 Shills to the poor shoemaker and a like sum to Isaac Navarro.
>
> Page 81. Widow Solomons given "Four Pounds towards house rent. . . ."
>
> Page 89. Four elderly ladies each provided with five pounds. And Widow Mrs. Hanah Luzado- . . .maintenance for her and her son allowed for four weeks.
>
> Page 90. Widow of the late Somas, twenty pounds per annum.
>
> Page 91. Allowance for wood, three pounds each to several individuals; and 45 pounds for medical care of Mrs. Navarro and others. Also money for three Corse Shirts for Aaron Pinto," as he is "almost naked."
>
> Page 93. Sum of 32 pounds for wood to needy.
>
> Page 95. Rachell Conpanall's allowance "augmented to 25 pounds pr annum," and three pounds for "firewood."
>
> Page 105. Moses Hart is allowed "a loaf of bread per day."
>
> Page 124. Widow Hanah Luzado's pension augmented from eight to ten shillings per week.
>
> Page 55. Two pairs of boots and a great coat to the "Schochet."

The disbursements of Congregation Beth Elohim, organized in 1750 in Charlestown, South Carolina, was likewise characteristic. The community spent ". . . 125 pounds in charity: more than 80 pounds in donations to the poor, besides about 35 pounds for the sick and in doctor's bills, and about ten pounds to help Jewish wayfarers. . . ."[17]

There were two other congregations functioning during the colonial era. These were: (1) the Yeshu' ath Israel of Newport, Rhode Island, founded in 1658; Isaac Touro, father of the philanthropist Judah Touro, was its revered Rabbi in 1763; (2) the Mikveh Israel of Savannah, Georgia, founded in 1733, and the first congregation in the South. Savannah was also the site of the earliest settlement of Jews in the South.

Conclusion

I will conclude with this interesting entry in Rush's[18] Commonplace Book, a revealing commentary on the subject. He received 20 dollars from Mrs. Bravo for attending her husband Jacob who died in Philadelphia.

> I did not expect the payment of this bill, having seldom, or perhaps never received the payment of a bill under equal circumstances. Mrs. Bravo was a Jewess. Blush Christians: who forget or neglect to practice similar acts of justice.

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16. From the Minute Books of Congregation, Shearith Israel, *ibid.* 21: 2, 3, 26, 28, 32, 43, 46, 47, 60, 72, 80, 85 (1913); *ibid* 27: 22 (1920).
17. Reznikoff, C., and Engelman, U. Z.: The Jews of Charlestown, Philadelphia, Jewish Publication Society of America, 1950, p. 246.
18. The Autobiography of Benjamin Rush, edited by J. W. Corner, Princeton, Princeton University Press, 1948, p. 310.

Necrology

Leo Charles, M.D., of The Bronx, died on May 3 at the age of fifty-six. Dr. Charles graduated in 1947 from the School of Medicine of the Royal Colleges, Edinburgh, Scotland. He was an assistant attending physician in pediatrics at Flower and Fifth Avenue Hospitals. Dr. Charles was a member of the Bronx County Medical Society, the Medical Society of the State of New York and the American Medical Association.

Forris Ensor Chick, M.D., of Ithaca, died on April 19 at the age of seventy-five. Dr. Chick graduated in 1918 from New York Homeopathic Medical College and Flower Hospital. He was a consulting pediatrician at Morrisania City Hospital, the Bronx Eye and Ear Infirmary, and Misericordia Hospital. Dr. Chick was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the New York Academy of Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

August Stephen de Augustinis, M.D., of Briarcliff Manor, died on April 16 at the age of fifty-four. Dr. de Augustinis graduated in 1945 from Columbia University College of Physicians and Surgeons. He was an attending physician in internal medicine at Phelps Memorial Hospital Association, North Tarrytown. Dr. de Augustinis was a Diplomate of the American Board of Internal Medicine.

Brewster Clarke Doust, M.D., of Syracuse, died recently at the age of eighty-two. Dr. Doust graduated in 1914 from Syracuse University College of Medicine. He was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Gelb, M.D., of Miami Beach, Florida, formerly of Brooklyn, died on April 30 at the age of eighty-four. Dr. Gelb graduated in 1908 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Radiology and a member of the Radiological Society of North America, Inc., the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Julius Jeremiah Guttman, M.D., of Brooklyn, died on April 28 at the age of eighty-six. Dr. Guttman graduated in 1913 from Long Island College Hospital. A former president of the medical board and chairman of the Department of Medicine at The Brooklyn-Cumberland Medical Center, he was a Diplomate of the American Board of Internal Medicine and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

George P. F. Katz, M.D., of Great Neck, died on May 1 at the age of seventy-seven. Dr. Katz received his medical degree from the University of Rostock in 1920. He was a staff physician at Long Island Jewish Hospital and an honorary physician at North Shore Hospital, Manhasset. Dr. Katz was a Fellow of the American College of Chest Physicians and a member of the American Thoracic Society, the New York Academy of Medicine, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Everett Vincent Mack, M.D., of Ilion, died on April 26 at the age of fifty-nine. Dr. Mack graduated in 1950 from Syracuse University College of Medicine. He was chief of pediatrics at Mohawk Valley General Hospital, an associate attending pediatrician at Children's Hospital and Rehabilitation Center, Utica, and a consulting pediatrician at Little Falls Hospital, Little Falls. Dr. Mack was a member of the Utica Academy of Medicine, the Herkimer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Geysa Sarkany, M.D., of Long Island City, died on April 24 at the age of eighty-two. Dr. Sarkany received his medical degree from the University of Budapest in 1914. He was a staff surgeon at Madison Avenue Hospital, New York City. Dr. Sarkany was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Bernard Vincent Scurti, M.D., of Flushing, died on April 23 at the age of sixty-four. Dr. Scurti graduated in 1934 from Long Island College of Medicine. He was a Diplomate of the American Board of Otolaryngology, a Diplomate of the American Board of Ophthalmology, and a member of the American Academy of Ophthalmology and Otolaryngology, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

John Edward Silson, M.D., of Montauk, died in April at the age of fifty-eight. Dr. Silson graduated in 1939 from New York University School of Medicine. He was a member of the American Public Health Association, the Suffolk County Medical Society, the Medical

Society of the State of New York, and the American Medical Association.

Yudell Kantor Slocum, M.D., of Huntington, died on March 19 at the age of sixty-seven. Dr. Slocum graduated in 1932 from Indiana University School of Medicine. He had courtesy privileges in medicine at Huntington Hospital. Dr. Slocum was a member of the American Geriatrics Society, the American Psychiatric Association, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Torner, M.D., of Albany, died on May 1 at the age of seventy-seven. Dr. Torner received his medical degree from the University of Basel in 1920. He was an honorary general practitioner emeritus at Memorial Hospital. Dr. Torner was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

ANNUAL CONVENTION

Medical Society of the State of New York

FEBRUARY 11 through 15, 1973

the AMERICANA of New York

SCIENTIFIC PROGRAM, EXHIBITS, MOTION PICTURES
SUNDAY, FEBRUARY 11 through WEDNESDAY, FEBRUARY 14

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Requests for scientific exhibit space should be addressed to Albert H. Douglas, M.D., Chairman, Scientific Exhibits Subcommittee of Convention Committee, at the address given below.

Scientific Motion Pictures

Requests to present a motion picture in the motion picture theatre at the convention should be addressed to Kenneth B. Olson, M.D., Chairman, Motion Picture Subcommittee of the Convention Committee at the address given below.

Address all communications to the chairman

Medical Society of the State of New York
420 Lakeville Road
Lake Success, New York 11040

167th ANNUAL CONVENTION

ORGANIZED 1807

Medical Society of the State of New York

FEBRUARY 11 through 15, 1973

The Americana, New York City

SUNDAY THROUGH WEDNESDAY

SCIENTIFIC PROGRAM

SCIENTIFIC EXHIBITS

SCIENTIFIC MOTION PICTURES

TECHNICAL EXHIBITS

SUNDAY THROUGH THURSDAY

HOUSE OF DELEGATES

WEDNESDAY EVENING

PRESIDENT'S DINNER

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New York State **July 1–31, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

WGO-1

WHAT GOES ON IN MEDICINE

New Address:
Medical Society of the State of New York
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The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
August 1–31	June 10
September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25
November 1–15	September 10
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25

NEW YORK CITY AREA

July 1, 1972 / for Six Months

Brooklyn Eye and Ear Hospital

29 Greene Avenue
Brooklyn

CLINICAL FELLOWSHIP IN SURGERY OF THE CORNEA (Offered to applicants who have completed at least three years of residency training in ophthalmology)

For further information, please contact: A. BENEDICT RIZZUTI, M.D., Dir., of the Corneal Service, above address.

SATURDAY, JULY 1

10:00 a.m.

Staten Island Family Service

25 Victory Boulevard
Staten Island

HYPNOSIS IN GROUP PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
Institute of Human Relations

NO FEE OPEN TO PHYSICIANS

Contact: Sid Herling, MSW, above address

July 8 / August 5, 1972

9:00 a.m.—12:00 noon, Saturdays

Institute for Research in Hypnosis

140 West End Avenue, Suite 1 H

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JOHN G. WATKINS, M.D.
University of Montana

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July 8 / August 5, 1972

1:30–4:00 p.m., Saturdays

Institute for Research in Hypnosis

ADVANCED SEMINAR IN HYPNOTHERAPY AND HYPNOANALYSIS

JOHN G. WATKINS, M.D.

FEE: $175

FUTURE EVENTS

September 5 / 15, 1972

9:00 a.m.–6:00 p.m., Tuesday thru Friday

The Page and William Black Post-Graduate School of Medicine and the Department of Ophthalmology of the Mount Sinai Medical Center

Fifth Avenue at 100th Street

TEMPORAL BONE SURGERY

HARRY ROSENWASSER and SIMON C. PARISIER, M.D.'s
Mount Sinai School of Medicine

FEE: $600

(Course Repeated Monday, February 19, 1973 thru Saturday, March 2, 1973.

THURSDAY, SEPTEMBER 7

9:00–11:00 p.m.

Albert Einstein College of Medicine

The Forchheimer Building
First Floor Lecture Hall
1300 Morris Park Avenue
Bronx

PSYCHIATRY

GEORGE GOTTESMAN, M.D.

For information on this meeting, which is a session of the Annual Postgraduate Course in Family Practice, please contact Mrs. Frieda Fagin at the above address or telephone (212) 430-2822.

September 23 / 28, 1972

American Academy of Family Physicians

Hilton Hotel
Avenue of the Americas, 53rd–54th Streets

ANNUAL MEETING

Exec. Dir.: Mr. Roger Tusken, Volker Blvd. at Brookside, Kansas City, Mo. 64112

September 28 / October 2, 1972

International Forum of Psychoanalysis, IV

Hilton Hotel

Info: Gerard Chrzanowski, M.D., Chairman, 20 West 74th Street, New York, N.Y. 10023

September 30 / November 18, 1972

10:00 a.m.–5:00 p.m., seven Saturdays

Columbia University P & S

Department of Psychiatry
630 West 168th Street

MEDICAL HYPNOSIS (BASIC)

HERBERT SPIEGEL, M.D., with A. A. BRIDGER, M.D.

FEE: $175

For information, please write to:
MELVIN D. YAHR, M.D., Associate Dean, above address

BUFFALO AREA

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The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in five series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 A.M. on Tuesdays.
2. The monthly Pediatrics Conference from Children's Hospital sponsored by the Department of Pediatrics and presented on the second Friday of each month under the direction of Thomas Aceto, Jr., M.D.
3. The monthly series on trauma sponsored by the Division of Orthopedic Surgery, Department of Surgery, and presented on the fourth Thursday of each month under the direction of Eugene R. Mindell, M.D.
4. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.
5. A monthly series sponsored by Buffalo State Hospital to be presented under the direction of Dr. Desmond Moleski on the fourth Wednesday at 11:00 A.M.

LAKE GEORGE AREA

July 5 / 10, 1972

International College of Surgeons

United States Section
Sagamore Hotel
Bolton Landing, Lake George

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RENSSELAER COUNTY FUTURE EVENT

THURSDAY, SEPTEMBER 14

11:30 a.m.

Rensselaer County Academy of Medicine

UROLOGICAL PROBLEMS IN INFANTS AND SMALL CHILDREN

W. HARDY HENDREN, M.D.
Massachusetts General Hospital

OTHER STATES

July 16 / 19, 1972

American Association for Clinical Immunology and Allergy

Washington Plaza Hotel
Seattle, Washington

INTENSIVE, INSTRUCTIONAL COURSE IN CURRENT CONCEPTS IN ALLERGY AND CLINICAL IMMUNOLOGY

Additional information may be obtained from the above association at Post Office Box No. 912 DTS, Omaha, Nebraska 68101.

PHYSICIANS' PLACEMENT

MORAVIA, N.Y., Cayuga County. G.P.

CONTACT: WILLIAM M. FOSTER, Exec. Secty., Cayuga County Medical Society, 187 E. Genesee Street, Auburn, N.Y. 13021.

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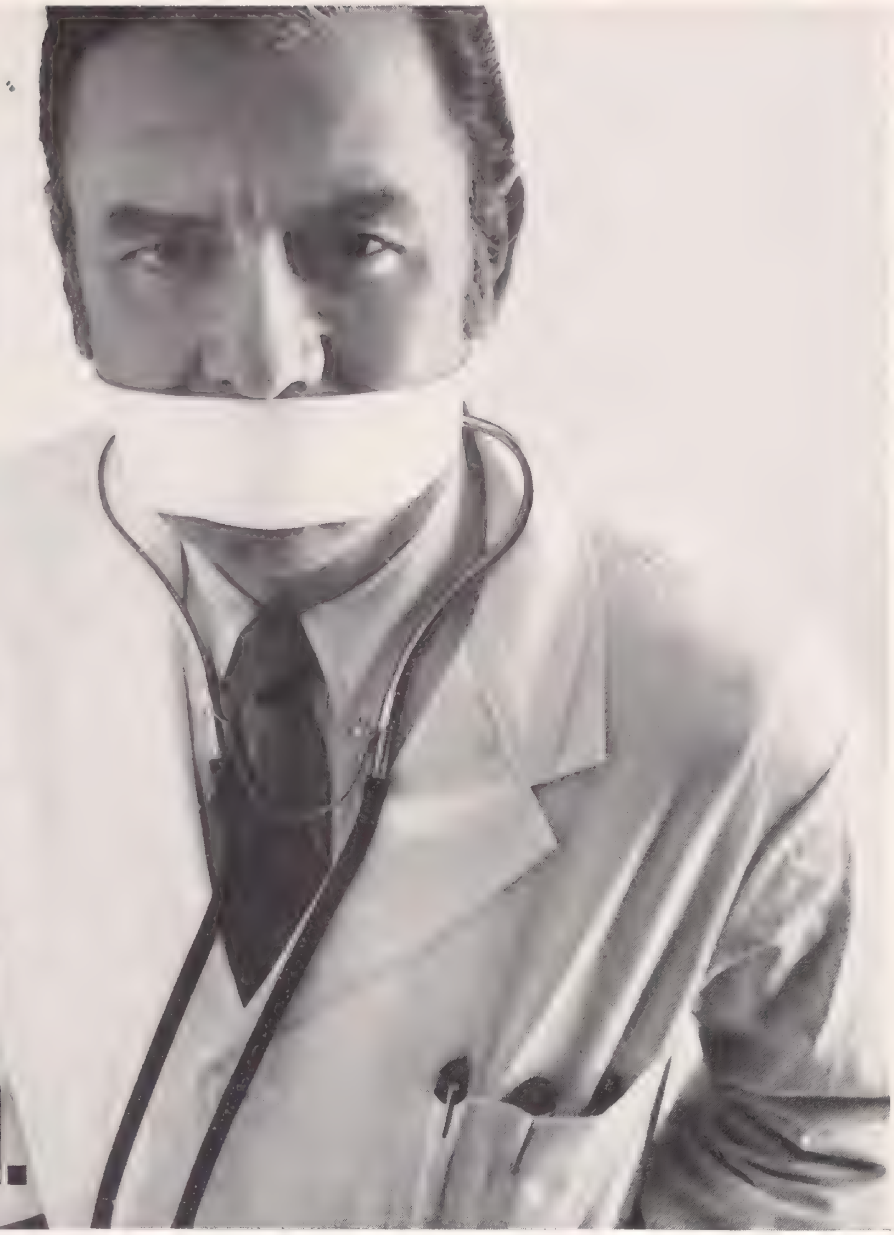

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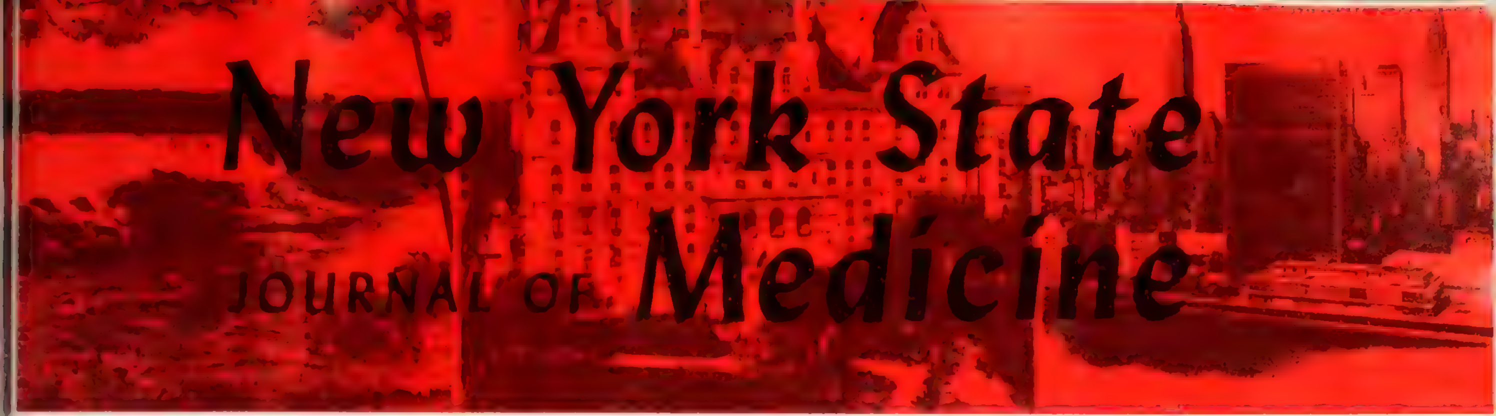

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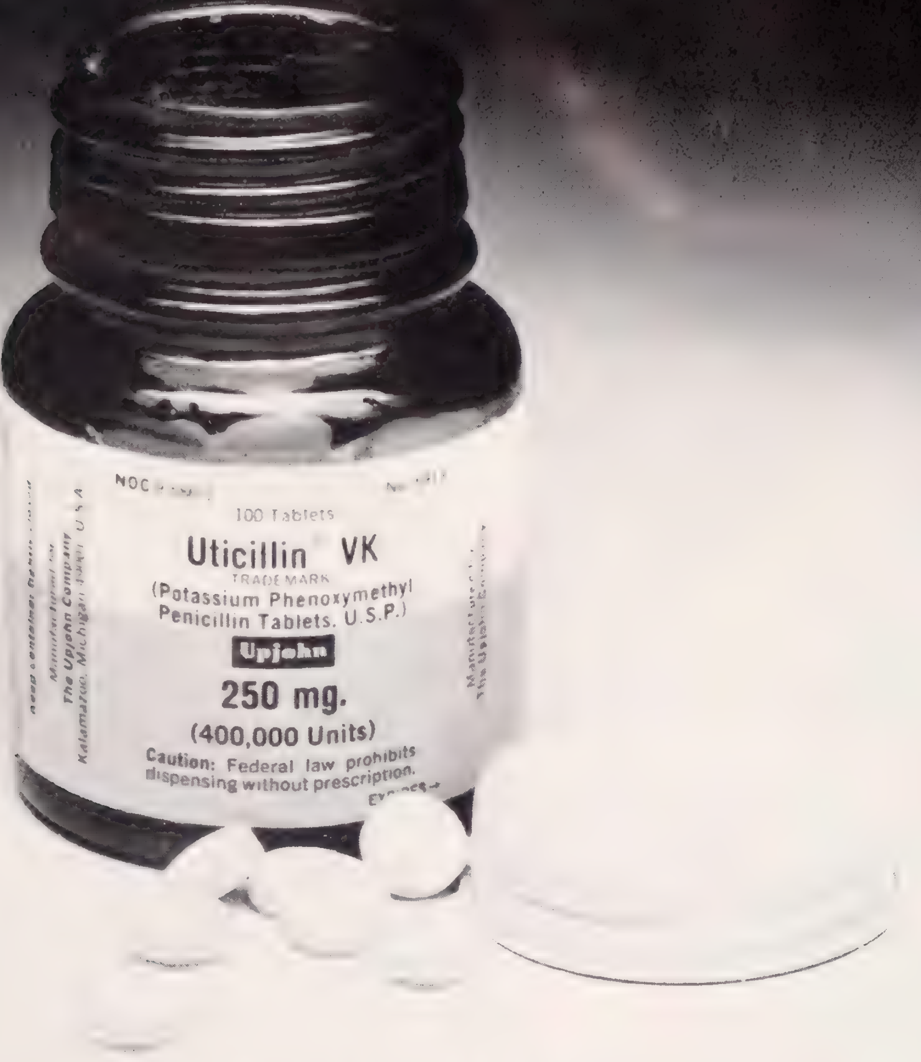
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Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving), and increase dosage gradually. Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension since phenothiazines may induce a reversed epinephrine effect on occasion. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

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The following reactions have occurred with phenothiazines and should be considered: *Autonomic Reactions*—Miosis, obstipation, anorexia, paralytic ileus. *Cutaneous Reactions*—Erythema, exfoliative dermatitis, contact dermatitis. *Blood Dyscrasias*—Agranulocytosis, leukopenia, eosinophilia, thrombocytopenia, anemia, aplastic anemia, pancytopenia. *Allergic Reactions*—Fever, laryngeal edema, angioneurotic edema, asthma. *Hepatotoxicity*—Jaundice, biliary stasis. *Cardiovascular Effects*—Changes in terminal portion of electrocardiogram, including prolongation of Q-T interval, lowering and inversion of T-wave, and appearance of a wave tentatively identified as a bifid T or a U wave have been observed with phenothiazines, including Mellaril (thioridazine); these appear to be reversible and due to altered repolarization, not myocardial damage. While there is no evidence of a causal relationship between these changes and significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients showing characteristic electrocardiographic changes while taking the drug. While proposed, periodic electrocardiograms are not regarded as predictive. Hypotension, rarely resulting in cardiac arrest. *Extrapyramidal Symptoms*—Akathisia, agitation, motor restlessness, dystonic reactions, trismus, torticollis, opisthotonus, oculogyric crises, tremor, muscular rigidity, and akinesia, occasionally persisting for several months or years especially in elderly patients with brain damage. *Endocrine Disturbances*—Menstrual irregularities, altered libido, gynecomastia, weight gain, false positive pregnancy tests. *Urinary Disturbances*—Retention, incontinence. *Others*—Hyperpyrexia; behavioral effects suggestive of a paradoxical reaction, including excitement, bizarre dreams, aggravation of psychoses, and toxic confusional states; following long-term treatment, a peculiar skin-eye syndrome marked by progressive pigmentation of skin or conjunctiva and/or accompanied by discoloration of exposed sclera and cornea; stellate or irregular opacities of anterior lens and cornea.

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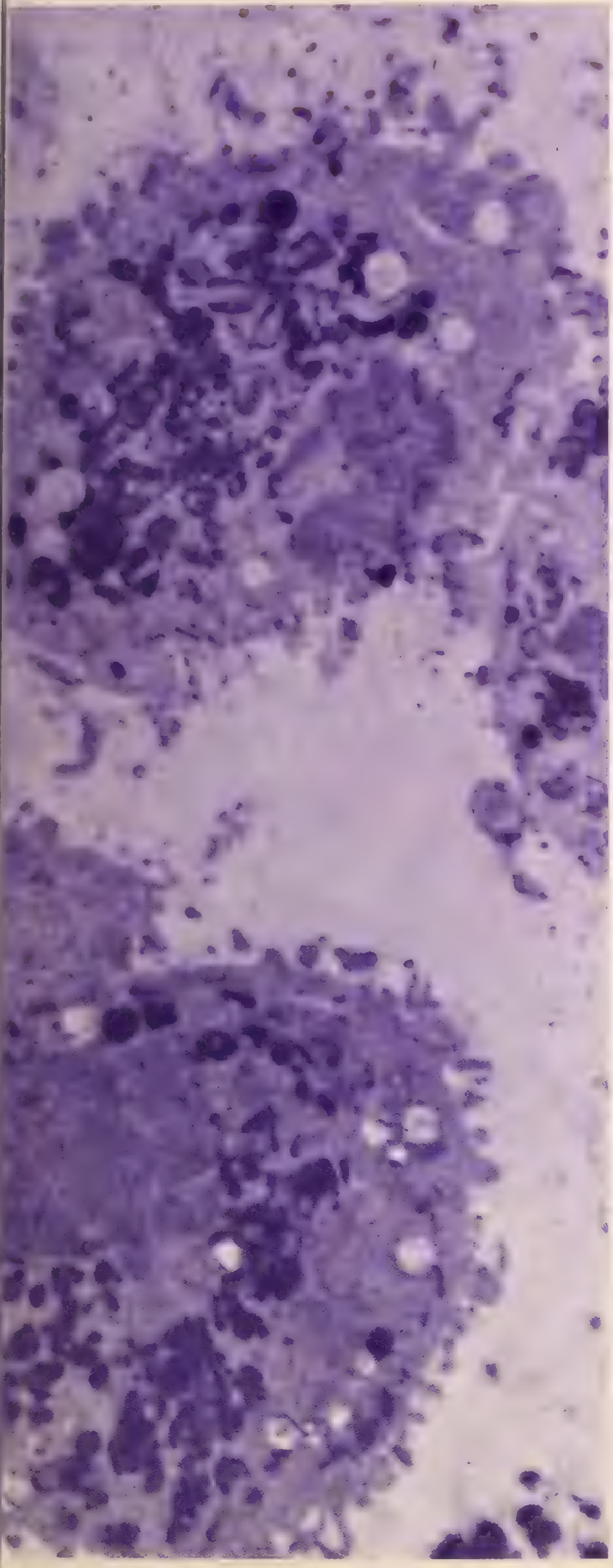

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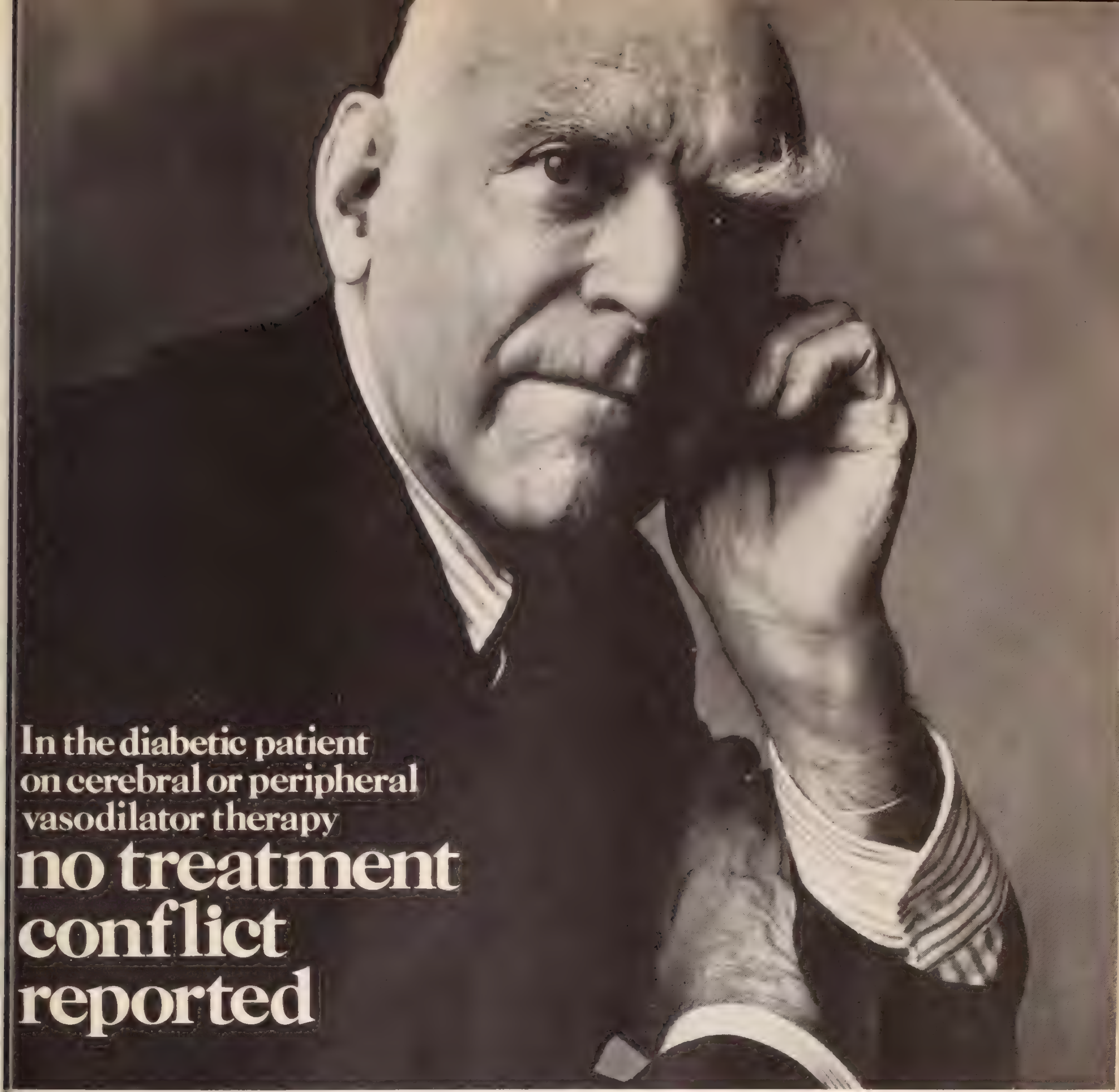
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Abstracts

Gursel, E. O., and Zinsser, H. H.: Thyrocalcitonin deficiency and urolithiasis; Preliminary report, *New York State J. Med.* 72: 1705 (July 1) 1972.

Recent discovery of a hormone, calcitonin or thyrocalcitonin, has suggested extensive revision of the physiologic concepts of calcium metabolism. Thyrocalcitonin may have an important role in the various forms of hypercalcemia, hypercalcinuria, and urolithiasis. The purpose of this preliminary report was to find a practical way of estimating thyrocalcitonin function and its relation to human urolithiasis. The study showed that determination of tubular reabsorption of phosphorus with the simultaneous determination of urinary calcium excretion can be useful in the differential diagnosis of hyperparathyroidism from thyrocalcitonin deficiency.

Zizmor, J., and Ganz, A. R.: Mucoceles of paranasal sinuses, *New York State J. Med.* 72: 1710 (July 1) 1972.

Thirty-one cases of mucoceles seen at the Manhattan Eye, Ear and Throat Hospital from 1966 to 1970 are reviewed. Twenty-two of the patients exhibited eye signs or symptoms. Other signs and symptoms are tabulated. The use of roentgenograms in the diagnosis of mucocele is discussed.

Abstracts in Interlingua

Gursel, E. O., e Zinsser, H. H.: Deficientia de thyrocalcitonina e urolithiasis; Reporto preliminari, *New York State J. Med.* 72: 1705 (1 de Julio) 1972.

Le recente discoperta de un hormona, le calcitonina o thyrocalcitonina, ha determinate un revision extensive del physiologia del metabolismo del calcium. Le thyrocalcitonina pote haber un rolo importante in le varie formas de hypercalcemia, hypercalciuria e urolithiasis. Le proposito de iste reporto preliminari es trovar un cammino practic pro estimar le function del thyrocalcitonina e su relation con le urolithiasis human. Le studio demostrava que le determination del reabsorption tubulari del phosphoro con le determination simultanee del excretion urinari del calcium pote esser utile in le diagnose differential del hyperparathyroidismo e del deficientia de thyrocalcitonina.

Zizmor, J., e Ganz, A. R.: Mucoceles del sinusos paranasal, *New York State J. Med.* 72: 1710 (1 de Julio) 1972.

Trenta-un (31) casos de mucocele viste al Hospital Manhattan Eye, Ear and Throat, de 1965 a 1970, esseva revistate. Vinti-duo (22) del patientes presentava signos o symptomas oculari. Altere signos e symptomas esseva tabulate. Le uso de roentgenogrammas pro le diagnose del mucocele es discutite.

Books Received

*The following books were received during the month of May, 1972.**

Contemporary Ophthalmology. Honoring Sir Stewart Duke-Elder. Edited by John G. Bellows, M.D., Ph.D. Quarto of 554 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $34.75.

Head Injuries. Proceedings of an International Symposium held in Edinburgh and Madrid 2nd to 10th April 1970. Sponsored by various departments of the United Kingdom and Spain. Quarto of 242 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $22.25.

Series Haematologica. Volume IV, 2, 1971. The Biochemical, Genetic, and Clinicopathological Aspects of Haptoglobin. By Jan Pintera. Quarto of 183 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $19.25.

Tropical Sprue and Megaloblastic Anaemia. Wellcome Trust Collaborative Study, 1961-1969 (London, England). Quarto of 318 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $18.

Transplantation Reviews Volume 7, 1971. Immunological Surveillance Against Neoplasia. Edited by Göran Möller, M.D. Quarto of 171 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $16.50.

Immunohematology. Second edition. By Chester M. Zmijewski, Ph.D., and June L. Fletcher, B.S., M.T. Quarto of 334 pages, illustrated. New York, Appleton-Century-Crofts, 1972. Cloth, $15.50.

Pfizer Medical Monographs 6. Control of Gonadal Steroid Secretion. Edited by David T. Baird, M.D., and Prof. J. A. Strong. Quarto of 304 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $15.50.

Hormonal Contraception. By Jürgen Haller, M.D. Translated from the 3rd German edition by Herbert Gottfried, Ph.D. Octavo of 314 pages, illustrated. Los Altos, California, Geron-X, Inc., 1972. Cloth, $13.

Obstetrics. By E. Stewart Taylor, M.D. Condensed from **Beck's Obstetrical Practice,** ninth edition. Quarto of 311 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $11.

Pharmacy, Drugs and Medical Care. By Mickey C. Smith, Ph.D., and David A. Knapp, Ph.D. Octavo of 278 pages, illustrated Baltimore, The Williams & Wilkins Company, 1972. Paper, $9.50.

Statistics in Small Doses. By Winifred M. Castle, M.B., B.S. Octavo of 216 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $9.50.

Essentials of Artificial Ventilation of the Lungs. By A. R. Hunter, M.D. Octavo of 95 pages, illustrated. Third edition. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $7.75.

An Introduction to Clinical Research. By W. P. Small, V.R.D., Ch.M., and Urban Krause, M.D. Octavo of 125 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $7.75.

Introduction to Electrocardiography: Second edition. By Thomas M. Blake, M.D. Octavo of 218 pages, illustrated. New York, Appleton-Century-Crofts, 1972. Cloth, $7.50.

Handbook of Obstetrical and Gynecological Data. By Robert C. Goodlin, M.D. Duodecimo of 526 pages, illustrated. Los Altos, California, Geron-X, Inc., 1972. Paperback, $7.00.

Clinical Obstetrics and Gynecology. Volume 14 Number 4, December 1971. Gynecology of Adolescence. Guest Editor, John W. Huffman, M.D. **Implementation of Legal Abortion: A National Problem.** Guest Editor, Gerald B. Holzman, M.D. Octavo, illustrated. New York, Harper & Row, Publishers, 1972. Published quarterly (four numbers a year). Cloth, $22. per year.

The Medical Clinics of North America. Volume 56 Number 3, May 1972. Symposium on Therapeutic Problems. Guest Editor, Henry E. Zellmann, M.D. Octavo, illustrated. Philadelphia, Pa., W. B. Saunders Company, 1972. Published bimonthly (6 numbers a year). Cloth, $21. per year.

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*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
>
> *– George Sarton, from "The History of Medicine Versus the History of Art"*

Would it be useful in clinical practice to have government predetermine drugs of choice?

Opinion

Results of a survey of physicians:

13.3%
Yes, it would be useful.

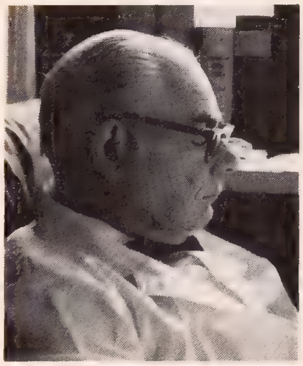
86.7%
No, it would not be useful.

Dialogue

Would it be useful in clinical practice to have government predetermine drugs of choice?

Doctor of Medicine

Walter Modell, M.D.,
Professor of Pharmacology,
Cornell University
Medical College,
Editor,
Clinical Pharmacology
& Therapeutics,
Drugs of Choice,
Rational Drug Therapy



The proposition that government should determine one or two "drugs of choice" within a given therapeutic class reflects the belief that a similarity in molecular structure insures a close similarity in pharmacologic effect. But this is by no means the rule. An obvious example would be in the field of diuretics, where a small change in chemical structure accounts for substantial differences in concomitant effects such as potassium excretion.

Any attempt to dictate the "drug of choice" would be complicated by the fact that some populations demonstrate a bimodal distribution in their reaction to drugs. If the data on drug response are mixed for the total population, one drug will appear to be as useful as the other. But if drug response is reported separately for different segments of the population, drug A will be found to be better for one group and drug B for the other.

It may, of course, be possible to determine drugs of choice in particular categories on a broad statistical basis. But there are always certain patients in whom a drug produces odd, unpredictable or idiosyncratic reactions. So, though a drug might statistically be the most useful one in a given situation, individual variations in response might make it the *incorrect* one.

The point I wish to make is that if two, three, four or more drugs in one class are of approximately equal merit, that in itself is justification for their availability. Exceptional cases do arise in which one drug would be useful to a certain segment of the population and another drug would be of no use at all. In the practice of medicine, the physician must be prepared to treat the routine as well as the unusual case.

Another objection to the determination of a drug of choice is that precise statements of *relative* efficacy are very difficult to make—much more difficult than statements of efficacy. For example, in testing drug efficacy, it is easy to determine the difference between a drug that is effective in treating a condition and one that is not at all effective. Thus, it is fairly easy to determine whether a drug is more effective than a placebo. But if you compare one drug that is effective with another drug that is also effective, and the relative differences between them are very slight, statements of relative efficacy may be very difficult to make with assurance.

I do not mean to imply that relative efficacy statements are not useful or can never be made. With some groups of drugs (e.g., analgesics), extensive study and precise methodology have yielded useful information on relative efficacy. But in most situations, such information can be acquired only through studies encompassing three to five years of use in many more patients than are used to compare drugs with a placebo for the introduction of a drug into commerce. It is really only after practitioners use a drug extensively that relative safety and efficacy in practice can really be determined.

The Bureau of Drugs has suggested the package insert as a possible means of communicating information on relative efficacy of drugs to the physician. I find this objectionable, since I do not believe the physician should have to rely on this source for final scientific truth. There is also a practical objection: Since few physicians actually dispense drugs, they seldom see the package insert. In any event, I would maintain that the physician should know what drug he wants and why without depending on the government or the manufacturer to tell him.

Undoubtedly, physicians are swamped by excessive numbers of drugs in some therapeutic categories. And I am well aware that many drugs within such categories could be eliminated without any loss, or perhaps even some profit, to the practice of medicine. But, in my opinion, neither the FDA nor any other single group has the expertise and the wisdom necessary to determine the one "drug of choice" in all areas of medical practice.

Maker of Medicine

enneth G. Kohlstaedt, M.D.,
Vice President,
Medical Research,
Eli Lilly and Company

In my opinion, it is not
he function of any govern-
ent or private regulatory
gency to designate a "drug
f choice." This determina-
on should be made by the
hysician after he has re-
eived full information on
he properties of a drug,
nd then it will be based on
is experience with this
rug and his knowledge of
he individual patient who
seeking treatment.

If an evaluation of com-
arative efficacy were to be
ade, particularly by gov-
rnment, at the time a new
rug is being approved for
arketing, it would be a
reat disservice to medi-
ne and thus to the patient
the consumer. For exam-
le, when a new therapeu-
c agent is introduced, on
he basis of limited knowl-
dge, it may be considered
be more potent, more
ffective, or safer than
roducts already on the
arket. Conceivably, at
his time the new drug
ould be labeled "the drug
f choice." But as addi-
onal clinical experience is
ccumulated, new evidence
ay become available.
ater, it may be apparent that the established products should not be so easily dismissed.

Variation in patient response to drugs constitutes one of the major obstacles to the determination of "drugs of choice." We are just beginning to open the door on pharmacogenetics, but it is evident that genetic differences cause wide variations in the way drugs are absorbed, metabolized, etc. This fact alone is sufficient to make unrealistic the idea that there is one drug in each class to be used for every human being.

The problem of determining relative drug efficacy is an extremely complicated one. Comparison with other drugs of the same class should not be a prerequisite for marketing a new substance. In some therapeutic areas, it may be difficult to make accurate comparisons. For example, in the treatment of infections it is not possible to conduct crossover studies. Recovery may be influenced by factors which cannot be controlled or measured, i.e., natural host resistance and virulence of infective agents. A drug's acceptability must often be judged on the basis of its own performance, and this may be limited to experience in a relatively small patient population. If the introduction of a new drug must await the adequate establishment of relative efficacy, the duration of clinical trial and extent of studies would be greatly prolonged, particularly for rare or unusual conditions. The availability of a new drug would be delayed. Many patients might suffer needlessly and lives might be lost.

Relative efficacy can best be established by experience in a general patient population through regular channels of clinical practice. The physician considers the patient as a whole, which means the patient often has multiple problems and drugs must be selected with this in mind. Hence, a "drug of choice" in an uncomplicated case may not be the best drug for a patient with associated problems. Publication of well-controlled studies in medical journals may provide comparative evidence; discussions at medical meetings, presentations at postgraduate courses, and the new audio-visual technology may bring evidence to physicians on comparative therapy. In a free medical marketplace, a drug that does not measure up will fall into disuse. For example, broad clinical experience has established vitamin B_{12} as the "drug of choice" for the treatment of primary pernicious anemia. No amount of advertising or promotional effort by the manufacturer could increase the use of liver extract for this anemia. However, a physician may wish to employ parenteral liver preparations for a special purpose.

In the field of surgery, peer review in the hospital has brought significant improvement in the use of new techniques and procedures. Something of this nature would be useful in the area of drug therapy. However, it should be developed by the medical profession itself and would necessitate, for its proper function, an improvement in the dissemination of reliable data on clinical pharmacology of drugs under consideration.

Ideally, information on the relative efficacy of drugs should be gathered and assessed by the physicians who actually administer the specific agents to a specific patient population. To do this, they will need even more information on the drugs they use – information that the pharmaceutical manufacturers must begin to provide if government regulation of *"drugs of choice"* is to be avoided.

Opinion & Dialogue

What is your opinion, doctor?
Send us your comments on the above issue.

P·M·A

The Pharmaceutical Manufacturers Association
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Book Notes

Hermaphroditism, Genital Anomalies and Related Endocrine Disorders. Second edition. By Howard W. Jones, Jr., M.D., and William Wallace Scott, M.D., Ph.D. Quarto of 564 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $33.50.

As the last decade has witnessed more understanding of the anomalies of sexual differentiation than any other ten-year span in all of history, a new edition of this work was deemed necessary. Except for the historical chapter, the entire book has been rewritten.

An Atlas of Anatomy. Sixth edition. By J. C. Boileau Grant, M.C., M.B. Quarto, 665 illustrations depicting the structures of the human body. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $23.50.

This collection of illustrations depicts the structures of the human body, region by region, in much the same order as the student displays them by dissection. The observations and comments that accompany the illustrations are designed to attract attention to salient points that might otherwise escape notice and are not intended to be exhaustive.

Pharmacognosy. Tenth edition. By George Edward Trease, B.Pharm., and William Charles Evans, B.Pharm. Octavo of 795 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $23.

As the authors believe that the recognition of plants in the whole or powdered states and their accurate description is an important part of pharmacognosy, the first two sections of this work are predominantly botanical. As in the past, this new edition has undergone extensive revision.

Textbook of Orthopaedic Medicine. Volume Two. **Treatment by Manipulation, Massage and Injection.** Eighth edition. By James Cyriax, M.D. Octavo of 432 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $19.50.

To the description of manual methods contained in the previous editions of this book has been added equal consideration of standard injection technics. As a consequence, manipulation, traction, injections, and deep friction are set out in one volume.

Strategy of the Viral Genome. A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Octavo of 406 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $15.75.

The purpose of this symposium was threefold: To recognize the different types of information coded by viruses, to comprehend why some types of information may be needed by some but not all groups of viruses and, finally, to discern an overall viral genome strategy for rational groupings of viruses.

ECG Diagnosis. Self Assessment. By Edward K. Chung, M.D., and Donald K. Chung, M.D. Octavo of 221 pages, illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1972. Paperback, $12.95.

The purpose of this book is not to discuss in depth various electrocardiographic findings. The primary intention of the authors is to describe common electrocardiographic abnormalities which are frequently encountered in daily practice. The arrangement of the text and illustrations is based on the authors' experiences in teaching medical students and physicians with various backgrounds.

Cell Structure. An Introduction to Biological Electron Microscopy. Second edition. By Peter G. Toner, B.Sc., M.B., and Katharine E. Carr B.Sc., Ph.D. Quarto of 255 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $10.75.

The micrographs produced to illustrate this book testify to the progress made in the field of electron microscopy since the early 1950's. The common denominators of cellular structure and the structural adaptations concerned with transmission, conduction, and contraction are emphasized.

Identification of Asthma. Ciba Foundation Study Group No. 38. Edited by Ruth Porter and Joan Birch. Duodecimo of 179 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $8.25.

The announced aim of this symposium was to define asthma more precisely, as much confusion still exists between this respiratory ailment and others of a similar nature. The papers presented deal with a variety of relevant aspects of the subject, including diagnosis, pathology, physiology, and therapy.

Radiology. For General Practitioners and Medical Students. Second edition. By David Sutton, M.D. Octavo of 101 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $6.50.

This work provides a survey of modern diagnostic radiology for the medical nonspecialist. The author hopes that this will prove as useful to the medical student as to the general practitioner.

Fundamentals of Athletic Training. A Joint Project of the National Athletic Trainers Association, the Athletic Institute, and the Medical Aspects of Sports' Committee of the American Medical Association. Octavo of 128 pages, illustrated. Chicago, Illinois, American Medical Association, 1971. Paper, $2.00.

In this manual will be found the guidelines for the organization and administration of an athletic program, principles of physical fitness, nutrition, communicable disease control, and physical therapy. It should be very useful for those taking on responsibilities in athletic training and might well be an inspiration for many to continue in this field as a career.

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NEOSPORIN for topical infections due to susceptible organisms, as in impetigo, surgical after-care, and pyogenic dermatoses.

Precaution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

Contraindications: Not for use in the external ear canal if the eardrum is perforated. These products are contraindicated in those individuals who have shown hypersensitivity to any of the components.

Complete literature available on request from Professional Services Dept. PML.

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Medical News

New drug order forms issued

After May 1, 1972, only Bureau of Narcotics and Dangerous Drugs Official Order Forms will be valid for transactions involving Schedule I and II controlled substances. Any physician may obtain the new forms by forwarding the old-type IRS order form requisition (IRS Form 679) to the Registration Branch, Bureau of Narcotics and Dangerous Drugs, P. O. Box 28083, Central Station, Washington, D.C. 20005.

The registrant's complete, 9-digit Bureau of Narcotics registration number must be shown on the form in order that it may be processed. IRS Form 679 will not be honored as a valid requisition for official order forms after April 30, 1972. Any registrant who does not have an IRS requisition, and who wants new order forms, must complete form BND 222D and send it to the Registration Branch. BND 222D forms may be obtained from the Registration Branch or any regional office of the Bureau of Narcotics.

Lasdon gift enables Cornell to increase enrollment

In a move to help meet the urgent need for more doctors and other health care personnel, the estate of the late Jacob S. Lasdon has given $2 million for the construction of an apartment residence for students of the Cornell University Medical College, Graduate School of Medical Sciences, and the Cornell University-New York Hospital School of Nursing, all of which are components of the New York Hospital-Cornell Medical Center.

The building will be called The Jacob S. Lasdon House. Jacob S. Lasdon was prominent as a philanthropist and patron of the arts; he and his brothers have been active in the support and encouragement of medical research, the arts, education, and other charitable activities.

Dialysis patient becomes M.D.

The first hemodialysis patient to be accepted as a medical student, received an M.D. degree from State University of New York Downstate Medical Center. Peter Lundin has been a "100-per cent survivor" of chronic kidney disease for the past six years.

In December, 1965, he had two alternatives: either get a kidney transplant or die. The first was impossible; he had no relative who would make a suitable donor, and cadaveric transplants were still experimental with poor results. And what twenty-one-year old person would take the second possibility seriously, without putting up a fight, particularly since he would not give up the goal he had cherished for most of his growing years: to become a doctor.

Material for inclusion in the medical news section must be received six weeks prior to publication date.

X-ray use for screening purposes

The Commissioner of the New York State Department of Health, Hollis S. Ingraham, M.D., stated that progress in tuberculosis control has made it possible to reduce chest x-ray programs in New York State. Three departmental tuberculosis clinics and Homer Folks TB Hospital in Oneonta began discontinuing "walk-in" and "survey" x-ray examinations last fall, and several other health jurisdictions in the State have done likewise.

"X-ray facilities will still be available at health departments and will be used where indicated for individual patients or special groups," Dr. Ingraham added.

Primary testing of persons under twenty-one years old will be done with skin tests. Those who show a positive reaction will then undergo x-ray examination. X-ray studies will still be used for selective screening in areas where a high incidence of tuberculosis has been recorded. X-ray surveys for detection of other lung or heart disease has proved unrewarding.

Dr. Ingraham said he endorsed the recent joint policy recommendation of the U.S. Department of Health, Education, and Welfare; the American College of Chest Surgeons, and the American College of Radiology which advocates sharply reduced use of x-rays as a means of screening for cardiopulmonary disease.

Personalities

Appointed. Paul F. Griner, M.D., Rochester, to the Samuel E. Durand Chair in Medicine, at the University of Rochester School of Medicine and Dentistry. . . Morrell M. Avram, M.D., clinical assistant professor of medicine, Downstate Medical Center, as chairman of the membership committee, New York State Society of Nephrology. . .Lee R. Lumpkin, M.D., chief of dermatology service, Wilford Hall USAF Medical Center, Lackland Air Force Base, Texas, as chief of the medical specialty division of dermatology, Albany Medical Center. . .Worthington G. Schenk, Jr., M.D., Buffalo, as chairman of the Department of Surgery, School of Medicine, State University of New York at Buffalo.

Elected. Norman Sher, M.D., clinical assistant professor of psychiatry, Downstate Medical Center, as treasurer of the Brooklyn Psychiatric Society. . .Julius E. Stolfi, M.D., clinical professor of medicine, Downstate Medical Center, as vice-president of the American College of Physicians.

Named. Hans Popper, M.D., New York City, as acting president and acting dean of the Mount Sinai School of Medicine of the City University of New York . . .Eugene V. Leslie, M.D., Buffalo, as chairman of the Department of Radiology, School of Medicine, State University of New York at Buffalo.

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***Indications:** Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. Also, mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (> 5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently** — both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

Supplied: Bottles of 100 capsules.

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Carolina, P.R. 00630
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IN EDEMA*—IN HYPERTENSION*

Books Reviewed

The Human Adrenal Cortex. With 23 authors. Edited by Nicholas P. Christy, M.D. Quarto of 552 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $25.

This book on the adrenal cortex edited by Dr. Christy includes a review of the major aspects of the endocrinology of this endocrine gland by scientists eminently qualified to do this. While the book itself is thereby an asset to the library of any medical school, it suffers from the inordinate length of time (seven years) taken in its preparation. Most references are only up to 1969 and some of the terminology (TPN, DPN) is outmoded. There are some excellent chapters, particularly Peterson's on the "Metabolism of Adrenal Cortical Steroids" and the chapter on "The Adrenogenital Syndrome" by Root, Bongiovanni, and Eberlein. There are some historic additions to our knowledge including Jane Austin's having Addison's disease and a report in Russian of Cushing's syndrome!

It should provide a useful source of reference to most aspects of adrenal cortical function. **Elaine B. Feldman, M.D.**

The Anatomical Basis of Medical Practice. By R. Frederick Becker, Ph.D., James W. Wilson, Ph.D., M.D., and John A. Gehweiler, M.D. Quarto of 907 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $23.50.

There is no doubt that the authors of this latest contribution to the field of gross anatomy textbooks have made innovations which set this book apart from others in this field. The emphasis on surface anatomy featuring numerous illustrations of "playboy type" female models and the occasional breezy and even spicy style of writing are certain to attract the attention, although not necessarily the acclaim, of all readers.

Although this is a good size book, the extensive use of photographs, radiographs, and drawings greatly reduce the volume of text material. It is a regional book which certainly does not compare favorably with other more conventional texts as a complete reference book.

The authors are certainly to be commended for the excellent incorporation of radiographic anatomy into the text and illustrations. This alone should make this book attractive for use in medical gross anatomy courses. Furthermore, the incorporation of embryology and frequent reference to clinical applications of the importance of an understanding of gross anatomy will make this text readily adaptable to many modern courses.

The text is written in a readable style but at times tends to ramble. This may make it difficult for the reader to locate hard facts but this problem is offset to some degree by the frequent use of summary tables which are typical of review texts.

Only time will tell whether this new approach to a frequently dull subject will be acceptable to a large number of gross anatomy faculty, but it seems likely that most medical students will find it attractive. **George B. Talbert**

Cardiology: A Clinicophysiologic approach. Edited by Stephen M. Ayres, M.D., and John J. Gregory, M.D. Quarto of 667 pages, illustrated. New York, Appleton-Century-Crofts, 1971. Cloth, $15.

This book is a survey of the usual topics included in most textbooks on the subject, and attempts a physiologic ("deductive") approach to diagnosis and an empiric approach to treatment. The authors are all on the staff of the Saint Vincent's Hospital, and while some are well-known and experienced, others are apparently still in training or recently have completed their specialization. The proposed readership is noncardiologist internists, students, and cardiac nurses.

The major failing of this book, and it is a significant one but by no means unique to this text, is incompleteness: the attempt to write for the nonspecialist leads too often to a superficial approach to the subject by putting in a smattering of physiologic principle unsupported by didactic or interpretive material. Thus, selective angiocardiography in the diagnosis of intracardiac shunts receives a small, noninformative paragraph; the technics of cardiac catheterization are covered satisfactorily, but the clinically useful information which is obtained (or, more important, which is not obtainable) are ignored; vectorcardiographic loop genesis and interpretation are discussed, but the value of this technic vis-a-vis the electrocardiogram is not emphasized. Thus, as with many other books, the nonspecialist reader is left with the impression of a large variety of complicated methods available to solve "all" his problems, but he is left without the information necessary to select intelligently the appropriate investigation, or to understand the data when it is returned to him by the consultant or the laboratory.

The book is more manageable in size and readability than some compendia. The text is clear, the pictures of x-rays rather good, and some useful diagrams are included. It may usefully serve as an introductory volume for junior students and nurses. **Norman Krasnow, M.D.**

Coeliac Disease. Proceedings of an International Conference held at the Royal Postgraduate Medical School, London, 1969. Edited by C. C. Booth, M.D., and R. H. Dowling, M.D. Octavo of 252 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1970. Cloth, $14.

As a major effort toward establishing the close relationship between celiac disease of children and the syndrome of fat intolerance in adults, toward eliciting a more accurate definition of the combined entity and toward epitomizing the most advanced knowledge of this condition, an international conference was convoked at the instance of the Coeliac Trust and the Coeliac Society, both of Great Britain, with supportive assistance of the Milne Research Co., Limited, the Gerber Group of Brown and Polson, and the Sandoz Co. of New Jersey, U.S.A.

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As guest speakers the foremost investigators of the disease from England, Scotland, Ireland, Canada, Denmark, Finland, France, Germany, Holland, Italy, Sweden, Switzerland, and the United States delivered formal addresses and enlightening discussions. This volume contains the abridged edited essays and discussions.

The initial paper explores the pertinent chemistry of wheat and more particularly that of gluten, the wheat protein factor which has the reputation of causing the molecular damage underlying celiac disease. The essays and discussions which follow reflect the knowledge which has accumulated from the application of the most advanced technics to the problems of the disease.

In spite of the use of enzyme and molecular chemistry, chromatography electrophoresis, immunoreactive technics, and electromicroscopy no real breakthrough seems to have been attained. Each discipline has added interesting facts toward understanding the disease but the primary etiologic factor has not been demonstrated.

A few noteworthy observations are the following: As a matter of light microscopy it has been found important to examine a generous series of sections from each biopsy specimen. Otherwise false diagnoses of partial mucosal atrophy and lymphocytic infiltration will result. Dermatitis Herpetiformis has been reputed to have jejunal lesions similar to celiac disease. However, careful studies have now found that the intestinal atrophy is really caused by a complicating celiac disease. Perforating ulcers of the jejunum as result of the pathology of fat intolerance of adults may require prompt surgical intervention. Intestinal lymphoma and carcinoma of the esophagus have a statistically significant relationship to adult celiac disease.

The information provided by this conference is important. It is the platform from which advancing studies will be built. **Kenneth G. Jennings, M.D.**

The Psychiatric Interview in Clinical Practice. By Roger A. MacKinnon, M.D., and Robert Michels, M.D. Octavo of 473 pages. Philadelphia, Pa., W. B. Saunders Company, 1971. Cloth, $12.50.

This guide to a psychiatric interview (with all of its inherent complexities) becomes indeed a practical and helpful tool through which medical students, psychiatric residents, paraprofessional aides as well as seasoned therapists can all profit.

Psychodynamics is offered in the framework of psychoanalytic theory, yet is nevertheless presented in a manner which avoids many of its persistent controversies. Specific variations produced by different types of patients are presented; nevertheless, the reader is left with the conviction that each patient is unique and that the therapist must utilize his own reactions to really reach the patient who is emotionally disturbed.

Major clinical syndromes considered include the obsessive patient, the hysterical patient, the phobic patient, the depressed patient, the schizophrenic, the paranoid patient, the sociopath, and the patient with an organic brain syndrome. Clinical features, thought processes, behavior, psychodynamics, as well as man-

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Alfred A. Angrist, M.D., Editor

It is the purpose of this editorial to introduce our new editor, Alfred A. Angrist, M.D., to the readers of the ***Journal.*** Those who are members of the Medical Society of the State of New York know him well for his hard work, diligence, and faithful attendance as a member and chairman of committees, as a member of the House of Delegates, and as an officer. Those of you who have been affilated with the institutions at which he worked, particularly the Albert Einstein College of Medicine, know him well as a brilliant educator, who displayed the rare combinations of humility and knowledge, of compassion and efficiency, and of devotion to students and love of humanity. Those of you, who have been exposed to his scholarly contributions to medical literature, know him as a thinker and investigator. Those of you, who have yet to have initial contact with him in the pages of this ***Journal,*** can look forward to a worthy successor to his predecessors.

During the past generation, the ***New York State Journal of Medicine*** has flourished under the editorial direction of George Kosmak, M.D., Laurance Redway, M.D., and William Hammond, M.D. As a member of the Publications Committee during the tenure of Doctors Redway and Hammond, I have had some acquaintance with the problems faced by the ***Journal.*** The editorship has been primarily a labor of love. The dedication of the editorial staff has been an inspiration to all associated with the ***Journal,*** and has been responsible for its recognition as an important medical publication, which has done credit to the medical society of the great Empire State.

When Dr. Hammond indicated his desire to retire on July 1, 1972, the Council, which is responsible for the ***Journal,*** in accordance with the Bylaws of the Society, appointed an Ad Hoc Committee to search for a successor. This was not an easy task. After careful study of the credentials of suitable candidates and much soul searching, the committee recommended the appointment of Dr. Angrist. This appointment has been approved by the Council and by the House of Delegates.

It has been my good fortune to have known our new editor for many years. On many occasions I have had the opportunity to watch him battle courageously for those things which he believed were right. Invariably, they reflected a sincere concern for the best interests of the physician and the patient. Recent developments, which have threatened the independence of the physician, were recognized by him early. They disturbed him and he crusaded in attempts to interest young physicians in organized medicine.

When the Albert Einstein College of Medicine was founded, Dr. Angrist was appointed professor and chairman of the Department of Pathology. His students, many of whom are now distinguished teachers in their own right, testify to the exceptional enthusiasm, integrity, and ability of our new editor in academic medicine.

We live in an age of accelerated change in the philosophy of medicine, in medical college curriculae, in the priorities given to research, in the role of medical students and medical faculty, and in the methods of delivery of medical care. The town-gown schism, the increase in the number of full time physicians, the altered relationship of the physician to the hospital with increased lay control of medical policy and emasculation of medical boards, the growth of group practice, the growth of third party domination of medical economics, and the rapid expansion of governmental regulation, are some of the important problems that involve all of us. In this era of accelerated change, we are fortunate to have as editor, a man who is both an idealist and a realist, who is well acquainted with the problems involved, and who has earned the respect and trust of the academic community, the physician in practice, and the representatives of third parties and government. Under his direction, our readers can look forward to further development of our ***Journal*** as a scientific publication of superior stature, and as a worthy image of a medical society, which has passed its sesquicentennial birthday in service to its members, to the medical world, and to the patients above all for it is their welfare, which is the ultimate goal of all our efforts.

Albert H. Douglas, M.D.
Chairman, Publication Committee

An Appreciation of Interlingua

Interlingua, the international scientific language, which the late Alexander Gode, Ph.D., was instrumental in developing seems to be serving its purpose. We have used it for the abstracts of our scientific articles for the past ten years. Dr. Gode did the translations until the time of his death. Since then, Eduardo I. Juliet, M.D., has carried on. We print here a letter received by Dr. Juliet from a specialist in internal medicine in Switzerland, with its translation.

Dr. med Hugo Fischer
Spezialarzt FMH für innere Medizin
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Sr. Eduardo Juliet, M.D., Ashford Av., New York

Car Sr. Collega:
Con placer io apprende que per vostre initiativa appare in ***New York State Journal of Medicine,*** Summarios in Interlingua. Isto non es *JAMA?* Nos in Europa son felice vider de novo un certe activitate in America, e io specialmente, vider lo in le campo del medicina.
Io serea multo grate reciper per vos altere signos de activitate in USA. Mi personal activitate es in le campo del scolas superior, ubi le officiales cerca e labora a reformas, ubi le latino classic es in regresso e nostre "latino vivente" de natura deberea prender su posto. Le officiales es poco disposte, alteres vide melio le justification de Interlingua.
Io serea felice audir de vos e saluta vos
(signed) cordialmente, Hugo Fischer

Hugo Fischer, M.D.
Specialized in Internal Medicine
Switzerland

Eduardo Juliet, M.D.
501 Ashford Avenue
Ardsley, New York 10583, USA

Dear Colleague,
With pleasure I learned that due to your initiative summaries in Interlingua appear in the ***New York State Journal of Medicine.*** Isn't that *JAMA?* We, in Europe, are happy to see again certain activity in America, and especially to see this in the field of medicine.
I would be very grateful to know through you of other signs of activity in the U.S.A. My personal activity is in the field of higher schools where the officers are working on reforms where the classic Latin is regressing, and our natural "living Latin" should take its place. The officers are not too enthusiastic and others are looking for the justification of Interlingua.
I would be happy to hear from you, and I am greeting you

Cordially,
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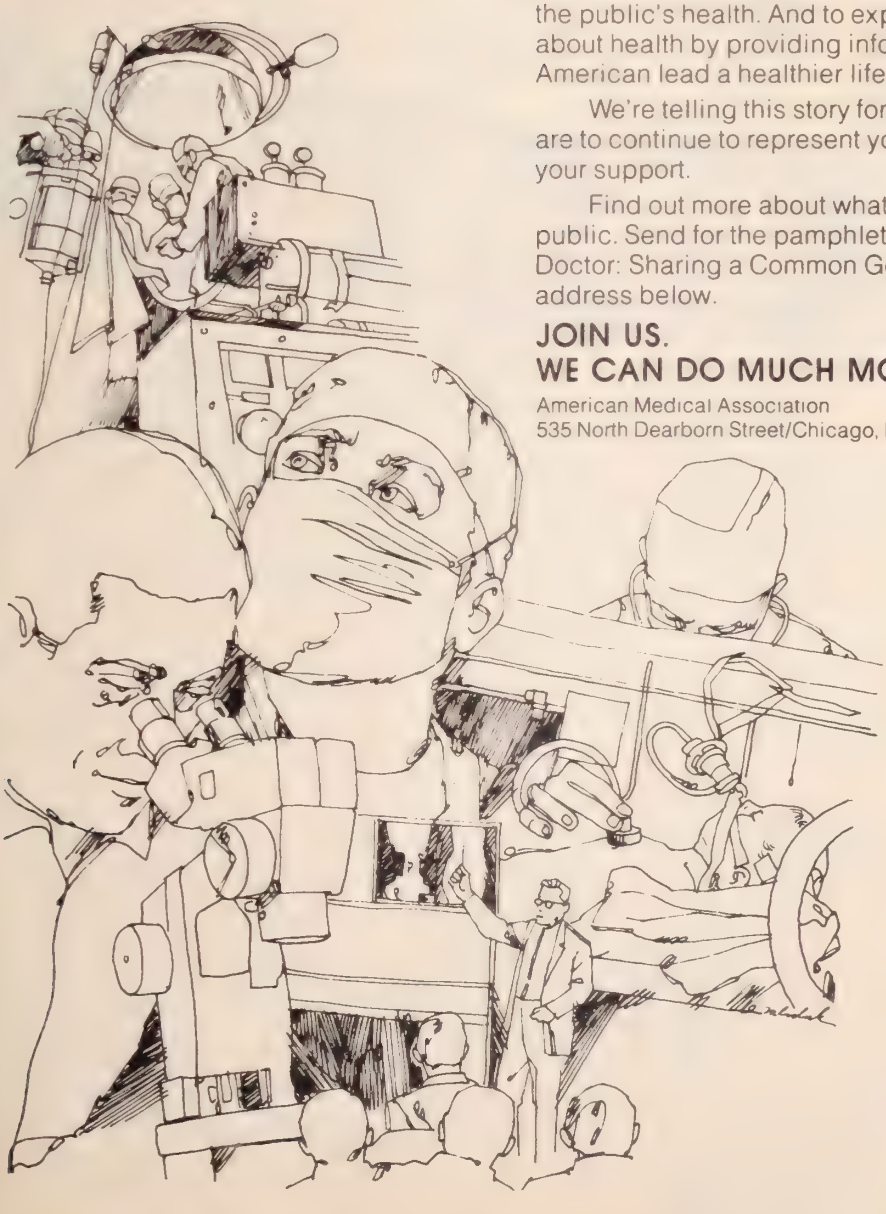

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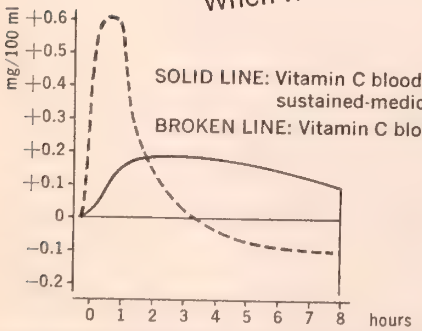

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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THYROCALCITONIN DEFICIENCY AND UROLITHIASIS

Preliminary report.*

EROL O. GURSEL, M.D.
New York City
HANS H. ZINSSER, M.D.
New York City

From the Department of Urology, Columbia University, College of Physicians and Surgeons

Recent discovery of a hormone, calcitonin or thyrocalcitonin, has suggested extensive revision of the physiologic concepts of calcium metabolism. Thyrocalcitonin may have an important role in the various forms of hypercalcemia, hypercalcinuria, and urolithiasis. The purpose of this preliminary report was to find a practical way of estimating thyrocalcitonin function and its relation to human urolithiasis. The study showed that determination of tubular reabsorption of phosphorus with the simultaneous determination of urinary calcium excretion can be useful in the differential diagnosis of hyperparathyroidism from thyrocalcitonin deficiency.

An understanding of calcium homeostasis is essential in the evaluation of patients with renal stones. In at least 90 per cent of all kidney stones calcium is a major constituent.[1] Disorders of any of the factors affecting the renal handling of calcium, such as, excess parathyroid hormone, dietary calcium intake, phosphate intake, metabolic acidosis, an excess of cortisone, growth hormone, or thyroxine, may be responsible for the production of the kidney stones. In addition, there may be a lack of substance in the urine that inhibits crystallization.[2] The association of parathyroid adenomas and kidney stones is well known. HPT (hyperparathyroidism) is present only in 2 to 8 per cent of patients with kidney stones.[3,4] However, stone formation in patients with HPT is observed frequently (5 to 61 per cent).[4,5] Recent discovery of a hormone, calcitonin[6] or thyrocalcitonin,[7] has suggested extensive revision of the physiologic concepts of calcium metabolism. TCT (thyrocalcitonin) may have an important role in the various forms of hypercalcemia, hypercalciuria, and, therefore, in urolithiasis.

There is no proved practical way of diagnosing TCT disorders in man. The availability of a direct immunoassay of plasma TCT would make this possible. Even radioimmunoassay of PTH (parathyroid hormone) revealed elevated hormone levels in only half of the patients with biopsy-proved parathyroid adenoma.[8] Therefore, parathyroid function must still be estimated indirectly.

The purpose of this study was to find a practical indirect way of estimating TCT function and to show its relation to human urolithiasis. Phosphorus excretion tests should be useful for this purpose, since TCT increases the urinary phosphorus.[9] Various measures such as phosphate clearance (Cp), phosphate creatinine clearance ratio, tubular reabsorption threshold, and Tmp (maximum tubular reabsorption capacity of phosphate) have been employed for the determination of urinary phosphorus excretion. The determination of TRP (tubular reabsorption of phosphorus), that is, the percentage of the filtered phosphorus reabsorbed by the kidney tubules, has been believed to be consistently abnormal in parathyroid disorders in comparison with the phosphorus excretion tests.[10] We have, therefore, utilized it in this study.

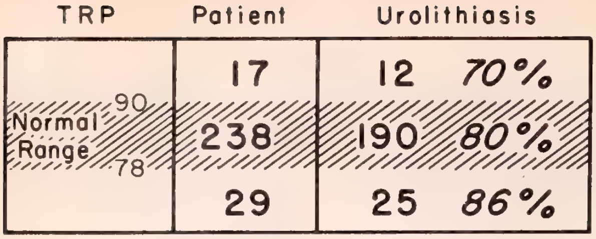
Materials and methods

Two hundred eighty-four patients, hospitalized on the Urology Service of the Columbia-Presbyterian Medical Center during 1958 to 1968 were

---

*This study won first prize on laboratory research at the Resident Essay Contest of the New York Section of American Urological Association in March, 1969.

This work is supported by the Genitourinary Metabolic Research Fund of Columbia University, College of Physicians and Surgeons.



TRP	Patient	Urolithiasis	
	17	12	70%
90 Normal Range 78	238	190	80%
	29	25	86%

FIGURE 1. Distribution of 284 determinations of TRP at Squier Urological Clinic, 1958 to 1968.

tested. All patients had a recent history of radiopaque renal stones. They were given a diet containing 700 mg. of calcium and 1,200 mg. of phosphorus per day for three days. On the third day, a twenty-four-hour urine specimen was collected for creatinine and phosphorus, and 20 cc. of blood were drawn for creatinine and phosphorus determinations. The Folin-Wu method was used for creatinine determination.[11] The levels of calcium and phosphorus in urine and serum were measured by the Technicon Autoanalyzer. The percentage of reabsorption of the phosphorus by the renal tubules was calculated from the following formula[12]:

$$\text{TPR per cent} = [1 - ({}^{c}\text{Phosphorus}/{}^{c}\text{Creatinine})] \times 100$$

Normal values in our laboratories are: TRP = 85 ± 5, serum calcium 9 to 11 mg. per 100 ml., serum phosphorus 2.7 to 4.2 mg. per 100 ml., and urinary total calcium up to 150 mg. per twenty-four hours (after three days on 150 mg. calcium test diet).

Results

In 29 patients the TRP was below normal levels; 25 of the 29 (86 per cent) had renal stones. Among 238 patients with normal TRP, 190 (80 per cent) had renal stones. In 17 patients TRP was above normal levels; in this group, 12 patients with increased TRP (70 per cent) had renal stones (Fig. 1). The latter were believed to be a unique group and were studied in detail (Table I).

Two patients had infection in the urinary tract. Two patients had bilateral renal stones, and 4 had hypercalciuria either at the time of the study or before. One patient had diabetes, and 1 had undergone parathyroidectomy one year prior to the test but had normal serum calcium throughout the time of the study. All patients had normal endogenous creatinine clearance, and there was no evidence of obstruction on intravenous pyelography. Excessive TRP occurred twice as frequently in females (8 females : 4 males) and in white patients (8 white : 4 Negroes). All had excess TRP and hypercalciuria, and were believed to have a deficiency in TCT production.

Comment

Site of origin of thyrocalcitonin. Thyrocalcitonin is a hypocalcemic, hypophosphatemic hormone from parathyroid,[6] thyroid,[7] or both,[13] depending on the animal species investigated. The concept of a TCTRF (TCT-releasing factor) from parathyroid gland has been postulated[13] but not generally accepted, while the thyroid gland is uniquely important for protection against hypercalcemia.[14] The parathyroids have been found unnecessary for this purpose, so that the evidence for TCTRF remains uncertain.[15]

TABLE I. Detailed study of 12 patients with increased TRP and renal stones

Sex	Age	Race	Serum (mg. per 100 ml.) Calcium	Serum (mg. per 100 ml.) Phosphorus	Urinary Calcium (mg. per 24 hours)	TRP Per Cent.	Urinary Tract Infection	Urolithiasis	Disorder in Calcium:Phosphorus Metabolism
F	73	W	9.8	3.7	354	91.0	Absent	Single, unilateral	IHC (idiopathic hypercalciuria)
F	67	W	10.0	3.1	N*	91.2	Absent	Single, unilateral	None
M	53	W	9.7	3.6	N	95.4	Absent	Single, unilateral	None
F	54	W	10.8	4.2	Not done	95.1	Present	Single, unilateral	None
F	60	N	10.3	4.0	N	92.8	Absent	Single, unilateral	None
F	65	N	9.7	3.2	305	100.0+	Absent	Single, unilateral	IHC; diabetes mellitus
F	48	W	9.6	3.0	509	94.3	Absent	Single, unilateral, recurrent	IHC
M	52	W	9.7	2.7	N	93.5	Absent	Single, unilateral, recurrent	B_6 deficiency; hypercalcemia in the past
F	36	W	9.9	3.0	N	90.5	Absent	Bilateral, multiple	None
F	62	N	10.9	3.3	N	98.9	Absent	Bilateral, multiple	None
M	73	N	10.5	3.9	419	94.3	Absent	Bilateral, multiple	IHC; peptic ulcer
M	56	W	9.7	3.3	N	96.7	Present	Unilateral, staghorn	Parathyroidectomy one year prior to test

* Less than 150 mg. per twenty-four hours.

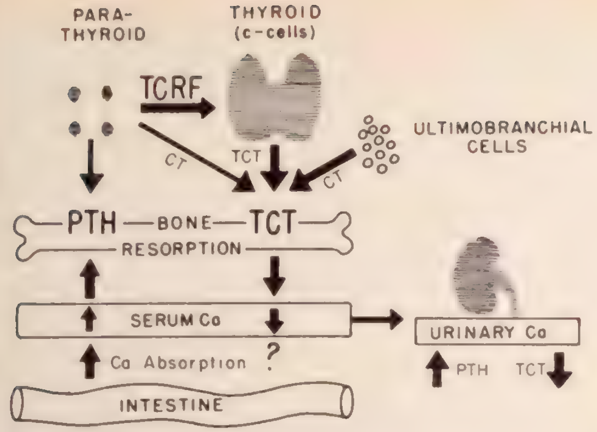


FIGURE 2. Current concepts in calcium homeostasis. Comparative effects of parathormone and thyrocalcitonin on bone, kidney, and intestine.

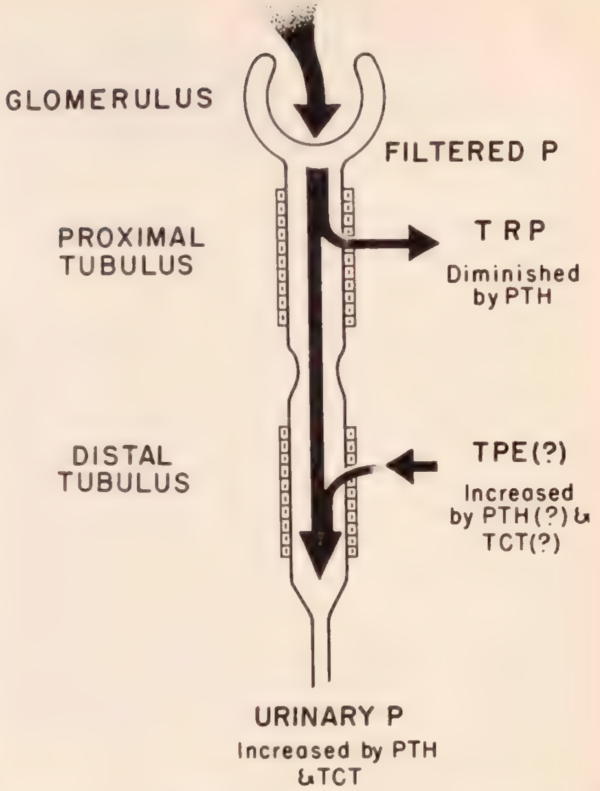


FIGURE 3. Renal handling of phosphate: TPE (tubular phosphate excretion).

Site of action of thyrocalcitonin. The mode of action of TCT has been presumed to be directly on the bone matrix.[16] Its hypocalcemic effect is thought to be due to decreased bone resorption rate.[17] The effect on intestinal calcium absorption in man is not known. It has been shown, however, that TCT has no effect on calcium transport in the rat duodenum.[18] Removal of the intestinal tract in rats again does not alter the hypocalcemic response of TCT.[19] The role of the kidneys in TCT-PTH homeostasis probably also shows species differences. Decreased calcium levels in the urine during TCT administration are due to the diminished blood levels. The effect of TCT on renal tubular calcium kinetics also is not known yet. The kidneys probably do not play a role in the hypocalcemic response from TCT. Indeed, bilateral nephrectomy in rats does not change this response.[20] However, the observation of hypercalcemic and hyperphosphatemic responses to an acute calcium load in bilaterally nephrectomized dogs suggests that, in the dog, kidney tubules may play a direct role in the response to endogenous TCT production induced by hypercalcemia.[21]

Thyrocalcitonin-parathormone homeostasis. The action of TCT is also able to diminish serum phosphorus levels. This appeared to be due, in part, to a renal effect similar to that of PTH and, in part, to the inhibition of bone resorption.[22] Lowering of serum phosphorus without affecting serum calcium in parathyroidectomized rats and prevention of this action by prior nephrectomy proves a direct renal effect of TCT in rat phosphate metabolism.[9] An increase in urinary phosphorus secretion by exogenous TCT has been shown in rats[9,23] and in man.[24] When TCT and PTH are administered concomitantly in rats, inconsistent results are obtained. Administration of TCT and PTH together had a phosphaturic effect similar to the administration of each separately (Fig. 2), but overall decrease in PTH-induced phosphaturia by TCT has also been observed.[25] The phosphaturic action of TCT is probably not due to hypocalcemia, because the hypocalcemic effect is often observed in the absence of phosphaturia.[26] Due to increased TCT secretion when plasma calcium rises, the highest rate of hormone secretion may occur under conditions of prolonged hypercalcemia. The possibility of interference of TCT with phosphorus excretion tests in hypercalcemia still persists.[27] Certainly this would make tests dependent on phosphorus excretion invalid in hypercalcemia.

Urinary phosphate excretion. There has been little work on the renal effects of TCT in man. Parathyroid function is not antagonized by TCT in phosphaturia, and there is suggestive evidence that TCT reinforces the phosphaturic effect of PTH on the kidney tubules.[23] During evaluation of TRP above 90 per cent, it has been assumed that no tubular secretion of phosphorus takes place in the human kidney. However, tubular phosphorus secretion has been shown in chickens,[28] but stop-flow studies in dogs are as yet equivocal.[29] Indeed, it has been suggested that the primary effect of PTH in mammalian kidneys was to cause the secretion of phosphorus in the distal tubules.[30] However, evidence from differen-

Hormone	Dysfunction	Urinary		TRP
		Ca	P	
PTH	HYPERFUNCTION	⇧	⇧	⇩
	HYPOFUNCTION	⇩	⇩	⇧
TCT	HYPERFUNCTION	⇩	⇧	⇩
	HYPOFUNCTION	⇧	⇩	⇧

FIGURE 4. Effects of PTH and TCT on urinary calcium and phosphorus excretion. Differential diagnosis of disorders of parathormone thyrocalcitonin production.

tial tubular damage experiments would bear this out.[31] Since phosphate can be almost completely reabsorbed from the urine, it is evident that the reabsorptive mechanism is both an active one and that it is Tmp limited. The administration of PTH and TCT reduces the TRP, thus increasing the urinary excretion of phosphorus (Fig. 3). Decreased production of these hormones is associated with decreased phosphorus in the urine and an increase in TRP. The following factors increase the tubular reabsorption of phosphorus: hypoparathyroidism, hyperthyroidism, overproduction of growth hormone, low phosphorus diet, and calcium infusion. In hypoparathyroidism only urinary calcium is normal or decreased, whereas in the remaining it is found to be increased.

Pitfalls in the evaluation of TRP. The administration of excessive amounts of vitamin D, cortisone, phosphorus supplements, metabolic acidosis, decreased GFR (glomerular filtration rate), and glucosuria are all factors which will affect the TRP. Obviously, diminution of GFR reduces the apparent value of TRP, because it depends on the creatinine clearance. In none of these patients was decreased GFR observed. However, glucosuria was present in 1 patient, but it reduced the TRP instead of increasing it.[32] Normal serum calcium levels in these patients and hypercalciuria (4 of 12 patients) also ruled out the existence of decreased parathyroid function (hypoparathyroidism). Because of the phosphaturic effect of PTH, TRP was below normal or at the lower level of normal but was not elevated as in hyperparathyroidism. The association of a low TRP and urolithiasis in 86 per cent of this group is similar to previous reports.[33] There has been no explanation for the association of renal stones and the elevation of TRP. The percentage of renal stones (70 per cent) in this group is not significantly below the percentage (86 per cent) found in proved hyperparathyroidism. It is reasonable to assume that the TCT deficiency could produce an increase in urinary calcium (4 of 12) and decrease in phosphorus secretion in the urine (12 of 12). Four patients in this group had previously been classified as cases of idiopathic hypercalciuria. Serum calcium levels in TCT deficiency can be normal, but a tendency to hypercalcemia is also understandable; this was observed in 4 patients.

Figure 4 summarizes the differential diagnosis of the disorders of PTH and TCT production. The presence of calcium-containing renal stones in patients with increased TRP casts serious doubt on the usefulness of this test for the diagnosis of hyperparathyroidism. However, this study shows that determination of TRP with the simultaneous determination of urinary calcium excretion can be useful in the differential diagnosis of overproduction of PTH (hyperparathyroidism) from the underproduction of TCT (thyrocalcitonin deficiency).

The observation of the association of presumed TCT deficiency and of urolithiasis in man does not establish a cause-and-effect relationship, because urolithiasis was seen with both normal and diminished TRP values with equal frequency. But if TCT deficiency is kept in mind, a further development of diagnostic technic, in addition to the demonstration of an increase in calcium and a decrease in phosphate in the urine, may confirm TCT deficiency as a cause of urolithiasis.

Summary

TCT (thyrocalcitonin) deficiency is suggested as an etiologic factor in 12 puzzling, recurrent calcium stone-forming patients with increased TRP (tubular reabsorption of phosphorus) values (more than 90 per cent). In none of these patients were other known systemic or local factors demonstrated. TCT deficiency can be differentiated from hyperparathyroidism by the simultaneous determination of urinary calcium excretion rates and of TRP. An increase in urinary calcium (hypercalciuria) and a decrease in phosphorus excretion (increased TRP) are suggestive of TCT deficiency.

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MUCOCELES OF PARANASAL SINUSES

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A mucocele is a cyst which originates when the drainage of the sinus cavity is blocked by occlusion of the sinus ostium by infection, fracture, or osteoma. With accumulation of mucous secretions, the mucosal and submucosal lining of the sinus expands and erodes the adjacent bony walls.[1]

A mucocele is lined by a respiratory type of epithelium which becomes cuboidal or squamosal due to increased pressure within the sinus.[2] It is filled with mucoid or gelatinous fluid varying in color from amber to red-brown, gray, or green. When infected, the fluid becomes purulent and the mucocele is called a pyocele.

This report attempts to correlate the clinical and radiologic aspects of mucoceles of the paranasal sinuses. A five-year review, 1966 to 1970, of all mucoceles at Manhattan Eye, Ear and Throat Hospital was used for this presentation.

Material

Thirty-one mucoceles were recorded over the five-year period: 18 frontal, 6 ethmoid, 5 maxillary, 1 sphenoid, and 1 frontoethmoid in which the exact site of origin could not be determined. The patient's ages ranged from ten to eighty-three years, the average age being fifty-three years. Of the 31 patients, 21 were female and 10 were male.

Signs and symptoms

Table 1 summarizes the signs and symptoms of mucoceles. The known duration of symptoms ranged from three days (acute) to twenty-four years (chronic). The average duration of complaints was four months. Twenty-seven of the 31 cases had clinical symptoms; 4 cases were picked up by x-ray or physical examination. Twenty-two showed eye signs or symptoms. Eye signs or symptoms were not evident in any of the maxillary or sphenoid mucoceles, however, only 2 of the 18 frontal and 1 of the 6 ethmoid mucoceles did not show eye signs. The 7 cases of downward and outward globe displacement were found in 6 frontal mucoceles and 1 ethmoid mucocele. Table II lists the frequency of occurrence of bacteria found in cultures taken at the time of surgery.

TABLE I. Signs and symptoms of mucoceles

Symptom	Frequency
General symptoms	
Headache	9
Nasal obstruction and congestion	6
Facial pain	5
Anosmia	1
General signs	
Palpable mass	12
Deviated nasal septum	5
Intranasal mass	4
Facial swelling	4
Eye symptoms	
Eye pain	8
Diplopia	7
Increased lacrimation	1
Blurred vision	1
Eye signs	
Exophthalmos	13
Lid edema and eye swelling	13
Globe displacement	7

TABLE II. Bacteria found in cultures taken from mucoceles at time of surgery

Bacteria	Number of Patients
Staphylococcus aureus, hemolytic, coagulase positive	8
Staphylococcus albus, nonhemolytic	7
Staphylococcus aureus, nonhemolytic, coagulase negative	4
Streptococcus viridans	2
Diplococcus pneumoniae	1

TABLE III. Operative procedures

Procedure	Number
External frontal	14
External frontoethmoid	4
External ethmoid	2
Caldwell-Luc	3
Intranasal ethmoid	1
Intranasal ethmosphenoid	1
Dacrocystorhinostomy	1

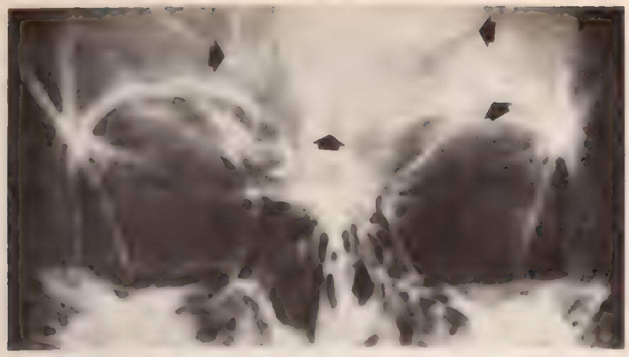


FIGURE 1 Calcified left frontal mucocele. Thirty-four-year-old woman with frontal headaches for two years following osteoplastic flap procedure for frontal mucocele. Roentgenographic findings: Calcified mucocele occupies left frontal sinus and demineralizes roof of left orbit. Treated conservatively.

Thirty-one cases of mucoceles seen at the Manhattan Eye, Ear, and Throat Hospital from 1966 to 1970 are reviewed. Twenty-two of the patients exhibited eye signs or symptoms. Other signs and symptoms are tabulated. The use of roentgenograms in the diagnosis of mucocele is discussed.

Treatment

Twenty-six of the cases came to surgery. Of the remainder 2 were treated conservatively and 3 were lost to follow-up. Ten of the cases had had previous nasal or sinus surgery. Table III gives the frequency of the operative procedures used.

Roentgenographic evidence of mucoceles[3]

Mucoceles can often be recognized on the basis of their roentgen appearance. The sinus is opacified by the trapped mucus which has displaced all the air. The resulting pressure causes a gradual erosion of the sinus wall so that the mucoperiosteal margin decalcifies and fades, and the normally scalloped borders disappear. As the process continues, the sinus appears more radiolucent, since the loss of bone more than cancels out the replacement of air. By that time, the classic roentgen appearance of mucocele is usually evident: a smooth, expanded, oval or round zone of bone erosion with an abnormal radiolucency involving the frontal or ethmoidal sinuses. Although the affected adjacent bone is generally osteolytic, there is frequently a zone of sclerosing osteitis about the margins of the lesion.

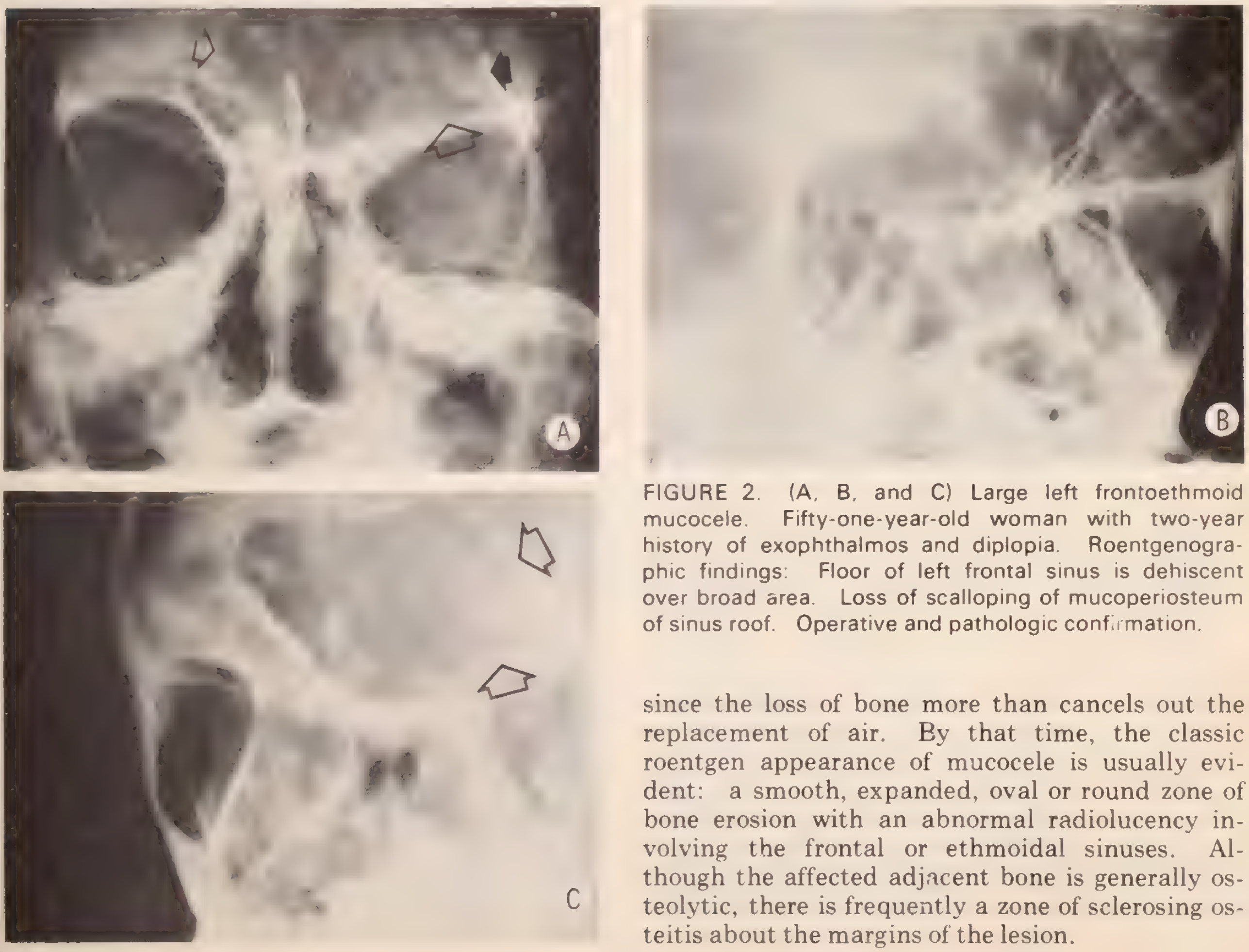
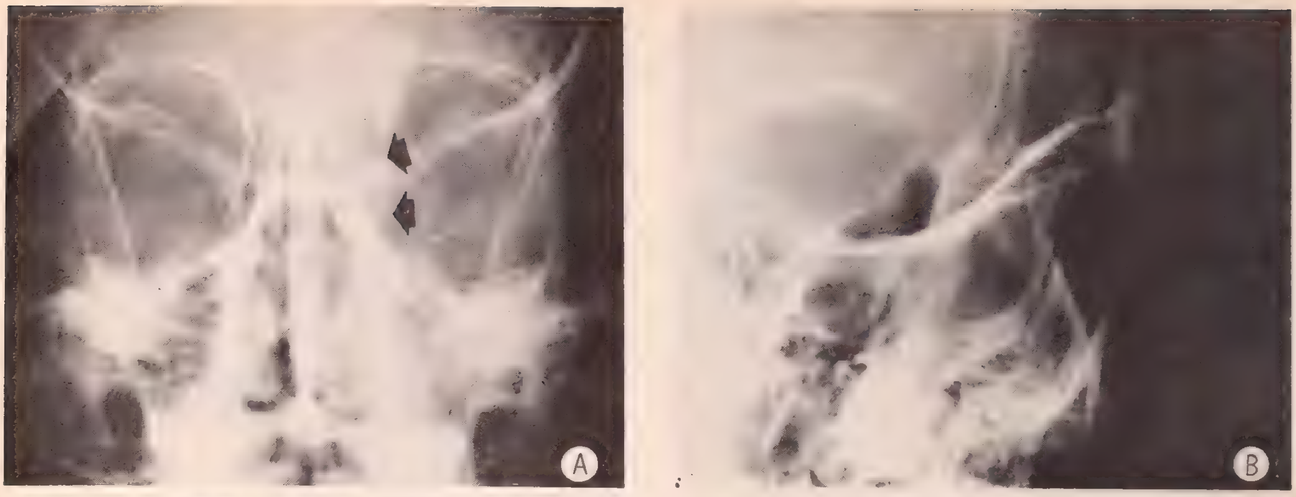


FIGURE 2. (A, B, and C) Large left frontoethmoid mucocele. Fifty-one-year-old woman with two-year history of exophthalmos and diplopia. Roentgenographic findings: Floor of left frontal sinus is dehiscent over broad area. Loss of scalloping of mucoperiosteum of sinus roof. Operative and pathologic confirmation.



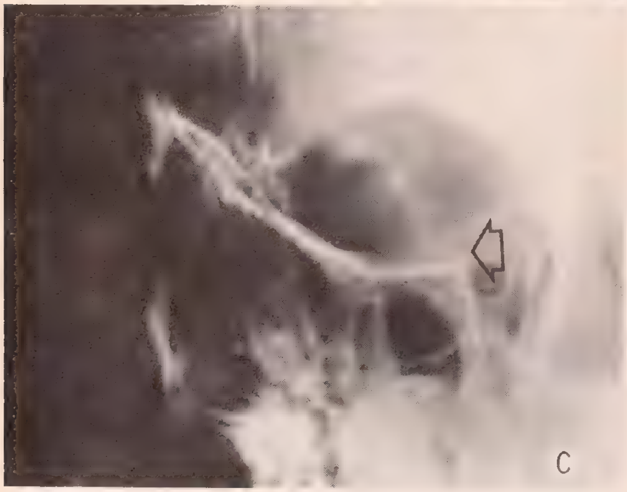


FIGURE 3. (A, B, and C) Left ethmoid mucocele invading orbit. Ten-year-old boy with proptosis of left eye of one-year duration. Roentgenographic findings: Left ethmoids are cloudy; their cell walls are destroyed. Orbital plate of ethmoids is partly destroyed and expanded into orbit as seen on oblique orbital view. Confirmed surgically.

About 5 per cent of the mucoceles show macroscopic calcification of their walls. This calcification may be heavy enough to simulate osteoma. Deep intracranial extension of the mucocele into the frontal lobe may displace a fragment of frontal bone, which then demarcates the posterior boundary of the mucocele.

Since frontal and ethmoidal mucoceles are common and their usual path of extension is into the orbit, the radiographic demonstration of a smooth oval erosion in the fronto-orbital or ethmo-orbital areas offers a clue to the diagnosis in patients with unilateral exophthalmos.

Caldwell, Waters', optic foramen, lateral, and basal views are all required for adequate radiographic evaluation. Laminagrams are also helpful.

Cholesteatoma, or primary epidermoidoma, mimics the roentgen appearance of mucocele. It is an expanding, benign, cystic lesion that produces bone destruction but is quite rare in the sinuses. It may arise either from congenital epithelial cells resting in the meninges or diploe of the cranial vault, or by squamous metaplasia of chronically infected respiratory epithelium lining the sinus lumen.

Figures 1 through 10 illustrate some typical examples of the roentgenographic appearance of mucoceles.

Comment

The clinical appearance of a patient with mucocele depends on the location and direction of the expansion of the lesion. Frontal and ethmoid mucoceles can displace the eye downward, laterally, and forward causing exophthalmos and diplopia. Infected mucoceles cause edema of adjacent soft tissues and may be associated with pain and osteomyelitis. In most cases the mucocele appears as a painless, smooth swelling in the roof of the orbit above the inner canthus. The symptoms of chronic sinusitis, headache, and nasal obstruction or congestion are frequent concomitant complaints of patients with mucocele.[4,5] Maxillary mucocele commonly expands into the cheek and causes local swelling. It may cause exophthalmos by invading the orbit or obstruct the nose by intranasal expansion.[6,7] Sphenoid mucoceles may erode into the nasopharynx and nasal cavities, causing obstruction to the airway; erode intracranially through the sella and cause increased intracranial pressure; erode into the cavernous sinus and cause ophthalmoplegia; or erode toward the orbital apex and sphenoidal fissure, causing ophthalmoplegia, visual loss, and exophthalmos.[8,9] The sphenoidal mucocele presented in this report is very small, localized, and is only beginning its expansion and bone erosion.

The treatment of mucoceles is surgical removal with eradication of all mucosal lining. Widening

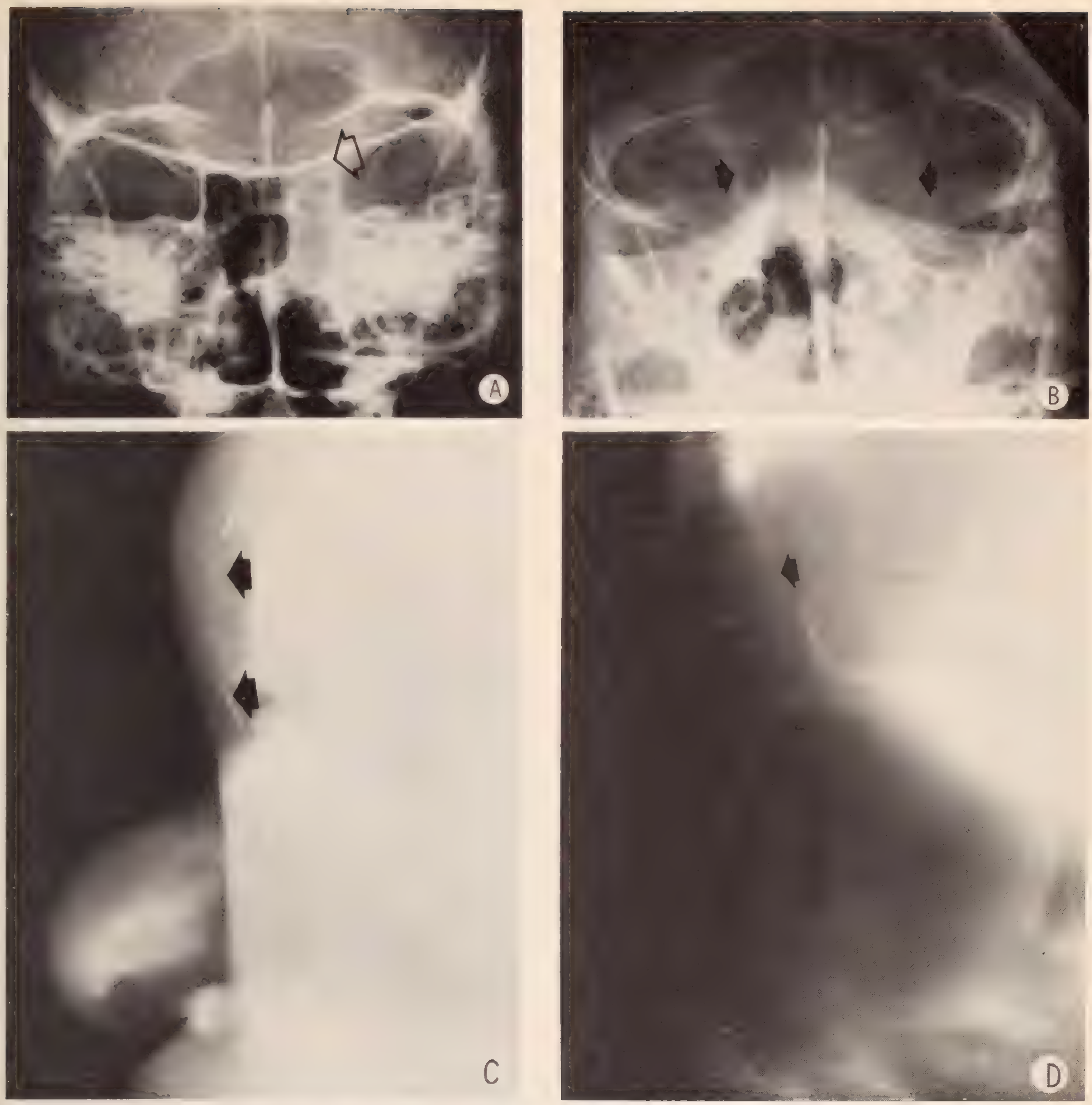


FIGURE 4. (A, B, C, and D) Large left ethmoid mucocele eroding into frontal sinus and forehead intranasally, intracranially, and intraorbitally. Seventy-six-year-old woman with three-month history of swelling over left eye, forehead, and nose. Roentgenographic findings: Erosion of floor of left frontal sinus and its anterior and posterior walls, bony nasal septum, both nasal bones, and left medial orbital wall. Lateral tomograms of frontal sinuses reveal extensive bone destruction of posterior and anterior walls and floor of frontal sinuses and of cribriform plate. Confirmed surgically.

of the nasofrontal duct, and maintaining its patency with a polyethylene tube, along with external sinusectomy were done in most cases of frontal mucoceles. Ethmoid mucoceles were treated equally well with external ethmoidectomy or intranasal ethmoidectomy. Maxillary mucoceles were treated by Caldwell-Luc antrostomy. The sphenoid mucocele was treated by an intranasal ethmosphenoidectomy.

It is significant that 10 of the 31 patients with mucocele had had previous sinus or nasal surgery.

Summary

Thirty-one cases of mucoceles of the paranasal sinuses over a five-year period at Manhattan Eye, Ear and Throat Hospital were reviewed. Frontal mucoceles were three times more common than ethmoid mucoceles.

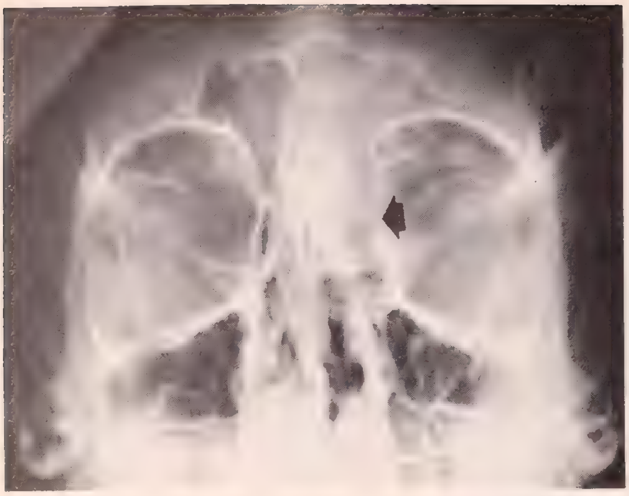


FIGURE 5. Left ethmoid mucocele. Eighteen-year-old girl with swelling in medial canthal region of left orbit for several months. Roentgenographic findings: Left frontal sinus and cells of left ethmoidal labyrinth are very cloudy. Left ethmoidal cell walls and medial orbital wall are destroyed. Frontal intersinus septum bulges to the right. Ethmoidal mucocele invading left orbit and frontal sinus found at surgery.

Female patients outnumbered males by a 2:1 ratio, 70 per cent of the cases had eye findings, 85 per cent of the cases came to surgery, and, one third of the cases had had previous nasal or sinus surgery.

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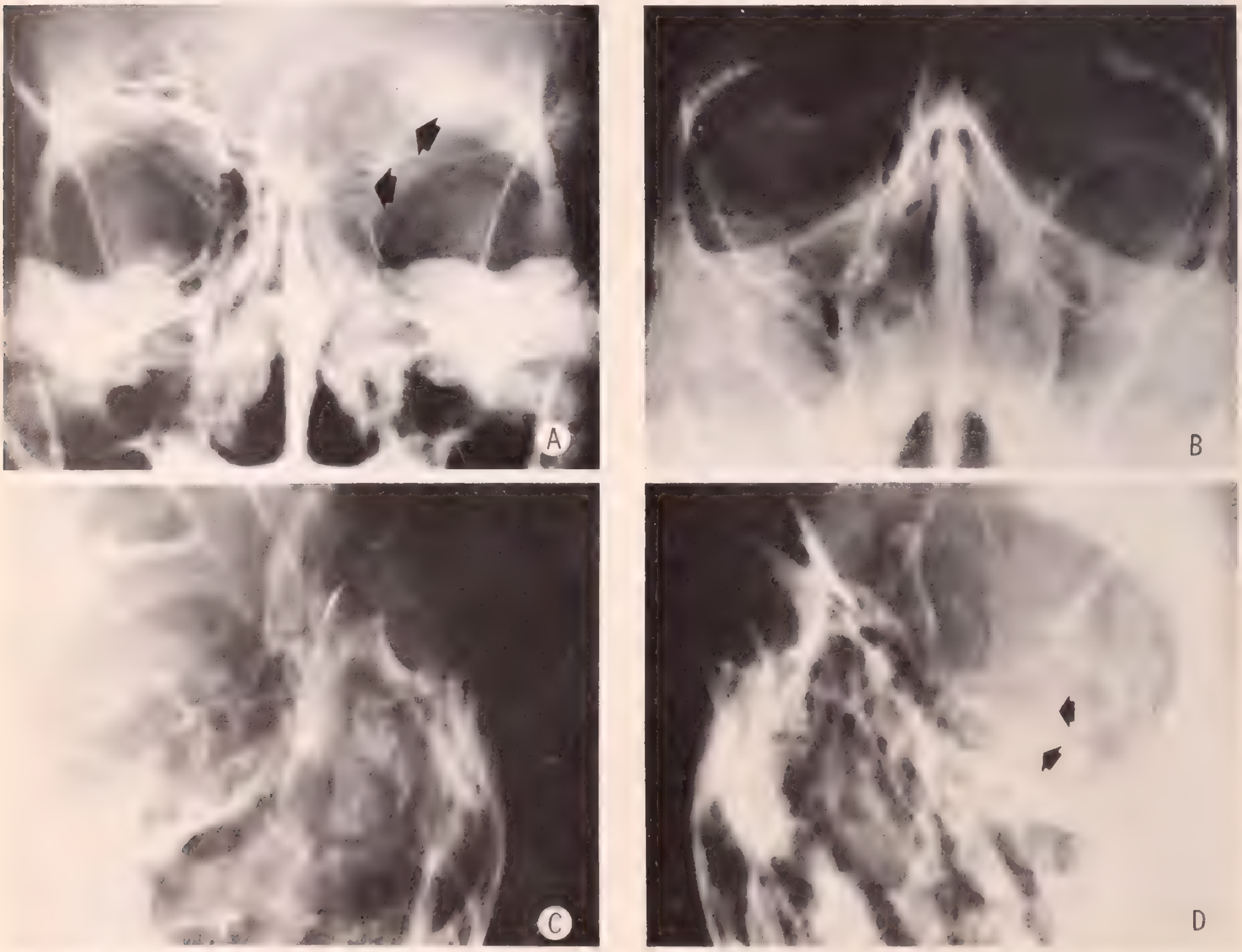

FIGURE 6. (A, B, C, and D) Left superior ethmoid mucocele. Fifty-nine-year old woman had six-month history of headache and gradual onset of left exophthalmos with forward and downward displacement of globe. Roentgenographic findings: Floor of left frontal sinus and left ethmoidal cells are destroyed. Medial orbital wall is partly destroyed and displaced into orbit. Confirmed at surgery.

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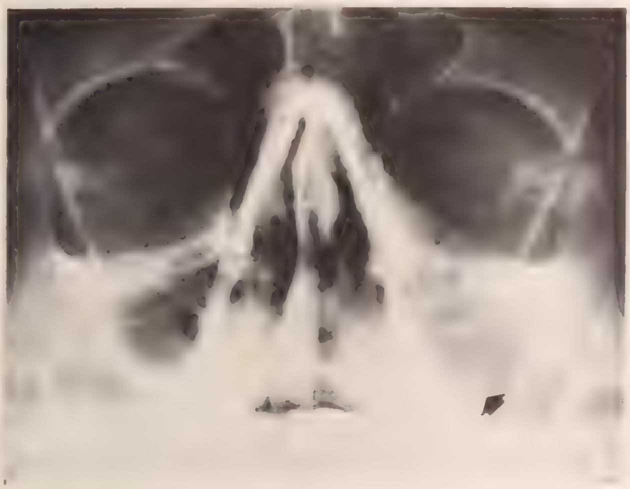

FIGURE 7. Left maxillary mucocele. Fifty-six-year-old man with six-month history of swelling of left side of face. Roentgenographic finding: Left antrum is opaque with smooth dehiscence of lateral wall. Maxillary mucocele confirmed surgically.

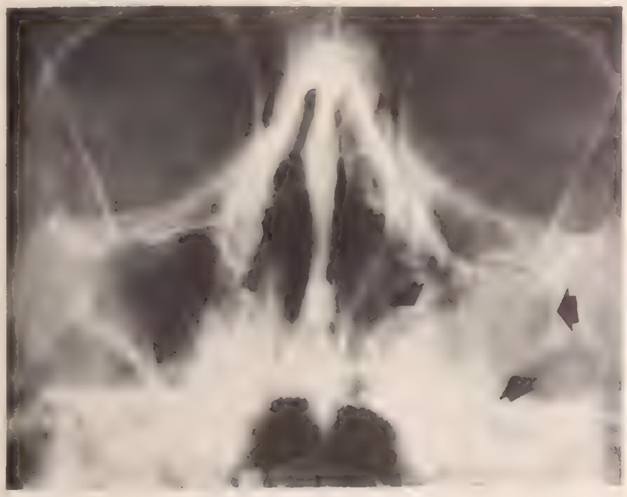

FIGURE 9. Left maxillary mucocele. Sixty-six-year-old man with left nasal obstruction for years and history of left Caldwell-Luc procedure forty years previously. Roentgenographic findings: smooth erosion of lateral wall of left antrum. Patient was poor surgical risk and was not subjected to surgery.

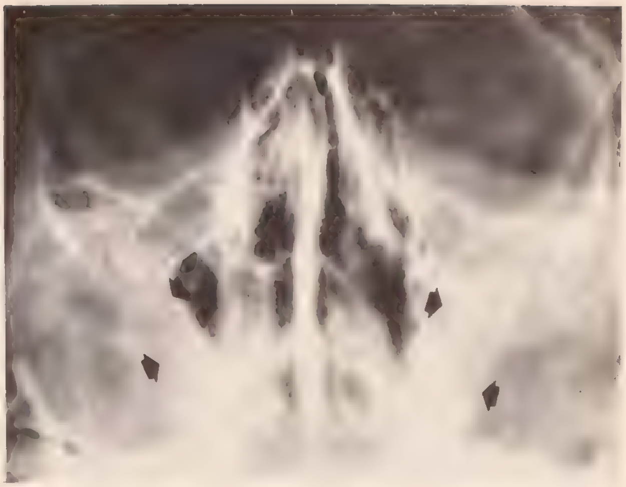

FIGURE 8. Left maxillary mucocele. Forty-eight-year-old woman with swelling of left canine fossa. Roentgenographic findings: Both antra are cloudy with thickening of membrane and demineralization of lateral walls. Bony defects are suggested in lateral walls of both antra. Bilateral maxillary mucoceles diagnosed radiographically. Left Caldwell-Luc procedure confirmed left maxillary mucocele. No surgical procedure done on right antrum.

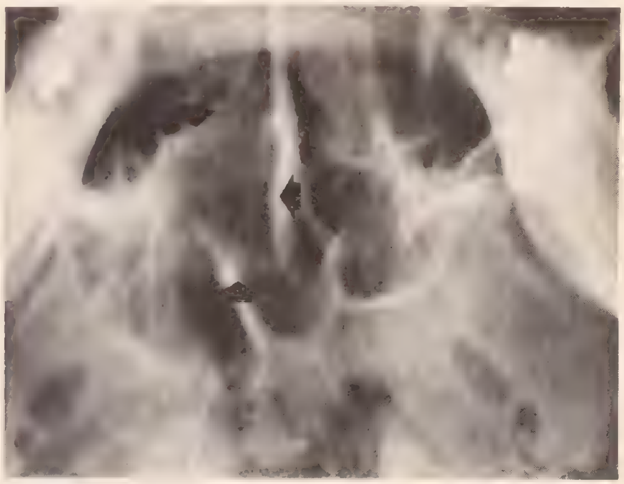

FIGURE 10. Right sphenoid mucocele. Thirty-six-year-old woman with six-month history of nasal obstruction and malar fullness. Roentgenographic findings: 2-cm. mucocele or cyst-like density in anterior compartment of right sphenoid sinus expanding and eroding its anterior and posterior bony walls. Confirmed surgically.

Scientific Sessions held at
St. Luke's Hospital Center
New York City
November 19, 1971

ABSTRACTS AND REPORTS OF PROCEEDINGS

New York Society for Thoracic Surgery

ALLAN ELLIA BLOOMBERG, M.D., Editor

FALL SESSION

The Annual Meeting of the New York Society for Thoracic Surgery was held on November 18, 1971. Following the dinner, astronaut Story Musgrave, M.D., spoke on selection, training, and activities of a physician astronaut.

On November 19, the Annual Scientific Session of the Society was held at St. Luke's Hospital Center. The proceedings of the morning session follow.

ARTIFICIAL MUSCLE-ACTIVATED PROSTHETIC VENTRICLE

P. N. SAWYER, M.D.
M. PAGE, M.D.*
B. RUDEWALD, M.D.*
H. LAGERGREN, M.D.*
L. BASELIUS, M.D.*
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Evolution and structure of the human heart is considered functional. To develop a comparable artificial heart one must have artificial contractile element "muscles." One can then duplicate with increasing efficiency the other functions of the heart.

Contractile elements previously developed have efficiencies lower than 0.1 per cent, so that pump application appeared practically impossible.

Development of nitinol, a contractile stoichiometric nickel, titanium, cobalt alloy with a fatigue stress rating of 70,000 pounds per square inch at 10^7 cycles permitted the development of artificial muscle strands. Anchored to the exterior of flexible chambers, the wire segments can be used for contractile purposes.

Artificial heart chambers were constructed using a self-vulcanizing elastomer and human cadaver hearts as mold masters. Female metal molds were electrodeposited on these masters. Heart chambers were molded using ethylene vinyl acetate.

An integrated electrical circuit activates the contractile elements replicating the double helical wringing motion of the left ventricle during contraction. The results have been the first partially physiologic replica of a wall-activated ventricle which has proved capable of ejecting a 25 to 35-cc. water bolus up a 160-cm. pressure head at a rate of 12 to 15 times per minute in vitro.

Discussion

Hugh F. Fitzpatrick, M.D., *New York City.* My immediate reaction, Dr. Sawyer, is that you have done it again. You have presented us with a most fascinating and stimulating piece of work. As you all know, the paradox of this is that the heart is the simplest organ in the body and should be the simplest to duplicate mechanically. We have to simulate a certain amount of blood 80 times a minute, but the production of such a pump has not been as easy as the basic concept. Dr. Sawyer's approach, at least to me, is most intriguing indeed. Are there any other comments?

Voice: What is the durability of this material?

Dr. Sawyer: The first pump we made pumped 12 times and burned out.

Voice: No, I am thinking in terms of the wires.

Supported by a Grant-in-Aid from Elema-Schonander, Stockholm, Sweden.

**By invitation.*

Dr. Sawyer: The wire life expectancy is high. It is very durable; it will contract up to 10^7 times quite at 10,000 pounds per square inch loads. That is roughly three to four years of human life. That is just ordinary conventional wire of this sort. You can anneal it and change its physical characteristics by using very special metalurgic technics. Increasingly sophisticated contractile characteristics, more sophisticated energy inputs, and greater efficiencies can be obtained, and you can program into your metalurgic technics fairly sophisticated quality control characteristics. It has very replicable heat-resistance characteristics. If you find breaks in capacitance characteristics for any given lengths of the alloy, you simply throw that length away on the presumption that it does not have appropriate annealing characteristics.

Dr. Fitzpatrick: There is evolving, you might say, two schools of thought insofar as replacement of the human heart is concerned. One obviously uses a transplant which is an allograft or homograft, and the other uses an artificial heart.

Dr. Sawyer: Transplants are great, Hugh, as long as you have one available.

Dr. Fitzpatrick: I was going to ask roughly where you think the future lies, in the transplant or in the mechanical replacement?

Dr. Sawyer: The future lies in preventing the disease, and that is not very far away; I think probably ten years. We will then have atherosclerotic coronary heart disease probably about two-thirds under control. I say this because this era in history is very reminiscent of the years of typhoid fever when we knew essentially nothing about antibiotics. More than half of the general beds in the hospitals constructed in the United States between 1900 and 1910 were used for typhoid patients which was then the scourge of our society.

When I went on the wards of the University of Pennsylvania Hospital in 1949, Pepper ward, and all, I was reminded that all of those wards were constructed to treat typhoid, and typhoid is now a nonexistent disease.

Dr. Fitzpatrick: I really hope you are right. Any other comments? Does anybody think there is any future for the transplants?

Dr. Sawyer: Yes, I do. My fundamental belief in this matter is that so long as we keep on jostling people, as long as we keep making enough brownian movements so that people are conscious that a problem needs solution, it does not make any difference whether we transplant hearts, make artificial hearts, or what we do. As long as we make enough brilliant minds sufficiently responsive and keep reminding them that the problem is not solved, there will be persistent pressure on the problem until we do. Obviously, the solution of the problem is twofold, changing our mode of living to a limited degree and developing some sort of enzymatically effective agent which will prevent the abnormal pathophysiologic development of atherogenesis.

Roy H. Clauss, M.D., *New York City.* You have available to you everything up to the brain power of NASA and the computers of NASA. It appears that what you are doing is necessary, and the most important thing is your idea, but your application of it seems too primitive rather than programmed.

Dr. Sawyer: Well, we really do not have NASA's support; we had no facilities and no money. The original money that was produced for this project was $10,000, given by the Cardiovascular Society, and $20,000 by Elema-Schonander about two years ago. We have done probably $100,000 of work with no additional money. Now we have no money and are not working on the prosthetic heart, because there is no additional money available. I wish I could say to you that the facilities of NASA are available to us, but that is not the case.

I think there is a renewal of interest in newer approaches to the production of an artificial heart. It is conceivable that in about six months, which is virtually instantaneous for our government, there may be some money available to work in this particular area. Others are working on the screw engine technic. Frank Hastings, M.D., had a sequential pizzo electric engine, a number of capacitor engines, and a solanoid engine when he died, which I assume they are still working on. They are probably at some working level of fruition. The result of this divided work is even further away from making the artificial heart like a human heart. These approaches represent an absolute retrogression to the most fundamental of all vertebrate and nonvertebrate hearts, which is the development of a single continuous chamber that starts to contract at one end and is really just a long tube or blood vessel with sequentially more powerful muscles attached to it. I think the principle, when work started on that particular concept, was to establish the fact that you could replace the left ventricle with a booster heart which could work for a long period of time. I assume that that was what Frank and the team at the National Institutes of Health were thinking of when these concepts were originally developed. I still maintain that the best heart that has worked in any of us is our own heart and that it is a pretty good model to try to copy.

The following report appears in its entirety.

INAPPROPRIATE RESPONSE OF DRUG ADDICTS TO CARDIOTHORACIC SURGERY

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New York City
S. GIANNELLI, M.D.
New York City
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From St. Vincent's Hospital and Medical Center of New York

At present the number of people addicted to opiate derivatives is estimated to be more than 130,000. The increasing incidence has directed more attention to the medical sequelae of addiction. The addict has only one consuming aim in life, to supply himself with the illegal drug to satisfy his habit. As a result, he disregards all aspects of his personal care and indulges in criminal activity. Our hospital, located in the Greenwich Village area, has a large addict population using the emergency room facilities. The surgical service, dealing primarily with sequelae of addicts' criminal activity, has noted inappropriate responses out of proportion to the degree of their illnesses. This report details our experiences with addict patients on a thoracic surgical service.

Eleven heroin addicts were admitted to St. Vincent's Hospital on an emergency basis from June, 1970, to June, 1971. For purposes of comparison, 30 cases of trauma of comparable severity during the same period were also reviewed.

Case reports

Case 1. A thirty-two-year-old white male heroin addict was stabbed at the third interspace of the left side of the chest. On admission he was pale and unresponsive, his blood pressure was 60/0 mm. Hg, his pulse was faint at a rate of 60, and his central venous pressure was 21 cm. of water. There was a 1.5-cm. stab wound in the third intercostal space just to the left of the sternum. The neck veins were distended; breath sounds were audible over both lung fields. A diagnosis of pericardial tamponade was made.

At thoracotomy there were 500 ml. of fresh blood in the left chest cavity. A pericardial tamponade was drained with some return of heart action. Little response was noted in the blood pressure, so 1,500 ml. of blood and 1,500 ml. of crystalloid solution were administered with a rise in blood pressure to 100 systolic. Immediately postoperative, the pulse was noted to be irregular, and the central venous pressure rose to 35 cm. of water. This progressed to a cardiac arrest which was not responsive to external defibrillation, prompting reopening of the chest incision and direct cardiac massage. Good cardiac action was not restored until 1,500 ml. of blood were removed by phlebotomy.

Roentgenogram of the chest, after reclosing the incision, showed interstitial pulmonary edema and increased vascular markings consistent with pulmo-

*By invitation.

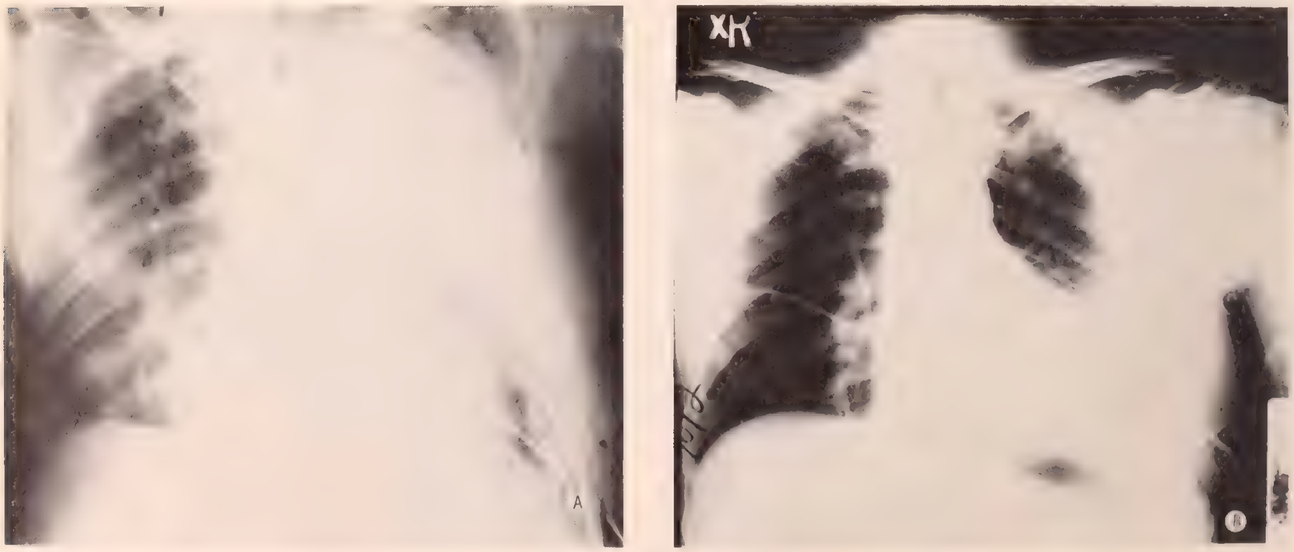

FIGURE 1. Case 1. (A) Chest film showing interstitial pulmonary edema and increased vascular markings consistent with pulmonary edema. (B) Discharge film showing residual pleural reaction.

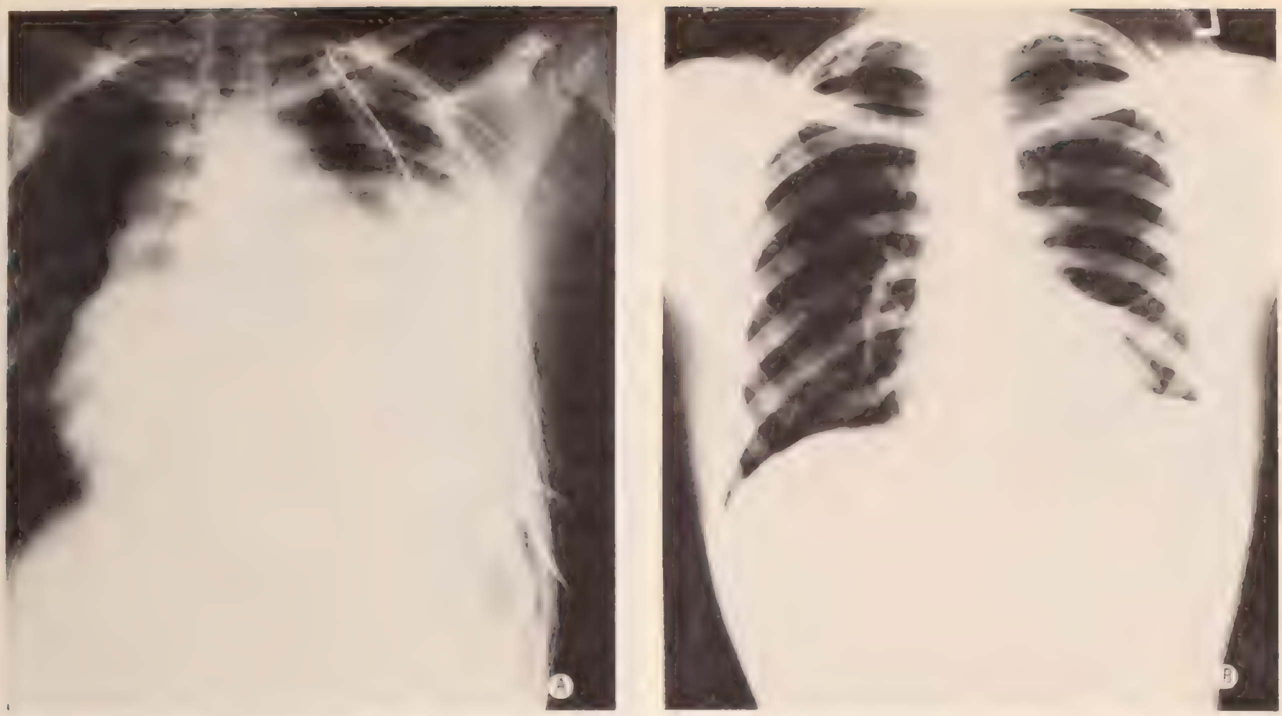

FIGURE 2. Case 2. (A) Chest film showing marked cardiac enlargement and interstitial edema. (B) Chest film showing return of heart size to normal.

nary edema. (Fig. 1A). Diuretic therapy was initiated, and the patient was returned to the operating room for closure of the chest. Digoxin, continuous positive pressure ventilation, and diuretics were administered with clearing of all symptoms. In the ensuing days a continuing febrile course was noted. X-ray film of the chest showed a persistent left pleural effusion, aspiration of which yielded old blood from which Serratia marcescens was cultured. Sputum cultures grew out Klebsiella and Pseudomonas. The temperature spiked to 104°F. daily. On the nineteenth postoperative day posterolateral thoracotomy and removal of loculated empyema were performed. Recovery after this procedure was uneventful. He was discharged on the thirty-fourth postoperative day. Discharge x-ray film of the chest demonstrates some residual pleural reaction on the left side (Fig. 1B).

Case 2. A seventeen-year-old white male heroin addict was stabbed in the epigastrium just to the left of the xiphoid process. No palpable pulse or blood pressure could be elicited. A pericardial tap yielded 30 ml. of blood with rise of blood pressure to 60 systolic, and the patient was taken to the operating room where a tense hemopericardium was drained. The immediate postoperative course was normal, but on the third postoperative day he became febrile. On the ninth postoperative day his temperature was 100°F., and a left pleural effusion was noted. Thoracentesis yielded 300 ml. of bloody fluid which was sterile. X-ray films of the chest showed increase in the size of the heart shadow and failed to differentiate pericordial effusion from four-chamber enlargement. On the seventeenth hospital day the temperature was 102.8°F., and the central venous pressure was 18 cm. The neck veins were distended. There was no peripheral edema. An electrocardiogram showed diffuse flattening of T waves in the precordial leads. A diagnosis of myocarditis was made.

A thoracotomy was performed, and 700 cc. of foul-smelling clotted blood were evacuated from the left pleural cavity. There was no pericardial effusion. Fluid replacement during surgery was 1,000 cc. of whole blood and 1,000 cc. of Ringer's lactate solution. Eight hours postoperatively there was sudden onset of dyspnea. The central venous pressure was 24 cm. of water. Moist rales were audible over both lung fields. The arterial pH was 7.43, the carbon dioxide pressure 33, bicarbonate ion 20.5, and oxygen pressure 72. Roentgenogram of the chest showed marked cardiac enlargement and interstitial edema (Fig. 2A). Intravenous diuretics and positive pressure breathing were administered with some improvement. Digitalis was given. Endotracheal intubation with intermittent positive pressure ventilation was effected. Slow clearing of the infiltrate was noted. On the twenty-seventh hospital day a cardiac series showed considerable diminution in heart size. An x-ray film of the chest just prior to discharge showed return of heart size to normal (Fig. 2B).

Case 3. A twenty-two-year-old heroin addict entered the emergency room with chest pain, fever, and a cough productive of greenish sputum.

On admission he appeared toxic, the temperature was 104°F., the pulse was 140, and there were rales over both lung fields. A grade 2 to 6 systolic murmur was audible over the left sternal border. The white blood cell count was 4,000. Blood and sputum cultures were positive for hemophilus, and ampicillin was begun and later changed to kanamycin. Resolu-

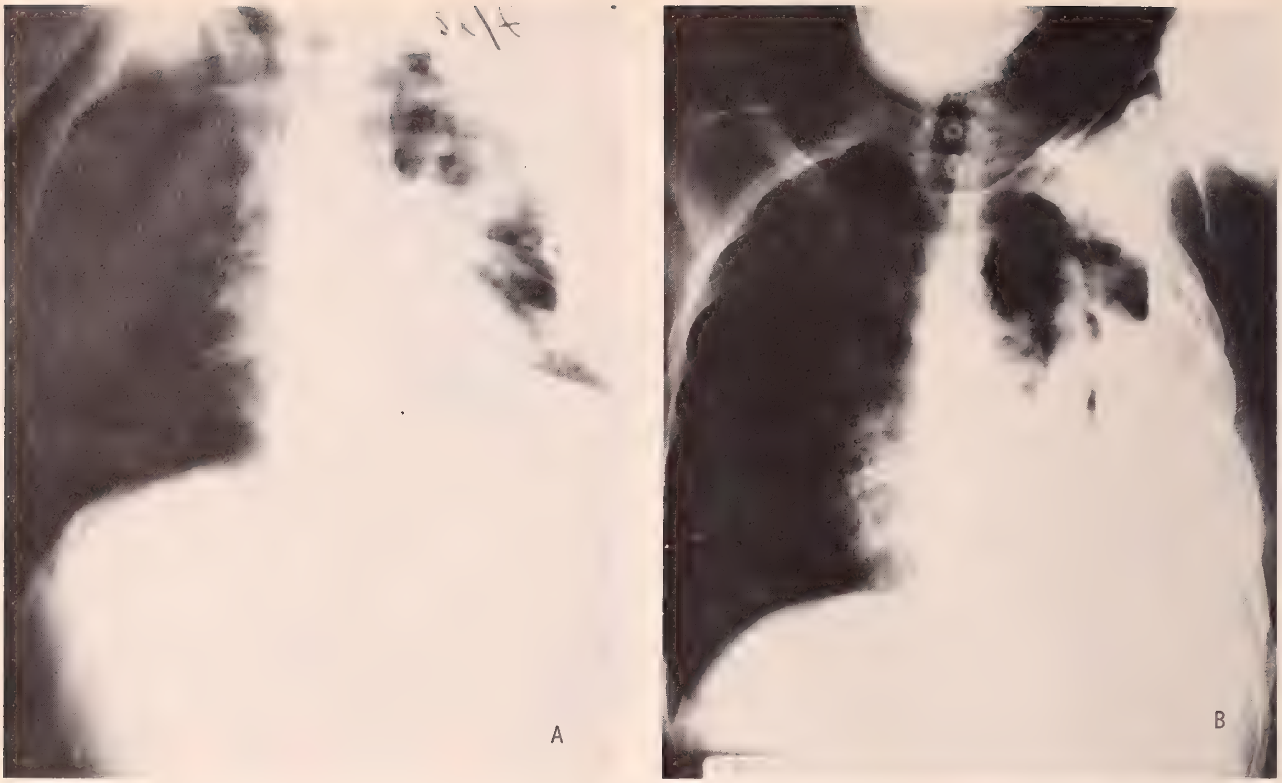

FIGURE 3. Case 3. (A) Chest film showing partial pneumothorax. (B) Chest film showing fluid levels and pneumatocele.

tion of the infiltrate was noted. The patient ran a low-grade temperature for fourteen days, but then spiking temperatures again were noted.

On the twenty-third hospital day the temperature was 105°F., and large amounts of foul greenish sputum were expectorated. Roentgenogram of the chest showed partial collapse of the left lung (Fig. 3A). Closed thoracotomy was productive of air, with expansion of the lung. He continued to run a febrile course with production of large amounts of sputum which grew out Klebsiella, Aerobacter, and Escherichia coli on subsequent studies. A pulmonary scan showed an infarction in the right lower lobe.

On the thirty-first hospital day, blood cultures grew out Pasteurella multicarda. An x-ray film of the chest demonstrated a pneumatocele in the left lung field (Fig. 3B). The temperature was 102°F. The liver and spleen were palpable, and the hematocrit was 28. A diagnosis of subacute bacterial endocarditis was made. Therapy was continued with penicillin and kanamycin.

On the forty-eighth hospital day a left thoracotomy was performed, and an empyema cavity overlying the left lower lobe was drained.

After initial improvement the spiking febrile course continued, and a left pleural effusion was noted, culture of which grew out Streptococcus faecalis. A chest tube was inserted. On the sixtieth hospital day thoracotomy with resection of portions of the fifth, sixth, and seventh ribs and open drainage of an empyema cavity were performed. In the ensuing weeks the wound responded to local irrigation, and the patient became afebrile. He was discharged to be followed daily in the outpatient clinic.

A bronchogram one year later showed complete atelectasis of the left lung, and left extrapleural pneumonectomy was done (Fig. 4). The total hospital stay was two hundred thirty-six days.

Table I summarizes this series of cases. The

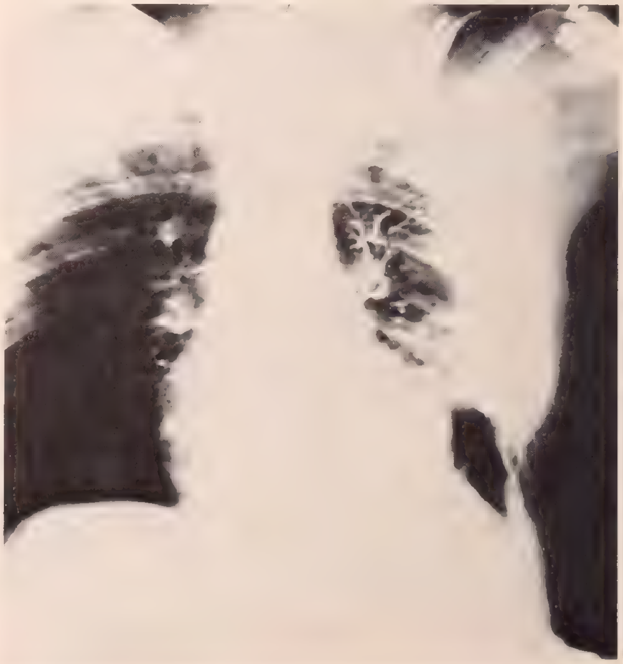

FIGURE 4. Case 3. Bronchogram showing complete atelectasis of left lung.

TABLE I. Clinical experience in 11 cases of thoracic surgical procedures in drug addict patients: complications of surgical procedures performed on this type of patients illustrated

Age	Injuries	Procedures	Complications
30	Stab wound, right	Suture cardiac wound	Congestive heart failure, empyema
21	Stab wound, chest	Repair lung and diaphragm, splenectomy	Empyema
17	Stab wound, left ventricle	Suture cardiac wound, drainage empyema	Congestive heart failure, myocarditis, empyema
32	Stab wound, left ventricle	Suture cardiac wound, drainage empyema	Empyema
31	Stab wound, left chest	Splenectomy, repair diaphragm	Wound infection and dehiscence
50	Stab wound, left chest	Splenectomy, repair diaphragm	Wound dehiscence
50	Stab wound, left chest	Splenectomy, repair diaphragm	Cardiac failure, refractory hypotension
29	Rib fractures, pneumothorax	Tube thoracostomy, splenectomy	Pneumonia atelectasis
30	Rib fractures, pneumothorax	Tube thoracostomy	Pneumonia atelectasis
23	Stab wound, chest	Repair lung laceration, cardioversion	Supraventricular tachycardia, pneumonia
21	Pneumothorax, empyema	Decortication, left pneumonectomy	Septicemia, resistant wound infection

TABLE II. Comparisons of complications of thoracic and cardiovascular procedures performed on heroin addicts and nonaddict population during same period

	Heroin Addicts (10)		Nonaddicts (30)	
Complications	Number	Per Cent	Number	Per Cent
Pulmonary edema, heart failure	3	30	0	0
Empyema	4	40	2	7
Wound infection and dehiscence	3	30	1	3
Pneumonia	3	30	3	10

sex and age incidence correlates well with previous reports, such as that of Helpern and Rho.[1] All of the addicts were "main liners" with a habit ranging from two to five bags per day. Only 1 had been admitted previously as a direct result of heroin poisoning. The 2 older addicts had had multiple hospital admissions for cellulitis and chronic alcoholism.

There were 3 stab wounds of the heart and 5 stab wounds of the chest with violation of the diaphragm. Four of these were handled by thoracotomy and laparotomy: 1 by a combined thoracotomy and laparotomy, 1 by a combined thoracoabdominal approach; the remaining 2 cases were of blunt trauma, both caused by falls from heights, with multiple rib fractures and pulmonary contusion necessitating aggressive pulmonary supportive therapy. In addition, these 2 patients also had laparotomy for visceral injury. The final case is a patient with empyema and infected pneumatocele who was admitted to the emergency room with pneumonia.

In contrast, Table II compares the complication rate among our series of heroin addicts with a series of 30 nonaddicted patients, admitted during the same period, with trauma to the thorax or cardiovascular system of comparable severity.

Heart failure resulting in pulmonary edema and cardiac arrhythmia were not seen in the nonaddicted group, whereas there was a 30 and 10 per cent incidence in the addict group. Infection was seen in about 30 per cent of the addicts, whereas this complication was seen in only 16 per cent of the nonaddicted group. These more serious complications were encountered twice as frequently in the addicts.

Comment

Some of the surgical problems peculiar to the narcotic addict have been well reviewed by Eiseman, Lam, and Rush.[2] The frequency of gastrointestinal symptoms, the difficulty in finding unthrombosed routes for intravenous therapy, and the routine of pre- and postoperative medication have all been noted. Clark[3] has emphasized the care of infected injection sites and the vascular complications thereof which may threaten the viability of extremities. The response of such patients to surgical stress, particularly to the cardiovascular system, has not received as much attention, however.

The cases reported illustrate complicated courses in excess of what one would expect, allowing for no other errors in management. Congestive heart failure and pulmonary edema are common consequences of heroin intoxication and are important causes of death among addicts.[4-6] However, pulmonary edema did not occur in Cases 1 and 2 until their cardiovascular systems were stressed with fluid loads during surgery. Foreign body emboli and pulmonary arteriolar thrombosis, resulting in cor pulmonale, have been reported in heroin addicts and may have predisposed these patients.[4,6] Hypersensitivity may also play a role.

Increased sensitivity to infection by organisms of relatively rare pathogenesis and decreased ability to withstand infection are hallmarks of Case 3. Pneumonia and lung abscesses represent a common cause for admission of addicts to the medical wards.[7]

The heroin addict does not tolerate trauma, surgical or otherwise, as well as the average hospital patient. A particular cause for this is not evident. A yet unrecognized defect is likely. It is important for us to realize that these people will react more severely, and we must anticipate these problems.

Summary

This report relates our experience with a series of addicts who were admitted to St. Vincent's Hospital and Medical Center of New York for treatment of trauma and surgery to the chest. The incidence of complications was considerably higher than in other patients seen with the same injuries. The incidence and severity of the complications were out of proportion to the injuries sustained.

Although the treatment required was no different from that in nonaddicts, successful management requires an awareness of the increased incidence of severe complications and meticulous attention to all aspects of their care.

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Discussion

Dr. Fitzpatrick: I have one question. After the patients undergo surgery, are they withdrawn or are they maintained on the drug?

Dr. Camer: It varies, sir. If they are having behavioral problems, we usually start them on methadone; but this hospital course is so protracted and long that the patients are usually off methadone by the time they are discharged.

Dr. Fitzpatrick: About how many of them?

Dr. Camer: About half of them.

Dr. Nealon: Dr. Fitzpatrick, many never stopped getting what they got before they entered the hospital and from the same source.

Dr. Fitzpatrick: I am told that in some of the hospitals around the city there are more bags on the floor than there are cigaret butts.

Dr. Nealon: I think one of the worst things that you can do is to try to decide to cure these addicts during the acute phase of their illness. I believe you have to get them over the immediate surgical problem.

Dr. Fitzpatrick: I have not had much personal experience with addicts. We have a narcotic detoxification unit at the hospital for adolescents, but I have not had much dealing with it. I am told that withdrawal from heroin really is not a violent explosive experience. It amounts essentially to a running nose and a cold. Is that true? I always envisioned it as being a wild, thrashing, explosive kind of thing, but our people here tell me that it usually is not that way.

Dr. Camer: We have behavioral problems but of a much lesser magnitude than that.

Dr. Fitzpatrick: Dr. Nealon, would you like to comment further?

Dr. Nealon: We brought up this subject because the first case shown really drew this to our attention. This fellow did not appear to be in poor condition. He had not sustained that much operative trauma. He had trauma to his heart, but it was really an easy case, so why should myocarditis develop? He really had a very rocky postoperative course, and we were quite concerned about him; therefore, this patient made us take a closer look at the other patients. I just believe that there is something wrong with the metabolism or the tissue of these people after they have been on drugs for awhile. What it is, I do not know, but they do not respond very well.

Dr. Fitzpatrick: Do you suggest that keeping up methadone treatment might be of benefit?

Dr. Nealon: No, I do not necessarily say so.

Dr. Fitzpatrick: You do not want to cure them the first postoperative day?

Dr. Nealon: My first efforts at curing them of the habit immediately cured me. We wanted to bring to your attention that you are more likely to have unusually severe complications with these patients, and that maybe we could come up with some answers as to the cause.

Eugene E. Cliffton, M.D., *New York City.* I wonder if you have done anything about immunologic responses.

Dr. Nealon: We have not, but I think that is an excellent idea.

The following report appears in its entirety.

INTRATHORACIC GOITER LOCATED IN POSTERIOR MEDIASTINUM

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Brooklyn, New York
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Brooklyn, New York

From the Division of Thoracic and Cardiovascular Surgery, Jewish Hospital and Medical Center of Brooklyn

The incidence of intrathoracic goiter located in the posterior mediastinum is relatively infrequent. Reports in the literature are varied because there are no uniformly accepted criteria for its definition.

To date, 93 cases of intrathoracic goiter located in the posterior portion of the superior and posterior inferior mediastinum have been reported in the literature.[1-33] In this presentation, interest is directed toward several unusual clinical problems encountered in the management of 2 patients with this lesion.

Case reports

Case 1. The patient, a seventy-year-old white male, was admitted with a one-year history of dry cough, increasing weakness of voice, progressive dyspnea, and dysphagia. A routine chest x-ray film five years previously revealed an intrathoracic mass. It was asymptomatic until one year prior to admission. There was a history of goiter in the paternal family.

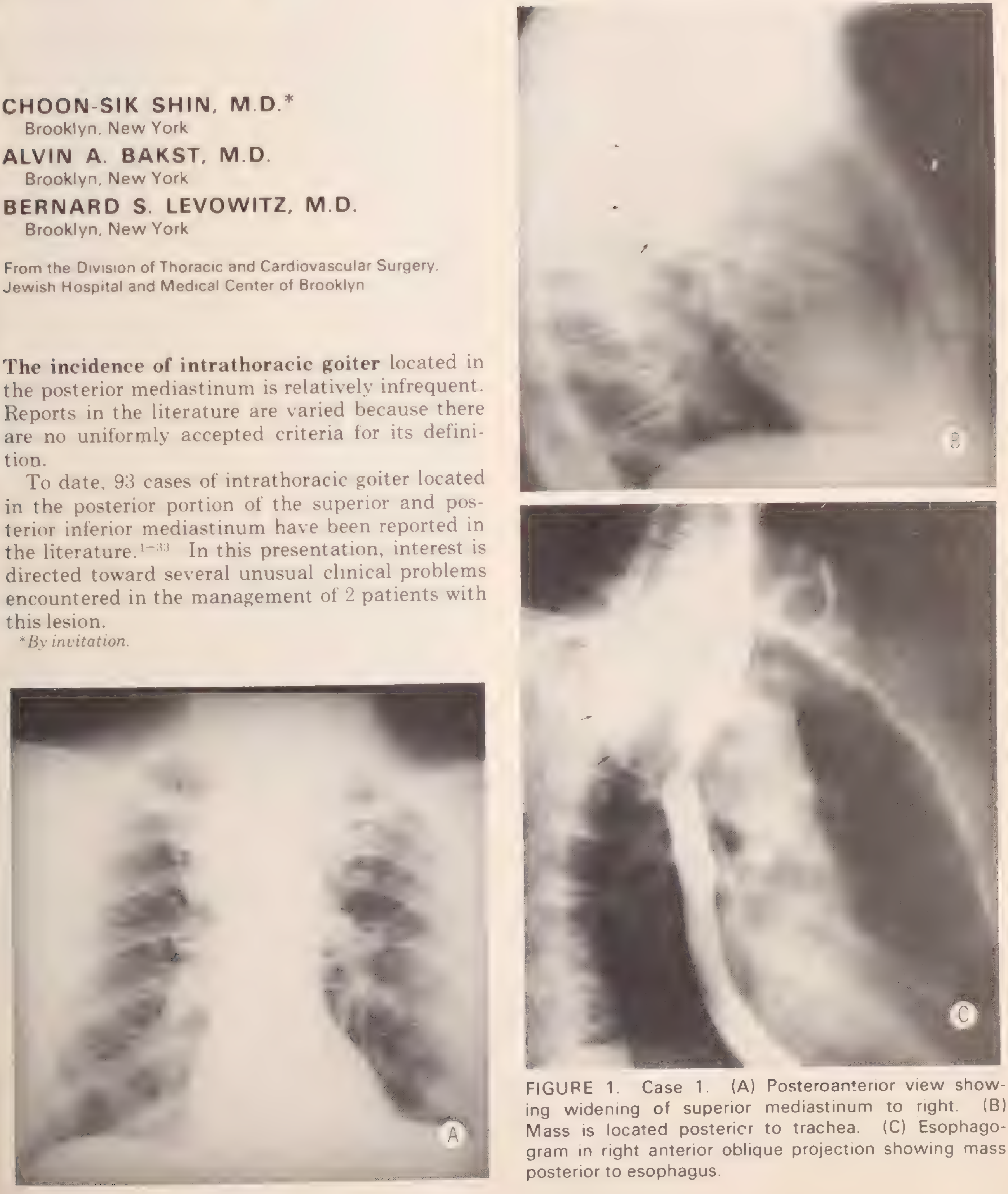

FIGURE 1. Case 1. (A) Posteroanterior view showing widening of superior mediastinum to right. (B) Mass is located posterior to trachea. (C) Esophagogram in right anterior oblique projection showing mass posterior to esophagus.

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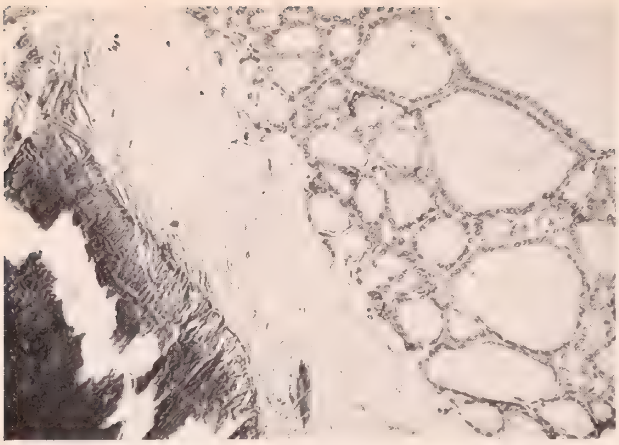


FIGURE 2. Case 1. Photomicrograph of excised tumor. Calcific focus is seen adjacent to thyroid follicles (hematoxylin and eosin stain × 100).

On physical examination the blood pressure was 120/80 mm. Hg, pulse 76 per minute, and temperature 98.6°F. There were no symptoms or signs of thyrotoxicosis. There was no palpably enlarged thyroid in the neck. The roentgenogram of the chest and esophagogram showed a mass extending from the lower neck into the posterior mediastinum, displacing the esophagus and trachea to the left and anteriorly (Fig. 1). Thyroid scan using radioactive iodine revealed normal activity in the neck, but there was no uptake by the intrathoracic mass. The triiodothyronine and twenty-four-hour neck uptake were within normal limits. Findings on the electrocardiogram were normal. Indirect laryngoscopy showed normal motion of vocal cords on phonation and respiration. On February 2, 1971, the patient was operated on for a superior mediastinal tumor through a median sternotomy. A large, multiloculated, orange-sized tumor was located in the posterior mediastinum. There was a distinct extension of this tumor into the cervical thyroid, the pedicle of which extended behind the innominate vessels. The right lung was displaced downward and anteriorly, and the superior vena cava and right innominate vessels were retracted medially. Dissection was carried out with some difficulty. The only significant blood supply to the tumor arose from the inferior thyroid artery. The mass was completely freed and the pedicle transected. The mediastinum was drained with a number 36 plastic catheter attached to underwater drainage and the incision closed in routine fashion. The postoperative course was uneventful, and the patient was discharged on February 13, 1971. The pathologic report was nodular goiter with foci of calcification. The specimen weighed 110 Gm. and measured 9 by 5 by 5 cm. (Fig. 2).

Comment. Failure to demonstrate I^{131} activity in an intrathoracic goiter was diagnostically misleading. Moreover, the median sternotomy approach to this lesion was less than ideal, and its removal would have been facilitated through the transpleural route.

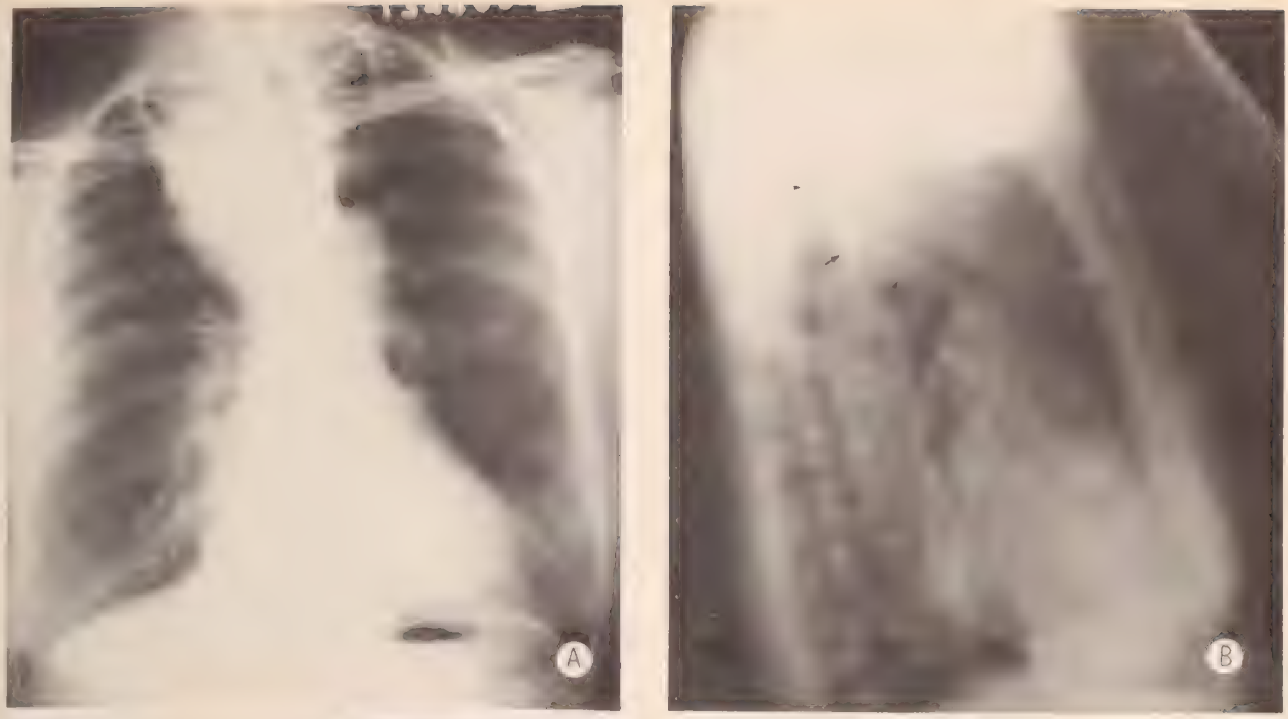
Case 2. The patient, a sixty-seven-year-old white female, was admitted because of anorexia, dysphagia, and a 10-pound weight loss of two months' duration. The patient noted some change in her voice and a sensation of a lump in her throat. The family history disclosed that her father and two daughters had nontoxic goiters. On physical examination blood pressure was 140/70 mm. Hg and the pulse 80 per minute. The pertinent findings were moderate distention of the neck veins and the veins of the anterior chest wall, more marked on the right side. No masses were palpable in the neck.

Roentgenogram of the chest and esophagogram revealed a large mass extending from the neck into the right posterior mediastinum with displacement of trachea and esophagus to the left (Fig. 3). The thyroid scan revealed normal activity in the left lobe of the cervical thyroid, diminished uptake by the right lobe, and no activity in the intrathoracic mass. The twenty-four-hour uptake and triiodothyronine determinations showed normal thyroid function. On March 9, 1971, the patient was explored through a right posterolateral thoracotomy through the fourth intercostal space with preoperative diagnosis of intrathoracic goiter. A mass was located in the posterior mediastinum reaching just below the azygos vein with its stalk extending into the neck. Compression of the superior vena cava was evident. There was no intrathoracic blood supply to the tumor. The mass was freed from surrounding structures, the pedicle was divided, and the tumor removed. The right pleural space was drained with a number 36 plastic chest tube and connected to underwater drainage. Her postoperative course was complicated by respiratory difficulty due to right vocal cord paralysis which was confirmed by laryngoscopy. Tracheostomy was performed on the first postoperative day. She was discharged in satisfactory condition four weeks later. The specimen consisted of thyroid gland weighing 150 Gm., measuring 10 by 8 by 4 cm. with a well-circumscribed focus of Hürthle cell carcinoma surrounded by abundant normal thyroid tissue (Fig. 4).

Comment. Of interest in this case was the finding of compression of the superior vena cava. It was apparent that the recurrent laryngeal nerve was injured during removal of the tumor. The disadvantage of the posterolateral thoracotomy approach to this lesion is the hazard of trauma to the recurrent laryngeal nerve since its course cannot be visualized.

Comment

Location. The evolution of intrathoracic goiters is an unsettled question. The mechanical theory of origin described by Lahey and Swinton[1] would account for the vast majority. The downward direction for expansion is the path of least resistance, since the growth of cervical goiter is limited by the base of skull superiorly, strap muscles anteriorly, vertebrae posteriorly, and by the first rib laterally. Swallowing, which causes the goiter to move up and down in the thoracic inlet, and negative intrathoracic pressure, which results in its downward displacement, are contributing factors.



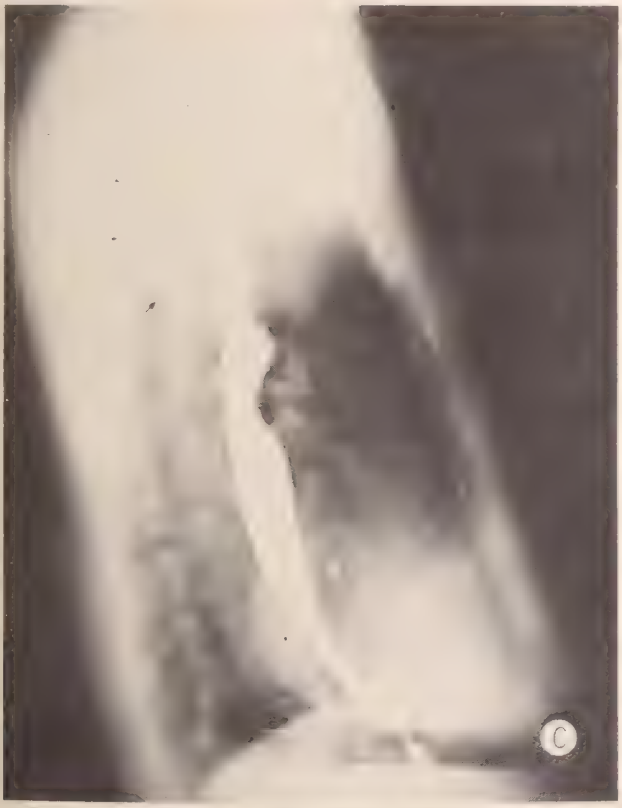


FIGURE 3. Case 2. (A) Posteroanterior view showing large superior mediastinal mass displacing trachea to left. (B) Mass appears posterior to trachea. (C) Esophagogram in lateral view showing compression and anterior displacement of esophagus by goiter.

Embryologic anomalies may account for the aberrant location of retrosternal goiters. In their usual position anterior to the recurrent laryngeal nerve and innominate vessels they can originate

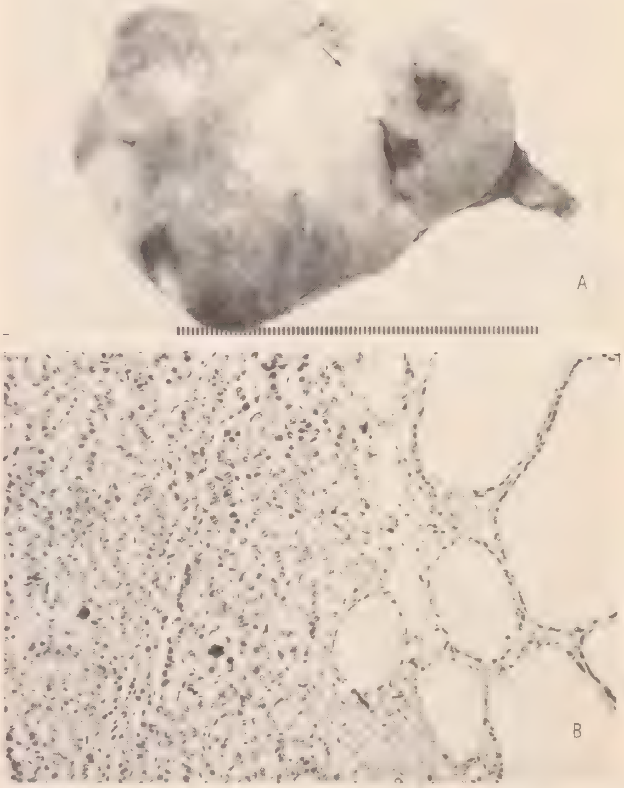


FIGURE 4. Case 2. (A) Gross appearance of excised goiter with focus of Hürthle cell carcinoma (arrow). (B) Photomicrograph showing columns of large polygonal cells with abundant cytoplasm characteristic of Hürthle cell tumor. Normal thyroid tissue seen to right (hematoxylin and eosin stain × 100).

either from the lower poles of the lateral thyroid lobes or from the isthmus. However, goiters located posterior to these structures arise from posterior and lateral aspects of the thyroid lobes.[2] The relatively fixed aortic arch is responsible for the fact that the goiter is more common on the right side of the mediastinum than the left.

Symptomatology. Patients with intrathoracic goiters fall into one of three symptomatic groups. The first group is asymptomatic. In a relatively large number of patients intrathoracic goiter is discovered as an incidental finding on a roentgenogram of the chest. The second group has symptoms and signs of thyrotoxicosis. Hyperthyroidism was present in 50 per cent of Crile's[3] series, whereas Rietz and Werner[4] reported no instance of toxicity in a series of 48 cases. Nielsen and Iversen[5] noted 4 toxic goiters in 37 patients, and Lindskog and Goldenberg[6] had 2 cases among 31 patients with intrathoracic goiters who received antithyroid therapy before surgery. The last group is characterized by pressure symptoms. Most of the patients with posterior mediastinal goiters belong in this group. In our 2 patients symptoms were due to compression of the trachea, esophagus, and recurrent laryngeal nerve. Displacement of the trachea and esophagus was evident on chest x-ray films and esophagograms. Our second patient had clinical signs of a superior vena caval syndrome. Cases of superior vena caval syndrome caused by intrathoracic goiter have previously been reported.[7-9]

Diagnosis. Careful roentgenologic examination of the chest is essential to establish an accurate preoperative diagnosis. McCort[10] described the significant roentgenographic findings of an intrathoracic goiter. A nonpulsatile tumor in the mediastinum seen on fluoroscopy which displaces the trachea at the level of the thoracic inlet and moves upward on swallowing is diagnostic. Aortography and esophagograms will help exclude other lesions usually mistaken for intrathoracic goiter.

Thyroid scan using I^{131} is helpful in diagnosis only if the thyroid tissues function sufficiently to concentrate iodine. Our 2 patients had I^{131} uptake in the cervical thyroid but none in the intrathoracic mass. This is caused by nonfunctioning intrathoracic thyroid tissue. A positive uptake of radioactive iodine will confirm the diagnosis of intrathoracic goiter, but a scan with negative results does not exclude the diagnosis.[11-13]

Intrathoracic goiter must be differentiated from other neoplastic and non-neoplastic diseases of the mediastinum. This includes thymoma, dermoid cyst or teratoma, aneurysm of innominate artery or aorta, mega-esophagus, esophageal tumor, lymphoblastoma, and Hodgkin's and neurogenic tumors.

Treatment. The treatment of choice for intrathoracic goiter is surgical removal. The danger from mechanical interference with the airway constitutes the most compelling indication for operative removal. An asymptomatic posterior mediastinal thyroid mass should be removed because of the threat of cancer. Moreover, as the tumor enlarges, pressure symptoms may be produced, and surgical removal becomes far more hazardous.

Various operative approaches to intrathoracic goiter have been described in the literature.[4-31] These include the cervical route, median sternotomy, posterolateral thoracotomy, and combined cervical and posterolateral thoracotomy. The preferred surgical approach to the large posterior mediastinal goiter with a nonpalpable cervical thyroid is the posterolateral thoracotomy. This exposure reduces the danger to great vessels, since the tumor lies posteriorly, and control of the occasional vessels arising from intrathoracic trunks is readily achieved.[32,33] The combined thoracocervical approach may be ideal in the removal of a posterior mediastinal goiter with an enlarged cervical thyroid.

Summary

Two cases of posterior mediastinal goiter have been presented. Symptoms were due to compression of trachea, esophagus, and recurrent laryngeal nerve. One patient had clinical signs of a superior vena caval syndrome. Thyroid scan using radioactive iodine was not helpful in identifying the mass as thyroid tissue. Excision of intrathoracic goiters located in the posterior mediastinum through a posterolateral thoracotomy affords the least hazardous approach to removal of these lesions.

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Discussion

Joseph Timmes, M.D., *Jersey City, New Jersey.* This is an interesting problem which should be simple for the thoracic surgeon but which, at times, may become relatively complicated. We had a somewhat similar patient in whom the lesion protruded into the right side of the chest. We did a right posterolateral thoracotomy and found that the mass was arising from the left lobe of the thyroid gland. To control the vessels and the left recurrent laryngeal nerve from the right side of the chest is quite a problem. Of course, you have to turn the patient over, make a cervical approach, and work through both incisions at the same time.

Paul A. Kirschner, M.D., *New York City.* This is a very important subject which Dr. Shin has brought to our attention. No one sees very many of these cases, so that each time one appears, the problem has to be worked out almost de novo. It is essential to refer to a report published by Sweet.[2] He reported 6 cases, 3 operated on through the chest and 3 through the neck. They were all colloid goiters; none was a malignant neoplasm. He indicated that if the masses were large, they had to be approached through the chest. He also made the point, which you have just heard, that the goiters that descend into the posterior mediastinum arise from the posterior and lateral portions of the thyroid lobes, while those that descend anteriorly and which can usually be removed by the cervical approach are usually derived from the isthmus and inferior poles of the thyroid gland. We have a patient in the hospital now who illustrates some of the factors but also has some interesting unusual features.

A seventy-five-year-old woman was admitted with a three- to four-week history of dyspnea, severe dysphagia, marked weight loss, and then aphonia with crowing respirations. A slide showed a large mediastinal mass. Ten months previously her chest x-ray film revealed no abnormality.

The lateral view showed the mass to be posterior to the trachea which was narrowed. This is the typical position of a retrotracheal retroesophageal goiter. The barium-filled esophagus was wrapped around the mass.

The patient was admitted as an emergency case because of respiratory difficulties. Further examination revealed that the right lobe of the thyroid could be palpated in the neck, but on the left side the top of a firm mediastinal mass could be felt alongside the trachea. Indirect laryngoscopy revealed paralysis of both vocal cords. A right Horner's syndrome was present, and the cervical veins were engorged.

An emergency tracheostomy was performed immediately after admission. The thyroid isthmus which was in the normal position and contained a small nodule was removed. The left retrotracheal mass was biopsied and turned out to be an undifferentiated thyroid carcinoma. A tracheostomy tube was literally forced into the narrow trachea. We tried to feed the patient through a Levin tube which could be passed into the stomach but which was constantly regurgitated. A gastrostomy was therefore performed. She is now in a critical state on a respirator and has had one x-ray treatment of 750 rads.

The reason for reporting this case is to raise the question of the incidence of carcinoma in these retrotracheal retroesophageal goiters.

Emil A. Naclerio, M.D., *New York City.* I wish to corroborate some of the points outlined and to present a few additional pertinent points relative to the infrequently encountered goiters which are located in the posterior mediastinum of the thorax.

I recently had a patient admitted to Columbus Hospital with a three-months' history of mild dysphagia and occasional shortness of breath. Thoracic roentgenograms demonstrated evidence of a mass in the upper region of the posterior mediastinum; there was significant displacement of the trachea and esophagus to the left. An esophagogram, tracheogram, and venogram further delineated the mass and clearly showed the extent of tracheal and esophageal displacement and the degree of compression of these structures.

Physical examination with the palpating finger revealed no thyroid enlargement in the neck, as also observed by the essayists. This is unlike the quite commonly encountered anteriorly located (substernal) goiters; these tumors practically always communicate with the thyroid in the neck and are generally associated with an easily palpable cervical component.

Thyroid scanning using radioactive iodine failed to show any accumulation of iodine in the region of the mediastinal mass. This technic, therefore, should not be relied on for a definitive diagnosis of an intrathoracic goiter, since a number of these goiters are complicated by nonfunctioning thyroid tissue.

I would also like to make one more comment. When dealing with an intrathoracic goiter in the posterior superior mediastinum, one should always employ two separate incisions, posterolateral thoracotomy combined with a cervical incision. A properly chosen position and an accurately planned approach will greatly facilitate the removal of these masses.

In the patient whom I treated, I had no problems whatsoever with ventilation, circulation, or bleeding. A posterolateral thoracotomy was performed; the tumor was carefully mobilized and removed through a separate cervical collar incision, at which time vascular control was obtained by ligating the inferior thyroid artery and venous connections. Postoperatively, the patient did well and was discharged ten days later.

Allan E. Bloomberg, M.D., *New York City.* I would like to ask Dr. Shin a question. What happened to the patient's voice after the removal of the tumor in the first case? Also, I was not sure from the presentation whether there was involvement by tumor of the recurrent laryngeal nerve, or whether it was just a pressure phenomenon. I believe that one can get a very good idea of whether a mass is anterior or posterior to the trachea by auscultation of the trachea.

Dr. Shin: I was interested in Dr. Kirschner's question, but I was unable to come to any definite answer. I had the impression that there was no difference as far as incidence of carcinoma is concerned, but one report mentioned that the incidence of carcinoma is higher in intrathoracic goiter, just as an intra-abdominal nondescending testicle has a higher incidence present in that organ.

In regard to Dr. Bloomberg's question, there has been no change in the 2 patients postoperatively as far as their voice is concerned. With regard to Dr. Kirschner's case, our patients did not have much respiratory distress preoperatively, even though there was tracheal compression.

HIGH-VELOCITY PULMONARY INJURY

Relation to traumatic wet-lung syndrome

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New York City
EUGENE E. CLIFFTON, M.D.
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From the Department of Surgery, Memorial Hospital for Cancer and Allied Diseases

In a study of 104 battle casualties who required thoracotomy for penetrating chest injuries, 60 patients required surgical intervention for major pulmonary wounds. Indications for thoracotomy were hemorrhage, extensive chest-wall damage, and severely contused and lacerated lung, frequently accompanied by hypoxemia. Complicating factors included shock in 67 per cent and multiple injuries (extrathoracic) in 80 per cent of these patients. The operative procedures performed included pneumonectomy in 7 patients (none survived), lobectomy in 33 patients (17 survived), wedge resection in 8 (7 survived), and oversewing of bleeding pulmonary sites or bronchial repair in 12 patients, 10 of whom survived. The overall mortality rate was 43 per cent.

Pulmonary insufficiency was the major postoperative complication and occurred in 44 patients: traumatic wet-lung syndrome developed in 28, and 17 of these expired. Contributory causes of this syndrome were high-velocity chest-lung injury, massive infusion of blood and saline, intrabronchial hemorrhage, and long-term respirator care. Suggestions to improve survival include early exploratory thoracotomy and conservative resection of traumatized lung when clinical signs warrant. Pneumonectomy is usually contraindicated. Intraoperative uses of a Carlens tube, judicious administration of blood and saline, frequent changing of blood filter sets, careful postoperative use of the volume respiratory monitored according to patient's arterial gases, and use of appropriate diuretics, steroids, digitalis, and anti-

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By invitation.

biotics should improve patient survival in high-velocity chest injuries.

Discussion

Dr. Timmes: Dr. Wanebo, that is a tremendous series. Are we correct in assuming that all of these are Vietnamese casualties?

Dr. Wanebo: All these casualties occurred in Vietnam. About 70 per cent were Vietnamese, and about 30 per cent were U.S. casualties.

Dr. Timmes: Any report on thoracic trauma automatically sets the stage for Dr. Naclerio.

Dr. Naclerio: The term "traumatic wet lung" was introduced during World War II by Brewer, Samson, and Burford. They observed that this pathologic state was common to all patients with major thoracic trauma and, when severe, proved lethal in practically all situations.

I wish to emphasize that traumatic wet lung is a loose clinical term and not an accurate pathologic one. In light of present knowledge, it can be appropriately classified along with other potentially lethal pulmonary pathophysiologic states, namely, secretional obstruction of lower airways, congestive atelectasis, the noncompliant or stiff lung, and shock lung. These so-called entities are unique in that they all bear many similarities as to pathogenesis, clinical manifestations, treatment, and prognosis. Pulmonary insufficiency and hypoxemia incident to the resultant reduction in lung compliance, pulmonary hypertension, increased alveolar-capillary permeability, fluid extravasation, and pulmonary shunting are basic to these entities.

It is to be noted that "wet lung" in World War II, much as "shock lung" in Vietnam did not develop as a result of penetrating or blunt trauma to the lung alone; in many instances it occurred secondarily, consequent to some nonspecific hemodynamic response to tissue insults in other parts of the body, such as brain trauma, abdominal injury, and fractures of long bones. Shock is a particularly common cause; this complicating factor was found in 67 per cent of the battle casualties studied. Fluid overload, fat embolism, sepsis, aspiration of gastric contents, oversedation, and postoperative abdominal distention are other frequent contributing factors.

The tragedy of traumatic wet lung is that once respiratory difficulty, cyanosis, and severe hypotension become manifest, the essential measures necessary to sustain life, namely, endotracheal aspirations, administration of high concentrations of oxygen, and mechanical ventilation using high pressures to overcome the significant reduction in pulmonary compliance, themselves often produce lung damage. These modalities, therefore, while essential and therapeutic in scope, also play a definite role in bringing about severe respiratory insufficiency and death.

Hence, the importance of immediate respiratory supportive measures, judicious administration of blood and crystalloid solutions to prevent fluid overload, as brought out by Dr. Wanebo, and prompt thoracotomy when indicated.

As for the patient with a severely contused and/or lacerated lung, I should like to state that one may have difficulty in deciding whether or not excisional therapy is necessary, particularly when it is realized that pulmonary contusions and lacerations heal spontaneously in practically all instances. This point deserves emphasis, because at thoracotomy the surgeon may be tempted to remove a lobe or entire lung for a parenchymal lesion that may be bleeding at the time, when in the particular circumstance simple mattress sutures, using fine suture material, may suffice.

For massive hilar pulmonary bleeding, one should not attack the bleeding by blind application of large clamps or hemostats. In these situations simple manual compression of the hilum often proves effective for temporary vascular control; one may also resort simply to throwing a ligature or two around the hilum or cross-clamping the hilar structures, if an appropriate vascular clamp is immediately available. These lifesaving maneuvers not only prevent death from exsanguination but also often preclude the need for an emergency pneumonectomy. With bleeding under control, the surgeon is then able to proceed with the indicated dissection and repair. In certain situations, however, the circumstances are such that pneumonectomy becomes necessary.

Bleeding from a secondary hilar vessel can be more appropriately controlled by grasping the lung at some distance from the bleeding area with an Allis forceps, applying traction on the lung, and then rotating the handle of the forceps until all bleeding ceases. Definitive repair can then be instituted.

R. G. Carlson, M.D., *New York City.* I would like to mention the use of the membrane oxygenator for patients with bad lungs. The disposable Landé-Edwards membrane oxygenator is available today for use in any hospital.

At The New York Hospital-Cornell Medical Center we treated a woman with acute respiratory insufficiency with the Landé-Edwards membrane oxygenator by perfusing 3,000 ml. blood per minute for seven and one-half days.

This oxygenator can be used in any patient who is dying from reversible respiratory insufficiency. Bill Rae, M.D., of Dallas, Texas, recently used the Landé-Edwards membrane oxygenator for twenty-four hours without heparin. Perhaps before long, we will be able to avoid the use of systemic heparinization.

Dr. Wanebo: Certainly Dr. Naclerio's discussion is a report in itself and raises many questions which time precludes answering from this podium.

Dr. Carlson's reference to potential use of the membrane oxygenator to support patients with acute pulmonary insufficiency has merit. This apparatus may eventually enable us to salvage some of these seriously ill patients by tiding them over their acute pulmonary insufficiency.

The following report appears in its entirety.

DIRECT CORONARY ARTERIAL SURGERY

Comparative study of internal mammary-coronary arterial direct anastomosis and saphenous vein jump graft*

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Since we reported the first successful internal mammary-coronary arterial anastomosis on February 8, 1968,[1] several other methods of direct coronary arterial surgery using modern technics have been reported.[2,3] Currently, the saphenous vein jump graft is the most popular method of revascularizing the ischemic myocardium due to segmental coronary arterial obstruction. However, the final results of these technics have not yet been properly evaluated either clinically or experimentally.

The immediate favorable results of the saphenous vein grafts and the internal mammary-coronary arterial anastomoses are fairly well established.[4] The patency rates of the anastomoses immediately after the operation and in the one-year follow-up study are 90 per cent and more than 70 per cent, respectively, in most clinics (Table I). However, the patency rates of these anastomoses for the five-year postoperative period will not be known for some time.

TABLE I. Postoperative patency rates in revascularization of myocardium

Procedure	Years (Per Cent) 1	2	3	4
Internal mammary artery direct anastomosis	76	...	...	...
Saphenous vein direct anastomosis	72	...	...	...
Internal mammary artery implant	94	70	70	68
Gastroepiploic artery implant	86	82	80	...

Scattered reports of the premature occlusion of the saphenous vein grafts due to subintimal fibrohyperplasia in clinical cases, especially in the Milwaukee group, connote the gloomy fate of the vein grafts in the long-term follow-ups.[5]

The patency rate of the saphenous vein graft in the leg for occlusive peripheral arterial disease showed that less than half of the grafts were patent after five years in well-controlled studies.

In 1969 the authors initiated experiments on dogs for the purpose of comparing the internal mammary-coronary arterial anastomosis and the saphenous vein jump graft. Preliminary studies indicated the supremacy of the arterial anastomosis over the vein graft.

Materials and methods

One hundred fifty-eight 30-Kg. mongrel dogs were used for these experiments. Under intravenous general anesthesia with pentobarbital sodium (Nembutal), the dogs were intubated with endotracheal tubes and connected to the respirator.

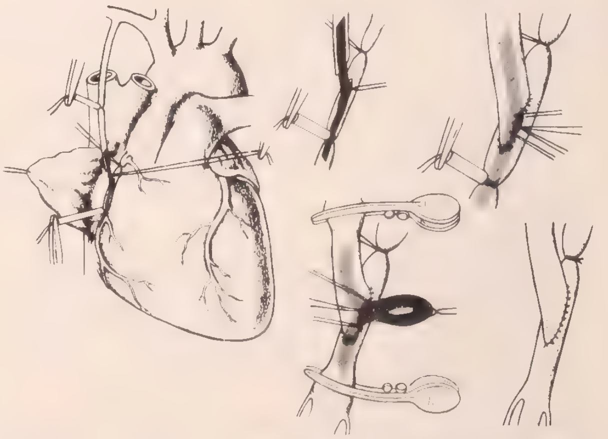


FIGURE 1. Direct end-to-side anastomosis between right internal mammary artery and right coronary artery. Offsets show step-by-step technics of anastomosis with plastic shunt cannula without using cardiopulmonary bypass.

*This study was supported by the John A. Hartford Foundation for research of revascularization of the posterior ischemic myocardium.

[†] *By invitation.*

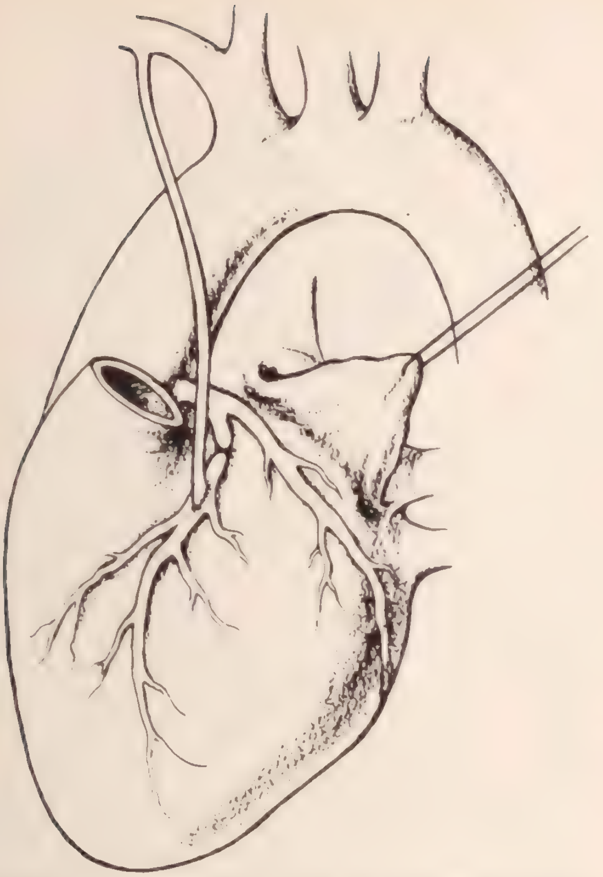


FIGURE 2. Direct end-to-side anastomosis between left internal mammary artery and anterior descending branch of left coronary artery. Anterior descending artery was ligated above anastomosis.

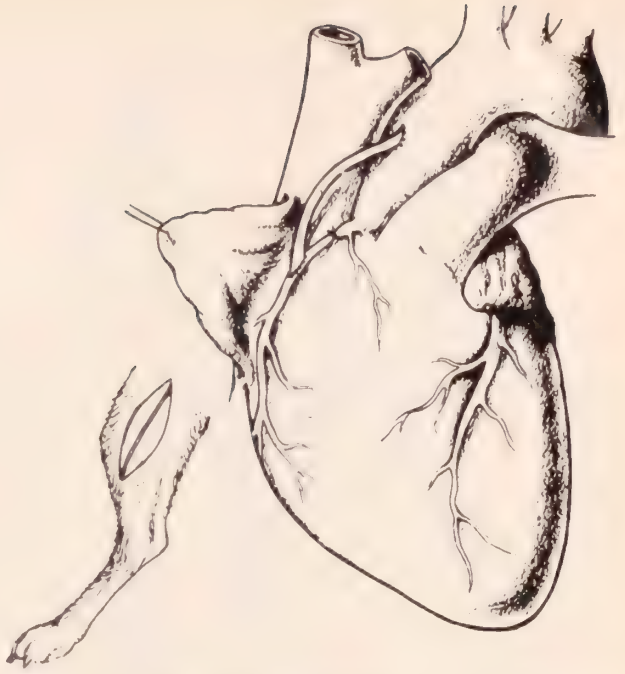


FIGURE 3. Aortocoronary saphenous vein jump graft between ascending aorta to right coronary artery.

Experiment 1. *Right internal mammary-right coronary-arterial direct anastomosis* (Fig. 1). Using the right lateral thoracotomy through the fourth intercostal space, the chest cavity was opened. The right internal mammary artery was mobilized from the chest wall, from the second intercostal space to the eighth intercostal space. The right coronary artery was mobilized from the underlying epicardium about 0.5 cm. from its origin for a distance of 2 cm. One milligram per kilogram of heparin sulfate was administered intravenously.

The distal part of the internal mammary artery was ligated, and the internal mammary artery and the coronary artery were anastomosed in end-to-side fashion. To avoid unnecessary complications, a heart-lung machine was not used in these anastomoses. In dogs the maximum tolerance for acute myocardial ischemia without permanent injury to the myocardium or without ventricular fibrillation is about three minutes. Since the anastomosis could not be completed within this limited time, an internal shunt catheter was necessary to establish the continuity of the blood flow during the anastomosis. One end of a plastic cannula was inserted into the distal portion of the right internal mammary artery and the other end through the incision in the distal portion of the right coronary artery to establish the required blood flow during the anastomosis. The anastomosis was made around the plastic cannula using number 6-0 Ethiflex interrupted stitches, and all but three stitches were not tied down. After the internal shunt cannula was removed through the anastomotic opening, these three stitches were tied to complete the anastomosis.

Experiment 2. *Left internal mammary artery and circumflex or anterior descending coronary arterial anastomosis* (Fig. 2). Using left thoracotomy through the fourth intercostal space, the left internal mammary artery was mobilized from the chest wall and was anastomosed to either the anterior descending branch or the circumflex branch of the left coronary artery using the technic which was described previously.

Experiment 3. *Aortocoronary saphenous vein jump graft between ascending aorta and right coronary artery* (Fig. 3). The vein was mobilized from the hind leg of the dog and transplanted between the ascending aorta and the right coronary artery using a technic similar to that described in Experiment 1, except that the end-to-side anastomosis between the saphenous vein and the ascending aorta was made without the use of a plastic cannula prior to the anastomosis between the saphenous vein and the right coronary artery.

Experiment 4. *Aortocoronary saphenous vein jump graft between ascending aorta to circumflex*

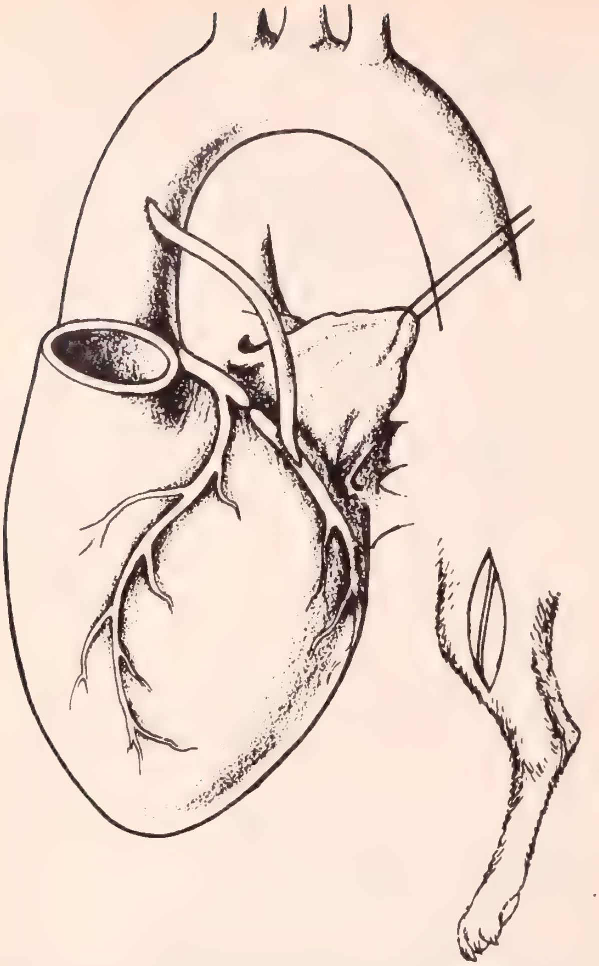


FIGURE 4. Aortocoronary saphenous vein jump graft between ascending aorta and circumflex branch of left coronary artery.

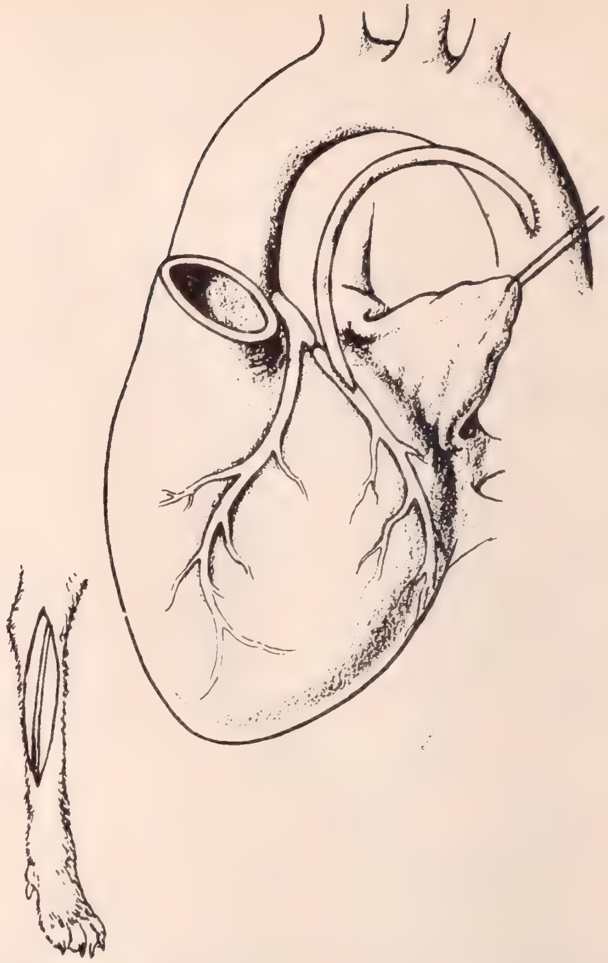


FIGURE 5. Aortocoronary cephalic vein jump graft between descending aorta and circumflex branch of left coronary artery.

branch of left coronary artery (Fig. 4). Through a left thoracotomy, the saphenous vein jump graft was made between the ascending aorta and the circumflex branch of the left coronary artery using the technic which was described in Experiment 3. After 24 trials of Experiment 3 and 10 additional trials of the technics in Experiment 4, we were convinced, in the canine study, that the aortocoronary anastomosis using the saphenous vein jump graft cannot be effectively established from the ascending aorta.

Because of excessive fatty tissue in the adventitia and the thickened medial wall, the wall of the ascending aorta in dogs is twice as thick as that of the descending aorta or the human ascending aorta. The anastomosis between the thin-walled saphenous vein graft and the thick-walled ascending aorta cannot be achieved with satisfactory intimal approximation. If the intima cannot be approximated properly, a thrombus will be formed, and the graft will close in the immediate or early postoperative period.

Experiment 5. *Aortocoronary saphenous vein jump graft between descending aorta and circumflex branch of left coronary artery* (Fig. 5). For the reason mentioned previously, the majority of the saphenous vein jump grafts to the left coronary artery were performed from the descending aorta to the circumflex branch of the left coronary artery, using a technic almost identical to that described in the previous four experiments. However, the cephalic vein was substituted for the saphenous vein to avoid the discrepancy between the size of the vein and the anastomosing circumflex branch of the left coronary artery.

Results

Experiment 1. Seventy-five dogs were used, and 206 blood-flow studies were performed in this group. The studies showed the patency rate of the anastomoses to be 84 per cent. The average blood flow through the patent graft was 15.3 cc. per minute (Table II). If the graft was patent after nine months, it remained patent during the entire three years of the study (Fig. 6), and the blood flow remained the same (Fig. 7). The nor-

TABLE II. Per cent patency of direct (end-to-side) anastomosis of the right internal mammary artery to the right coronary artery (75 dogs)

Length of Survival	Number of Blood Flow Studies	Patency Number	Patency Per Cent	Postoperative Average Flow Rate (cc. per minute)
0 to 3 Days	64	55	86.0	15.6
4 to 30 Days	57	47	82.5	15.2
1 to 5 Months	44	38	86.3	15.6
6 to 9 Months	30	22	73.3	15.7
10 to 18 Months	8	8	100	14.8
19 to 24 Months	2	2	100	15.3
25 to 36 Months	1	1	100	15.0
TOTALS	206	173	84.0	15.3

TABLE III. Per cent patency of direct (end-to-side) anastomosis of the left internal mammary artery to the circumflex branch of the left coronary artery (32 dogs)

Length of Survival	Number of Blood Flow Studies	Patency Number	Patency Per Cent	Postoperative Average Flow Rate (cc. per minute)
0 to 3 Days	19	15	79.0	24.8
4 to 30 Days	12	12	100	26.1
1 to 5 Months	12	10	83.3	28.4
6 to 9 Months	7	6	85.7	33.5
10 to 12 Months	6	5	83.3	35.6
13 to 18 Months	2	2	100	40.1
TOTALS	58	50	86.2	31.4

mal blood flow in the right coronary artery before anastomosis is 18 to 25 cc. per minute.

Experiment 2. Thirty-two dogs were used, and 58 blood-flow studies were performed on this group. The studies showed an overall patency rate of 86.2 per cent. The average flow rate was 31.4 cc. per minute (Table III). The flow rate through this anastomosis was almost twice the rate of flow through the anastomosed right coronary artery. The normal blood flow in the circumflex branch before anastomosis is 50 to 55 cc. per minute.

Histologic studies of the anastomosed internal mammary artery up to thirty-six months following the operation showed almost completely normal intimal structure. The elastic tissues of the intima and the media were well preserved (Fig. 8A). There was no evidence of subintimal hyperplasia in this group (Fig. 8B).

Experiment 3. Twenty-four dogs were studied. The patency rate at six months was 20 per cent. None of the dogs in this group survived more than six months; therefore, the results cannot be used for statistical purposes (Table IV).

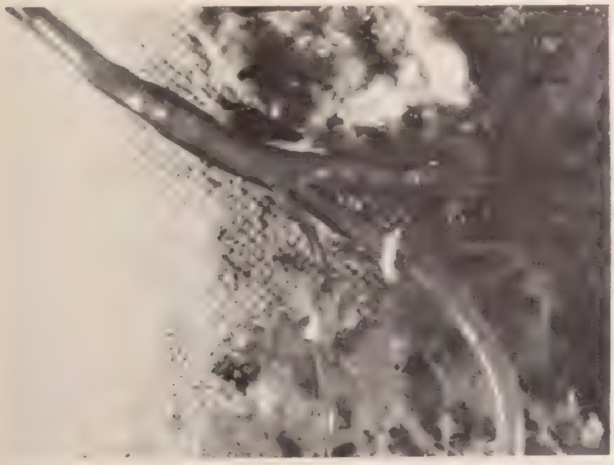


FIGURE 6. Dog 422, two months postoperatively. Acrylic plastic mold of anastomosis between left internal mammary artery and circumflex branch of left coronary artery. No change noted in arterial wall structure. Amount of elastic fibers in subintimal layer and media stayed same. No evidence of degenerative changes.

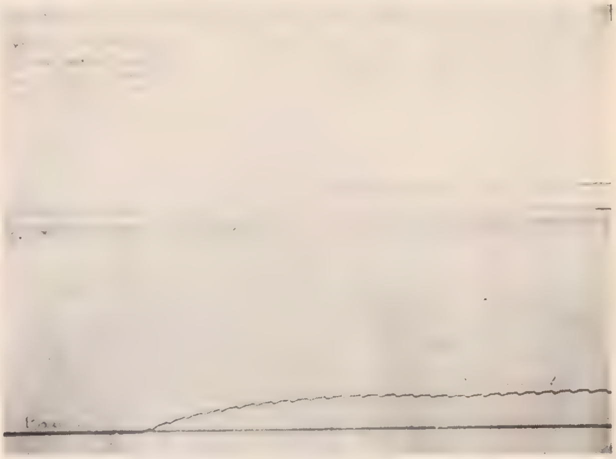


FIGURE 7. Dog 360. Electromagnetic blood-flow recording (Biotronic Laboratory) of eighteen and thirty-two months postoperatively in anastomosis between right internal mammary artery and right coronary artery; 14 cc. at eighteen months and 15 cc. at thirty-two months, respectively.

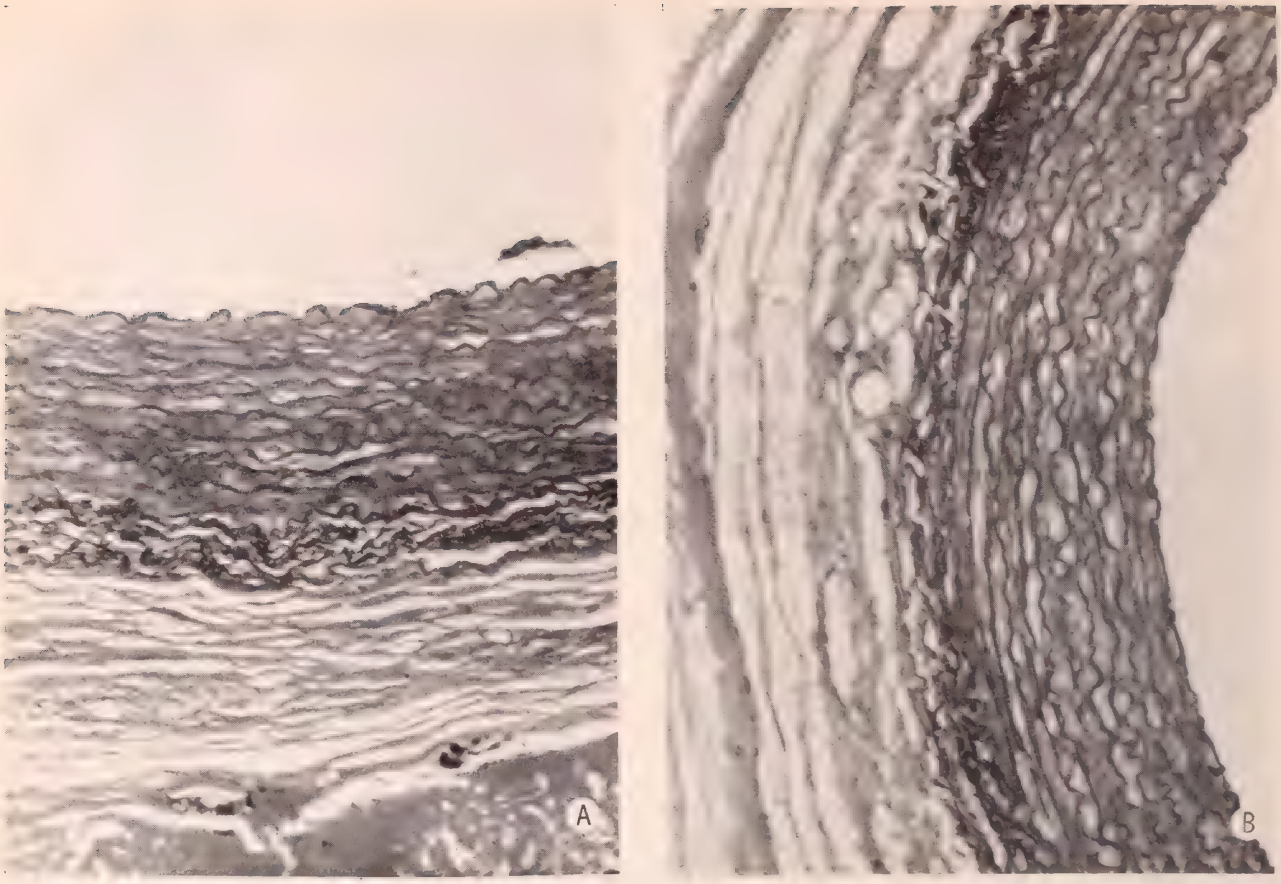


FIGURE 8. (A) Elastic stain (van Gieson) of left internal mammary arterial wall before anastomosis. Abundant elastic fibers in subintimal layer observed. (B) Dog 426, elastic stain (van Gieson) of left internal mammary arterial wall eighteen months postoperatively. No change noted in arterial wall structure. Amount of elastic fibers in subintimal layer and media stayed same. No evidence of degenerative changes.

TABLE IV. Per cent patency of direct (end-to-side) anastomosis of the saphenous vein from the "ascending" aorta to the right coronary artery and to the circumflex branch of the ieft coronary artery (24 dogs)

Length of Survival	Number of Blood Flow Studies	Patency		Postoperative Average Flow Rate (cc. per minute)
		Number	Per Cent	
0 to 4 Days	13	1	7	<3
4 to 30 Days	6	1	16	<3
1 to 6 Months	5	1	20	<3
TOTALS	24	3	4	<3

Experiment 4. For the reasons mentioned previously, this method was abandoned and replaced by Experiment 5.

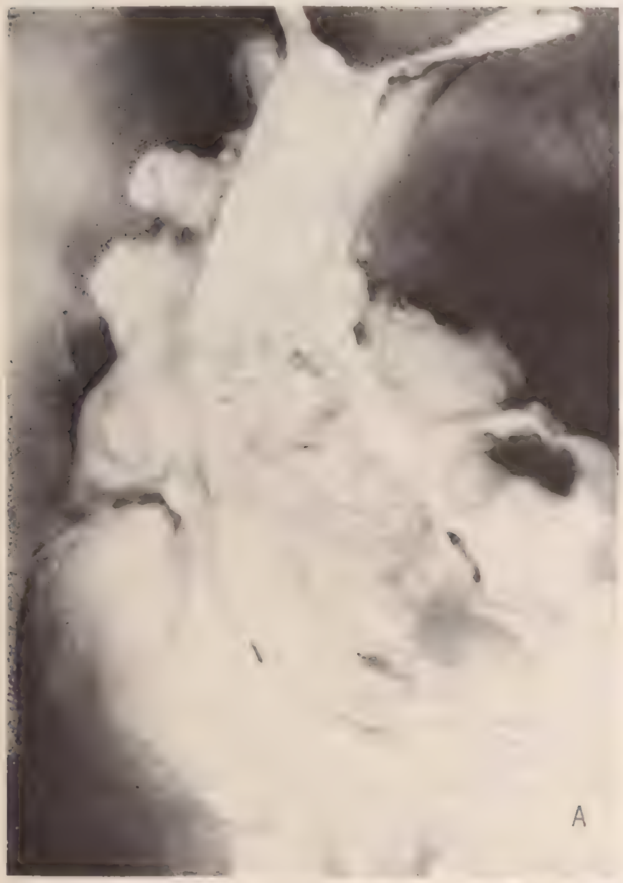
Experiment 5. Twenty-seven dogs were used, and 55 blood-flow studies were performed on this group. The overall patency rate of this group was less than 50 per cent, and the average blood flow through the patent graft was 30 cc. per minute. The blood flows were almost identical with those of Experiment 2 and with improved technics (Table V).

These studies clearly indicate the superiority of the internal mammary arterial anastomosis to the vein graft in the long follow-up from the aspects of both flow and patency. The histologic studies also demonstrated no visible degenerative changes in the arterial wall during the thirty-six months of observation. On the other hand, histologic studies of the patent vein graft showed degenerative changes and subintimal hyperplasia in the wall of the graft as early as three months postoperatively. The narrowing of the lumen and the fibrosis of the wall could sometimes be detected in the gross specimen (Fig. 9A). Even those specimens which appeared to have a friable wall to the naked eye revealed fibrotic subintimal hyperplasia in the histologic studies (Fig. 9B). These changes usually started at three months postoperatively and became more apparent in the six-month specimens (Fig. 10).

TABLE V. Per cent patency of direct (end-to-side) anastomosis of the cephalic vein from the "descending" aorta to the circumflex branch of the left coronary artery (27 dogs)

Length of Survival	Number of Blood Flow Studies	Patency		Postoperative Average Flow Rate (cc. per minute)
		Number	Per Cent	
0 to 3 Days	25	11	44	43
4 to 30 Days	13	8	62	N. R.*
1 to 3 Months	10	5	50	15
4 to 6 Months	7	3	43	32
TOTALS	55	27	49	30.0

* Flow rate not recorded.



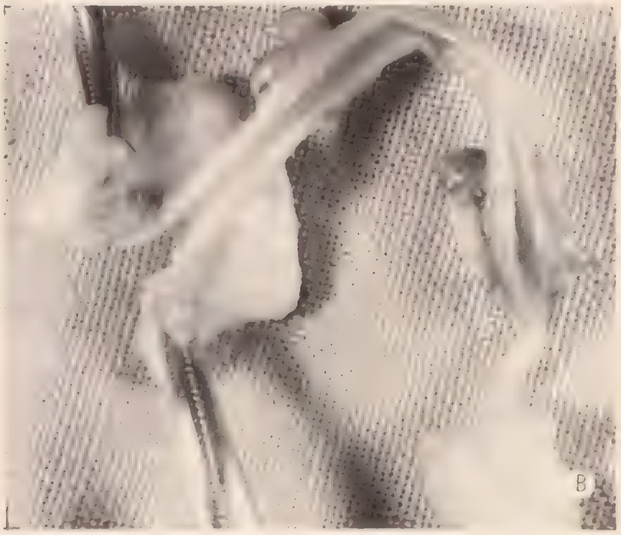


FIGURE 9. (A) Dog 507 six months postoperatively. Patent anastomosis of cephalic vein jump graft between descending aorta to circumflex branch of left coronary artery. Venous wall well preserved and showed no gross changes. (B) Dog 414 six months postoperatively. Patent anastomosis of saphenous vein jump graft from ascending aorta to right coronary artery. Thick fibrotic wall of grafted vein shown; however, it was still patent.

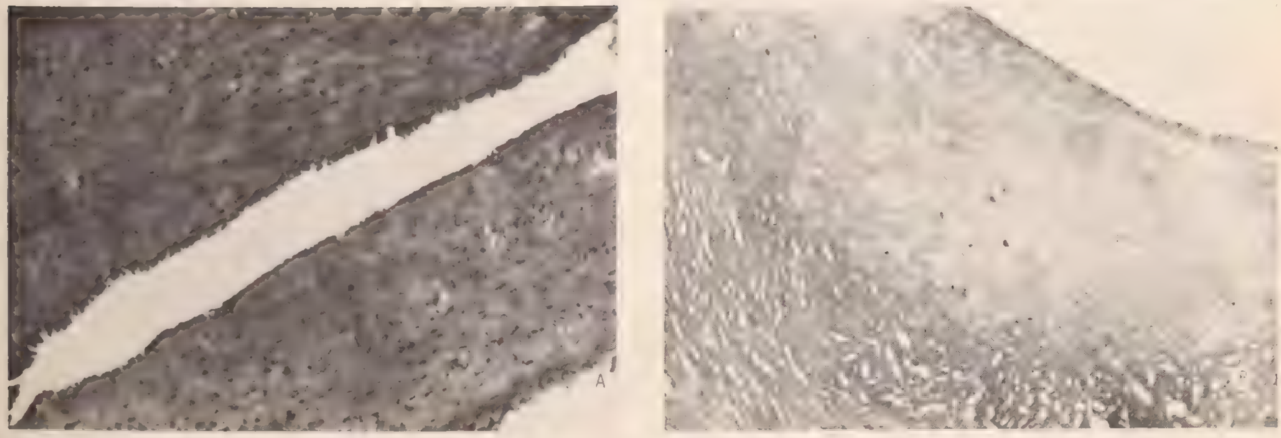


FIGURE 10. (A) Histologic specimen of wall of cephalic vein before grafting. No elastic fiber present in subintimal or medial layers. (B) Dog 414 six months postoperatively. Histologic specimen of wall of grafted saphenous vein. Extension of subintimal fibroplastic proliferation and scarring shown. No elastic fibers seen.

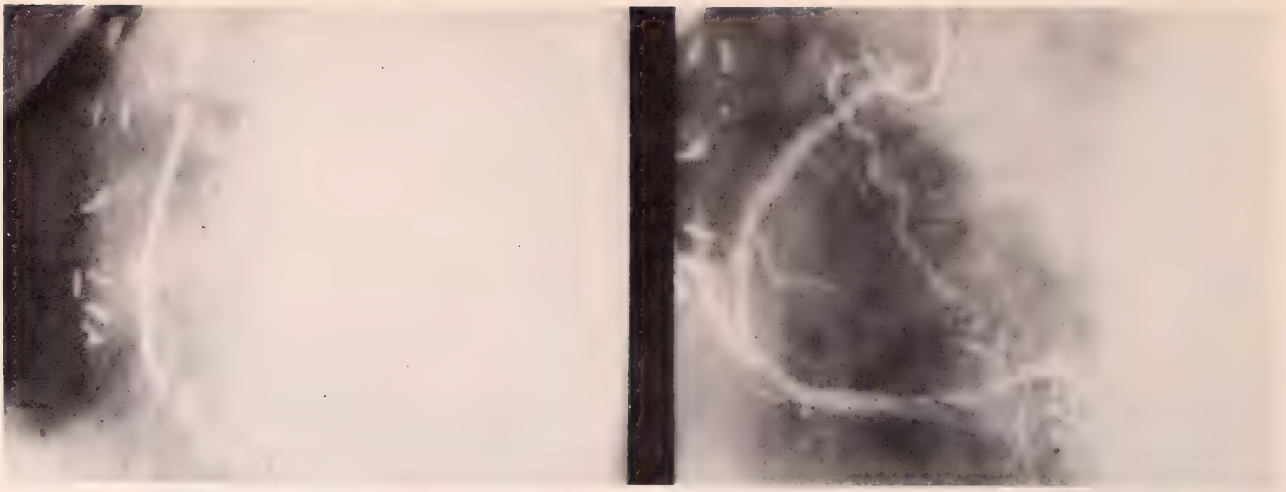


FIGURE 11. Selective right internal mammary arteriogram and right coronary arteriogram of forty-two-year-old human male. Direct anastomosis of the right internal mammary artery and right coronary artery on February 18, 1968, still showed patency on both internal mammary artery and right coronary artery four years postoperatively.

Comment

Direct coronary arterial surgical procedures are now established operations for major coronary arterial obstructions. The bypass methods for the segmentally occluded coronary artery are accomplished by either internal mammary arterial direct anastomosis or the saphenous vein jump graft. In 1968 Favarolo[2] and in 1969 Johnson *et al.*[3] reported independently on technics for the saphenous vein jump graft. In 1968 Bailey and Hirose[1] and Green *et al.*[6] also reported independently on technics for the internal mammary arterial direct anastomosis. A final evaulation of these technics will not be possible for many years to come.

The patency rates and the degree of preservation of the wall of the grafts were far better in the internal mammary arterial anastomosis group. However, the internal mammary arterial anastomosis can be performed only in selected cases and cannot be used for distal segmental obstructions unless the entire arterial graft is transposed from the base of the aorta to the coronary artery. Unfortunately, the operative procedures are complicated and the anastomoses difficult to perform.

Clinical reports concerning the early occlusion of the saphenous vein grafts and the degenerative changes of the wall, especially subintimal hyperplasia, were presented by Johnson *et al.*[3] early in 1971.

Experimental studies in the animal laboratory at St. Barnabas Hospital clearly showed degenerative changes in the vein grafts due to sudden exposure to the higher blood pressure created by arterialization of the vein segments which were interposed in the coronary arterial system.

The average patency rate of the saphenous vein bypass grafts in the femoral popliteal arterial occlusion was less than 50 per cent after five years. The caliber of the anastomosis in the coronary arterial surgery is much smaller than the caliber of the vein graft in the lower extremity bypass operation, and the patency rate should be much lower even if perfect surgical technics are applied. Fortunately, in coronary arterial surgery, the natural arterial system (the internal mammary artery) can be used to minimize the postoperative occlusion of the grafts. In this case, only one anastomosis is required, and the risk of anastomotic occlusion is therefore half that incurred in the saphenous vein jump graft procedure, even if we discount occlusions due to degenerative changes of the wall in the follow-up period. The arterial wall remains unchanged. The first anastomosis which was reported from our clinic four years ago has remained patent to the present time (Fig. 11).

The aforementioned statements are not intended to discredit the use of the saphenous vein bypass in cases in which arterial anastomosis cannot be performed. Acute revascularization of the ischemic myocardium due to segmental obstructions of the major coronary arterial system must be performed regardless of the future fate of the grafts, since the patient will not survive even the period during which the grafts might occlude because of degenerative changes.

However, experiments are now being conducted to find better graft material for these cases. The Johnson & Johnson Company is supplying us with small-caliber treated bovine arterial grafts. These arterial grafts have been implanted in several dogs, and follow-up studies are in progress and will be reported shortly (Fig. 12).

Conclusion

We have presented a comparative study of the internal mammary arterial direct anastomosis and the saphenous vein jump graft for direct coronary arterial surgery. In the long follow-up, both the

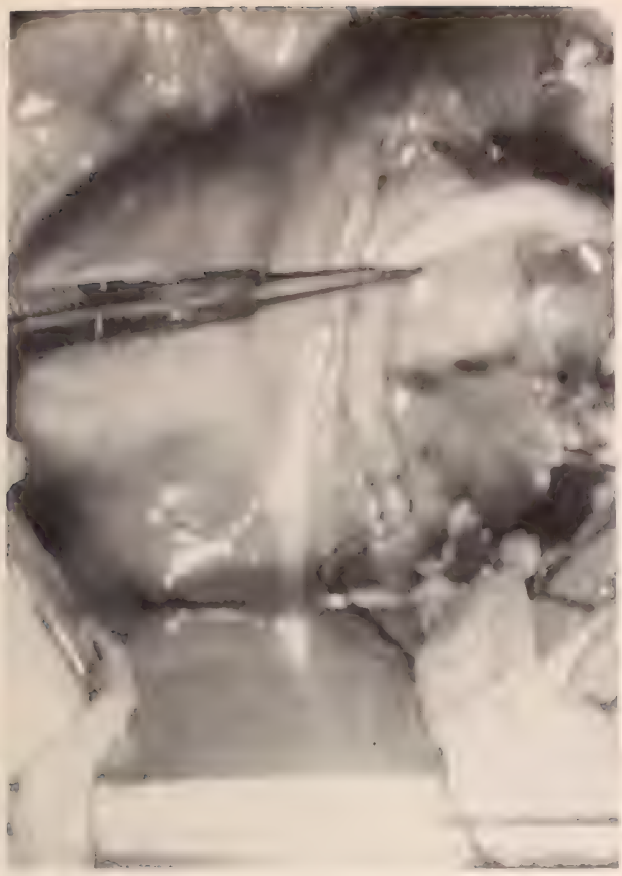


FIGURE 12. Dog 561. Aortocoronary bovine arterial jump graft between descending aorta and circumflex branch of left coronary artery. Both anastomoses completed. Showed blood flow of 42 cc. per minute.

patency rates and the degree of preservation of the wall are better in the internal mammary arterial anastomosis group than in the saphenous vein-graft group, clinically and experimentally. Whenever the internal mammary arterial anastomosis is feasible, this method should be used. Better materials for the jump grafts are being sought, and experiments are being conducted with bovine arterial grafts.

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Discussion

Dr. Timmes: Your report, Dr. Hirose, demonstrates the usual excellence with which you do your research. I should like to ask one question. Have you applied this operation in patients without using the pump oxygenator? I am curious as to why there are very few pump complications in this type of surgery.

Dr. Hirose: Yes, we had several cases without using the pump oxygenator. Our very first case was four years ago when we anastomosed the right internal mammary to the right coronary artery which was done without using the pump oxygenator. In some of the single coronary arterial occlusion cases this kind of operation is very easily done, and we are still doing some selected cases. The anastomosis in the circumflex coronary artery without the pump oxygenator can be done from the descending aorta to the coronary artery.

Dr. Bailey: I would like to say that the complications of cardiopulmonary bypass during these operations is the greatest cause of mortality that we have experienced. As far as I am concerned, if we can do it without the bypass, we should do without it. It is hard to do it for the circumflex. You can do it for the anterior descending and the right coronary most of the time.

Dr. Carlson: We have used the mammary to coronary artery anastomosis and found that it has an 80 to 110 cc. flow per minute, which is comparable to our vein grafts. I think the vein graft is preferable if there is multiple stenosis in the same artery. One can anastomose the end of the vein to the distal artery and the side of the vein to the side of the proximal artery by performing an additional anastomosis.

We have used the Landé-Edwards membrane oxygenator for total bypass in 70 patients needing coronary artery surgery. In our experience the use of the membrane oxygenator resulted in fewer complications than with the bubble oxygenator. This membrane oxygenator represents a real step forward and should be considered frequently.

Dr. Timmes: I would assume also some complications when you do not use a pump oxygenator.

Dr. Bailey: Well, there are but these are relatively few. One main complication is that you might not do a good anastomosis because of the movement of the heart.

Dr. Carlson: That was our experience. We did some anastomoses without the pump but found that we could get a 90 per cent patency rate if we had the heart quiet and still. We have not found it necessary to use a microscope for mammary to coronary artery anastomoses, although George Green, M.D., at St. Luke's Hospital, does excellent anastomoses using a microscope.

NEW CENTRAL FLOW PIVOTING DISK AORTIC AND MITRAL PROSTHESIS

Clinical experience

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Prosthetic valve performance has been significantly improved by this new, low-profile valve with a titanium cage and a free floating pure carbon (Pyrolite) disk which opens to 80 degrees allowing central flow with minimal turbulence. This pure carbon is the hardest man-made substance, antithrombogenic, and resistant to biodegradation.

Comparisons were made with prostheses of the same size (Starr, Smeloff, Wada, Bjork) in an analog-pulse duplicator computer system simulating physiologic conditions. This new prosthesis exhibited the largest flows, smallest gradients, and least retrograde flow. Examinations for wear were made employing electron microscopy after stressing the valve in the pulse accelerator for 120 million cycles. Under these conditions, it was estimated that the pure carbon disk would wear one-half in two hundred fifty years.

No thromboembolic episodes occurred in canine or bovine valve recipients without anticoagulants. To date, single and double replacements have been carried out in the mitral and aortic areas in 45 patients ranging in age from nineteen to seventy-three years with a hospital mortality rate of 6.8 per cent. To date, no valve-related complications have occurred. Anticoagulants are being discontinued electively after three months in some patients.

The pivoting disk prosthesis represents a significant advance in prosthetic valve design.

Discussion

Dr. Fitzpatrick: I am sure we have some people who have their own thought on valve structure and their own designs. Are there any comments? I would like to call on one of our guests, Dr. Ankeny.

Jay L. Ankeney, M.D., *Cleveland, Ohio.* This certainly appears to be a very effective valve for the small annulus, and I think it has a great deal to recommend it. We do have to follow this valve for a long enough period of time to be sure it works properly. This valve business is tough, you know. For awhile I thought that Hufnagel had a good valve and so did Dr. Robinson, but we lived to regret that. I certainly hope that this valve is going to be a good one.

Dr. Fitzpatrick: Is there any other discussion of this report, Dr. Lillehei?

Dr. Lillehei: The valve is valuable for anyone who would like to try it, and we would be glad if you would like to do so. I have nothing to gain either way, since the patent was given to the University of Minnesota.

Dr. Ankeney: The concept of a central flow valve is certainly an excellent one. This is especially true if a valve of limited diameter has to be used, such as is necessary in some patients with aortic stenosis. Dr. Lillehei should be congratulated on the development of this new valve. Hopefully, it will function well and perform even better than the ball valve which has been used so widely and successfully.

The afternoon session was devoted to "Current Concepts of Intensive Respiratory Care," and will appear in a later issue of the ***Journal***.

**By invitation.*

Electrocardiograms of the Month

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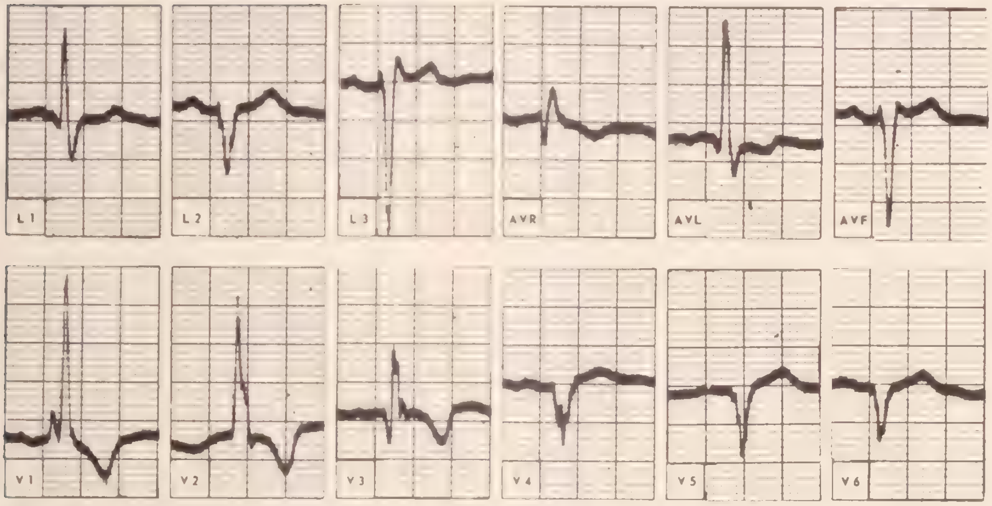
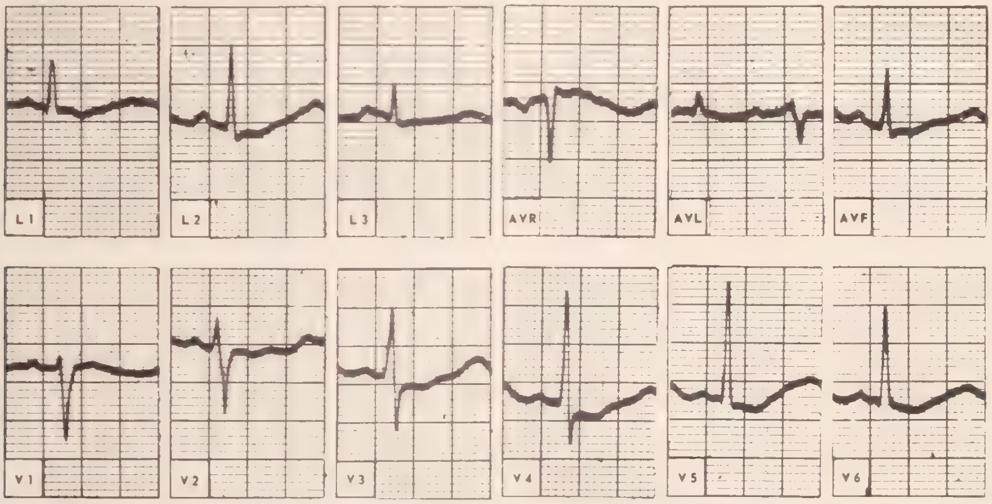


QUESTION 109. What is the interpretation of this electrocardiogram obtained from a patient who had a myocardial infarction five years prior to an elective admission to the hospital? Can the patient be cleared for surgery?



QUESTION 110. The patient was a seventy-year-old woman admitted to the hospital with severe weakness and long-standing congestive failure. She had received diuretic therapy and digitalis. What is the interpretation of this admission electrocardiogram? The ventricular rate was 70 per minute.

ELUCIDATION

Question 109. The rhythm is a regular sinus rhythm. The ORS is widened to 0.14 second. Leads I, II, and III show an electrical axis of beyond minus 60 degrees, and in V_1 there is a right bundle-branch pattern. The interpretation is pathologic left axis deviation with right bundle-branch block. The combination of left axis deviation with right bundle-branch block implies that there is disease of both bundle branches. The marked left axis deviation has been termed left anterior hemiblock. There is a tall R wave in aVl, but this cannot be interpreted as left ventricular hypertrophy in the presence of right bundle-branch block. The Q waves in precordial leads V_3 to V_6 are consistent with a diagnosis of anterior wall infarction. If this electrocardiographic pattern is stable, there is no contraindication to surgery.

Question 110. The tracing shows regular sinus rhythm. There is a striking abnormality in the precordial leads where large U waves are visible. The S-T segments are slightly depressed, and in V_3 to V_6 the T wave is followed by an afterwave, which is the giant U wave. The U wave is also visible in the limb leads. These giant U waves are characteristic of hypokalemia. The patient had a serum potassium of 1.1 mEq. per liter secondary to protracted diuretic therapy without potassium supplementation.

HYPERGLYCEMIC HYPEROSMOLAR COMA ASSOCIATED WITH HYDROCHLORO–THIAZIDE AND PANCREATITIS

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Serum hyperosmolality can occur as a consequence of a major increase in solute. If it is prolonged, it may result in coma. Since glucose is a solute which frequently attains high levels in the blood, hyperglycemia is one of the more common causes of hyperosmolality. Sament and Schwartz[1] first described hyperglycemic hyperosmolar nonketotic coma, differentiating it from the coma of diabetic ketosis. Subsequently, measurements of plasma insulin concentration have revealed the presence of insulin in this syndrome.[2] Thus, it occurs in the stable type of diabetic who has available endogenous insulin, or in the nondiabetic in whom there are other factors responsible for hyperglycemia.

Davidson[3] was the first to draw attention to acute pancreatitis as a cause of hyperglycemic hyperosmolar coma, and other reports of this association followed.[4,5] Shortly after the introduction of benzothiadiazine and phthalimidine derivatives as oral diuretics, Johnston and Cornish[6] reported 4 cases of acute pancreatitis in patients receiving thiazides. Later, Cornish, McClellan, and Johnston[7] noted that 10 out of 20 patients on this medication had elevated serum amylases, and the authors were able to cause pancreatitis in 7 per cent of mice given chlorothiazide. Others have substantiated the occurrence of pancreatitis associated with this therapy.[8–10] In 1963, Wolff *et al.*[11] detected hyperglycemia in nondiabetic patients on long-term benzothiadiazine therapy, and recently Portier *et al.*[12] published 2 cases of hyperglycemic hyperosmolar coma due to thiazide diuretics. The present report describes a patient who, while receiving hydrochlorothiazide, developed pancreatitis, hyperglycemia, and hyperosmolar nonketotic coma with acidosis.

Case report

A seventy-two-year-old woman had been under treatment for mild asymptomatic hypertension for over one year, receiving 50 mg. of hydrochlorothiazide daily. There was no family nor personal history of diabetes. She did not drink alcohol and never had any known biliary disorder. Her present illness of two weeks' duration began with gradually progressive anorexia, malaise, upper abdominal pain, fever, and vomiting. She was hospitalized and became semicomatose. Her blood pressure was not obtainable, her pulse was rapid and regular, her lungs were full of coarse rales, and her abdomen was unremarkable. There was no Küssmaul respiration nor was there any acetone odor to her breath. A urine specimen was obtained by catheterization and gave a negative nitroprusside test result for acetone. A venous sample did not appear lipemic. The hemoglobin was 14.4 Gm. per 100 ml., the hematocrit 44, and a white blood count was 18,000 per cubic millimeter, with 57 per cent segmented polymorphonuclear leukocytes, 5 per cent band forms, 37 per cent lymphocytes, and 1 per cent basophils. The blood glucose was 704 mg. and the blood urea nitrogen was 21 mg. per 100 ml. The serum amylase was 400 units. Serum chlorides were 103, carbon dioxide content was 13, serum potassium was 4.5, and serum sodium was 132 mEq. per liter. This gave an estimated osmolality of 327 mEq. per liter and an anion gap of at least 16. An electrocardiogram revealed normal sinus tachycardia. She received 80 units of crystalline insulin intravenously and 75 units subcutaneously as well as saline, oxygen, penicillin, levarterenol, and ethacrynic acid. Subsequent tests again showed the absence of acetone in the urine, a blood sugar of 688 mg. per 100 ml., and a carbon dioxide content of 12.2 mEq. per liter. The patient never regained consciousness and died four hours after admission. Postmortem examination revealed hemorrhagic necrosis of the pancreas; hypertrophy of the heart; a thrombosis of the right coronary artery; and chronic, focal, bilateral pyelonephritis. The parathyroid glands, adrenals, entire biliary and gastrointestinal tracts, and the salivary glands were all unremarkable.

Comment

The following points in this report merit emphasis. The patient received hydrochlorothiazide regularly for over one year. No other factors were uncovered that have been implicated in the development of acute pancreatitis. There was no history of alcoholism, and no biliary tract disease was detectable. Although diabetic ketoacidosis may be associated with pancreatitis, we have no evidence of its presence in this patient: she had no acetonuria with normal renal function, there was no Küssmaul respiration, and no acetone odor was noted on her breath. In addition, the hyperglycemia was not necessarily an indication of diabetes mellitus, since both hydrochlorothiazide and pancreatitis could alone be responsible. Thus, the patient was either not diabetic or, if so, had only latent, maturity-onset diabetes.

Although no measurement of serum lactate was made, the presence of lactic acidosis must be postulated to explain the degree of acidosis and the anion gap in the face of a negative nitroprusside test reaction for acetone. Marliss *et al.*[13] emphasized this, and also pointed out that lactic acidosis may mask the concomitant presence of ketoacidosis when only this test is used. However, it is unlikely that ketoacidosis was also present, since stable diabetes is resistant to the development of ketosis.

We know that lactic acidosis may result in coma. But hyperglycemic hyperosmolality is also frequently associated with stupor, and this may occur in the absence of acidosis. The indolent clinical course of this patient, continuing over a period of two weeks, favors the diagnosis of prolonged hyperglycemic hyperosmolality resulting in coma with lactic acidosis as a terminal event.

It seems likely, then, that this clinical picture represents a logical sequence of events beginning with hydrochlorothiazide ingestion, continuing with acute hemorrhagic pancreatitis followed by marked hyperglycemia, and ending in hyperosmolar coma, secondary lactic acidosis, and death. The assumption of a cause-and-effect relationship between each stage appears warranted. This concept is of importance in the management of such cases, since immediate attention to the correction of the hyperosmolality in the form of suitable parenteral fluid might well be life-saving.

Summary

This is a clinical and postmortem case report of a woman who had taken hydrochlorothiazide for mild hypertension over a one-year period. It is suggested that a logical sequence of events followed, consisting of acute pancreatitis, hyperglycemic hyperosmolar coma, and terminal lactic acidosis. The concept of a cause-and-effect relationship between each stage in this sequence is considered of great importance for its proper management.

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RADIOLOGIC FOLLOW-UP AFTER LYMPHANGIOGRAPHY

Evaluating effects of therapy

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Lymphangiograms of the periaortic nodes are an important and necessary adjunct to staging analysis of patients with malignant lymphoma. They are also used by the radiation therapist for treatment planning. After the initial lymphangiogram, follow-up abdominal films have proved to be especially useful to the clinician, to detect unresolved tumor following therapy, to detect recurrent tumor after therapy, and to monitor the effect of chemotherapy and radiation therapy.

Method

The basic lymphangiography methods of Kinmonth[1] as modified by Wallace,[2] plus minor variations in technic were employed.

Case reports

Case 1. A seventy-four-year-old white female was noted to have an enlarged right tonsil. A biopsy of the tonsil revealed reticulum-cell sarcoma. Except for the annoyance of the large tonsil, the patient was asymptomatic.

Bilateral pedal lymphangiography was performed, and the findings were considered to be within normal limits (Fig. 1A). The patient was treated with radiation therapy to the tonsil. She received a tumor dose of 3,500 rads with complete disappearance of the tonsillar tumor mass.

Five months later the patient complained of backache in the left upper lumbar area. Follow-up abdominal films revealed extraordinary enlargement of the left periaortic nodes (Fig. 1B).

The patient was started on quadruple chemotherapy regimen (vincristine, Thio-Tepa, prednisone, and procarbazine) and follow-up abdominal films ten days later showed considerable reduction of the nodal mass (Fig. 1C, anteroposterior views; Fig. 2, lateral abdominal views). Her back pain subsided simultaneously with the onset of chemotherapy.

Comment. Follow-up abdominal films clearly outlined the progressive reticulum-cell sarcoma without having to resort to any further technics. By following the change in configuration of the residual contrast medium in the nodes, simple abdominal films proved useful in the objective evaluation of the patient's chemotherapy.

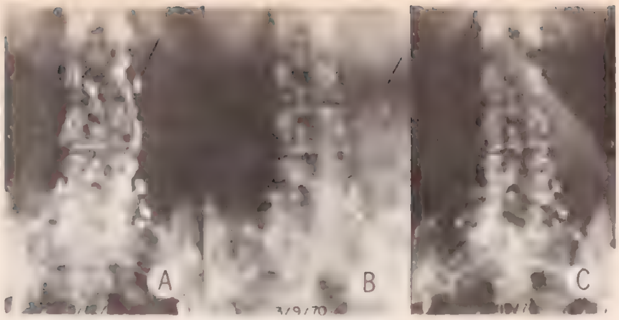

FIGURE 1. Sequence showing (A) normal lymphangiogram, (B) extraordinary enlargement of nodes, and (C) response to therapy viewed by follow-up abdominal films.

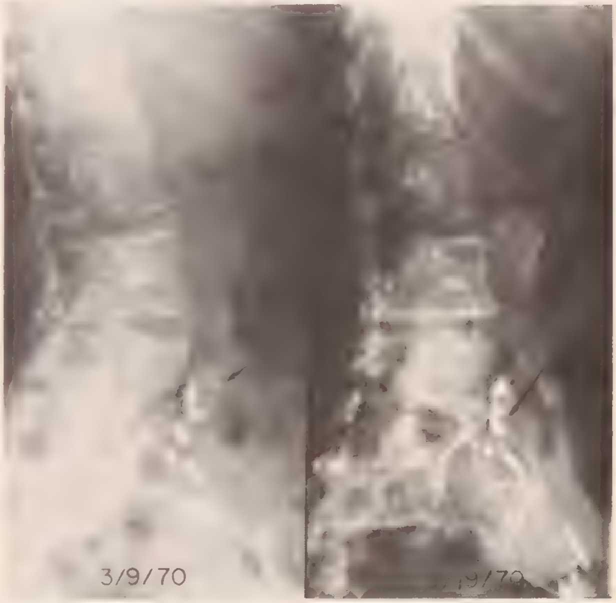

FIGURE 2. Simple oblique views of abdomen showing nodal response to therapy.

Case 2. A twenty-six-year-old white female was noted to have an enlarged mediastinal mass in December, 1967. Intermittent fever was also present. A right supraclavicular node biopsy revealed Hodgkin's disease.

A bilateral pedal lymphangiogram appeared to indicate the presence of Hodgkin's tumor. Radiation therapy was given only to the neck and mediastinum. The patient's fever disappeared, and she became asymptomatic. A follow-up abdominal film five months later revealed no change in the periaortic node configuration.

The patient noted recurrent fever in December, 1968, and complained of pain in the left flank. Simple abdominal films revealed markedly enlarged periaortic nodes as visualized by the residual contrast material still present from the initial lymphangiogram (Fig. 3A). Radiation therapy, 3,000 rads, to the periaortic node area resulted in a marked decrease in the nodal enlargement.

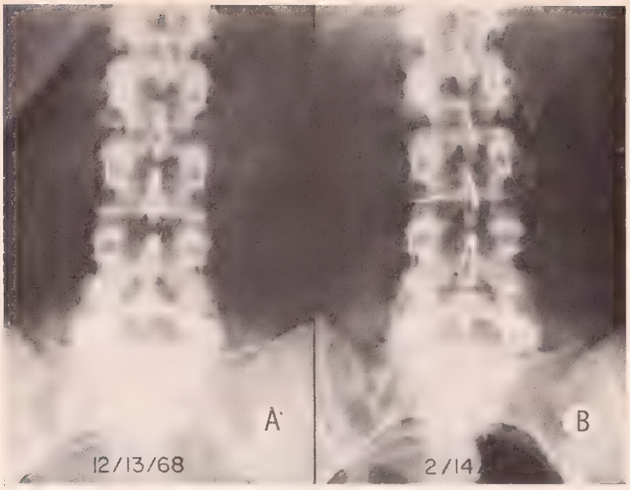

FIGURE 3. Follow-up films: (A) preradiation and (B) postradiation.

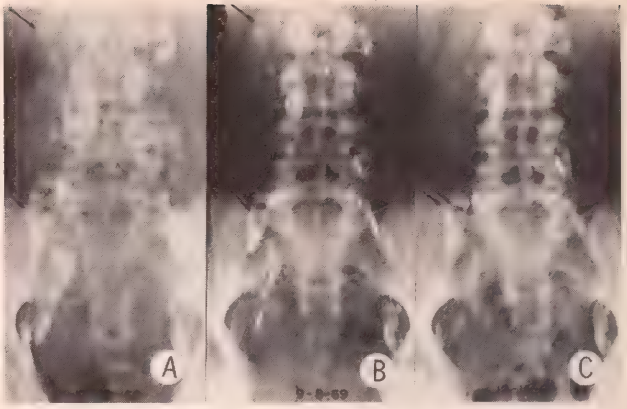

FIGURE 4. Considerable residual adenopathy clearly visualized (A) on simple abdominal follow-up films, (B) after extensive radiation therapy and chemotherapy. A further follow-up film (C) reveals progressive enlargement of nodes.

Figure 3 compares the preradiation therapy abdominal films and the postradiation therapy abdominal films taken two months later.

Simple films of the abdomen amply demonstrated the change in periaortic node size.

Case 3. A nineteen-year-old white male was first diagnosed as having Stage III B Hodgkin's disease (neck, axillary, mediastinum, and periaortic nodes plus intermittent fever). A left axillary node biopsy established the diagnosis of Hodgkin's disease.

A bilateral pedal lymphangiogram revealed markedly enlarged periaortic nodes (Fig. 4). The patient received radiation therapy of 3,500 rads to a mantle field and simultaneously received intermittent intravenous vinblastine chemotherapy.

After a three-month interval the patient received 3,500 rads to the periaortic, inguinal, and femoral node areas and the spleen. The simultaneous chemotherapy was stopped when the radiation therapy to the periaortic nodes was started.

Between the initial lymphangiogram and the follow-up abdominal film ten months later and three months after the end of intensive radiation therapy and chemotherapy, there was a decrease in the periaortic node size (Fig. 4). A disturbing degree of residual node enlargement persisted, however.

One year after the patient was first diagnosed and six months after all treatment was completed, a recurrent node appeared in the right axilla. A repeat node biopsy again revealed Hodgkin's disease. A repeat abdominal film revealed progressive enlargement of the periaortic nodes (Fig. 4). The patient subsequently developed recurrent back pain, and more nodes appeared in the left axilla and inguinal areas.

Comment. This illustrates the failure of intense radiation therapy to eliminate the Hodgkin's tumor in this patient. When a recurrence appeared in the right axilla, this was readily biopsied because of its accessibility, and the diagnosis of Hodgkin's disease was reconfirmed. Periaortic node biopsy probably would have revealed residual Hodgkin's disease at that time too, since progressive nodal enlargement was evident on the follow-up abdominal films. The patient has subsequently responded to maintenance chemotherapy.

Comment

The fact that residual contrast material remains in the lymph nodes after lymphangiogram permitting the use of simple abdominal films for follow-up is especially appreciated by the radiologists. The practicing internist, chemotherapist, or hematologist charged with the day by day responsibility of the care of the patient is not fully aware of the extraordinary usefulness of this technic. The preceding case reports amply illustrate the use of this technic under various circumstances.

Wallace *et al.*[2] anticipated and recorded the usefulness of follow-up abdominal films after lymphangiography (eleven years ago). Recently Sweet, Scanlon, and Kaplan[3] reemphasized the usefulness of follow-up abdominal films after lymphangiography.

Follow-up abdominal films after lymphangiography may be used to diagnose the presence of progressive tumor as well as to judge the effectiveness of therapy. Follow-up abdominal films should be used after lymphangiography as an additional guide to the clinical status of the patient, and when all contrast material has disappeared, repeat bilateral pedal lymphangiography should be employed if necessary.

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STRANGULATED OBTURATOR HERNIA

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Since 1724, when Pierre Rolane Arnaud de Ronsil first described obturator hernia at the Royal Academy of Science in Paris, this rare but serious emergency has defied detection prior to laparotomy. To emphasize this fact, a group of 3 patients with this condition, recently treated at St. Vincent's Medical Center of Richmond, Staten Island, New York, is presented. A possible method of improving on the preoperative diagnosis is also suggested.

Case reports

Case 1. A seventy-six-year-old Negro female was admitted sixteen hours after the onset of left lower quadrant pain, associated with nausea and vomiting. The pain was constant and radiated to the upper medial aspect of her left thigh. Physical examination revealed a thin, elderly female in acute distress with abdominal pain. Her abdomen was distended but soft. There was tenderness to palpation over the left inguinal region. The patient complained of pain over the medial aspect of her left thigh, particularly when the left hip was flexed. No tenderness could be elicited on palpation of this area. There were no abdominal scars noted. Pertinent laboratory investigations revealed a hemoglobin of 13.7 Gm. per 100 ml. and a hematocrit of 43. The white blood count was 12,050 with 91 per cent segmented forms. The urine specific gravity was 1.028. Roentgenograms of the abdomen suggested a small-bowel obstruction (Fig. 1).

Conservative treatment was initiated. A nasogastric tube was inserted and placed on suction. Rehydration was effected by parenteral fluids, but the patient's condition did not improve. An exploratory laparotomy was, therefore, carried out with the presumptive diagnosis of small-bowel obstruction. At operation, a Richter's hernia was found protruding through the left obturator foramen. The involved segment of bowel was necrotic, necessitating a segmental resection. The defect in the obturator foramen was closed with silk sutures.

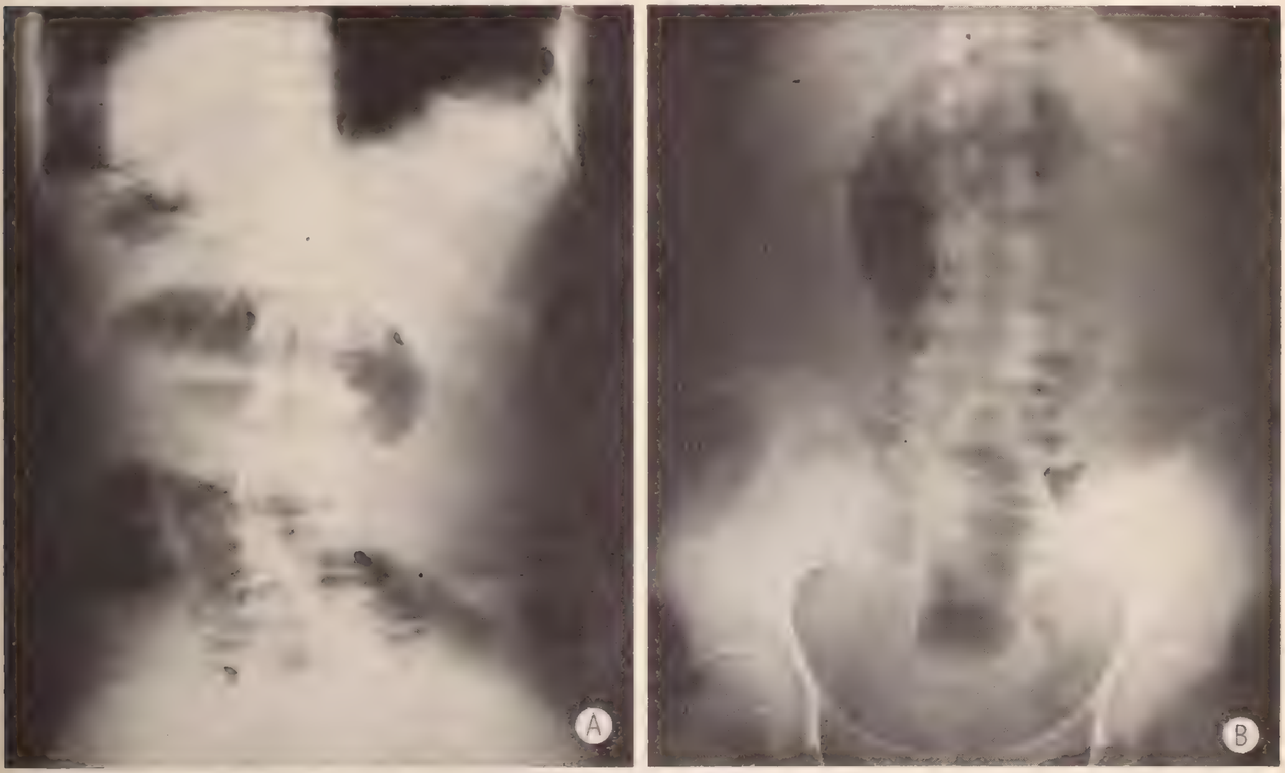

FIGURE 1. Case 1. Abdominal roentgenograms showing evidence of small-bowel obstruction.

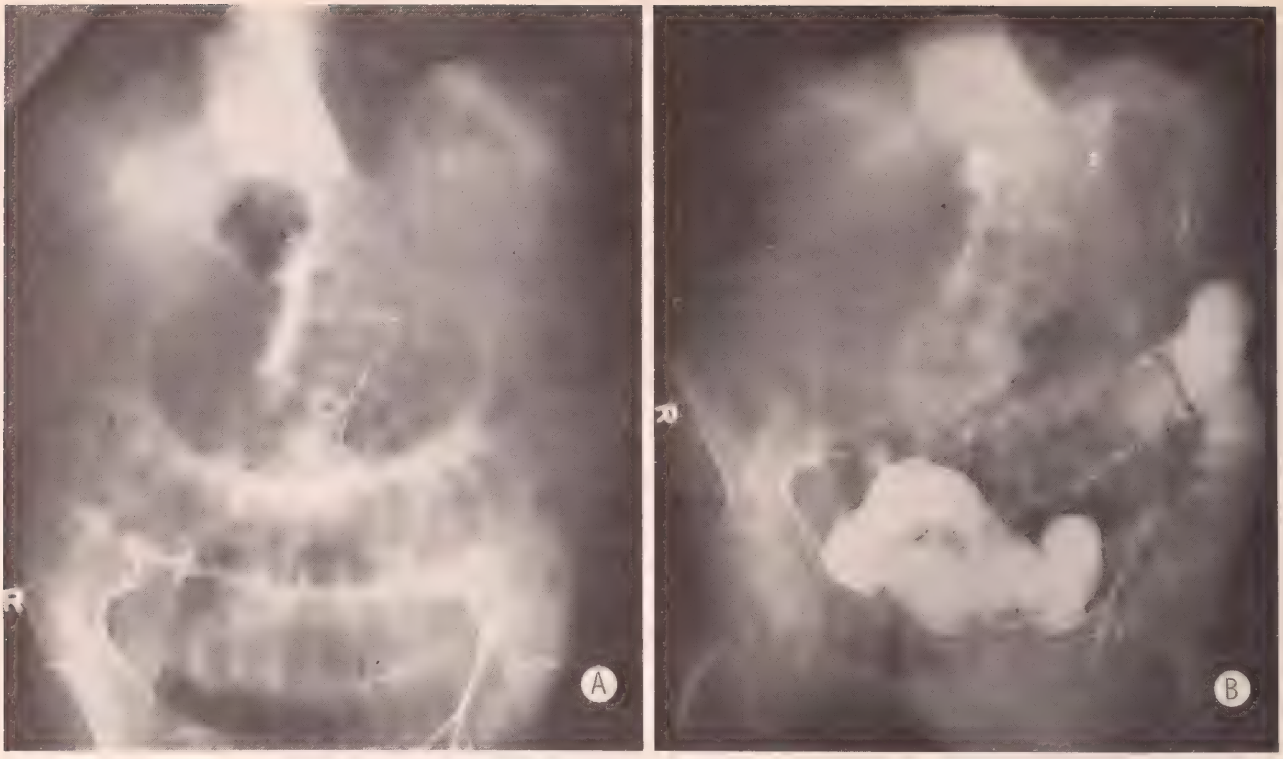

FIGURE 2. Case 2. (A) Abdominal roentgenograms at time of first admission, showing distal small intestinal obstruction. (B) Four months later, abdominal roentgenograms again showed evidence of small-bowel obstruction.

Postoperatively, the patient developed congestive heart failure which cleared with medical management, and she was discharged on the fourteenth postoperative day. Two months later, she was readmitted to the hospital in congestive heart failure and expired.

Case 2. An eighty-one-year-old white female was admitted because of persistent vomiting. The history was not reliable because of the patient's inability to communicate. The only positive physical finding was abdominal distention and dehydration. Abdominal x-ray films were interpreted as showing a distal small intestinal obstruction (Fig. 2A).

The patient became symptom free with conservative treatment and was discharged. Approximately four months later, she was readmitted with a similar problem. Examination at that time again revealed an extremely dehydrated patient with marked abdominal distention. X-ray examination of the abdomen suggested small-bowel obstruction (Fig. 2B).

She did not respond to conservative measures, the vomiting persisted, and the abdominal distention increased. At exploration, an incarcerated right obturator hernia was noted as well as a chronically inflamed gallbladder with calculi. A right obturator herniorrhaphy and cholecystectomy were performed. Postoperatively, the patient did poorly. She developed a wound infection. This was followed by congestive heart failure, which terminated in death on the eighth postoperative day.

Case 3. An eighty-five-year-old white female was admitted with lower abdominal pain for three days, associated with nausea and vomiting. She had a past history of congestive heart failure. On physical examination the pertinent findings were limited to the abdomen, which was distended and tender in the lower abdominal quadrants. There was a mass palpable in the left lower quadrant. There were no bowel sounds audible. The laboratory examinations revealed a white blood cell count of 5,100 with a normal differential. The urinalysis showed a specific gravity of 1.018. The blood urea nitrogen was 97 mg. per 100 ml. and creatinine was 3.4 mg. per 100 ml. Abdominal x-ray films showed a pattern consistent with distal small-bowel obstruction (Fig. 3). In addition, a large semilunar defect was noted in the left iliac bone, suggesting a large benign tumor.

The patient was treated conservatively with nasogastric suction and parenteral fluids for three days. Because of failure of improvement, she was explored on the fourth hospital day at which time an incarcerated right obturator hernia was found. The involved segment of ileum was gangrenous and required resection and anastomosis. Postoperatively, the patient made an uneventful recovery.

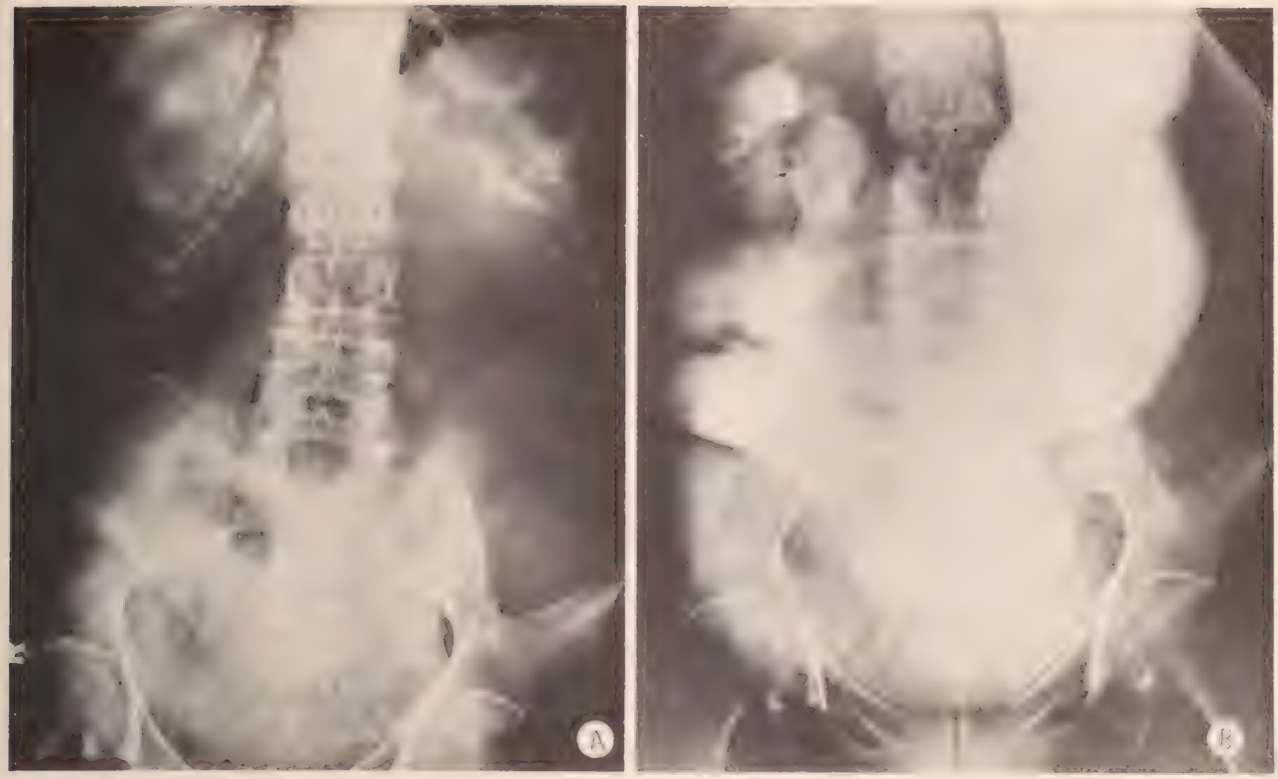

FIGURE 3. Case 3. Abdominal roentgenograms displaying evidence of small-bowel obstruction. Note semilunar defect in left ilium.

Comment

A high percentage of patients who develop obturator hernia are thin, weak, elderly females. The defect is found six times more commonly in women than in men and with the average age of the patient in the seventh decade.[1-4] The anatomic reasons for the predominance of females with obturator hernia are probably the normally larger obturator canal opening and, in many cases, the relaxation of the pelvic peritoneum due to repeated pregnancies.

The main difficulty, as demonstrated by the 3 cases presented, has been the failure to consider strangulated obturator hernia as the cause of small-bowel obstruction and also the failure to recognize Howship-Romberg's sign, that is, pain or parasthesia along the path of the obturator nerve on the affected side. One of our patients elicted this sign, the significance of which was not recognized. In other series reported, approximately 50 per cent of the cases showed this sign.[1-4]

Laparotomy with simple repair of the defect provides the best therapy if the preoperative diagnosis is suspected before the bowel becomes gangrenous.[5] A suprapubic retroperitoneal approach has been recommended when the diagnosis is suspected preoperatively.[6] The advantage of this approach is that both obturator openings can be inspected through the one incision, since bilateral defects are found in about 6 per cent of the cases.

The mortality rate of strangulated obturator hernia is high, ranging from 50 to 70 per cent in previously reported series. This clearly points out the need for earlier diagnosis and treatment. The only way to initiate treatment at an early stage in this condition is to consider it in all cases of small-bowel intestinal obstruction. It should be especially thought of in those patients who are elderly females with signs and symptoms of intestinal obstruction and without previous abdominal surgery. The importance of eliciting Howship-Romberg's sign cannot be overemphasized.

Summary

Three cases of strangulated obturator hernia in thin, elderly females are presented. In all cases, signs and symptoms of intestinal obstruction were evident, and in 1 case, Howship-Romberg's sign was present. It is suggested that the diagnosis be considered in all patients with signs and symptoms of small-bowel obstruction and especially in those patients who are elderly females without previous abdominal surgery.

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Coronary and intensive care

Ways of avoiding fatal micro and macro shocks to patients in coronary care and intensive care units have recently been outlined by Hans A. Von Der Mosel (Med. Surg. Rev. **6:** 28 [October-November] 1970). He emphasizes that while these two areas are particularly sensitive in this respect, there is no shock-free zone in any area of the hospital, especially for heart cases or debilitated patients. Not only are coronary care unit and intensive care unit patients especially sensitive to dangers of electricity, but the array of electronic equipment creates a hazardous environment in these areas. At rest on his electric bed, for example, a coronary care unit patient may suffer a macro shock by touching the controller. If he has a mycoardial electrode or intracardial catheter implanted, even a small micro shock from leakage current seeking ground through his heart can cause fibrillation, perhaps fatal.

CARCINOMA WITHIN LOWER ESOPHAGEAL (EPIPHRENIC) DIVERTICULUM

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In a recent review of the literature on epiphrenic diverticula, 9 cases of carcinoma were found arising from the diverticulum. Epiphrenic diverticula are second in incidence to those in the pharyngeal region. This is the first case report of carcinoma arising in an epiphrenic diverticulum in a Negro male.

Case report

A fifty-five-year-old Negro male was admitted to St. John's Episcopal Hospital, Brooklyn, New York, on December 2, 1968, for burning pain in the lower substernal region and occasional regurgitation of food of three years' duration. Three years previously, he was admitted to another local hospital in New York for similar complaints. Esophagograms and upper gastrointestinal studies done at that time were interpreted as indicating hiatal hernia. He was discharged on a bland diet and antacids. He showed relative improvement until two months prior to this admission, when he began to have frequent attacks of lower substernal pains without any relief from medication. He had difficulty in swallowing solid foods, but had no difficulty with liquids. There was no history of melena or hematemesis.

Physical examination on admission revealed a well-built, well-developed Negro male, weighing 140 pounds, in no acute distress. Vital signs were as follows: blood pressure 104/70 mm. Hg, pulse 88 per minute, and temperature 99°F. There was no lymphadenopathy. He had minimal loss of subcutaneous fat. Examination of the heart and the lungs showed them to be essentially normal. The abdomen was soft and not tender. The liver and the spleen were not enlarged, and no masses were palpable. The rectal examination revealed a moderately enlarged, nodular, hard prostate and no evidence of melena. Hemogram results were as follows: hemoglobin, 13.7 Gm. per 100 ml.; hematocrit, 40; white blood cells, 10,100; polymorphonuclear leukocytes 41; eosinophils, 3; basophils, 3; lymphocytes, 52; and monocytes, 1. Urinalysis revealed a specific gravity of 1.018, albumin negative, and sugar negative. Blood chemistry revealed a fasting blood sugar of 100 mg. per 100 ml.; blood urea nitrogen, 20 mg. per 100 ml.; and VDRL findings negative. Liver profile was as follows: alkaline phosphatase, 3.5 Bodansky units; bilirubin, 0.5 mg. per 100 ml.; cholesterol, 190-125 mg. per 100 ml.; thymol turbidity 0.6; total protein, 6.6 Gm.; albumin, 4.7 Gm.; globulin, 1.9 Gm. per 100 ml.; and serum glutamic oxaloacetic transaminase, 11 units per milliliter. Chest x-ray revealed obliteration of the right costophrenic angle due to an acute or chronic pleural reaction. An esophagogram revealed a pressure defect due to an irregular mass pressing on the right side of the lower third of the esophagus (Fig. 1). There was an epiphrenic diverticulum arising on the right side, as shown by prolonged retention of barium. Esophagoscopy revealed complete obstruction and rigidity of the esophagus 33 cm. from the incisor teeth. The diverticulum could not be visualized.

It was decided to explore the patient for the obstructing lesion in the lower third of the esophagus. Carcinoma of the esophagus was highly suspected. Exploratory thoracotomy was carried out through the bed of the left sixth rib. The lower third of the esophagus was stony hard, highly suggestive of cancer. The periesophageal lymph nodes were taken for frozen section biopsy and were reported negative for metastatic lesions at that time. The diaphragm was opened to explore the abdomen. Two large nodes in the paracardiac region revealed metastatic epidermoid carcinoma (Fig. 2). The liver was free of metastasis on palpation. Proximal esophagogastrectomy was carried out. The proximal portion of the stomach was closed and inverted. The stomach was pulled in the chest, and the esophagus was implanted on the anterior part of the stomach. The chest was drained in routine fashion.

A left lower lobe atelectasis developed on the third postoperative day. A bronchoscopic aspiration of mucous plugs did not result in any radiographic improvement. The thoracotomy tube stopped draining on the fourth day and it was removed on the fifth day.

X-ray examination of the chest showed definite loculated effusion with collapse of the left lung.

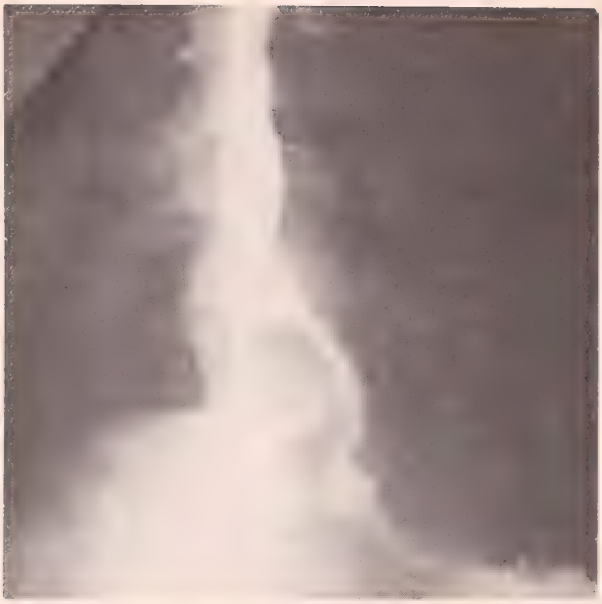

FIGURE 1. Esophagogram revealing filling defect in distal end of esophagus with displacement of esophagus to left. Contrast material entering diverticulum. Pressure defects present on both sides of diverticulum. Cardiac portion of stomach is normal.

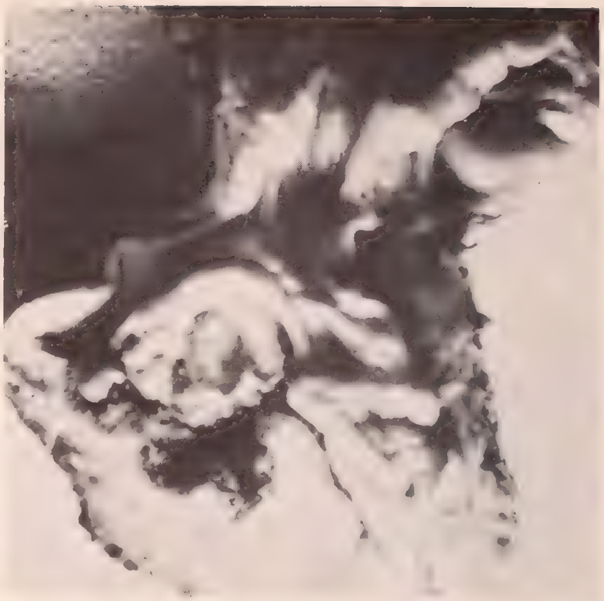

FIGURE 2. Diverticulum of esophagus. Tumor mass is seen arising from ulceration at tip of diverticulum, pressing on esophagus, and giving x-ray appearance.

The patient had tachycardia (120 beats per minute), with central venous pressure equal to 10 cm. of water. Left closed thoracotomy was done, and 800 cc. of serosanguineous fluid was obtained. Methylene blue dye was given by mouth and was not recovered from thoracotomy drainage. A gastrographin study was done and did not reveal an anastomotic leak.

A decision to explore the chest was made because of progressive, increasing effusion in the left side of the chest, a mediastinal shift to the right, and plugging of the thoracotomy tube. Prior to the thoracic exploration, gastrostomy was done for decompression purposes, pyloromyotomy was performed as a drainage procedure, and jejunostomy was done for feeding purposes. Exploration of the chest revealed a large loculated empyema in the anterolateral aspect of the left side of the chest with consolidation of the left lung. Two large number 36 thoracotomy tubes were placed in the empyema cavity. No attempt was made to explore the anastomotic site. Tracheostomy was done to improve the respiratory distress. The patient had a downhill course. He died two days later from bilateral bronchopneumonia.

A postmortem examination revealed empyema in the left side of the chest, consolidation of the left lung, and bilateral diffuse bronchopneumonia. No anastomotic leak was found. No metastases were found in any other organ.

Comment

From the Mayo Clinic, Allen and Claggett[1] have reported 1 case of carcinoma arising from the diverticulum. No details of the case history are available. Thus there are 9 cases of carcinoma arising from a diverticulum on record. The case records in Table I reveal that the youngest patient was forty-three years old and the oldest was seventy-nine years of age. All of them were white males except our case. The most common symptoms were dysphagia, loss of weight, and substernal pains. Less common symptoms were melena and hematemesis.[2-8]

Epiphrenic diverticula are not very common. There are about 273 cases of reported epiphrenic diverticula in English literature. The first case of epiphrenic diverticulum was reported by DeGuise in 1833. Clerf[9] reported 7 cases. Goodman and Parnes, in 1952,[2] reported 126 cases. Habein, Moersch, and Kirkland[10] reported 149 cases. Therefore the approximate incidence of cancer arising in epiphrenic diverticulum would be 3 per cent.

Hoover reports a 1.5 per cent incidence of carcinoma in cases of cardiospasm, and a 1.08 per cent incidence in cases of esophageal diverticulum.[1] He speculates that chronic irritation and inflammation in diverticula of considerable size may be a predisposing factor.

When an esophageal diverticulum is diagnosed, the possibility of development of cancer in such a lesion should be considered. Our patient had symptoms related to the diverticulum for over three years. It is conceivable that he had the diverticulum for many years without symptoms.

Habein, Moersch, and Kirkland,[10] from the Mayo Clinic, found that one third of all pulsion

TABLE I. Summary of all recorded cases of carcinoma in epiphrenic diverticula, all Caucasian, all male

Author	Number of Cases	Age (Years)	Symptoms	Treatment and Remarks
Goodman and Parnes[2]	1	63	Dysphagia for three months. Loss of 10 pounds.	Gastroesophagectomy. Found to have epidermoid carcinoma arising from diverticulum with invasion of wall.
Plous, Freedman, and Wolf[3]	1	79	Regurgitation of food for two years. Pressure pains over anterior chest. Lost 101 pounds.	Diverticulectomy. Found to have invasive carcinoma in diverticulum.
Zinner[4]	1	64	Asymptomatic epiphrenic diverticulum for two years. Melena.	Esophagoscopy revealed 4 polypoid masses in diverticulum. Biopsy revealed squamous cell carcinoma.
Thomas[5]	1	77	Six-year history of 2 epiphrenic diverticula. Occasional hematemesis. Severe dysphagia of short duration.	Segmental resection. Squamous-cell carcinoma found.
Kay and Cross[6]	2	62	Substernal pains for three years. Dysphagia for one year. Two episodes of hematemesis. Loss of 40 pounds.	Esophagogastrectomy for squamous-cell carcinoma arising from diverticulum.
Cabot[7]	1	64	Ten-year history of occasional regurgitation of food. Loss of 15 pounds.	Died from epidermoid carcinoma of diverticulum.
Lerche[8]	1	43	Epiphrenic diverticulum diagnosed five years previously.	Died from metastasis of epidermoid carcinoma of diverticulum.

diverticula in the lower esophageal region are asymptomatic. In another third of patients it is difficult to establish the exact role of the diverticulum in producing symptoms. Only 15 to 20 per cent of patients with epiphrenic diverticulum produce symptoms. These symptoms are mostly associated with the complications arising from the diverticulum. The complications of the diverticulum are (1) inflammation leading to abscess formation, (2) perforation and fistula formation, (3) hemorrhage,[11] (4) stricture formation, and (5) malignant changes in or around the diverticulum. Early surgical intervention for epiphrenic diverticulum is recommended for progressive symptoms and for complications of the diverticulum. Liberson and Riese[12] suggest that the in situ carcinoma phase exists in this condition and that the best surgical results are obtained in cases where it is noninvasive. Our case report is presented to add another example, although admittedly rare, for the consideration of early surgical intervention in symptomatic epiphrenic diverticulum.

Summary

A case of lower esophageal diverticulum is reported in which carcinoma developed. This is the tenth case of this type, and first case in a Negro male to be reported in English literature. A careful follow-up of the patient with epiphrenic diverticulum is indicated to prevent malignant transformation.

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METHADONE MAINTENANCE TREATMENT OF NARCOTIC ADDICTION

Analysis of police records of arrests before and during treatment *

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Decreased criminal behavior is frequently stated to result from methadone maintenance treatment of narcotic addiction.[1-3] However, convincing documentation is urgently needed. In this study, New York City police records were used to measure the frequency of arrests before, during, and after methadone maintenance treatment of chronic heroin addicts attending a New York City methadone clinic.

Materials and methods

The names of 151 patients, who had been in treatment in the St. Luke's Hospital Center's methadone clinic from its inception in 1966 to January, 1971, were submitted to the New York City Police Department criminal records division. The race, age, sex, date of birth, and borough of residence were submitted for each of the 151 patients. The clinic, which has been thoroughly described elsewhere, admits all volunteer patients over eighteen years of age who had been addicted for over two years.[4,5] Six other patients, who had been in treatment transiently in the year 1967 to 1968, had insufficient records and were omitted. One-hundred-and-twenty-eight remained in treatment in January, 1971.

After verification that the arrest record supplied did in fact refer to the clinic patient, the frequency of arrests for each patient was calculated. The total life-time arrests were counted; also counted were: (1) arrests made in the last twelve months before entry into methadone treatment, (2) arrests made during each year of methadone treatment, and (3) arrests made after discharge in those persons who left the clinic for whatever reason. The rate of arrests per year of addiction was calculated by dividing the total pretreatment arrests in each patient by the years of addiction, which was obtained by patient interview and not otherwise substantiated or corrected for any years of abstinence for whatever cause.

Comparisons of police records with the self-confessed arrest rates were made by detailed interviews in 81 randomly selected patients. The arrest data in this sample was tabulated as: (1) total life-time arrests, (2) arrests in the year before entry into treatment, (3) arrests per year of narcotic use, and (4) arrests during methadone treatment.

Results

The criminal records of 119 patients, or 77.6 per cent of the total submitted were made available for study. The other 32 patients did not have city police records. Although 122 records were actually obtained, there were 3 patients who had criminal records under both maiden and married names. Only those patients with New York City police criminal records were further studied.

The total life-time arrests amassed by all 119 patients numbered 715. During 1,718 combined years of narcotic addiction (mean 14.3, range 2–46), the records of these 119 patients show an annual arrest rate of 0.42 per year, or, expressed in a more useful way, 42 arrests per hundred patient years. On the other hand, during methadone treatment 16 arrests were recorded in the 119-patient sample during two hundred forty-five completed years of methadone treatment. The arrest rate per hundred patient years was 6.1, or 14.6 per cent of the base line arrest rate during narcotic addiction.

Since narcotic addiction fluctuates in individual patients, it was felt that a more useful comparison would be the arrest rates immediately before entry into treatment compared with the succeeding years of treatment. During the twelve months before entry into treatment, the 119 patients had 50 arrests listed, or 42 arrests per hundred-pa-

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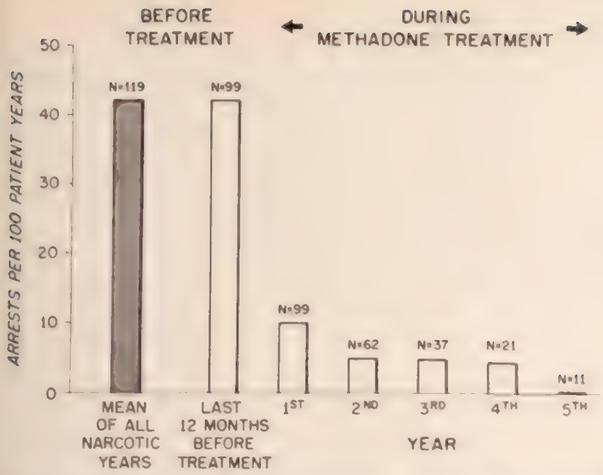

FIGURE 1. Histogram comparing number of arrests during year immediately preceding entrance into treatment program and during successive years of treatment.

TABLE I. Arrests of 119 narcotic addicts before and during methadone treatment

Category of Offense	Before Treatment*		After Treatment†	
Drugs		25		4
Possession	9		1	
Selling	5		2	
Paraphernalia	4		0	
Loitering	7		1	
Money		17		1
Larceny	9		0	
Robbery	2		0	
Burglary	2		0	
Criminal trespassing	1		0	
Bad check	1		0	
Leaving scene of crime	1		0	
Possession of stolen property	1		0	
Forgery	0		1	
Violence		3		2
Dangerous weapon	2		0	
Assault	1		1	
Resisting arrest	0		1	
Prostitution		3		0
Misbehavior		6		5
Criminal nuisance	4		2	
Disorderly conduct	2		3	
Minor		1		3
Subway violation	1		2	
Driving without license	0		1	
TOTALS		55		15

* All arrests in the year before entry into treatment—119 patient years at risk.

† All arrests during methadone treatment—245 patient years at risk.

tient-year arrest rate. In the first year of methadone treatment, 10 arrests were made in 8 of the 119 patients, for a rate of 8.3 arrests per hundred patient years. However, not all 119 had completed their first year of treatment by the time of the study in October, 1971, and some might be expected to have further arrests before the completion of one year. Therefore, the records of 99 patients who had New York City police records and who had completed one year or more of treatment were compared. In the year before treatment, 42 arrests were made in 35 of the 99 patients. This contrasts with 10 arrests in 8 of the 99 patients during the first year of completed methadone treatment. The arrest rate per hundred patient years fell from 42 to 10 (Fig. 1).

During the second year of methadone treatment, 3 arrests were recorded. Since 62 patients had completed two or more years of methadone treatment, the arrest rate was 3:62 or 4.8 per hundred patient years. In the third year, 2 arrests were made, while 37 patients had been treated for at least three full years. In the fourth and fifth years, 1 and 0 arrests were made respectively, but only 21 and 11 patients had completed four and five years of treatment, respectively. The arrest rates in the third, fourth, and fifth years were 5.4, 4.8, and 0 per hundred patient years, respectively.

Detailed analysis of the charges in each arrest during treatment is presented in Table I. Before treatment 47 per cent of the offenses, which were multiple on occasion, were for crimes directly involving narcotics. Another 32 per cent of the charges were for crimes involving money, which were probably closely related to drug abuse. Another 6 per cent were for prostitution—a narcotic-related offense, since it was the most common method used by the females in the clinic to pay for their narcotic use.[4] Twelve per cent were for misbehavior, 6 per cent for violence, and 2 per cent of the arrests were for minor offenses.

The charges during the period of methadone treatment showed a greatly decreased number of arrests for money crimes and a sharp reduction in arrests for narcotic crimes. No arrests were made for prostitution. During treatment, misbehavior offenses constituted 31 per cent of the total and minor infractions accounted for 18 per cent of all recorded arrests.

The arrest data obtained by confession in 81 patients showed their life-time total to be 456, or 35.1 per hundred patient years, based on the duration of addiction reported by the patients. Their arrest rate for the last year before treatment was 50 per hundred patient years. During the first year of methadone treatment, it was only 3.

The 32 patients apparently without New York City police records were questioned about their past criminal activities. Twenty-three readily admitted to having been arrested, and 9 denied ever having been arrested at all.* On the other hand,

*All arrests for misdemeanors and felonies are reported and listed; however, some arrests for minor offenses may not get reported to the criminal records bureau. Since arrests out of the jurisdiction of the New York City police would not be included in the records studied, these facts may account for the discrepancies.

8 other patients denied arrests but had a New York City police record, nevertheless.

Comment

The New York City Police Department records confirm the sharp reduction in criminal arrests in methadone-treated addicts living in New York City during the time of methadone maintenance treatment. Since the police department had changed neither its criteria for recording arrests nor for making arrests during the years of the study, the reduction in arrests was real. Since arrest frequency is a measure of criminal activities, and criminal activity in these patients is a measure of drug-seeking behavior, it can be inferred that drug abuse was sharply reduced after entry into methadone treatment. Furthermore, the arrest rates in those patients in treatment beyond one year show an even further decrease, suggesting that additional rehabilitation of the long-term patients had occurred.

The arrest rate in the last pretreatment year appears to be a particularly useful base line with which to compare subsequent years. The lifetime of narcotic use and last pretreatment arrest rates were quite similar, supporting the assumption that the last pretreatment year was a typical one with respect to criminality. These data lend support to the assumption that the pretreatment arrest rates would have continued unchanged in the absence of treatment.

The analysis of the individual charges in the pretreatment year showed the pattern of arrests during narcotic use to be predominantly for narcotic-related offenses: violations of the drug laws, prostitution, and offenses involving money. While the drug offenses are self-evident, the crimes involving money are less clearly related to narcotics. However, most of the methods used to finance heroin, as reported by members of the clinic during their last year before entry into treatment, came from such criminal acts as: drug dealing, stealing in one fashion or another, and prostitution.[4] Since the average retail cost of narcotics used in the pretreatment year was reported to be $35 per day and since only 25 per cent were working full time before treatment, the annual investment in narcotics by this predominantly lower-class population was about $10,000 per patient. Therefore, it is likely that the preponderance of the money-seeking crimes were committed to obtain narcotics.

During treatment, the pattern of offenses changes strikingly. With two hundred forty-five patient years at risk in comparison with one hundred nineteen years in the last pretreatment year, reductions in arrests for narcotic offenses and very steep decreases in arrests for money crimes occurred. Also, prostitution arrests were absent. In fact, half of the arrests were for misbehavior and minor offenses, which are difficult to relate directly to narcotic addiction. Many of these offenses may have little, if any, relationship to drugs or drug-seeking activities.

Therefore, these arrest data further support the assumption that methadone treatment of criminal narcotic addicts reduces illicit drug use and criminal drug-seeking behavior. Moreover, not only did the patients studied exhibit less criminal behavior, but also the nature of their few offenses committed during treatment were less disturbing to society than those committed before treatment was started.

The confessed-arrest data are surprisingly similar to that derived from police records, especially the pretreatment arrests rate. While these self-confessed rates are doubtless less accurate than the police data, particularly in understating the arrests made during methadone treatment, their fall after treatment is so steep that they also can be viewed as a valid reflection of the reduced criminal activities of the treated patients.

The reasons for patients leaving the clinic were multiple. Ten were transferred to, and remained in treatment in, other more recently established methadone clinics because of patient convenience. Their data were included up to the date of transfer. Hence, the retention rate actually was 128:147, or 87 per cent, if these 10 are subtracted from the denominator. Among the 20 discharged patients, 2 died, 4 left voluntarily, and 14 others were fired because of drug abuse, mixed addiction, behavior problems including alcoholism, and so on.

The posttreatment arrest rate of the 119 patients was 1 arrest during fifteen patient years at risk. These data are too small to draw any meaningful conclusions at present.

Summary

Sharply reduced arrest rates according to the New York City Police Department records occur during methadone maintenance treatment for chronic criminal narcotic addicts living in New York City. Although the major decrease occurred in the first year, subsequent years of treatment are accompanied by even further reductions in arrest rates. Comparative analysis of arrests in the twelve months prior to treatment with those of the treatment years showed that narcotic-related crimes committed before treatment were sharply reduced during methadone therapy. Since the retention rate was 87 per cent in the clinic over a five-year span, methadone maintenance is an efficient treatment of chronic narcotic addiction and is of vital importance in the reduction and prevention of crime.

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Fibrotic stenosis

Fibrotic stenosis within the trachea can follow prolonged use of any endotracheal tube with which an inflatable cuff is used, Tatum has reported recently (North Carolina M. J. **31:** 343, 1970). Without the cuff, it is rarely seen. The fibrotic lesions after extubation probably are a result of the ulceration, necrosis, perichondritis, and granulation which occurred earlier. The fact that these lesions may be far advanced, reducing the airway to 3-4 mm. before there are overt signs like dyspnea or stridor, is emphasized. Lesions may not become clinically evident until several months after the tube has been removed. The factors contributing to the formation of fibrotic lesions, primarily due to prolonged pressure on the tissues are: (1) the shape of the tube, (2) the size of the tube, (3) the pressure of the inflatable cuff; tissue reactions; movement of the tube within the larynx and trachea; and the duration of intubation.

PRACTICE OF COMMUNITY PSYCHIATRY

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Community psychiatry involves a community and the clinical practice of psychiatry as it exists within that community. These two factors must be considered separately and together. We may consider this subject by raising a series of questions to focus on the problems and then try to answer these questions so as to suggest solutions to the problems.

Queries on community problems

What is the community really like? This involves a study of size, location, industry, recreation, roads, schools, poverty, luxury, population, and its many demographic details. This study should be made by experienced sociologists or social planners. They know where to find the data, how to collect it, and how to analyze and present it. Too often inexperienced people spend a lot of time, money, and energy on a study of the community and omit too many of the facts needed to get a real picture of what the community is. Broome County is fortunate in having two very capable units able to make such studies.*

Then comes the question of its unmet needs in the area of mental health. How can you estimate what this community really needs, and how do you document this need? Then, of course, come the plans and programs for the unmet needs. These plans must include programs, staff, equipment, and budget. In addition, there must be included a method of evaluation of the plans and programs, and built-in flexibilities for growth, expansion, or deletion. Finally, one must consider the source or sources of the funding and the political expediency of the entire project. One might add: who in the end will want and get the credit for it all if everything is successful, and who will be the "goat" if it is not?

These are the realities involved; and while one is considering reality, a considerable effort should be made to estimate or, better still, learn in advance how the consumer will react to all the planning and implementation of the unmet needs.

Is the community healthy enough to seek and accept the treatment offered? Can the resources of the community be grouped and be centrally directed to make for unified efficient services? Can each agency give up a little of its autonomy for the greater good of all? Can this kind of community maturity with a more effective communication from group to group be accomplished? Can a wide outreach program which cannot keep all its promises for realistic service be maintained without forcing some changes in clinical practice?

There are no pat answers to these questions. Every community has multiple needs, and a planner cannot always start "where the patient is." It is very difficult not only to assess what a community needs but also to know what a community wants. The professional planner and certainly the nonprofessional planner too often falls back on suggesting what he thinks the community needs. This is generally what the planner is most comfortable in offering.

Queries on clinical practice

Relative to the clinical practice in a community, a detailed study of physicians, clinical psychologists, psychiatrists, social workers, paraprofessionals, hospitals, clinics, day centers, and the many agencies involved in mental health efforts must be made. How do they cover the community? Is there duplication of effort? Is there too much specialization of each factor so patients are referred around a merry-go-round and never get the brass ring of definitive treatment? Are the services able to meet all the service demands of the community? Are locations accessible to all who need help? Is there too much screening and not enough treatment? Are there enough therapists to treat in crisis, in short-term problems, and for the long-term need?

Is optimal treatment really available, or will the community have to settle for less? Is there really a comprehensiveness and sharing in therapy? Can the ground rules of a specific type practice be maintained and be considered too strict, or be relaxed and become too loose, in either case to the detriment of the patient?

Are there enough clinical practitioners to take responsibility, to supervise, and to teach? Can the clinical community psychiatrist serve as a coordinator of the clergy, the schools, the jails, the probation department, the hospitals, clinics, and agencies of the community?

We have asked 26 questions and could easily ask more. We have been told that if you ask the right questions you will get the right answers. Let us see what we can do with the questions we have.

Suggested solutions to problems

The demographic data on the community can be collected from the census tracts, the Chamber of Commerce, county planning departments, or other agencies involved in collecting statistics of the community. This sounds like a big job but usually is not. State departments of mental hygiene can often help with this.

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*The Broome County Planning Department, under Commissioner Joseph Missavage, and the NY-Penn Health Planning Council, Inc., under the Executive Director, Richard Landis.

What are the unmet needs of the community? How many people must go out of town for what they need? One must first survey what the community does have to offer, and a survey of a reasonable percentage of the people in different neighborhoods will help determine what the community should have. What the community does have is usually not too difficult to compile. Questioning people about their mental health needs is much more difficult. Most of them do not really know what they need. Looking into neighboring communities and seeing what they offer will often point up your own deficiencies. The many agencies which are operating can also furnish the kinds of needs they cannot supply and which are frequently asked for.

The courts and the police will point up community needs. The probation department will see other needs. The social welfare department will see still other needs. Private and public agencies will recite their limitations and thus point to needs unmet. Public health nurses, old age assistance programs, the schools, and finally the physicians of the community can add to the list of unmet needs.

To gather all these data one needs good help, money, time, and the ability to analyze the collected data and reduce them to a plan and program which can be staffed and budgeted. This must then be sold to a local government and to the public.

Local government, in charge of spending local tax money, must be willing to buy the plan for the unmet needs. Local government considers the costs, sources of revenue, inputs from state and/or Federal funds, applications involved, bureaucratic regulations and restrictions, and public acceptance.

Public acceptance is often dependent on jobs and fears. One year aid for the retarded is in; another year it is cancer research that is big. This year the drug scene is in. Thus timing becomes important. A program may be presented which is ahead of its time or comes in too late. In either case it is dead. Good programs are often too dependent on good timing. The number of jobs that will become available may be an important factor. Neighborhood fears of creating a drug center, a school for the retarded, an alcoholic half-way house, and so on, may act to block a needed program.

Who gets the credit for the program? Everyone wants to get in on the act if the program is a good one. There are the bold and the too cautious. There are the idealists and the pragmatists. There are the do-gooders and those who want to do nothing. There is always the struggle for power. In the end, some one person must run the show, and he is always caught between the establishment, the militants, and the discontented. He can never be sure of the loyalties of those who are pledged to help him.

What does the consumer want? He is usually not articulate, not communicative, not demanding, and not knowledgeable of his unmet needs. A few consumers are frustrated, angry, and bellicose. They demand instant relief, and nothing you do is good enough and fast enough. There is really no pleasing some of them. Many remain fearful of what you have to offer.

The consumer wants privacy and anonymity. He wants no stigma. The problems of confidentiality are great, and there is no simple formula to protect all in community programs. The smaller the community the greater the difficulty of maintaining confidentiality. When one thinks of integrating all the existing agencies into a network of unified services, the problems of privacy become almost impossible to deal with. With the addition of nonprofessionals, the selective sharing of information leads to less privacy. Certain agencies, such as courts, schools, police, physicians, and so on, are often overprotective and refuse to share certain kinds of sensitive information. The guiding principle should be "everyone must share," but this is a long way from being accepted.

Sooner or later, the question of confidentiality often becomes the greatest block to community-focused and shared mental health services. It cannot be achieved by an administrative decision. What is necessary is a new education at all levels of community service so that barriers can be lowered, confidences are properly shared, people learn to work together more efficiently, and the patient profits more. The individual styles of different agencies have to be modified to lessen idiosyncracies, lessen internal agency conflicts and tensions, increase effective record keeping, and increase intercommunications among the agencies. Broome County is fortunate that the many agencies working in some area related to mental health were willing to get together and did actually form a mental health coordinating committee which met monthly to try to do all the things listed previously. This committee then joined with the NY-Penn Health Planning Council, Inc., to become the technical advisory committee to NY-Penn. NY-Penn is concerned with Bradford and Susquehanna counties in Pennsylvania, and Broome, Chenango, and Tioga counties in New York State.

The need for professional staff is often a serious problem in most places. The average community must import professionals who must like the area as well as the job and the salary. Too often the community is found lacking in the cultural and recreational demands of the professional and his family. Much too often the smaller communities cannot or will not offer sufficient salary and fringe benefits to make the job a desired one. Smaller communities must begin to compete with larger areas, and this means offering a bit more to bring in good people. It is good people who make a good program, not the other way round.

There is a serious shortage of good people well trained in community psychiatry. These people must be sought after vigorously. More such people should be trained and be made available by the universities. There are certainly not enough trained professionals to tackle the whole job of therapy for those in need. The result is less than optimal treatment. This points up the great need for sharing in therapy. Therapy need not be the exclusive territory of the psychiatrist.

Are there enough clinical practitioners to take more responsibility, to supervise, and to teach? The answer is no. Of the potential number available, too many work in the secure areas of state or Federal hospitals or in local government clinics. Many prefer private practice in which they can make a greater income. Others, unable to do these things, work in the relative security of small agencies doing a special kind of work and too often become involved in referrals as often as in therapy. The patient is shifted from place to place, drops out, gets lost, and only occasionally winds up in good hands. Most hospitals, clinics, and agencies do not have training programs to help develop more administrators, supervisors, and teachers.

The demands on the community psychiatrist by the hospitals, clinics, agencies, schools, police, courts, and clergy are too much. He spreads himself too thin, and his efforts become too superficial. He is unhappy with his role, and too many others are unhappy because he cannot live up to their expectations or to his promises.

In 1964, Bellak* spoke of the third revolution in psychiatry, "The Coming of Therapy for the Whole Community." The climate was favorable for change. The principle of quick definitive diagnosis and intensive treatment caught on as a preventative of long-term care in hospitals. New technics evolved rapidly and piled up so as to overburden the conventional psychiatrist not trained and not ready to make the change-over. The challenge was too much for some; others began to learn on the job and built up new sensitivities and approaches. Still the trained manpower is extremely limited. Younger professionals adapted more readily to the new demands but lacked solid experience. The acquirement of new skills and roles became mandatory, but these had to be built on good ability to diagnose and treat the everyday problems. The psychiatrist had to become a "generalist," and this was new and often too difficult. In reaching out to the community too many professionals overextended themselves, failed to meet the challenge, and were overwhelmed. It became evident that even for the professionals there was the need for support, supervision, consultation, and training, and the amount of administrative structuring to accomplish this was usually not anticipated or was underestimated.

Treatment orientations varied from analytic through confrontation, encounter, sensitivity, and drug approaches. There was more chaos than order. Some staff members were reluctant to reveal their deficiencies and feared exposure. Frustrations were frequent, and the need to support autonomous responsibility often made it impossible to point up or overcome inadequacies.

What does all this point to? It points to the fact that community psychiatry still needs vigorous leadership and respected professionals who can create new goals and present these in an articulate and acceptable manner to the community. Without this we shall surely go on building more warehouses for the poorly treated thousands who will wait patiently tranquilized to die.

The community must realize that it is not well and must undergo therapy itself. A community with a slum area, a high rate of unemployment, poor housing, inadequate education, inefficient police protection, a high rate of drug abuse, and a high rate of criminality is not a healthy community and is in need of therapy. It cannot depend on the "community psychiatrist" alone nor on the limited modalities available to deal with emotionally disturbed and mentally ill people.

Prevention is the key word, not just various forms of crisis and maintenance therapies. The community must be willing to undergo and pay for a psychosocioeconomic change. This will be difficult and expensive but necessary. Slums and ghettos must be eliminated as housing standards are improved. Education must be available to all and maintained at the highest standards possible. Employment must be encouraged and drug abuse and criminality discouraged. These things must be done if we are to win the battle against mental illness in all its forms. The treatment of mental illness is costly and will not prevent new additions to the ranks of the emotionally disturbed, insane, drug abusers, and mental cripples. At this time it appears we are still fighting a losing battle, unable to keep up with the rapidly growing list of victims. We need more community facilities, more trained personnel, more money, and more creative ideas and courage.

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*Bellak, L.: Handbook of Community Psychiatry and Community Mental Health, New York, Grune and Stratton, 1964.

UNREPORTED PULMONARY TUBERCULOSIS

Documented analysis

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From the Nassau County Department of Health

Many factors influence the reporting of tuberculosis by physicians to the public health departments. There is always a certain amount of unreported tuberculosis which probably cannot be avoided. The purpose of this report is to describe occasional situations, experienced by the Nassau County Department of Health, in which reports could have been made, since sufficient evidence existed to make such a determination. Usually when apprised of a possible deficiency, most physicians will review their data and comply with a request from a public health agency to report tuberculosis. Occasionally, however, minimal or moderately advanced tuberculosis goes unreported for very obscure or unknown reasons.

Methodology

The Nassau County Department of Health, as mandated by law, maintains a tuberculosis registry for all reported cases of tuberculosis, suspects, and contacts. In addition, the department also maintains a drug file, reflecting the distribution of antituberculosis medications to patients submitting prescriptions from attending physicians.

A surveillance system is in effect whereby a physician submitting a prescription for antituberculosis drugs is requested to report the nature of the patient's illness. From the moment this mechanism is activated and up to its logical conclusion, there are a number of routine step-by-step procedures designed to obtain information from the physician in attendance, which could be helpful in making a decision concerning the reporting of a case of tuberculosis.

Results

During the calendar year 1970, a total of 157 cases of tuberculosis were reported to our health department. In addition, 5 patients were identified by the drug file surveillance system as possible cases of tuberculosis which needed reporting or clarification of their therapeutic status.

The following lists the diagnoses under which these patients are receiving double antituberculosis treatment: tuberculin test reactor; pulmonary disease, cause unknown; pulmonary fibrosis; pulmonary fibrosis, cause unknown; pleural fibrosis, cause unknown; fever, cause unknown; and undiagnosed disease of lung.

The incidence of newly reported tuberculosis cases in our county during 1970 was 10.9 per 100,000 population. The incidence of antituberculosis medication administration, as documented in this report for conditions which are not reported as tuberculosis, is 0.3 per 100,000 population. A number of factors common to these patients were identified.

Comment

Are the patients mentioned previously suffering from pulmonary tuberculosis? A critical review of their records shows that these 5 patients have the following factors in common: positive tuberculin test reactors, PPD-S (purified protein derivative-S); x-ray evidence of parenchymal infiltrates; sputum negative for Mycobacterium tuberculosis; lack of appropriate differential diagnostic skin testing for other pulmonary diseases; treatment with double antituberculosis regimens for six months or more; improvement and recovery from the illnesses previously mentioned; and treatment by the same clinic and sanatorium physicians.

If the only acceptable proof of tuberculosis is a positive reaction to bacteriologic testing, these cases cannot be considered tuberculosis; however, it is common knowledge that one cannot expect 100 per cent bacteriologic proof. This has been recognized for many years and is explicitly described in the recent *Guidelines* of the U.S. Public Health Service.[1]

There are many reasons why one cannot expect 100 per cent bacteriologic proof. The most important are lack of free communication between the lesion and the environment through a patent bronchus, the difficulties of culturing M. tuberculosis, the size of the lesion, the rarity of M. tuberculosis in the lesion, and so on.

How do we make a judgment as to whether or not the physician in attendance considers these lesions tuberculous in nature? The strongest evidence we have for this is the lack of differential diagnostic skin testing to rule out other pulmonary infiltrative diseases, such as histoplasmosis, coccidioidomycosis, blastomycosis, pulmonary disease due to atypical tubercle bacilli, and so on. If indeed the physician in attendance had thought there was a strong possibility that this particular illness was due to an agent other than M. tuberculosis, he would have undertaken differential skin testing to prove the existence of hypersensitivity to another antigen or a higher size of induration than that due to PPD-S.

We have additional evidence that the physician in attendance thought it to be tuberculosis, because an antituberculosis regimen of two drugs was prescribed and continued for a prolonged period of time for these patients. If this was just a short therapeutic test trial, these medications would have been discontinued after four to six weeks.

Another "justification" used for not reporting such patients states that these treatments represent double- or triple-drug prophylaxis for tuberculin reactors. It is needless to reemphasize that the only acceptable form of prophylaxis against tuberculosis at this time is with one drug only, isoniazid (INH), unless bacterial sensitivity studies are available.[2,3]

What are the consequences of not reporting these patients as suffering with tuberculosis? The patient who is told that his or her illness is not tuberculosis but is given antituberculosis medication is confused. In other words, the patient is treated for something he does not have. This situation certainly has an adverse effect on the cooperation of these patients concerning the intake of their medications. The public health department is unable to identify associates, source cases, and so on, since no epidemiologic investigation is warranted. A possible legal liability exists for the attending physician for failure to diagnose tuberculosis or for treating nontuberculous conditions with antituberculosis medications.

Why then are these patients not being reported as suffering with tuberculosis, such as "activity undetermined," a classification approved by the New York State Department of Health? After an appropriate interval of time, usually up to three months, the classification can be changed to "inactive, on treatment." Such a procedure would permit the examination of family contacts for the identification of positive reactors or additional cases of tuberculosis to be followed at a later date.

What motivates certain physicians not to report such patients as cases of tuberculosis? A persistent medical conviction prevails that it is right to expect 100 per cent bacteriologic proof in each case in spite of existing available evidence and contrary to existing rules, regulations, and guidelines from supervisory and educational organizations. It may also be a sincere desire on the part of the physician to protect the medical record of the patient against the possibility that he or she may be discriminated against with reference to future employment. Obviously, this is a false belief. A simple medical statement that the patient, at this point in time, is noninfectious, is on medication, and/or has inactive tuberculosis is sufficient to insure employment from a medical point of view. Another reason could be outright human failure on the part of a few physicians to comply with accepted medical practice in this community as to the reporting of tuberculosis and the management of such patients. Finally, there may be a lack of appropriate medical knowledge on the part of certain "sanatorium" physicians in our county as to the proper management of these tuberculosis problems. It is beyond the purpose of this report to analyze each case in detail. However, my impression is that one or more of the aforementioned factors is operative in motivating a few "sanatorium" physicians in withholding the reporting of tuberculosis in situations of this kind.

What can be done about it? The only way in which these problems can come to their logical solutions is by acknowledging their existence and the difficulties that the Nsssau County Department of Health encounters, bring them to the attention of any interested physician or group of physicians for review, gain support from the medical community, and hope for a frank discussion which could throw light on the best possible steps to be taken toward a solution.

Summary

The records of 5 patients who were thought by the Office of Tuberculosis Control, Nassau County Department of Health, to suffer with tuberculous diseases but who had not been reported were reviewed. The factors in common with these cases were listed, the diagnoses under which they were carried were analyzed, and the consequences of nonreporting were discussed.

It is hoped that all physicians will report to their public health departments not only the obvious cases of tuberculosis but also those that exhibit sufficient evidence to be considered as tuberculous in nature. Such evidence includes the presence of tuberculin skin hypersensitivity, radiologic evidence of disease, lack of other differential skin testing to rule out fungal and atypical disease, and treatment with at least two antituberculosis drugs beyond the limit of a therapeutic trial period of a few weeks' duration.

Our physicians' awareness to this problem will help us find a solution.

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PATIENT'S VIEW OF ILLNESS AND SURGERY

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An educated and sophisticated man sought advice concerning a pending herniorraphy, since he felt "unable to accept the loss of my testes," which he felt the operation entailed. When reassured by his internist that this was not part of the operation, he was able to return to the surgeon and undergo uneventful surgery.

This vignette illustrates two problems facing the physician. First, there is a difference in what a patient may reveal to different physicians—in this case he could not ask his surgeon, a sensitive and kindly man, a straightforward question about the results of the procedure. What this communication will focus on is a second problem: the difference between the physician's concept of illness and treatment and the patient's idea of the same situation. While the physician deals with bodily functions and illness in anatomic, physiologic, and pathologic terms, the patient tends to think about them along a spectrum from reality to fantasy, with his own position on this continuum determined by several factors. These include: communication and real information, general attitudes toward body parts, personal history, guilt, denial, social factors, and fantasies concerning illness and operations.

Lack of information

There is obviously a gap between a layman's and a medical person's knowledge of medicine. However, there is a natural tendency for the physician to assume that everyone shares his information, especially when the other person is intelligent and educated. For example, in patients undergoing herniorraphy, it is commonly feared that the testes are endangered, since examination for this condition in the male involves palpation in the scrotal area. The surgeon knows this is not so and may not think that the patient would have such a worry. Another example is the "beautiful incision" reaction when the surgeon comments on how good the operative area looks. The patient who peeks at his cut skin bristling with black thread and strange looking drains has an eerie feeling of unreality as he tries to reconcile his perception with the surgeon's words. He has no way of knowing that the surgeon's experience provides different information from his.

As technologic progress surrounds the hospital bed with complicated gadgetry, a gulf is created between the patient and those attending him. The staff accepts the equipment as part of the natural sickroom enviroment. The patient, however, may find the devices terribly frightening, a fact not appreciated by the staff, whose theme becomes, "since this is so commonplace, why should it bother anyone?"

In dealing with patients undergoing emergency tracheotomy in the intensive care unit, we find it important to keep reminding them of the fact that they will be able to talk once the opening is closed. This followed our realization that almost all patients anticipate a permanent loss of voice and consequently suffer intensely. Previously, we said nothing about it, since we knew their speech would return and assumed this could be taken for granted.

Perhaps the most striking area of difficulty in communication occurs in the language of cardiology. Expressions such as "heart failure" and "heart block" are taken quite literally by patients, who attribute to them ominous implications well beyond their true meaning.

General attitudes toward body parts

The nonsense verse of Gelett Burgess that states:

> I'd rather have Fingers than Toes,
> I'd rather have Eyes than a Nose:
> And as for my Hair
> I'm glad it's all there,
> I'll be awfully sad when it goes.[1]

may be psychologically incomplete, but it is very illustrative of the fact that for all human beings there is a hierarchy of organ importance. It is obvious that surgery on the heart appears more dramatic than surgery on the liver, although both organs are vital. The kidneys are more heavily weighted than the pancreas. Mental anguish for the patient with circumcision may be greater than the anxiety preceding splenectomy, although the latter is obviously a more major enterprise. For some women undergoing mastectomy, the loss of the breast may be more traumatic than awareness of the cancer.

Personal history

In addition to general reactions, the individual's own history may determine how he looks on the illness. The diagnosis of diabetes may well mean something quite different to different patients. Someone whose parent suffered a painful siege of comas, neuropathies, blindness, and amputations undoubtedly will not react to his own diagnosis in the same way as someone whose parent had a mild case of diabetes which was easily controlled by diet. To each patient, diabetes is a different disease entirely.

Another example is seen in a young woman with a long history of proved duodenal ulcer. Surgery was recommended for pyloric stenosis, but at the last moment she became panicky and refused the operation. It was only when we learned that her father had died immediately after surgery for carcinoma of the stomach that she could be reassured concerning the difference between her condition and her father's. She then agreed to surgery. It was interesting that she originally had given the cause of her father's death as leukemia, in an unsuccessful attempt to dissociate her own illness from his. Her equation of her illness with her father's led her to expect a rapid demise if she were operated on.

Guilt

On one level, illness is always perceived by the patient as punishment for past transgressions. At times this is overt, but it is usually obscured. It is revealed by such expressions as, "what have I done to deserve this?"

Sometimes one sees a paradoxic reaction: a patient undergoes a serious procedure which he handles well at first, only to become depressed when danger is past. One such patient, a young man who underwent open-heart surgery for mitral valve replacement, began to feel suicidal when it became evident that things had gone well. A careful history revealed that a younger brother had died years before following an appendectomy. The patient's unspoken theme was "What right do I have to survive such major surgery, when my brother couldn't be saved from a relatively minor illness!"

Denial

Denial is the inability to become consciously aware of some reality because the reality or its implications are too painful to tolerate. This defense mechanism is commonly seen when a patient seeks consultation for a lesion which is obviously months old yet was "first noticed this week." The patient has blocked out awareness and is quite honest about his observation, largely because the prospect of having the disease may be overwhelming. If denial hampers treatment, it is, of course, detrimental, but in the face of a hopeless situation, it may provide a blessed anesthesia. Above all, it is well to remember that a patient is not consciously lying when he announces to his family that his operation was unnecessary since his physician misdiagnosed the lesion as cancer.

Social factors

While physicians usually view illness in medical terms, at times they may join the patient in taking a moralistic outlook. This is most evident in cases of venereal disease or pregnancy out of wedlock. However, there are various illnesses which have special meanings to certain ethnic groups or socioeconomic classes. For instance, tuberculosis is often treated as a shameful condition by descendants of Mediterranean immigrants. Apparently this is due to the idea that the cause of tuberculosis is dirt. Among members of some lower socioeconomic groups there is frequently a fatalistic outlook concerning surgery. For this group there is often difficulty in realizing that current pain can lead to a long-range advantage.[2]

Fantasies concerning illness and operations

A sick person with no specific medical knowledge develops a mental picture of the pathologic processes, which may or may not bear a close relationship to the actual facts. There are several commonly shared fantasies and some idiosyncratic ones. A frequent fantasy is seen in herniorraphy patients. In a study of patients in a recovery room, it was surprising that the first question asked by patients who had had herniorraphy under spinal anesthesia was "what did they find?"[3] Clearly these patients were worried lest the surgeon had discovered cancer. This reaction, in part, stems from the lack of knowledge of hernia on the part of the layman. It also illustrates the fact that any operation is experienced by the patient as a diagnostic exploration with the possibility of dire results.

Another common fantasy is shared by subjects of cardiac valve replacement. Although there is a careful preoperative explanation, more than half of the cardiothoracic patients at The Mount Sinai Hospital picture the valves as being outside the heart. In this situation, there is the shared inability to accept the idea that the heart is opened during open-heart surgery. In another cardiac procedure, pacemaker implantation, it is not rare for patients to picture the device as an artificial heart.[4]

Individual reactions are often seen mixed with shared fantasies in organ transplants. Kemph[5] and Basch[6] describe a common feeling of acquiring psychologic attributes from the donor in kidney transplants, although the specific nature of the fantasy depends on the individual. Thus a young man went into a panic when he learned that the donor was homosexual, fearing that he too would acquire such a condition.

Comment

Almost every surgeon can recall a patient who refused permission for a relatively minor operation, only to learn that the patient had misinterpreted the meaning of the operation. The physician, because he is reality-oriented, may lose sight of the fact that the person who is ill views his body and his illness as a fantasy and in an idiosyncratic way. Since the patient is unable to bridge this gap, the physician must be aware that what he says and does may not be quite understood; and he must be alert to possible breakdowns in communication, since these may hinder an otherwise successful procedure. In addition, the outcome of treatment may not be greeted by surgeon and patient in the same way. A patient who has undergone successful removal of colonic cancer may not be as enthusiastic with the cure as is the physician; not when he, the patient, must deal with his new colostomy.

The patient who becomes depressed after successful surgery is a perplexing problem unless one realizes that there may be understandable reasons for this reaction. George Bernard Shaw's admonition, "Do not do unto others as you would that they should do unto you. Their tastes may not be the same,"[7] is particularly applicable in these situations.

Especially important for the physician to keep in mind is the fact that his natural habitat is not that of the patient. The patient comes into the physician's bailiwick as an alien into a threatening land, and he is frightened by the landmarks the physician barely notices. The physician's awareness of this anxiety will go far toward making the patient's sojourn an easier one.

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PSYCHIATRIC HOSPITALIZATION

Role of administrative policy

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Between 1968 and 1970, the Committee on Hospital Psychiatry of the New York Society for Clinical Psychiatry, the district branch of American Psychiatric Association, informally surveyed several of the diverse inpatient psychiatric facilities in New York County (Manhattan). Especial attention was focused on admission practices and treatment policies, and the relationship between administrative and clinical decision-making closely examined.

Administrative decisions are often based on sound clinical experience or desire to improve patient care. At times, however, they are based on controversial or undocumented theoretical assumptions. It is our intention in this report to illustrate the manner in which administrative decisions support or limit the activities of clinicians.

To highlight this complex interface between administrative and clinical policy, we will draw on examples from the addictions, adolescent and geriatric psychiatry, and from more general therapeutic considerations involving such variables as length of hospitalization, preferred treatment modality, openness of wards, and patient-selection criteria.

Duration of hospitalization

The interplay of clinical and administrative elements is no better exemplified than by comparison of lengths of hospitalization.

The duration of hospitalization varies impressively among the hospitals surveyed. In one hospital, most patients are hospitalized about three months. In several others, most stay three to six weeks. In another, efforts are made to discharge most patients to aftercare within seven days. Patients who are not ready to leave when the specified time has elapsed may be transferred to State hospitals or passed to other hospitals which have different policies about length of stay. Proponents of brief hospital treatment cite evidence that their approach is associated with lesser morbidity and with outcome as good as or better than more conventional approaches. We do not yet know what are the clinical indications for long or short hospitalization for any patient. The patient receives that treatment which has been chosen by the hospital available to him as the treatment to be applied to all patients.

Length of treatment is determined for most patients in voluntary or proprietary hospitals by policies of third-party payers. Proprietary hospitals are not permitted by law to receive Medicaid payment. Hospitals which may receive Medicaid payments were initially authorized to provide ninety days of hospitalization. Beginning in February, 1971, payment was limited to sixty days. The Department of Mental Hygiene's memorandum explaining the reduction stated: "The goal of inpatient care is to relieve severe psycho-social problems as quickly as possible so that the patient can become suitable for partial hospitalization or outpatient treatment."[1] Justification was offered by a survey of 5,732 admissions to general hospitals during a three-month period, illustrating that only 12 per cent of the admissions were for more than sixty days. Is this an illustration of heavy-handed administrators fitting all patients to a Procrustean bed ample in size for 88 per cent? Is it a valid clinical discovery which will protect some patients from excessive hospitalization? Or is it merely an economic necessity?

Blue Cross and most other hospitalization insurance policies pay for twenty-one to thirty days of hospital treatment, so there is pressure to treat rapidly to discharge patients within the time for which there will be reimbursement. When the depressed patient cannot remain long in the hospital, electroconvulsive therapy is likely to be used more readily. When more hospital time is available, as with Medicaid patients, antidepressant medication and psychotherapy are likely to be attempted before electroconvulsive therapy is considered. While we have observed electroshock being used to help patients get out of the hospital quickly, we have not seen it used for the purpose of increasing the number of Medicaid patients who could be served.

The most extended care has historically been possible in public hospitals. Treatment wards in some municipal hospitals may keep patients for over a year, but on all other wards of municipal hospitals, pressure of admissions reduces the capability of the hospital to provide prolonged treatment. It may become necessary in some public hospitals to discharge patients to make room for new patients without overcrowding. In contrast, voluntary hospitals may control their admissions by postponing discharges.

All the variables influencing length of stay affect the setting of the imaginary "thermostat" on each ward. Whether this "thermostat" is set for seven days or for three months, it tends to determine the expectations of both patients and staff. Patients seem to ready themselves for discharge at the rate expected by the staff and other patients.

An example of the manner in which policies may dictate treatment is the effort made by the State hospitals in New York to reduce their census by emphasizing the role of the community in treatment of chronic patients, even though community resources are limited. Observation of persons seeking admission to Bellevue Psychiatric Hospital showed that many of the patients once cared for in State hospitals are now the responsibility of the Department of Social Services (Welfare) and the municipal hospitals. Each year, the further reduction of State hospital census is described as progress, but we cannot consider this approach to treatment successful until we know more about the impact of these patients on their families and on the community, as well as knowing more about the adjustments they make. In this instance, administrative action was based on an untested assumption about treatment. The State hospitals' burden of too many patients and too little staff has been lightened: an illustration of the use of administrative action to support clinical activity. At the same time, this administrative action by a single unit of the multiagency treatment system assumed the function of comprehensive planning.

Therapy

Within the hospitals which emphasize psychotherapy, there are many approaches to treatment. In one hospital, where classic psychoanalysis is emphasized, the patient is expected to participate in psychotherapy with his resident and to avoid discussion of his problems with other staff members. In other hospitals, where more eclectic therapeutic philosophies exist, patients may be in groups led by nurses, social workers, or paraprofessional persons. Psychotherapeutic exploration, when carried out, may be aimed at current social or emotional problems, or it may follow classic lines and deal with early origins of illness. Staff in one hospital emphasize the new patient's need to accept his role as a patient, while in another hospital the emphasis is on leaving the hospital. Patients may be required to participate or allowed to withdraw; recreational activities may or may not be provided. Passes may be given immediately after admission or may be delayed until the patient has improved. Absence of follow-up data makes it impossible to know which approaches or treatments are efficacious or even which patients have, on discharge, immediately sought admission to another hospital. Despite the goal of individually prescribed treatments, in practice, treatment is applied according to policy which is essentially the unverifiable views of the leaders of services or supervising psychiatrists.

Milieu

The interdigitation of administrative and philosophic considerations with clinical issues is illustrated by the concept of openness. Some hospitals eschew the locked ward as repressive, regressive, inhuman, and unduly expensive to maintain. However, in locked wards, many patients who are initially quite disturbed improve rapidly and become responsive to treatment. An applicant for admission may be rejected by a hospital with no security facilities, but a week later he may be considered quite suitable. As a consequence, certain patients are sent to municipal hospitals because the voluntary hospitals which might ordinarily serve them have elected not to maintain the necessary facilities. The issue is compounded when State hospitals limit their closed services. Patients are assigned to State hospitals by their addresses. If a person is ruled unsuitable for admission to his State hospital, he is not easily accepted by another which does have security beds. He becomes a person without a hospital. The most disturbed patient, instead of receiving the most consistent and continuous treatment, is the one most likely to be transferred from one facility to another. To maintain open wards, State hospitals may make efforts to have certain patients transferred to correctional facilities which maintain better security.

Once a patient has gained admission to a hospital, many aspects of the care he receives are determined by considerations that appear to be philosophic rather than derived from clinical data. Some hospitals are luxurious, some Spartan. At this time, we do not have data to establish, in terms of outcome, whether the comfortable hospitals have advantages over the less comfortable and less well staffed. Patients are more accepting of hospitalization in comfortable surroundings, and at least some are more agreeable to readmission when necessary. But comfortable surroundings also encourage certain dependent patients to maximize their problems to gain admission or forestall discharge.

In some hospitals, patients are expected to comply with regulations and generally be docile, cooperative, and agreeable. In others, patients with similar conditions are expected to participate in a democratic society and may be encouraged to express criticism of staff. Nearly all hospitals have adopted the practice of having psychiatric patients wear ordinary clothing rather than hospital garb. For converse reasons, the director of one well-known hospital insists that patients be attired as are other medical and surgical patients. Patients and staff have preferences about uniforms vs. autocratic ward structure, but no one has evidence that one approach is more effective than another as measured by any clinical parameter.

Admission practices

Hospitals which elect to receive governmental support as community mental health centers are required to take responsibility for patients living within their catchment areas. Since many of these hospitals must also be available for the hospitalization of private patients of members of their attending staffs, they have either designated a stipulated number of beds for the community or have developed a system of priorities to meet the needs of both groups. While the State goal for each community mental health center is to assume complete responsibility for all patients within its area, each, when it is at capacity, sends patients to municipal hospitals. It is expected that those who need prolonged care (which is not always clinically defined) will be referred or transferred to State hospitals. Whether or not a given patient will receive treatment in the psychiatric services of a general hospital or other community mental health center depends to a large measure on the selection policies of the institution first contacted. Each hospital is free to define its role in dealing with the community's need for services. Thus, certain patients are more likely to be selected than others. In a study of admissions to Massachusetts Mental Health Center, Mishler and Waxler[2] observed that patients referred by physicians were more likely to be admitted than others, that young patients were favored over older patients, and that previous hospitalization was associated with denial of admission.

Teaching hospitals are often biased in favor of patients who are young and skilled verbally. Those who are of limited intellect or who do not speak fluent English are less likely to be admitted. The patient's need for services is important, but so is his ability to participate in the program being offered. A dirty, coarse, or cantankerous person may be turned away as not suitable, even though he might, when his acute illness subsides, be responsive to psychotherapy. The categories defined as appropriate by administration may become subordinate to initial attractiveness to the resident staff.

When a hospital has the capability of providing intensive psychotherapy for every patient, it may be an extravagant use of resources to admit patients who do not need this form of treatment. When this position is adopted, chronic schizophrenic patients are usually excluded, despite the likelihood that symptom improvement and reintegration will occur. Staff preference or philosophy determines whether a hospital emphasizes psychotherapy, potential for improvement, or dangerousness as a criterion for admission. Even many hospitals which are community mental health centers, required to provide care for all in their catchment areas, are able to exercise this preference, for most are not required to accept patients above their authorized capacity.

Each of the surveyed hospitals had at some time attempted psychiatric treatment of drug addicts. Each hospital found that the treatment failed and that the patients were disruptive to the treatment of others. As a result, each institution developed a policy either restricting admission only to psychotic addicts or excluding all addicts from inpatient care. The high rate of recidivism of the alcoholic patient has made most facilities also reluctant to admit an individual with a history of this disorder, even when it is not part of the presenting problem.

Administrative inflexibility is often revealed in the setting of age limits for a hospital. The usual reason given for excluding adolescent patients is that they create problems which make it difficult to treat them along with older patients and that they may remain for months because other facilities are not available. But here there is no uniformity. Some hospitals accept youngsters of fourteen; others require that patient be at least seventeen. Manhattan hospitals with no facilities for adolescent patients may send them to Bellevue. However, problems arise when there is failure to mesh administrative policy. Bellevue has found it can most effectively treat boys up to sixteen and girls up to seventeen on its adolescent service. Another hospital, which has no adolescent service, insists that all patients under eighteen be admitted to Bellevue. For a long time Bellevue accepted these patients to adult wards, but finally insisted that this was illogical and insisted than the other hospitals accommodate to its age requirements.

In recent years an age group whose pattern of psychiatric hospitalization has been profoundly affected by administrative policy changes is that of the elderly, whether at voluntary, proprietary, municipal, or state hospitals. The Social Security Medicare Law, in making payment for hospital care available to many people, mandated that treatment be active, not custodial. This, coupled with emphasis on therapy through the State hospitals has made it difficult for elderly patients and alcoholics to gain admission to many psychiatric facilities. The policy stated by the Department of Mental Hygiene[3] is that elderly patients should be admitted to State hospitals only if they have illness of such severity that they cannot be cared for in nursing homes or foster care, but clinical criteria are not clear. At times, there is disagreement between the referring physician and the State hospital admitting psychiatrists about whether a patient is psychotic or simply geriatric. In practice, this policy has engendered a bias against patients over sixty, even when they have clear psychiatric illness, for hospitals fear that once the patient has improved, there will be no facilities for his continuing care. For many patients with chronic brain syndromes who were formerly eligible for admission to State hospitals, facilities no longer exist. Nursing homes, limited in availability, protect themselves from difficult patients by discouraging applicants who have histories of having been on a psychiatric ward or of having exhibited behavioral problems.

Patients not wanted in a hospital are declared to be members of a category that is not the responsibility of that hospital, as illustrated by the assertion that care of the elderly is the responsibility of the community, not the State hospital. Some hospitals acknowledge responsibility for their own ex-patients and give them priority in admission. Others declare such patients to be chronic, hence the responsibility of chronic-care hospitals.

Comprehensive planning

Comprehensive planning for psychiatric hospital treatment has not yet been possible because of the coexistence of incompatible systems of treatment. The traditional organization of services has been a large number of small psychiatric facilities, each developing its own approach to treatment and its own concept of responsibility, with a small number of large public hospitals responsible for all patients who need care. The catchment area concept has been developed as an approach to comprehensive planning by the National Institute of Mental Health and the State Department of Mental Hygiene.

The development of an extensive network of catchment areas, all following similar approaches to admission and treatment of patients, does not seem to be the solution, for it is contrary to the trend in medicine and in other community services, where regional planning is encouraged to minimize expensive duplication. No one quibbles with the idea that patients should be treated near home rather than away in the country or in a large dehumanizing institution. Access rather than closeness is what matters to urban residents, and most can travel as far to obtain medical treatment as they can to shop or to attend an integrated school. The goal of providing some service for all who live within a designated area may hinder development of treatment approaches based on indications rather than arbitrary standards.

In the absence of effective central planning—and it would probably be rejected if it were proposed—the public hospitals provide de facto problems posed by the large volume of patients they have to handle. Procedures have been developed which make transfer of patients from institution to institution more humane and more efficient. Direct transfer of patients to State hospitals has helped many institutions to control their census. The larger municipal hospitals provide backup coverage for the smaller hospitals and community therapeutic facilities by accepting their overflow patients and those who cannot be treated within their policies. Meetings with local groups to discuss common problems are often held under auspices of the larger municipal hospitals. They also provide leadership by altering their programs. For example, when Bellevue insisted that other hospitals assume responsibility for psychiatric care of their own patients with medical illnesses, other hospitals developed capability of providing psychiatric care for these patients.

The administrators planning programs for the State hospitals are usually the final arbiters of patient care. By their unilateral action, they are forcing changes in the treatment of the aged, the alcoholic, the addict, and the chronic schizophrenic patient. There have been many problems in the care of people in these groups, since community facilities to care for them are created only when community agencies cannot send them elsewhere.

In New York City the large municipal hospitals which have long formed the backbone of psychiatric care for the majority of the city's population are now in transition. They are developing the services and approaches of community mental health centers, while still filling their traditional role as receiving hospitals. In this way, they function to a large degree as regional mental health centers. While their administrators are aware of the fact that they are not making administrative decisions for the city, in their response to the pressures of people seeking help and the restrictions imposed by the State hospital system, any policy decisions they make have far-reaching effects.

Public hospitals shape policy for private and voluntary hospitals by their power to refuse admission to certain patients. Policies of the public hospitals are in turn affected by their inability to refuse patients sent to them by courts. The disruptive effects of offenders in a civil hospital have been described by Lowenkopf and Yessne.[4] Individuals may be remanded to municipal hospitals for periods of observation much longer than hospital staffs feel necessary or practical.

There has been no decision in the community or within the psychiatric profession about whether the many independent hospitals and community mental health centers should continue to have a fairly broad range of autonomous functioning, whether the large municipal hospitals should be reduced to catchment area centers, or whether State and municipal governments should plan for a complete system of care. In absence of clear policy, planning is being accomplished by decisions of many administrators, each solving his own problems.

Conclusion

The organization and provision of psychiatric hospital service adequate for the needs of New York County entails problems of formidable proportions. The intent of this report has been to highlight the important influence of administrative considerations on psychiatric hospital admission and treatment policies.

Administrative policy should reflect accumulated clinical experience. It should be a guide to efficient practice, facilitating the work of less-experienced clinicians. At the present time, for example, the decision of many hospitals not to undertake treatment of heroin addiction on psychotherapeutically oriented services appears to be clinically sound. However, once policy is formulated in administrative rather than clinical terms, flexibility is lost. An example of this, leading to policy not firmly grounded on clinical data, is the exclusion of heroin users from treatment of other conditions.

Administrative influences affecting the practice of hospital psychiatry may arise from issues apart from clinical needs of individuals. Preeminent among these are decisions relating to allocation of resources, establishment of priorities, institutional commitments, facility autonomy, program development, and other abstractions that pertain to money and control. The great influence of administrative policy in psychiatric care exists in part because of clinical default. In the absence of clear clinical data, a vacuum exists which is filled by administrators. The fact that psychiatric illness invariably involves the patient's total environment makes it impossible to ignore the issues which pertain to administration rather than to clinical practice. A common illustration is the fact that a chronic patient who is maintained by an aftercare clinic may be admitted to a hospital if he seeks assistance at its emergency department. In such a case, it is not the patient's psychopathology but the work schedule of the clinic that has necessitated hospitalization. Broader in scope, and more sophisticated, was the decision twenty years ago in California to increase the number of clinic facilities and decrease state hospital care.[5] This may have been approached as an administrative solution, but the nature of facilities available shapes the practice and judgment of clinicians. A significant change in psychiatric thinking about dangerousness of patients came not from a clinical breakthrough but from a court decision (Baxstrom) which required the transfer of hundreds of patients, psychiatrically labeled dangerous, from Matteawan to civil hospitals.[6]

No psychiatric facility in New York can function autonomously. Administrative interrelationships among the various State, municipal, voluntary, and proprietary hospitals have been developed informally to accomplish admission of all who need it, while preserving the specialized interests of many institutions. According to Kolb,[7] antiquated administrative procedures and statutory regulations may have an adverse effect on the care of the mentally ill, and experience has demonstrated that the delivery of psychiatric services requires an administrative organization to arrange for patient reception and flow.[8] In the absence of effective central planning, the public hospitals have been providing de facto leadership, primarily by exercising their power to regulate admissions.

Is such a plan fundamentally acceptable? If such decisions are ultimately the wisest for the psychiatric community, are they not usurping functions of those planning authorities charged with responsibility of coordinating a complete system of care for the community? If, on the other hand comprehensive centralized planning is not desirable, should it not be made clear that the freedom of each psychiatric hospital or community mental health center to define its own policy ought not to be abridged by administrative decisions of public hospital officials not charged with planning responsibilities?

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W. C. ROENTGEN

Travel aspects of his life

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Wilhelm Conrad Roentgen discovered the x-ray in November, 1895, in Würzburg, Germany. For seven weeks he experimented almost without interruption until he donated the "new kind of rays" to the world. Although he was always deeply involved in his work, he also found time to travel a great deal.

Born in 1845 in Lennep, Germany, east of Cologne, he was taken by his parents to Holland when he was three years old. He developed into a handsome, tall, and slender young man. Until the age of twenty, his travels were mainly confined to the surroundings of his hometown of Apeldoorn and of Utrecht.

In 1865, Roentgen went to Zurich, Switzerland, to attend the polytechnical school and the university. Here, he was attracted to the nearby mountains, the Leiterli, the Uetliberg, and the Rigi. His long legs and healthy constitution made him an ideal mountaineer. Strangely, a man who was mentally so far ahead of his time preferred to travel by old-fashioned horse carriage in the mountains (Fig. 1). Railroads were too fast for him to enjoy the beauty of the scenery.

His meager income as an assistant in Zurich (1870) and in Würzburg (1870 to 1872) prevented extensive traveling. He also did not receive any material support from his parents after his graduation from college or after his marriage in January, 1872. However, when he moved to Strassburg soon afterward, his economic condition became less burdensome. There he enjoyed frequent trips to the Vosges mountains and the Rhine Valley.

For one year, Roentgen went to Hohenheim as professor of physics. Now he could explore the beauty of the Black Forest. After three more years in Strassburg, he was appointed full professor at the University of Giessen (1880). Thus, he finally was assured an ample income so that he could freely indulge in traveling.

Numerous holidays were spent in nearby mountains and the lower Rhine Valley. Of especial interest, however, was the leasing of an ideal hunting ground in the nearby forest. As precise as he proved with all his undertakings, he also developed a high degree of marksmanship, and his love of hunting lasted almost to the end of his life.

Trips with companions

The mountains of Switzerland were the chief attraction for him, and in the month of August climbing was undertaken preferably around Pontresina. Here, he met congenial fellow climbers such as Krönlein, Zehnder, Wölfflin, Cohen, and others. They all became his lifelong friends. There were the glaciers of Diavolezza and Morteratsch, the Piz Bernina, Palü, and Roseg which attracted the daring mountaineers. Occasionally, they also ventured beyond the mountain ranges to the lakes of Silvaplana and Sils, where they admired a sweeping view of the Fexthal toward St. Moritz. Remaining landmarks at the Hotel "Weisses Kreuz" still remind visitors of the memorable Roentgen era.

Around Christmas time, the Roentgens enjoyed winter sports in Tirol and at Davos-Schatzalp. During the Easter holidays, the Roentgen entourage headed toward Cadenabbia at Como Lake, south of the Swiss border. Many faculty members of the University of Würzburg, where Roentgen resided from 1888 until 1900, joined in the pilgrimage. The climate was balmy, and spring flowers blossomed at their best. Hotel Bellevue served as headquarters, since it was ideally located close to the lake and adjacent to the Villa Carlotta. A special key, through the courtesy of the Prince of Meiningen, provided free access to the villa at all times.

When climbing mountains, Roentgen always managed to be ahead of his group, choosing the steepest approaches instead of the regular serpentine paths. On reaching the top, he would leisurely absorb the scenery and enjoy his refreshments long before his friends arrived. He arranged trips to Villa Arconati near Lennon and across the lake to Bellagio with its tasty cherry tarts. Roentgen planned all tours in detail: some members would hike, others would take the boat or a horsedrawn carriage to join at a common destination for an afternoon outing.

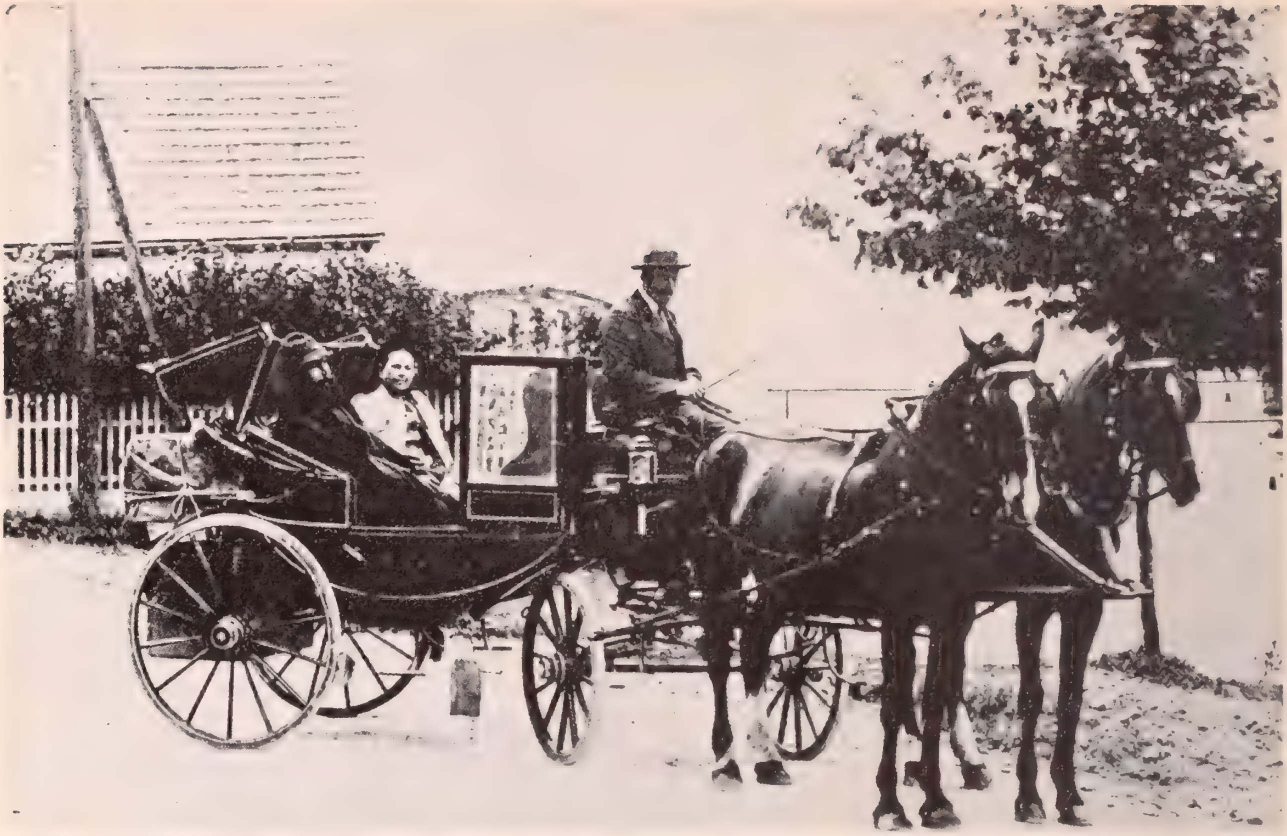

FIGURE 1. The Roentgens traveled leisurely in the mountains to enjoy the beauty of the scenery (courtesy of Roentgen Museum).

Special birthday parties at that time meant a great deal to Roentgen. One evening, the well-groomed but absentminded "geheimrat" appeared with a dress shoe on one foot and a mountain shoe on the other. When detected with this attire, he was greeted with hilarious laughter. The friends continued teasing him with rhymes and a doll masquerading as the well-dressed professor with two different shoes. He fully enjoyed this interlude.

When it rained, card games were played. The losers frequently lost their tempers but not the composed professor. He would only stare at the companion at fault, so that partnership was discouraged in the foreseeable future.

Other journeys

Roentgen also liked to travel in solitude and incognito; but this was hardly possible after he had reached world fame. In March, 1896, when the Roentgens set out for an extensive journey to Italy, he was recognized at the Munich station while changing trains. Numerous people surrounded him and asked for autographs. A similar reception awaited him in Rome where university professors and reporters begged him to give lectures and grant interviews. While sightseeing in Florence, he was recognized by a large group of enthusiastic students. They asked him to speak, and later Roentgen addressed the crowd in Italian. The applause was overwhelming, and he was given the red-carpet treatment wherever he went. Even on the isolated Rigi mountain in Switzerland, autograph seekers surrounded him as he descended from the cog railroad.

Roentgen journeyed to Italy less frequently than to Switzerland. Nevertheless, having studied Italian culture and art beforehand he developed a never-ending desire to visit the cathedrals, museums, and statues of Rome, Naples, Florence, Venice, and Milano. He also traveled to the Riviera, Santa Margherita-Ligure, Siena, Sorrento, Capri, and many other places as far south as Sicily. On the Adriatic coast, he ventured down to Brindisi and across the water to Corfu. Unhappily, the party had to stop short of Athens, when a sudden illness befell Mrs. Roentgen. For the same reason, Roentgen once had to return to Cairo, Egypt, while on a boat excursion on the Nile river in the Sudan.

Later travels

In 1900, Roentgen was called to the University of Munich. On moving there, he lost little time in obtaining the lease of a hunting ground at the Gögerl near Weilheim, within commuting distance

FIGURE 2 Wilhelm Conrad Roentgen (1845 to 1923) at the time of his discovery of the x-ray (1895). [From Glasser, O.: The life of Wilhelm Conrad Rontgen as revealed in his letters, Scient. Month. **45**: 194 (1937), courtesy of Roentgen Museum].

of Munich. Four years later, he purchased an adjacent lodge offering a sweeping view of the Bavarian Alps from the Allgäu to the Karwendel. The place attracted numerous visitors and house guests. These friends could easily dispel his feeling of loneliness. The lodge also became an ideal substitute for longer trips, and for some time he felt he might move there altogether.

In December, 1901, Roentgen became the first recipient of the Nobel Prize. His journey to Stockholm proved a pleasant experience, since he was royally entertained; however, inclement weather during the dark and cold season prevented much sightseeing. In the following years, extensive traveling had to be curtailed because of Mrs. Roentgen's frequent attacks of renal colic. Thus, a long-planned visit to America in 1912 had to be abandoned.

During the war years, from 1914 until the end of 1918, traveling to foreign countries became restricted. Several beloved travel companions also had passed away. In 1915, Roentgen spent much time with the ailing Professor Boveri. He would not move from his bedside in Oberstdorf-Allgäu even though he was expected in Munich to receive a decoration from the King of Bavaria. In 1919, Mrs. Roentgen passed away, and loneliness invaded the once lively household.

Foreign travel still remained difficult after the war because of the devaluation of German currency. The good angels, however, made their appearance in the person of Professor Wölfflin, who invited his old friend to come to Switzerland as his guest. Roentgen, in spite of considerable self pride, reluctantly accepted the generous offer. Thus, for the last three years of his life he was able to roam the mountains again and refresh old memories in Pontresina, Lenzerheide, and many other favorite places.

Despite his advanced age, Roentgen still could undertake strenuous tours. He loved to drift off the beaten path, where he could best observe strange rock formations and mystifying shapes of crystals. "If I ever should be missed," he remarked, "do not look for me on the main road." As he climbed once more the Marmoré from the Fexthal in the Engadin, he exclaimed: "This I wanted to see again before I die." On February 7, 1923, Roentgen suffered an acute abdominal condition, and three days later he passed away peacefully while holding his housekeeper's hand and flustering: "I had it so good."

Almost fifty years ago a famous traveler has gone forever, but memories linger among those who still remember him and follow his trails to the beloved mountains and to the Roentgen Museum in Lennep, Germany. There, Roentgen's large collection of photographs and other travel memorabilia can still be admired (Fig. 2).

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Letters to the Editor

Abortion: Inalienable right

To the Editor: After years of devoted effort, a collaboration of obstetricians and gynecologists, lawyers, demographers, psychiatrists, groups of concerned citizens, and, perhaps most important of all, women, New York State achieved a liberal abortion law two years ago. In its practical operation, it became clear that abortions could be performed effectively and safely for all within the State who need them, including some out-of-State women as well. It required an attitude composed of empathy, compassion, willingness, and practicality to accomplish this, and it was all there.

Why then is it necessary to bring up the question of abortion again? Because there has been a backlash which may undo all the gains of a great and necessary reform. People, many with honorable but misguided or obstinately unyielding intentions, succeeded in cutting off Medicaid funds for abortions, while the "Friends of the Fetus" have been increasingly active in attempting to undo abortion reform. Let me say at once that Catholics and Orthodox Jews are entitled to their theologic position but have no right, in my opinion, to legislate that view against the best interests of society.

I speak as a psychiatrist who has witnessed, in my practice of almost thirty years centered on women and their psychology, the harm that refusal of abortion has done to women and society, the wreckage and destruction of lives that has been wrought by this, the emotional damage done. But I also speak as a woman, proclaiming my indignation at the uncaring, casual, insensitive way that men have legislated women's reproductive lives, which has virtually been the sole content of their lives.

Poets are the true seers and visionaries. Let me cite the poet Rilke,[1] in contrasting masculine and feminine attitudes:

> Women, in whom life lingers and dwells more immediately, more fruitfully and confidently, must surely have become fundamentally riper people, more human people, than easygoing man, who is not pulled down below the surface of life by the weight of any fruit of his body, and who, presumptuous and hasty, undervalues what he thinks he loves.

Physicians' attitudes

Most physicians in their opinions on the issue of abortion, which they have had to decide in the past on "therapeutic grounds," a conscience-easing fiction, have failed to realize that their judgments were highly personal and largely theologic. Any medical heritage from the Hippocratic oath, which includes refusal of abortion, denies the growth of medical knowledge and skills, since the basis for Hippocrates' position was the danger then inherent in abortion, a virtual death sentence and an agonizing one. The issue was not "morality."

Physicians in these times have played a game, alternating between "anguish for the woman" and "conscience." They have failed to realize that they themselves were ill-used by our criminal abortion laws and perhaps seduced by the power over their women patients as they have been forced into the grandiose position of judge, and judge with completely insufficient evidence for reasoned decision.

The alternative, of course, was to become a criminal in performing the abortion. Thus physicians were placed in a position where self-interest was in conflict with practice, which made it all too easy to be stern and uncaring and even, at times, sadistic. If all the reports of women attempting to obtain abortion were laid end to end, they would seriously interfere with the image of physicians as humanitarians! Physicians salved their consciences by accusing their less rigid colleagues of greed and exploitation and by clutching to their breasts the belief that guilt is a built-in aspect of abortion.

In the wake of legal changes permitting abortion, research studies by psychiatrists have been revealing what was there for any caring physician to see: abortion is a release and relief for all women; it is not in itself guilt-producing; and any evidences of what might be termed "pseudo-guilt" is a societally or iatrogenically induced response.[2–5] So-called guilt, if expressed by the woman, is an exaggerated statement symptomatic of other problems in her life, often used in retaliatory fashion (not consciously, of course) for "secondary gain," where no other means of expression is at hand. There is verity in the old cliché that "murder will out." But it is murder of the woman I am talking about, psychologic and social murder, not murder of the fetus, or rather the embryo, which is what usually gets aborted. This leads me to ask: why has the fetus got friends, while the woman has not? Why does her suffering make so few claims on the conscience of men?

Certain issues have been considered over and over again, yet in some instances it has been a one-sided debate, because of sensitivity about touching certain areas and particularly religious positions. I believe we will be much better off if all of the things that lurk sub rosa are brought out into the open.

Expediency

What has given impetus to all of these efforts, and why now? Basically, it is the population explosion —an enormous threat to the quality of our lives and, indeed, to our survival. This threat has been well studied and documented by the Population Council and various other demographic groups. The number of unwanted babies born in this country has been estimated by Westoff of Princeton to be 45 per cent.[6] That abortion is a necessary mode of backing up contraceptive failure is self-evident. That there are conditions surrounding the circumstances of conception and of the early embryonic development, which make abortion the only effective means to avoid further trauma, suffering, and intolerable life circumstance for the woman, potential child, entire family, and society is also apparent. Why must the seed of rape, to take one example, be permitted to commit a "double jeopardy": the first, a brief punishment of unspeakable violence; the second, a nine-month involuntary servitude terminated by pain and suffering, and then a life sentence?

Although expediency will probably carry the day, I, as a woman, regret that this will be the basis for changes to restore to women an inalienable right: the right to life, liberty, and pursuit of happiness, possible only when a woman has the right to decide when, whether, and under what circumstances to have children, in short, the right to master her reproductive life and her total life course.[7] The Group for Advancement of Psychiatry[8] in its report, *The Right to Abortion*, concludes that a woman has as much right to decide when and whether to have children as when and whether to marry. Many psychiatrists have been quite outspoken in supporting this view, including John M. Cotton, M.D.,[9] chairman of the division of psychiatry, St. Luke's Medical Center, New York City.

Special aspects of the problem

This leads to a second issue, about which the women's liberation groups have been most vocal—one in which I would hope that the stridency of the desperate would not evoke the calculated indifference of the deaf. For men have been deaf and perhaps also blind to the complex issues involved in unwelcome pregnancy for women. In some aspects, men's attitudes toward abortion have really been dictated by feelings in relation to the sexual aspects of woman's dual sexual role, rather than the reproductive. For while denying abortion, men have espoused the playboy philosophy. Sexual contact devoid of meaningful relationship has been in the past "fine" for men. No one raised a hue and cry about the Army's equipping soldiers with contraceptive equipment and information, but when women are, so to speak, "caught with the goods," then there is righteous indignation and a response which equates pragmatically with "let them bear the consequences."* In other words, all kinds of male sexual attitudes and hostilities are involved, including remnants of the double standard and buried infantile resentments toward the mother figure.[10]

The mystique about abortion has been that it is something that must be dispensed from "on high" and in very special circumstances. Thus, men, who are largely the "deciders," can maintain control and vicariously punish. White[11] and Van Leeuwen[12] have called attention to aspects of this; fortunately, these views are not uniquely mine.

De Beauvoir[13] has pointed out that in the sexual act at the very moment when man transcends himself in its climax, he is then restored to himself. Woman, on the other hand, first "violated," that is her body integrity is penetrated, then becomes "alienated": in pregnancy she is other than herself. This alteration in woman when unwelcome, in which new, difficult, and eventually painful bodily events await her, while her emotional, psychologic, and social life course is forever altered, denies her mastery over her own life.[7,14,15]

That this was necessary for perpetuation of the species in prehistory and until the time now when medicine could virtually guarantee the survival of each child produced, it would be foolish to deny. That refusal to allow women abortion as an individual right has not been consistent with other changes in civilized contemporary life would, I believe, be equally foolish to deny. That it has been denied reflects a reluctance to see clearly and to surrender power.

Religion and moral codes

Let me return to the issue of religion and moral codes: again a very difficult territory to survey, and one fraught with hazards for the daring. Yet, there are aspects of the problem here which must be discussed. Let us look at the "but-it's-taking-a-life" view. Here, I assert that a nonsentient, nonindependently viable, noncognitive cell mass is not a human life; it is a potential life and so are all of the ova and spermatozoa which have never had occasion to meet. When they do meet, something is furthered, not started, which may be welcome or unwelcome, healthy or diseased, and is indeed not even a definitive potential human being until the genetic code is unalterable—an occurrence at about the eighth week of embryonic life, with the closing of the neural tube.

In relation to concern about life and reverence for life, it is the quality of the life that matters. Further, no one who puts the life and well-being of these cells over the life and well-being of an actual human being, the mother, has true reverence for life; no one who condones or in any way abets killing of the sentient living by any means, especially war, has a right to veto abortion. Cardinal Cushing, a great and just theologian, said: "Catholics do not need the support of civil law to be faithful to their own religious convictions, and they do not need to impose their moral views on other members of society." But there is more to the problem than this.

Tietze, of the Population Council, has noted that acceptance or refusal of abortion in some countries has depended on their warlike intentions and has been altered accordingly.[16] That is, the over-riding and practical issue is desired size of population. Now, the Catholic religion has always directed efforts to making converts, the ideologic implication being that there is only one way to God. But implicit and underlying this is the temporal awareness of the power in numbers. It may surprise many Catholics to know that views on abortion within the church have varied, and that St. Thomas Aquinas found abortion acceptable in the first few months, until the time of "quickening," after

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*In Honolulu, the Army refused to change its abortion policy, in spite of Hawaii's recent permissive abortion law. This policy is to permit abortion only to "save the life of the mother," and the decision is that of the Army Surgeon General (*N. Y. Post*, March 24, 1970). Undercurrent to this is the Army's interest in minimizing venereal disease. Refusal of abortion helps prevent men from becoming careless about use of contraceptives. However, recently, (1971) this ruling was reversed.

which, in his times, attempts would have meant almost certain death for the woman.

Today, there is another issue. In our times of sophistication, if not cynicism, the Pope's decisions on abortion, contraception, and celibacy reflect the recognition that when the affectional tie forged by sexual privation is weakened, all hierarchic control is likely to go. Certainly we all are aware that the devotion of animal pets reflects social and sexual deprivation from their own kind. Comparative animal psychologic studies, starting with Harlow and Zimmermann's[17] work, support this.[18] I am saying that the subterranean reasons for the Pope's decisions are based on power, while the overt reasons presented are inconsistent ideologic ones. If "taking a life" is a genuine issue, the Pope has an absolute obligation to command all Catholics to refuse to serve in war, making excommunication of consequence of failure to do so.

Male responsibility

A curious aspect of the abortion issue is that it revolves around the woman, and not the man who inseminates her. Of course, at the simplest and least sophisticated level, which is our historical heritage from the past, since it is the woman who becomes pregnant or who is considered "caught," she is the one on whom attention has been focused and, unfortunately, in a moralistic, blameful way.

But the reality is that it takes two to cause a pregnancy. Where is there evidence of concern, attention, interest, or moralizing (which of course I do not advocate) about the man who participates in or is in major part responsible for unwelcome and unwanted pregnancy? And one might add, why is it only so recently that thoughts of a "male pill" and of vasectomy have appeared?

All of this suggests a grave, punitive, and long-standing injustice to women socially and theologically perpetuated.[15] If the ideals of concern and love of life are genuine and not hypocritical, there is need for much soul-searching in men and devoted effort to make changes which will correct ancient wrongs. I dare to suggest in the wake of many social and sexual changes which have come about, largely promulgated by men, that the abortion question must be considered in the larger context of the sexual question, rather than in the schizophrenic setting of its history. Men must be involved not only in social change but in seeing the role of the man where unwelcome pregnancy occurs both in or out of marriage.

Mother-child tie

I turn at last to the area where my special interest and experience lead me to some definite conclusions. An unwanted child is a hated child—forever! It has been my experience that whatever the reason, and it is sufficient that there simply is one, unwelcome pregnancy runs a course in which there is agitation on discovery of the pregnancy, frantic efforts at psychologic denial in some instances, or obtaining abortion in most. There is virtually no woman who does not undergo considerable humiliation at this point—an ego-damaging experience; the risks taken to obtain illegal abortion amount to what I have called a murder-suicide compact. If these life-risking efforts were included under the suicide rubric, one would discover notable change in the statistics on suicide.

Forced to continue with the pregnancy, there is a marked affective disequilibrium, particularly in the first two trimesters of pregnancy, expressed in depression, neurotic symptomatology, psychotic reactions, and psychosomatic disorders.[7] The stress of delivery, always threatening to the woman's ego, or self, is even greater under these circumstances. Postpartum depressions and other reactions reflect this. If the child is given up for adoption, at some deep level there is further ego-damage; if the child is retained, it is the inception of a life-long struggle where, by her maternal dynamisms or modes in relation to the child, rejection and hate—the results of the insoluble tie—are perpetually and unavoidably being enacted. While the child-battering mother is the result of complex forces, I have yet to hear that such a mother longed for and planned for the child. Nor would I believe it if I did.

Comment

Does it make sense to do this, to mother and to child? And what about the effect of all this on the husband, where there is one, and other children in the family? And what of seeding society with unwanted, hated, distorted, damaged, and hostile people, in an already overly hostile group?

We claim we perpetuate all this in the name of respect and reverence for life, religion, love, concern for woman and child, and further, our society. Once again the chasm between word and act is revealed. The poet, Gibran,[19] wrote a parable in which he told of a mother going to the church and begging for a needle so that she could sew up her son's ragged clothes, and he could come to church and pray. But the priest gave her not a needle, but a lengthy lecture on love.

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Necrology

Stuart L. Craig, M.D., of New York City, died on May 22 at the age of eighty-seven. Dr. Craig graduated in 1905 from the Medical College of Virginia. He was a consulting surgeon at Rockefeller University and a consulting otolaryngologist at Vassar Brothers Hospital, Poughkeepsie. Dr. Craig was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York Society of Laryngology and Otology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul Dvorkin, M.D., of Brooklyn, died on April 24 at the age of sixty-five. Dr. Dvorkin received his medical degree from the University of Naples in 1936. He was an attending anesthesiologist at Doctors' Hospital of Staten Island and an assistant attending anesthesiologist at Brooklyn-Cumberland Medical Center. Dr. Dvorkin was a Fellow of the American College of Anesthesiologists and a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Edward Percy Eglee, M.D., of Bronxville, died on May 31 at the age of eighty-four. Dr. Eglee graduated in 1913 from Columbia University College of Physicians and Surgeons. He was a consulting physician in chest disease at Bellevue Hospital, a consulting physician in thoracic disease at Beekman-Downtown and Knickerbocker Hospitals, and a consulting physician in pulmonary disease at Lawrence Hospital (Bronxville). Dr. Eglee was a Fellow of the American College of Physicians, a Fellow of the American College of Chest Physicians, and a member of the American Thoracic Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Helga Mae Erdman, M.D., of New York City, died on May 28 at the age of forty-two. Dr. Erdman graduated in 1958 from Howard University College of Medicine. She was an assistant attending surgeon at Italian Hospital. Dr. Erdman was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Fink, M.D., of Cambria Heights, died on May 10 at the age of fifty-seven. Dr. Fink was graduated in 1939 as a Licentiate of the Royal College of Physicians and Surgeons (Edinburgh) and a Licentiate of the Royal Faculty of Physicians and Surgeons (Glasgow). He was an assistant attending physician at Queens Hospital Center. Dr. Fink was a member of the American Geriatrics Society, the American Academy of General Practice, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Charles Finkelstein, M.D., of Yonkers, died on February 18 at the age of seventy-eight. Dr. Finkelstein received his medical degree from the University of

Kaunas in 1923. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Reuben Finkelstein, M.D., of Brooklyn, died on May 16 at the age of eighty-eight. Dr. Finkelstein graduated in 1906 from Long Island College Hospital. He was a consulting gastroenterologist at Brookdale Hospital Center, Metropolitan Jewish Geriatric Center, and Kingsbrook Jewish Medical Center. Dr. Finkelstein was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Gastroenterology, a Fellow of the American College of Physicians, and a member of the American Geriatrics Society, the New York Gastroenterological Society, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

John Alfred Frank, M.D., of New York City, died on May 19, 1970. Dr. Frank graduated in 1939 from Yale University School of Medicine. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association.

Donald Murray Green, M.D., of Auburn, died on December 13, 1971. Dr. Green graduated in 1923 from Syracuse University College of Medicine.

Sigmund Karfiol, M.D., of Brooklyn, died on January 20 at the age of seventy-seven. Dr. Karfiol received his medical degree from the University of Vienna in 1922. He was an adjunct in general practice at Prospect Heights Hospital Pavilion. Dr. Karfiol was a member of the American Academy of General Practice, the American Public Health Association, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

John Joseph Kennedy, M.D., of Briarcliff Manor, died on May 4. Dr. Kennedy graduated in 1932 from George Washington University School of Medicine.

Martin Leiser, M.D., of Poughkeepsie, died on May 28 at the age of seventy-three. Dr. Leiser received his medical degree from the University of Berlin in 1923. He was an honorary obstetrician and gynecologist at Vassar Brothers Hospital and a consulting obstetrician and gynecologist at St. Francis Hospital. Dr. Leiser was a Fellow of the American College of Obstetricians and Gynecologists and a member of the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Solas Joseph Low, M.D., of Brooklyn, died on May 19 at the age of sixty-nine. Dr. Low graduated in 1928 from University and Bellevue Hospital Medical College. He was a member of the American Academy of General Practice, the New York Cardiological Society, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Alphonse Frank Lucas, M.D., of Rochester, died on April 28 at the age of sixty-three. Dr. Lucas graduated in 1936 from St. Louis University School of Medicine. He was an associate attending surgeon at Rochester General Hospital and an attending surgeon at Rochester State Hospital. Dr. Lucas was a Diplomate of the American Board of Surgery, and a Fellow of the American College of Surgeons, and a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Anthony Manzella, M.D., of New York City, died on April 2. Dr. Manzella graduated in 1917 from Fordham University School of Medicine.

Joseph Harold Morton, M.D., of Miami, Florida, formerly of Hempstead, died on June 2 at the age of sixty-six. Dr. Morton graduated in 1930 from Long Island College Hospital. He was a member of the Academy of Psychosomatic Medicine, the American Society of Clinical Hypnosis, the Endocrine Society, the Nassau Academy of Medicine, the Clinical Society, New York Diabetes Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur J. Murphy, M.D., of New York City, died on May 27 at the age of seventy-four. Dr. Murphy graduated in 1921 from Tufts University School of Medicine. He was a consulting obstetrician and gynecologist at St. Luke's Hospital Center. Dr. Murphy was a Diplomate of the American Board of Urology, a Fellow of the American College of Surgeons, and a member of the American Urological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Healy Murphy, M.D., of New York City, died on November 1, 1971. Dr. Murphy graduated in 1955 from New York University College of Medicine. He was a clinical assistant physician at Bellevue Hospital.

Ralph E. Perry, M.D., of Lynbrook, died on May 14 at the age of eighty. Dr. Perry graduated in 1920 from New York Homeopathic Medical College and Flower Hospital. He was an honorary physician on the medical staff of the South Nassau Communities Hospital (Oceanside). Dr. Perry was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry B. Pozner, M.D., of Elmont, died on May 14 at the age of sixty-two. Dr. Pozner graduated in 1938 from the Royal College of Physicians and Surgeons of Edinburgh. He was a clinical assistant pediatrician at Queens Hospital Center and an assistant attending physician in general practice at Nassau Hospital (Mineola). Dr. Pozner was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sandor Rado, M.D., of New York City, died on May 14 at the age of eighty-two. Dr. Rado received his medical degree from the University of Budapest in

1915. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the Academy of Psychoanalysis, the American Psychoanalytic Association, the Association for Research in Nervous and Mental Disease, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Spencer Rogers, M.D., of Bethesda, Maryland, formerly of New Rochelle, died on May 13 at the age of seventy-seven. Dr. Rogers graduated in 1918 from University and Bellevue Hospital Medical College. He was a Fellow of the American College of Surgeons and a member of the Westchester Academy of Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Thomas Alexander Rossano, M.D., of The Bronx, died on May 18 at the age of seventy-two. Dr. Rossano graduated in 1928 from George Washington University School of Medicine. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Shafiroff, M.D., of Flushing, died on June 1 at the age of fifty-eight. Dr. Shafiroff graduated in 1939 from New York University College of Medicine. He was an attending surgeon at Unity and Goldwater Memorial Hospitals and an associate attending surgeon at Queens Hospital Center and Flushing Hospital and Medical Center. Dr. Shafiroff was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Hans Richard Sielman, M.D., of New York City, died on September 27, 1971, at the age of seventy-seven. Dr. Sielman received his medical degree from the University of Munich in 1922. He was a Diplomate of the American Board of Radiology (Roentgenology) and a member of the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anna A. Stein, M.D., of Staten Island, died on May 10 at the age of seventy-two. Dr. Stein graduated in 1925 from University and Bellevue Hospital Medical College. She was a Fellow of the American College of Obstetrics and Gynecology and a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Luther Sweet, M.D., of Peekskill, died on May 26 at the age of fifty-six. Dr. Sweet graduated in 1942 from Long Island College of Medicine. He was an attending obstetrician and gynecologist at Peekskill Community Hospital. Dr. Sweet was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Asher Winkelstein, M.D., of New York City, died on May 30 at the age of seventy-eight. Dr. Winkelstein graduated in 1917 from Syracuse University College of Medicine. He was a consulting physician in gastroenterology at The Mount Sinai Hospital. Dr. Winkelstein was a Diplomate of the American Board of Internal Medicine (Gastroenterology), a Fellow of the American College of Gastroenterology, and a member of the American Gastro-Enterological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

continued from page 1697

agement are examined in intimate detail. Special chapters deal with patients with psychosomatic problems, ward consultations, the emergency patient, telephone interviews, and interviews through an interpreter.

This book is recommended to physicians as well as paraprofessionals who wish to increase their ability to communicate with the patients who have emotional problems. **Wilfred Dorfman, M.D., F.A.C.P., F.A.P.A.**

A Primer of Electrocardiography. Sixth edition. By George E. Burch, M.D., and Travis Winsor, M.D. Quarto of 292 pages, illustrated. Philadelphia, Pa., Lea & Febiger, 1972. Cloth, $7.75.

The authors are authorities in cardiovascular diseases. As the title of the book implies it gives the first principles of electrocardiography. These principles are presented concisely and clearly. The book has been changed very little from the fifth edition. It is unfortunate that the authors provided only two short paragraphs on the His bundle electrogram.

The book is intended for students who are learning the basic concepts of electrocardiography and can be recommended to them. **Jack Budow, M.D.**

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Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

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References: 1. Kupperman, H.S.: Medical Aspects of Human Sexuality *1*:64 (Sept.) 1967. 2. Rhoades, F.P.: J. Amer. Geriat. Soc. *15*:346 (Apr.) 1967. 3. Kerr, M.D.: Mod. Treatm. 5:587 (May) 1968. 4. Greenblatt, R.B., in Conn, H.F. (Ed.): Current Therapy 1970. Philadelphia, W.B. Saunders Company, 1970, p. 757. 5. Astwood, E.B., in Goodman, L.S., and Gilman, A. (Eds.): The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970, Chap. 69 p. 1538. 6. Tramont, C.B.: Geriatrics *21*:212 (Nov.) 1966.

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Abstracts

Karayalcin, G., Rosner, F., and Sawitsky, A.: Pseudoneutropenia in Negroes; a normal phenomenon, ***New York State J. Med.*** 72: 1815 (July 15) 1972.

Four hundred ninety-seven healthy black and white volunteers participated in a study to ascertain whether or not granulocytopenia is indicative of any disease process. Absolute granulocyte and lymphocyte counts were calculated. Total leukocyte counts were lower in Negroes than in Caucasians due to a diminution in granulocytes. It appears likely that these findings represent a genetic difference between the black and white races, and it is imperative that physicians become aware of this racial difference to avoid stigmatizing healthy Negroes as having a disease process.

O'Connor, J. F., and Stern, L. O.: Developmental factors in functional sexual disorders, ***New York State J. Med.*** 72: 1838 (July 15) 1972.

In this, the first of two reports dealing with psychogenic or functional sexual disorders, the authors attempt to define the causes of the disorders in terms of the patients' early development, environmental interrelationships, and the continuance of these disorders in their current life functioning. Ninety-six patients (35 males and 61 females) comprising the study group were treated at the Columbia Psychoanalytic Clinic. The family histories of these patients were more disturbed than those of other patient groups. Fifty seven per cent of the patients had at least one parent who evidenced severe problems such as alcoholism, abnormal sexual behavior, incest, exhibitionism, psychosis, and excessive brutality. Almost one third of the patients were partners to some form of bizarre sexual activity within the family structure. An equal number had been reared in an atmosphere of excessive prohibition. Other significant findings were the high incidence of death within the immediate family, and prolonged separation from either the mother or father before the patient reached sixteen years of age. A large number of patients had been subject to a severely traumatic initial sexual experience. One third of the study group reported an overt sexual problem on the part of their spouse.

Abstracts in Interlingua

Karayalcin, G., Rosner, F., e Sawitsky, A.: Pseudoneutropenia in nigres. Un phenomeno normal, ***New York State J. Med.*** 72: 1815 (15 de Julio) 1972.

Quatro-cento-novanta-septe (497) voluntarios san, nigres e blancos, participate in un studio pro establir si le granulocytopenia es indicative de alicun morbo. Le conto absolute del granulocytos e lymphocytos esseva facite. Le contos leucocytari total esseva plus basse in nigres que in caucasicos, debite a un disminution del numero de granulocytos. Isto pare indicar que ha un differentia genetic inter le racies nigre e blanco. Es imperative que le medicos cognosca iste differentia raciel pro prevenir le stigmatisation que le nigres san ha un processo morbide.

O'Connor, J. F., e Stern, L. O.: Factores de disveloppamento in alterationes sexual functional, ***New York State J. Med.*** 72: 1838 (15 de Julio) 1972.

In iste prime de duo reportos supra le alterationes sexual psychogenic o functional, le autores tracta de definir le causas del alterationes in function del disveloppamento temprane del patientes, le inter-relationes ambiental, e le continuitate de iste alterationes durante su vita functional corriente. Le gruppo de studio, formate con 96 patientes (35 homines e 61 feminas), esseva tractate in le Clinica Psychoanaltyic de Columbia. Le antecedentes familiar de iste patientes monstrava plus disturbamento que lor de altere gruppos de patientes. Le 57 pro cento del patientes habeva, al minus, un parente con un grave problema como alcoholismo, comportamento sexual anormal, incesto, exhibitionismo, psychosis o excessive brutalitate. Quasi un tertio del patientes esseva participante de alicun forma de activitate sexual bizarre intra le structura familiar. Un numero equal esseva crescite in un atmosphera de excessive prohibition. Altere trovatos importante esseva le elevate frequentia de mortalitate intra le familia immediate, e le separation prolongate del patre o matre ante de que le patiente attingera le 16 annos de etate. Un elevate numero de patientes esseva submittite a un experientia sexual initial traumatic. Un tertio del gruppo de studio reportate un evidente problema sexual del conjuge.

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Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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Month in Washington

The American Medical Association has asked Congress to beef up the Administration's budget for medical education and other health programs.

"We believe that, instead of terminating the Federal construction program for medical schools at the end of fiscal year 1973 as has been proposed by the Administration, at least $200 million per year, beginning immediately and continuing for at least three years, is going to be necessary," said Raymond T. Holden, M.D., a member of the AMA's Board of Trustees before a subcommittee of the House Appropriations Committee.

Dr. Holden, accompanied by C. H. William Ruhe, M.D., director of the AMA Division of Medical Education, told the subcommittee: "we have received information from a number of medical schools that their plans, developed over the past years, are absolutely dependent on a Federal construction grant program."

Present levels of funding, the AMA spokesman said, "will leave several of these schools in the position of having made the commitment (for increased enrollment) in good faith and implemented the first phase (basic facilities), only to find the Federal program of assistance may not continue" for the implied commitment of Federal help for construction of clinical facilities. Dr. Holden continued:

> Moreover, some new medical schools are completely dependent on Federal funds for construction in order to get started.... Even if they can find a way to go ahead without Federal aid for construction, these schools reach full operation much more slowly without Federal funds.

"The Administration's proposal for guaranteed loans and interest subsidies to spur construction is not a feasible method of assuring construction," Dr. Holden said. With many private medical schools living "a hand-to-mouth" existence, "it is not realistic to expect" them to amortize the costs of facilities producing no income, he declared.

Noting that the Administration has requested $5 million for support of family-practice training next fiscal year while the legislation authorizes $35 million, Dr. Holden said, "we would support full funding if there were assurances that the funds could be used at this time." One of the more serious shortages in the profession is for family practitioners. He proposed that $20 million be provided until more programs are geared up.

Much more money is needed for programs to combat alcoholism, Dr. Holden testified. The Administration's 1972 budget "does no more than mark time in both research and training, particularly in view of increasing costs. There is need for full appropriation of the $80 million authorized for grants to states for treatment and rehabilitation programs.

The Administration's plan to cut $15 million from manpower development programs of the National Institute of Mental Health was criticized, particularly the slash in funds for the psychiatric residency program as "the first step in a complete abolition of that program." The residency program is needed to cope with the rising incidence of mental illness and because training funds have not been forthcoming from other sources, he said.

The Appropriations Committee was urged to limit the use of funds for health maintenance organizations to a completion and evaluation of the 110 grant projects already authorized by law and to "preclude any further expansion without congressional direction."

"The scope of HEW's present activity is more than ample to establish an experimental basis to ascertain any validity in this form of contract practice for future governmental support," Dr. Holden told the lawmakers.

* * *

Health Maintenance Organizations (HMO) were the subject of a panel discussion at the annual meeting of the U.S. Chamber of Commerce held in Washington, D.C.

Jean Harris, M.D., of the National Medical Foundation, questioned whether HMOs are capable of coping with inner-city health problems. The particular problems of these areas make it "almost impossible" for an HMO, as we understand it today, to function. The costs will be high, and the poor will not agree to pay monthly premiums. "The only solution would be for the government to pay the enrollment cost," Dr. Harris stated.

Clinton McGill, M.D., the AMA representative on the panel, said savings in HMOs come from underutilization not health maintenance, which he described as an "unfortunate term." Dr. McGill said the Kaiser-Permanente plan has been confined to relatively low-risk groups. Prepaid practice is not an acceptable form of delivery to many people, although it is a legitimate experiment, he told the audience. Even Kaiser officials have urged a go-slow approach and questioned whether universal enrollment is possible or financially feasible, Dr. McGill noted. The position of the American Medical Association, he said, is to study the system and find what it can do and build on its strengths.

George Wheatley, M.D., medical director for Metropolitan Life Insurance Company, noted that Paul Ellwood, M.D., a developer of the HMO concept, has said that business interested in HMOs must be prepared to wait five years for a return on a $10-million investment and to withstand the publicity from possible shoddy public service. Dr. Wheatley questioned whether any of the HMO plans offered sufficient incentives for physicians to participate in HMOs.

John Veneman, under-secretary of HEW, denied that HMOs would be a stepping stone to socialized

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medicine. He predicted some 40 million people might be covered by 1980. Concern about socialized medicine should be directed at legislation such as the Kennedy bill rather than HMOs, he said in reply to a question.

Edward Annis, M.D., moderator, said statistics demonstrate that the chief health problems of this country stem from life style, alcoholism, obesity, accidents, and others rather than health care. He asked how changing the system will improve this.

* * *

Medical care foundations can be set up "at an incomparable lower cost" than closed-panel prepaid group practice and "with maximum acceptance by the medical profession," the American Association of Foundations for Medical Care told Congress.

Urging that HMO legislation specifically embrace foundations, F. William Dowda, M.D., president of the Georgia Foundation for Medical Care, said "government should encourage active competition between the major modalities of medical care in every geographical area, stimulating efficiency and permitting comparison between systems."

Testifying before the House Subcommittee on Health, Dr. Dowda said, "the Foundation for Medical Care is the most far-reaching, realistic effort that American medicine has made during the past thirty years to meet the needs of the people for better systems of medical care delivery.

"Foundations are soundly conservative in that they build solidly on the community's existing health-care facilities, and they seek to improve rather than to displace the worthy characteristics and potentialities of our traditional medical ways," Dr. Dowda said.

Dr. Dowda argued that foundations have shown they can make individual practice competitive with group practice. "Congress has an opportunity, by simultaneously encouraging the development of group practice and individual practice foundation programs, to give people a choice between equally desirable alternative health service plans."

The Administration witnesses expressed doubt that one of the principal bills before the subcommittee, introduced by Rep. William Roy, M.D., (Democrat, Kansas), would cover foundations and urged that it be amended to include foundations as does its own bill. Dr. Roy and other subcommittee members indicated they would make the change.

The HMO bill introduced by Sen. Edward Kennedy (Democrat, Massachusetts) flatly excludes foundations, except perhaps in rural areas.

* * *

The National Health Service Corps has made its first mass assignment of medical personnel to areas short of health services. The program represents the first Federal provision of direct care to medically needy people except for special groups, such as Indians.

This summer the program will send 152 HEW physicians, 20 dentists, 72 nurses, and 44 other health professional personnel to some 122 communities, both urban and rural.

The salaries of health professional personnel will be paid by the Federal government. The young physicians, many fulfilling draft obligations, will be paid between $12,000 and $15,000 per year. The patients will be charged fees on the basis of their ability to pay. Funds collected may be retained to provide additional care within the community or returned to the Federal government.

Established under a law signed by President Nixon seventeen months ago, the new organization will be headed by H. McDonald Rimple, M.D., who had been serving as acting director.

HEW Secretary Elliot L. Richardson, already engaged in a fight with Congress over whether or not the Food and Drug Administration (FDA) will remain in the Department of Health, Education, and Welfare, ordered the transfer of the Division of Biologics Standards to the FDA.

Richardson said the transfer would result in an "obvious advantage" through consolidation of the similar activities of the two agencies. He said there was no implied criticism of past performances of the Division of Biologics Standards. The transfer was effective July 1.

Concerning legislation that would take FDA out of HEW and make it the base of a new and independent consumer safety agency, Richardson said it would sell the consumer a phony bill of goods, deal the cause of consumer safety a crushing setback, and abandon the field to exploiters of the consumer by destroying existing mechanisms for regulation.

He said it was "to my complete disbelief" that the Senate Commerce Committee voted 17 to 1 for the independent FDA-consumer safety legislation which runs counter to the Nixon Administration's executive branch reorganization proposal for fewer rather than more government departments and agencies.

FDA, which has been charged with laxness by some Congressmen, was criticized by a group of leading scientists as being too strict. In a letter to the House Commerce Subcommittee on Health, they said:

> We believe a change in the drug regulatory system is badly needed. The system too often stifles creativity and escalates costs of research; perpetuates a continuing decline in the number of new drugs entering the market in this country; and may be depriving the practicing physician of agents beneficial to patient care.

In ordering the transfer of the Division of Biologics Standards to FDA, Richardson said:

> During the past decade there have been repeated examinations of the question of the best organizational locus for the regulatory function of the Division of Biologics Standards.
>
> On the one hand there is important advantage in having a close working relationship between research scientists and the administrators charged with enforcing Federal regulations related to biologic materials. On the other hand, there is the obvious advantage gained by consolidating the DBS regulatory function with similar activities carried out on a much broader range by the Food and Drug Administration.
>
> We have decided that it is timely to bring about a consolidation and to do so in such a way as to maintain the advantages of close scientific collaboration that have well served the DBS.
>
> Several weeks ago I announced by decision to consolidate certain functions of the DBS with the Food

continued on page 1798

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continued from page 1796

and Drug Administration. Following that announcement the director of the National Institutes of Health provided his analysis of the DBS operations and the change in organization to Merlin K. Duval, M.D., assistant-secretary for Health and Scientific Affairs. Dr. Duval and Dr. Marston have recommended that the consolidation can best be implemented by continuing to maintain as a functioning unit the regulatory activity with the research that is related to regulation.

The American Medical Association sided with Richardson in opposing the proposed removal of FDA from HEW. An AMA statement to Congress said:

> The American Medical Association does not believe that the proposed transfer of drug evaluation and regulation represents a sound course of action. We would urge your committee to reject any proposal which would isolate the testing, evaluation, and regulation of drugs from the department of government bearing the principal responsibility for the health of our people.
>
> We are concerned that in any agency oriented primarily toward consumer and product safety the therapeutic benefits resulting from risk-bearing drugs may not be given appropriate recognition. Pharmaceuticals are unique and should not be described as "consumer products" within the common understanding of that term.
>
> The risks of administration for therapeutic purposes must always be balanced with the need, a judgment to be made by the physician. The entire process of developing, evaluating, and prescribing of medication is a continuing exercise in experienced professional judgment. In our opinion, the greater safety factor can be gained by retention of drug regulation within this professional and health-oriented environment.

* * *

The American Medical Association supported, with modifications, legislation that would expand the National Heart and Lung Institute's attack on diseases of the heart and blood vessels, the lungs and blood.

In a statement sent to the House Health Subcommittee, Ernest B. Howard, M.D., AMA executive vice-president said:

> These diseases are in the forefront in terms of the devastating effect they have upon the lives and well-being of our people. An intensified and augmented national effort for research concerning these diseases is highly desirable so that we may increase our ability to provide preventive, therapeutic, and rehabilitative measures for our patients. Thus, we support an expanded national research program, such as proposed in H.R. 13715, and in doing so, we shall offer recommendations for modification to the bill.

The AMA recommended that the number of new research centers under the program be limited to a maximum of 30 and that patient care and demonstrations in the centers be barred "unless tied in and required for research."

> We also call to your attention some overlap in this legislation with Regional Medical Programs." While research is basic to NIH, general aspects of education, training, and demonstrations for heart disease, and others, are properly within RMP. Thus, while the development of new basic research information can be expected within the NIH, the dissemination of information on new technics to practicing physicians, through various educational means, including demonstrations, is the undertaking of RMP. We believe a clear expression should be made for research in NIH, limiting patient care and demonstration to research needs, and providing for education, training, and demonstrations through RMP. In preservation of the value and integrity of both programs, we urge the deletion of sections 413(a), (4), and (7) of H.R. 13715 providing for programs and centers for studies, large-scale testing and evaluation and demonstrations, as well as for professional training relating to all aspects of cardiovascular, pulmonary, and blood diseases.

Bio-Science Reports

Hyperlipoproteinemia Phenotyping:

Caution Lights

Several papers have recently appeared in the medical literature which confirm the need for wider comprehension of the concepts involved in the phenotyping procedure (e.g., Dr. Steinberg's editorial, Circulation, *45*:247, 1972). Further emphasis has been given by the reprinting of Classification of Hyperlipidemias and Hyperlipoproteinemias, Beaumont et al. (Bull. Wld. Hlth. Org., *43*:891,1970) in Circulation, *45*:501, 1972.

The physician has no need to quiz the laboratory when the lipoprotein electrophoretic pattern, the lipid concentrations and the clinical picture are all in harmony. At times, however, findings are not readily explained. As stated in the recent article by Lehmann and Lines, Lancet, March 11, 1972, page 557, **it is possible to type only untreated hyperlipoproteinemias.** "Once treatment has started it may no longer be possible to classify lipoproteinemia—indeed it may even be misleading to do so."

Steinberg makes a strong point that the **amounts and types of the lipoproteins found in the blood are by no means static and that diet can have profound effects on these parameters.** He reiterates the recommendations of the WHO article that the blood sample for this investigation be drawn only if the subject has been 1) maintaining steady body weight, 2) on a diet of "usual composition" and, 3) fasting for 10-14 hours. Normal individuals who have ingested a high-fat meal several hours before having blood drawn or who regularly obtain 70-80% of their calories from carbohydrates are likely to show laboratory results indicative of type IV hyperlipoproteinemia, but who should not be so classified. As stated by Lehmann and Lines, "If the electrophoretic pattern cannot be classified by our new system, it is almost certain that the patient will be on a diet or chemotherapy, or has had a recent myocardial infarction."

Many laboratories are now offering phenotyping services as routine procedures, but there is only one clinical laboratory with an extensive research background in this methodology—Bio-Science. The following are published research articles on this subject from our staff (Winkelman, Ibbott and Wybenga):

The Indirect Confirmation of Hyperlipoproteinemia Phenotypes II, III and IV.
Clin. Chim. Acta, in press

Correlation of Laboratory Tests and Clinical Evaluation in Phenotyping of Lipoproteinemias.
Clin. Chem. *16*:594, 1970

Phenotyping of Hyperlipoproteinemias.
Clin. Chem. *16*:507, 1970

Quantitation of Lipoprotein Components in the Phenotyping of Hyperlipoproteinemias.
Clin. Chim. Acta *27*:181, 1970

Studies on the Phenotyping of Hyperlipoproteinemias. Evaluation of Cellulose Acetate Technique and Comparison with Paper Electrophoresis.
Clin. Chim. Acta *26*:33, 1969

Studies on the Phenotyping of Hyperlipoproteinemias. Evaluation of Paper Electrophoresis Technique.
Clin. Chim. Acta *26*:25, 1969

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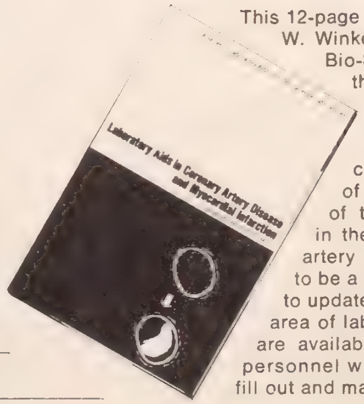

This 12-page booklet, written by James W. Winkelman, M.D., President of Bio-Science Laboratories and the principal investigator on most of our research publications involving phenotyping, contains a clear and graphic summary of the value and limitations of these laboratory technics in the assessment of coronary artery problems. You will find it to be a quick and ready reference to update yourself in this important area of laboratory medicine. Copies are available to physicians and lab personnel without obligation. Simply fill out and mail this coupon.

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cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

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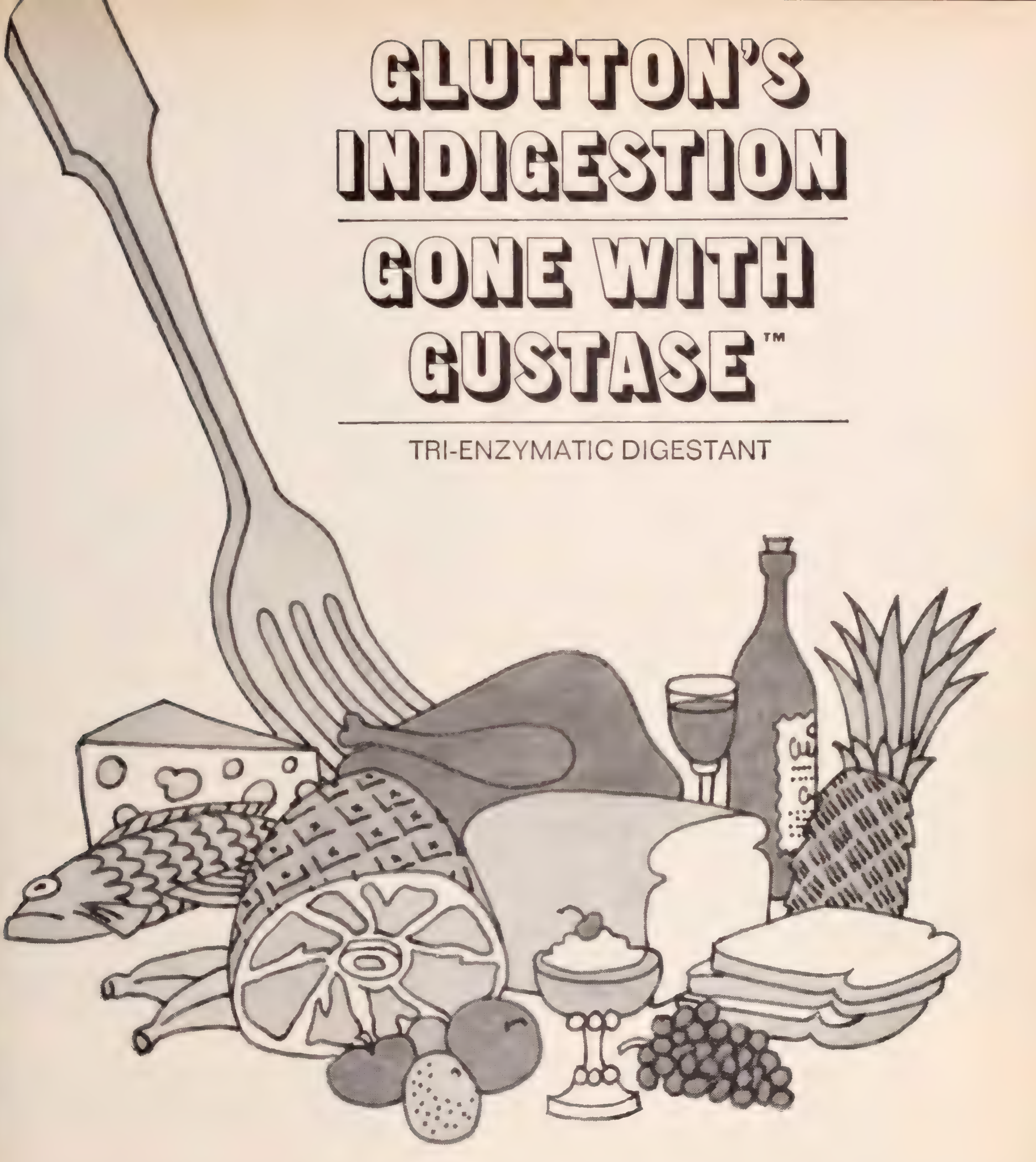

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Book Notes

Cancer Chemotherapy II. The Twenty-second Hahnemann Symposium. Edited by Isadore Brodsky, M.D., S. Benham Kahn, M.D., under the General Editorship of John H. Moyer, M.D. Quarto of 478 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $29.50.

This volume, like the first, groups the papers presented into five areas: The mechanism of action of chemotherapeutic agents, clinical management of the patient, a consideration of bone marrow function, hematologic neoplasms, and, finally, regional technics in the management of metastatic cancer.

The Principles and Practice of Medicine. Eighteenth edition. Edited by A. McGehee Harvey, M.D., D.Sc., Richard J. Johns, M.D., Albert H. Owens, Jr., M.D., and Richard S. Ross, M.D. Quarto of 1,650 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Cloth, $24.50.

In this eighteenth edition, most of the sections have been extensively revised, while a few have undergone minor revisions and the factual information brought up-to-date. In addition, new chapters have been added on several subjects, including obesity, the hyperlipidemias and alcoholism.

Artificial Organs and Cardiopulmonary Support Systems. Edited by Felix T. Rapaport, M.D., and John P. Merrill, M.D. (Reprinted from the December 1971 issue (Volume III, Number 4) of the quarterly journal *Transplantation Proceedings*). Quarto of 186 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $15.

This monograph is reprinted from the December, 1971, issue of the quarterly journal *Transplantation Proceedings* and is made up of papers presented at a symposium. These papers provide an overview of the current status of artificial organs and other substitutions for permanent allografts.

The Electrogenic Sodium Pump. By G. A. Kerkut and Barbara York. Octavo of 182 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $12.50.

This book considers the idea that the sodium pump in some muscle and nerve cells can directly contribute to that cell's membrane potential. There is also indication that it could play a role at some synaptic sites, in adaptation of some sense organs, and in the relationship between the glial cells and the neurons.

Progress in Community Mental Health. Volume II. Edited by Harvey H. Barten, M.D., and Leopold Bellak, M.D. Octavo of 290 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $9.75.

This is the second volume of a series which reviews and analyzes key issues in the rapidly developing field of community psychiatry and community mental health. The authors consider relevant past experience, provide examples from their own innovative efforts, and attempt to foresee emerging problems and prospects.

Sudden and Unexpected Deaths in Infancy (Cot Deaths). Report of the Proceedings of the Sir Samuel Bedson Symposium held at Addenbrooke's Hospital, Cambridge on 17 and 18 April, 1970. Edited by Francis E. Camps, M.D., and R. G. Carpenter, M.A. Quarto of 129 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paperback, $9.50.

This seminar was based on the principle that new ideas were needed to solve the problem of sudden death in infants. One section is devoted to the present state of knowledge regarding these tragic deaths, while the second is devoted to a discussion of new ideas.

The House Physician's Handbook. Third edition. By C. Allan Birch, M.D. Duodecimo of 257 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Co., 1972. Paperback, $7.50.

Medicolegal and administrative problems are given considerable space in the latest edition of this handbook, which is intended to aid young British medical practitioners. Also, whenever appropriate, the patient-as-a-person approach has been stressed.

Medicine and the Artist. Third enlarged edition. 137 Great Prints, Selected with Commentary by Carl Zigrosser. Quarto of 175 pages. New York, N.Y., Dover Publications, Inc., 1970. Paperback, $3.75.

This picture book is a reprint, somewhat revised, of an exhibition catalogue which accompanied a traveling show of medical prints organized by the Philadelphia Museum of Art in 1959. It was assembled from works in the permanent collection of the Museum.

A Decade of Progress. The United States Army Medical Department. 1959–1969. Prepared and published under the direction of Lieutenant General Hal B. Jennings, Jr., Surgeon General, United States Army. Editor in Chief, Colonel William S. Mullins, MSC. Edi-

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tor for **A Decade of Progress,** Rose C. Engelman, Ph.D. Octavo of 214 pages, illustrated. Washington, D.C., Historical Unit, Walter Reed Army Medical Center, 1971. Cloth, $2.25.

This historical survey, which recounts the various activities of the Army Medical Department from June 1959 to June 1969, was not written to emphasize the achievements of any one individual. Hopefully, it will benefit those officers who must resolve the problems of today and prepare the Department to meet the problems of tomorrow.

Television and Growing Up: The Impact of Televised Violence. Report to the Surgeon General United States Public Health Service from the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Octavo of 169 pages, illustrated. Rockville, Maryland, National Institute of Mental Health, 1971. Paperback, Approx. $2.50.

This report is the result of over two years of effort by a distinguished committee of behavioral scientists. It is a major contribution to an understanding of the role of television in influencing the social behavior of children and young people.

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July 15, 1972 Volume 72 Number 14

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Editorials

The passing of the mobile x-ray unit

With antibiotic and chemotherapy for tuberculosis, the "white plaque" is no more. The former incidence, morbidity, mortality, and long duration of illness have improved remarkably so that this disease has lost its former dread. Modern therapy is so potent and specific that failure to respond justifies doubt as to the diagnosis, while inadequate therapy can confuse the clinical picture.

The benefits of modern therapy are evident in the closing or transformation for other purposes of many former tuberculosis hospitals (Trudeau, Raybrook, American Hospital in Denver, Sea View, and many others), and in the present use of ambulatory care in lieu of the prolonged hospital stay and bed rest of the past.

With this dramatic changing picture, methods of case finding in the general population must change too. The mobile x-ray unit is no longer an effective public health measure to achieve this objective. Watching for the conversion of the negative reactor offers a less costly, less hazardous, and more informative "alert" for further procedures to rule out active tuberculosis in the lung *and* elsewhere. The mobile x-ray unit too requires relatively higher levels of exposure to ionizing radiation.

All progress brings change and this often demands adjustment; in this instance a change in policy. The new joint policy statement of the American College of Chest Physicians, the American College of Radiology, and HEW Food and Drug Administration recommending the abandonment of the mobile x-ray unit as a means of case finding is timely and welcome and an indication of real progress.

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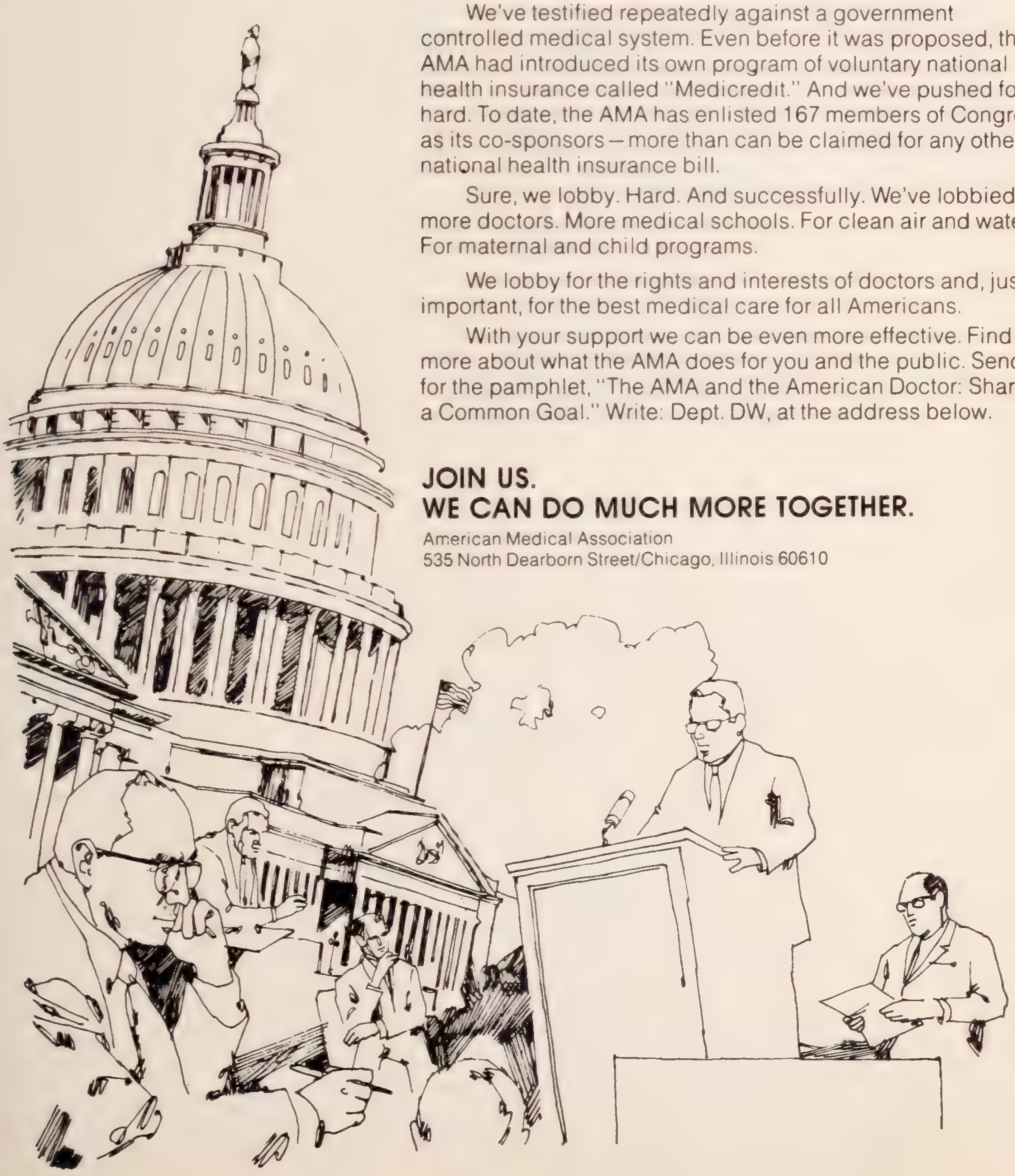

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PSEUDO-NEUTROPENIA IN NEGROES

A normal phenomenon

Four hundred ninety-seven healthy black and white volunteers participated in a study to ascertain whether or not granulocytopenia is indicative of any disease process. Absolute granulocyte and lymphocyte counts were calculated. Total leukocyte counts were lower in Negroes than in Caucasians due to a diminution in granulocytes. It appears likely that these findings represent a genetic difference between the black and white races, and it is imperative that physicians become aware of this racial difference to avoid stigmatizing healthy Negroes as having a disease process.

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Leukopenia, primarily neutropenia, was reported in Negro sharecroppers in Mississippi by Forbes, Johnson, and Consolazio in 1941.[1] One-quarter century later, in a retrospective analysis, Broun, Herbig, and Hamilton[2] found that approximately 25 per cent of Negro patients hospitalized for elective surgery had significant granulocytopenia. They postulate that this finding is not indicative of any disease process, but that Negroes normally have lower granulocyte counts than Caucasians. The present prospective study supports this hypothesis.

Materials and methods

Four hundred ninety-seven healthy black and white physicians, nurses, technicians, and other employes of the Queens Hospital Center volunteered to participate in the study. The following information was gathered on each subject: age, race, sex, urinalysis, sickle-cell preparation (metabisulfate method), erythrocyte sedimentation rate (Wintrobe tube), hemoglobin (cyanmethemoglobin method), microhematocrit, leukocyte count (Coulter electronic counter, model F), and differential leukocyte count.

Absolute granulocyte and lymphocyte counts were calculated. Data from individuals with preparations positive for sickle cell, increased sedimentation rates (greater than 15 mm. per hour for men or 25 mm. per hour for women), or abnormal results on urinalyses (greater than 5 leukocytes per high-power field for men or 10 for women, respectively) were analyzed separately.

Results

Means, ranges, and standard deviations for age, hemoglobin, and hematocrit values were nearly identical in both Negroes and Caucasians in both sexes (Table I). However, mean total leukocyte counts in 107 black men were significantly lower ($p < 0.01$) than in 105 white men (6,363 ± 1,909 versus 7,583 ± 1,755). The lesser white blood cell counts in Negroes compared with those in white people were entirely due to a diminution in granulocytes (3,356 ± 1,554 versus 4,600 ± 1,381), since mean absolute lymphocyte counts were identical in the two groups. Negro women also had significantly lower ($p < 0.01$) total leukocyte counts than white women (5,846 ± 1,847 versus 7,540 ± 1,753). Once again, this was caused by a significant ($p < 0.01$) decrease in granulocytes (3,129 ± 1,469 versus 4,633 ± 1,493). Absolute lymphocyte counts were identical in the two groups. More than 30 per cent of the Negro men and 40 per cent of the Negro women had leukocyte counts below 5,000 per cubic millimeter com-

TABLE I. Selected hematologic observations in healthy individuals*

Factors	Men		Women	
	Black	White	Black	White
Number of subjects	107	105	124	122
Age in years	34.0 ± 14.4	32.0 ± 14.2	32.6 ± 13.7	33.8 ± 14.9
Hemoglobin (Gm. per 100 ml.)	14.9 ± 1.06	15.2 ± 0.99	13.2 ± 0.65	13.6 ± 0.87
Hematocrit	44.5 ± 2.9	45.1 ± 2.7	39.6 ± 2.0	40.7 ± 2.5
Total leukocyte count per mm.^{3}	6,363 ± 1,909	7,583 ± 1,755	5,846 ± 1,847	7,540 ± 1,753
Granulocyte count per mm.^{3}	3,356 ± 1,554	4,600 ± 1,381	3,129 ± 1,469	4,633 ± 1,493
Lymphocyte count per mm.^{3}	2,812 ± 715	2,701 ± 819	2,524 ± 720	2,616 ± 783

* Mean plus or minus standard deviation.

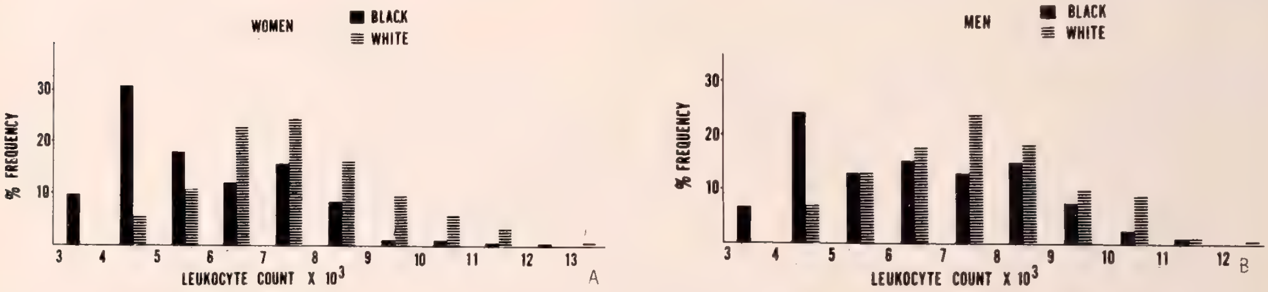

FIGURE 1. (A and B) Leukocyte counts in healthy American Negores (107 men and 124 women) and Caucasians (105 men and 122 women).

TABLE II. Normal leukocyte values in Negroes and Caucasians

Authors and Year	Number of Subjects	Sex	Total Leukocyte Count per Cubic Millimeter*	Absolute Granulocyte Count per Cubic Millimeter*	Absolute Lymphocyte Count per Cubic Millimeter*
White Americans					
Osgood *et al.* 1939[10]	269	Both	7,400	4,050	2,750
Broun, Herbig, and Hamilton, 1966[2]	257	M	7,235 ± 1,669	4,463 ± 1,374	2,369 ± 679
Ibid.[2]	406	W	7,066 ± 1,588	4,440 ± 1,268	2,293 ± 727
Wintrobe 1967,[4]	105	Both	7,780 ± 1,460	4,300 ± 1,214	2,710 ± 610
Orfanakis *et al.* 1970[5]	226	Both	7,100	3,700	2,400
Present report	105	M	7,583 ± 1,755	4,600 ± 1,381	2,701 ± 819
Ibid.	122	W	7,540 ± 1,753	4,633 ± 1,493	2,616 ± 783
Negro Americans					
Broun, Herbig, and Hamilton, 1966[2]	56	M	6,404 ± 1,737	3,722 ± 1,406	2,245 ± 656
Ibid.[2]	67	W	6,838 ± 1,724	4,082 ± 1,491	2,451 ± 655
Orfanakis *et al.* 1970[5]	65	Both	6,300	3,400	2,300
Present report	107	M	6,363 ± 1,909	3,356 ± 1,554	2,812 ± 715
Ibid.	124	W	5,846 ± 1,847	3,129 ± 1,469	2,524 ± 720
African and West Indian Negroes					
Shaper, Kyobe, and Stansfield, 1962[3]	160	M	5,500 ± 1,650	2,100 ± 800	2,500 ± 950
Rippey, 1967[6]	32	Both	4,430	2,210	1,670
Kasili, Cardwell, and Taylor, 1969[8]	152	Both	5,000	2,110	2,430
Hawgood, 1969[9]	455	Both	5,700	2,600	2,200

* Mean plus or minus standard deviation.

pared with less than 7 per cent for white men and women (Fig. 1).

An additional 14 black women and 10 white women with increased sedimentation rates, or abnormal findings on urinalysis, had comparable mean ages, hemoglobins, and hematocrits but greater leukocyte and granulocyte counts (by about 20 per cent) than their healthy counterparts, probably a reflection of the urinary tract infection. In 6 black men (an incidence of 5.3 per cent) and 9 black women (an incidence of 6.1 per cent) with sickle-cell trait the findings were identical to black subjects with preparations negative for sickle cell in all parameters measured.

Monocyte, eosinophil, and basophil counts were the same in all groups of individuals studied.

Comment

In 1941, Forbes, Johnson, and Consolazio[1] found that the average leukocyte count of 23 apparently healthy Negro sharecroppers was 4,050 per cubic millimeter, whereas the mean of 7 white persons living under the same conditions was 7,600 per cubic millimeter. The leukopenia in Negroes was principally a neutropenia. East African[3] and American Negroes from Missouri[2] are said to have lower leukocyte counts than those recorded in most textbooks.[4] Other recent reports from both the United States[5] and Africa[6-9] confirm decreased leukocyte and granulocyte counts in Negroes, especially Africans, when compared with Caucasians (Table II).[10]

Numerous factors are known to change the leukocyte count.[11] These include physical or emotional stress, hyperactivity, pregnancy, severe pain, starvation, fever, infection, steroid therapy, or high altitudes. Most of these factors, even if present, would lead to leukocytosis rather than leukopenia. None were present in the subjects herein reported.

It appears likely that the findings of this and previous studies of lower white blood cell counts in Negroes represent a genetic difference between the black and white races. It is imperative that physicians become aware of this racial difference to avoid stigmatizing healthy Negro individuals as having a disease process. In addition, extensive hematologic evaluations for "pseudoleukopenia" can be avoided.

Summary

A group of healthy American Negroes (107 men and 124 women) were found to have granulocyte counts significantly lower than normal American Caucasian men and women. Absolute lymphocyte counts were identical in Negroes and whites. These racial differences must be recognized before considering "leukopenia" in a Negro to be a pathologic finding.

Acknowledgment: The authors are indebted to Miss Karen Shinkaroff for technical assistance.

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RECOGNITION OF CORONARY ARTERY DISEASE*

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The topic of this discussion deals with the recognition of coronary artery disease. The report is divided into the following parts: (1) history and physical examination; (2) recognition of coronary artery disease by means of the so-called coronary risk factors, with special reference to the lipid profile; (3) recognition of coronary artery disease by means of the rest and exercise electrocardiogram; (4) recognition of coronary artery disease by means of coronary arteriography; and (5) recognition of coronary artery disease by means of noninvasive technics.

History and physical examination

History and physical examination remain the keystone of the recognition of coronary artery disease. Very often the symptoms of chronic diseases appear before the signs. At times, the multiplicity of manifestations of coronary artery disease makes recognition by history alone difficult. Familiar symptoms are pressure in the chest, epigastric pain, shortness of breath, nausea and vomiting, dizziness, and faintness.

All too often shortness of breath may be the only symptom present. Analysis of pain may be difficult, since it can assume a variety of disguises, such as toothache, backache, abdominal pain, and so on. It is sometimes advisable to reproduce the symptoms by situations to which the patients can relate, such as exercise and the relief of pain by nitroglycerin.

The physical examination of the patient may reveal completely normal findings, but the x-ray film may show calcification of the coronary arteries, enlargement of the heart, pulmonary congestion, and other signs of congestive heart failure. Gallop rhythm may be present. It should be remembered that coronary artery disease may be present in conjunction with rheumatic valvular disorders. Sometimes during an attack of angina, gallop rhythm and a systolic murmur are transiently audible.

Coronary risk factors: lipid transport fractions

It has been known for a good many years that the major coronary risk factors are hypercholesterolemia, hypertension, diabetes mellitus, with some question as to the importance of obesity, habitual lack of exercise, and cigaret smoking. Even more disputed are factors of psychologic stress, tension, personality-behavior patterns, and the pace of modern life.[1,2] It has been recently proposed that it is not necessary to examine the patient's blood for all abnormalities in lipid metabolism,[3] and that it is sufficient to determine the cholesterol and triglyceride blood levels.[4]

Fredrickson and Lees[5,6] have pointed out that there are certain abnormal patterns present in the sample of patients with coronary artery disease. Half of the patients had type II abnormality. This implies an elevated concentration of beta lipoproteins with normal electrophoretic mobility. The cholesterol concentration in these patients is always elevated. Equally common is the sample

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†*By invitation.*

of patients with coronary artery disease with the type IV pattern. This is characterized by abnormal concentration of endogenous triglycerides and thus of very low-density lipoproteins or prebeta lipoproteins.

The relationship between cholesterol and cholesterol deposition, coronary artery disease, and hyperlipoproteinemia is not surprising when one recalls that plasma lipoproteins serve as a transport medium for triglycerides and appear to be the major vehicles for cholesterol and phospholipids. Of the cholesterol associated with the lipoproteins, normally about one third is free and the remainder esterified.[7] The present position has been well summarized by Walton[8] in experiments in which isotopically labeled low-density lipoproteins have been administered to patients and in which it was established at autopsy that material from an atheromatous lesion in the aorta had accumulated radioactivity at higher levels than other organs. These experiments also illustrate that low-density lipoproteins, more than any other lipid-carrying proteins of plasma, are of major significance for the transport of lipoproteins into blood vessels. When the serum concentration of low-density lipoprotein is normal, raised intra-arterial pressures may increase the volume of plasma transuding through the intima and augment the amount of low-density lipoprotein in the vascular wall.

Formation of lipids can also occur within the arterial wall directly. In this laboratory Morita and Bing[9] have recently been able to demonstrate that the human coronary artery synthesizes most lipids but that cholesterol and cholesterol esters, under experimental conditions existing in in vitro perfusion, are not synthesized. Rather, they enter the arterial wall through filtration (imbibition).

There is, therefore, sufficient evidence for the presence of two factors in atherosclerosis: (1) an increase in low-density lipoproteins in plasma which carry cholesterol, and (2) an increased formation of lipids in the aortic wall. There appears little doubt that serum cholesterol is an excellent indication for increased risk whether or not it is associated with elevated prebeta lipoproteins.[3,4]

Hypertension has long been known as a risk factor of premature clinical atherosclerotic disease. This is also the case for diabetes mellitus. Persons with manifestations of atherosclerotic disease frequently exhibit abnormalities in glucose tolerance.

Whether obesity, personality, or lack of exercise play any role is not sufficiently clear.

Blankenhorn[10] has recently shown in 15 young patients that among 10 patients with coronary artery disease, proved by angiography, 5 had type IV hyperlipoproteinemia. There were changes in triglyceride levels and prebeta lipoproteins which occurred two to seven days after the start of an 85 per cent carbohydrate diet.

We may summarize the role of the coronary risk factors in the recognition of coronary arteries as furnishing only presumptive evidence. However, the future course is clear; the prevention of atherosclerosis will undoubtedly play a much greater role than its treatment.

Electrocardiographic recognition of coronary artery disease

The electrocardiogram, particularly the exertional electrocardiogram, is often used for objective confirmation of the clinical diagnosis and for the management of the patient. It should be remembered, however, that a significant percentage of asymptomatic and clinically normal older subjects have abnormal electrocardiographic responses to maximal or near-maximal exercise. This suggests the possibility of identifying on a statistical basis a group of asymptomatic persons as high risk for subsequent development of coronary heart disease. It is important that the exercise should be standardized, because graded exercise further reduces the small hazards inherent in the test. Two types of specific exercise tests are available, the Master two-step test[11] and the graded exercise test of Sheffield, Reeves, and Holt.[12,13] In the test suggested by Sheffield, the maximal heart rate possible during exercise can be predicted with accuracy and be related to the age of the subject; the heart rate is a good measure, since it is one of the factors influencing the oxygen demands of the heart muscle. A detailed description of the test is available in the literature.[12 13] It is believed by Sheffield, Reeves, and Holt that transitory changes in S-T segments during or immediately after maximal exercise are likely to represent myocardial ischemia. The criteria for positive responses have been amply illustrated in the literature.

Much work has been done to relate S-T changes to arteriographic studies. Fortuin, and Friesinger[14] have recently published evidence suggesting that S-T segment elevation in the exercise electrocardiogram can be a manifestation of severe myocardial ischemia, and that the electrocardiographic changes accurately predict the site of the responsible anatomic lesion. Six of 8 persons with S-T segment elevations in anterior precordial leads had lesions in the left descending coronary artery which were qualitatively similar to those seen in the right coronary artery. These lesions were located principally in the proximal portion of the left anterior descending coronary artery. Most, Kemp, and Gorlin[15] analyzed the relationship between coronary cinearteriographic findings and the postexercise electrocardiographic evidence of ischemia. In most cases the frequency and degree of postexercise electrocardiographic abnormalities correlated directly with the number of significantly diseased coronary arteries. These workers believe that the postexercise electrocardiogram adds a significant dimension to the understanding of coronary artery disease and provides information not available from coronary angiography alone.

In summary, the electrocardiogram cannot be considered as a quantitative test for either the presence or for the location of myocardial ischemia. However, since it is easily performed and since its values have been shown, it is an important adjunct to the more quantitative tests.

Coronary angiography

Reference has already been made to the relationship between postexercise electrocardiographic findings and selective coronary arteriography. Selective coronary arteriography, introduced by Sones and Shirey,[16] has been simplified considerably by the introduction of percutaneous transfemoral approach, first practiced by Ricketts and Abrams in 1962.[17] The criteria for the use of this technic which is not completely without hazards, particularly in patients with severe coronary artery disease, should be rigidly defined; it should be realized that although this technic is the best possible one available for the recognition of coronary artery disease, it is not infallible. In general the mortality rate of this procedure is about 0.3 per cent.[18] The nonlethal complication rate is about 2.2 per cent.[18]

Some of the precautions which should be taken concern patients with coronary artery disease and consist of insertion of a pacemaker prior to the procedure and the presence of equipment for resuscitation and cardioversion. The indications have been summarized by Abrams and Adams[18] as (1) angina pectoris in young adults; (2) angina pectoris in the presence of normal resting and exercise electrocardiogram; (3) incapacitating angina pectoris or severe coronary disease requiring serious consideration for surgical intervention; (4) atypical chest pain with or without normal resting and exercise electrocardiograms; and (5) angina associated with valvular heart disease, primarily prior to surgery. The method does not permit any conclusions as to the presence of small-vessel disease, and experience in interpretation is as important as experience in performing the test. Mention was already made of the high correlation between a positive work exercise electrocardiogram and the presence of arteriosclerotic disease as demonstrated by coronary angiography. In angina pectoris, occlusive disease of the major coronary arteries is frequently demonstrated. Puzzling are the cases of angina pectoris referred to as variant forms of angina pectoris in which any pathologic condition of the coronary artery is absent. In this condition electrocardiographic and metabolic changes affecting the heart may be found, but the coronary arteriogram findings appear to be normal. Several explanations have been made to explain this condition, among them changes in hemoglobin affinity for oxygen due to an excess of erythrocytic 2–3 diphosphoglycerate, spasm of the coronary artery, and alterations in the coronary microcirculation.[19] Among the reasons for atypical angina, one must also consider the possibility of underperfused coronary capillaries. Using transillumination, and high-speed cinematography, Hellberg *et al.*[20] were able to demonstrate the presence of countercurrent flow, periodicity in time and space, and variations in red-cell velocity with the cardiac cycle. However, following hemorrhage, resulting in a decrease in aortic perfusion pressure, a diminution in red-cell velocity occurred in some of the capillaries, converting these vessels into functional shunts. It is possible that under similar conditions resulting in abnormal responses of the metarterioles and/or precapillary sphincters, similar redistribution in blood in the coronary capillaries may exist leading to local ischemia with its clinical symptoms. The technic for visualization of the coronary microcirculation has been described in detail.[21]

Use of noninvasive technic in recognition of coronary artery disease

Within recent years, noninvasive technics have become popular in coronary care units, and the technics have also been applied in the recognition of coronary artery disease. These procedures consist primarily of the application of apex cardiogram or kinetocardiogram to record precordial vibrations; they also include measurements of hemodynamic events which can be recorded without catheter insertion, external measurement of electromechanical systole and left ventricular ejection time, pre-ejection period, 2-S, and isovolumic contraction time intervals. Of particular interest is the possible relationship between LVET/EICT (left ventricular ejection time over external isovolumic contraction time) ratios at rest and after exercise. Using these noninvasive technics together with cineangiographic measurements of cardiac contractility, Aronow, Bowyer, and Kaplan[22] found good correlation between the end-diastolic volume and the ratio of LVET/EICT immediately following and after three minutes of exercise. Apparently therefore the fraction of LVET/EICT ratio after exercise is a good noninvasive measurement for assessment of myocardial contractility. To accomplish these measurements, only simultaneous recordings of the heart sounds at the apex, the carotid arterial pulse tracing, and the electrocardiogram are necessary.

The technic of applying the apex cardiogram or the kinetogram is equally easy. Using the apex cardiogram it was found by Benchimol and Dimond[23] that in patients with angina pectoris or ischemic coronary disease, the rise in left ventricular end-diastolic pressure is associated with an abnormally large atrial component of the chest wall movement at or near the point of maximal impulse of the left ventricle. This reproducible presence of the atrial wave suggests that it may be a reliable herald of significant ischemic heart disease. Furthermore, this altered pattern frequently can be produced by the amount of exercise which does not at the same time provoke the sensation of angina pectoris. As Dimond[24] states, when there is a clinical issue as to whether or not angina pectoris is present, the recording of the apex cardiogram at rest and after exercise and the expression of the amplitude of the atrial component may offer a simple safe useful test for the recognition of coronary artery disease. Furthermore, if the abnormal atrial component returns to normal after treatment with nitroglycerin, confirming evidence of the presence of ischemic heart disease is obtained. If nitroglycerin does not return the atrial component to normal or near normal, it is strongly suggested that myocardial hypertrophy, dilatation, or fibrosis are major factors. Using the kinetocardiogram, Eddleman and Langley[25] also found that shortly after the atrial contraction there is a large outward atrial movement followed by an inward atrial movement. The main movement during systole is a sustained outward movement or a bulge. The kinetocardiogram may be entirely normal, grossly abnormal, or intermediate in patients with angina pectoris in ischemic coronary disease. Following exertion, however, transitory bulges insufficient to produce pain may appear. A great majority of anginal attacks are associated with the appearance of a bulge or with the exaggeration of one previously present. It is quite likely that the findings by Benchimol and Dimond[23] and by Eddleman and Langley[25] are the results of asymmetry or dyssynchrony of ventricular contraction.

Other noninvasive technics, such as ultrasound, have been developed. There use in the recognition of ischemic heart disease is being established.

Use of coincidence counting in diagnosis of ischemic heart disease

In 1964 a test for the determination of coronary blood flow, based on the use of a positron emitter, rubidium-84, and coincidence counting was described.[25] It was found that coronary vasodilators, which in normal individuals usually produce an increase in coronary blood flow, fail to do so in coronary artery disease.[26,27] Based on these experiences and using a more direct method for the determination of coronary blood flow using rubidium-84, Knoebel *et al.*[28] have recently extended these findings with the use of isoproterenol. They found good correlation between the severity of coronary artery disease and the response of myocardial blood flow to increased oxygen demands. In patients with severe coronary artery disease, myocardial blood flow failed to increase with isoproterenol. In patients with less severe disease, nutritional coronary flow increased within the normal range during the infusion of isoproterenol. Recently Rickart, Hellberg, and Bing[29] confirmed these findings on an experimental basis. They were able to show in dogs with restricted coronary flow (application of ameroid clamps) that isoproterenol failed to increase the maximal rise in left ventricular pressure as well as the effective coronary blood flow.

Summary

This report deals with modern aspects of the recognition of coronary artery disease. History and the physical examination remain the keystone of the recognition of coronary artery disease. The serum cholesterol level and triglycerides are the most useful representatives of the lipid profile. Electrocardiographic stress tests remain an important adjunct to the more quantitative tests. The well-standardized, graded exercise test is especially useful. Selective coronary arteriography offers the best way to recognize coronary artery disease and to determine its severity. Using well-defined criteria for its use and taking certain precautions, the mortality rate is low, and the complications are few. Changes in coronary microcirculation may be implicated in the cause of atypical angina.

Noninvasive technics may be important in the presumptive diagnosis of coronary artery disease. The fraction of LVET (left ventricular ejection time) to EICT (externally determined isovolemic contraction) after exercise shows a good correlation to myocardial contractility. The apex cardiogram and the kinetocardiogram, especially after exercise, offer additional help.

The rubidium-84 coincidence counting technic is a simple method to determine coronary blood flow and coronary reserve in man. Using isoproterenol, recognition of severe atherosclerotic heart disease may be possible.

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LEGAL ASPECTS OF EXERCISE TESTING

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In discussing the legal implications of exercise testing I will exclude as a possible basis of liability an express or implied contract and concentrate on tort law as a basis of liability. By definition, a tort is socially unreasonable conduct giving rise to a civil action for money damages. It may involve an act of commission or omission.

Tort law

Within the framework of tort law there are three generally recognized theories of liability: (1) strict liability, that is, extra hazardous conduct, such as blasting; (2) negligence, that is, failure to do what a reasonably prudent person would do under the circumstances, such as driving on the wrong side of the street; and (3) intentional wrong, that is, voluntary conduct evidencing the immediate objective of the actor, such as throwing a pencil at a man in front of him; the wrong is known as battery if there is unconsented touching of another. The motive deals with the actor's more remote ends, why he did it, such as out of spite. It may be important on the question of damages. In the ordinary tort action the plaintiff seeks to recover compensatory damages which include a sum of money for wages lost, medical expenses, and pain and suffering, all past, present, and future. Where there is evil motive or aggravated conduct, the plaintiff, in addition to compensatory damages, may be entitled to punitive damages.

Tort law applied to exercise testing

We may start with the proposition that no study to date shows "exercise testing" to be so hazardous or contrary to public policy as to be subject to strict liability.

Our problem then is whether or not the procedures used spell out negligence or the intentional tort of battery.

First let us consider certain basic concepts which the law of torts has established as criteria to be employed in determining whether there is negligence: (1) the interests that would be sacrificed if the specific activity was not undertaken by the physician; (2) the likelihood of harm to the patient by the specific activity; (3) the safety measures that were available and were employed to reduce the likelihood of harm, and (4) whether

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or not harm to the patient in fact results.

As to criterion 1, I quote from an article by Levenson,[1] Medical Director of the Washington Work Evaluation Clinic:

> Exercise testing has offered a number of benefits. First, of course, it offers a better evaluation of the individual's functional capacity than would be obtained by the usual clinical history. Second, it offers a means of evaluating symptoms. Some symptoms of which a patient may complain may not be of cardiac origin and he may be restricted by them. It is difficult to make this assessment by history alone, and thus the test has had a special benefit here, by developing these under direct observation. Third, as a side benefit it has been observed repeatedly that having exercised under observation, and finding that no problems arise the patients will become more confident of their ability to perform and were willingly thereafter, increasing their own activity level.
>
> Finally, exercise testing has provided documentation of the limits of a clinical evaluation and of the special benefits to be obtained by the use of an exercise test.

It is apparent from the foregoing that important and significant interests would be sacrificed if the activity of exercise testing was not undertaken. It is obviously a socially desirable activity which, from the standpoint of the law of torts, suggests that engaging in it should not be regarded as negligence unless countervailing considerations under criteria 2 and 3 are applicable. Criterion 2 is the likelihood of harm to the patient, and criterion 3 is the availability and use of safety measures.

In considering the applicability of criteria 2 and 3 let me refer you to a recent report (1970) by Rochmis, formerly Medical Officer of the Heart Disease and Stroke Control Program, and Blackburn[2] of the University of Minnesota, based on a survey of 170,000 exercise tests performed in 73 medical centers.

The following factual patterns emerged from that survey:

1. A careful history and physical examination with a complete resting electrocardiogram was generally required before stress testing.
2. Subjects were excluded from testing if they had cardiovascular processes of an acute or active nature.
3. Specific criteria for interruption and cessation of an exercise test were carefully followed.
4. Gradually progressive work loads were employed by the majority of the testing facilities surveyed.
5. Thoroughgoing resuscitation facilities existed in virtually all centers.
6. Sixteen deaths were probably attributable to the exercises in the extensive experience of the 73 respondents, for a death rate of about 1 per 10,000 tests.
7. The combined mortality and morbidity rates attributed to the test within a week was approximately 66 cases, for a rate of about 4 per 10,000 tests.

The foregoing data tend to show that the likelihood of harm to the patient is relatively minimal and that adequate safety measures are employed.

The authors point out, however, that "The standards of practice of the medical centers surveyed here are advanced. They do not constitute grounds for establishing the usual or expected level of community practice in the field of exercise tests, but point out directions toward the optimal use of exercise stress testing." It cannot be assumed, therefore, that the apparently high standards employed in the 73 medical centers surveyed are typical of the standards everywhere. To the extent that testing elsewhere does not conform to such standards, the possibility of finding negligence in a legal sense cannot be excluded.

One of the most disturbing findings from the viewpoint of the protection of the physician performing the exercise test was that, although approximately 75 per cent of the respondents obtained some form of consent from the test subject, the consent was usually oral. While as a general rule a consent is not required to be in writing, an oral consent is obviously much more difficult to establish.

A rule of law known as the "informed consent" rule requires a physician to make a reasonable disclosure to his patient of the nature of the infirmity, the nature of the treatment, whether it be an operation or otherwise, and of the more probable consequences and difficulties inherent in the treatment. These consequences and difficulties have been termed the "recognized risks" of the treatment.

In all but clear-cut cases, the plaintiff, who is normally the injured patient or his next of kin, establishes that the particular risk which caused injury lay within the range of the "more probable consequences and difficulties inherent in the treatment" by means of expert testimony. In a few cases he may be able to establish this without expert testimony on the theory that the facts are simple enough for a jury of laymen to draw its own conclusions.

Some courts have held the failure to inform a patient properly of the hazards of a proposed medical procedure to be an act of negligence because of lack of "informed consent." Other courts have held this to be a "battery."

If the failure to inform the patient is treated as negligence, certain consequences flow. In most cases, the patient is required to prove by expert testimony that the physician breached the standard of care required of him. The patient must establish that the injury was "foreseeable" and was proximately caused by defendant's negligent act, and that he suffered "damages." The statute of limitations may be longer or shorter than the battery period. Negligence is usually covered by the physician's malpractice insurance. The rule of res ipsa loquitur may be applied. Contributory negligence of the plaintiff may bar his recovery.

If the failure is treated as a battery, the consequences are somewhat different. It is irrelevant that the physician performed the procedure with skill and care, except as it may affect the amount of damages. There is no need for any expert testimony to establish that the physician breached the standard of care required of him. The patient is not required to show that he suffered any actual injury as a result of the procedure or that any injury was foreseeable. The statute of limitations may be longer or shorter than the negligence period. A battery may be excluded from coverage under the physician's malpractice policy, thus leaving him to defend the action on his own. Contributory negligence of the plaintiff is generally not a defense in a battery action.

Conclusion

Although "exercise testing" involves a small risk of morbid effects or death, a signed consent should be obtained from the test subject. The Rehabilitation Committee of the American Heart Association is currently working on a form containing recommended elements of information and consent.

In closing I quote the following from Klass[3]:

> In a field of rapid discovery, the accepted treatment of today was risky yesterday; and will be obsolete tomorrow. During the period of yesterday, the treatment was new and hazardous, perhaps experimental in the eyes of the court, and few doctors would come to its defense. During the period of tomorrow it is obsolete, antiquated, proven to be wrong, condemned in the witness box and accepted as negligent by the court. It is only during the brief period of today that the treatment is right and proper and this period is made ever shorter by the rate of discovery.

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SYMPOSIUM

PSYCHIATRY IN GENERAL PRACTICE

DEPRESSION

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If there be a hell upon earth it is to be found in the melancholy man's heart.—Robert Burton, *The Anatomy of Melancholy*

The term melancholia, which is one of the great words of medicine and psychiatry, is of ancient origin. I shall not go into the legends about its origin here. The first clinical description of the disorder was given by Hippocrates in the fourth century B.C. In the second century A.D., also, Plutarch gave a vivid account of it, in many ways comparable to present-day descriptions of the disorder. In fact, the cardinal signs of the illness as delineated today have their counterparts in several ancient descriptions of the same illness.

Evidences of depression, the modern psychiatric term for the ancient label melancholia, appear regularly throughout history, and yet, despite the fact that depression has been recognized for over two thousand years and it is the psychiatric diagnosis made most frequently today, there is much about it that remains enigmatic. Paradoxically too, while it is now eminently treatable, we are still not sure "whereof it is born." Lindsay, ten years ago in a report entitled "Melancholia 1621 and Depression 1961," compared Burton's *Anatomy of Melancholy* with a recent comprehensive study of depression and concluded that we had learned very little about the etiology of depression in the last three-hundred-forty years, and that the symptoms were still basically unchanged. While this statement is in itself depressing, it will lessen your expectations that I will present anything very new or startling here. To mitigate that depressing thought, however, I will say quickly that we have learned some things and we are better able to treat the illness today; there is promise that we may soon understand its mechanics.

The disorder is a major health problem; its sufferers number in the millions. It is probable that it has altered the course of millions of lives and even influenced human destiny. One of its sequels, a constant danger, is suicide. The suicide rate, which is 1 in 10,000 in the general population, is 50 times higher among depressed persons. All of this taken together indicates that it would be well for all physicians to know something about this enigma and its protean manifestations. There is also a reason a bit more personal. When physicians are emotionally distressed, they often become depressed; they sometimes cover their depression by means of alcohol or drugs. It is legendary that when clergymen become ill they generally become depressed. This phenomenon is well known. Cotton Mather wrote about it prolifically and, among others, a number of wonderful clergymen in the colonies suffered with this disorder.

When we say that the course of human affairs has been altered at times by depression and mental disorders, this is not hyperbole. It is known that earthquakes, floods, and other calamities have altered human destiny, but it is not as well known that it has been altered much more frequently by human emotions.

> Because of depression favorable enterprises have been abandoned because the owner has forebodings of disaster. Important research has been neglected because the investigator imagines difficulties which are not there. Defeat has been snatched from the jaws of victory because a military commander countermanded a campaign which in reality had already succeeded. At a more mundane level, the housewife is too tired to maintain pride in herself or her home; the bright young man with high potential lacks drive to convert his assets into successful accomplishment. Still at the same level, the illness has many more paradoxes. The rich man feels he is poor; the beauty begs for plastic surgery and depressed people, in general, are swayed neither by objective evidence nor by logic.[1]

What is the disorder which causes so much unhappiness? Is it an illness? How is it described, from whence comes it, and what can we do about

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it? There are many other questions. Is depression a well-defined clinical entity or is it an exaggeration of mood? Is it quantitatively and qualitatively different from the normal mood or is it a wastebasket in which diverse, poorly understood disorders are collected? Seemingly, it can be all of these things. Varying degrees and gradations of depression are described from transient attacks of the "blues," through longer-lasting mood changes and symptoms, and on up through graver situations of distressing emotional and mental illnesses. As the term depression is used in everyday life, it implies lowered spirits, feelings of dejection, or a depressive unhappy mood.

The psychiatrist conceives of depression as a disorder characterized by varying qualitative deviations from the behavioral and experiential norm. He may refer to depression as a symptom, in which case he means a dysphoric affect, a sad dejected mood. Or, he may refer to depression as a syndrome which comprises, in addition to the depressed affect, retardation, agitation, loss of appetite, suicidal ruminations, feelings of hopelessness, insomnia, and other symptoms of a lowered mood disorder. The clinician may go even further and speak of manic depressive disorder or involutional depression, thus referring to diagnoses and nosologic entities. It would be out of place for me to go into great detail about the symptoms of these more serious illnesses. The symptoms of manic depressive psychosis and involutional melancholia are to be found in any textbook. I would rather spend this short time discussing the illnesses the family physician sees in his office.

All people feel sad, depressed, blue, or melancholy at one time or another. Sometimes the cause seems apparent and rational; at other times the emotion seems to "arise from nowhere," and sweeps over the individual in an inexplicable mood of "blackest midnight born." Occasionally this depressive mood passes as whimsically as it came, and yet again it seizes on the individual and cuts him off from activity, from pleasure, and even from his fellow men.

Seemingly, too, occasional low spirits are ordinary accompaniments of intelligence and experience. Transcultural studies have indicated that depressive elements are more likely to be found in cohesive groups because of the dynamics which operate within them and because individuals must live up to the expectations of the group of which they are a part. Failing to do this, they are in danger of becoming self-accusatory and turning their anger and hostility in on themselves and becoming depressed.

It is tempting to go into the fascinating evidences of depression in history, but in the terms of the present day it would not be "relevant." It is not unlikely that some of the patients presently in your practice who have been painstakingly examined physically and who are not doing well when all evidences indicate that they should be; whose complaints are still many and varied and which do not hold together; and who report loss of interest and vague feelings that something is wrong, could be mildly depressed. It is also not unlikely that you are the person best fitted to determine that and to treat them due to your relationship with them; and therefore they must be recognized and understood. As in any other illness which we may be called on to treat, the main thing necessary is to keep in mind the possibility that our patients may be depressed and to know depression's protean manifestations well.

Before attempting to describe the less easily recognized depressions, we should mention briefly the more obvious syndromes. The common clinical picture is of a person bowed down with dejection and despair with an expression of perplexity and worry. Psychomotor retardation may be marked. There is a feeling of intense fatigue unrelieved by sleep or rest. The patient feels worse in the morning sometimes but easier at night; however, the depression returns after sleeping at any time of day.

This picture is so obvious that it can be recognized anywhere and there is no need for us to detail it here. Ordinarily these patients require expert treatment and, quite frequently, a protected environment. We should comment, however, on the alternative clinical picture in which retardation is replaced by or mixed with agitation, anxiety, restlessness, pacing, wringing of the hands, moaning, wailing, and complaining. In patients exhibiting these symptoms, which are more likely to be seen in middle- or older-age groups, the likelihood of suicide is greater than in any other category.

You are aware that the core signs of depression are generally, but not always, reasonably apparent. They consist of a low mood, a loss of interest, a criticism of self or self-debasement, a general slowing up or agitation, varying vague physical complaints, anorexia, constipation, fleeting pains, and general somatic symptoms of an overall dejection. Along with this, there is a noticeable loss of zest, lack of interest in things which formerly were attractive, loss of the desire to live, and suicide ruminations. One must constantly keep in mind the fact that depressions may be hidden under a welter of physical complaints for which no satisfying underlying disease process can be found. There is a general slowing up of intellectual processes and a slowing up of motor activity accompanying the dejected mood. The illness is characterized by withdrawal from previous interests and even from loved ones, yet there is a regressive action noticeable with increased dependency. Some of the depressive thoughts may become delusional as the individual becomes more indecisive, pessimistic, and vacillating; the patient presents a sorry picture as sleep and metabolic functions get progressively out of order.

Depression as seen in the general hospital

It is probable that the diagnosis most frequently made in psychiatric consultations in the general hospital is depression in some degree, because depression can be so effectively masked by somatic symptoms. Many patients, unaware of the role of emotions in illness, are liable to interpret the distressing vegetative concomitants of depression, such as insomnia, anorexia, and fatigue, as indications of physical disorder. It is true enough that the experience of physical illness also may lead to depression in certain persons because of a partial or complete collapse of their self-esteem.

Some persons pride themselves on the fact that they have never been sick and feel a need to emphasize their independence from having to rely on others. Being sick in a hospital with its attendant necessity of having to rely on others is enough to depress them. Understandably, major changes in a person's life such as the actual or threatened loss of a loved one may influence patterns of physiologic response. The same concurrence of events may trigger the development of organic illness, for disease is a process and rarely springs de novo into being. The fact that depression can be masked by a conversion symptom such as pain should not lead the physician to dismiss the patient as being hysteric, but rather he should search for deeper depressive factors, even though no mention of them or complaint about them was made. Sometimes the complaints of lethargy and fatigue are of such momentum that one must carefully rule out occult cancer and various chronic disorders. Essential as this search will be, it is always wise to keep in mind the weight of depressive factors with their subtle influences on the problem. It is only rarely that a clear-cut diagnostic decision can be made.

Sometimes the psychiatrist is presented with serious depressive symptoms which are the harbinger of organic illness. As an instance, depressed patients with weight loss, intractable insomnia, abdominal pain, for which no cause can be determined, plus a feeling of impending disaster, may be showing early signs of carcinoma of the pancreas. There are, as you know, a number of emotional counterfeits of physical disease.

Milder disorders seen in office practice

Passing and usually easily handled fits of depression occur in young people, but their resiliency and adaptability ordinarily limit them. Then, too, the reasons for their lowness of spirit are often apparent and although the events cannot be changed, attitudes toward them can be. We are all aware of the Weltschmerz of idealistic young people who, often understandably, find the world not to their liking. As the individual grows up, occasional bouts of sadness cannot be avoided. With each new joy comes some sorrow, and with each new discovery of love comes some pain. It is inevitable that the middle years should be a time when one might become vulnerable to periods of depression. Not only are failures liable to discourage individuals in this age group, but success also can take its toll. Understandably, such things as illness, business setbacks, delays, disappointments, rebuffs by colleagues or friends, and failures of promotion or invitation are likely to undermine the good humor of the individual in middle life more than they would have earlier, when life's abundant generosity is taken for granted. Time seems to be racing by in the middle years, and occasionally they bring a period of special stress. Also, there are important cultural and economic factors at work in this age group, and this is the time when financial success really shows itself to be a "will of the wisp." It is easy to see how these moods can be accompanied by nebulous physical symptoms, and the individual may divert attention to them to the neglect of the underlying cause.

Strangely, or perhaps not so strangely, the man of achievement also has depressive moments like his less successful counterpart. The trophy he chased too hard and spent too much of his time and energies winning is found to be empty. That life which, from a distance, appeared to be so delightful is discovered to be a dizzy whirl of obligation with no time left for spiritual contemplation, moments of play, and none of the joy of an occasional hour of do-nothing pleasure or of relaxed emotional satisfaction. Occasionally a man in middle life goes through what is called medically a "success depression," a feeling of being pushed beyond his powers, a dizziness and an aloneness on the heights which he has attained, a frightened look down from a pinnacle from which there is always the danger of falling. The poets have spoken of this as "the melancholy of all things completed."

Sometimes the person with a tendency toward depression gets into trouble when his goals are set and maintained higher than realizable and beyond his personal resources. This happens in medicine as it does in various other vocations. The well-adjusted person sees the futility of this and generally erects adequate safeguards.

He has the ability to adjust his sights to the level of his capacity. Then, too, he is fortunately more able to tolerate loss and disappointment and is free of the characteristically harsh demands which arise from within the personality of the depressive individual.

Psychodynamics—underlying mental processes of depression

Before going further in the differentiation of various types of depression, let us examine the underlying mental processes of an individual liable to depressive illnesses. Briefly, in depression it can be said that the individual has lost someone or something or is in danger of loss; it could be loss of a loved one or loved object or a loss of self esteem. Freud and Abraham attributed depression to a loss or feared loss of an object of gratification. Rado also saw depression brought about in the same fashion. The loss of self esteem holds the central place in Bibring's theory; to this he adds a frustration of needs and an inability to achieve one's aspirations. Jacobson spoke of a loss of self esteem produced by the discrepancy between the actual level of achievement and the level aspired to. Klein, in the same vein, saw depression as helplessness, loss of esteem, and frustration.

It also may be said that these patients are narcissistic and egocentric, with many early infantile drives still active within them. The depressed personality is at the mercy of an extremely severe superego and is usually overconscientious, overly serious, compliant to the point of being subservient, obsessive, and, on occasions, overly agreeable. He is invariably an individual who finds recognition of his own anger and hostility entirely too threatening to his own security; he cannot allow a vestige of it to appear. He reacts by clamping down too hard and quickly on any impulse which might in the slightest way betray aggressiveness. Thus he moves along under an unrelaxing constraint from which he eventually begins to suffer feelings of depression.

Some observers see three personality groups most commonly associated with depression. The first reacts to hostile, aggressive impulses by an overserious, somber, overly studious, overly conscientious pattern of behavior. This pattern, while it aids in the repression of impulses, also depresses the spirits. The second group has developed traits which deny hostility and utilize reaction formation that is, the unconscious adoption of behavior that reflects impulses opposite to those which the individual is attempting to disown. They are the overly compliant, overly polite, subservient, and obsequious types. The third group employs obsessive-compulsive habits which are repetitive thoughts or acts provoked by unconscious urges—such as meticulousness, concern with detail, rigidity of behavior, and parsimony—to master these impulses. Attempts to desist from this behavior results in vague anxiety and agitation.

As long as the defensive traits of the depressive person serve their purpose, the status quo of adjustment is maintained. But if internal or external stresses increase, the defenses may become inadequate; then depression may supervene as part of the urgent need to conceal from everyone, oneself included, the feared aggressive hostile drives.

Thus it is apparent that depression is closely related to conflicts arising from the frustrations of denial, loss, and failure. In the resulting deep disappointment, the individual is literally unable to handle his hostility. Depressed individuals suffer deeply, much more so than those in any other medical condition, and the acme of the suffering can be seen in severe cases of agitated depression of middle life.

Underlying biologic factors in depression

Reluctantly, we must conclude that despite hundreds of studies in the biologic area and some very interesting leads, the final answer to the problem has not yet been written. The catecholamine hypothesis of affective disorders proposes that some, if not all, depressions are associated with an absolute or relative decrease in catecholamines, particularly norepinephrine, available at central adrenergic receptor sites. Conversely, elation may be associated with an excess of such amines.[2] Most recent evidence, however, indicates that changes in the level of the amines appears to be only part of the chemical pathology in mania and depression. There may be a necessary predisposition that requires another factor, perhaps endocrinologic to produce the clinical pictures. Thus while it is not possible to confirm or reject definitely the catecholamine hypothesis at present, the hypothesis does provide the investigator and the clinician with a frame of reference on which to operate.

There are other leads which we do not need to detail here. They are concerned with electrolytes and steroid metabolism. Bunney is of the opinion that they are progressing to a point where they may soon be applicable to the understanding of the biochemical abnormalities of depression.[1]

Differentiation from grief

Grief may herald the beginning of a depression at any time of life, but it should not be confused with it. In grief the loss is personal, objective, external, and readily understandable. The response it calls forth is realistic and proportionate to what has been lost. In depression the loss is emotional, of internal origin, and much more complex. It is a loss of self. It is this loss of self, the feeling of self-doubt, of self-contempt, even of self-loathing, which is the core of the depression. Grief is the normal expression of sorrow and bereavement which follows the death of a loved one or other significant loss.

Grief is self-limited and gradually subsides; it merges into a depression only when a complex set of reactions is set off, which has to do mainly with guilt of some sort, real or unreal. The memory of ambivalent feelings, quiet dislike, or even hatred for the deceased; the thought of something left undone or something that might have been done, trivial or of major proportions: these factors prolong the guilt and make it more intense. If someone else can be blamed or considered in any way neglectful, such as a physician or a hospital, then the feeling which otherwise might have been turned in on the self is turned outward to another person in all of its intensity.

Interestingly enough, we are relearning that there is something salutary in the moderate and timely expression of our grief. In our own native circles, probably due to a puritan heritage, the outward expression of our grief has been regarded as unseemly. Emotional displays of weeping are frowned on, and the stiff upper lip is the sign of good breeding. Unfortunately, these attitudes encourage both conscious suppression and repression of a strong emotion, which, in turn, could have a delayed reaction. It is even salutary for young people to assimilate their sense of loss rather than to repress it. Sometimes young people are shielded from sorrows under mistaken impressions of their effect on them, yet feeling the sorrow of a loss is a necessary part of limiting its length and its intensity.

Depressive phenomena in older-age groups

In the older-age groups there are various causes of depression. More often than not they have to do with the treatment accorded the elderly in this culture. Only too often, the individual is pushed into retirement before he needs or desires this enforced leisure. He is declared old by fiat of a board of directors and by a calendar. In our urbanized, industrial age, with its cultural respect for the producer, retirement too often means a loss of privilege and of status. As inflation continues, it also means financial stress. Depression is an almost inevitable reaction to this change, but the symptoms of it may differ widely. Some men become peevish and irritable; others have a tendency toward useless overactivity, as if they are attempting to show themselves and others that they are capable of superhuman achievement. Others show more typical symptoms of irregular sleep patterns and gradual loss of interest in friends and in former hobbies.

Actually, early morning awakening is a common symptom and, although it is inconvenient, no harm comes from it. Some clear thinking and excellent writing have come from people bothered by insomnia. Sometimes symptoms which are regarded as manifestations of senility or of cerebral arteriosclerosis are, in reality, depressive symptoms due to the fact that in this culture society has little use for older persons. As depressive phenomena, these symptoms are amenable to treatment.

Like the pebble dropped in the pool, the depressed state of the one-time strong man of the family sends ripples of unease throughout his whole environment. The wife, who may have been anticipating new hours of companionship and recreation with him, finds instead that she is rebuffed or, even more annoying, a target of his complaints. The children feel they must "do something," but their good intentions are interpreted as interference, and disputes and difficulties arise that add to their own tensions. Physicians, clergymen, and family members should be aware of what is going on in individuals in the older-age groups so that otherwise admirable lives may not be marred. Individuals suffering from mild and normal depressions, who have handled them satisfactorily in the past, usually have methods that will serve to handle them in the future. These methods vary, and often only the most superficial aspects of them are revealed to the outside observer.

The new (1968) official nomenclature of the American Psychiatric Association attempts to bring some order out of the medley of descriptions of the more serious depressive illnesses. Whether it has succeeded or not remains to be seen. I need not go into the intricacies or minutiae of diagnostic labels, but all should be aware of the various categories into which depressive psychoses have been placed.

Course and prognosis of depressions

It is considered axiomatic that the prognosis for the initial attack of depression is good. This implies, however, that no promises can be made that there will be no recurrence of the illness. It was formerly thought that the duration of the attacks lasted longer as the disease recurred, but this idea is now discounted. Recovery takes place in 85 to 95 per cent of depressed patients. If they are in the younger-age groups the recovery rate is at its highest. In older patients there is always the danger of complications intervening which will lengthen the duration of the attack. If the patient is ill enough to be hospitalized, the median duration of the attacks will be from three to six months, depending on the treatment method used. Some individuals regress, become dependent, and take longer to get well under hospital regimen. In outpatient treatment, the duration of the illness is lessened, indicating that that is the method of choice, provided that it is safe and that the individual can be properly treated as an outpatient. The problem is, of course, to evaluate carefully the conditions and the surroundings to which the patient will return. One must be on the watch for atypical depressions, sometimes called masked or smiling depressions, in which none of the core signs of depression are obvious; rather, the symptoms are somatic but inconclusive and appear after a person has experienced an event that he interprets as a loss of a loved one or desired object with consequent loss of self-esteem.

Suicide

I merely mention suicide here, for you are well drilled in the possibilities of it. The critical times of going in and coming out of depression are dangerous, as is the sudden recovery for no apparent reason. It may signal the fact that the decision has been made—all that is necessary is the opportunity. In hospitalized patients the greatest periods of danger are on weekend leaves from the institution or shortly after discharge from it. It is thought that the risk in the first six months post-hospital is three times greater than in the general population, and in the second six months it is nine times greater.

Attention must be paid to all suicidal ideas; none can be dismissed lightly. Each threat is a call for help, and each one should be looked into thoroughly. Assuring oneself that "he won't do it," "he is a coward," "he hasn't got the nerve," or "it's against his religion," is taking a chance on tragedy. If an individual is depressed enough and desperate enough and sees no future before him, or sees only ruination and disgrace in his path, he is definitely a suicidal risk no matter who or what his belief or position might be.

Whenever a person ruminates on suicide, thinks over methods of accomplishing it, considers ways to make the event look like an accident, or determines that the world and especially his family would be better off without him, it is obvious that he needs to be under expert care, and more likely than not, needs to be at least temporarily in a protected environment.

This is a brief and admittedly superficial discussion of the clinical aspects of depression, tailored to the time limit of the present situation. I would like to close by adding that should any of us personally encounter depressive symptoms in oneself or a loved one, it would be well to think of them as did Leigh Hunt, who said in 1879: "If you are melancholy for the first time, you will find upon a little inquiry that others have been melancholy many times and yet are cheerful now."

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DRUGS VERSUS PYSCHOTHERAPY

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Psychotherapy and psychochemotherapy are the primary treatment procedures available to the emotionally ill. Since psychotherapy is based on the physician-patient relationship, many clinicians believe it is as old as the practice of medicine and the finest example of the art of medicine. Psychochemotherapy in its present form is a scientific development of the last twenty years and bears little resemblance to the past.

I can still recall my first experience as an assistant in the operating room. In 1945, as an externe in a psychiatric hospital, I had what seemed to be the glamorous opportunity of assisting a neurosurgeon in performing a classical prefrontal lobotomy on a schizophrenic patient. At that time I did not understand the seriousness of the patient's illness nor the irreversibility of the procedure we were doing. Other accepted forms of treatment at that time were insulin coma, prolonged narcosis, hypoxemia, electronarcosis, fever therapy, and electroshock. Only electroshock has survived and maintained a position of importance. Packs, tubs, seclusion rooms, physical restraints, and intravenous barbiturates were used abundantly; there was no reason to expect that things would change dramatically in a few years.

The era of modern psychopharmacology was born in 1950 when chlorpromazine was synthesized in the laboratory; Rauwolfia, a naturally occurring substance, was being seriously investigated; and in Australia Cade was beginning to work with lithium carbonate. Within five years chlorpromazine and reserpine were in the forefront of both public and psychiatric attention. These drugs were different from anything we had previously used, and their impact was great. They calmed without producing sedation and reduced destructiveness, combativeness, and assaultiveness.[1] Most large mental hospitals had a number of patients who received little or no personal care. Now that personnel had drugs which could dramatically alter behavior without producing sedation, doors were opened and an optimistic attitude

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prevailed. Personnel could also tolerate more pathologic conditions without reacting. Psychopharmacologic research was stimulated; soon several congeners of chlorpromazine were developed. Worldwide research activity and observation led to the discovery of the so-called minor tranquilizers and the antidepressants. Millions of patients have received these drugs and over 50,000 articles have been written about them.[2] Patterns of psychiatric hospitalization have changed; in fact, the hospitals themselves have changed. The practice of clinical psychiatry was extended. It is now possible for any interested physician to alleviate the suffering and discomfort of the emotionally disturbed patients in his practice often without hospitalization.

Categories of drugs

Broadly speaking, we have two major categories of drugs—the tranquilizers and the antidepressants. One cannot talk about both groups simultaneously, so we will consider the antidepressants first, since their area of usefulness is more restricted.

Antidepressants. Unquestionably, depression is the most frequently encountered psychiatric illness. I believe that all depressed patients, except the malignantly suicidal patient, deserve a trial of antidepressant medication. The deeply depressed patient with nihilistic delusions and/or strong suicidal potential should not be treated on an outpatient basis. Such patients need the protection and security afforded by hospitalization. Some of these patients will require electroshock therapy, which is still the most dramatic treatment for this malady. The majority of the depressed patients we see are candidates for chemotherapy on an outpatient basis. A suitable trial treatment period should be at least four weeks at the maximum-tolerated effective dosage. Successful drug treatment depends on accurate diagnosis, selection of a proper drug with which the physician is familiar, and the administration of an effective dose.

Tranquilizers. The situation with the tranquilizers is much more involved. First, there are two groups of tranquilizers: the major and the minor. Both groups affect anxiety, but only the major tranquilizers have the so-called antipsychotic activity.

Major tranquilizers. The phenothiazines, the thioxanthines, and the butyrophenones constitute the major tranquilizers and alleviate agitation, aggression, hostility, and the extreme manifestations of anxiety—hallucinations and delusions. They are the drugs used in the treatment of schizophrenia. We have learned that it is often necessary to use large doses of these drugs and expect treatment to continue for several years. Some physicians and many patients find this a difficult concept to accept and seem disappointed and discouraged because the drugs do not cure within a predictable time span. This situation is not unique with psychiatry, but extends throughout the practice of medicine.[3,4] There are many reports in the literature of improvement being sustained for as long as fifteen years with the continuous administration of the drugs. It is still unclear whether these drugs work mainly by suppressing symptoms or whether they operate at a more basic and specific level. There also is no evidence that tolerance or addiction occurs. Failure to continue treatment aggravates the "revolving door" process.

Although the phenothiazines and similar drugs find their greatest applicability in the treatment of schizophrenia, they also afford symptomatic help in other psychiatric conditions such as mania and the detoxification of alcoholism and drug addiction. Their calming powers assist the surgeon and anesthesiologist in preparing patients for surgery by allaying pre- and postoperative anxiety. Their ability to potentiate the action of narcotics and sedatives is both useful and desirable. Their antiemetic properties are well documented in medicine and obstetrics. So diverse and versatile are their actions that I believe an injectable phenothiazine should be carried in every physician's emergency bag.

Minor tranquilizers. The minor tranquilizers—meprobamate, chlordiazepoxide, and its congeners—are used in the treatment of the neuroses and related conditions in which disorganization of the personality is not extensive. They also have other therapeutic properties. These compounds relieve skeletal muscle spasms. Intravenous diazepam is indicated in the treatment of status epilepticus and may be useful in endoscopic procedures and cardioversion.

Psychotherapy

There probably is no treatment procedure which is as difficult to describe, understand, teach, or define as psychotherapy. All young psychiatric residents are eager to learn it, but an easy primer detailing technic and guaranteeing success is not available.

Psychotherapy may be defined as the act of influencing behavior by psychologic measures arising out of a significant relationship which is developed between a physician and his patient extending over time. In this strongly affective relationship there exists the potential for significant change in the patient. A psychotherapist is trained to understand the anatomy or organization of the personality, to recognize the elements producing disharmony and discord, and to formulate a plan for relieving the ataxia.

It is the practice of psychotherapy accomplished through interviews which has resulted in the psychiatrist being called the talking or sitting physician as contrasted to other more action-oriented physicians. Mere talking or conversing with a patient is not psychotherapy. Conversation is a verbal exchange between people for their mutual benefit and satisfaction. Psychotherapy is not an aimless, verbal perambulation. It is patient oriented and is carried on for the purpose of relieving the patient's discomfort or suffering. And it is not a painless procedure. A successful psychotherapist has learned to be comfortable in the role of an observer and has learned when not to talk.

The concept of psychotherapy is complicated by the fact that there seem to be so many varieties. Some are identified according to the founder or principal proponents. Others, such as abreactive or ventilative psychotherapy, are associated with what is expected of the patient. The activity of the therapist may identify the treatment as being directive, nondirective, supportive, or exploratory. The therapy may be superficial or intense, analytically oriented or one with insight. Ordinarily one is not equally proficient with all forms of treatment. There probably are particular kinds of patients with which one can work more comfortably and successfully. Experience will provide a solution to the dilemma.

Regardless of the type of psychotherapy used, the goal is essentially the same. We are trying to alleviate suffering and help patients handle their feelings, behavior, and motivations in a more effective manner.

Stresses both past and present, conflicts, and problems which have produced symptoms are explored.[5]

I have heard rehabilitation experts frequently criticize physicians for being "too pathology- or disease-oriented" and not attentive enough to the assets of the patient. Since psychotherapy is usually a time-consuming procedure there is an opportunity to elicit and use strengths of the patient while his pathologic condition is being dissected out or explored. It has been said that the ideal candidate for psychotherapy is young, attractive, successful, talkative, and intelligent. Although these may be desirable attributes for therapy, they are rarely encountered in one patient, and, indeed, are not requisites for successful treatment.

It is apparent that I believe psychotherapy is a skilled or artistic procedure, hard to define, difficult to teach, and time consuming. Unfortunately busy physicians have too little time. However, if you are interested in acquiring skill in psychotherapy I am sure there are courses in the psychologic aspects of medical practice available in this area. On the other hand, you probably practice more psychiatry than you think and with a little expertise can be even more effective and can make some of your routine procedures psychotherapeutic.

Procedure

Whenever you encounter a patient with a clearly identifiable emotional problem or with a rather obscure set of symptoms you should be prepared to spend time with him. Some physicians have such patients rescheduled as the last patients of the day so as not to be clock-conscious. The importance of the first patient contact cannot be overemphasized. That is the time to obtain a comprehensive history and, if possible, the patient should be given ample opportunity to speak spontaneously about his chief complaint. If the interview is kept open-ended the patient will have the feeling of engagement rather than reaction to interrogation. While the patient talks, the physician observes and listens. Alterations in the speech or behavior of the patient not infrequently provide the first clue to inner turmoil—for example, a deviation in eye contact, blinking, a quivering in the voice, easy distractibility to noises outside the office, and so on. When depression is suspected I sometimes find it helpful to close my eyes and just listen to the words. After the patient has had an opportunity to present his complaint you can then ask some specific questions. A complete history will include information about family, marital status, educational and vocational adjustment, and a detailed drug history. Your history taking should be comprehensive enough to contain the minimum elements of a mental status examination. What is the appearance of the patient? Are there any unusual mannerisms? Is his speech a good medium of communication? How does he speak? Is speech flighty? What is the prevailing mood? Is it one of depression or elation? Is the feeling tone appropriate to the material being presented? If you suspect the presence of suicidal ideas, hallucinations, or delusions ask the patient. Is the patient oriented in all spheres? Can he interpret simple proverbs? Can he do simple tasks of calculation? Are there any aberrations of recent or remote memory? The initial visit will also include a careful physical examination. Some of the preceding information may have been obtained while the physical examination was being done. It isn't essential that these three procedures be done as separate entities. Combining parts of each may be helpful.[6]

Treatment

We have now arrived at a point of decision. We suspect or are convinced that an emotional disorder is present. If, by virtue of the symptoms, there is reason to believe that the patient's illness constitutes a threat to his life or the safety of others, he should be referred for hospitalization. Acute crisis situations, neurotic problems, psychosomatic disorders, recurrent exacerbations of a chronic psychiatric disability, and most depressive disorders lend themselves to office or outpatient management. The severity of the illness will dictate the frequency of the interviews, the time required, and the necessity for drugs. The administration of drugs does not preclude the use of psychotherapy. Drugs may make psychotherapy possible by rendering the patient comfortable, accessible, and communicative. The more florid the symptomatology, the more diffuse the anxiety, the greater the need for drugs. Drugs have been called organizers of behavior. If hospitalization cannot be avoided, the stay is usually shortened. This is illustrated by the following examples.

I am affiliated with a hospital that has three inpatient departments: a private service, a community mental health service, and a resident service. We try to utilize an eclectic approach while being strongly committed to psychotherapy and the maintenance of the individuality of the patient. Since 1954, when the drugs were introduced, the average stay for our patients has declined from one hundred and forty-four days to forty-three days. During the preparation of this report, I found that 80 per cent of the private patients, 90 per cent of the residents' patients, and 93 per cent of the patients on the community mental health service were receiving drugs as either primary or adjunctive treatment.

The results of a very significant research project on the treatment of schizophrenia, supported by the National Institute of Mental Health, have recently been published. This study was under the direction of May[7] and compared five treatment methods for 228 hospitalized schizophrenic patients. The treatment methods used were tranquilizers alone, tranquilizers plus psychotherapy, electroshock, psychotherapy alone, and milieu. Some findings of this study are worth relating. Drugs alone were as effective as the same drug regimen with the addition of psychoanalytically oriented individual psychotherapy. The average length of hospital stay was shortest in the group treated with drugs alone, and the cost of hospitalization for this group was also the least expensive. Psychotherapy alone was only slightly more effective than milieu treatment, and the average length of the hospital stay for these discharged patients was the longest. The results of this study emphasize the importance of the drugs in the treatment of schizophrenia and are not an indictment against psychotherapy in all conditions.[7]

The discovery and development of the psychopharmacologic drugs has revolutionized the care of the mentally ill, has removed much of the pessimism concerning mental illness, and has done much to reidentify psychiatry with medicine. Unfortunately these drugs are not the panacea we hoped for. They have stimulated research. New drugs, both synthetic and naturally occurring substances, will be developed and submitted to clinical investigation. Temporal patterns, biologic rhythm,[8] and new delivery devices may represent directions of future research.

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DAVID K. MERINEY, M.D., Editor

HYPERSENSITIVITY PNEUMONITIS DUE TO ORGANIC DUST INHALATION*

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Most of the hypersensitivity diseases in man involving the respiratory tract occur as asthma or rhinitis, in which the participating antibody is probably immunoglobulin E and its combination with specific antigen releases pharmacologic mediators from sensitized cells. Recent evidence has indicated that additional immunologic processes, possibly involving antigen combining with precipitating antibody of the immunoglobulin G class may play a role in the genesis of hypersensitivity responses other than asthma.[1] These disorders may be grouped under the general term of hypersensitivity pneumonitis or extrinsic allergic alveolitis and occur in both atopic and nonatopic individuals. The diseases are the result of reactions to a variety of inhaled organic dusts and may occur in several clinical forms, probably depending on the immunologic responsiveness of the patient and the intensity of exposure to the dust.[1-5]

Etiology

Almost any inhaled organic dust can cause sensitization and a subsequent hypersensitivity pneumonitis (Table I). The offending dusts may be derived from animal proteins, as in pigeon breeders' disease, in which the inhaled proteins are dried avian materials,[5] or pituitary snuff takers' disease in which the inhaled pituitary powder contains bovine or porcine proteins.[6] Other sources of dusts include a variety of vegetable materials contaminated with fungi which may also cause hypersensitivity reactions as seen in farmer's lung or bagassosis. In these disorders the inhaled vegetable dusts are contaminated with thermophilic actinomycetes, such as Micropolyspora faeni or Thermoactinomyces vulgaris.[7-9] These organisms are ubiquitous in nature and grow best at 45° to 60°C., temperatures usually reached in decomposing vegetation. The spores of these organisms are less than 1 micron in size and can thus reach the alveoli where they evoke an immunologic reaction. Recently, thermophilic actinomycetes have also been found in heating or air-conditioning systems of commercial or residential buildings, and a hypersensitivity pneumonitis develops also in certain individuals in those environments.[10,11]

The inhalation of other fungi may also cause a hypersensitivity pneumonitis. Workers removing the bark from maple logs and inhaling the spores of Cryptostroma corticale,[4] woodworkers exposed to redwood dust containing Graphium species,[12] individuals working in cheese factories in which Penicillium caseii spores may be inhaled,[1] or brewers working in malt factories where spores of Aspergillus clavatus[1] may be present in the environment also become sensitized. It is likely that the list of inhaled organic dusts will grow as exposure to newly recognized antigens increases.

Clinical presentation

The clinical features of these disorders depend on the immunologic response of the patient, the antigenicity of the organic dust, and the intensity and frequency of exposure.[1-5] In general, the manifestations are similar regardless of the organic dust inhaled, and the hypersensitivity pneumonitis should be considered as a syndrome with a spectrum of clinical features. In addition, bronchospasm or rhinorrhea may develop immediately following inhalation of the dust by the atopic individual, and this reaction can be followed

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TABLE I. Organic dusts involved in hypersensitivity pneumonitis

Disease Entity	Antigenic Material Inhaled	Antigen
Induced by inhaled microorganisms		
Farmer's lung	Moldy hay	Micropolyspora faeni or Thermoactinomyces vulgaris
Bagassosis	Moldy sugar cane	Micropolyspora faeni or Thermoactinomyces vulgaris
Mushroom picker's lung	Mushroom compost	Micropolyspora faeni or Thermoactinomyces vulgaris
Pneumonitis due to contaminated air-conditioner or heating system	Dust from furnace or air-conditioner	Micropolyspora faeni or Thermoactinomyces vulgaris
Maple bark disease	Moldy maple bark	Cryptostroma corticale
Sequoiosis	Redwood dust	Graphium species
Suberosis	Moldy cork dust	Moldy cork dust
Cheese washer's lung	Cheese particles	Penicillium caseii
Paprika splitter's lung	Paprika dust	Mucor stolonifer
Malt worker's lung	Malt dust	Aspergillus clavatus
Induced by inhaled serum proteins		
Bird breeder's lung	Avian dust	Avian proteins
Pituitary snuff taker's lung	Pituitary powder	Bovine or porcine proteins

hours later by the features of hypersensitivity pneumonitis. The nonatopic patient, on the other hand, will respond only with a respiratory type reaction characteristic of hypersensitivity pneumonitis.

Acute form

The most common and most easily recognized form of hypersensitivity pneumonitis results from intermittent exposure to a specific organic dust.[1-5] Respiratory and systemic symptoms of cough, dyspnea, chills, fever, malaise, and myalgia resembling a systemic viral or bacterial infection develop in the sensitized patient within four to six hours of exposure. The symptoms may persist up to twelve hours, and the patient recovers spontaneously only to have the symptoms recur with reexposure. Frequent or severe attacks may also be associated with weight loss and anorexia. Physical examination of the patient during an attack reveals an acutely ill, dyspneic patient with prominent bibasilar moist rales. The findings disappear within twelve to eighteen hours after the exposure as the patient recovers, and between attacks the patient is asymptomatic.

During the acute attack, a leukocytosis as high as 25,000 may be seen. Eosinophilia is unusual but may be as high as 10 per cent. Elevated levels of all the immunoglobulins are often seen. Normal pulmonary function studies can be demonstrated during an asymptomatic period of the acute form of hypersensitivity pneumonitis. However, four to six hours after exposure to the offending antigen there is reduction in vital capacity, decrease in diffusing capacity, and decreased pulmonary compliance. Some patients also demonstrate decreased expiratory flow rates and one-second forced vital capacity, indicating airway obstruction. Fine nodular densities and peripheral infiltrations suggestive of interstitial as well as alveolar involvement can be seen on chest x-ray films.

Avoidance of exposure to the offending dust or therapy with corticosteroids results in disappearance of all symptoms and return to normal of the laboratory tests. Continued intermittent exposure of the offending dust may, however, lead to more permanent pulmonary function and abnormal findings on x-ray films as well as progressive respiratory insufficiency.

Subacute form

A few individuals have a more insidious type of disease with infrequent acute attacks.[1-5] These patients are often exposed to small amounts of antigen over long periods of time. The symptoms resemble a progressive bronchitis with dyspnea, chronic productive cough, anorexia, fatigue, and weight loss. Pulmonary function abnormalities of progressive restriction, diffusion defect, and increased stiffness of the lung can be demonstrated. Roentgenograms of the chest may show fibrosis or at times may be normal. These patients are usually thought to have recurrent episodes of influenza, chronic bronchitis, idiopathic pulmonary fibrosis, or Hamman-Rich syndrome. Although the clinical and laboratory abnormalities disappear following corticosteroids or prolonged avoidance of exposure, the response is slower than in the acute form.

Chronic form

In some cases of hypersensitivity pneumonitis, chronic irreversible lung damage may occur.[5] Fibrosis with irreversible pulmonary insufficiency can be seen in long-standing cases of farmer's lung or in patients keeping parakeets, budgerigars, or lovebirds. Restriction, diffusion defects, and "stiff" lungs, which do not respond to therapy, may develop in these individuals. Interstitial fibrosis with granulomatous formation as well as thickening of alveolar walls have been demonstrated in lung biopsies of some of these patients.[1]

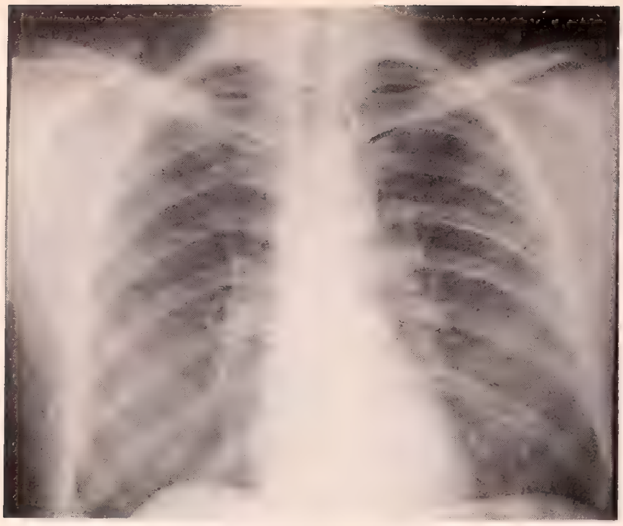

FIGURE 1. Roentgenogram of patient with hypersensitivity pneumonitis due to inhalation of avian antigens. Note fine nodular infiltrates.

In a few patients with farmer's lung, pigeon breeders' disease, or bagassosis, pulmonary function tests have shown marked elevation of the residual volume, diminished flow rates, and loss of pulmonary elasticity, suggestive of emphysema.[5] Histologic examination in these cases has revealed obstructive bronchiolitis with distal destruction of alveoli. These patients do not usually respond to bronchodilator or corticosteroid therapy or even prolonged avoidance of exposure.

X-ray features

Hypersensitivity pneumonitis cannot be distinguished by x-ray film from other nonimmunologic interstitial disorders.[1-5] Roentgenogram findings may be normal or may show recurrent interstitial nodular infiltrations or fibrotic changes, depending on the stage of the disease (Fig. 1).

Pathologic features

The histologic features of the lung in hypersensitivity pneumonitis depend on the stage of the disease at the time the biopsy is obtained.[1-5] Early in farmer's lung, bagassosis, or mushroom picker's disease, there is infiltration of alveolar walls with lymphocytes. Plasma cells and histiocytes containing foamy cytoplasm may also be seen within the alveolar spaces. Later, there is infiltration of the interstitium with mononuclear cells and scattered giant cell granulomas. Still later, fibrosis of these areas occurs, and an organizing bronchiolitis obliterans may be seen.

In pigeon breeders' disease similar changes may be found. In addition, there are foamy macrophages in the interstitial and intra-alveolar areas. Bronchiolitis obliterans with peripheral destruction of alveoli has been observed in some chronic cases of farmer's lung, bagassosis, or pigeon breeders' disease.[1,5]

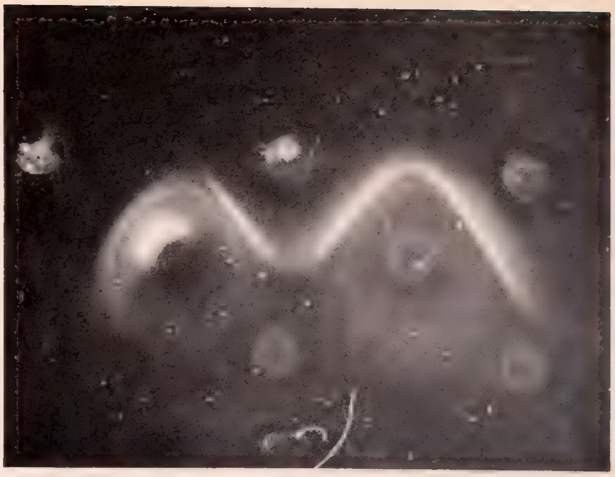

FIGURE 2. Photograph of gel diffusion of serum of pigeon breeder (center well) against pigeon antigens.

Immunologic features

The characteristic immunologic feature of these disorders is the occurrence of precipitins against the offending antigen which can be demonstrated by gel diffusion technics (Fig. 2). Immunoelectrophoresis has shown that these antibodies belong to the immunoglobulin G class of immunoglobulins and are present in relatively high titers. Up to 50 per cent of asymptomatic individuals exposed to the same antigen, however, also have precipitins but of lesser titer.[13] Thus, the finding of precipitins must be considered in light of the clinical history.

Skin tests with thermophile antigens have been shown to be unreliable because of nonspecific irritation.[1] In the disorders, such as pigeon breeders' disease, in which serum proteins are implicated, skin tests may be of value.[5,6] Both immediate wheal and flare and late (four to six-hour) skin reactions, resembling the Arthus phenomenon, can be observed. The late reaction begins with edema and erythema and may progress to central necrosis but usually subsides within twenty-four hours unless there is necrosis. Histologic examination of biopsies of such skin reactions have demonstrated lesions consistent with Arthus reactions with a polymorphonuclear and plasma cell infiltration of the area surrounding the vessels.[1] This type of late reaction may also occur in the lung after antigen inhalation, but there is no clear evidence indicating the role of precipitating antibody in the genesis of hypersensitivity pneumonitis.

Diagnosis

The diagnosis of hypersensitivity pneumonitis can usually be made by an appropriate environmental history, clinical laboratory, and serologic studies, and a trial of avoidance and reexposure to the suspected antigen source. The more insidious or progressive forms may be more difficult to diagnose, and at times a lung biopsy may be necessary to make a definitive diagnosis.

On occasion, the diagnosis may be confirmed by cautiously exposing the patient to the suspected antigen and carefully observing his reaction.[1-5] This may be carried out during an asymptomatic period by allowing the patient to enter the suspected environment (barn, coop, and so on), and then observing the patient frequently over the next eight hours for symptoms or signs of hypersensitivity pneumonitis.

Although less desirable than observation after such natural exposure, some patients may be tested by careful inhalational exposure to sterile nonirritating extracts of the suspected antigen. Minimal demonstrable abnormalities in pulmonary function or a rise of a few degrees in temperature four to six hours after exposure may clarify the diagnosis.

Pathogenesis

The mechanism(s) resulting in hypersensitivity pneumonitis are not yet known. The characteristic precipitating antibodies may only reflect exposure to antigen rather than disease. There have been few features of the Arthus reaction characteristic of a precipitating antibody-antigen interaction described in lung biopsies of patients; in fact, the lung lesions are more consistent with a delayed or tuberculin type of reaction. Further studies will be necessary before the immunologic mechanism(s) involved in the genesis of the lesions are known. Perhaps several different mechanisms will be found to play a role in the cause of these diseases.

Therapy

As in other allergic disorders, the most important therapeutic measure should be avoidance of the offending antigen once it is known. The use of masks with filters capable of removing the antigen, appropriate ventilation of working areas, or even changing of occupations may be necessary if the disorders are occupational.

Drug therapy may be needed in these disorders when avoidance cannot immediately be carried out. Antihistamines or bronchodilators usually have no effect on the symptom pattern, but the response to corticosteroids is often dramatic. Moderate doses of these drugs, as well as avoidance, may be necessary to determine if reversibility of the clinical abnormalities is possible. Hyposensitization should not be carried out since a vasculitis or serum sickness may occur when the injected antigen combines with precipitating antibody. The immune complexes formed are toxic to the vessels, and a vasculitis may result.

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DEVELOPMENTAL FACTORS IN FUNCTIONAL SEXUAL DISORDERS

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The original purpose of this report was to evaluate the use of psychoanalysis and psychotherapy as treatment modalities for patients suffering from sexual disorders of psychogenic origin, that is, the various forms of impotence and frigidity. Homosexual disturbances were eliminated from the study as being a separate entity. Also excluded were individuals who had never attempted intercourse. As our work progressed, we found that in reviewing the case material of all patients who had been treated for sexual dysfunction at the Columbia Psychoanalytic Clinic, there was a wealth of pertinent data relating to the patients' past life experiences; their religious, ethnic and cultural backgrounds; and their present life performance. Accordingly, we divided the study into two parts: (1) an attempt to further define the origin of these disorders in terms of early development and the continuance of these disorders in the patient's current life functioning, and (2) an evaluation of the effects of psychiatric treatment, not in general, but only with respect to the specific isolated symptom—the functional sexual disorder.

Although we studied a clinic population, by and large the patients could be described basically as members of the middle class. The same holds true for most investigations of sexual dysfunction; few studies concentrate on sexual disorders or their treatment in a lower-class sample. On the Vanderbilt Clinic Psychiatry Service, which represents a relatively low socioeconomic group, it was difficult to find a male or female patient who sought help primarily for a sexual disorder. The presenting complaint was usually of a physical nature or concerned with some form of acting out by a family member—for example drug use, excessive drinking, aggressive behavior, and the like. One has to postulate that sexual disorders are either not discussed by this group of people, not understood, or at times, are considered by them to be basically physical in nature.

In our series there were 96 patients, 35 males and 61 females. Sixty-one per cent of the group had been married. Their ages ranged from eighteen to fifty plus years, the majority being in their middle twenties to early thirties. The educational level went beyond high school. Most of the patients were white-collar workers; a few were professional. Religious backgrounds were predominantly Jewish—more than 50 per cent—with the remainder being fairly evenly divided between Protestant and Catholic. In all, the make-up of the patient group reflects quite accurately the composition of other patient groups in the Columbia Psychoanalytic Clinic population.

Methodology

The records of all patients whose primary symptom was that of a functional sexual disorder and who were treated at the clinic over a seventeen-year period were studied. Each individual session was reviewed to pick up data that might have been missing in the initial history and final summary. This was particularly important as far as the female patients were concerned; while the males brought out their sexual difficulty as a presenting complaint, females were more likely to introduce it at a later date, during a session in the first few weeks or months of treatment. Their original reason for seeking help was usually a sense of anxiety, depression, or "a lack of fulfillment."

A summary was prepared on each patient which included developmental history, current life situation during treatment, and the results of treatment. Factors such as familial history, parental attitudes toward sex, previous sexual experiences, partner's sexual performance, and so on were all carefully studied. If we felt that the records did not supply adequate information, we then elicited additional material from the Columbia Psychoanalytic Records Project. This group contributed substantially to our eventual findings.

If, at this juncture, we still had not acquired sufficient data we contacted the treating analyst by letter or telephone to obtain a follow-up of the patient. The chief problem that presented itself was a lack of patient interviews. We are all

In this, the first of two reports dealing with psychogenic or functional sexual disorders, the authors attempt to define the causes of the disorders in terms of the patients' early development, evironmental interrelationships, and the continuance of these disorders in their current life functioning. Ninety-six patients (35 males and 61 females) comprising the study group were treated at the Columbia Psychoanalytic Clinic. The family histories of these patients were more disturbed than those of other patient groups. Fifty seven per cent of the patients had at least one parent who evidenced severe problems such as alcoholism, abnormal sexual behavior, incest, exhibitionism, psychosis, and excessive brutality. Almost one third of the patients were partners to some form of bizarre sexual activity within the family structure. An equal number had been reared in an atmosphere of excessive prohibition. Other significant findings were the high incidence of death within the immediate family, and prolonged separation from either the mother or father before the patient reached sixteen years of age. A large number of patients had been subject to a severely traumatic initial sexual experience. One third of the study group reported an overt sexual problem on the part of their spouse.

aware that there is considerable resistance in the field of psychoanalysis to follow-up inquiry and we did encounter understandable opposition in this study. As a result, patient interviewing was not included. However, many of the treating analysts had long-term follow-ups of their patients.

In view of the fact that the majority of patients had been treated by analytic students and therfore, some criticism of our findings might arise, we decided to interview more experienced graduate analysts from Columbia and other institutes in the New York area. So as not to be selective, we would contact the analyst by telephone, present our definitions of impotence and frigidity to him, and ask if he were willing to be interviewed about the patients he had treated in a year of our choice. This eliminated any possibility that the analyst might unconsciously select a "good" year in terms of results. Usually we designated years in the late forties or early fifties for the older analysts and years in the early sixties for the younger ones. The findings of this group corresponded with the findings in the clinic group.

Personality structure

The general life adjustment of many patients, exclusive of sexual pathology, appeared to be adequate. Diagnostically, 65 per cent of patients were classified as having personality disorders, 33 per cent as psychoneurotic, and only 2 per cent as schizophrenic. The majority evidenced a marked obsessional character structure with varying degrees of anxiety. Depression was common, more noticeable in the female than in the male population. The males tended to be affable, although not particularly outgoing, and as a rule they were friendly and related well to others on a superficial level. It was our impression that the same factors causing the sexual inhibition also generated excessive constraint in other areas, that is, a basic lack of self-esteem, feelings of worthlessness, and a considerable degree of conscious or unconscious fear. Some males overcompensated by demonstrating what they believed to be an aggressive masculinity, but these were relatively few in number.

The females, on the other hand, presented a rather obsessive controlling pattern. Standards and rules were strictly adhered to, and phobic symptoms were common. Many of the phobias related to fears of suffocation or enclosure. A small group displayed very seductive superfeminine facades. Surprisingly few female patients manifested a gross hysteric personality structure. In terms of the neuroanatomic innervation, since the primary elements are sensory and motor, it seems likely that frigidity would be a conversion symptom. Conversely, in male impotence and premature or retarded ejaculation, the autonomic nervous system, both sympathetic and parasympathetic, plays a larger role, so that these disorders could be characterized as more psychophysiologic in nature.

Past life experience

Without question, the family history of these patients was more markedly disturbed than that of other patient groups we have studied. We noted a considerably higher degree of overt, gross pathologic conditions such as psychosis, alcoholism, abnormal sexual behavior, incest, exhibitionism, and at times, excessive brutality on the part of either the mother or the father. In reviewing the family background of patients with ulcerative colitis (a psychophysiologic disease), there is certainly ample evidence of significant psychopathology, but it is of a far more subtle nature than that encountered among patients with sexual disorders. To go one step further, and as might be expected, when one examines the family relationships of patients with systemic lupus erythematosus (an illness that has no psychogenic cause) the extent of pathology is no more or less than would be found in a cross segment of the general population.

Fifty-seven per cent of our patients with sexual dysfunction had at least 1 parent who manifested severe problems such as have been cited. While this had no real effect in terms of improvement and is not necessarily a prognostic factor, the degree of familial psychopathology is unquestionably significant in the eventual development of the sexual disorder.

Basically, the early developmental pattern of the group from birth to five years of age did not appear to deviate significantly from the norm. If it did, then the memories had been repressed and were not accessible. However, between this period and adolescence, 32 per cent of both male and female patients were partners to some form of bizarre sexual activity within the family structure. One father initiated intercourse with his six-year-old daughter but stopped at point of penetration for "fear of hurting her." Another father practiced cunnilingus on his daughter over an eight-year period. Several female patients had been subjected to frequent genital fondling on the part of the father or a paternal surrogate. There was also a history of obvious seductive and provocative behavior towards male children on the part of the mother or a maternal figure. This was manifested by frequent states of undress, excessive caressing, and sleeping together. There was less overt incestual activity among the male population.

Case 1. The patient was a pleasant, bright young lawyer, married, with two children, whose presenting complaint was premature ejaculation. In terms of his sexual history, he had never experienced successful intercourse. He was reared in New York, and had a sister five years his junior. The mother was an extremely attractive and apparently narcissistic female who paid very little attention to his basic needs such as food, clothing, and other care. He recalls that at the age of six years he would be invited into the bathroom with her daily while she took her shower. To quote him: "It was like going to a burlesque show every day from the age of six to fourteen years. Her body was quite beautiful and she used the towel to cover up, always though, exposing her breasts or genitals at one time or another." After this he would run to his room in a state of sexual excitement and masturbate. On the father's arrival home the mother would recount the son's daily wrong-doings, which consisted chiefly of temper tantrums and teasing his younger sister. As far as the patient could recall, he was spanked by the father daily from the age of eight to twelve years. The father never had any knowledge of the shower scene, nor was the sister ever present during these interludes. It was a "secret" between mother and son. Unconsciously, this patient equated the sexual stimulation and masturbatory release to the resulting punishment. As a consequence of the mother's constant provocation, the boy was never allowed to go through a normal latency period.

Case 2. This patient was a twenty-five-year-old secretary, married for two years, with no children. She first appeared with complaints of depression and frigidity, stating she had never been orgasmic in intercourse, either in her one premarital affair or with her husband.

She was reared in New York City. She had 2 brothers, one seven years her senior and one three years her junior. She did not feel close to her older brother and fought constantly with her younger one until he went away to school at age ten.

Her father, a pharmacist, was a cold and moody man by nature, except with the patient. If home, he would accompany her to the bathroom whenever she urinated and wipe her. This continued until after she had reached the age of eight years. When the patient was twelve, her father slept in her bed one night; she felt his erection and became terrified. At that time she also had wishes that her mother would die—accompanied by considerable guilt.

The mother, a critical, domineering, antagonistic woman, constantly belittled her husband and threatened to leave home. She was cold, uncommunicative, strict with the patient, and openly expressed her preference for her sons.

The patient was totally unprepared for the onset of menstruation which occurred at age thirteen. At this time, the mother began to explain that she herself had never enjoyed sex and that the patient "should not" enjoy sex either.

The patient's masturbatory experience began at age fourteen—for a limited time—with marked guilt. Her fantasies were of being raped on a doctor's table. She does not recall if she was orgasmic during masturbation.

The mother imposed severely restrictive social and sexual curbs during the patient's adolescence and forbade her to go out with boys until she was eighteen. Her first dating experience occurred at age nineteen. The following year she took a secretarial position and shortly thereafter moved away from home. At age twenty-one she had a brief affair with her employer and was not orgasmic. Two years later she married a young accountant and up to the time of beginning her analysis, had still not experienced orgasm.

Both sexes frequently participated in various forms of sexual activity—primarily mutual masturbation—with siblings of the opposite sex. One patient and her sister regularly had sexual relations with their brother for over a year's period of time in early adolescence and stopped only when discovered by the father.

Almost all of the patients reported a remarkably pathologic history of disinterest on the part of one or the other parent, manifested by lack of warmth, lack of expression or concern, in fact, lack of almost any meaningful interpersonal communication with the child during its formative years. Surprisingly, this did not seem to affect the child's peer relationships, social activity, or school experience. In terms of a behavioral adjustment, there was no striking deviation from what one would expect to find in other segments of the population.

It was our impression that those children who were deprived of an atmosphere of warmth and care within the family unit gravitated toward friends, school teachers, and parental substitutes, where at least some of their dependency needs could be fulfilled. In this group, the males were rarely leaders; they tended to be followers who relied on the strength of another male or the care of the female. There was no discernible pattern in terms of the female patients.

Fourteen per cent of the patients came from what could be termed an extremely rigid religious background. Included in this group were Orthodox Jewish, strict Catholic, and fundamentalist Protestant families. There was considerable evidence of authoritarianism and punishment, as well as marked implantation of fear and guilt. Similarly, 16 per cent of patients were reared in an atmosphere of continual excessive sexual prohibition, with overt interdictions and direct threats instilling fears of pregnancy in females or predicting severe disease from masturbation or intercourse in male children. It was our impression that any contributory factor to later sexual difficulty derived from the actual imparting of fear, guilt, and punishment per se—whether the prohibitions were based on a religious, moral, or sexual code did not appear to be significant. In all, 30 per cent of the patients had been reared in families either of excessively rigid religious backgrounds or with overt sexual restrictions.

Another 25 per cent of the patients grew up in households where the subject of sex was totally ignored. There was a lack of developmental or sexual education on the part of the parents and strict avoidance of any discussion or comment. "Sex" was inferred to be "dirty, shameful," and therefore unmentionable. These parental attitudes usually persisted throughout adolescence and longer, frequently resulting in the patients' total ignorance of sexual functioning at the time of their first such experience. These patients were also remarkably unknowledgeable in regard to genital structure in themselves or the opposite sex.

Other significant findings in the patients' histories were the high incidence of (1) death within the family structure, and (2) prolonged separation from either the mother or father before the patient reached sixteen years of age. Twenty-eight per cent experienced the death of a member within the immediate household, 18 per cent of these being parental losses, 10 per cent the loss of a sibling. The familial death rate for female patients was 36 per cent, as compared with only 14 per cent for male patients. In the general population at the time that these patients were reared, the death rate of an immediate family member before the age of sixteen years would be approximately 9 per cent. Our findings correspond to those reported in another study where the patient population was divided into what were considered satisfactory and unsatisfactory marriages as regards warmth, closeness, and communication. The investigators found a much higher incidence of familial death prior to age fifteen among those marriages categorized as unsatisfactory than among the satisfactory marriages. The authors concluded that such a parental loss became an influential factor in the patient's capacity to enjoy a warm, intimate relationship later in life. The death or separation was generally so traumatic to the individual that future relationships were limited due to an unconscious fear of loss in their current life and a basic, again unconscious, inability to rely on others, including their marital partners. Unfortunately, that study did not go on to investigate the sexual adaptation of the group in question.[1]

Traumatic separation which included divorce, long-term separation of one or both parents due to desertion, war, illness, and, at times, "business," occurred in 23 per cent of the group. The separations discussed here were accompanied by a considerable degree of anger and frustration on the part of one or the other parent; for example, the fact that a father might be in military service was not faced as a situation to be realistically accepted, but was used as a lever to bring out feelings of hostility on the part of the mother, reinforcing and fixating what might otherwise have been normal fears of desertion on the part of the child. On occasion the father used these technics of avoidance deliberately, as a means of dealing with his inability to tolerate the contact and interaction that is required in any family unit.

In all, 51 per cent of our patient population experienced either a death in the immediate family or a prolonged, traumatizing parental separation during the first fifteen years of life.

It has frequently been remarked in the literature that a normal masturbatory history predicates a greater capacity for future normal sexual relationships. Consequently, we were somewhat surprised to discover that statistically, the masturbatory history of our patient group corresponded quite closely to that of the general population. Ninety-one per cent of the males and 69 per cent of the females had an essentially typical pattern of masturbation; figures which are equivalent to those of Kinsey.[2,3]

Another indication of psychosexual adjustment has been thought to be the presence or absence of conscious homosexual fantasies and desires during masturbation and at other times. In our group they occurred chiefly during adolescence and young adulthood and were reported by 51 per cent of the males and 38 per cent of the females. Unfortunately there are no statistics indicating the occurrence of such fantasies within the general population. Any overt homosexual activity was chiefly preadolescent or adolescent, and confined to occasional, limited episodes. The males manifested a considerably higher amount of anxiety and guilt regarding their early homosexual activities, fantasies, and dreams than did the females, who seemed to be more capable of integrating it into their life experience.

The onset of menstruation and the patient's preparedness and reactions to it were, overall, much the same as one would expect for any cross section of the general population. While some females did entertain feelings of shame and fear, and while there were certainly glaring instances of mishandling on the part of the mother, reaction to menarche did not prove to be a significant predictive factor in the pattern of psychosexual development.

At least 35 per cent of the patients were subject to an initial sexual experience that could only be defined as traumatic—such as rape, attempted rape, attempted incest, intercourse with inability to perform, and so on. About two thirds of these patients were female. The males among this group were, for the most part, those who suffered from severe premature ejaculation or impotency.

As with masturbation, it has been generally assumed that the capacity to "get involved" sexually in adolescence or before marriage, is indicative of a future satisfactory sexual adjustment. While 79 per cent of our patient group had attempted premarital intercourse, only 55 per cent had a successful experience; 72 per cent of females in contrast to only 59 per cent of males. These markedly skewed findings in terms of sexual activity are readily explained by the male and female roles in coitus. The male with total impotence or premature ejaculation for all intents and purposes was unable to penetrate or ejaculate within the woman; the male with partial impotence or premature ejaculation faced failure or rejection by his partner in terms of unsatisfactory performance. In all, 91 per cent of our male patients had attempted premarital intercourse, but 41 per cent were unable to have a successful experience. On the other hand, the female, although sexually unfulfilled, was almost always able to have intercourse, even if she did not reach orgasm. Some responded with varying degrees of pleasure, while others did not.

Sixty-one per cent of the patient group had been married. Many of these marriages were not entirely satisfactory in other areas beside the sexual. On the part of the males there was frequent fear of business or scholastic failures, while the women often lacked confidence in themselves or their mates. In several instances parent-child relationships were blatantly pathologic. It was our impression that the sexual symptom was just one manifestation of a total personality problem that served to limit a mature relationship in many other areas of life.

Fourteen per cent of our married sample had either been divorced or separated by the time that they entered treatment. Two female patients were divorced during the course of their clinic treatment; 3 females and 1 male married while in treatment.

The literature indicates that there is frequently a concomitant, or bilateral sexual deviation. It has often been noted that if one partner has a sexual problem, there is likely to be an equivalent form of disturbance in the spouse. As described in our records, 5 of the 35 male patients had wives with sexual disorders: 1 having dyspareunia, 1 having vaginismus (these are not necessarily psychologic in nature). Three other wives were nonorgasmic. Sixteen of the 61 female patients had partners with sexual disorders: 15 with premature ejaculation (13 severe) and 1 with "consistent poor performance or avoidance."

In terms of improvement, a reciprocal pattern was also observed: as the sexual problem became resolved in 1 partner, the same was likely to hold true for the other, usually to a corresponding degree. Conversely, if the patient's sexual symptom continued, the spouse's impotence or frigidity tended to remain unchanged. There seemed to be a somewhat circular contribution of one partner's abnormality to the other in that the poor sexual performance of one spouse was a definite factor in the prolonging of the partner's sexual symptom.

Comment

It should be noted that we have no review of the literature, mainly because none pertinent to this type of study is available. While excellent individual case histories and summaries of a particular treatment process have been reported in psychoanalytic and psychiatric literature, there are no developmental studies of large patient groups.

It further has to be pointed out that those patients who applied for treatment at the Analytic Clinic may not be representative of other people with sexual disorders. Greater populations and other socioeconomic groups will have to be more intensively studied before any definitive conclusions can be reached as to how developmental factors contribute to eventual sexual maladjustment. We do hope that with the facilities available to us, much more data will become obtainable over the next five years on patients who are seen at the Analytic Clinic or through the International Institute for the Study of Human Reproduction.

One of the striking findings was the low incidence of patients with functional sexual disorders in the clinic population as a whole. Of 1,348 patients treated over a seventeen-year period, only 96 (7 per cent) came with primary psychogenic sexual disturbances.

The extent of trauma these patients were faced with during their developmental years was indeed extreme. Table I lists, in order of frequency, those pathologic elements which, if not causative, were certainly contributory to the development and continuation of the eventual sexual maladjustment. It was our impression that these factors led to an inability on the part of the patients to express their feelings, not only sexually, but also in many other areas of self-assertion or pleasure. In both male and female there appeared to be an excessive degree of emotional control and

TABLE I. Factors contributing to sexual maladjustment

Factor	Per Cent Total	Male	Female
Severe parental psychopathology	57	57	57
Traumatic initial sexual experience	35	40	33
Bizarre familial sexual activity	32	34	31
Excessive religious, moral, and sexual prohibition	30	31	30
Early familial death rate	28	14	36
Sexuality totally ignored	25	34	20
Traumatic familial separation	23	29	20
Bilateral sexual pathology	22	14	26

little capacity to give or receive the warmth and intimacy intrinsically necessary in normal human relationships. For example, more than 50 per cent of our patients experienced a death or distressing separation within the immediate family before the age of sixteen years. In these cases, one would expect that as adults they would retain an inherent, generally unconscious fear of loss, and an inability to give of themselves to another human being because of the impending expected loss of a loved one—a repetition of the painful bereavement in the past. The original loss and resulting depression had never been worked through in the patient's childhood, adolescence, or adulthood.

Masters and Johnson[4] place great emphasis on the initial sexual experience as pathogenic in the development of sexual disorders. While 35 per cent of our total cases were certainly subject to a traumatic first attempt at intercourse, it was our impression that the earlier abnormal situations generated the need for, or an inability to avoid, such an experience and was markedly more significant than the initial sexual encounter itself in maintaining the sexual problem. A totally impotent male is impotent, be it his first, second, or third attempt; the psychologic roots were there before the actual unsatisfactory sexual episode. One frequently sees patients whose first sexual relations prove to be severely upsetting but who do not go on to develop any functional sexual difficulties.

We felt that a bizarre sexual situation within the family unit contributed much more to the patient's maladjustment than did the initial sexual experience. It occurred at an earlier date, tended to be repeated, and continued over a longer period of time. Since the pathologic behavior occurred within the immediate family, the child was virtually helpless in effecting a change without upsetting the family structure. This resulted in conflictual feelings and fears of guilt and desertion, at times due to the child's own sense of guilt at the pleasure derived and at times out of loyalty to the partner, be it mother or father who was involved.

Thirty per cent of the group had been reared in an atmosphere of excessive prohibition, either through religious (14 per cent) or familial (16 per cent) attitudes which were strongly directed against the sexual act as a source of pleasure. It was considered, rather, to be something a female must undergo as a wifely duty or a male had to avoid because of disease, sin, or harming the female who was equated to the mother. Intercourse was for the purpose of reproduction, and any enjoyment derived from the act was secondary, shameful, and "bad."

As described in the records, only one third of our patients stated that their partners also had an overt sexual problem. In view of reports in the literature, one would expect the incidence of bilateral sexual pathology in the clinic population to be appreciably higher. In our next report, it will be seen that a decrease in the patient's pathologic condition had a demonstrable effect on the partner. It was not possible to evaluate the partner's attitudinal disturbance, only the performance abnormality. If an attitudinal problem existed, it was frequently unknown to the patient and did not come up in the analysis.

Summary

Our findings testify to severe psychopathology within the family unit which eventually takes its toll on the capacity of the individual to interact emotionally, as well as physically, with members of the opposite sex. In many of the cases all of this has been masked under the guise of normality. When one reviews the developmental history and bizarre familial background of the patients it is surprising to discover that comparatively speaking, the patients evidenced much less abnormality than did their parents. There are indications that maternal problems had more of an adverse effect than untoward paternal behavior, but as yet we have not been able to arrive at any definitive conclusions. We purposely avoid attempting to apply our findings to any existing psychoanalytic theory, although it is tempting to do so. Our next report will discuss the results of psychoanalysis and psychotherapy on the functional sexual disorders in this group of patients.

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Correlation Conferences in Radiology and Pathology

State University of New York
Upstate Medical Center
Syracuse, New York

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FORAMEN MAGNUM LESION

Case history

Ronald F. Young, M.D.*: This sixty-year-old woman was first seen by her physician for progressive, nonradiating, suboccipital headache of five years' duration. For the last two years she had noted increasing paresthesias in her right forearm and the fingers of her right hand, and during the last year she had complaints of marked upper-extremity weakness and gait unsteadiness. Plain roentgenograms of the cervical spine and a cervical myelogram performed at that time were said to show findings consistent with cervical spondylosis. In view of her presenting complaints, physical findings, and radiographic examinations, an anterior cervical fusion was performed from the fourth through the seventh cervical vertebrae. Postoperatively the patient experienced only transient improvement, and by the time she was evaluated at this institution six months later her complaints of headache, weakness, and paresthesias were even more pronounced. On physical examination, she held her head flexed in obvious pain. Her gait was wide based and ataxic. Muscle weakness was most marked in the right arm but was also present in both the left arm and right leg. The ankle reflexes were absent, although the remainder of her reflexes were symmetrically increased. The plantar responses were extensor. Hypalgesia was present over the entire right arm and over the right side of the body from the third thoracic to the first lumbar dermatome levels. Suboccipital hypalgesia was also present, more pronounced on the left. Most impressive was the disproportionately severe posterior column deficit present in all four extremities.

Results of laboratory examination including blood count, urinalysis, and roentgenogram of the chest were normal. Electromyography and nerve-conduction studies indicated minimal neuropathy without myopathy.

At this point a postoperative myelogram became available for review, and subsequently a repeat cervical myelogram and brachial angiogram were performed.

Eugene F. Binet, M.D.†: The first film included for review is a cross table lateral film from the prone iophendylate (Pantopaque) myelogram performed postoperatively (Fig. 1A). It shows minimal indentations into the ventral aspect of the partially filled dural sac at the fifth to sixth and sixth to seventh cervical vertebrae levels. These appear related to the posteriorly projecting bony spurs present on the adjacent vertebral bodies. Of perhaps more significance is the radiolucent filling defect projecting into the iophendylate column at the level of the foramen magnum. The defect is considerably larger than the shadows cast by either vertebral artery or the odontoid process, and, therefore, a mass at this level should be suspected. A repeat myelogram with special emphasis on the foramen magnum is indicated. Figure 1B is a spot film from the repeat myelogram. It shows a large circular mass in the iophendylate column at the level of the foramen magnum. The mass is intradural in location as it presents a sharp interface to the iophendylate column, and the iophendylate "surrounds" the lesion from all four sides. The cervical spinal cord is well outlined and is deviated to the right side of the cervical spinal canal. The right vertebral artery is draped over the superior pole of the mass. The prone cross table roentgenogram from the cervical myelogram demonstrates a large circular defect projecting into the iophendylate column at the foramen magnum (Fig. 2A, arrows). A supine cross table roentgenogram shows that the filling defect extends superiorly to the posterior margin of the foramen magnum (Fig. 2B, arrows). The

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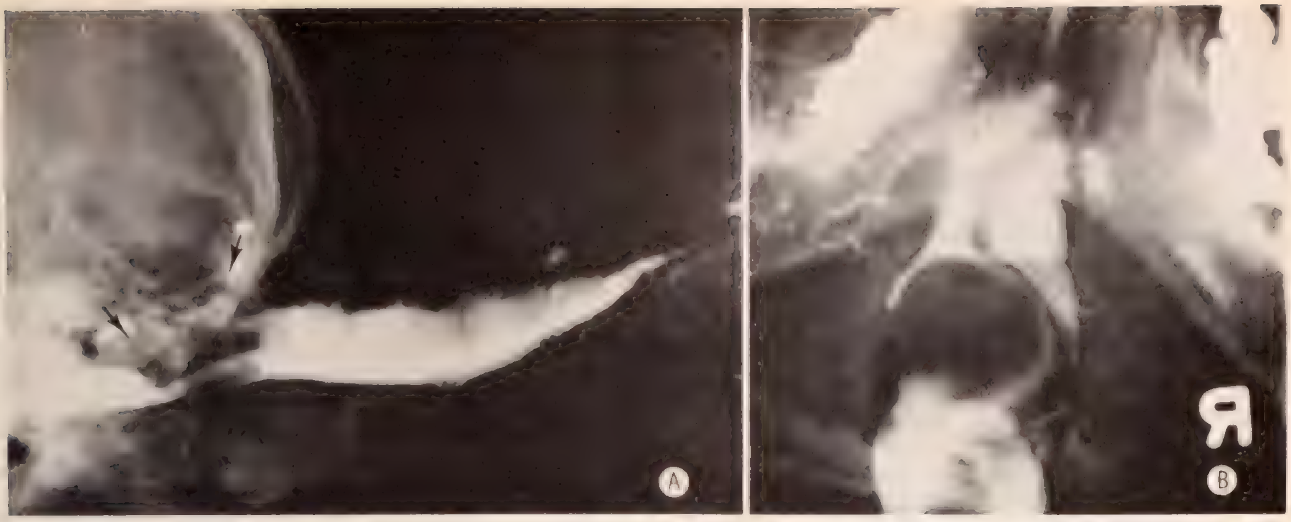

FIGURE 1. (A) Cross table lateral firm, prone cervical myelogram. Note large filling defect projecting into iophendylate column at level of foramen magnum (arrows). (B) Spot film from later prone cervical myelogram. Observe large intradural extramedullary mass displacing cervical spinal cord toward right.

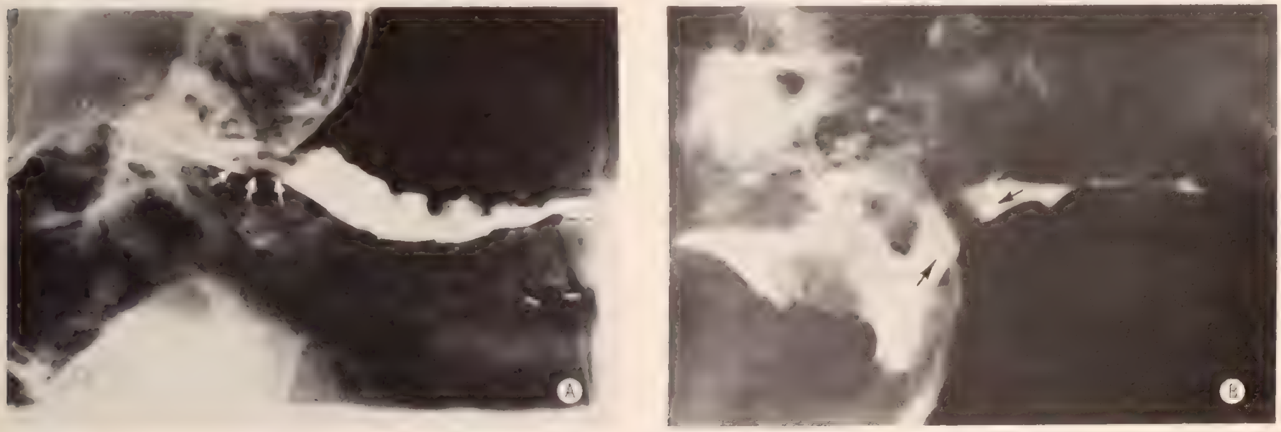

FIGURE 2. (A) Prone cross table lateral film, cervical myelogram. Note large filling defect in iophendylate column at foramen magnum (arrows). (B) Supine cross table lateral film cervical myelogram. Mass extends superiorly to posterior margin of foramen magnum (arrows).

myelographic findings are those of an extramedullary, intradural mass lesion at the foramen magnum arising from the left side of the dural sac. The most likely diagnosis is a foramen magnum meningioma. Because of the somewhat circular appearance of the lesion, the possibility of a giant aneurysm of the left posterior-inferior cerebellar artery, although extremely unlikely, should be considered. The final roentgenogram is the subtraction study from a combined brachial angiogram, arterial phase (Fig. 3). No aneurysm is identified. The left vertebral artery is bowed over the mass while the right vertebral artery is displaced inferiorly (at arrows).

Since there is no suggestion of neural foramen enlargement on any of these studies, the most probable diagnosis remains a foramen magnum meningioma.

Dr. Binet's diagnosis

Foramen magnum meningioma

Surgical findings

Dr. Young: In view of the progressive nature of the patient's disease and in light of the neuroradiologic findings, a posterior fossa craniectomy and upper cervical laminectomy were immediately performed. Figure 4 is an artist's reproduction of the appearance of the lesion at surgery. An intradural extramedullary tumor was found attached by a small base to the ventral and lateral aspect of the dura mater on the left side. It had caused deviation to the right of both the upper cervical spinal cord and medulla oblongata. The second cervical posterior nerve root, a number of spinal accessory rootlets, and several fairly large blood vessels were stretched over the dorsal surface of

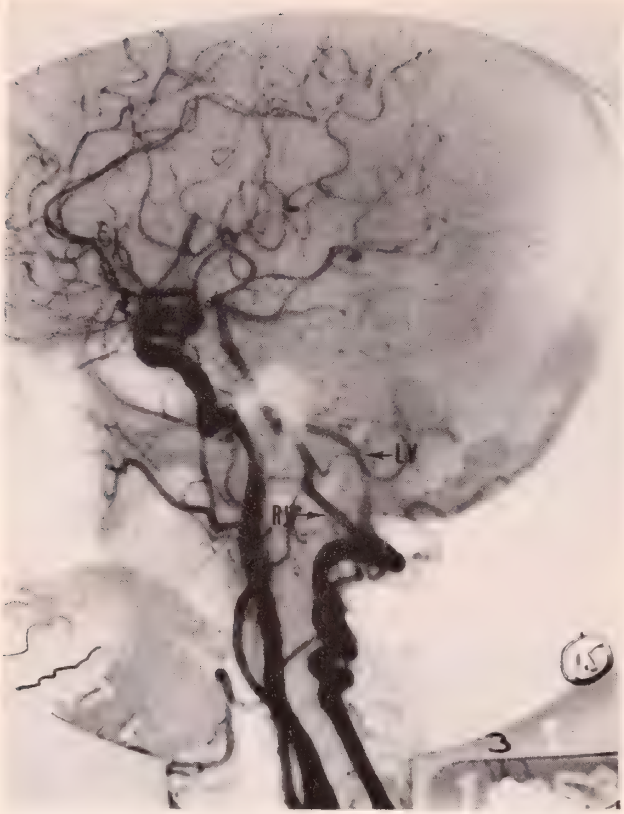

FIGURE 3. Subtraction film combined brachial angiogram lateral film. No aneurysm identified. Both vertebral arteries displaced by tumor mass.

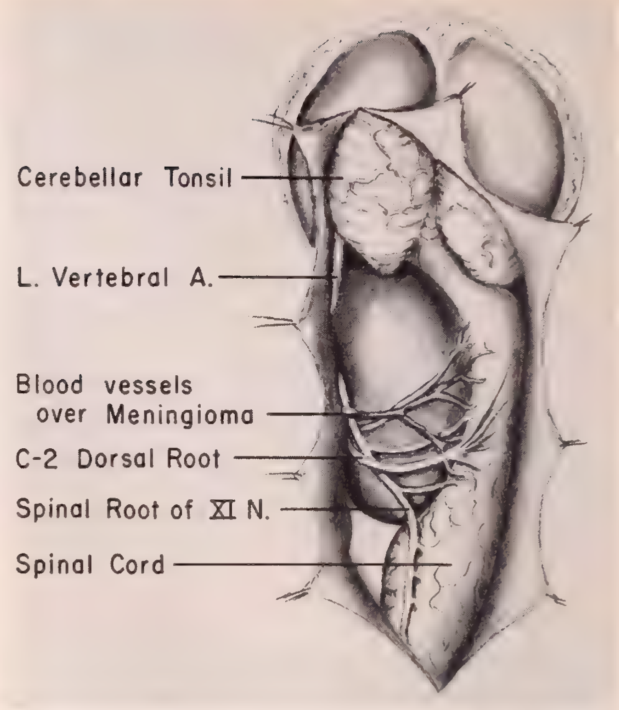

FIGURE 4. Artist's reproduction of appearance of lesion at surgery.

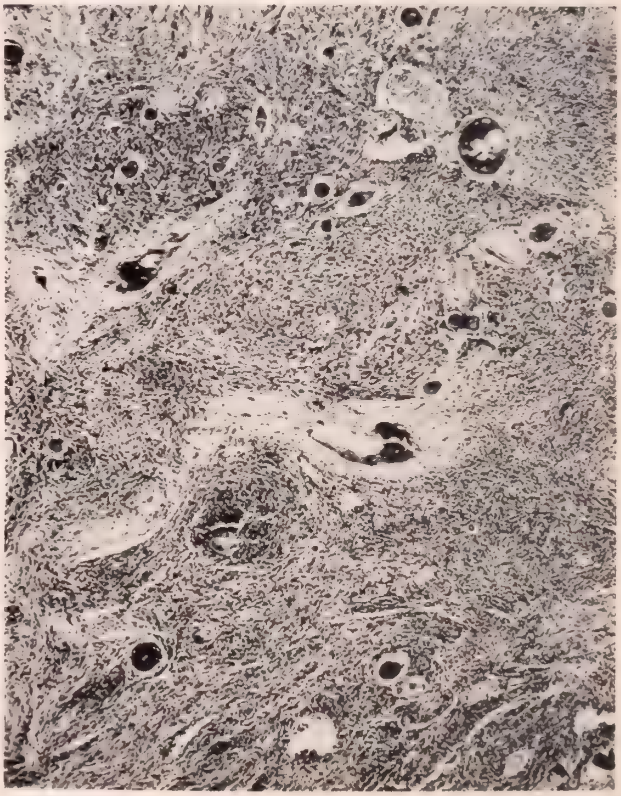

FIGURE 5. Low-power view of meningioma showing spindle-cell pattern with multiple, darkly stained, calcified psammoma bodies (hematoxylin and eosin stain).

the tumor. The left vertebral artery was displaced laterally and dorsally over the superior pole of the tumor, while the right vertebral artery was displaced laterally and ventrally. The tumor was removed in toto and its base coagulated.

Pathologic discussion

Bedros Markarian, M.D.*: An aggregate of tissue fragments approximating a volume of 3 cc. labeled "foramen magnum tumor" was submitted for examination. Portions had a thin, tough, grey, membranous material attached. Some pieces had a gritty resistance when they were sectioned. Microscopic examination of this material shows the spindly nature of the tumor which forms whorls in many areas. Psammoma bodies were also a prominent finding (Fig. 5).

These findings are very characteristic of a benign meningioma of the transitional type with psammoma bodies.

Comment

Dr. Young: Foramen magnum meningiomas make up only 3 to 4 per cent of all spinal meningiomas. They are, however, the most common extramedullary lesion at this level, exceeding neurofibromas by a ratio of 2:1.[1-4] They are tumors of adult life. There is only 1 case report of a foramen magnum meningioma in a child.[5] Other rare lesions occurring at the foramen magnum include vertebral artery aneurysms, dermoid cysts, subarachnoid metastatic deposits, and arteriovenous malformations.[6] The more common intramedullary lesions including spinal cord tumors, syringomyelia, and hydromyelia are also seen at the spinocranial junction.

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Foramen magnum meningiomas will often produce a constellation of confusing neurologic signs and symptoms.[6] These include cervicosuboccipital pain, upper-extremity weakness, spastic paraparesis, and, rarely, minimal cranial nerve deficits. Disproportionately severe dorsal column deficit is often present. This benign tumor should be excised; if left untreated, it will cause progressively severe quadriparesis and may produce respiratory arrest due to brain-stem compression.[6]

Foramen magnum meningiomas often pose major diagnostic problems. The differentation of this tumor from degenerative diseases, such as multiple sclerosis, may be exceedingly difficult. Occipital pain and hypalgesia plus profound dorsal-column involvement should make a diagnosis of degenerative disease suspect.

Of equal difficulty, as this case demonstrates, is the differentiation between cervical spondylosis and foramen magnum tumors, since both conditions may be associated with extensive cervical osteoarthritic changes on plain cervical spine roentgenograms.

In all of these conditions adequate cervical myelography is the diagnostic procedure of choice.[7] The foramen magnum level must be visualized in two projections in both the prone and supine positions. Only then can a foramen magnum meningioma be safely excluded. Good cervical myelography will also disclose the presence or absence of all of the other mass lesions seen at this level. Subacute combined degeneration will be excluded if the results of a Schilling test are normal, and cerebrospinal fluid protein analysis may help exclude many of the other degenerative diseases. Vertebral angiography should be performed as a prerequisite to surgery and to rule out the very occasional aneurysm or malformation that occurs at the foramen magnum.[6]

The surgical procedure of choice is total removal of the tumor and coagulation of its base of attachment to the dura mater.[1-4] Early diagnosis is extremely important, since the surgical mortality and morbidity rates for large tumors is very high.

Final diagnosis

Foramen magnum meningioma

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Clinical Anesthesia Conference

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

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PNEUMOTHORAX COMPLICATING TREATMENT OF LARYNGEAL SPASM

Pneumothorax during the postoperative period is infrequent.[1] However, the same complication caused by the treatment of laryngeal spasm is rare.

Case report

A healthy 5-Kg. female infant, age two months, was scheduled for examination of the eyes and discission and aspiration of bilateral congenital cataracts under general anesthesia.

After premedication with 0.05 mg. of atropine sulphate, anesthesia was induced with nitrous oxide and halothane using a Jackson Rees modification of an Ayres T-piece assembly and a number 2 pediatric mask. When adequate relaxation had been obtained laryngoscopic examination was performed with an Anderson infant blade. The larynx was visualized, but attempts to pass 3.5, 3, and 2.5-mm. plastic Rusch tubes without stilettes were unsuccessful. The tubes could be easily introduced through the laryngeal aperture but were held up just below the vocal cords. The diagnosis of subglottic stenosis was entertained, and it was decided that the baby had had sufficient instrumentation for one day and would be rescheduled. During emergence from anesthesia, mild laryngeal spasm occurred which responded to inhalation of oxygen without sequelae.

The following day, under general anesthesia, no difficulty was encountered in passing a 3-mm. tube with the aid of a stilette. Examination and photography of the eye, followed by aspiration of one cataract, lasted one hour and twenty minutes.

At the end of the procedure, the child was extubated. After a few minutes, moderate laryngeal spasm developed, which again responded to the administration of oxygen.

One month later, when the baby weighed almost 6 Kg., she was scheduled for examination and aspiration of some remaining fragments of the cataractous lens. Anesthesia with nitrous oxide-oxygen and halothane and intubation with a 3-mm. anode tube was uneventful.

Extubation of the baby in a relatively deep plane of anesthesia was followed by severe laryngeal spasm that did not respond to inflation with oxygen, during which, a considerable amount of oxygen must have reached the stomach. Laryngoscopic examination at this time revealed a larynx tightly in spasm, and since the baby was then cyanotic and had marked bradycardia, an attempt was made to intubate through the adducted cords. This was accomplished only after the third attempt and required some force and a stilette in the tube.

The baby's color improved, and her heart rate returned to normal. Respiration was spontaneous, and the baby began to awaken. It was noticed, at this time, that there was considerable subcutaneous emphysema of the neck, and there was a tinge of peripheral cyanosis.

X-ray examination revealed 50 per cent pneumothorax on the right and 30 per cent on the left, as well as some pneumomediastinum and subcutaneous air in the neck.

Underwater drainage was established bilaterally with immediate improvement and subsequent reexpansion of the lung.

An esophagogram using diluted methylglucamine diatrizoate (Gastrografin) revealed the mucosa of the esophagus to be intact.

The patient recovered without sequelae.

Comment

Laryngeal spasm is not uncommon in babies following extubation. To avoid many of these complications especially following intraocular and reconstructive surgery, the endotracheal tube should be removed in deep plane of anesthesia. Once laryngeal spasm develops, the treatment consists of positive pressure oxygen. If hypoxia is not relieved immediately, a small dose of muscle relaxant will facilitate the atraumatic reestablishment of the airway.

The most likely route for air to have taken into

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the pleural space was: (1) a mucosal tear in the pyriform fossa or cricothyroid membrane following the forceful use of a stilette, and (2) excessive airway pressure with rupture of esophagus and/or alveoli. The excessive pressure was excluded by a negative test result shown on esophagogram. The latter was unlikely under the circumstances. Alveoli do not rupture because of pressure alone but as a result of the size they attain. This is a function of time and transmural pressure.[2]

This case illustrates that damage to the mucosa may easily result from forceful use of hard instruments, such as laryngoscope and stilettes. Subcutaneous emphysema is inevitably associated with pneumomediastinum, pneumothorax, and not infrequently pneumoperitoneum.

Gentleness and the absence of panic can prevent such complications. The prompt recognition and immediate treatment of pneumothorax will stave off serious damage.

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SEGMENTAL POLYCYSTIC DISEASE*

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Cystic renal disease has been an interesting phenomenon to physicians for centuries. This disease, which may appear at any age and in various forms, concerns physicians in many specialties. Different types of cystic renal disease have at one time or another been included in the general term "polycystic disease," notwithstanding the gross appearance of the kidney or the clinical course of the patient. Most observers now reserve the term "polycystic" for that form which is bilateral, diffuse, progressive, and hereditary. There may be exceptions to this classic form of polycystic disease.

Case report

A twenty-two-year-old white man was first admitted to the Naval Hospital, St. Albans, in October, 1967, because of a left testicular mass. A radical orchiectomy was performed on October 13, 1967. An excretory urogram was interpreted as showing normal findings. After pathologic study of the specimen, the diagnosis of embryonal carcinoma was made. A preoperative course of actinomycin D was followed by a bilateral retroperitoneal lymphadenectomy. Examination of the nodes revealed embryonal carcinoma metastases. The patient had an uneventful recovery. He subsequently had monthly admissions for actinomycin D therapy. A routine follow-up excretory urogram in March, 1968, revealed a tumor deformity of the lower pole of the right kidney. A review of previous films revealed similar changes. Retrograde pyelography and nephrotomography performed on an outpatient basis were not diagnostic, and the patient was admitted for further studies. The physical examination and laboratory study results were normal. A selective right renal angiogram confirmed the presence of a mass in the lower pole, with early staining of the mass suggestive of neoplasm. Aortography demonstrated a normal left kidney. Surgical exploration revealed a well-demarcated, cystic, flesh-colored mass in the right kidney with prominent veins on its surface. Firm nodules were felt on palpation. It could not be ascertained whether this was a benign cystic lesion or a malignant tumor. Therefore, a radical nephrectomy was performed. The patient had an uneventful postoperative recovery.

On gross examination, the kidney weighed 330 Gm. Cut section revealed a cystic mass 5 by 7 cm. occupying the lower half of the kidney (Fig. 1). This mass was comprised of numerous cysts, measuring from 0.2 to 1.5 cm. in size and separated by bands of firm white tissue. The upper pole, renal pelvis, and ureter were normal.

On histologic study, the cystic spaces were found to be lined by a single layer of normal cuboidal epithelium. Normal tubules and glomeruli were seen in areas between cysts (Fig. 2). There was no gross or microscopic evidence of a capsule around the mass, and no areas of dysplasia or neoplasia could be identified. The remainder of the kidney was entirely normal.

Comment

Prior to any logical classification of renal cysts, there must be a basis for the inclusion of various types into specific categories. Cystic renal diseases have been grouped into extensive and cumbersome categories according to their gross and microscopic appearance, multiplicity, laterality, prognosis, and pathogenesis.

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*The opinions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

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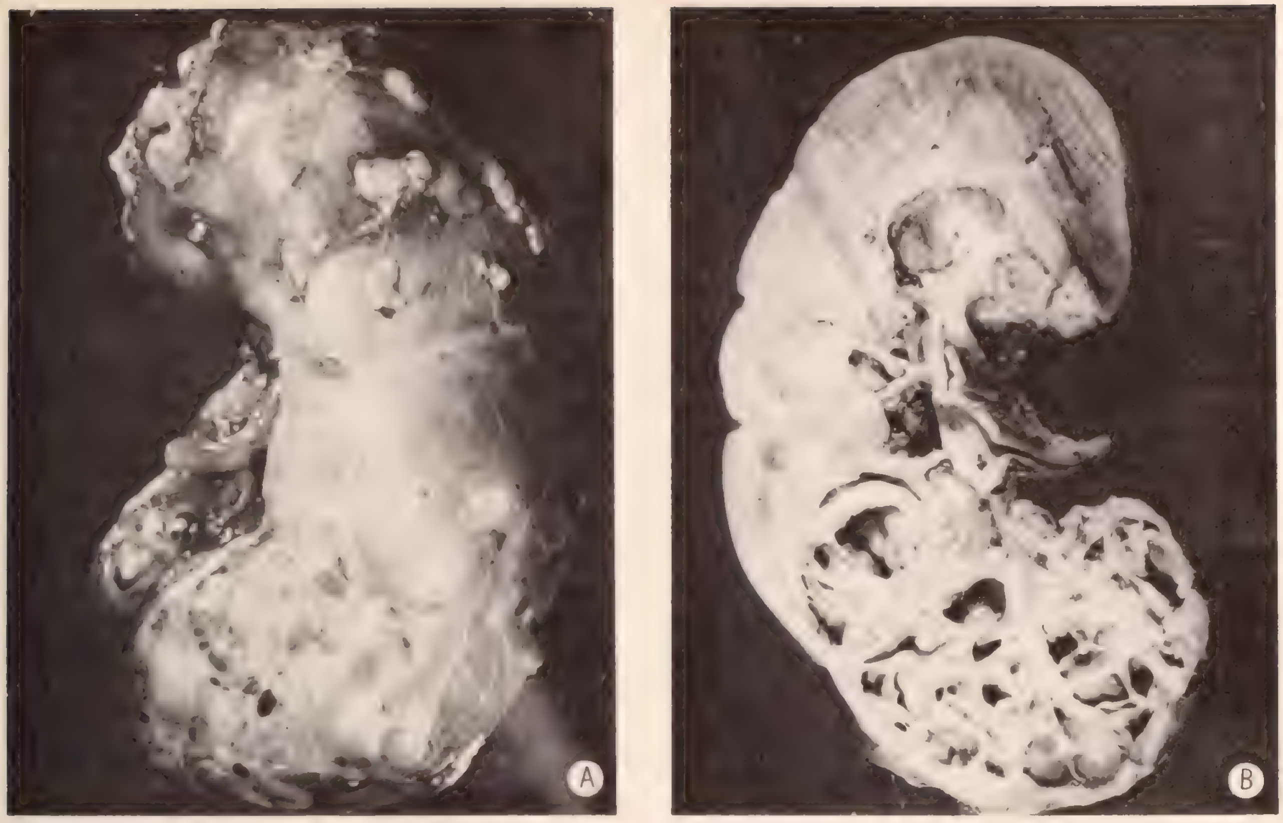

FIGURE 1. Gross right kidney. (A) Mass in lower pole. (B) Cut gross specimen showing nonincapsulated cystic disease confined to lower pole.

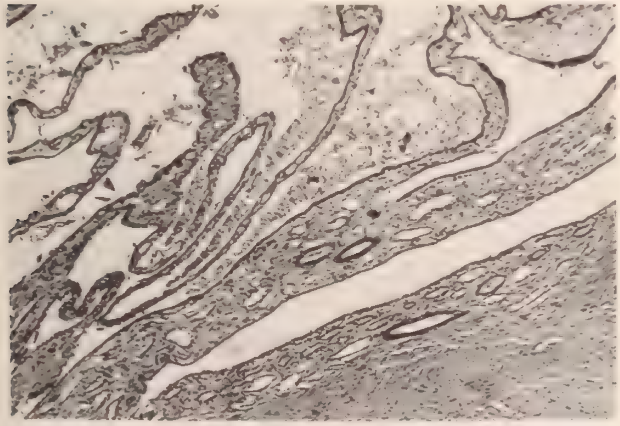

FIGURE 2. Microscopic section through kidney with cystic disease. Note presence of tubules between cysts.

Classification based on pathogenesis began with Virchow's theories in the middle 1800s. He thought that the cysts were secondary to obstruction to the outflow of urine. Near the end of the 1800s, Hildebrand published his theory of nonunion of the nephron and collecting tubule. The next major contribution in the literature suggested that cyst formation was the result of failure of involution of first-generation nephrons.[1,2] Subsequently, the classic work on microdissection of normal and cystic kidneys was published.[3,4] Osathanondh and Potter effectively categorized all significant cystic renal disease into four distinct groups and postulated the pathogenesis for each. Cystic renal disease is usually congenital. The pathogenesis and the time and mode of presentation vary with the different types.

The first of Osathanondh and Potter's categories is commonly known as infantile polycystic disease. This is bilateral, diffuse, and incompatible with prolonged life; no cases have been reported in adults. Siblings can be affected, but studies fail to show the disease in other relatives. The basis for the condition, according to Osathanondh and Potter, is an "interstitial tubular hyperplasia" producing massive cystic dilatation of the collecting tubules. The nephron proximal to the collecting tubule is normal.[4a]

The second type of cystic renal disease has many aliases, the most popular being multicystic or dysgenetic kidney. According to Osathanondh and Potter,[4b] this type is due to inhibition of the budding portion of the developing ureter. There is cystic dilation of the ends of the collecting tubules with few, if any, nephrons being seen. This condition is usually unilateral. It is incompatible with life when bilateral. When only a segment of one kidney is involved, the term "multilocular" cyst is used. No hereditary pattern has been

TABLE I. Comparison between polycystic and multilocular cystic diseases

	Adult Polycystic Disease	Multicystic Disease or Multilocular Cystic Disease
Hereditary	+	−
Progressive	+	−
Segmental or unilateral	−	+
Ureteral or pelvic abnormalities	−	+
Thick fibrous capsule	−	+
Dysplastic areas	−	+
Normal renal parenchyma between cysts	+	−
Functioning cysts	+	−
Communication between cysts	+	−
Renaform shape of kidney	+	−
Usually present in adults	+	−
Usually present in children	−	+

demonstrated. A benign hamartomatous origin for this type of cystic disease has been suggested by Boggs and Kimmelstiel.[5]

Osathanondh and Potter's third category is most commonly referred to as adult polycystic disease.[4c] This includes the remainder of cases of cystic disease with the exception of those associated with fetal urethral obstruction (the fourth category).[4d] A definite hereditary pattern is a prominent feature of adult polycystic disease. Inhibition of the budding portion of the developing ureter with interstitial hyperplasia is seen. The budding end is capable of inducing normal nephron formation. The disease is bilateral and diffuse.

Unilateral cases of polycystic disease have been reported by Rall and Odel[6] in 4 to 13 per cent and by Bell[7] in 8 per cent of cases. Oppenheimer[8] and Moore[9] reported on unilateral polycystic disease where the cystic changes were limited to a segment of the involved kidney. A condition that is confused most often with segmental cystic disease of this nature is multilocular cystic disease. Osathanondh and Potter[4] state that multilocular cysts, multicystic kidneys, or dysgenetic kidneys are all results of the same pathogenetic process. Differentiation between multicystic renal disease and the polycystic variety can best be appreciated by examining Table I.

Most observers flatly state that polycystic disease does not exist except in the bilateral form. They state that either reported cases have not been followed long enough for the disease to become manifest on the opposite side, or the patient has a unilateral dysplastic kidney.

This case illustrates microscopically advanced cystic disease in the lower pole of an otherwise normal kidney. There were absolutely no changes in the normal segment suggesting embryologic abnormalities that could develop into cystic disease. The microscopic changes in the lower pole were typical of polycystic disease.

Summary

A case of unilateral, segmental, cystic disease microscopically identical to polycystic disease is presented. The types of cystic renal disorders are discussed with emphasis on the comparison between the polycystic and multicystic varieties. A rare variant form of polycystic disease which is not only unilateral and segmented, but also nonhereditary and nonprogressive is described.

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INTRACEREBRAL HEMORRHAGE DURING HEMODIALYSIS

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Several reports of subdural hematoma complicating hemodialysis have appeared in the recent literature.[1,2] Only one example of intracerebral hemorrhage occurring during dialysis has been previously recorded, despite the theoretic hazard of administering heparin to these patients who, in addition, are often hypertensive.[3] The present report concerns a young, nonhypertensive, patient, in whom massive intracerebral hemorrhage developed in relationship to hemodialysis for barbiturate overdose.

Case report

A forty-two-year-old white female was brought to Bellevue Hospital in a comatose state. She had a long history of psychiatric disturbances and was a chronic user of alcohol, a variety of sedatives, and tranquilizers. She had been treated on three previous occasions at other hospitals for coma due to drug overdoses. Most recently she had been taking undetermined quantities of diazepam, phenmetrazine hydrochloride, and sodium secobarbital. There was no history of neurologic symptoms, hypertension, bleeding diathesis, or any other significant illness.

At 1:00 A.M., the morning of admission, her parents with whom she resided found her lying unconscious on the kitchen floor. Accustomed to seeing her in this condition, they were not alarmed. They judged her pulse to be adequate. At 7:00 A.M., however, when she had still not awakened and had apparently been incontinent of urine, they summoned an ambulance which brought her to Bellevue Hospital.

Initial examination in the emergency room revealed the following: Respirations were 2 per minute, pulse was 40 beats per minute, blood pressure was 120/80 mm. Hg, and rectal temperature was 95°F. She was unresponsive to all stimuli. Pupils were dilated and unreactive to light. The ocular fundi were normal. Passive turning of the head elicited no eye movements. There was a patchy cutaneous erythema. Her tendon reflexes were active and equal bilaterally, and no pathologic reflexes were present. She was immediately intubated, and ventilation with a Bird respirator was begun.

Initial laboratory values were as follows: arterial blood pH 7.50, oxygen pressure 17 mm. Hg, and carbon dioxide pressure 28 mm. Hg. The electrocardiogram showed occasional atrial premature contractions. Cerebrospinal fluid was clear, and the blood secobarbital level was 2.3 mg. per 100 ml.

During the first twenty-four hours of hospitalization she was treated with assisted ventilation and intravenous fluids. Her deep-tendon reflexes were no longer obtainable when examined twelve hours after admission, but no other change in her neurologic status occurred during her hospitalization.

On the morning of the second hospital day hemodialysis was carried out. A total dose of 110 mg. aqueous sodium heparin was given intravenously in divided doses during the six hours of dialysis. Blood clotting time was maintained at approximately one hour. The blood secobarbital (Seconal) level following dialysis was 0.4 mg. No change in her clinical status was noted.

On the third hospital day tracheostomy was performed, and she was continued on controlled ventilation. For the remaining two days of her life she was intermittently hypotensive, and intravenous metaraminol was required to maintain her blood pressure. Two electroencephalograms performed at a twenty-four-hour interval during this period were isoelectric. On the fifth hospital day an idioventricular rhythm on the electrocardiogram developed followed by cardiac arrest, and the patient was pronounced dead.

Postmortem examination revealed the following: Abnormalities outside the central nervous system were edema and congestion of the lungs, congestion and slight fatty metamorphosis of the liver, a 2 cm.-fibroma of the right ovary, and several small leiomyomas of the uterus. Significant findings included the absence of cardiac or renal changes suggesting hypertension and absence of bleeding into any organ except the brain. External examination of the scalp and skull revealed no evidence of trauma.

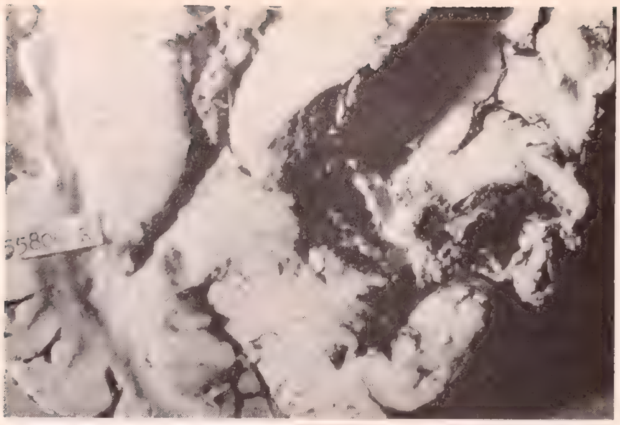

FIGURE 1. Horizontal section through brain showing hemorrhage in left frontal lobe with extension to lateral ventricle and subarachnoid space.

On opening the dura a small amount of fresh blood clot was noted overlying the left frontal lobe. In addition to the focal subarachnoid hemorrhage, external examination of the brain revealed evidence of considerable swelling of the brain and bilateral transtentorial herniation of the hippocampal gyri, most marked on the left side. Horizontal sections through the cerebral hemispheres revealed a large hemorrhage in the left frontal lobe (Fig. 1). This hemorrhage centered in the left frontal white matter, dissected backward into the left lateral ventricle, and outward through the frontal cortex where it was continuous with the subarachnoid blood. In addition, there were small hemorrhages in the midbrain and upper pons typical of those associated with uncal herniation. Microscopic examination revealed acute ischemic changes in the neurons in the left frontal cortex as well as scattered ischemic neurons in other areas of cortex. There was no gross or microscopic evidence of vascular anomalies in the region of the hemorrhage or in any other area of the brain.

Comment

Serious bleeding episodes during short-term systemic heparinization are uncommon, and its employment during hemodialysis is generally considered safe.[4,5] Significant hemorrhage, particularly intracranial, has rarely been reported to have occurred during hemodialysis. Four instances of subdural hematoma occurring under these circumstances have been recorded in the literature.[1,2] Only one pathologically documented instance of intracerebral hemorrhage has been previously reported.[3]

In addition to trauma, the factors that are known to underly intracerebral hemorrhage are hypertension, vascular malformations, vascular inflammation, neoplasms, and disturbances in the blood-clotting mechanisms.[6] While the latter makes the systemic administration of heparin for hemodialysis a potential hazard in terms of precipitating cerebral hemorrhage, it has been said that some other factor must be added before a real danger exists.[1,7,8] Head trauma, even though minor enough to have been forgotten by the patient, appears to be the most likely additional factor in the cases of subdural hematoma. We have not been able to determine the presence of any additional factors in our patient. There was no clinical or postmortem evidence of head trauma, hypertension, neoplasm, or inflammatory disease. The possibility of a small vascular malformation that was obliterated by the hemorrhage cannot be entirely excluded.

The increasingly successful employment of surgical attack on intracerebral hematomas, especially those centered in the lobar white matter as it was in our patient, necessitates keeping the possibility of this complication of hemodialysis in mind.[9] Clinical clues pointing to the development of this catastrophe in our patient were lacking, since her central nervous system was severely depressed by the barbiturate overdose. In retrospect her complete failure to respond to the lowering of the blood barbiturate level during dialysis should have served as a warning that some other event was taking place. Leonard, Weil, and Scribner,[2] in reference to the clinical problem of diagnosing subdural hematoma in relationship to hemodialysis, emphasize the necessity of considering an underlying intracranial process when a patient's response to dialysis is not appropriate. Prompt recognition of these serious intracranial complications may be life saving.

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CLINICAL MENINGEAL LEUKEMIA IN ACUTE MYELOCYTIC LEUKEMIA*

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The clinical syndrome of meningeal leukemia occurs in approximately one quarter of all patients with acute lymphoblastic leukemia.[1,2] The percentage of children developing this complication appears to be increasing as their life span is lengthened with newer chemotherapeutic agents. Clinical meningeal leukemia occurs rarely in patients with acute myeloblastic leukemia.[3] In the past nine years, we have treated 522 patients with acute leukemia. Meningeal involvement developed one or more times in 48 of 223 patients (21.5 per cent) with acute lymphoblastic leukemia. On the other hand, only 6 instances of meningeal leukemia were encountered in 294 patients with acute myeloblastic leukemia (2 per cent). The present report concerns these 6 cases.

Case reports

Case 1. A fifteen-year-old white girl developed acute myeloblastic leukemia on January 1, 1967. After three weeks of treatment with a combination of weekly intravenous vincristine sulfate (2 mg. per square meter), daily oral prednisone (150 mg. per square meter), daily oral 6-mercaptopurine (500 mg. per square meter), and daily oral methotrexate (5 mg. per square meter) complete clinical and hematologic remission, including bone marrow, was achieved. An additional three weeks of "consolidation therapy" with the regimen described was then administered followed by maintenance therapy consisting of weekly intramuscular injections of methotrexate (15 mg. per square meter) and daily oral 6-mercaptopurine (90 mg. per square meter).

On August 25, 1967, the patient was hospitalized following a one-week history of dull frontal headaches, nausea, and vomiting. Physical examination revealed bilateral papilledema. Bone-marrow examination revealed hematologic relapse (65 per cent myeloblasts). On lumbar puncture the opening pressure was 300 mm. of water. The cerebrospinal fluid had a sugar content of 48 mg. per 100 ml., a total protein content of 39 mg. per 100 ml., and a chloride content of 127 mg. per 100 ml. All the cells in the spinal fluid were myeloblasts (850 per cubic millimeter). Methotrexate (12 mg. per square meter) was administered intrathecally. Despite five repeated weekly intrathecal injections of methotrexate at the same dose, headaches, nausea, and vomiting continued. Bone-marrow remission was achieved on September 5, 1967, following five doses of intravenous daunorubicin (60 mg. per square meter) given twice a week. On November 10, 1967, the patient complained of blurred vision. Neurologic examination demonstrated bilateral papilledema, hemorrhages and exudates in both fundi, internal strabismus of the left eye, and weakness of the left lateral rectus muscle. Another lumbar puncture revealed pressure greater than 600 mm. of water. There were 25 cells per cubic millimeter, all myeloblasts. The patient was treated with cytosine arabinoside (10 mg. per square meter), dissolved in Elliot's B solution, intrathecally, twice weekly for a total of five doses. The papilledema and diplopia persisted. An electroencephalogram indicated right posterior cerebral dysfunction. On November 29, 1967, radiotherapy to the midline of the cranial cavity was begun. All of the patient's neurologic signs and symptoms disappeared after she had received 2,000 rads of high-voltage cobalt treatment. Bone-marrow relapse was noted on February 2, 1968. Complete hematologic remission was achieved this time with the daily intravenous administration of cytosine arabinoside (100 mg. per square meter) for three weeks.

On July 8, 1968, the patient developed headache, increasing lethargy, dizziness, and unsteadiness of gait. Nuchal rigidity was present. There

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was some tenderness to palpation over both eyes. Horizontal nystagmus was present on lateral gaze to either side, and transient vertical nystagmus was present on upward gaze. There was residual papilledema of the left eye. There was no focal motor weakness. The deep tendon reflexes were active and equal. There was a left extensor plantar response. Bone-marrow examination demonstrated 32 per cent myeloblasts. Hydroxyurea (120 mg. per square meter) was administered orally twice a week. The patient refused further medication after five doses because of severe nausea. Lumbar puncture on July 19, 1968, revealed an opening pressure of 500 mm. of water. The cerebrospinal fluid protein content was 82 mg. per 100 ml., and the sugar content was less than 20 mg. per 100 ml. There were 6,000 cells per cubic millimeter, all myeloblasts. The patient was again given intrathecal cytosine arabinoside (40 mg. per dose). Following two injections she appeared clinically improved, although headaches, horizontal nystagmus on right lateral gaze, and weakness of the left sixth cranial nerve remained. By July 27, 1968, the neurologic examination results were normal. The cerebrospinal fluid contained 3 cells per cubic millimeter. On July 30, 1968, daily oral prednisone (40 mg. per square meter) and 6-mercaptopurine (90 mg. per square meter) and biweekly oral methotrexate (15 mg. per square meter) were begun. No hematologic improvement was observed.

On August 8, 1968, a grand mal seizure occurred. The patient refused further lumbar punctures and developed low back pain and urinary incontinence. On September 9, 1968, intolerable sharp shooting pains began, starting over the lumbosacral area and radiating into both thighs. Neurologic examination revealed a conscious but lethargic girl. Horizontal nystagmus was present on lateral gaze to either side, but it was more pronounced on the right; there was slight drooping of the right side of her mouth as she smiled; and some nuchal rigidity with severe pain on head flexion and lateral head turning was present. There was minimal, but definite, weakness of the right upper extremity. Any movement of the lower extremities elicited severe pain. The deep tendon reflexes were hypoactive or absent, and there were bilateral extensor plantar responses. There was severe pain on straight leg raising bilaterally. Sensory examination revealed diminished appreciation of pinprick and touch over the right arm and leg with occasional extinction on bilateral simultaneous stimulation. Lumbar puncture was refused by the patient. The lumbosacral spine was normal on x-ray examination. On September 27, 1968, she received a course of radiotherapy to the cranium and lower spine. No clinical improvement was noted after 1,000 rads of high-voltage cobalt radiation. Daunorubicin (60 mg. per square meter) administered intravenously twice a week failed to alter the patient's condition. On November 6, 1968, the patient developed a fever of 103° F. She died six days later of Escherichia coli sepsis. Permission for postmortem examination was not obtained.

Case 2. An eighteen-year-old white man developed acute myeloblastic leukemia in February, 1966. Intravenous daily administration of cytosine arabinoside (30 mg. per square meter) for four weeks resulted in complete hematologic remission by June 24, 1966. Bone-marrow examination twenty-six days later demonstrated 43.6 per cent myeloblasts. A second, similar course of cytosine arabinoside failed to alter the leukemic process. On August 16, 1966, the patient appeared with a four-day history of throbbing frontal headache, nausea, and vomiting. Physical examination was normal. Bone-marrow aspiration demonstrated 41 per cent myeloblasts. The cerebrospinal fluid contained 18,000 cells per cubic millimeter, all myeloblasts; a protein content of 44 mg. per 100 ml.; and a sugar content of 104 mg. per 100 ml. Spinal fluid culture results were negative. Methotrexate (12 mg. per square meter) given intrathecally on four separate occasions, two to three days apart, resulted in complete subsidence of the neurologic symptoms. After five weeks of treatment with intravenous vincristine sulfate (2 mg. per square meter) weekly and oral prednisone (40 mg. per square meter) daily, a complete clinical and hematologic remission was achieved by September 26, 1966.

On January 8, 1967, the patient developed a second episode of meningeal involvement. Neurologic examination revealed bilateral papilledema, a left extensor plantar response, and diminished tendon reflexes. A bone-marrow examination demonstrated remission (only 4 per cent blast cells). Lumbar puncture revealed an opening pressure of 370 mm. of water. The spinal fluid had a sugar content of 35 mg. per 100 ml., a total protein content of 39 mg. per 100 ml., and contained 5,750 myeloblasts per cubic millimeter. Methotrexate (12 mg. per square meter) given intrathecally on three separate occasions at three-day intervals failed to alleviate the patient's symptoms. Headaches continued. On January 23, 1967, high-voltage cobalt radiotherapy was administered to the cranium. All neurologic symptoms and signs subsided after 1,000 rads had been administered over five days.

The patient continued to do well until September 15, 1967, when he appeared with a one-week history of frontal headaches, stiff neck, nausea. and vomiting. Physical examination revealed a lethargic man with bilateral papilledema and nuchal rigidity. Bone-marow examination results were normal. The lumbar puncture revealed an opening pressure of 330 mm. of water. The cerebrospinal fluid contained 4,200 cells per cubic millimeter, all myeloblasts. The sugar content was 32 mg. per 100 ml., and the total protein content was 62 mg. per 100 ml. The skull and lumbar spine roentgenogram findings were normal. Following four separate weekly intrathecal injections of methotrexate (12 mg. per square meter), the neurologic examination results were normal. Bone-marrow relapse (57 per cent blasts) was noted on December 22, 1967. Three short remissions of one to two months' duration each were achieved with intravenous weekly administration of daunorubicin (60 mg. per square meter). The patient died on June 10, 1969. , Postmortem examination revealed leukemic infiltration of the brain and all organs.

Case 3. A forty-eight-year-old white man was hospitalized because of acute myeloblastic leukemia on September 9, 1967. For one month previously he had experienced progressive weakness, dizziness, headache, and fever from 101° to 104° F. On the sixth hospital day, the patient became confused and disoriented. Lumbar puncture revealed an opening pressure of 500 mm. of water. The cerebrospinal fluid contained 45 cells per cubic millimeter; the morphology of the cells was not well preserved. The sugar content was 100 mg. per 100 ml., and the total protein content was 76 mg. per 100 ml. Results of bacterial and fungal cultures of spinal fluid and blood were negative. Neurologic examination three days later revealed nystagmus on left lateral and vertical gaze. There was decreased hearing bilaterally, but it was more on the right. The Weber test revealed lateralization to the left. The patient continued to complain of severe frontal headaches and dizziness. An electroencephalogram indicated moderately diffuse nonspecific abnormality without focal features. Repeat lumbar puncture on the twelfth day gave an opening pressure of 160 mm. of water. The cerebrospinal fluid contained 20 cells per cubic millimeter, all myeloblasts. The sugar content was 82 mg. per 100 ml., total protein content was 56 mg. per 100 ml., and chloride content was 118 mg. per 100 ml. A single intrathecal injection of 20 mg. of methotrexate was given. Headaches and dizziness subsided. Daunorubicin (60 mg. per square meter) was given intravenously on the twelfth, twenty-second, twenty-fifth, and thirty-third days, with no hematologic improvement. The patient died from pseudomonas sepsis on the thirty-sixth hospital day. Permission for postmortem examination was not obtained.

Case 4. A twenty-year-old white man was seen with acute myeloblastic leukemia on August 1, 1967. Clinical and hematologic remission was achieved following five daily intravenous injections of daunorubicin (60 mg. per square meter). Despite maintenance chemotherapy with weekly methylglyoxalbisguanylhydrazone (350 mg. per square meter) and cytosine arabinoside (30 mg. per square meter), both given subcutaneously, relapse occurred in early May, 1968. Two weeks later, a second complete hematologic remission was achieved following two additional doses of daunorubicin. A maintenance regimen of 50 mg. of oral methotrexate twice weekly was initiated.

Eleven months after the onset of the leukemia the patient complained of neck stiffness, frontal headache, and intermittent diplopia. Neurologic examination revealed nuchal rigidity, bilateral papilledema, and bilateral paralysis of the lateral rectus muscles. The cerebrospinal fluid revealed 2,500 cells per cubic millimeter, all myeloblasts. Spinal fluid cultures for bacteria and fungi were negative. Bone-marrow examination results at this time were normal. The patient was treated with five intrathecal injections of methotrexate, 20 mg. on each occasion, two to three days apart. All neurologic signs and symptoms subsided.

One month later the patient presented symptoms of recurrent diplopia and hepatitis—including icteric sclerae, hepatomegaly 4 cm. below the right costal margin, and splenomegaly 2 cm. below the left costal margin. Neurologic examination revealed bilateral papilledema and internal strabismus of the left eye. Bone-marrow examination results were normal. Liver biopsy demonstrated hepatic necrosis with bile thrombi. These findings of hepatitis were attributed to methotrexate toxicity. Lumbar puncture revealed a pressure of 306 mm. of water. The cerebrospinal fluid had a protein content of 76.5 mg. per 100 ml., a sugar content of 63 mg. per 100 ml., and there were 2,000 cells per cubic millimeter, all myeloblasts. Following a single 20 mg. injection of methotrexate intrathecally, there was complete subsidence of neurologic signs and symptoms.

Hematologic relapse recurred in late December, 1968. Intravenously administered vincristine sulfate (2 mg. per square meter) weekly and oral prednisone (40 mg. per square meter) daily achieved hematologic remission for four weeks. The patient was then treated with 200 mg. daily of thioguanine by mouth and 200 mg. daily of cytosine arabinoside by vein. After two weeks, the patient developed headache and fever. Lumbar puncture revealed the cerebrospinal fluid to have 2,400 cells per cubic millimeter, all myeloblasts; a protein content of 60 mg. per 100 ml.; and a sugar content of 55 mg. per 100 ml. Bone-marrow aspirate was hypocellular. After adequate hematologic recovery, 20 mg. of methotrexate were given intrathecally on four separate occasions two to three days apart, with complete subsidence of neurologic signs and symptoms. The patient died of his disease twenty-six months after the diagnosis of leukemia was made. Permission for postmortem examination was not obtained.

Case 5. A nineteen-month-old Negro boy was diagnosed to have acute promyelocytic leukemia on February 9, 1966. Blood fibrinogen was 80 mg. per 100 ml. (normal is 200 to 400 mg. per 100 ml.). Weekly intravenous injections of vincristine sulfate (2 mg. per square meter) and daily oral prednisone (120 mg. per square meter) for four weeks failed to alter the leukemic process. Consequently, cytosine arabinoside (30 mg. per square meter) was given intravenously daily. On March 11, 1966. the patient developed spontaneous hematomas over the right maxillary region and right arm, hematuria, and rectal bleeding. The blood fibrinogen level was 80 mg. per 100 ml. Fibrinogen (850 mg.) over two days, and 12 Gm. daily epsilon-aminocaproic acid for ten days, were administered. The bleeding subsided and the plasma fibrinogen increased to 378 mg. per 100 ml. Bone-marrow aspiration five weeks later revealed a partial remission with myeloblasts and promyelocytes making up 40.5 per cent of the marrow cells. Fluorinated progesterone (200 mg. per square meter) was given daily by mouth and the patient was discharged from the hospital.

Two weeks later the patient was hospitalized because of two days of fever (102° F.), soreness of the legs, stiff neck, and vomiting. Physical examination revealed a pale irritable child. There was nuchal rigidity. The child was unwilling to extend his lower extremities because of pain. Lumbar puncture revealed 220 cells per cubic millimeter, all myeloblasts. The cerebrospinal fluid protein was 10 mg. per 100 ml., and culture results were negative. Three intrathecal injections of methotrexate (10 mg. per square meter) were given on the first, second, and seventh hospital days. By the ninth day the patient was asymptomatic. He was discharged, still in bone-marrow relapse, receiving oral methotrexate, 30 mg. per square meter biweekly.

Eleven days later on May 23, 1966, the patient was admitted for the third time because of fever to 102° F., stiff neck, and vomiting. Physical examination demonstrated nuchal rigidity. Lumbar puncture revealed a pressure of 300 mm. of water. All of the cells (400 per cubic millimeter) in the cerebrospinal fluid were myeloblasts. The patient received two intrathecal injections of methotrexate (12 mg. per square meter) on the first and eighth days. By the tenth day there was no evidence of meningeal irritation. On the seventeenth hospital day, daily intravenous injections of cytosine arabinoside (30 mg. per square meter) were begun. After eighteen days there was no hematologic improvement. One week before the patient's demise, on June 28, 1966, he developed hematuria and gastrointestinal bleeding, probably secondary to thrombocytopenia (4,000 per cubic millimeter). Despite transfusions with packed red cells and platelets, the patient died of a massive gastrointestinal hemorrhage. Permission for a postmortem examination was denied.

Case 6. A twenty-year-old white woman developed acute myeloblastic leukemia in October, 1961. Hematologic remission was achieved with 50 mg. of daily oral 6-mercaptopurine for six weeks. Physical examination in late April, 1962, revealed a right-sided Bells palsy. In late May, 1962, progressive weakness of the right arm developed. Physical examination demonstrated right-sided facial paresis, right lateral rectus muscle paresis, absent right triceps and biceps reflexes, and decrease in pain sensation and proprioception over the right arm and hand. Bone-marrow examination demonstrated 57.2 per cent myeloblasts. Lumbar puncture revealed a normal pressure. The cell count was lost, but the protein content was 95 mg. per 100 ml. and culture results were negative. Roentgenograms of the cervical lumbar spine showed normal findings. High-voltage cobalt radiotherapy to the neck and cervical spine (2,000 rads) resulted in almost complete recovery from the weakness. Intravenous daily injections of methylglyoxalbisguanylhydrazone (120 mg. per square meter) for ten weeks failed to alter the leukemic process.

In late November, 1962, neurologic examination demonstrated bilateral papilledema. Shortly thereafter the patient became entirely blind. Radiotherapy to the cranium (1,800 rads) resulted in partial restoration of her sight. Neurologic examination on December 14, 1962, revealed left peripheral facial paralysis, bilateral papilledema, and bilateral hypoactive deep tendon reflexes. Lumbar puncture revealed 2,800 cells per cubic millimeter, all myeloblasts. The protein content was 225 mg. per 100 ml. Methotrexate (12 mg. per square meter) given intrathecally at weekly intervals for three weeks resulted in partial improvement of her neurologic complaints and a gradual clearance of leukemic cells from the spinal fluid. The patient died on December 30, 1962, of sepsis, fourteen months after the onset of her disease. Consent for autopsy was denied.

Table I summarizes the pertinent clinical data for all 6 patients.

Comment

Meningeal leukemia has been defined as a clinical syndrome in which signs and symptoms of meningeal irritation and increased intracranial pressure are present.[4] Other central nervous system complications of acute leukemia, such as intracranial hemorrhage and central nervous system infections, are absent.

Shaw[4] was able to find only 100 reported cases

TABLE I. Clinical summary of 6 patients with acute myeloblastic leukemia who developed meningeal involvement

Patient	Age (Years)	Sex	Morphologic Type of Leukemia	Months From Onset Until First Meningeal Involvement	Survival After Onset of First Meningeal Symptom (Months)	Stage of Disease at Time of First Meningeal Symptom*	Number of Episodes of Meningeal Symptoms
1	15	F	Myeloblastic	8	13	Relapse	3
2	18	M	Myeloblastic	7	22	Relapse	3
3	48	M	Myeloblastic	0†	1	Relapse	1
4	20	M	Myeloblastic	11	26	Remission	3
5	1.5	M	Promyelocytic	4	2	Relapse	2
6	20	F	Myeloblastic	13	1	Relapse	1

* As revealed by bone-marrow examination.
† Meningeal involvement appeared at onset.

of meningeal leukemia. Before the availability of antileukemic chemotherapy (1878 to 1948), only 31 patients, 23 of whom were adults, were reported with meningeal leukemia. After the introduction of chemotherapy, 60 additional patients were observed until 1959. In a review of 974 children with acute leukemia, Evans[2] noted that the incidence of meningeal leukemia before 1953 was less than 10 per cent, but it had risen to 30 to 40 per cent by 1960. This increase can be attributed to two factors: (1) an increased awareness of the meningeal leukemia syndrome and (2) an increased survival of patients with acute lymphoblastic leukemia because of more effective chemotherapy.

Leukemic meningeal involvement occurs almost exclusively in children with acute lymphoblastic leukemia. The frequency of such involvement has been reported in various series to be from 10 to 42 per cent.[3-11] Meningeal leukemia is rare in acute myeloblastic leukemia. Shaw *et al.*[4] reported clinical meningeal leukemia in 25 per cent of patients with acute lymphoblastic leukemia and in 4 per cent of patients with acute myeloblastic leukemia. Both groups of these patients were observed during the period 1953 to 1958. From 1961 to 1963 the same authors changed their definition of meningeal leukemia from signs and symptoms of increased intracranial pressure to the finding of ten or more monuclear cells per cubic millimeter in the spinal fluid, irrespective of the presence or absence of neurologic signs or symptoms. Using these more liberal criteria Nies, Thomas, and Freireich[8] reported the incidence of meningeal leukemia to be 42 per cent in patients with acute lymphoblastic leukemia and 12 per cent in patients with acute myeloblastic leukemia. Thirty-eight episodes of meningeal leukemia were observed from 1961 to 1963. In 14 of these episodes the patients had no presenting neurologic signs or symptoms. Lumbar punctures were performed at the time of bone-marrow aspirations. If only the symptomatic patients are included in the 1961 to 1963 series, the prevalence of meningeal leukemia remains the same. In our experience 21.5 per cent (48 of 223) of patients with acute lymphoblastic leukemia and only 2 per cent (6 of 294) of patients with acute myeloblastic leukemia developed symptomatic meningeal leukemia at some time during their illness. In 1 patient the meningeal leukemia was noted at the onset of the disease, whereas in the other 5 patients four to thirteen months had elapsed since their disease began. Three of the patients each had three separate episodes of meningeal leukemia, 1 patient had two episodes, and 2 patients had only one episode. Meningeal leukemia occurred in 1 of the 6 patients while the bone marrow was entirely normal. All of these observations, namely, the occurrence of meningeal leukemia at any stage of the disease, such as onset, remission, or relapse, and its repetitive occurrence are well recognized in patients with acute lymphoblastic leukemia.[3-11]

The reason for the marked disparity in incidence of meningeal involvement between the two types of acute leukemia is not known. One possible explanation might be derived from animal studies. Meningeal leukemia of mice has been found to be pathologically similar to meningeal leukemia of man.[12] In mice, the principal route by which leukemic cells enter the meninges and brain is direct migration through perivascular and perineural tissues of vessels and nerves which cross the subdural space. Thomas[12] has demonstrated that mice receiving subcutaneous inoculations of L1210 leukemia virus die before diffuse infiltration of the arachnoid develops. When the life of such mice is prolonged by methotrexate therapy, however, the number of leukemic cells spreading from dura to arachnoid by way of nerves and vessels markedly increases, and leukemic infiltration of the arachnoid develops. It is possible, although not proved, that the analogous situation exists in man.

Increasingly efficient use of antileukemia drugs has produced a longer survival in patients with acute lymphoblastic leukemia (median survival, thirty-three months) but not in patients with

TABLE II. Meningeal involvement in patients with acute leukemia

Age Group	Acute Lymphoblastic Leukemia Number Patients	Meningeal Involvement Number	Per cent	Acute Myeloblastic Leukemia Number Patients	Meningeal Involvement Number	Per Cent
Children*	203	47	23.1	42	5	11.9
Adults	20	1	5.0	252	1	0.4
TOTAL	223	48	21.5	294	6	2.0

* Age twenty or less.

acute myeloblastic leukemia (median survival, six months). Meningeal involvement is usually a late complication of leukemia, although it can occur even at the onset of the disease.[1-3] The median duration of disease prior to meningeal involvement was reported by the Southwestern Cancer Chemotherapy Study group to be nine months.[3] Thus, the rarity of meningeal leukemia in acute myeloblastic leukemia may be related to the short survival of patients with this form of leukemia.

The survival of patients with acute myeloblastic leukemia is inversely related to age.[13] Of the 294 patients with this type of leukemia in the present series, 42 were children twenty years of age or less. Thus, in children with this form of leukemia, the incidence of clinical meningeal involvement was 11.9 per cent; in adults the incidence was only 0.4 per cent (Table II). Survival of children with acute myeloblastic leukemia is intermediate between that of children with acute lymphoblastic leukemia and that of adults with either type.[13] Thus, of the three parameters—age, type of leukemia, and duration of disease—duration appears to correlate best with the occurrence of meningeal involvement. The longer the survival the higher the incidence of meningeal leukemia, irrespective of age or morphologic type of acute leukemia. If this hypothesis is correct, then one should expect that as more effective antileukemic therapy for myeloblastic leukemia becomes available and survival becomes prolonged, meningeal leukemia may occur with greater frequency in acute myeloblastic leukemia.

A disparity exists between the clinical syndrome of meningeal leukemia and postmortem findings of infiltration of the meninges; the latter is much more common. Litteral and Malamud[14] estimated that neuropathologic changes were present in about 80 per cent of patients with acute leukemia whereas clinical neurologic manifestations were observed in only 20 per cent of patients. Moore *et al.*[1] reported results of postmortem examinations of the central nervous system in 117 consecutive cases of acute leukemia from 1953 to 1958 and compared them to 100 consecutive cases from 1961 to 1963. A high frequency of dural infiltration was found in both morphologic types of acute leukemia. Infiltration of the arachnoid, however, was significantly more frequent in lymphocytic than in myelocytic leukemia and occurred more commonly in children than in adults. When dural infiltration was compared to arachnoidal infiltration a much higher incidence of dural involvement was found in both morphologic types of acute leukemia.

Another unresolved question in meningeal leukemia is whether diagnostic spinal taps will be able to detect this syndrome prior to the appearance of symptoms and whether "early" intrathecal treatment will prolong survival. Does prophylactic intrathecal antileukemia therapy in the absence of demonstrable meningeal leukemia prolong life? This question also awaits an answer.

Summary

Of 294 patients with acute myeloblastic leukemia, clinical meningeal involvement developed in 6 patients. Meningeal leukemia is a rare complication of acute myeloblastic leukemia (2 per cent in the present series) but occurs frequently in acute lymphoblastic leukemia (48 of 223 cases, or 21.5 per cent). In both types of acute leukemia, meningeal leukemia is more frequent in children than in adults (23.1 per cent of children and 5 per cent of adults with acute lymphoblastic leukemia; and 11.9 per cent of children and 0.4 per cent of adults with acute myeloblastic leukemia), and children with acute myeloblastic leukemia have a higher incidence of this complication than do adults with acute lymphoblastic leukemia (11.9 per cent versus 5 per cent). The data support the hypothesis that the major determinant for meningeal leukemia is duration of the disease, irrespective of either age or the morphologic type of acute leukemia.

Increased awareness of this syndrome by physicians, and perhaps diagnostic lumbar punctures, will lead to earlier diagnosis. Improving chemotherapy and more prolonged survival will all probably contribute to the increasing occurrence and recognition of this syndrome in both acute lymphoblastic and acute myeloblastic leukemia.

Addendum

Since submission of this paper for publication, we have seen two additional patients with acute myelogenous leukemia and meningeal leukemia.

Case 1. A twenty-nine-year-old Negro woman with acute myelogenous leukemia achieved a complete clinical and hematologic remission following an eight-week course of daily intravenous cytosine arabinoside (100 mg. per square meter) and oral 6-thioguanine (40 mg. per kilogram). Her subsequent course was complicated by three separate episodes of meningeal leukemia, manifested by nausea, vomiting, seizures, and left-sided leg paresthesias. All three episodes were successfully treated with intrathecal methotrexate (12 mg. per square meter). The first episode occurred while she was still in bone-marrow remission twenty-nine months following the original diagnosis. She died six months later from gram-negative sepsis.

Case 2. A twenty-two-year-old white man with acute myelogenous leukemia was treated with cytosine arabinoside (45 mg. per square meter) and bis-chloro-nitrosourea (4.5 mg. per square meter) intravenously every twelve hours. In addition he received weekly injections of intravenous vincristine sulfate (2 mg. per square meter) and daily oral prednisone (40 mg. per square meter). A complete clinical and hematologic remission was achieved. Thirteen months later, while still in bone marrow remission, he appeared with a right seventh peripheral nerve paralysis, left-sided paresthesias, and nausea and vomiting. There was no response to intrathecal methotrexate. Following one dose of intrathecal cytosine arabinoside (20 mg. per square meter) and 400 rads of cobalt therapy to the craniospinal axis, all neurologic manifestations disappeared. He died seven months later.

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PROTEIN-LOSING ENTEROPATHY CAUSED BY INTESTINAL LYMPHANGECTASIA

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Intestinal lymphangectasia is a rare cause of protein-losing enteropathy characterized by nonselective enteric protein loss. The consequences are edema and lymphocytopenia, immunologic incompetence, hypocalcemia, and malabsorption of variable severity. Clinical recognition of this disorder may be difficult because gastrointestinal manifestations are minimal or absent; edema and marked hypoproteinemia are the major clinical features. Establishing the mechanism of hypoproteinemia is of major practical interest in both the further workup of the patient as well as in choice of therapy. A case of protein-losing enteropathy, due to intestinal lymphangectasia and documented by iodine-131-albumin turnover studies and small-bowel biopsy, is reported here.

Case report

A twenty-three-year-old Negro female was admitted to Grasslands Hospital because of asymmetric edema of the lower extremities and muscle cramps of several months' duration. She gave a history of intermittent diarrhea over the past four years. The stools were of watery consistency, displayed a greenish color, and were occasionally foul smelling. At age fifteen, she had had an asthma-like attack which responded poorly to standard therapy. Similar attacks occurred at irregular intervals and were occasionally associated with muscle cramps. Menarche occurred at age twelve, with regular periods since that time. She had had an episode of pelvic inflammatory disease which required treatment. She was a moderate drinker and had smoked one pack of cigarets a day since age sixteen. The family history was noncontributory to her present illness.

Physical examination revealed a poorly nourished, well-developed Negro female weighing 44 Kg. and measuring 150 cm. in height. She was afebrile. The blood pressure was 90/60; the pulse rate was 80 per minute and regular. Except for edema extending above the knee in both lower extremities, there were no other abnormal findings. Specifically, there was no evidence of cardiopulmonary disease, the liver and spleen were not palpable, and the neurologic examination result was within physiologic limits. Repeated attempts failed to elicit a Chvostek or Trousseau sign.

Laboratory data revealed a hematocrit of 42 and a white cell count of 3,600 with 71 per cent neutrophils, 4 per cent eosinophils, and 25 per cent lymphocytes. Subsequent white cell counts were essentially similar to the initial count. The absolute number of lymphocytes never exceeded 1,000 per cubic millimeter. Repeated urinalyses were normal. The protein-bound iodine and cholesterol were 4 micrograms per 100 ml. and 160 mg. per 100 ml., respectively. Serum iron was 89 micrograms per 100 ml., and the total iron-binding capacity was 223 micrograms per 100 ml. Serum carotene was 30 micrograms per 100 ml. An oral glucose tolerance test result was normal. Latex fixation and antinuclear antibody test results were negative, as were repeated lupus erythematosus cell preparations. A d-xylose absorption test result was within normal limits. Serum calcium varied from 5.6 to 7 mg. per 100 ml., while the serum phosphorus ranged from 3.2 to 4.9 mg. per 100 ml. Alkaline phosphatase was 4.3 Bodansky units. Electrolytes were within normal limits on repeated occasions. Total protein ranged from 3 to 3.5 Gm. per 100 ml.; the serum albumin concentration varied between 1.74 and 1.9 Gm. per 100 ml. The concentrations of immunoglobulins G, M, and A, as determined by immunodiffusion were 400, 27, and 105 mg. per 100 ml., respectively. A seventy-two-hour stool collection, following a diet of 100 Gm. of lipid per day, contained 5.06 Gm. of fat. Injection of a standard dose of 5 mg. per kilogram body weight of sulfobromophthalein (Bromsulphalein) showed complete absence of dye in plasma at forty-five minutes. Liver function test findings were normal. Radiologic examination of the upper gastrointestinal tract, including a small-bowel series, disclosed thickened mucosal folds of the small bowel which were interpreted as compatible with hypoproteinemia. A small-bowel biopsy showed dilated lacteals (Fig. 1).

The clinical course was uneventful. No overt gastrointestinal symptoms were noted. The

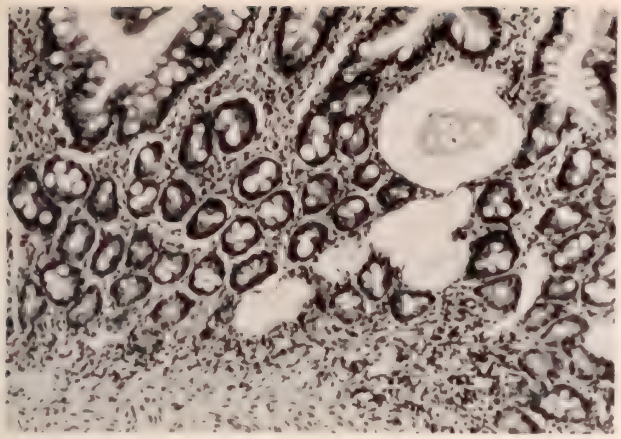

FIGURE 1. Small intestinal biopsy showing widely dilated lymphatic vessel and moderately dense chronic inflammatory infiltrate in the lamina propria. Small dilated lymphatic vessels can be seen in submucosa. (Hematoxylin and Eosin stain)

edema subsided on bed rest alone, but it returned within three weeks of discharge, when the patient was readmitted because of another episode of pelvic inflammatory disease.

Special studies

A repeat sulfobromophthalein injection with serial sampling of blood at five, ten, fifteen, and twenty minutes revealed barely detectable levels at the end of twenty minutes. This was repeated again after the completion of the tracer albumin studies before and after the injection of 12.5 Gm. of human serum albumin (Albumisol).

The patient's immunologic status was challenged with intradermal purified protein derivative and mumps antigen. Simultaneously, 3 housestaff members were inoculated with the same preparations.

Fifty millicuries of commercially obtained I^{131}-albumin was mixed with a standard 5 mg. per kilogram body weight of sulfobromophthalein and injected into an antecubital vein via a properly functioning infusion set. Serial heparinized blood samples were obtained from the opposite arm through an indwelling plastic catheter at five, ten, fifteen, twenty, and forty minutes, and subsequently once a day for the following nine days. This timing allowed observation of the early plasma disappearance of both the sulfobromophthalein and tracer albumin. Daily urinary collections, assayed for completeness by twenty-four-hour creatinine excretion determination, were carried out for the same period of time. Determination of fecal radioactivity was omitted because of the vagaries of I^{131} handling by the gastrointestinal tract.[1] One-ml. plasma and urine aliquots were assayed for radioactivity in a well-type scintillation counter, along with an appropriate dilution of an aliquot of the injected isotope. The counting accuracy was within 3 per cent. The quality of the injected tracer was indirectly judged from its behavior during the acute distribution phase. This was comparable with similar studies conducted with tracer material obtained from the same commercial source.[2] Albumin turnover rates were calculated according to the time-equilibrium method of Pearson, Veall, and Vetter.[3] Nonurinary protein losses were inferred as described by Berson *et al.*[4] Direct determination of fecal losses by chromium-51-albumin was not possible because of commercial unavailability of this material.

TABLE I. Summary of sulfobromophthalein studies

	Sulfobromophthalein (Milligrams per 100 Ml. Plasma)		k*	
Time (Minutes)	Before Albumin Infusion	After Albumin Infusion	Before Albumin Infusion	After Albumin Infusion
5	7.5	9.0	...	...
10	0.5	2.5	0.55	0.38
15	0.5	1.5	...	...

* Fractional turnover constant derived from equation: $k = 0.693/T^{1}/_{2}$, where $T^{1}/_{2}$ is the half-life.

Results and comment

Table I shows the data of sulfobromophthalein kinetics. The rapid plasma disappearance of sulfobromophthalein is not an unexpected finding. Benhold and Kallee[5] reported accelerated plasma disappearance rates for both Evans blue and Congo red dyes in a female analbuminemic subject and interpreted their findings as related to the diminished serum albumin concentration.

In our patient, the half-life and the k* values were increased by a factor of 4 as compared with published normal values.[6] Since the total dose injected was 220 mg., the amount removed from plasma in the first minute was 220 mg. × 0.55 × 100 = 111 mg. This was well in excess of the published maximum tubular excretory capacity of 8.8 ± 2.2 mg. per minute and therefore cannot be explained by increased hepatic excretion.[7] Since the acute distribution of the tracer albumin was normal, one cannot explain the rapid plasma sulfobromophthalein clearance by enteric bulk loss of the sulfobromophthalein-albumin complex. It is reasonable to assume, therefore, that the rapid hepatic removal was due to decreased plasma binding. The decrement of the k value following intravenous albumin indicates that the accelerated sulfobromophthalein plasma disappearance is largely explained by decreased plasma binding while hepatocellular binding is either unchanged or increased. The possibility of simultaneous changes in cellular-binding proteins and their ef-

*See footnote to Table I.

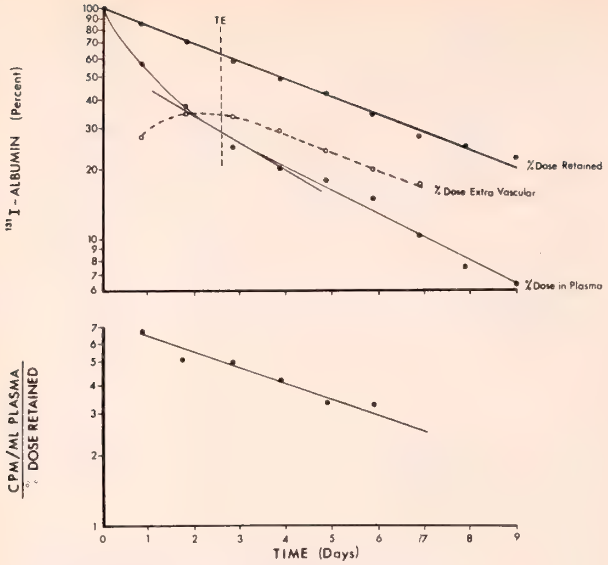

FIGURE 2. I^{131}-albumin turnover kinetics.

fects on the plasma clearance of sulfobromophthalein has not been studied.[8]

These sulfobromophthalein distribution kinetics are quite similar to those of tracer thyroxine in patients with diminished thyroxine-binding globulin and suggest that the partition of chemically unrelated molecules between plasma and liver may be governed by similar principles.[2] These concepts have been validated by direct tissue analysis in experimental animals.[9]

The immunologic data showed nonresponsiveness to both purified protein derivative and mumps antigen, while all three housestaff members showed a strong local reaction. The criteria for a positive reaction were adopted from Strober *et al.*[10]

The diminution in the globulin classes measured was marked and well below the lower limits of normal. These are comparable with published immunoglobulin serum concentrations obtained in 18 patients with intestinal lymphangectasia.[10] The fact that 3 immunoglobulin species were equally affected, along with albumin, is suggestive of nonselective protein loss. The borderline low protein-bound iodine value is probably due to similar losses of the thyroxine-binding globulin-T_4 complex.

The ideal material for demonstration of enteric protein loss must fulfill the following criteria: (1) the molecular weight should be equal to or higher than that of albumin; (2) the label attached to it should not undergo exchange with other serum proteins; and (3) the label should not be reabsorbed or excreted actively by the intestinal mucosa or glandular structures dispersed throughout the gastrointestinal tract.[1,10] These criteria are best fulfilled by Cr^{51}-albumin, a material commercially unavailable at the time these studies were performed. We have used I^{131}-albumin, hoping to be able to assess nonurinary losses indirectly.[4] The results of I^{131}-albumin turnover studies are presented in Figure 2 and Table II. The data were analyzed by the method of Pearson, Veall, and Vetter.[3] The half-life is markedly shortened, indicating rapid removal of tracer albumin from the total exchangeable albumin pool. That this is not due to distributional phenomena is clearly shown by the parallelism of slopes of the plasma and total body radioactivity decay curves. The fact that both intravascular and total exchangeable albumin pools are diminished serves to rule out dilutional factors as a cause of this patient's hypoalbuminemia.

TABLE II. Summary of albumin turnover studies

Variable	Measurement	Normal[11]
Weight (kilograms)	43.1	. . .
Serum albumin (grams per 100 ml.)	1.75	. . .
Plasma volume (milliliters per kilogram)	37	36–43
Half-life (days)	3	13–20
Fractional catabolic rate (per cent per day)	17.2	4.2–6.1
Intravascular albumin (grams per kilogram)	0.68	1.3–1.9
Total exchangeable albumin (grams per kilogram)	1.23	3.6–4.8
Total catabolic rate (milligrams per kilogram per day)	221	150–260

The negative slope of the ratio of plasma concentration to total body radioactivity of the tracer albumin persisting well beyond distribution equilibrium is indicative of nonurinary losses of the labeled material.[4] This is in keeping with the absence of proteinuria on repeated testing by conventional clinical laboratory methods.

In intestinal lymphangectasia, fecal losses of the iodide label are said to be negligible because of unimpaired reabsorption of I^{131} freed by intraluminal digestion of the tracer albumin. This contention is supported by studies with I^{125} and Cr^{51}-albumin, showing significant underestimation of fecal losses in patients with intestinal lymphangectasia as determined by the fecal content of I^{125} if compared to the Cr^{51} values.[11] One may therefore assume that the intestinal losses of I^{131} in the present case may not be of sufficient magnitude to introduce major errors in the estimation of turnover rates. The fractional distribution of total exchangeable albumin removal between degradation and intact albumin lost by bulk leakage into the gut cannot be assessed from this study.

The marked increment of both the fractional and total albumin removal rate suggests that hypercatabolism is the mechanism of this patient's hypoalbuminemia. Since the endogenous albumin concentrations were virtually identical both at the beginning and conclusion of the turnover study, the assumption that a steady state was present during this period is a reasonable one. Therefore, the synthetic rate for albumin must equal that of its removal. In view of the marked total body albumin depletion of this patient, the normal rate of albumin synthesis may be regarded as a relatively insufficient hepatocellular response (Table II).

Finally, the histologic appearance of the small bowel shows dilated lacteals and constitutes morphologic support for the diagnosis of intestinal lymphangectasia.

The lymphocytopenic variety of protein-losing enteropathy is encountered in intestinal lymphangectasia, right-sided heart failure, and Whipple's disease. In inflammatory, ulcerative, and allergic varieties of protein-losing enteropathy, lymphocytopenia is absent. Hypogammaglobulinemia may lead to gastrointestinal infection and enteric protein loss resulting in a clinical and chemical picture similar to that seen in lymphocytopenic protein-losing enteropathy.[12] Differentiation of this variety of protein-losing enteropathy is possible if a history of recurrent infection is present. Bone-marrow or small-bowel biopsy usually shows diminution or absence of plasma cells. The clinical differences in resistance to infection between hyposynthetic and hypercatabolic hypogammaglobulinemia are discussed in detail by Strober *et al.*[10]

Therapy of lymphocytopenic protein-losing enteropathy may be etiologic when the cause is known, such as right-sided heart failure or constrictive pericarditis, and correctable. Symptomatic therapy is resorted to if the underlying cause cannot be corrected. Steatorrhea of lymphocytopenic protein-losing enteropathy is the result of bulk leakage of fat from dilated enteric lymph vessels; it is not a malabsorptive disorder.[13] Therefore, diminution of lymphatic flow will alleviate both enteric protein and lipid losses. This is accomplished by feeding medium-chain triglycerides, which are reabsorbed directly into the blood stream bypassing the intestinal lymphatics.

Summary

A case of protein-losing enteropathy due to intestinal lymphangectasia documented by small-bowel biopsy and I^{131}-albumin turnover studies is presented. Depletion of all tested circulating protein species was documented by means of quantitative immunodiffusion. This was accompanied by skin anergy. An increased fractional turnover rate, coupled with severe depletion of total exchangeable albumin, resulted in a normal absolute degradation rate. The effects of albumin concentration on sulfobromophthalein plasma disappearance were studied, and a relationship between serum albumin concentration and sulfobromophthalein plasma decay was established. Differential diagnosis and therapy are briefly discussed.

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COLLEGE DRUG SCENE

As it is

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The title of this article, "The college drug scene as it is," is a misnomer. The college drug scene is not a scene unto itself. The college drug scene is a reflection of our total scene—the total scene as it is!

My involvement with the college drug scene has been from a dual perspective. I have been both a student, completing my Bachelor of Divinity degree at the Colgate Rochester Divinity School, and an intern chaplain at Cornell University.

In October, 1969, concern developed over the growing number of students who were encountering difficulties with drug use and abuse. The normal methods of counseling and assistance provided through the Cornell University services were not adequate to deal with these situations. The Cornell University Medical and Mental Health Services were seeing, at most, 1 drug case a month. It was obvious that there were more than these few who were requesting and needing assistance. The students in difficulty felt they had no place to turn for help other than to their roommates and classmates. Through a series of informal meetings, organized by a group of concerned students and which included the University Vice President for Student Affairs and me, the student response to the drug problems encountered on campus was established and called Main-Line.

Main-Line began as a confidential information and crisis hot-line telephone referral service. The service was designed primarily to meet the needs of university students, although a great number of contacts have been with Ithaca junior and senior high school students and their parents. Main-Line attempts to provide credible and morally neutral information to those persons who seek knowledge concerning drugs. It provides a response to drug crises—situations in which persons experience drug-induced difficulties whether they are emotional, intellectual, social, or otherwise—in an attempt to assist these persons in resolving those difficulties. Main-Line is a group of student-age lay counselors; when professional advice is needed referrals are made to the appropriate persons or agencies.

During January, 1971, Main-Line expanded its service and is now operating, in addition to the telephone hot-line, a walk-in center. This new program is designed to help meet the needs of those persons whose drug crises are obviously secondary to other major problems. The expansion of Main-Line has been due to a growing awareness that, in most cases, drugs are only a superficial aspect of the individual's personal or social crisis. For example, a rebellious youth smokes marihuana to defy the law; the focus of his problem, so often wrongly placed, is not the marihuana but his rebellion.

Main-Line has been funded through Cornell University, private funds, and a recent grant from the New York State Department of Education.

In keeping with the nature of Main-Line, the following comments on the Cornell drug scene are based on my experiences with Main-Line and as a chaplain, and do not reflect positions of Main-Line. Every individual in Main-Line speaks for himself, from his own experiences, not from Main-Line consensus.

Persons who have contacted Main-Line

There were 639 contacts made with Main-Line during two hundred twenty-two days in which the service was in operation (Table I). In an effort to assure the anonymity of the contacts, Main-Line secures very little information about the persons who use the service. Consequently, it is difficult to describe precisely the persons who have contacted Main-Line.

An analysis by sex of those who have contacted Main-Line showed that 62 per cent were men, 29 per cent women, and 9 per cent were unreported. These percentages are approximately the same as the staff of Main-Line and reflect the university enrollment where 74 per cent of the students are men and 26 per cent are women. It is necessary to point out that the contacts with Main-Line do not reflect a total picture of drug use or drug crisis

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TABLE I. Main-Line statistics for April 7, 1970 (opening date of Main-Line) to May 29, 1970, (end of term); July 2, 1970, to August 14, 1970, (summer session); September 11, 1970, to January 20, 1971, (fall term)

Variable	Number	
Total calls		555
Informational calls about drugs	177	
Informational calls about Main-Line	163	
Informational calls that could have been crisis	41	
Wrong number and crank calls	36	
Crisis calls	138	
Task force used		20
Medical referral made by Main-Line		8
Medical referral suggested by Main-Line to be made by the individual		23
Total drop-in visits		84
Information about drugs	41	
Information about Main-Line	29	
Could have been crisis	1	
Crisis	13	

in Ithaca or among Cornell students. Fewer than 10 contacts made with Main-Line have related that they were "having a pleasant trip" or "have smoked some excellent grass." Only a very few who use drugs get into difficulty, and only a portion of those have contacted Main-Line.

The major difficulty in trying to assess the total use of nonprescriptive drugs is that such drug use is illegal. Questionnaires or other types of surveys are usually invalid; persons will not answer honestly whether or not they are breaking the law. The purpose of the surveys are usually held in suspicion. At Cornell University an estimate that 40 per cent of the students use nonprescriptive drugs seems to be too low, while an estimate of 80 per cent seems to be too high. There are no valid tools for measurement, and any estimate would be, at best, only an educated guess.

Approximately 25 per cent of the total contacts made with Main-Line are made by junior and senior high school-age persons in Ithaca and the surrounding area. This estimate is based on unsolicited information given to Main-Line. These persons sometimes give their status or refer to a school activity or project. They seem to have a greater fear of being discovered by their parents to be drug users than do college-age persons. Most of these junior and senior high school students are living at home and relate a great deal of information about tensions with their parents. In some cases it has been evident that the parents of these young people have large selections of various quantities of amphetamines and barbiturates in their medicine cabinets.

There has been an increase, although a relatively small one, in contacts made with Main-Line by parents and teachers. The Main-Line statistics do not include the number of contacts made with Main-Line volunteers outside the Main-Line office. Main-Line volunteers who have participated in community drug programs are receiving an increasing number of telephone contacts at their homes or in the classroom by parents and teachers. The concerns of parents and teachers are usually of a particular nature: their child or a child in their class at school is using drugs. It is obvious in many cases where parents and teachers contact Main-Line that they are ashamed of their predicament and ashamed to use a public service for help or information.

Similarly, there has been an increasing number of referrals made to Main-Line by professionals: psychiatrists, psychologists, physicians, Tompkins County Hospital, and Suicide Prevention of Tompkins County. Main-Line has been requested to help these professionals by describing the hallucinogenic experience, by helping to assess the seriousness of a crisis, by helping to determine the nature of a "street drug," and by providing peers for their patient who seems to need "his own kind" for conversation and guidance.

At least 60 of the contacts made with Main-Line have been made by persons on behalf of their friends. In the majority of these cases, the person who contacts Main-Line attempts to convince his friend to talk with Main-Line. Some contacts are made in secrecy from the friend. Suggestions and encouragement are given to the contact so that he will be able to help his friend without creating additional problems. The advice that Main-Line gives to the contact for a friend cannot be too indirect because it has been apparent in some cases that the contact has disguised his own problem as a problem of a friend.

The number of contacts requesting information about Main-Line has almost equaled the number requesting information about drugs. The concern for drug rehabilitation and drug crisis services reflects the growing concern of the community and students.

This concern is perhaps due to the increasing abundance of publicity given to drugs. The drug issue is one of the most important social issues of the day.

Informational inquiries can be generalized into several categories:

1. Inquiries about the hallucinogenic experience, for example, "What is it like to trip on mescaline?"
2. Inquiries about the effects of a specific drug, for example, "Is diazepam (Valium) an up or a down?"
3. Inquiries concerning specific drug information, for example, "What are the facts about LSD and chromosome damage?" and "Explain how the methadone maintenance program works."
4. Inquiries to learn whether Main-Line is aware of certain street drugs which are being misnamed or which are causing people to get sick, for example, "The brown tab which is being sold as mescaline is really acid and a lot of people are getting sick on the stuff, I did!"

Of the 452 contacts made with Main-Line for information, 42 are believed to have been disguises for actual crisis situations. For example, a caller may have taken diazepam, had a few alcoholic drinks afterwards, and has started to worry about the combination. He then calls Main-Line asking about the effects of such a mixture without revealing that this was in fact his own situation.

The crisis contacts made with Main-Line are considerably varied. Of the 639 total contacts, only 151 of them have been known crisis situations. Of those 151 crisis situations, 13 of them were face-to-face; the remaining 138 were telephone calls. In those situations where a telephone conversation is inadequate, Main-Line sends a member of its task force to meet the troubled person at the location of his choice. There were 20 such task force visits and 13 crisis visits to the Main-Line office.

The crisis situations seem to have several general patterns: (1) fear that the trip or effects of the drugs will never end; (2) depressing thoughts, images, and hallucinations; (3) physical discomfort; and (4) addiction—amphetamine, barbiturate, opium, and their derivatives and compounds.

Of the 151 crisis situations, only 8 were serious enough for immediate medical attention. These referrals usually consisted of extreme physical discomfort and obvious overdoses of barbiturates and amphetamines. Of the crisis contacts, 23 were referred to their own physician. These referrals included people who had taken overdoses of prescribed drugs and those who had serious counseling problems that would have to be solved over a long period of time with professional guidance.

Main-Line does not administer or recommend drugs to its contacts as the solution to a drug crisis, has been instrumental in several opium addiction withdrawals, and has had no contacts with people making intentional suicide attempts.

The major approach of Main-Line, when appropriate, is to provide patient, tender, loving care through "talking the person down" when he is in crisis. A description of this procedure will follow.

Drugs

There have been 53 specific drugs and 26 specific combinations of drugs identified through informational inquiries and crisis situations brought to Main-Line. Of these specific drugs, at least 38 have been produced legitimately by pharmaceutical firms but, usually, distributed illegally. The other 15 drugs have probably been produced illegally, such as LSD and synthetic mescaline. The most commonly encountered drugs are listed in Table II. Particularly in crisis situations, the drug mentioned as the cause of the crisis may not in fact be the cause of that crisis. For example, a person may have thought he was taking synthetic mescaline when he had in fact taken LSD. The most common of the 26 drug combinations are actually combinations of a drug with alcohol.

TABLE II. Most frequently encountered drugs at Main-Line from April 7, 1970–January 20, 1971

Drug	Count
Mescaline	52
LSD ("acid," lysergic acid, various compounds)	39
Marihuana	30
Methamphetamine ("speed")	27
Heroin	14
Amphetamine synthesized from nutmeg (M.D.A.)	14
Dextroamphetamine sulfate (Dexedrine)	13
Cocaine	6
Alcohol	5
Propoxyphene hydrochloride (Darvon)	5
Hashish	5
Diazepam	4
Amphetamine sulfate (Benzedrine)	3
Mint leaves	3
Morning glory seeds	3
Morphine	3
No-Doz	3
Alcohol and codeine	2
Alcohol and propoxyphene sulfate	2
Alcohol and mescaline	2
Apomorphine	2
Aspirin	2
Belladonna alkaloids and phenobarbital (Donnatal)	2
Chlordiazepoxide hydrochloride (Librium)	2
LSD and methamphetamine	2
Marihuana and mescaline	2
Methamphetamine and mescaline	2
Nutmeg	2
Psilocybin	2
Tripelennamine (Pyribenzamine)	2

In the past few months there has been an alarming increase in the use of drug combinations. Combining drugs produces additional kicks; the effects are highly unpredictable, and the crisis situations due to the combinations are more difficult to assess and treat medically.

The popularity of a particular drug seems to depend on two criteria: its availability and the particular effects desired. Students smoke marihuana at their parties as often as many of their parents drink alcohol. David E. Smith, M.D., Medical Director of the Haight-Ashbury Medical Clinic in San Francisco, has called marihuana, "the new social drug." Amphetamines are used more during examination and paper-writing times of the school year. Acid trips have a high correlation with good weather. Many students take drugs as an experiment, although there seems to be growing peer group pressure for taking drugs. It appears that more freshmen at Cornell University this year are experienced drug users than were the freshmen a year or two ago. Main-Line has had twice as many crisis contacts between the hours of 10:00 P.M. and 8:00 A.M. as before 10:00 P.M. This indicates that most drugs are taken in the late afternoon or early evening hours, and that peak hours of a trip or of other drug effects are planned to coincide with the most sociable hours of night life.

The popularity of a drug is often due to its availability. During the summer months in Ithaca marihuana was scarce and expensive, but there was a large shipment of methamphetamine (Methedrine) in town. The methamphetamine was less expensive and easier to secure; consequently, it was more popular than marihuana. Exactly the opposite has been true during the fall and early winter months; marihuana is easily available and, in comparison, produces a cheaper "high" than methamphetamine.

Rumors in Ithaca have described an increase in heroin use and addiction, and although Main-Line heroin contacts have been relatively small in number, they do reflect the truth of the rumor. Main-Line's total contacts with addiction have been small, probably for several reasons: the addict is probably interested in direct medical aid which Main-Line does not provide other than through referrals, and the addicts are considerably smaller in number than those persons who use hallucinogens, amphetamines, and barbiturates for only short or scattered periods of time. The users of heroin in Ithaca can be described as primarily non-Cornell University students, although perhaps living on the periphery of the campus community, and predominantly of minority races. There is evidence that a growing number of white middle-class and upper-middle-class young people are using heroin in Ithaca. There exists in Main-Line a general concern that most of the state rehabilitation programs are designed for ghetto street addicts and that those programs do not seem adequate for this relatively new and growing number of white suburban addicts. A drug problem cannot be separated from a social and cultural context. For example, the resolution of poverty in the ghetto is certainly not the same as the boredom of affluence. There is one other distinction that is not made in most state rehabilitation programs: the differences required for rehabilitating "junkies" and "acid heads."

There has been a notion among many citizens of Ithaca that Cornell and Ithaca College students have been responsible for making drugs available to the junior and senior high school students. The Ithaca-Tompkins Narcotic Guidance Council has discovered in the past few months that while there may be some exchange of drugs between the college and the younger students, the younger students in the majority of cases do not depend on the college students for their drugs. The junior and senior high school students have developed their own sources and methods of distribution.

The amount of knowledge that some students and other young people have about drugs is astonishing. It is not uncommon to find a drug user who can identify a tablet or capsule, name its chemical formula, explain in some cases how the drug can be manufactured, and state the normal and dangerous doses of the drug. Most of their information is accurate—surprisingly so, for it has usually come from a friend.

Needed referral services

In the formulation of the Main-Line program, it was apparent that there would be a need for adequate referral resources. The greatest difficulty in enlisting referral help came not from legal and law enforcement agencies, as you might expect, but from medical and counseling agencies. Many of their criticisms have been very helpful, but their encouragement has been rare. The greatest reluctance of these professionals focused on the concept of peers aiding peers. It was difficult for many physicians, psychiatrists, and psychologists to accept the possibility that youthful peers would be able to assess the seriousness of a drug crisis. Yet while they were criticizing Main-Line, some of these professionals were themselves unwilling to aid individuals with drug problems. After several months of Main-Line's successful operation, however, the prejudices of the medical and mental health professionals, and the prejudices of young people toward them, began slowly to disappear. This growing respect and dialogue seems to be a "must" if the professional is to do his job well and if Main-Line is to continue to provide a valuable community service.

Idealistically, what kinds of referral resources does Main-Line need? One resource, a very expensive one that is not now easily available, is a laboratory. Physicians in Ithaca are becoming more aware that chlorpromazine (Thorazine) is not the easy antidote for all drug crises. Things are more complicated than that. Even if the person believes he knows what drug has caused his crisis, the chances are that his information is inaccurate. A good example of the need for exact diagnosis is the boy who went to his physician declaring himself to be a heroin addict. The physician became alarmed, traced a minimal history, and administered methadone for withdrawal. Later it was discovered that the boy had had more methadone, while supposedly withdrawing, than he had ever had heroin. Nor does the story end here. This same boy went through two other similar methadone withdrawal programs in Upstate New York. Had there been knowledge, equipment, and personnel available, the boy's condition could have been determined and he could have been given appropriate treatment.

Other resources are needed in their various aspects of drug rehabilitation. Quick and easily available resources are needed for withdrawals especially in the cases of amphetamine and barbiturate addiction. Attractive rehabilitation programs are needed for youthful addicts; yet providing them seems impossible when our communities are unable to provide even attractive education, vocational training, and life training for nonaddictive youths. Rehabilitation centers and philosophies need to develop so as not to perpetuate many of the problems of the American society. I am specifically criticizing those rehabilitation programs which, in the last analysis, stress the material productivity of the individual or teach submission to blatant authority as the solution for drug addiction.

Other resources are needed which relate the facts of drug use and abuse. While Main-Line refers to its library of about 100 books for information, and has printed two informational supplements on drugs in the *Cornell Daily Sun,* additional information is necessary. Additional research seems to be an imperative. We simply do not have enough decisive information about drug use and abuse. There is a strong need to avoid giving out misinformation. Not long ago I previewed several advertisements to be published in a local newspaper. One article had a picture of a coffin with a draped flag and a bunch of roses. It claimed that Johnny died of a heroin overdose and that it all began with his smoking marihuana. The article implied that marihuana leads to heroin, and marihuana leads to death. Yet perhaps it all really began because of something else: neglect, a broken home, or poverty. Johnny's drug-taking may have begun with marihuana, but marihuana does not categorically lead to heroin or death. The implications in the advertisement were therefore inaccurate.

The misinformation about drugs is often based on a moralistic judgment related as fact. For example, the view that smoking marihuana is bad often implies, in addition, that the smoker is bad. The marihuana smoker, like any of the rest of us, resents being labeled a bad person. If we are going to prevent drug abuse, if we are going to inform the public, then we must report the facts accurately and without moral insinuations.

Professional resources are needed—persons who are willing to treat drug crises, which, unfortunately, often occur at inconvenient hours. We need physicians and counselors who are not afraid to treat hippies because they feel they cannot talk with them. They should realize that the drug user who needs help is looking not for a person who can talk the street language but for a person who is competent and willing to help him. After many experiences with drug crises, I have observed that a physician will be rejected only when he rejects his patient.

Main-Line has discovered that the first treatment most physicians consider as the solution to a patient's problem, drug crises included, is prescribing drugs. When a patient presents his problem, the physician often says, "Let me see, I believe I have something you can take." Drug prescriptions are certainly in order when necessary, but consideration might well be given to alternatives. Granted, many physicians have had little experience with drug crises, especially with the hallucinogenic drugs. They have not had enough time to experiment with alternative approaches to prescribing drugs for a drug crisis. Of the 151 crisis contacts with Main-Line, only 8 have required immediate medical attention, and of those 8 only a part were, of necessity, treated with drugs. The approach of Main-Line, "talking a person up" from a bad drug experience, might be seriously considered by the medical profession.

Talking a person up

The approach used most often by Main-Line in relating to drug crises is known as "talking a person up." This same approach is sometimes referred to as "talking a person down," but most of the Main-Line volunteers prefer the phrase "talking a person up" because it implies a positive approach: encouraging the person to "ride out" the drug effects successfully. In contrast, "talking a person down" implies a negative attitude towards the drug experience, implying the possibility of "getting off" the drug. It seems unrealistic, and it is certainly offensive to a person on drugs to try to convince him that his discomfort is not a result of taking the drug. The approach of talking a person up is used in those cases where there are no physical problems that require medical attention. Those cases include hallucinogenic drugs and sometimes amphetamines and barbiturates. The following are typical examples:

1. I am on speed. I want to go to sleep and can't. When will it end?
2. My friend and I dropped (acid) this afternoon. The trip is over for me, but my friend has just been sitting and staring without saying a word for the last three hours. What can I do?
3. I've been tripping on acid and the world seems like it is closing in on me.
4. I'm getting sick and have been on mescaline for about three hours. Is it possible that I have taken a bad drug?
5. My friend has been acting real strange. He looks out the window and then he curls up, shivers, and shakes. He is on cocaine; is it possible he has taken an overdose?

The immediate concern of an individual talking a person up is to assess the seriousness of the crisis. According to Main-Line guidelines, the following things should be found out as quickly as possible:

1. What the person thinks he has taken.

2. How much he took, and when.
3. If it is a phone call, where he is (in case it is necessary to send help) and whether he feels comfortable in that place.
4. Whether there are friends around who might be able to help.
5. What activities or interests the person has (this information to be used in diverting his attention toward positive activity).

Main-Line does not give medical advice. Where there is the slightest possibility of an overdose Main-Line contacts a physician. When the person seems to have overreacted to a drug or is uncontrollably irrational or hysterical, he is referred to a physician. Sometimes Main-Line easily detects a need for counseling and arranges for the person to see a psychologist or psychiatrist.

The individual who talks another person up does not attempt to direct the drug experience; he attempts to refocus it. The process is to minimize his fear or anxiety that the trip will never end, that the drug is making him sick, that the walls are closing in and will crush him, and so on. Although the conversations are sometimes ridiculous, it should be remembered that what is being said is not as important as is projecting a feeling of genuine concern and interest for the person. The individual talking a person up must not be impatient with the content of the conversation, nor the length of the conversation, which may be two or three hours. The individual talking a person up must be able to develop a relationship characterized by trust, honesty, interest, concern, warmth, and a totally nonjudgmental attitude. The quickest way to break the trust would be by saying, "Why did you take that junk?" or "You deserve to be sick," or some similar moralistic judgment. The individual should never be satisfied with a drug user's own evaluation of his own difficulty when under the influence of drugs.

An individual who has had some experience with drugs, especially hallucinogens, has an advantage in talking a person up. Because of his own experience he is able to anticipate some of the fantasies or dangers that may arise. For example, someone might call and explain that he is on the fourteenth floor of a tall building. He may go on to describe how high up he feels and how far down it seems. The drug-experienced individual talking this person up would probably anticipate that the person might pretend that he is a bird and start flying. The individual could then refocus the train of thought in a subtle but effective way. I am certainly not advocating that we all "turn on" to be able to talk a person up; I am suggesting that we need to try to sense, emphatically, the drug experience.

Helpful suggestions are sometimes in order. If the drug user has not eaten regularly or recently, a suggestion that he eat a meal or an orange often distracts him from his preoccupations. Sometimes taking a walk, listening to music, or looking at pictures may be advised. Simple games can be played to direct attention away from uncomfortable thoughts.

There is no "correct" way of talking a person up. What may work in one crisis situation may be exactly what should not be done in another.

Conclusion

Recently a great deal of material has been written about the drug scene. The approach most often used is to provide data or case studies to prove a particular thesis regarding the nature of the drug scene. I would suggest, from experience, that the approach should be exactly the opposite. We can develop means of collecting data, we can draw implications from that data, and we can then deal with the changes demanded by those implications in resolving our drug abuse problems. We can no longer allow drug programs to develop on the basis of mere opinion.

Through our experience with Main-Line we have discovered that the drug scene includes us all, in varying degrees, of course. The drug scene is not limited to a group of hippies who smoke "reefers" or to a group of persons over the age of thirty who take tranquilizers. Everyone I know takes drugs and I am thinking of drugs in the broadest sense—that is, substances that, by their chemical nature, alter human functioning.

Through our experience with Main-Line we have learned that the drug scene is a reflection of every facet of American life. The drug scene is made up of our individual personalities, our medicines, our laws, our economic system, our religions, everything. The drug scene cannot be described as a problem of just medicine, or laws, or any other particular thing; it is all of them. Let me illustrate my point. Consider the drug scene from the standpoint of a drug user, particularly a user of hallucinogenic drugs. He has no guarantee of the nature of the end result of a digested drug. There are too many variables involved in taking drugs to anticipate their effects: the digestion of food, the amount of sleep, his general physical well-being, his emotional state, the situation in which the drug is induced, with whom it is taken, and so on. The effects of the drug depend on the condition of the whole man, not just one facet.

Let me illustrate in another way that the drug scene is a reflection of our total life. I cannot think of a single facet of our culture that is not influenced in some way by drugs: we have drug profiteering, drug rehabilitation centers, drug advertising, drug laws, drug stores, drug education, drug symposiums, and so on. Hallucinogenic drug experiences have great similarities even to our religious experiences. The ills of our culture are reflected in the drug scene: the boredom of affluence, poverty, racism, poor housing, and all the rest. The college drug scene is not a scene unto itself. The college drug scene is a reflection of our total scene—the total scene as it is!

Until we are able to change those ills which plague our society, until we are able to accept the world with all its paradoxes of justice and injustice, I believe that we will continue to have the drug culture. In the meantime we will have to deal with our drug crises, and we will have to educate our people as well as possible about drugs. I believe that Main-Line's approach of talking people up is a good way of finding out what the issues of life are, and that it is a responsible way of handling drug crises. Until the day when Main-Line will no longer be needed, I believe that it will continue to be a legitimate referral agency for you, the professionals, and a legitimate resource for the community.

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BLOOD TRANSFUSION

Recent medical-legal developments

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Approximately 6 million units of whole blood and blood derivatives are transfused annually in the United States into nearly 3 million patients for a variety of medical reasons, including: (1) blood-volume deficit, (2) red blood cell mass deficit, (3) coagulation deficiency, (4) exchange transfusion, and (5) extracorporeal support. It is estimated that about 30,000 cases of serum hepatitis and 1,500 to 3,000 deaths related to hepatitis occur each year.[1]

The volume of blood and blood transfusions, approximately 600,000 to 700,000 per year in New York State, plus the number of patients involved, coupled with the incidence of hepatitis morbidity and mortality, have generated considerable public interest and much legal activity in this important area of medical care. More recently, tests for the detection of hepatitis in blood donors, although less than ideal in terms of sensitivity (approximately 25 to 30 per cent detection of individuals who are capable of transmitting hepatitis), have been introduced. Such tests are now required by the American Association of Blood Banks and several states including New York to reduce this hazard of blood transfusion.

Hence a review of recent medical-legal developments affecting hemotherapy is important and timely. Moreover, legislation has been passed recently in New York State in response to court decisions adversely affecting blood banking in other states. Since blood transfusion is an integral part of medical practice, a change in public policy through judicial and legislative action can have a major impact on medical practice; hence it is of extreme importance to hospitals and physicians as well as to other health professionals who usually are individually and collectively involved in negligence and liability suits.

Effects of amendment

An amendment to New York State's Public Health Law[2] passed May 4, 1971, will provide added protection for hospitals, blood banks, physicians, and other health professionals from litigation arising from posttransfusion hepatitis and some other diseases as well as from such untoward effects and reactions from blood transfusion as the following:

- Hemolytic
- Febrile (pyrogenic)
- Allergic
- Bacterial contamination
- Circulatory overload
- Isosensitization
- Hemorrhage after massive transfusion
  - A. Platelet deficiency
  - B. Depletion labile coagulation factors (V, VIII, XI)
  - C. Fibrinogen deficiency
  - D. Fibrinolysis
  - E. Citrate intoxication
- Air embolism
- Metabolic acidosis
- Transmission of disease
  - A. Hepatitis
  - B. Syphilis
  - C. Malaria
  - D. Brucellosis
- Hyperkalemia (potassium toxicity)
- Ammonia toxicity (in the presence of liver disease)
- Vasoconstriction secondary to vasoactive substances primarily from platelets
- Transfusion hemosiderosis
- Thrombophlebitis
- Injection of particulate matter including skin

This amendment, sponsored by Sen. Tarky Lombardi, has dual implications. It first designates that the handling of blood for medical purposes is to be construed as a public health service and shall not be considered as the sale of a product under any legal theory. The second aspect of the amendment is to eliminate from the definition of blood bank the term "sale" altogether, including this type of transfer in the phrase " . . . otherwise made available."

The immediate impact of this change is to bring all facets of blood processing under the rationale of the *Perlmutter* v. *Beth David Hospital*[3] case which is considered a landmark case in the field of blood transfusion. This four-to-three decision in 1954 established the legal principle that hospital contracts were essentially for services and not divisible; therefore, the entire contract was one of service, and the supplying of individual medications, devices, or blood transfusion could not be considered as the sale of a product.

This sale versus service dichotomy has provided protection for hospitals and blood banks in this area for the simple reason that legally the sale of a product is considered to have an implied warranty of fitness and merchantability regardless of the absence of an express warranty; no such rule applies to services. Therefore, any lawsuit seeking to recover on the grounds of breach of implied warranty as to blood transfusion will fail since this must be considered as a service; there are no implied warranties for service and hence insufficient grounds to maintain a lawsuit. This leaves only the possibility of recovery on a theory of negligence, that is, that in handling the blood, normal care was not taken. The amendment will have no effect on lawsuits based on this theory. Lawsuits based on negligence will continue to be available to persons harmed as a result of an error in professional judgment, a technical error, or an administrative oversight such as failure to identify properly the patient and/or blood unit.

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Need for protection

The need for increased protection stems from recent serious attacks on the rationale of *Perlmutter* which has been overturned in several other jurisdictions. Most notable, and the case which more than any other directly prompted this amendment, is an Illinois Supreme Court decision in the case of *Cunningham* v. *MacNeal Memorial Hospital*[4] (September, 1970); this was a suit for damages ($50,000) based on posttransfusion hepatitis morbidity. Here the court declared that blood was a product and that blood transfusions were in fact sales of such a product. However, the court went further and stated that the hospital should be held strictly liable for damages in supplying hepatitis-infected blood. Previously, even where blood was considered a product and subject to implied warranties, there was still a measure of protection afforded from the fact that if a product was unavoidably unsafe but properly prepared and marketed, the supplier should not be held strictly liable.[5] The end result of this case was the stripping away of two previously viable defenses. Although the decision involved blood transfusion, the implications extend much further. The same rationale may be expanded to include other services rendered by hospitals and physicians for which a charge is made. It is not difficult to conceive of this theory being used as a basis for actions arising from unfavorable results of injections or other modalities of therapy, and this may be its greatest potential danger.

Fortunately, the Illinois decision has been criticized and appears not to be enjoying wide acceptance at present. Indeed, it is indicative of the far-reaching effect of this judicial decision to note that the Illinois legislature passed a bill approved by the governor which grants a two-year grace period in which hospitals will be exempt from liability due to illness resulting from blood transfusion.

The Illinois court based a portion of its findings on the grounds that the hospital was better able to bear the risk of injury by purchasing insurance. However, the high cost of medical services resulting from increased premium costs of liability insurance, coupled with difficulty in purchasing adequate insurance coverage, has been cited in opposition to the reasoning of this decision. This decision might have been precipitantly made and reflects flawed logic in holding the hospital strictly liable.

However, a more dangerous legal theory directly opposed to the *Perlmutter* rationale is the *Hoffman* v. *Misericordia Hospital of Philadelphia*[6] Pennsylvania supreme court decision which suggested that even if a blood transfusion could not be considered a sale, it might still be subject to implied warranties. Although a more sincere approach and logically sound decision, it certainly appears to ignore the fact that if blood transfusions are medically necessary and serum hepatitis is only partially detectable with currently available tests, hospitals and physicians are virtually defenseless. The reasoning here is that physicians and hospitals may not withhold blood transfusion from the public because of a vague possibility that it may be contaminated. However, other products either defective or unavoidably unsafe may be withdrawn from use thus eliminating any exposure by the supplier. In essence, a physician who witholds administering a blood transfusion to a patient in need of blood may be liable for negligence; on the other hand, if blood is administered to this patient and the patient develops hepatitis, the physician and the hospital even in the absence of fault might be liable if the *Cunningham* rationale or the inference in the *Hoffman* case were the prevailing law.

Against the *Hoffman* rationale it might be well to examine the approach taken by states such as Hawaii which expressly excludes liability on any grounds other than negligence.[7] This is a simpler approach than New York's since it eliminates the sale versus service dichotomy altogether.

Comment

Medical malpractice lawsuits in general and blood transfusion litigation in particular cannot be expected to diminish in the foreseeable future. Increased activity in the area of consumer protection and products liability will tend to exact higher standards of care in rendering transfusion and drugs safer to use. With this as background, physicians and hospitals must take full advantage of legislative protection and take steps to improve donor screening, eliminate administrative and technical errors, and, most importantly, seek greater public participation by voluntary blood donation. The disturbing misconception harbored by the legal profession that there is indeed a foolproof test for hepatitis must be dispelled. As lawyers become increasingly well informed about medical malpractice, physicians must become correspondingly well aware of the legal ramifications of the practice of medicine.

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TRAUMA AS NATIONAL PROBLEM

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Trauma is indeed a national problem. It is of a magnitude which challenges both the medical profession and its professional organizations. Trauma is the fourth-ranking cause of death for all ages and the leading cause between ages one and thirty-seven years. In 1968 in the United States, trauma resulted in more than 100,000 deaths, 10 million temporarily disabled, and 400,000 permanently disabled persons, at a cost of 18 billion dollars. Trauma patients took up 22 million hospital days, more than all heart patients or obstetric patients and four times those needed by cancer patients. Truly, trauma is a most important environmental health problem.

The challenge to the medical profession is, in association with nonprofessional groups, to initiate, coordinate, and implement (1) programs for the prevention of trauma, (2) systems of emergency medical services in each locality, designed to provide optimal prehospital handling of the injured (or ill), and (3) prompt, effective professional management of patients in well-equipped hospitals which, combined with good emergency medical services, should significantly reduce the alarming morbidity and mortality data.

Prevention

The data reported should shock a population, including its medical profession, that is subsidizing hospital construction, education of an increased number of physicians and potential physician's assistants, and medical care for many patients. The total hospital days required annually by trauma victims is equivalent to 120 hospitals of 500 beds each. A reduction of 10 per cent in injuries requiring hospitalization would save over 2 million hospital bed-days, free physicians for about 8,000 workdays, and save some $1.6 billion each year.

The medical profession not only is presented with a challenge to support programs to prevent trauma, it has a responsibility and a capability to do so. In the past, support of safety programs has been rather passive. Active, militant support is needed for safety measures in industry and homes, and on athletic fields and highways, all particularly fertile areas for the profession.

The Committee on Medical Aspects of Sports of the AMA and other groups have developed superior recommendations concerning protective equipment, playing-area construction, and conditioning programs for athletes. Unfortunately, such recommendations at a national level all too frequently are unknown or ignored at regional levels in both urban and rural areas. Dissemination and hopefully utilization of this information could be improved by better reception, communications, and organized programs at the state, county, and local areas.

Organized medicine really has the authority to require its members to be knowledgeable and active in measures designed to minimize injuries on the athletic fields.

In the areas of prevention of street and highway crashes and resulting injuries, the profession has a great opportunity to meet its challenge. The National Highway Safety Bureau has established a splendid program with its 16 standards. They deserve full support of physicians and organized medicine, but little has been done at the local or national level to provide it or to encourage it at the state level. Practically all standards require state legislation or regulation. State and county societies and individual physicians should campaign actively to gain public and legislative support for implementation of the standards in their respective states. Activities by physicians are needed in four highway safety areas particularly.

Driver licensing. Physicians must support the denial of licenses to drive for medically unqualified individuals. West *et al.*[1] have shown that in 15 per cent of single-car crash driver fatalities in California in 1963, the cause of death was a previously known disabling medical condition, principally heart disease. Physicians must willingly report individuals with such conditions to licensing authorities regardless of an adverse effect on physician-patient relationships and also use all their persuasive powers to discourage high-risk patients from driving.

Motorcycle safety. Physicians must advocate and support legislation to require motorcycle riders to use protective helmets and spectacles and warn them repeatedly of the hazards of motorcycling. Adverse rulings by several state supreme courts have invalidated legislation to require such

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*By invitation.

protective equipment. Physician pressure might help overcome these rulings.

Safety restraints. Physicians by advocacy, precept, and example must promote full use of lap belts and shoulder harnesses. Patients, family, and friends should be urged to utilize them at all times in both urban and rural motoring. It is distressing to see physicians themselves leave their own lap belts unfastened. The value of restraints in preventing or minimizing injuries is well documented.

Alcohol and highway safety. In the area concerning alcohol physicians should become militant in demanding legislation to provide implied consent for breath and blood tests for alcohol content and levels of 0.10 mg. per 100 ml. as presumptive of driving while intoxicated. Even prearrest testing as currently provided by law in Baton Rouge, Louisiana, should be advocated. Data show that 2 per cent of drivers are intoxicated; hence 1 of every 50 approaching drivers has a blood alcohol level above 0.10 mg. per 100 ml. and is driving while intoxicated. If all causes of highway crashes were eliminated except alcohol consumption, 50 per cent would still occur. What a challenge to the medical profession to do all in its power to eliminate driving while intoxicated!

Emergency services

Prehospital emergency services, with rare exceptions, are in a deplorable state throughout this nation. The components and standards of a community system of emergency medical services, now well established, are:

> Casualty-carrying vehicles which provide adequate space for needed equipment and for trained personnel to render life-supporting emergency care in transit.
>
> Equipment sufficient to permit effective emergency care for all injuries and illnesses.
>
> Two or more well-trained and experienced ambulance attendants (emergency medical technicians—ambulance) on each vehicle.
>
> Adequate communications, two-way radio and telemetry, between ambulance, dispatcher, and hospital emergency departments whereby the latter may be alerted to the impending arrival of a casualty and the ambulance personnel may receive advice from a physician at the hospital. Hopefully, the latter in the near future may include instructions to initiate intravenous fluids, administer drugs, or carry out cardiac defibrillation as is done now in Miami and Jacksonville.

To provide such services appears easy, but few, if any, communities have a system fulfilling all the requirements. Money, manpower, and motivation are essential prerequisites. Fortunately the cost of equipment is not prohibitive for any size area. Increased funding, however, is crucial in large urban areas to provide adequate pay scales to attract and retain competent personnel and perhaps to underwrite any operational deficit. One solution, particularly in urban and suburban areas, is for government to assume fiscal responsibility for emergency ambulance service as a third tax-supported emergency service; fire and police services comprise the first two. Obviously governmental officials who are highly motivated to provide first-class emergency ambulance service are necessary.

In rural areas, money may be a lesser prerequisite particularly in those areas with volunteer fire departments or organized rescue squads. Funds for adequate equipment usually can be obtained from civic organizations and service clubs. Volunteers usually can be recruited, and they serve without compensation. Actually, some of the most proficient ambulance services now functioning in this nation are provided by volunteers.

The challenges to the profession are to participate and insure adequate motivation at the local level, not merely to issue pontifical statements favoring improved prehospital and hospital emergency services. Action is needed by county medical societies, the basic units of organized medicine, other professional groups, or individual physicians at regional levels within which effective systems of emergency medical services must be developed. A national system or even state-wide systems would have built-in overwhelming problems because the resources, problems, and solutions vary too widely region to region, even county to county, or city to city.

A county society, fully mobilized, should develop easily and effectively a public demand for efficient emergency ambulance services which would motivate, even if only from political pressure, governmental officials to insure that the third emergency service is provided. At times a single physician missionary, particularly in a rural area, can have the same effect, as has been demonstrated by Farrington[2] in Minocqua, Wisconsin. His efforts plus the effect of the National Highway Safety Bureau standard on emergency medical services actually have produced a state-wide group of well-motivated physician missionaries and, in turn, a set of programs across Wisconsin which bids fair to lower the mortality and morbidity rates from trauma in that state. When a community fails to have an adequate system of prehospital emergency services, a black mark is placed indelibly somewhere on the anatomy of its physicians.

A most advantageous step at the local level is the formation of an advisory council on emergency medical services, as has proved effective in many communities of various sizes. Membership should include representatives of all governmental and voluntary agencies who have either an interest or responsibility or both for emergency ambulance services. Membership usually includes a representative of the chiefs of police and fire departments, sheriff's office, health officer, civil defense, ambulance service industry (at times a mortician), hospital(s), the local medical society, and interested physicians. The objective and task of the council are the development of an adequate emergency ambulance service meeting the standards outlined which conform to standard 11 of the National Highway Safety Bureau. With adequate pressure the majority of governmental heads at a city or county level are likely to support and even initiate the formation of such a council. The council, after evaluating available resources and all other aspects of the problem, should make firm recommendations regarding the type of service: governmental (fire, police, county-city hospital based) or commercial (mortician or private ambulance service), perhaps franchised, and, of importance, the preferable financing arrangement. The council's job is not finished even when an effective emergency ambulance service is functioning since it should remain in being to continue surveillance of the problems in the community regarding emergency ambulance services and to insure that the quality of service does not deteriorate.

Prompt management

The third challenge to the medical profession is to assure prompt, effective professional inhospital management of trauma patients. Again, money, manpower, and motivation are needed. Actually only enough money is needed to insure adequate hospital equipment which fortunately is available in most hospitals. Manpower is a problem at times, however, and motivation is often sadly lacking. Here, organized medicine at the national, state, county, local, and individual physician levels must successfully meet the challenge of trauma if the upward trend of morbidity and mortality rates is to be revised downward. How? Partial answers are continuing education in the management and improved organization in hospitals for the injured.

A huge gap appears to exist between what is known about management of the critically injured and what is delivered to them in the way of professional treatment. For several years some 70 per cent of the deaths from highway crashes have occurred in or around communities of 2,500 people or less. While several variables must play a part —prolonged notification and response times and inadequate systems of prehospital emergency services as already discussed—undoubtedly certain deficiencies in professional inhospital management comprise a significant factor. Rural hospitals generally are staffed only by general practitioners who cannot be expected to have the knowledge and skills of highly trained surgical specialists. The survey in Colorado by Owens[3] revealed that 70 per cent of the hospitals did not have a specialist on the staff. Moreover, such hospitals usually do not have a physician in the hospital, much less in the emergency department, during many hours of the day and night. Unfortunately, the same deficiencies exist in many suburban and even urban hospitals.

Solutions

A partial solution, then, is continuing medical education in lifesaving measures for the critically injured, education to develop both knowledge and skills, for those physicians who first see such patients in hospitals. Here, organized medicine at each level, including specialty societies, must provide incentives, perhaps requirements, and adequate numbers of comprehensive educational programs, including demonstrations and practice sessions, accessible to physicians in all varieties of geographic location. Currently, as part of the trauma activities of the College, such programs for rural physicians are going in five states.

Currently some interest in continuing medical education is apparent. AMA members now may receive certificates if they attend an adequate number of scientific programs; the American Academy of General Practice requires continuing education for retention of membership; self-assessment programs comparable to those of the American College of Physicians are being considered by surgical societies. The American College of Surgeons offered one in 1971. Self-assessment programs alone, however, will not supply a full answer for professional deficiencies in management of the critically injured. Skills must be taught, demonstrated, and practiced under supervision either in the rural and other hospitals or during short (one to two weeks) inhospital postgraduate programs at medical centers. The Committee on Trauma of the American College of Surgeons has proposed that such programs be developed by medical schools with arrangements for residents to fill in for rural student physicians.

Another portion of the solution is improved inhospital organization, particularly as regards emergency departments. Hospitals in all localities likely to receive critically injured persons must keep a knowledgeable and skillful physician in the hospital and preferably in the emergency department at all times. Hospitals should not staff the emergency department merely with interns but rather with a physician, who could be a resident in at least his third postdoctoral year. The same staffing requirements hold even if medical staff rotation on a twelve- or twenty-four-hour basis is necessary. I contend that a requirement for Joint Commission on Accreditation of Hospitals approval should be a physician in the hospital at all hours to protect inhospital patients as well as those coming to the emergency department.

Categorization of hospitals based on capabilities to receive and render lifesaving treatment for the critically injured or ill in the emergency department, operating room, and/or intensive care unit must come as part of the regional or community system of emergency medical services. Categorization of hospital emergency departments was proposed in 1966 by the National Academy of Sciences-National Research Council committee on trauma. That categorization of entire hospital facilities (the emergency department being only one criterion) is preferable has been concluded by all groups studying the problem.

Categorization of hospitals according to their capabilities becomes an essential part of a well-organized regional system of emergency medical services. Trained attendants on ambulances, knowing which hospital is category I (the most sophisticated and capable), communicating with it by radio and receiving advice as to treatment, can proceed directly to it with the critically injured or ill, bypassing less capable and less ready institutions. This plan negates the concept that ambulances should always go to the nearest hospital regardless of its capabilities, a concept currently all too prevalent.

Several professional groups have standards for categorization under consideration. In general all recognize four types of hospital emergency service capabilities about as follows:

I. Comprehensive emergency service
II. Major emergency service
III. General emergency service
IV. Basic emergency service

Category I standards

A widely accepted set of standards for a category I hospital ready for implementation has not been developed as yet. The following are proposed principally insofar as trauma is concerned. The hospital should be fully equipped, prepared, and staffed in all medical and surgical specialties to render the most comprehensive and advanced lifesaving medical services, of a capacity adequate to the region served.

Staffing. Emergency department staffed twenty-four hours each day by physicians in at least the third postdoctoral year and by registered nurses, licensed practical nurses, and other allied health personnel, all with special training in emergency lifesaving procedures.

Hospital staffed twenty-four hours each day by physicians in at least the third postdoctoral year in all specialist categories concerned with management of life-threatening conditions.

Visiting staff physicians of all specialist categories available on call for consultation or service in the emergency department or other hospital areas within a short time.

Facilities. Emergency department of a capacity adequate to care for direct admissions and referrals from other hospitals of the region served, equipped to cope with all emergencies; equipment includes resuscitative intravenous fluids, with emergency surgical and intravenous administration sets, airway control and ventilation equipment, suction devices, bronchoesophagoscopy equipment, gastric lavage equipment, drugs and supplies, electrocardiograph defibrillator, pacemakers, and monitoring equipment, including apparatus needed to initiate monitoring of central venous pressure.

Blood storage facilities containing conventional types of blood, including O-negative, for immediate needs within one minute and ready access to an established blood bank for supplemental supply, including rare types.

Laboratory service capable of blood gas tension, pH, electrolyte, and blood-volume determinations, and other advanced procedures appropriate for emergency care, staffed at all hours by qualified personnel inhouse and immediately available.

Radiologic service completely equipped, including angiography capability, utilizing either fixed or mobile equipment as needed, staffed at all hours by qualified personnel inhouse and immediately available.

Operating room(s) set up and ready at all hours for any emergency surgical procedure, staffed by operating room personnel, including an anesthesiologist or experienced nurse anesthetist, inhouse and available immediately.

Postoperative recovery unit in or adjacent to operating room suite, staffed by trained personnel in the unit or inhouse and immediately available during nights and holidays.

Surgical and medical intensive care units with adequate monitoring and therapeutic equipment, staffed at all hours by specially trained personnel.

Burn unit designed and equipped for isolation and management of extensive burns, staffed by specially trained personnel in the unit or inhouse, and immediately available.

Poison control center inhouse or readily accessible for consultation.

Cardiopulmonary bypass capability on short notice.

Renal and peritoneal dialysis capability.

Communications equipment for inhospital coordination and for direct two-way radio communication with ambulances, dispatchers, law-enforcement personnel, and other hospitals.

Mass casualty expansion capability with ready access to supplemental space, equipment, supplies, and drugs necessary for emergency medical care in event of multiple casualties, including natural disaster or national emergency.

Categorization is likely to develop by regions within states and, therefore, the standards for rating the most capable hospital may vary from one part of a state or the country to another depending on the area sophistication in management of the injured or ill. Even so, certainly the concept of categorization deserves full support of the medical profession because of the favorable effect it should have on the professional management of the critically injured or ill.

Summary

The current status of programs for prevention of injuries and prehospital and inhospital management of trauma victims presents a challenge to organized medicine and its members at the county or regional level to help bring about (1) adequate safety regulations: implementation of the standards of the National Highway Safety Bureau would accomplish this; (2) an effective system of emergency medical services in each community; (3) to promote, provide, and participate in continuing medical education for physicians in the lifesaving technics for the critically injured, particularly for those physicians who are not surgical specialists; and (4) to support the concept of regional categorization of hospitals according to their capabilities with the understanding that trained emergency medical technicians in an ambulance will take injured patients to the institutions best organized and qualified to render lifesaving care regardless of previous or future physician-patient relationships.

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NAVAL SURGERY IN WAR OF 1812

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The naval War of 1812 consisted mainly of long, lonely cruises in search of prey and prizes punctuated infrequently by short but highly destructive battles. It was the last war in which unarmored wooden ships fought yardarm to yardarm, broadside to broadside. The naval surgeons thus faced the dual challenge of the management of routine shipboard medical problems, as encountered on any long sea voyage, with the ever-present possibility of a sudden swarm of battle casualties. The study of the details of naval surgery in this war provides important insights into the naval and medical practices of the times.

History of navy

The U.S. Navy had been entirely disbanded in 1785. The heavy debts remaining after the American Revolution and the problems of launching the new republic left little room for a peacetime navy. The individual states' navies had also been sold off.[1] However, the new nation was not long without a maritime defense. Responding to aroused public opinion, Congress abandoned its traditional policy of paying ransom and tribute to the Barbary corsairs and authorized the laying of the keels of six new frigates to protect the widely scattered American merchant marine. The Algerians, in particular, but also the Tripolitans, Tunisians, and Moroccans had been seizing U.S. ships, selling the vessels and their cargo, and enslaving the crews despite acceptance of bribes and tributes. These frigates, launched in 1797 and 1798, actually formed the nucleus of the U.S. Navy in the War of 1812. They were first tested in quasi-naval war with France* and later were fully schooled in the Barbary wars (1802 to 1812). These Barbary campaigns became the training ground for a number of Yankee seamen who were to gain glory and distinction in the War of 1812. When Madison signed the declaration of war June 18, 1812, the American Navy had only a handful of major ships in commission.† The Navy relied heavily on these vessels for the great majority of its sea operations. Since its expansion was slow at first, many of the newer ships were not completed in time. Therefore the needs for naval medical personnel at sea was limited since each ship had a surgeon and one or two surgeon's mates aboard.

The naval shore installations were as yet very small in scale. In 1812 there were only six naval bases[3]:

Base	Men Employed
Portsmouth, New Hampshire	10
Charlestown, Massachusetts	20
New York City	102
Philadelphia, Pennsylvania	13
Washington, D.C.	36
Gosport	16

Expansion of shore naval operations occurred with the addition of several new bases, but requirements for medical personnel rose only modestly. There was no provision as yet for extensive medical care in these naval bases. The onshore care for ill naval personnel was actually as haphazard as it was in 1809. In that year James Gallatin, Secretary of the Treasury, reported the U.S. expenditures for treatment of sick sailors in the *Medical Repository*.[4] In many cities ill seamen were boarded in private homes and taken care of by non-Navy physicians. The charges for boarding, which ranged from $2 to $3.50 weekly, were borne by the Treasury Department. In Boston a marine hospital had been built, staffed, and supplied by the government which had an average daily census of about 8 ill navy seamen. In New Orleans the Charity Hospital took care of 9 sea-

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*The French government was disappointed that the United States did not join them in fighting England. They also resented U.S. disapproval of their leaders' political excesses and began attacks on U.S. commercial shipping. The brief war (1799 to 1801) ensuing was exclusively a series of naval encounters in the Caribbean. Napoleon's rise to power brought peace.[2]

†Cooper lists 19 vessels available in 1812: 7 large frigates, 9 schooners, brigs, and 3 rotting hulks too far gone to be rehabilitated. The medical personnel needed would be 16 surgeons and 22 mates.[5]

men weekly at an average cost of $7.81 each; the Pennsylvania Hospital charged $4.60 weekly and usually had a census of about six seamen.

> New York—The seamen are received at the New York Hospital where all items of expense attending them, except funeral charges, clothing, and the pay of a superintendent of seamen, at $250 a year, are borne for $3 a week. On the average for the whole year, there were constantly sixty-four in the hospital, of whom about one in fourteen belonged to the navy. In the year 1809, thirty-eight died. For three maniacs supported during the year, an addition of $1.50 a week each is paid. The average expense was $3.25 a week for each seaman, Total $10,907.61.[4]

Although Congress had passed a bill authorizing the construction of naval hospitals in 1811, and money was being collected for that purpose, there was little progress made in systematizing shore care of ill seamen until the 1820s, when construction of hospitals actually began.

In keeping with the size of its fleet and its shore facilities, the Navy Department was still in its infancy in the War of 1812. Created a separate department in 1798, it exerted only broad directional powers over naval operations at first. Wide discretionary powers were delegated to local commanders in addition to their almost complete autonomy over routine shipboard matters. It is not surprising that naval medicine was also organized on a ship-by-ship or local squadron basis. Since the appearance of a subdivision of naval medicine within the Navy Department was not initiated until the 1840s, it is evident that the history of naval medicine in the first fifty years of the nation is the collective histories of the individual naval surgeons.[6]

At the start of warfare, the Navy had about 20 commissioned surgeons and slightly more surgeon's mates. With the expansion of the Navy during the war, the requirements for medical officers rose sharply, so that by January 1, 1815, when the first accurate roster was available, there were 44 surgeons and 46 surgeon's mates.[7]

Naval surgical practices, like most U.S. naval activities in general, had been borrowed more or less intact from the British Navy. There were no formal, centralized, or systematic procedures for shipboard medical care. Each new medical officer learned naval surgery procedures on the job without any specialized assistance from the Navy Department. Before each voyage, for example, each surgeon was expected to formulate and anticipate his medical needs and to obtain by direct purchase his supplies, instruments, drugs, and so on. In addition to following nautical customs and traditions, he could consult some published recommendations for the surgeons' chest.*

The lack of systematic direction for new naval surgeons was deplored by several regular Navy surgeons after the war. They supported vigorously a proposed naval medical school operated by Thomas Harris M.D., in Philadelphia.[8] He and several other distinguished Philadelphia physicians lectured on the management of wounds and the principles of naval medicine. Victualling, water supply, and antiscorbutic measures were stressed. There is no doubt that these subjects would have been useful to the surgeons in the War of 1812.

It was not until 1825 that the Navy Department began to evolve criteria by which promotion to the rank of surgeon could be made. A board of distinguished surgeons was first convened to examine candidates for advancement to surgeon from surgeon's mate.†

Three classes of medical personnel were authorized. There were two grades of commissioned officers; the surgeon and the surgeon's mate, and one enlisted man. In general the ship's surgeon was responsible for the health and safety of the ship. In the Naval Regulations of January 25, 1802, the surgeon was charged with the following duties: (1) to inspect and take care of the necessities sent on board; (2) to visit the men under his care twice a day or oftener if circumstances require; (3) in cases that are difficult, he is to advise with the surgeon of the squadron; (4) to inform the captain daily of the state of his patients (sick report); (5) to be ready with his mates and assistants in an engagement, having all things at hand necessary for stopping of blood and dressing of wounds; (6) to keep a day book of his practice, containing the names of his patients; and (7) stores for the medical department are to be furnished on requisition, and he will be held responsible for the expenditure thereof.[13]

The surgeon's mate was responsible for the details of patient care in the sick quarters, located forward on the gun deck, called the sick bay (a space normally occupied by a gun called a bay). He also assisted the surgeon in traumatic surgical procedures, often by positioning the wounded while the surgeon operated. In the 1840s the rank was redesignated assistant surgeon.

The third medical person was a petty officer called the "loblolly boy."** His responsibilities included the nursing care of the sick or wounded. He washed, shaved, and fed the sick and kept the journal. He also compounded the prescriptions and actually performed the leeching and cupping.

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*Heerman[9] published his recommendations in 1811 and Parsons[10] in 1821. The very influential textbook by Cutbush[11] published in 1808 contained suggestions for supplies, instruments, drugs, and so on, in great detail as well as thorough discussion of nautical medicine and battle surgery.

†Edward Cutbush, M.D., William P. C. Barton, M.D., Richard K. Hoffman, M.D., John H. Gorden, M.D., and Thomas Harris, M.D., were asked to direct their attention to the "moral character, scientific and professional attainments" of the candidates in a "full and minute" examination.[12]

**The loblolly boy was named after his counterpart in the Royal Navy. The "loblolly" was a nickname for the gruel frequently served in the eighteenth century English Navy. Sometimes they were very interested in caring for the sick, but more often they were not much use for anything else.[15]

In addition, one of his more colorful duties was ringing the ship's bell in the morning to announce sick call.

The dress uniform regulations of 1802 provided that each surgeon have a "blue coat with broad lapels and a standing collar, and 9 buttons embellished with gold frogs, white vest and breeches, and cocked hat."[14] The uniform of the surgeon's mate would be distinguishable by its lack of gold frogs and fewer buttons but was otherwise largely the same. There did not appear to be a specific uniform for the loblolly boy, who like other seamen could wear what he liked.

The ship's surgeon had his quarters in the wardroom and belonged to the officers' mess. His mate was berthed in the steerage and messed in the junior wardroom along with the midshipmen and other junior officers. The surgeon had some privacy, but his mate had very little. Some of the nineteenth century naval surgeons brought small libraries on board with them, but this was not a common practice. Most of the reading matter on board would belong to the chaplain, largely for the instruction of midshipmen.

Despite the obvious need for expansion of naval medical personnel, the Navy was unduly slow in commissioning new officers. The delay appears to have been primarily at the level of the Navy Department. Paul Hamilton,* the Secretary of the Navy until January, 1813, was a weak administrator with little detailed knowledge of nautical affairs. Applications for commissions would take excessive time before the final formal commission was enacted by Congress.

It is not surprising that selection of medical officers was poorly standardized. Recruiting appeared to have been left up to the local commanders. Apparently, they were capable of deciding whether a candidate had adequate medical knowledge and competence. They also could make an appointment of acting surgeon or acting surgeon's mate with full responsibility and pay implied. Weeks or even years after a ship's medical officer actually shipped out to sea might elapse before the commission was formally awarded. For example, after nearly a year at sea without touching any American base, Capt. David Porter of the *U.S.S. Essex* wrote:

> *U.S. Frigate Essex* at sea
> Pacific Ocean
> July 23, 1813
>
> Hon. Secretary of the Navy
>
> Doctor Richard Hoffman and Alexander M. Montgomery, two gentlemen of great merit, who volunteered their services at the commencement of hostilities, have received acting appointments from me, the first as surgeon to fill the vacancy occasioned by the death of Dr. Robert Miller; the other as surgeon's mate. To the great care and attention of these gentlemen . . . be attributed the extraordinary health of the crew; and as they are both desirous of joining the Navy, I hope their appointments may be confirmed.
>
> D. Porter[16]

One year later Porter, not sure that his earlier letter reached its destination, wrote the Secretary of the Navy again:

> *Essex* at sea
>
> July 3, 1814
>
> The professional knowledge af Doctor Richard Hoffman, acting surgeon, and Doctor Alexander M. Montgomery, acting surgeon's mate, added to the benevolent attentions of Chaplain P.D. Adams, saved the lives of many of the wounded. Those gentlemen have been indefatigable in their attentions to them; the first two I beg leave to recommend for confirmation, and the latter for the notice of the department.[16]

Many surgeons possessed neither a license nor a degree at the time of their appointment. The states varied widely in their licensing practices, including some which did not yet have any. Furthermore, formal medical education leading to a degree was often regarded as a cultural or prestigious activity rather than an essential step in acquiring medical knowledge. Actually, most physicians in New York State seeking licenses from the New York County Medical Society in the early 1800s learned their medicine as apprentices to established practitioners rather than in medical schools.[18]

The rank that the new medical officers assumed on entry appeared to reflect their past achievements. Eminence in the community and possession of a medical degree or a license appeared to be helpful in obtaining a surgeon's commission in addition to recommendatory letters from recognized practitioners attesting to his experience or his having attended medical lectures. However, the actual decision whether the new recruit would serve as surgeon rather than a surgeon's mate was often left up to the local commander.

If the medical criteria for the commissioning of surgeons were broad and ill defined, those for the selection of surgeon's mates were just as indistinct and arbitrary. Most were commissioned surgeon's mate just after completing their medical training or apprenticeship. For example, the twenty-five-year-old Usher Parsons, M.D., had been instructed for six months by John Warren, M.D., an outstanding Boston physician, and Samuel M. Kissam, M.D., at nineteen years had two years of medical education at Physicians and Surgeons. On the other hand, others were commissioned as surgeon's mates despite extensive training before their induction into the Navy, such as Samuel Jackson, M.D., who had a medical degree from Queens College, following studies with Dr. Nicholas Romayne in New York City.

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*Paul Hamilton, a South Carolina planter with little knowledge of the sea or of naval tactics, was unable to persuade Congress to authorize the construction of new ships. He was told that he had to make do with what he had but that any losses would be replaced. His lack of sobriety on several public occasions reinforced the general view that he was an unpopular, incompetent administrator. Pressures to replace him forced Madison's hand in January, 1813. William Jones was a former sea captain from Philadelphia and a satisfactory if not able replacement.[17]

The motives most of the surgeons had in joining the Navy can only be conjectured. Undoubtedly some had patriotic impulses. Others sought a maritime career because of the possibility of travel and opportunity to observe and study distant flora, fauna, geology, and so on. There were quite a number of medical naval officers who made significant contributions to scientific fields, particularly taxonomy.* Others appeared to be attracted by the assurance of a small but steady income, especially those who had hesitated to undertake the slow and often difficult job of building up a practice. It is doubtful that the pay and emoluments, $50 monthly plus rations for a surgeon and $39 monthly for a surgeon's mate, were especially attractive. While it was difficult to spend money on board ship, it was evidently quite difficult to support a family on this pay scale.† Despite some official disapproval, many surgeons welcomed the chance to supplement their Navy pay with revenues from private practice on the side. No doubt this motive may have accounted for several surgeons protesting their being ordered out to sea. In their letters to the Secretary of Navy after the war, they would request continuation of shore duty and cite the great financial hardships that sea duty would impose on their families. A number of surgeons actually resigned their commissions when their requests were turned down.

It is notable that 18 or 22 per cent of the 90 U.S. naval surgeons commissioned in the War of 1812 had an affiliation with medical education at Columbia. It appears that this unique relationship between Columbia medical education and naval surgeons in the War of 1812 was fortuitous. Perhaps in as important a Navy city as New York, it was merely the greater exposure of the Navy recruiters to the Columbia men, who were primarily New Yorkers themselves. Contact between the Navy and rural physicians or other urban physicians not residing in Navy cities must have been far less.[19]

It is also notable and unique that 4 of the 90 surgeons were members of the same family. Benjamin P. Kissam, M.D., surgeon first on the *U.S.S. Nautilus* and later the *U.S.S. Hornet*, served with and outranked his uncle, Samuel M. Kissam, M.D., his surgeon's mate. They formed the medical team in the battle between the *U.S.S. Hornet* and the *H.M.S. Penguin* off Tristan da Cunha in early 1815. Richard Kissam Hoffman, M.D., a first cousin of Benjamin, served first as mate and then as surgeon on the *U.S.S. Essex*. The fourth, Samuel Jackson, M.D., served in the Brooklyn Navy Yard during the war. All four members of the family had received or were to get part of their medical education at Columbia.

Peacetime naval surgery

The duties of the medical officers at sea were much the same as today.[1] They safeguarded the health and safety of the ship and examined all new recruits. They were responsible for inspection and storage of much of the foodstuffs brought on board. Since the relationship of illness and edibles on the long voyages was well recognized, much effort was made to monitor the ship's purchases. Most victuals consisted of salt meat, usually pork, taken on for the entire voyage; occasionally live animals were brought on board at the start and slaughtered from time to time. However, warships which had to be ready to fight at any time could not afford the luxury of carrying livestock. Cereals and biscuits were stored in barrels and became rapidly overrun with weevils. Baking on board ship was not possible until much later in the nineteenth century, so the hard bread served was baked prior to the journey. Standard naval practice was to knock the sliced bread firmly to dislodge the weevils or maggots inside before eating it.

The importance of fresh foodstuffs, particularly as a variation from the dull and dreary regular diet at sea, was recognized but also as a preventive of certain shipboard illnesses, notably scurvy. The English Navy had demonstrated the value of oranges and lemons as antiscorbutics, and Sir Gilbert Blane in 1795 had persuaded the Royal Navy to include as standard procedures a daily ration of lemon juice after fourteen days at sea. On the other hand, the American Navy appeared to reflect the widespread disagreement as to the best way of preventing scurvy. For example, Porter[20] insisted on exercise and good ventilation on his ships as well as citrus fruits.

Despite considerable attention paid to its prevention, scurvy did make an occasional appearance. After a long journey up and down the coasts of South America a case appeared on the *U.S.S. Essex*. Also Commo. John Rodgers reported an outbreak of scurvy July 17, 1812, on the *U.S.S. President* after only four weeks at sea, forcing a premature return to port.

Maintenance of drinking water remained a major challenge in the Navy. The regular progression of fresh water stored in wooden barrels from clear tasteless liquid through a turgid slimy stage and then back into a more clear liquid was regularly described. It is surprising that the naval medical records do not describe more shipwide epidemics of waterborne diseases such as salmonellosis, cholera, bacillary dysentery, and gastroenteritis. Fresh drinking water was one of the most precious commodities at sea. Carefully rationed on long voyages, it would become foul with overgrowth of algae and bacteria, particularly in the hot climates. It was years later that the eighteenth century idea of distilling water on board ship was actually possible.

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*Elisha Kane, M.D., is a notable example.

†A good meal cost about $0.80 and a house call about $1.00 in New York City at the time.

The medical officers conducted a daily sick call during which they encountered a variety of minor complaints as today. More seriously ill seamen would be moved to the sick bay, where their hammocks would be slung and more extensive care provided. The surgeon's mate would be responsible for much of the actual care of the sick, while the loblolly boy would perform whatever nursing assistance was required. A daily sick report was given the commander, and an entry was made in the log.

Patients with venereal diseases were singled out for a $5 fine to be paid the surgeon before treatment. Intended as a preventive measure this fine, called the surgeon's perquisite, was collected directly by the medical officer as in the Royal Navy. Ineffective as a deterrent, it may have actually prevented patients from seeking medical attention. It is an entertaining comment on the times that William C.P. Barton, M.D., argued successfully that the difficulty in collecting the fine plus the interference with the doctor-patient relationship made the system of collection unworkable.[21] The seaman's pay was docked instead and the fine added to the physician's next pay. In the 1840s the fine was abandoned.

Naval warfare

The styles and tactics of naval warfare are always dictated by the ships and weapons in use. In the War of 1812 the guns were of two types. The major offensive weapon was the long gun, ranging from 9 to 32 pounds that usually took 12 to 24 pounds of shot. It was effective to about 1.5 miles. The other was the carronade, a short-barrelled gun firing about the same weight of shot as the long gun but at a much closer range.[22]

Naval strategy was simply to sail the ship to bring maximal firepower to bear with minimal exposure to enemy fire. The usual course of events was some preliminary maneuvers at long range followed by the ships being sailed on parallel courses, often only a few yards apart. The vessels would trade broadsides, fired as rapidly and accurately as possible until one side was disabled, rendered defenseless, or seized by boarders.

The principal shot used were cannon balls; they were most effective if shot below the waterline, where gaping holes could be opened. They were least effective if shot high; unless a major spar was struck, they would pass relatively harmlessly through the rigging. Direct hits by cannon balls in the hull would send showers of jagged splinters flying, since the wooden ships were without armor and easily splintered. It was these secondary projectiles that were especially damaging to the seamen. Other damaging antipersonnel projectiles included canister and grape. These would strew bits of broken glass and jagged metal through the air and around the decks. The use of screens near each gun crew was effective in lowering casualties but was not commonly utilized in the war.

Other wounds were imparted as a result of the extensive use of side arms: pistols, rifles, cutlasses, boarding pikes, and so on. Particularly destructive were the sharpshooting marines stationed high in the rigging from which point they could pour shot down onto the exposed enemy deck below. They frequently selected the officers as their favorite targets. Another hazard was the loss of mast or rigging with devastating consequences for the men aloft and sometimes for those below as it fell.

The wounds the surgeons encountered were varied. Lacerations, contusions, fractures, dislocations, and penetrating and gunshot wounds were common.[23] Relatively uncommon were large losses of tissue secondary to direct hits by cannon balls. Burns were also infrequent probably because fire, always a threat at sea, was minimized by vigilance and vigorous preventive measures. Liberal use of fire buckets and wetted blankets stretched out between the guns undoubtedly helped confine many a nascent fire. Occasionally, wounded seamen would be brought down after a spontaneous gun explosion not due to enemy fire.*

While the surgeons were undoubtedly adequately prepared in principle to treat the individual lesions as a result of their medical lectures, their apprenticeships, or their reading in the standard textbooks of surgery, it is doubtful that the surgeons were ready for the sudden arrival of a number of critically wounded men. In some of the more destructive battles the wounded men piled up rapidly, presenting the surgeon with the problem of deciding what to postpone and what to attend to instantly.

The immediate treatment appeared to consist of arresting hemorrhage and applying lint, bandages, and tourniquets.[24] Patients with severe wounds of the extremities were advised to have as rapid an amputation as possible. Delay was thought to reduce the chances for success. Some surgeons treated patients in the order in which they were brought below. Rank appeared to have been an exception, although at least one seriously wounded officer insisted on waiting his turn with the others. On the other hand, Dr. Parsons rendered first aid to all and later returned for definitive care after the battle of Lake Erie had ended.

*The U.S. foundries had not always succeeded in casting guns. Most of the guns used had actually been cast in well-established English foundries.

Battle stations. When battle stations sounded, the surgical team assembled in the cockpit or the living quarters for the midshipmen, lesser officers, and so on, in the steerage below the water line. The mess table became the operating table and was lashed to the deck of this dark, poorly ventilated room, which was out of the way of the guns and relatively safe from enemy fire. The medicine chests would be opened and the tray of instruments, bandages, and tourniquets arranged. Lanterns were lit overhead and the loblolly boy sent for buckets of water. He also was expected to set out a bucket of sand to receive the blood during any operation to keep the decks free of blood. The wounded could be moved out to the gun room or sent to their quarters if only slightly wounded and if not needed to help elsewhere. Dr. Cutbush urges the surgeon . . . "although painful his situation, must manage as well as circumstances will permit."[25]

In the heat of the battle the surgeons were usually limited in their capabilities in treatment. Wounds were simply washed with seawater, dressings applied, and hemorrhage allayed by one means or another. Broken limbs were splinted, set, or amputated. The patient was often held down forcefully by the assistants, while the surgeon sawed away; anesthesia was unknown, and mouth gags were commonly used to muffle the cries of the anguished. Although opiates were in the medical chest, it is not clear to what extent they were used during surgery. Many a victim was considered fortunate to have passed out before the surgeon completed his grueling task, which often ended with the stump being dipped into hot pitch for cautery.

The results of battle surgery on these wooden ships have never been quantitated, but heavy losses due to shock, hemorrhage, and infection occurred but also were expected. It is little wonder that many lightly wounded men preferred to take their chances on deck with the danger of being hit by additional enemy fire than to go below and face the saw of a friend.

The available information on the details of battle surgery is often scanty; the total number of killed and wounded were always included in the commander's formal reports. Sometimes the wounded are listed by name, particularly when they were commissioned officers. There were four naval battles of special interest because of greater quantity of surgical details that have been retained.

In the *Argus* vs. the *Penguin* fight in 1813, the journal of the American surgeon, Inderwick,[26] has been preserved, the only survivor of these journals.* It listed the weather, state of the sea, together with the ill, discharges, and admissions for each day during the *Argus's* brilliant, brief, but devastating voyage in the English coastal waters. Inderwick's entry for August 14 included the names of the wounded, a description of their injuries, and the treatment rendered. Since daily entries were kept for several subsequent days, the results of his therapies can be evaluated. Unfortunately, his most seriously wounded and important patient, his commander, Lt. William H. Allen, underwent amputation about two hours after the receipt of the wound. The patient did poorly and died three days later. Dr. Inderwick could not account for the unsuccessful result since he had operated both swiftly and soon after the wound was received, two factors that were considered then to be most important in battlefield surgical care of severely wounded extremities.

The battle between the *U.S.S. Essex* and its two British opponents, the *Phoebe* and the *Cherub*, off Valparaiso in February, 1814, was also described in considerable detail by the American commander, Captain Porter.[27] However, even more graphic in its account of the injuries sustained was a journal kept by a twelve-year-old boy, David G. Farragut.† Since he was used as a messenger, he scampered throughout the ship many times during the battle and witnessed a variety of scenes of disaster, destruction, and death.[28]

The most eloquent and dramatic account of any naval battle during this war was by Poolman.[29] In his book he depicted the sequence of events in the thirteen minutes that it took the English 38-gun frigate, *Shannon*, to defeat the American 38-gun *Chesapeake*. Recounted in terms of named individuals, the moment-to-moment details of the carnage, blood, and gore are unforgettably vivid. Neither the English surgeon, Dr. Jack, nor the American medical team, Richard Edgar, M.D., surgeon, and James Dix, M.D., mate, could begin to cope with the high influx of wounded that streamed below.** It was only hours later that the American living were separated from the 61 dead and the 85 wounded assembled for orderly care.

The medical details of the battle of Lake Erie were thoroughly described by the twenty-five-year-old surgeon's mate, who single handedly cared for the heavy casualties incurred by the *U.S.S. Lawrence* during the fight. From his vantage point below deck in surgery, Parsons[24,30] depicted the surgical events as they occurred, his treatment, and the overall results. It is the only naval battle in which it is possible to quantify the results of treatment administered.[24,30,31]

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*The journals kept by each medical officer on each voyage have been lost, probably because they were the property of the surgeon and left the ship with him. It was decades later before the Navy retained these journals for permanent records.

†Farragut was the future hero of Mobile and the first U.S. admiral. Making his first voyage to sea as a midshipman, he served as a medical assistant to Dr. Hoffman, the surgeon, and A.M. Montgomery, M.D., mate, who were struggling with the 66 wounded after the battle ashore and during the long voyage home.

**It was to Dr. Edgar that James Lawrence, captain of the *Chesapeake*, uttered his dying plea, "Don't give up the ship" in vain on June 1, 1813.

Parson's description included the atmosphere immediately before the battle, the sights and sounds of the awful broadsides, the gore and blood spilled as a result of the terrible pounding sustained on the *Lawrence* during the intense three-hour struggle, and the contrasting tranquillity afterward. Of the 100 men fit for duty on the *Lawrence* that morning, 21 were dead and 63 were wounded by mid-afternoon. Dr. Parsons directed his afternoon initially to the bleeding problems during the battle and managed to arrest hemorrhage in all by nightfall. He elected not to attempt amputations in the dark by himself and spent the night positioning shattered limbs, stopping whatever bleeding recurred, and administering opiates to the wounded. As day broke, he began amputating and continued without interruption until the last limb was removed at eleven o'clock in the morning. Dr. Parsons then directed his attention to the "luxations, lacerations, and contusions, all of which occupied my time until midnight" or some thirty-six hours of continuous care of the injured.[30]

The next day he went to the *U.S.S. Niagara* and found its surgeon, Dr. Barton, in bed, far too feeble with malaria to attempt medical care. The wounded were treated and transferred to the deck of the *Lawrence*, now a hospital ship. It was only late in the evening of the second day that Dr. Parsons was able to turn his attention to the needs of the large number of sick.

His journal lists 96 wounded in the squadron. Twenty-five had compound fractures and only 4 simple fractures. Thirty-seven were suffering from grapeshot wounds with multiple lacerations both large and small. There were 2 cases of concussion of the brain. Ten patients suffered contusions, and 6 others had suffered severe sprains.

It is miraculous that of these 96 wounded sailors only 3 died. Parsons modestly attributed this very low mortality rate to abundant ". . . fresh provisions, a pure atmosphere under an awning upon the deck, and to the devoted attention of the commodore to every want."[30] There is no doubt that the skillful, meticulous, and highly organized care of Dr. Parsons also played a major role.

The War of 1812 was a failure in terms of its primary goals. The rights of American sailors were never formally acknowledged by the English, but they never again stopped American shipping seeking alleged deserters. The territorial ambitions of both countries were frustrated; they were apparently content to leave the boundaries where they were as of early 1815. The impetus the war gave the U.S. Navy was immense. It resulted in the global recognition of the U.S. Navy's stature as an effective fighting force. The stimulus to naval medicine was also immense. It emerged from a haphazard, loosely organized, decentralized operation at the start to a more systematized, structured service at the end. Comprehensive medical and surgical care would soon be a reality on both naval vessels and on shore.

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Necrology

William Antopol, M.D., of New York City, died on June 19 at the age of sixty-nine. Dr. Antopol graduated in 1927 from Long Island College Hospital. He was pathologist-in-chief and Director of Laboratories and Research at Beth Israel Medical Center and a consulting pathologist at New York Infirmary. Dr. Antopol was a Diplomate of the American Board of Pathology (Clinical Pathology and Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the American Society of Clinical Pathologists, the American Association for Cancer Research, the American Association of Pathologists and Bacteriologists, the American Society for Experimental Pathology, the Society for Experimental Biology and Medicine, the Aerospace Medical Association, the New York Academy of Medicine, the New York Pathological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rosa Aronoff, M.D., of New York City, died on April 22 at the age of seventy-four. Dr. Aronoff received her medical degree from the University of Zurich in 1922. She was a Diplomate of the American Board of Pathology, a Fellow of the College of American Pathologists, and a member of the International Academy of Pathology, the New York Pathological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Isabelle Blumenthal, M.D., of The Bronx, died on March 9 at the age of eighty-three. Dr. Blumenthal graduated in 1921 from the University of Pennsylvania School of Medicine. She was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Woodhull Lee Condict, M.D., retired, of Brooklyn, died on June 5 at the age of eighty. Dr. Condict graduated in 1914 from University and Bellevue Hospital Medical College. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

John Dorsey Craig, M.D., of New York City, died in May at the age of seventy-one. Dr. Craig graduated in 1925 from the University of Louisville School of Medicine. He was an honorary senior pediatrician at St. Vincent's Hospital and Medical Center of New York. Dr. Craig was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edmund Otto Darbois, M.D., of Pas-A-Grille Beach, Florida, formerly of Brooklyn, died on June 3 at the age of eighty-eight. Dr. Darbois graduated in 1905 from Cornell University Medical College. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Harry Feld, M.D., of Islip, died on June 2 at the age of sixty-eight. Dr. Feld graduated in 1927 from University and Bellevue Hospital Medical College. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Harry Feldman, M.D., of Ithaca, died on May 13 at the age of eighty-one. Dr. Feldman graduated in 1931 from the University of Wisconsin Medical School. He was a consulting psychiatrist at Veterans Administration Hospital Center, Bath. Dr. Feldman was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the Tompkins County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Thomas Joseph Garrick, M.D., of Manhasset, died in June at the age of seventy-seven. Dr. Garrick graduated in 1924 from Cornell University Medical College. He was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph E. Johnston King, M.D., of Murfreesboro, Tennessee, formerly of Bronxville, died on June 20 at the age of eighty-six. Dr. King graduated in 1909 from the University of Nashville Medical Department. Retired in 1961, he had been a consulting neurosurgeon at Polyclinic, Lenox Hill, Grasslands, Meadowbrook, New Rochelle, White Plains Hospitals and New York Eye and Ear Infirmary and Stamford (Connecticut) Hospital, and director of surgery at Lawrence Hospital (Bronxville). Dr. King was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the American Association for the Surgery of Trauma, the New York Academy of Medicine, the New York Neurological Society, the New York Society of Neurosurgery, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Klopstock, M.D., of Brooklyn, died on June 15 at the age of seventy-two. Dr. Klopstock received his medical degree from the University of Berlin in 1928. He was a member of the thoracic surgery staff at Veterans Administration Hospital. Dr. Klopstock was a Diplomate of the American Board of Thoracic Surgery (Affiliate of the American Board of Surgery) and a member of the American Association for Thoracic Surgery, the American Thoracic Society, and the New York Society for Thoracic Surgery.

*FOR CORRECTION
SEE p. 2113

David Lyall, M.D., of New York City, died on June 6 at the age of sixty-one. Dr. Lyall graduated in 1935 from Columbia University College of Physicians and Surgeons. He was an attending surgeon at Bellevue, University, and Midtown Hospitals and New York Eye and Ear Infirmary, and an associate attending surgeon at Lenox Hill Hospital. Dr. Lyall was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York Surgical Society, the New York County Medical Society (and a former president), the Medical Society of the State of New York, and the American Medical Association.

Gaetano Joseph Mecca, M.D., of New York City, died on June 13 at the age of eighty. Dr. Mecca graduated in 1917 from Long Island College Hospital. He was an attending surgeon at St. Vincent's Hospital and Medical Center of New York. Dr. Mecca was a Diplomate of the American Board of Urology and a member of the American Urological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Laurence Miscall, M.D., of New York City, died on June 17 at the age of sixty-seven. Dr. Miscall graduated in 1930 from Cornell University Medical College. He was a consulting thoracic surgeon at Flushing, Jamaica, and St. Francis (Poughkeepsie) Hospitals. Dr. Miscall was a Diplomate of the American Board of Surgery, a Diplomate of the American Board of Thoracic Surgery (Affiliate of the American Board of Surgery), a Fellow of the American College of Surgeons, and a member of the American Association for Thoracic Surgery, the New York Academy of Medicine, the New York Surgical Society, the New York Society for Thoracic Surgery, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Osterman, M.D., of Brooklyn, died on May 15 at the age of seventy. Dr. Osterman received his medical degree from the University of Frankfurt in 1925. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Robert Beebe Pender, M.D., of Utica, died on June 17 at the age of fifty-two. Dr. Pender graduated in 1945 from the University of Rochester School of Medicine. He was a senior surgeon at St. Elizabeth's Hospital and an attending surgeon at St. Luke's-Memorial Hospital Center. Dr. Pender was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Otto Carl Pickhardt, M.D., of New York City, died on June 13 at the age of eighty-four. Dr. Pickhardt graduated in 1912 from Columbia University College of Physicians and Surgeons. He was a consulting surgeon at Lenox Hill and Lawrence (Bronxville) Hospitals. Dr. Pickhardt was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the American Surgical Society, the American Thoracic Society, the American Association for Thoracic Surgery, the New York Academy of Medicine, the New York Surgical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Milda Pope, M.D., of Willowbrook State School, died in June at the age of seventy. Dr. Pope received her medical degree from the University of Riga in 1929. She was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Daniel Anthony Putignano, M.D., of Brooklyn, died on June 12 at the age of sixty-five. Dr. Putignano graduated in 1933 from Temple University School of Medicine. He was an associate attending surgeon at Samaritan Hospital of Brooklyn, an adjunct surgeon at Swedish Hospital of Brooklyn, and an assistant attending surgeon at the Hospital of the Holy Family. Dr. Putignano was a Fellow of the International College of Surgeons and a member of the American Academy of Compensation Medicine, Inc., the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Ellen Reiner, M.D., of New York City, died on May 15 at the age of seventy-two. Dr. Reiner received her medical degree from the University of Prague. She was an assistant attending dermatologist at The Mount Sinai Hospital (Special Service) and Metropolitan and Bird S. Coler Memorial Hospitals. Dr. Reiner was a Diplomate of the American Board of Dermatology, Inc., and a member of the Society for Investigative Dermatology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James William Ryan, M.D., of Ardsley, died on June 17 at the age of sixty. Dr. Ryan graduated in 1936 from Georgetown University School of Medicine. He was a member of the Medical Society of the County of Bronx, the Medical Society of the State of New York, and the American Medical Association.

Frederick Magnus Schwerd, M.D., of Staten Island, retired, died on June 16 at the age of seventy-nine. Dr. Schwerd graduated in 1913 from Columbia University College of Physicians and Surgeons. He was an honorary surgeon at Richmond Hospital (which he was a founder and a retired chief surgeon). Dr. Schwerd was a Fellow of the International College of Surgeons and a member of the Industrial Medical Association, the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry Stimson Tripp, M.D., of Delmar, died on June 9 at the age of fifty-four. Dr. Tripp graduated in 1943 from Albany Medical College. He was an assistant attending psychiatrist at Albany Medical Center and Albany Medical Center Outpatient Department. Dr. Tripp was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the American Academy of General Practice, the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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Dr. Robert W. Rock, Vice President for Student Affairs, SUNY—College
Oswego, Oswego, N.Y. 13126.

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236, c/o NYSJM.

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Arm, M.D., Apt. 9-F, 128 Fort Washington Ave., New York, N.Y. 10032.

PRACTICES WANTED

ANESTHESIOLOGIST, BOARD CERTIFIED, SEEKS PARTNERSHIP
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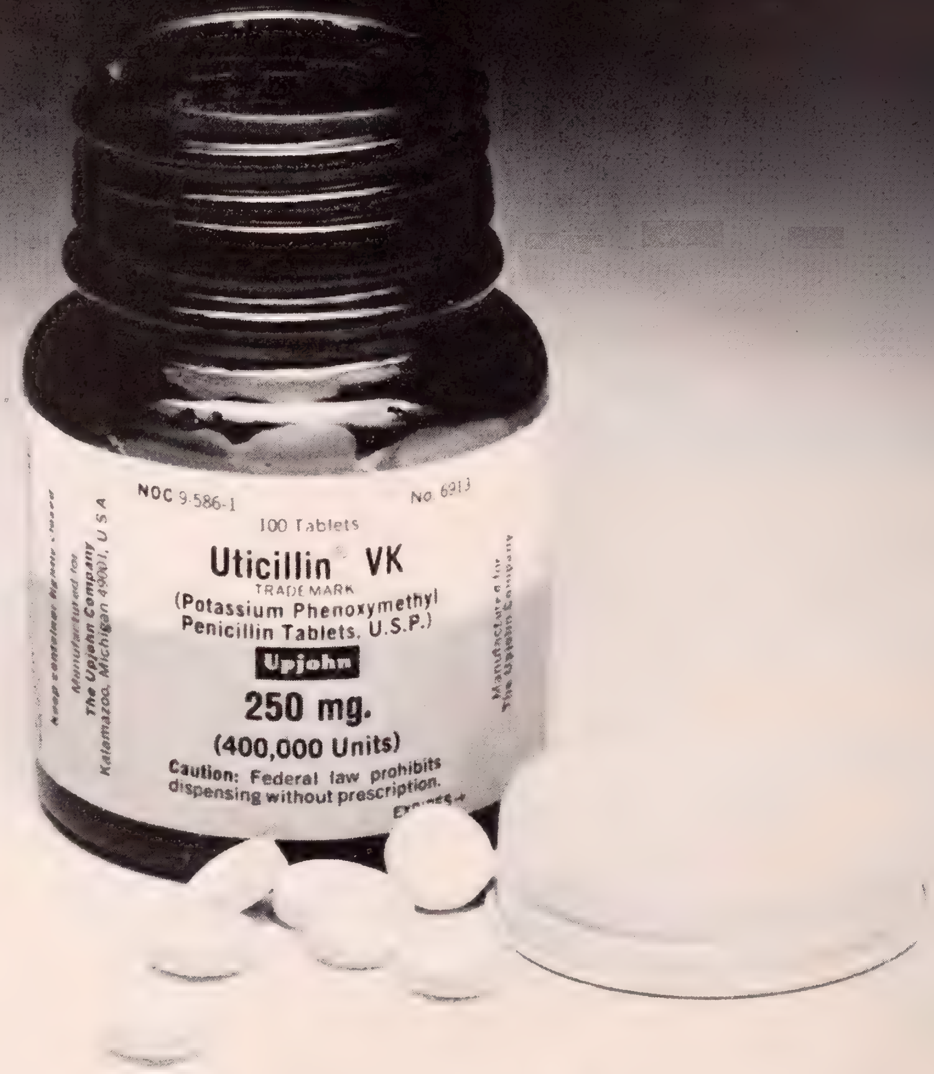
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WHAT GOES ON in medicine

NEW YORK STATE **August 1–31, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

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NEW YORK CITY AREA

FRIDAY, AUGUST 4

8:00 p.m.

Staten Island Family Service

25 Victory Boulevard
Staten Island

THE THERAPEUTIC USE OF HYPNOSIS AND DREAMLIKE STATES IN MENTAL DISORDERS

I. EMERY BREITNER, M.D.
Long Island Jewish Hillside Medical Center

Contact: Sid Herling, MSW, Director, Staten Island Family Service

---

Summer 1972 (time and dates to be announced)

Downstate Medical Center

450 Clarkson Avenue
Brooklyn

PHYSICAL EXAMINATION: A COURSE FOR R.N.'s

CHARLES M. PLOTZ, M.D. with JOHN CROCCO,
HERBERT S. DIAMOND, JOHN J. ROONEY and
MAX WEINER, M.D.'s

To register, contact: CHARLES M. PLOTZ, M.D., Dir., Continuing Education, at the above address. Tel. (212) 270-2421.

FUTURE EVENTS

FRIDAY, SEPTEMBER 1

8:00 p.m.

Staten Island Family Service

25 Victory Boulevard
Staten Island

SCOPE AND LIMITATION OF HYPNOSIS

I. EMERY BREITNER, M.D.
Institute of Human Relations

Contact: Sid Herling, MSW, Dir., above address

September 1, 1972 / June 1, 1973

2:30–3:30 p.m., Fridays

Downstate Medical Center

The Long Island College Hospital
Residents' Conference Room
Department of Radiology
340 Henry Street
Brooklyn

PHYSICS OF RADIATION

ROBERT L. PINCK, M.D., and
MR. VITO L. FODERA, M.A., F.A.S.R.T.
with MR. G. SHAPIRO, M.S., F.A.C.R.

To register, contact: MR. VITO L. FODERA, at the above address. Tel. (212) 780-1717.

September 5 / 15, 1972

9:00 a.m.–6:00 p.m., Tuesday thru Friday

The Page and William Black Post-Graduate School of Medicine and the Department of Ophthalmology of the Mount Sinai Medical Center

Fifth Avenue at 100th Street

TEMPORAL BONE SURGERY

HARRY ROSENWASSER and SIMON C. PARISIER, M.D.'s
Mount Sinai School of Medicine

FEE: $600

(Course Repeated Monday, February 19, 1973 thru Saturday, March 2, 1973.

WEDNESDAY, SEPTEMBER 6

4:00–5:30 p.m.

Westchester Square Hospital in collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

RECENT ADVANCES IN CARDIAC SURGERY

CHARLES P. BAILEY, M.D.
Misericordia Hospital

NO FEE CREDIT: AAGP 1½ hours

THURSDAY, SEPTEMBER 7

9:00–11:00 p.m.

Albert Einstein College of Medicine

The Forchheimer Building
First Floor Lecture Hall
1300 Morris Park Avenue
Bronx

PSYCHIATRY

GEORGE GOTTESMAN, M.D.

For information on this meeting, which is a session of the Annual Postgraduate Course in Family Practice, please contact Mrs. Frieda Fagin at the above address or telephone (212) 430-2822.

September 9 / December 2, 1972

10:00 a.m.–12:00 noon, Saturdays

Downstate Medical Center

State University Hospital
Room A7-383
445 Lenox Road
Brooklyn

QUANTITATIVE ANALYSIS OF MEDICAL RECORDS

MISS SUZANNE STEPHAN, B.S., with
MR. DWIGHT D. DIXON, B.B.A. and
MISS MURIEL BRANDFORD, RRL.

FEE: $45

To register, contact: MR. DWIGHT D. DIXON, Chm., Medical Record Administration Program, College of Related Professions, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Tel. (212) 270-2588.

September 10 / 12, 1972

Registration: 6:30–9:30 p.m., Saturday, September 9 or 7:30 a.m., Sunday

American Academy of Orthopaedic Surgeons

Committee on Sports Medicine
Americana Hotel
Seventh Avenue at 52nd Street

Postgraduate Course

INJURIES TO THE NECK AND UPPER EXTREMITY IN SPORTS

JAMES A. NICHOLAS, M.D., Chairman
Cornell University Medical College

FEES: $150 Physicians
50 Residents, Nurses and Allied Health Personnel

Write: JAMES A. NICHOLAS, M.D., 150 East 77 Street, New York, N.Y. 10021.

September 12, 1972 / June 26, 1973

11:00 a.m.–12:00 noon, Tuesdays

Downstate Medical Center

Kings County Hospital Center
Conference Room, B Building, 7th Floor
451 Clarkson Avenue
Brooklyn

CLINICAL PEDIATRICS

RAMON RODRIGUEZ-TORRES, M.D., with the Staff of the Department of Pediatrics of DMC

NO FEE

To Register contact Dr. Rodrigues-Torres, Acting Chairman, Department of Pediatrics, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Tel. (212) 270-1625

September 14, 1972 / June 28, 1973

11:00 a.m.–12:00 noon, Thursdays

Downstate Medical Center

ADVANCES IN PEDIATRICS

(See Above)

September 19, 1972 / May 29, 1973

8:30–9:30 a.m., Tuesdays

Downstate Medical Center

The Long Island College Hospital
Polhemus Building Main Amphitheatre, 3rd Floor
340 Henry Street
Brooklyn

FAMILY PRACTICE REVIEW COURSE

WILLIAM G. MULLIN AND EARL L. PETERSON, M.D.'s with MORELL M. AVRAM, LAWRENCE T. CHIARAMONTE, FRANK W. DiPILLO, EDWARD B. DOMBROWSKI, YEHUDI M. FELMAN, SPIRO GALLOUSIS, MILTON B. HANDELSMAN, ALFRED P. INGEGNO, MAY LEONG, VINCENT P. MAZZEO, ROBERT L. McGUIRE, JOSEPH J. RICCA, E. SENDEROFF, L. STEVENS, THOMAS H. WEISS, ROBERT E. WOLF and Z. ZABSKI, M.D.'s

FEE: $50

To register, contact: WILLIAM G. MULLIN, M.D. Dir., Continuing Medical Education, The Long Island College Hospital, at the above address. Tel. (212) 780-1717.

September 1972 / May 1973

French and Polyclinic Medical School

345 West 50th Street

NURSING HOME ADMINISTRATION

Offers basic courses and continuing education in Nursing Home Administration to meet the requirements of the Board of Examiners of Nursing Home Administrators of the New York State Department of Health.

Write The Dean, at above address

September 23 / December 2, 1972

10:00 a.m.–12:00 noon, Saturdays

Downstate Medical Center

Second Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

HOSPITAL ADMITTING OFFICE MANAGEMENT II

MR. MURRAY RIMMER, B.A., with MR. DWIGHT D. DIXON, B.B.A. and invited lecturers

FEE: $35

To register, contact: Mr. Dixon, Chairman, Medical Record Administration Program, College of Health Related Professions, above address. Tel. (212) 270-2588.

September 23 / 28, 1972

American Academy of Family Physicians

Hilton Hotel
Avenue of the Americas, 53rd–54th Streets

ANNUAL MEETING

Exec. Dir.: Mr. Roger Tusken, Volker Blvd. at Brookside, Kansas City, Mo. 64112

September 25 / December 29, 1972

French and Polyclinic Medical School

345 West 50th Street

CLINICAL MEDICINE REVIEW CURRICULUM

This course is primarily intended for candidates for

State Board, Flex and ECFMG examinations. The course content is based on the subject outline suggested by the National Board of Medical Examiners for the Part II Board examination, and by the Educational Council for Foreign Medical Graduates.

TUESDAY, SEPTEMBER 26

8:30 p.m.

Federation of American-European Medical Societies

Academy of Science
2 East 63rd Street

1. **A Hopeful Approach to the Treatment of Diffuse Obstructive Emphysema (For the Semmelweis Scientific Association)**
   E. E. ROCKEY, M.D.
   Metropolitan Hospital
2. **Some Unusual Cases of Radiographic Diagnosis. Demonstration and Discussion (For the Janusz Korczak Medical Society)**
   J. J. SMULEWICZ, M.D.
   Queens Hospital Center
3. **Parasitic Infections in New York City (For the Yugoslav Medical Society)**
   SVETOZAR TEODOROVICH, M.D
   Mount Sinai School of Medicine

September 30 / November 18, 1972

10:00 a.m.–5:00 p.m., seven Saturdays

Columbia University P & S

Department of Psychiatry
630 West 168th Street

MEDICAL HYPNOSIS (BASIC)

HERBERT SPIEGEL, M.D., with A. A. BRIDGER, M.D.

FEE: $175

For information, please write to:
MELVIN D. YAHR, M.D., Associate Dean, above address

October 1972 / June 1973

(Time and dates to be announced)

Downstate Medical Center

State University Hospital
Psychiatry Seminar Room, 5th Floor
445 Lenox Road
Brooklyn

PSYCHIATRY (Workshops and Seminars co-sponsored by the Brooklyn Psychiatric Society)

NOTE: In an effort to make it possible for every psychiatrist to participate in at least one course, scheduling of time and place will be postponed until after applications have been received. It is expected that there will be at least 8 monthly meetings in each course. . . . . .A nominal fee of $20 to $80 may be charged depending upon cost and attendance. Applicants may participate in more than one course, and a maximum fee for attending any combination of courses is $120. Applications must be returned by September 11, 1972. A certificate for participation in this postgraduate education program will be issued by the Brooklyn Psychiatric Society.

To register, contact: RENZO S. BASILI, M.D., Chm., Continuing Education Committee, Brooklyn Psychiatric Society, 130 Eighth Avenue, Brooklyn, N.Y. 11215.

Tel. (212) ST9-7595

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For information, contact the Dean, at the above address

October 2 / November 20, 1972

4:00–5:00 p.m., Mondays

Downstate Medical Center

Department of Physiology
450 Clarkson Avenue
Brooklyn

RECENT ADVANCES IN CARDIOVASCULAR AND NEUROPHYSIOLOGY

CHANDLER McC. BROOKS, Ph.D. with
MARIO VASSALLE, M.D.

Review of certain recent advances in knowledge of cardiovascular and nervous system function. The advances chosen will be those considered significant in the sense that they modify thought concerning normality and abnormality in body function and behavior. Emphasis on autonomic system, hypothalamus and cardiac pacemaker action control.

FEE: $20

To register, contact: DR. BROOKS, above address.
Tel. (212) 270-1153.

October 4, 1972 / May 16, 1973

7:00–9:00 p.m., every other Wednesday

Downstate Medical Center

First Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

INTERDISCIPLINARY SEMINARS

ELI A. FRIEDMAN, M.D., with the Staff of DMC and invited lecturers

NO FEE CREDIT: 2 Prescribed hours AAGP

To register, contact: CHARLES M. PLOTZ, M.D., Dir. Continuing Education, above address.
Tel. (212) 270-2421.

October 10, 1972 / April 17, 1973

10:00–11:30 a.m., Tuesdays

Downstate Medical Center

Maimonides Medical Center
Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

TUESDAY LECTURES IN PEDIATRICS

ZACHARY APFEL, HOWARD A. JOOS and
WALTER SILVER, M.D.'s with
Drs. BERTRAM D. COHN, SENIH M. FIKRIG,
RITA G. HARPER, WAYNE KLEIN,
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EDUARDO ORTI, FRED ROSNER, LEE SALK,
EDWARD J. SCHUTTA, ELIZABETH M. SMITHWICK,
NATHAN SOLOMON, ALICE C. YAO
and invited lecturers.

A series of lectures on current concepts in pediatrics and allied fields. Topics include: uremia; computers in pediatrics; heroin and methadone withdrawal in newborn; the bleeding child; clinical genetics; circulatory changes in newborn; the pediatric ICU; lung disease; and juvenile rheumatoid arthritis.

NO FEE

To register, contact: Mrs. Shirley Lasky, Registrar, Department of Pediatric Services, Maimonides Medical Center, above address. Tel. (212) UL3-1200, Ext. 2991.

October 11, 1972 / April 4, 1973

8:00–10:00 a.m., Wednesdays

Downstate Medical Center

Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

MEDICINE (Case Presentations for Community Physicians)

DAVID MUMFORD, M.D., with the Staff of Coney Island Hospital and invited lecturers

A weekly series of case presentations illustrating a variety of topics presenting diagnostic and management problems in the daily office practice of the community physician.

FEE: $50 CREDIT: 50 Prescribed hours AAGP

To register, contact: DR. MUMFORD, Dir., Medical Education, Coney Island Hospital, above address.
Tel. (212) 743-4100.

October 11 and 18, 1972

2:00–5:00 p.m., Wednesdays

Downstate Medical Center

First Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

DERMATOLIC WORKSHOP

LAWRENCE FRANK, M.D., with Drs. EUGENIO
BABAN, BENJAMIN BENDER, LASZLO BIRO,
PHILIP FELDMAN, YEHUDI FELMAN, FRANKLIN
S. GLICKMAN, ELY PRICE, YEHOSHUA RAPP AND
SIDNEY I. ROGERS

Open panel discussion of practical dermatology.

NO FEE CREDIT: 6 Prescribed hours AAGP

To register, contact: CHARLES M. PLOTZ, M.D., above address. Tel. (212) 270-2421

October 11, 1972 / January 31, 1973

3:30–5:00 p.m., Wednesdays

Downstate Medical Center

Continuing Education Conference Center

RECENT ADVANCES IN INTERNAL MEDICINE

CHARLES M. PLOTZ, M.D., with the Staff of DMC

A Lecture series in internal medicine designed especially for family practitioners. Topics include: acid-base balance; clinical renal disease; variants of rheumatoid arthritis; anemias; bleeding disorders; coronary artery disease; congestive heart failure; respiratory; gastroentestinal; oncologic; immunologic; endocrine and neurologic diseases.

FEE: $75 CREDIT: 20 Prescribed hours AAGP

To register, contact DR. PLOTZ, (see above)

October 12 / 14, 1972

9:00 a.m.–5:00 p.m., Thursday and Friday
9:00 a.m.–12:00 noon, Saturday

The Page and William Black Post-Graduate School of Medicine and the Department of Obstetrics and Gynecology of the

Mount Sinai Medical Center
Fifth Avenue at 100th Street

CURRENT CONCEPTS IN OBSTETRICS AND GYNECOLOGY

SAUL B. GUSBERG, KARLIS ADAMSONS, JR.,
JOSEPH J. ROVINSKY, M.D.'s, and Faculty
The Mount Sinai School of Medicine

FEE: $100

THURSDAY, OCTOBER 12

9:00–11:00 p.m.

Albert Einstein College of Medicine

First Floor Lecture Hall
The Forchheimer Building
1300 Morris Park Avenue
Bronx

*OTOLARYNGOLOGY

ROBERT RUBIN, M.D.

NO FEE CREDIT: 16 hours Category I AAGP

*One of the eight lectures in the annual postgraduate course in family practice, which started March 23 and continues through December 7, 1972.

Please contact MRS. FRIEDA FAGIN, Office of Continuing Education, above address. Tel. (212) 430-2822.

October 13, 1972 / April 20, 1973

8:00–9:30 a.m., Fridays

Downstate Medical Center

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

PEDIATRICS, GYNECOLOGY, MEDICINE AND SURGERY FOR THE FAMILY PHYSICIAN

GEORGE A. DEGENSHEIN, DAVID GROB, HOWARD A. JOOS, WILLIAM POMERANCE and OSCAR SCHWARTZ, M.D.'s with invited lecturers

The theme of this course is therapy with special emphasis on emergency therapy in situations met by the family physician.

FEE: $20

To register, contact: MRS. SHIRLEY LASKY, Registrar, Department of Pediatric Services, Maimonides Medical Center, above address. Tel. (212) UL3-1200, Ext. 2991.

October 15, 1972 / April 1, 1973

9:00 a.m.–12:00 noon, Sundays

Downstate Medical Center

Boulevard Hospital
46-04 31st Avenue
Long Island City

INTENSIVE REVIEW FOR COMMUNITY PHYSICIANS

CHARLES M. PLOTZ, M.D., with the Staff of DMC

A lecture series in family medicine for community physicians sponsored by the Academy of Medicine of the Queens County Medical Society. Topics include: diabetes mellitus; acid-base balance and electrolytes; endocrine, renal, pulmonary, gastroenterologic, cardiac, hematologic and neurologic disease; obstetrics and gynecology; genetic counseling and family planning. The last session will be a review session for those preparing for the Board examination in Family Practice.

FEE: $100 CREDIT: 57 Prescribed hours AAGP

To register, contact: MRS. KATHERINE FRIES, Boulevard Hospital, above address. Tel. (212) RA 1-7000

October 15, 1972 / May 20, 1073

5:00–8:00 p.m., Sundays

Downstate Medical Center

Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

SECOND ANNUAL REVIEW OF INTERNAL MEDICINE

DAVID MUMFORD, M.D., with the Staff of the Coney Island Hospital and invited lecturers

This course will consist of a series of weekly 3-hour teaching sessions designed for practicing internists and medical resident physicians preparing for the American Board of Internal Medicine examination. Physicians who are not candidates for this examination, but who wish to bring their knowledge and skill in the rapidly changing field of internal medicine up to date, will find this review invaluable. The format will include the distribution of study guides, and the illustration and clarification of difficult concepts. Self-assessment with prepared questions will be included in each presentation. Audience participation and discussion will be encouraged.

FEE: $200 ($100 for residents or fellows-in-training)
CREDIT: 90 Prescribed hours AAGP

To register, Contact: DAVID MUMFORD, M.D., Dir., Medical Education, Coney Island Hospital, above address. Tel. (212) SH 3-4100.

October 23 / 27, 1972

The Memorial Hospital for Cancer and Allied Diseases and Sloan-Kettering Institute for Cancer Research

444 East 68th Street

One-Week Course

CANCER CHEMOTHERAPY

Enrollment is limited, and applications should be submitted as soon as possible to IRWIN H. KRAKOFF, M.D., at the above address.

FEE: $150

October 25, 1972 / May 2, 1972

Downstate Medical Center

State University Hospital
Family Practice Unit, Outpatient Department
470 Clarkson Avenue
Brooklyn

CONSULTATION CLINICS FOR FAMILY M.D.'s

CHARLES M. PLOTZ, M.D., with the Staff of DMC

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NO FEE CREDIT: 60 Prescribed hours by AAGP

To register, contact: DR. PLOTZ, at DMC.

ALBANY AREA FUTURE EVENT

October 30 and 31, 1972

The New York State Department of Health

Birth Defects Institute

HUMAN TERATOGENESIS

DWIGHT T. JANERICH, Director
Epidemiology and Population Genetics

Chairman
Birth Defects Institute
Symposium III

BUFFALO AREA

August 1972

The Department of Pediatrics, School of Medicine

State University of New York at Buffalo
2211 Main Street

PROGRAM IN SCHOOL HEALTH

1. **Manifestations of Disease Identifiable by School Health Personnel**
2. **Advances in Prophylaxis and Therapy of These Diseases**
3. **The Learning Process**
4. **Behavior**

FEE: $60

For time and program, please contact Continuing Medical Education, above address.

DUTCHESS COUNTY FUTURE EVENT

October 22 / 25, 1972

The New York Trudeau Society

Camelot Motel
Poughkeepsie

CLINICAL PULMONARY PHYSIOLOGY

FEE: $150

Write for Program: WALTER A. GUDZ, Exec. Secty., New York Trudeau Society, 105 East 22nd Street, New York, N.Y. 10010.

RENSSELAER COUNTY FUTURE EVENT

THURSDAY, SEPTEMBER 14

11:30 a.m.

Rensselaer County Academy of Medicine

UROLOGICAL PROBLEMS IN INFANTS AND SMALL CHILDREN

W. HARDY HENDREN, M.D.
Massachusetts General Hospital

ROCHESTER AREA FUTURE EVENT

October 22, 1972 / October 25, 1972

Department of Radiology
The University of Rochester
School of Medicine and Dentistry

Flagship Rochester Hotel
Rochester

Symposium

DIAGNOSTIC RADIOLOGIC FACILITIES AND OPERATIONS (A Meeting on Planning, Organization, and Efficient Operation)

Chairman: HARRY W. FISCHER, M.D.

Write: Dante DiLella, Executive Secretary, Symposium, The University of Rochester School of Medicine and Dentistry, Rochester, N.Y. 14642: Telephone: 716-275-2611.

WESTCHESTER COUNTY FUTURE EVENT

WEDNESDAY, SEPTEMBER 20

8:30 a.m.–4:00 p.m.

Grasslands Hospital

The Hilton Inn
455 South Broadway
Tarrytown

First Annual Birth Defects Center Symposium

ROLE OF GENETICS IN MEDICINE AND DENTISTRY

Guest Faculty
IAN H. PORTER, M.D.
New York State Department of Health
LAWRENCE R. SHAPIRO, M.D.
Letchworth Village, Thiells
ROBERT J. GORLIN, M.D.
University of Minnesota
KURT HIRSCHHORN, M.D.
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OTHER PLACES

WASHINGTON, D.C.

August 1 / 3, 1972

The U.S. Civil Service Commission

Washington, D.C.

Computers in Medicine

SEMINAR ON ADP IN MEDICINE FOR ADMINISTRATIVE PERSONNEL

(Seminar on ADP for Clinical Personnel is scheduled for January 24 / 26, 1973)

Specific details about either of these seminars may be obtained for the ADP Management Training Center, U.S. Civil Service Commission, Washington, D.C. 20415. The telephone is (202) 632-5650.

TORONTO, CANADA

August 28 / 30, 1972

Panamerican Conference on Medical Education

Toronto, Canada

EDUCATIONAL RESEARCH FOR DECISION-MAKING

Write: Marna Robertson, Conference Secretariat, Medical Sciences Building, Room 6275, University of Toronto, Toronto 5. Tel. (416) 928-4896.

TUCKERS TOWN, BERMUDA

September 10 / 16, 1972

The American Society of Gastrointestinal Endoscopy

Castle Harbour Hotel
Tucker's Town
Bermuda

CLINICAL GASTROENTEROLOGY

Write for Program and Registration, to: VERNON M. SMITH, M.D., Dir., Postgraduate Course, 301 Saint Paul Place, Baltimore, Maryland 21202

WASHINGTON, D.C.

November 13 / 16, 1972

Interstate Postgraduate Medical Association of North America

Washington-Hilton Hotel
Connecticut Avenue at Columbia Road, N.W.
Washington, D.C.

SCIENTIFIC ASSEMBLY—INTERSTATE

Write: ROY T. RAGATZ, Exec., Dir., Interstate Postgrad.Med. Assn., P.O. Box 5445, Madison, Wisconsin 53705

HERZLIYA, ISRAEL

November 25 / 30, 1972

New York Medical College

Department of Ophthalmology
Sharon Towers Hotel
Herzliya, Israel

INTERNATIONAL SYMPOSIUM ON METABOLIC EYE DISEASES

Write: Department of Ophthalmology, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029.

PHYSICIANS' PLACEMENT

BROOKLYN, N.Y., needs a Medical Director Bd. Qual. with some administrative experience; a Psychiatrist, N.Y. lic. with 5 yrs. experience limited to Psychiatry; a Pediatrician, Bd. qual. N.Y. lic.

CONTACT: Personnel Director, Provident Health Center, 584 Myrtle Avenue, Brooklyn, N.Y. 11205. Tel. (212) 789-2594.

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CONTACT: WILLIAM R. UPDEGRAFF, M.D., 202 Hooker Avenue, Poughkeepsie, N.Y. 12603. Tel. (914) 454-0620 or 0621.

ATTICA, N.Y., Wyoming County, needs a G.P. for new Medical Center.

CONTACT: ANN MUNIAK, Exchange Road, Attica N.Y. 14011; or J. WYSOCKI, D.D.S., 14 Market Street.

AFTON, N.Y., Chenango County, needs a Family Physician.

CONTACT: MR. JAMES P. ERNSTROM, Chairman, Afton Medical Committee, 188 Main Street, Afton, N.Y. 13730.

CHATEAUGAY, N.Y., Franklin County. G.P.

CONTACT: MR. JOHN D. LYONS, Box #68, Chateaugay, N.Y. 12920. Tel. (518)497-2661

POTSDAM, N.Y., St. Lawrence County. ENT, G.P.'s, Orthopedic Surgeon.

CONTACT: HENRY VINICOR, M.D., Chief of Staff, Potsdam Hospital, Potsdam, N.Y. 13676. Tel. (315) 353-2341.

The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25
November 1–15	September 10
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25

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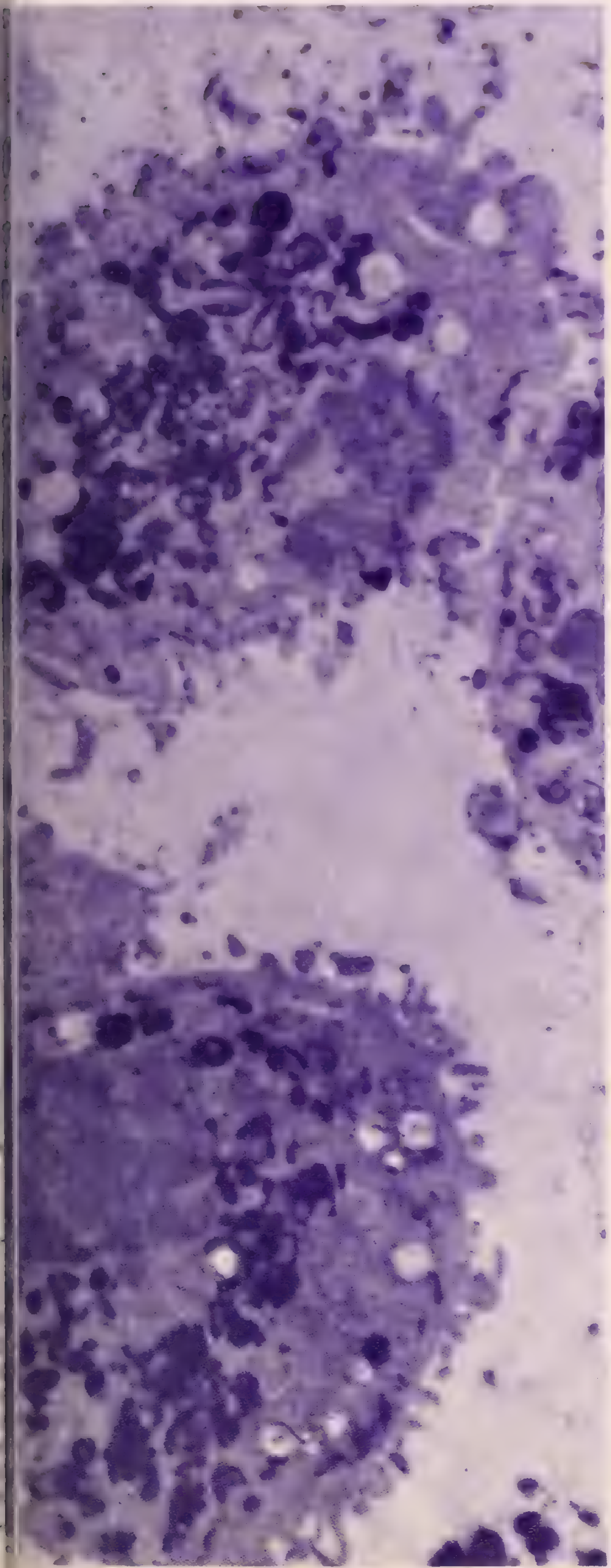

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New York State Journal of Medicine

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Abstracts

O'Connor, J. F., and Stern, L. O.: Results of treatment in functional sexual disorders, ***New York State J. Med.*** **72:** 1927 (Aug. 1) 1972.

The course and effects of psychoanalysis and psychotherapy in the treatment of functional sexual disorders in 61 females and 35 males are reviewed. No specific evaluation of overall treatment results are recorded. Factors influencing prognosis were (1) sex of the patient, (2) psychiatric diagnosis, and (3) type of treatment. Factors which contributed to the development of the disorder but had no relationship to the patient's response to treatment were negative familial and religious attitudes towards sexuality, degree of parental psychopathology, masturbatory history, and previous sexual experience. Males responded more successfully to treatment than females did. The duration of the sexual symptom was an additional unfavorable factor for the female. More severely emotionally disturbed patients did not improve as much as those with less psychologic disturbance. The improvement rate for patients treated analytically was 77 per cent, contrasted with an improvement rate of 46 per cent for those treated therapeutically. This disparity related as much to the depth of the analysis as to the degree of psychologic disturbance of the patient. No specific correlation seemed to exist between the material being dealt with in the analysis and the actual time of the alleviation of the sexual symptom. Although the patient begins with a conscious desire for cure, resistance is tremendous. Analysts must thoroughly recognize all components of transference and countertransference, and the role of analytic neutrality cannot be overemphasized.

Merlis, S., Fracchia, J., and Sheppard, C.: Polypharmacy in psychiatric treatment; physician's treatment preference and practice survey, ***New York State J. Med.*** 72: 1944 (Aug. 1) 1972.

A questionnaire was sent to psychiatrists on the staff listings of New York State hospitals, describing a case history of an acute paranoid schizophrenic patient and asking which drugs would be prescribed at eight stages of treatment of the case. Forty-one per cent of the responding psychiatrists recommended polypharmacy as the beginning treatment choice. Chlorpromazine was the most common single-drug choice and chlorpromazine-trifluoperazine was the most frequently selected combination. Another part of the questionnaire asked for descriptions of the psychiatrist and the type of patients he treated. No significant predictive differences were found between the patients of the two groups of psychiatrists, but significantly higher proportions of the polypharmacy selectors were in practice for under five years, had completed their residencies within the last five years, and had been trained in a hospital associated with a government agency. When faced with inadequate symptom control, 60 per cent of the initial polypharmacy recommenders did not deviate from the recommendation of drug combinations, and only 15 per cent of the initial single-drug recommenders retained only single-drug use.

Abstracts in Interlingua

O'Connor, J. F., e Stern, L. O.: Resultatos del tractamento del alterationes sexual functional, ***New York State J. Med.*** 72: 1927 (1 de Augusto) 1972.

Le curso e le effectos del psychoanalysis e le psychotherapia in le tractamento del alterationes sexual functional de 61 feminas e 35 homines es revistate. Non es registrate un evalutation specific del resultatos therapeutic integral. Le factores influentiante esseva: (1) sexo del patiente, (2) diagnose psychiatric, e (3) typo del tractamento. Le factores contribuente al disveloppamento del alterationes sexual, mais non relationate con le responsa del patiente al tractamento, esseva le attitude negative familiar e religiose al sexualitate, le grado de psychopathologia parental, le antecedente de masturbation, e le experientia sexual previe. Le homines respondeva plus satisfactorimente al tractamento que le feminas. Le duration del symptomas sexual esseva un factor additonal non favorabile pro le feminas. Le patientes plus gravemente alterate emotionalmente non meliorava tanto como ille con minus alteration psychologic. Le proportion de melioramento inter le patientes tractate analyticmente esseva del 77 pro cento; iste contrasta con le cifra de 46 pro cento de melioramento inter le patientes tractate therapeuticmente. Iste disparitate es relationate tanto al profunditate del analysis como al grado de alteration psychologic del patiente. Non pareva haber un correlation specific inter le material studiate in le analysis e le tempore actual del melioramento del symptomas sexual. Ben que le patiente comencia con un desiro consciente de curar se, le resistentia es tremende. Le analysta debe recognoscer completemente omne componentes del transferentias e contratransferentias, e le rolo del neutralitate analytic non debe esser supra accentuate.

Merlis, S., Fracchia, J., e Sheppard, C.: Polypharmacia in therapia psychiatric; studio del preferentias e practicas del medicos, ***New York State J. Med.*** **72:** 1944 (1 de Augusto) 1972.

Un questionario esseva inviate al psychiatros registrate in le Hospitales del Stato de Nove York con le description de un caso de schizophrenia paranoide

continued on page 2009

TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

The following chart was adapted by the Suffolk County Medical Society from one prepared by the Suffolk County District Attorney's Office

Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana ("Pot," "Grass")	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines ("Pep Pills," "Ups")	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates ("Goof Balls," "Downs")	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

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> *–George Sarton, from "The History of Medicine Versus the History of Art"*

Would it be useful in clinical practice to have government predetermine drugs of choice?

Opinion

Results of a survey of physicians:

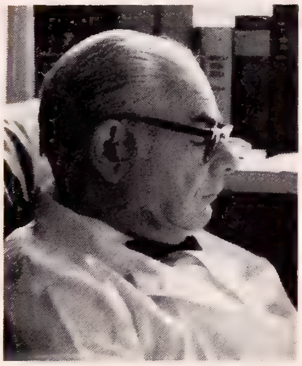
13.3%
Yes, it would be useful.

86.7%
No, it would not be useful.

Would it be useful in clinical practic to have government predetermine drugs of choice?

Doctor of Medicine

Walter Modell, M.D.,
Professor of Pharmacology,
Cornell University
Medical College,
Editor,
Clinical Pharmacology
& Therapeutics,
Drugs of Choice,
Rational Drug Therapy



The proposition that government should determine one or two "drugs of choice" within a given therapeutic class reflects the belief that a similarity in molecular structure insures a close similarity in pharmacologic effect. But this is by no means the rule. An obvious example would be in the field of diuretics, where a small change in chemical structure accounts for substantial differences in concomitant effects such as potassium excretion.

Any attempt to dictate the "drug of choice" would be complicated by the fact that some populations demonstrate a bimodal distribution in their reaction to drugs. If the data on drug response are mixed for the total population, one drug will appear to be as useful as the other. But if drug response is reported separately for different segments of the population, drug A will be found to be better for one group and drug B for the other.

It may, of course, be possible to determine drugs of choice in particular categories on a broad statistical basis. But there are always certain patients in whom a drug produces odd, unpredictable or idiosyncratic reactions. So, though a drug might statistically be the most useful one in a given situation, individual variations in response might make it the *incorrect* one.

The point I wish to make is that if two, three, four or more drugs in one class are of approximately equal merit, that in itself is justification for their availability. Exceptional cases do arise in which one drug would be useful to a certain segment of the population and another drug would be of no use at all. In the practice of medicine, the physician must be prepared to treat the routine as well as the unusual case.

Another objection to the determination of a drug of choice is that precise statements of *relative* efficacy are very difficult to make—much more difficult than statements of efficacy. For example, in testing drug efficacy, it is easy to determine the difference between a drug that is effective in treating a condition and one that is not at all effective. Thus, it is fairly easy to determine whether a drug is more effective than a placebo. But if you compare one drug that is effective with another drug that is also effective, and the relative differences between them are very slight, statements of relative efficacy may be very difficult to make with assurance.

I do not mean to imply that relative efficacy statements are not useful or can never be made. With some groups of drugs (e.g., analgesics), extensive study and precise methodology have yielded useful information on relative efficacy. But in most situations, such information can be acquired only through studies encompassing three to five years of use in many more patients than are used to compare drugs with a placebo for the introduction of a drug into commerce. It is really only after practitioners use a drug extensively that relative safety and efficacy in practice can really
determined.

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neth G. Kohlstaedt, M.D.,
Vice President,
Medical Research,
li Lilly and Company

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Variation in patient response to drugs constitutes one of the major obstacles to the determination of "drugs of choice." We are just beginning to open the door on pharmacogenetics, but it is evident that genetic differences cause wide variations in the way drugs are absorbed, metabolized, etc. This fact alone is sufficient to make unrealistic the idea that there is one drug in each class to be used for every human being.

The problem of determining relative drug efficacy is an extremely complicated one. Comparison with other drugs of the same class should not be a prerequisite for marketing a new substance. In some therapeutic areas, it may be difficult to make accurate comparisons. For example, in the treatment of infections it is not possible to conduct crossover studies. Recovery may be influenced by factors which cannot be controlled or measured, i.e., natural host resistance and virulence of infective agents. A drug's acceptability must often be judged on the basis of its own performance, and this may be limited to experience in a relatively small patient population. If the introduction of a new drug must await the adequate establishment of relative efficacy, the duration of clinical trial and extent of studies would be greatly prolonged, particularly for rare or unusual conditions. The availability of a new drug would be delayed. Many patients might suffer needlessly and lives might be lost.

Relative efficacy can best be established by experience in a general patient population through regular channels of clinical practice. The physician considers the patient as a whole, which means the patient often has multiple problems and drugs must be selected with this in mind. Hence, a "drug of choice" in an uncomplicated case may not be the best drug for a patient with associated problems. Publication of well-controlled studies in medical journals may provide comparative evidence; discussions at medical meetings, presentations at postgraduate courses, and the new audiovisual technology may bring evidence to physicians on comparative therapy. In a free medical marketplace, a drug that does not measure up will fall into disuse. For example, broad clinical experience has established vitamin B_{12} as the "drug of choice" for the treatment of primary pernicious anemia. No amount of advertising or promotional effort by the manufacturer could increase the use of liver extract for this anemia. However, a physician may wish to employ parenteral liver preparations for a special purpose.

In the field of surgery, peer review in the hospital has brought significant improvement in the use of new techniques and procedures. Something of this nature would be useful in the area of drug therapy. However, it should be developed by the medical profession itself and would necessitate, for its proper function, an improvement in the dissemination of reliable data on clinical pharmacology of drugs under consideration.

Ideally, information on the relative efficacy of drugs should be gathered and assessed by the physicians who actually administer the specific agents to a specific patient population. To do this, they will need even more information on the drugs they use – information that the pharmaceutical manufacturers must begin to provide if government regulation of *"drugs of choice"* is to be avoided.

Opinion & Dialogue

What is your opinion, doctor?
Send us your comments on the above issue.

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*The following books were received during the month of June, 1972.**

Chemical and Biological Aspects of Drug Dependence. Edited by S. J. Mulé, Ph.D., and Henry Brill, M.D. Quarto of 561 pages, illustrated. Cleveland, Ohio, CRC Press, 1972. Cloth, $35.

Vascular Mechanisms of the Brain. Translated from Russian. By George I. Mchedlishvili, M.D. Quarto of 119 pages, illustrated. New York, N.Y., Plenum Publishing Corp., 1972. Paper, $25.

Stedman's Medical Dictionary. A vocabulary of medicine and its allied sciences, with pronunciations and derivations. 22nd edition. Completely revised by a staff of 33 editors, covering 44 specialties and subspecialties. Quarto of 1,533 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $18.50.

Series Haematologica. Volume IV, 3, 1971. Hemoglobin Synthesis. Edited by Kaj Gert Jensen and Sven-Aage Killmann. Quarto of 132 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $16.50.

Practical Electrocardiography. Fifth edition. By Henry J. L. Marriott, M.D. Octavo of 325 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $10.50.

Handbook of Pharmacology. The actions and uses of drugs. Fifth edition. By Windsor C. Cutting, M.D. Octavo of 659 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Paper, $9.95.

Modern Treatment. Volume 9 Number 1, February 1972. The Treatment of Edema. Guest Editor, Richard H. Kessler, M.D. **Special Articles: Skin Stigmata of Adolescent Drug Addiction.** By Alex W. Joung, Jr., M.D., Elaine V. Digrande, M.D., and Lawrence T. Wagers, M.D. **The Pharmacology and Clinical Use of Lidocaine as an Antiarrhythmic Drug–1972.** By Donald C. Harrison, M.D. and Edwin L. Alderman, M.D., Octavo of 181 pages, illustrated. Hagerstown, Maryland, Harper & Row, Publishers, 1972. Published quarterly (4 numbers a year). Cloth, $20. per year.

The Medical Clinics of North America. Volume 56 Number 4, July 1972. Symposium on Endocrine Disorders. Guest Editor, Raymond V. Randall, M.D. Quarto, illustrated. Philadelphia, Pa., W. B. Saunders Company, 1972. Published bi-monthly (6 numbers a year). Cloth, $21. per year.

*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

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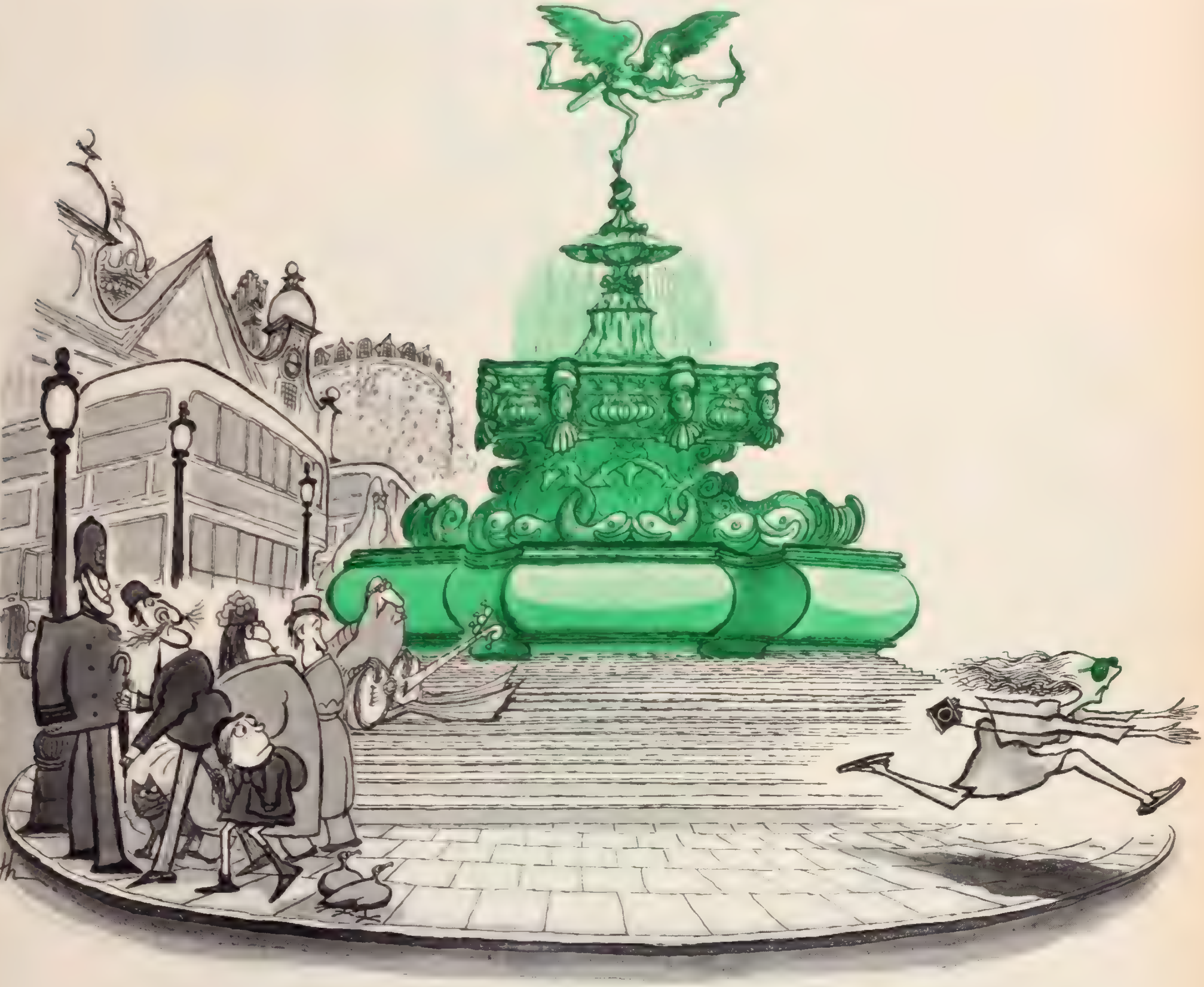

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Editorials

Who needs the AMA?

The eternal cry is raised, who needs the AMA? What does it do for me? It's too liberal! It's too reactionary! It's too conservative!

Anyone who has followed the AMA knows that the voices of dissension and criticism are now being heard in that organization. As all organizations must change to survive, the AMA is changing. What direction it takes depends on those of you who are interested enough to have a part of the action.

There is not a single physician in this country today who has not benefited from the AMA. Consider the fantastic amount of work that they have done on a national scale in all facets of medicine and public health. A look at their journals, magazines, committees, councils, and task forces will vouch for this.

I think it is morally unacceptable for us to share in the benefits of the AMA without supporting the AMA.

This excerpt is from the inaugural address of our President, Edward Siegel, M.D. It applies to all physicians, including our academic brethren.

Our failure to prepare for disaster

The rains came, the floods mounted with death and destruction

When food was at hand, primitive man was gluttonous, with no thought of the morrow; he lived in the present only. Civilized man prepared for the future. Like Joseph of old, in the days of plenty, he saves for the time of scarcity.

The abolition of the State Civil Defense Commission in the Department of Health this spring saved $7,000,000 in the State funds but lost an equal amount of matching Federal monies. All State aid to counties and cities was eliminated. No central unified disaster program now prevails, and no disaster units are ready—not even on paper. No detailed specific plans and accumulated material for grave emergencies and disasters are now at hand. Several packaged hospital units and treatment centers, geared specifically to disaster medicine, have been disbanded; all drills have been suspended and medical stockpiles dissipated.

The "boat drill" on the ship at sea, and the "fire drill" in schools are always unpopular; yet the price of unpreparedness in life and suffering has been evident all too often. Preparation for possible disaster is never dramatic, but the disaster itself is all too dramatic indeed. Prevention of disaster is best, let us strive for it; but planning for tragedies beyond our control is a clear-cut necessity. These simple clichés are all too obvious; yet they go unheeded.

Now a new committee or commission will be appointed to study appropriate action for future disasters. This is indeed a sad post hoc attempt to assuage our conscience for our lack of foresight. How to prevent disasters is a long, difficult, if not impossible task; but being ready for the emergency before it arises—whether it be the SOS of the sinking ship, or the destructive fire, or the flood—is within our power and ability. May all such preparations always be waste motions for lack of disasters to need them!

Organized civil disaster units could have done much during the recent tragic floods. May full preparedness always be available in the future for disasters which will never occur!

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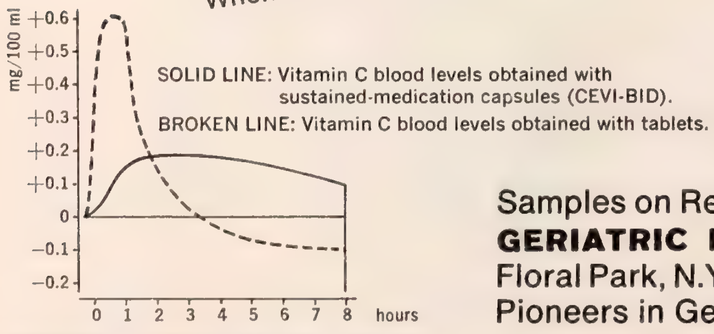

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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Results of Treatment in Functional Sexual Disorders

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The course and effects of psychoanalysis and psychotherapy in the treatment of functional sexual disorders in 61 females and 35 males are reviewed. No specific evaluation of overall treatment results are recorded. Factors influencing prognosis were (1) sex of the patient, (2) psychiatric diagnosis, and (3) type of treatment. Factors which contributed to the development of the disorder but had no relationship to the patient's response to treatment were negative familial and religious attitudes towards sexuality, degree of parental psychopathology, masturbatory history, and previous sexual experience. Males responded more successfully to treatment than females did. The duration of the sexual symptom was an additional unfavorable factor for the female. More severely emotionally disturbed patients did not improve as much as those with less psychologic disturbance. The improvement rate for patients treated analytically was 77 per cent, contrasted to an improvement rate of 46 per cent for those treated therapeutically. This disparity related as much to the depth of the analysis as to the degree of psychologic disturbance of the patient. No specific correlation seemed to exist between the material being dealt with in the analysis and the actual time of the alleviation of the sexual symptom. Although the patient begins with a conscious desire for cure, resistance is tremendous. Analysts must thoroughly recognize all components of transference and countertransference, and the role of analytic neutrality cannot be overemphasized.

The first part of this study, that appeared in the July 15 issue of the ***Journal,*** essentially brought us to the point in time when the patient entered psychoanalysis or psychotherapy at the Columbia Psychoanalytic Clinic. Now we intend to deal with the effect of these therapies on the patient's sexual disorder. It must be emphasized that we are not evaluating the use of psychoanalysis or psychotherapy in general, but only its effect on a single symptom: the specific sexual dysfunction. We will note in passing, however, that none of the patients developed an increase in their overall symptoms, some experienced an alleviation, while in others, the global pathologic condition remained unchanged.

Factors such as choice or type of treatment, motivation, the analyst's personality structure, and the sex of the analyst are all significant in evaluating psychotherapeutic results, but they are beyond the scope of this study and will be dealt with at a future date. In this report we will present only our findings and have purposely avoided hypothesizing or formulating any specific theoretic construction.

Literature review

In reviewing the literature one finds a considerable amount of material that deals with functional sexual disorders. There are many excellent analytic studies, but they do not address themselves to treatment results of a large population, and so they are not included in this review. Relatively few reports have presented the effects of psychiatric treatment, and what little is available has only begun to appear within the past ten years. We will not consider the results of hormonal treatment, stimulants, and other medication, for it appears to us that if these do have an effect, it is beyond our current level of understanding.

Blair and Pasmore,[1] reporting on successful psychotherapy in 58 females suffering from frigidity, divided the sample into four groups, based on each patient's own image as a female. Group I consisted of women who were having transitional problems in a new marriage, group II included women who were uncertain as to their own femininity, group III comprised those women who were overtly angry at being a female, and in group IV were women whose anxiety about their role was so overwhelming that they denied any sexual feeling. Prognosis was excellent for group I, good for groups II and III, and poor for group IV.

Gebhard[2] analyzed various factors in marital orgasm, correlating the existence of frigidity to the unhappiness of the marriage. He reported that total frigidity existed in only 5 to 10 per cent of more than 900 female respondents, although partial frigidity was probably present in a much larger population. In 85 per cent of the frigid women Kleegman[3] studied, there was evidence of a severe neurosis; only 15 per cent manifested frigidity as the single symptom. Shope and Broderick[4] emphasize the levels of premarital sexual experience as prognostic factors for a successful marriage.

Lesnenko,[5] treating three groups of patients with impotence and frigidity, classified them as (1) a personality disorder associated with anxiety, fear of intercourse, and masturbation; (2) having a history of a traumatic experience; and (3) neurastheniacs. He found a group therapeutic approach to be most successful for decreasing anxiety and increasing "strength of character." Lesnenko also emphasized the need for rest, relaxation, and vacation. The "neurasthenic group" were most difficult to treat. Drug therapy was necessary for these patients. His results were as follows: of 300 patients treated in group therapy 76 per cent are reported as cured, 10 per cent improved, and 14 per cent unimproved. Of 300 patients treated in individual therapy, 59 per cent are reported as cured, 25 per cent improved, and 16 per cent unimproved. He concluded that symptomatology tends to disappear more quickly in group therapy; group therapy also leads to more frequent recovery. His basic therapeutic premise presupposed that reassurance and removal of fears would result in a cure. The conclusions of this study and the high success rate are quite remarkable and to some extent, inexplicable, when compared with others.

The behavioral school reports a favorable response to their approach. One study of 18 impotent male patients reports 12 cures.[6] Another study reports on 2 patients treated by desensitization with 2 recoveries and 3 patients treated "interpretively" with no recoveries.[7]

Unfortunately, in the studies of Lesnenko,[5] Wolpe, and Lazarus the specific sexual disorders are not spelled out, at times there is no clear definition of what the authors consider "improvement" or "cure," and there is no follow-up.[6,7]

Masters and Johnson,[8] using their rapid-treatment method, report the results shown in Table I.

TABLE I. Results of rapid-treatment method of Masters and Johnson.[8]

Complaint	Patients		Success Rate (Per Cent)
Primary impotence	32		59.4
Secondary impotence	213		69.1
Premature ejaculation	186		97.3
Ejaculatory incompetence	17		82.4
Male totals		448	80.6
Primary orgasmic dysfunction	193		82.4
Situational orgasmic dysfunction	149		75.2
Female totals		342	79.2
Male and female totals		790	80.0

These figures seem comparable only to those of Lesnenko.[5] It appears that the Masters and Johnson patient population was more strongly motivated for treatment than other patient groups. The major attributes of this therapeutic method is its specific orientation toward sexual dysfunction, the use of both a male and a female therapist, the spouses are treated together, and the patients are generally on vacation. As Masters himself indicates, the procedure does have to be repeated at another institution before these statistics can be considered reliable. He deals primarily with the failure rate and does not define what he considers a success in terms of therapeutic results. It is our impression that what we term improvement, which could be a change in attitude, but not in performance, would not be included in his initial failure rate. We have interpolated here what must be assumed a success rate for ease of understanding, and because all other investigators deal with success or improvement rates.

Oversey and Myers[9] report on a total of 10 males suffering from retarded ejaculation; of this group 3 were homosexual. They concluded that the treatment of choice was psychoanalysis.

There are no reports commenting on the effectiveness of hypnosis in terms of the sexual disorders. However, in a separate study that we conducted with 14 patients, the results were not impressive. This will be extended at a later date.

Definition of terms

To undertake a study of functional sexual disturbances one must set up a series of definitions and end points that are to be measured. Considering the amount of literature on sexuality and sexual disorders, this would appear to be relatively simple. However, there is extreme divergence when it comes to defining such conditions as frigidity or impotence. Terminology varies from the vaguest description to extreme specificity. To give an example, the concept of female orgasm as described in the literature ranges from a profound experience which includes uterine and vaginal contractions, increased blood pressure and pulse rate associated with general body muscular contraction and carpopedal spasm, to a general sense of pleasure and well-being during and following intercourse. In addition to such latitudes of definition, there are manifestations and degrees of impotence and frigidity that make it necessary to subdivide these disorders into different categories. A series of meetings with both gynecologists and urologists did not completely resolve this task, and the definitions and classifications eventually decided on are still not wholly satisfactory.

Impotence. Impotence can be generally defined as a condition in which the male is unable to maintain an erection or experience orgasm resulting in satisfactory, pleasurable coitus. Our subcategories are as follows:

Total impotence. Males who are totally impotent have never been able to achieve satisfactory coitus associated with orgasm, despite the fact that they may be able to masturbate with normal heterosexual fantasies.

Partial impotence. Included in the category of partial impotence are: (1) Males, who, with the same partner, are able to complete satisfactory intercourse at times, but not consistently, or who have been potent in the past. (2) Males who are not able to maintain a full erection. (3) Males who are selectively impotent, that is, those who are able to perform satisfactorily only with a specific type of woman, for example, social or intellectual inferiors or those from a different ethnic group. (4) Males who for the most part had never experienced any sexual difficulty until faced with an anxiety-provoking change in their life situation such as a commitment of marriage, the birth of a child—or a loss of more than 14 points in the Dow Jones average. In most cases this was of a temporary nature.

Premature ejaculation. Premature ejaculation is defined by different groups according to the amount of time it takes for the male to achieve orgasm, for instance, a minute-and-a-half to two minutes following penetration, or by the number of thrusts, some groups stating that more than 10 thrusts cannot be considered premature ejaculation.

Retarded ejaculation. Retarded ejaculation is a relatively uncommon phenomenon, occurring in less than 1 in 1,500 males. There were 2 cases in our study group; 1 was classified as being totally impotent, the other as being partially so. Both cases were cured.

Retrograde ejaculation. Retrograde ejaculation, which is found frequently among diabetics and in males having had sympathectomies, was not observed in our clinic population.

Of our five categories of impotence, what we defined as total occurs in essentially 1 per cent of the male population. Figures for male groups with partial impotence or premature ejaculation vary from 10 to 90 per cent, depending on which reports are read. One recent questionnaire study indicates that 37 per cent of middle-class males experience some form of impotence during the course of their active sexual lives.

Frigidity. Frigidity was characterized as a condition in which the female is unable to achieve pleasurable orgasm through the act of heterosexual intercourse. Again, it was necessary to qualify this generality in terms of total and partial frigidity. The female who had never experienced orgasm during intercourse was considered totally frigid, even if she was able to achieve orgasm with masturbation. The criteria we applied for partial frigidity were much the same as those used for the different classifications of male impotence. In the female other forms of sexual dysfunction must also be defined.

Vaginismus. Vaginismus is a painful spasm of the vaginal and associated pelvic musculature which inhibits penetration and contributes to a lack of sexual excitement, even though penetration is occasionally accomplished. This may be caused by certain organic lesions but frequently is found to be of psychologic origin.

Dyspareunia. Dyspareunia is painful sexual intercourse. If there is no physical abnormality present it is considered an hysteric disorder. With dyspareunia, as with vaginismus, it is most important to eliminate the possibility of a local disease process, for if such is the case, gynecologic treatment can often cure the basic physical problem.

Vaginal anesthesia. Vaginal anesthesia is a complete lack of intravaginal sensation. This condition is always psychologic in nature. Women with this type of sexual dysfunction are those who offer the ultimate insult to the male when they ask "Is it in yet?"

Results

Sex. If the success rate of treatment is correlated according to sex, only 25 per cent of females were cured as compared with 57 per cent of males, while 36 per cent of females improved as compared with 17 per cent of males (Table II). One

TABLE II. Improvement shown in patients treated, analyzed by sex

		—Improved*—		—Unimproved—	
Sex	Patients	Number	Per Cent	Number	Per Cent
Male	35	26	74	9	26
Female	61	37	61	24	39
TOTAL	96	63	66	33	34

* Twenty males were cured and 15 females were cured.

would expect, in terms of anatomic and physiologic structure, that it would be easier for the woman to improve, even though she may not achieve a total cure. Improvement, for the female, included more pleasure in the sexual act, positive attitudinal changes, orgasm during foreplay, but no orgasm during intercourse itself. With the male, however, the potential for "improvement" is lessened; he is more likely to be totally "cured" or remain unimproved, since he is dependent chiefly on performance, that is, the ability to achieve and sustain an erection.

Psychiatric diagnosis. As mentioned previously, 65 per cent of the patients were diagnosed as having personality disorders, 33 per cent as psychoneurotic, and only 2 per cent as schizophrenic. The small number of schizophrenic patients (2) may be explained partially by the fact that the individual considered to be schizophrenic in initial diagnostic interviews is rarely accepted for treatment at the Clinic.

In general, those patients who exhibited gross symptoms such as phobias, anxiety, compulsions, and so on had a poorer prognosis than those patients with milder psychopathologic conditions. While the 2 female patients who were diagnosed as schizophrenic improved to some extent, this is too small a sampling to be significant. In some patients diagnosed as having personality disorders, there was a question of underlying schizophrenia, but no evidence of overt or secondary symptomatology. None of these patients improved (Table III).

These findings are similar prognostically to those for patients in our study of ulcerative colitis who were treated psychoanalytically or psychotherapeutically; a major determinant for improvement was the original psychiatric diagnosis.

Treatment. In terms of treatment, 60 per cent of the group had been analyzed, 34 per cent received psychoanalytically oriented therapy, and 6 per cent of the patients were seen briefly and supportively for less than a year. Patients in analysis had four sessions per week for a minimum period of two years. Psychotherapy was conducted on a semiweekly basis for no longer than two years. A number of patients had had some form of treatment or counseling prior to admission to the Clinic, and many went on to continue privately following their therapy at the Clinic. Most of these patients were followed up after their private treatment.

TABLE III. Improvement and psychiatric diagnosis in patients treated

Psychiatric Diagnosis	Number of Patients	Improved*	Unimproved
Personality disorder	62	44	18
Psychoneurosis	32	17	15
Schizophrenia	2	2	. . .

* Twenty-seven (44 per cent) of patients with personality disorder were cured, and 8 (25 per cent) of patients diagnosed as psychoneurotic were cured.

TABLE IV. Improvement shown in patients complaining of impotence and frigidity

Type of Symptom	Number of Patients	Improved*	Unimproved
Impotence			
Total	5	4	1
Partial	10	7	3
Premature ejaculation	20	15	5
Frigidity			
Total	44	26	18
Partial	17	11	6

* Twenty patients with impotence were cured (57 per cent), and 15 patients with frigidity (25 per cent) were cured.

Of the 61 patients treated psychoanalytically, 47 showed some improvement, including 26 who were cured. Of the 35 patients treated psychotherapeutically, 16 showed some improvement, including 9 who were cured. In all, 77 per cent of the analytic cases improved to some degree as compared with 46 per cent of the therapy cases. The higher improvement rate for psychoanalytic cases is probably a reflection of other factors—patients who have less mental illness for the most part tend to do better in treatment and, in this sample, the patients who were analyzed evidenced less illness than those who received psychotherapy. Seventy-three per cent of females in psychoanalysis improved, while the male improvement rate was 86 per cent. Therapy results were 38 per cent improvement for females and 57 per cent for males.

Fourteen per cent of our 35 male patients were classified as being totally impotent; 29 per cent had what we defined as partial impotence, and 57 per cent were categorized as premature ejaculators. Among the 61 female patients, 72 per cent were totally frigid and 28 per cent only partially so.

The severity of symptoms—that is, total as compared to partial impotence or frigidity—did not prove to be particularly significant in the eventual outcome of treatment (Table IV).

Among patients with total sexual dysfunction, 62 per cent improved; of the group with varying forms of partial impotence and frigidity, 70 per cent improved. Taken as a whole, 66 per cent of the sample improved, including 29 per cent who were cured.

Symptom duration. In our patient population, 22 per cent reported a history of sexual disorders that had been present for more than ten years. This group included 18 per cent of the females and 29 per cent of the males. Most studies emphasize that the existence of symptoms over a long period of time is indicative of a poorer prognosis. Fifty-seven per cent of our cases with symptoms for ten plus years improved as compared with 68 per cent of patients who had symptoms for shorter periods of time (Table V).

It is a generally accepted fact that 30 per cent of the average female population do not achieve orgasm during their first experience of intercourse. After a period of ten years or more, this 30 per cent is reduced to 10 per cent, and the figure of 10 per cent remains static thereafter. In our study group the improvement rate for females who had been frigid for more than ten years was 36 per cent as compared with 66 per cent of the females who had been frigid for shorter periods of time. In the male, sexual symptoms usually persist if untreated. However, the length of time the symptom existed did not appear to be a prognostic factor in our group; 8 of the 10 males who were impotent for more than ten years improved, and 6 of these were cured.

Problems within treatment situation

Although patients express a desire to obtain a more adequate level of sexual functioning on a conscious level, the underlying unconscious resistance toward recovery is substantial and greater than we expected to find. This was frequently evidenced by avoidance of any discussion of sexuality during the early months of treatment. In the male, it takes the form of dealing more with areas of work, aggression, and interpersonal relationships with other males. The female also uses these technics, or she may deny any need for erotic pleasure and orient the intercourse primarily toward satisfying the male partner. The analyst may aid and abet these defenses, particularly if he feels insecure or if he chooses to protect the patient from a further lowering of self-esteem by dealing with the resistance and not the basic symptom.

TABLE V. Improvement shown in patients showing symptoms for under and over ten years

Sex and Duration of Symptoms	Number of Patients	Improved*	Unimproved
Male			
Under ten years	25	18	7
Over ten years	10	8	2
Female			
Under ten years	50	33	17
Over ten years	11	4	7
TOTAL			
Under ten years	75	51	24
Over ten years	21	12	9

* Of the improved males, 14 (56 per cent) of those with symptoms of under ten years' duration were cured, and 6 (60 per cent) of those with symptoms of over ten years' duration were cured. Of the improved females, 14 (28 per cent) of those with symptoms of under ten years' duration were cured, and 1 (9 per cent) of those with symptoms of over ten years' duration were cured. In all, 28 (37 per cent) of those with symptoms of under ten years' duration were cured, and 7 (33 per cent) of those with symptoms of over ten years' duration were cured.

Another defensive technic observed mostly in the female, one would guess because of the preponderance of male analysts, was the use of an erotic transference which disengaged them sexually from their real-life partner and directed their erotic fantasy life wholly toward the analytic situation. Under these circumstances, the transference itself becomes a mechanism of defense and has to be dealt with.

If there is no erotic transference, either the male or female patient may assume an extremely dependent status, using the analyst as a maternal or paternal surrogate who will defend them against the potential aggressor, that is, the husband or wife. The less experienced analyst seems to be drawn more rapidly into the posture of unconsciously assuming a parental role. In one case the wife of the patient was labeled "schizophrenic" by the analyst, much to the distress of the supervisor who pointed out that his only source of information was the patient's verbal and possibly distorted description of his wife. As treatment progressed, the wife's support was quite influential in achieving an eventually successful result. Analysis of the patient appeared also to have cured his wife's "schizophrenia." In such a situation, the neutral stand of the analyst is most important. It will undoubtedly be viewed by the patient as nonsupportive, but it does allow for further opening up, as well as disclosure and interpretation of the patient's own psychopathologic condition, allowing for increasing insight and a greater potential for change.

In reviewing the records of the patients it was interesting to discover that no specific relationship existed between the loss of symptom and the material being dealt with at that time in the analysis. It may have occurred at a point when the patient was working through dependency problems or early familial relationships or their own aggressive feelings.

Case 1. The patient was an attractive married thirty-year-old mother of two children who entered treatment after an accident in which one of her children was almost killed. Following this near tragedy she developed acute anxiety attacks and eventually, depression. She felt that "life was closing in" and limiting her activities. In the initial history she stated that while she enjoyed sex and found it a source of great pleasure, her husband desired it at the most, once a week. After six months of treatment it became clear that the patient had never experienced orgasm during sexual intercourse. This discovery came as her sexual frustration increased and she began to masturbate. She then compared the pleasure of the masturbatory orgasm to her previous nonorgastic pleasure during intercourse and realized she had been frigid. Approximately six months later she became very angry with her husband not only for the sexual deprivation but also for his passivity in business, nonparticipation in family activities, and so on. At that time they were leaving for a long weekend vacation. During the session before departure she reported the following dream:

> There was a red-haired ugly young man. He was trying to kill a crippled girl with a knife. We were in a three storied house. I took the girl and slid down the bannister and we got to the cellar and my Aunt Bernice was there; we were safe.

On returning from the weekend, the patient was euphoric, stating that she and her husband had had intercourse two or three times during this short vacation and that she had been consistently orgastic. She then reported the following dream:

> Robert (her husband) told me he had been arrested on a homosexual charge and he was to be put in jail for two years. I went to see a lawyer who fell in love with me.

While undoubtedly a hostile dream, it was in a sense quite predictive of what was to develop during the following year. As the patient became more responsive, her husband withdrew even further. They were now having intercourse only once every few weeks. Following a confrontation one evening he admitted to her that he really was only attracted to young boys or girls.

Prior to this confession, the husband had always helped the patient shop for clothes. She had maintained in analysis that "he had much better taste than I." However, now, after reviewing her wardrobe, she realized that she had been dressing like a teenager—"even my damn evening dress is like something a twelve-year-old would wear to a party."

The husband entered treatment and there seemed to have been some initial improvement, but we have no follow-up. During the phase of the analysis when she became orgastic, she was primarily dealing with fears of her own aggression, that of others, and her dependency needs.

In the male, fear of castration and injury was a major factor to be reckoned with. Castration was visualized as a result of the vulnerability that would be incurred by "opening up" to others. The "opening up" was perceived of as the giving or receiving of any expression of emotion, be it love, warmth, or aggression. These males would separate themselves from the rest of the world by establishing a wall of neutrality which kept their emotional life within and others' out. This is not unlike the spectator role frequently described, where even during intercourse certain patients will maintain themselves at an emotional distance from their partners.

Occasionally the original castration anxiety was converted to a fear of harming the woman. Phrases such as "getting her," "pounding her," and similar expressions were used to describe intercourse. One patient visualized himself as potentially destroying women with his large penis. A prostitute had once refused to have intercourse with him, stating that "something that big would rip me apart." He applied this fantasy to his wife and other women; the end result being an avoidance of any sexual relations. There was considerable grandiosity but after the aggression and grandiosity had been dealt with, the castration anxiety remained the major factor in his continuing impotence.

Another behavioral pattern found in the male was similar to what is sometimes described as a "success phobia." One such patient had great difficulty in adolescence defeating his father in any sports activity, although in reality the son was much the better athlete. In his career he had always been the second man working dedicatedly for an older superior. This phobia also inhibited any success in his sexuality, which, by definition, would bring retaliation from the angry father.

This patient presented many problems in treatment but his most persistent defense was "friendliness and respect" for the analyst. Any aggression was displaced to paying bills late, criticism of the two other analysts who shared office space, and the like. However, his basic competitiveness and aggression was brought out directly in his dream life, which he was able to recognize; then it became apparent in his social and business life, where he was becoming more successful; and finally it came into the transference.

In a different way, the castration complex played a role in working through the problem of the female:

Case 2. A pleasant, covertly aggressive career girl became involved in an affair. She had previously worked through the existence of an "illusory penis" intellectually, but was unable to do so emotionally. Following her first successful sexual experience she had this dream:

> I was in the living room with George. I said to him, "Now George, won't you just lend me your penis for three days. I'll put it over there in the corner and return it to you." He appeared afraid.

Her fantasies at this time were of hurting the male through sexual intercourse—a result of her still-existent aggressive desire to obtain a penis through intercourse.

George, from all descriptions, appeared to be a more than acceptable person. However, she was markedly concerned with others' approval of him and for months refused to have her friends meet him. "He's too short," or "People may not like his looks," were frequent excuses. In essence, George had become her ambulatory penis.

Another difficulty evidenced by the female was a fear of direct injury from the male sexual organ. This was frequently displaced to a fear of pregnancy. Dreams of vaginal tears and loss of blood were not uncommon in these instances, even in the sexually experienced female.

The female also tended to equate a level of mature genitality with the surrender of many well-established dependency gratifications. She was now a woman and could no longer rely on mother and father; the new partner might not be as reliable as the parents. It was our impression that this factor also existed in those patients who had experienced a parental loss early in life. They were generally more dependent, although at times they exhibited a degree of pseudoindependence. Basically, these patients were unable to trust others because they unconsciously expected a repetition of the previous death or separation which had never been resolved or dealt with. The resolution of a loss at an early age and its effect on the developing personality is one of the most difficult situations to cope with in psychoanalysis. One has to be with the patient while he relives this experience and resuffers the deprivation, depression, and eventual anger—feeling that it should or could be stopped, but realizing all the time that if it is stopped, the patient will never work through the problem. In this situation, successful resolution hinges very much on the analyst's dependability, his being there, not missing appointments, and, as one patient stated, "not dying on me."

Perhaps one other difficulty that has been underestimated in the treatment of sexual dysfunction is that the disorder in many patients is integrated into a successful life adaptation and cannot be separated from it. Any attempt to relieve the symptom threatens every other area of life adaptation. They feel unable to risk such sweeping changes and, therefore, cling to the sexual problem. To illustrate, the female will visualize a cure of her frigidity as an extreme threat: "If I begin to like sex, I might go wild, go to bed with any man, ruin my home and children. I'm afraid of what I might do." What is normal sexual feeling to others meant a complete loss of control and destruction of everything good in life to many of our patients.

At times the analyst may want to purposefully avoid dealing with sex if the anxiety level is too high or if it may mean a discontinuation of the analysis. Of prime importance is the existence of a good transference, an understanding of the problem, a willingness to be flexible within the context of the analytic situation, and a working therapeutic relationship.

Occasionally a patient, either male or female, will use religion as a defense, stating that his particular faith forbids premarital sexual activity. Using this resistance, the male does not have to deal with his impotency and the female can fantasize that she would be orgastic if involved with a proper marital partner. However, this defense was relatively uncommon and comparatively easy to deal with. Other rationalizations, such as loss of status or the belief that sex was animalistic, were also present.

The final problem is that of the "third party," that is, the husband or wife of the patient. They frequently will try to sabotage any change or improvement in their spouse. With a more drawn-out type of treatment such as psychoanalysis, these maneuvers are not so obvious; however, when shorter therapy technics involving both partners are used, it has been noted that when improvement occurs in the primary patient, the healthy partner sets up many behavioral responses to prevent the spouse from recovering. In part one chooses a mate not only for his or her assets but also for his or her problems; as the problems begin to wane the equilibrium of the partner and even, at times, the family unit are certainly threatened. By attempting to block any healthy changes in the patient, the spouse can set up an outside resistance that is difficult to cope with in the analysis.

Summary

We have reviewed the effects of psychoanalysis and psychotherapy in the treatment of functional sexual disorders in 96 cases, 61 females and 35 males. We did not specifically evaluate overall treatment results, since this study focused primarily on the sexual symptom per se. However, it was obvious that most patients had been helped in other life areas.

Prognostically speaking, there were certain factors which, while contributing significantly to the development of the sexual disorder, had no demonstrable relationship to the patient's response to treatment. These included negative familial and religious attitudes toward sexuality, degree of parental pathology, masturbatory history, and previous sexual experience.

The factors that did substantially influence treatment results were (1) the sex of the patient, (2) the psychiatric diagnosis, and (3) the type of treatment.

Male patients uniformly responded more successfully to therapy than did females; they had a higher combined cure-and-improvement rate. We can only speculate that there was more motivation among the male patients. Whereas the female can function sexually and still be frigid, the male cannot have intercourse if he is impotent, so basically there was more pressure on him to recover.

The fact that the more severely disturbed patients did not improve as much as those with less psychopathologic illness was not surprising. The psychiatric diagnosis is certainly a prognostic factor. However, the marked discrepancy between effects of analysis and psychotherapy—77 per cent improvement for analytic cases in contrast to 46 per cent for patients in therapy—was greater than expected. We feel that this is as much related to the depth of the analysis as to the degree of psychopathologic illness of the patient. Many patients who stopped psychotherapy following their Clinic treatment might very well have been cured if treatment had been continued. The more intense four visits per week and the resulting concentration, plus the decreased ability of the patient to set up defenses within the analytic situation as compared to the therapeutic, contributed more to the eventual cure. In this group of patients, the duration of symptoms was more unfavorable prognostically for the female population than for the males.

In terms of treatment, we would emphasize the fact that, although the patient begins with a conscious desire for cure, resistance is tremendous and the technics of avoiding such cure are both subtle and strong. At times this avoidance is reinforced by the patient's spouse. In both situations, it is essential that the analyst be very aware of the components of the transference and the interrelationship with his own countertransference. The role of analytic neutrality cannot be overemphasized in dealing with the patient who has a sexual disorder. In those who have experienced a severe loss through death or deprivation within the family situation, there are severe basic feelings of depression which must be worked through not only in terms of the sexual problem but also in terms of the individual's feelings of loss, deprivation, and worthlessness.

Conclusions

The most important factor in the establishment of a sexual disorder was the existence of severe familial pathology, such as psychosis, death, separation, or bizarre sexual activity within the family.

Strict sexual prohibition associated with threats of injury as a result of sexual activity, be it on a religious, ethnic, or familial basis, played an important role in the development of sexual dysfunction.

Bilateral sexual pathology within the marriage was less than expected.

Factors affecting the prognosis for cure were sex of the patient, the psychiatric diagnosis, and intensity and depth of treatment. The nature or type of sexual symptomatology was less important.

Symptom duration in the female tended to be more unfavorable prognostically than for the male.

No apparent relationship could be drawn between the material being dealt with in the course of the analysis and the actual time of alleviation of the sexual symptom.

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SYMPOSIUM

DEVELOPING A FAMILY PRACTICE PROGRAM

Introduction

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I would like to extend my personal welcome to all attending the annual scientific section in general practice or what is now more correctly designated as family practice. Today, our program might better be referred to as educational. We will be concerned primarily with the delivery of health care and the education of the primary physician, better referred to as the family physician. The title of our program will be "Developing a Family Practice Program." We have distinguished educators for panel members.

Richard Schmidt, M.D., is dean of the College of Medicine at the Upstate Medical Center in Syracuse. Dr. Schmidt will give us a dean's viewpoint of the education of a family practitioner both at the undergraduate and graduate levels. Leland Blanchard, M.D., from San Jose, California, is secretary of the family practice committee, the Council on Medical Education of the American Medical Association. He is also assistant clinical professor of medicine at Stanford University. Dr. Blanchard's discussion will include the views of the American Medical Association toward developing future family practitioners.

I would like to present my views, as a practicing family physician in a suburban community, of the delivery of health care in the United States today. Family practice as an entity is a vital link in the delivery of health care in this country. Traditionally, general practice or family practice has had a wide interpretation as to its contents. In days past and in some areas today the family physician performed all types of skills from performing major surgery to treating a minor cold or paronychia. As we have become more sophisticated in our profession this has become an impossibility. With highly developed technical advances and skills, the advent of the specialist and subspecialist has become a necessity.

After numerous discussions, meetings, presentations, and soul searching, the newly founded Board of Family Practice has clearly defined the skills in which a family practitioner must be competent. These are mainly medicine, pediatrics, obstetrics, gynecology, psychiatry, and minor surgery. With this background a family practitioner can adequately diagnose and treat 85 per cent of the illnesses with which he will be confronted. The remainder will need more specialized attention. However, in the United States today 15 per cent of the students prepare for general or family practice; in some areas this figure is less than 5 per cent. With this paradox we are left with 85 per cent of the physicians treating 15 per cent of the illnesses and 15 per cent of the physicians treating 85 per cent of the illnesses. In my opinion, this has caused chaos in the delivery of health care. There are numerous complaints from patients and community organizations concerning the availability of health care to the private citizen of the United States today; so much so that the government has become more and more involved in determining how health care should be delivered, by whom, in what setting, and for what price. I feel that family practice and the family practitioner is the first line of defense in the delivery of health care.

It is my personal opinion that American medicine has three primary obligations to the people of the United States. First and foremost is caring for the sick. Therefore, we must constantly educate new people to carry on these duties. Third no physicians to carry out the first duty of caring for the sick. Therefore, we must constantly educate new people to carry on these duties. Third but not last, we must carry on research. Research

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must continue so that new horizons will be found in both diagnosis and therapeutics. To reiterate, (1) care of the sick, (2) education, and (3) research.

Then we must ask the "sixty-four dollar question" as to the allocation of these physicians by percentages. What per cent should be engaged in clinical medicine, what per cent in research, and so on? This will require extensive research but it would probably break down to 70 per cent of the physicians delivering health care, 15 per cent in education and 15 per cent in research. Of those 70 per cent delivering health care I feel there must be some streamlining of our present system. I personally feel that, with the advent of better training of family physicians, there will be less need for general pediatricians and general internists. Instead we will need pediatric subspecialists and subspecialists in internal medicine, for example, in cardiology, endocrinology, hematology, neurology, allergy, and so on.

I feel that the days of the general pediatrician and internist are doomed. With the advent of competent family practitioners the need for them diminishes. It hardly seems right that a person taking specialized pediatric training should be performing well-baby examinations, giving immunizations, and treating tonsillitis, pharyngitis, otitis media, and the like. These illnesses can more than adequately be handled by the family physician. The same holds true for internal medicine and minor surgery in such matter as routine physical examinations, diabetes, hypertension, sebaceous cysts, and minor fractures. Also, with the paramedical help we have today, the need for these general specialists diminishes. We have numerous methods of multiphasic screening and multiphasic laboratory studies to help the family physician in diagnosis so that he can channel difficult medical problems—such as leukemia, lupus, major surgery, severe thyroid, or renal disease—to the appropriate subspecialist.

But we must leave a definite challenge for students entering family practice. We must create an atmosphere of their being first-rate citizens in the medical community. In general, physicians and medical students are extremely idealistic and have super egos. If a student has trained ten to twelve years and is not at the top, he will surely look to other areas. He must not be a second-class citizen in medicine. If family practice offers a student a challenge, if it offers him recognition and peer acceptance, I feel that we will attract our share of medical students into family medicine.

Today the youth of America wants to "relate." The family physician "relates." I am sure that youth can be encouraged into family medicine.

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A Dean's Viewpoint

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The issues facing medicine today are well known to all of us, although we may view them in varying perspectives and propose widely divergent responses to them. In simple terms there appear to be three major areas at the base of these issues. First, our capabilities of treatment and of prevention of disease have been vastly expanded by scientific research and technologic development. Second, comprehensive and available health services are demanded and accepted as a right in all segments of society. Finally, people are not getting the services which they need or that they perceive to be their need. A variety of estimates have been made, suggesting that about half of our population is outside the main stream of readily available health care.

From each of these broad generalizations it is possible to construct subsets of definitions, examples, and proposals for solution. Although most of us may agree as to the nature of the major problems, we are likely to have sharply divergent views as to the solution. Some, because of the parallel development of scientific medicine and the decreased availability of primary medical care, are likely to conclude that to improve the latter one must reduce the former. The effective reduction of Federal support for medical research and research training appears to be in part a move in this direction. It is, further, easy to fall into the trap of the numbers game. The easy answer to the unavailability of medical care is to increase the number of physicians and other health professionals by greatly expanding the capabilities of our educational institutions to accept and graduate more students. I agree that this is necessary and I am willing to accept the general estimates of the numbers required. The Carnegie Commission and the Howard Committee of the Association of American Medical Colleges are in general agreement that we can and should expand our entering

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medical school classes by about 50 per cent. Neither of these groups, however, is so naïve in its conception as to suggest that the increase in numbers of physicians, nurses, physicians' assistants, and others will, per se, solve the problem directly. Other types of changes are needed as well. Some of these will be discussed as I present some of my viewpoints as a dean and as we consider the role of education in working toward a goal shared with the practicing profession and by the public.

The point at issue here today is the family physician, and I am charged with a discussion of his education. I cannot discuss curriculum for this education out of context with the climate and surroundings in which the physician learns or without dealing with some of the factors which influence his choice of specialty and location of practice.

I do not intend to present yet another grand scheme for provision of health services to all nor a grand plan to repopulate the medical profession with family physicians.

Provision of medical services

In another context, the real subject of our concern is the provision of comprehensive primary medical services. There is no doubt in my mind nor in the minds of those we serve that this means the availability of a capable physician in times of need and that this physician be backed up by all of the capabilities that medicine has to offer in terms of technology and specialization. Preventive care is increasingly identified by the public as an integral part of this and may be largely centered on the same physician, especially as it involves the individual or family constellation. The public is willing to accept the physician as a leader of a team and appears, for the most, quite ready to be served, in part, by individuals especially trained to assist him. If our goal is, indeed, the provision of comprehensive medical services, how are we to move in the direction of meeting that goal? In doing so, I am sure that we will need to change many of our ideas concerning medicine as a loosely knit group composed of individual private entrepreneurs. There are many schemes which will be tried, some with success and some with failure. I suspect that we will retain a series of options for the delivery of services, and I strongly support a variety of solutions as opposed to a monolithic organization such as might be in the minds of some. In whatever develops, our educational institutions must take a more significant role of concern with the practice of medicine and the methods of delivery of service, while at the same time expanding their capabilities for education and research. Some of the changes to be made require decisions which are part of the political process, both narrowly and broadly defined. Direction of movement can be changed gradually; dramatic changes will require solid backing in terms of financing of major new programs.

The concept of the family practitioner as having a major role is now accepted broadly within the medical educational establishment and there are but few schools unprepared or unwilling to strengthen programs to provide the educational base to the purveyor of primary health services. The establishment of a department of family practice to which is given a small bit of curriculum time is a move in this direction. If it is not supported by a program however, it could well turn out to be a "no-solution solution." I believe that such a department must have direct involvement in the provision of primary medical services and should be engaged in research and trials of the patterns of this practice with viable models of urban, rural, and inner city populations. It should be able to demonstrate to the student that the satisfaction and quality of personal and professional life of the family practitioner can be as great or greater than that of the more narrowly and technically trained specialist. Within the social system of medicine, the family physician must be able to gain equity with his colleagues in terms of his own income. He must be challenged by the opportunities of being involved with human problems, not only with disease or process problems. He must be able to see that he can continue in his professional growth and that he will not dry up by the age of fifty from sheer overwork and boredom.

Role of the medical school in change

I belive that many of the changes needed can be started to a great extent within the medical school itself. Following are some necessary elements.

Increased individualization of educational experience. For most of the past sixty years medical school curricula have been characterized by a locked-step progression through the study of basic medical sciences for two years and an analogous rotation through clinical services for another two. This resulted, in part, from a badly needed reform in medical education and put American medical education into a scientific base. Times change, however, and we have come to recognize that students differ widely in their educational background when they come to us, and they diverge again when they leave. Curricula of medical schools are also changing, largely in becoming more open, allowing increased options of divergence at an earlier stage, and recognizing the fact that the basic body of knowledge is simply too large to be learned by all students. Clinical experience is introduced at an earlier stage, in some instances on the first day of medical school. Guided and individualized elective experience has been greatly increased, in many instances by 50 per cent or more of the total. Steps are being taken which will permit at least a portion of the students to progress more rapidly through medical school. Significant steps are being made in the direction of making the entire educational experience more relevant through linkages with liberal arts colleges and more direct concern with the residency. Some schools are accepting a significant proportion of students whose educational base is primarily in social or behavioral science instead of the more traditional "hard" sciences. It appears to me that these changes provide an excellent opportunity for the student to be exposed early to the problems of provision of medical care and to gain an experience with family practice as he is beginning the medical school segment of his education. In this context, one can visualize teaching social issues relevant to medicine, and examining human problems of service as the scientific basis of medicine is being taught. Some schools are attempting this under the rubric of community medicine and have joined forces with social scientists, economists, and social planners. Departments of family practice might well concern themselves with these issues, take advantage of the increased freedom of curricula, and lead students into study of the issues of medicine as well as into the practice of medicine.

Strengthening of discipline of family practice. A few years ago it gradually entered my consciousness that family practice is not a mere combination of bits of surgery, dashes of obstetrics, jiggers of internal medicine, and pediatrics over the rocks, with a twist of psychiatry. Perhaps it is this in part. As I see it, however, there is a need to strengthen the core of the discipline and to emphasize its unique nature. I see this to be the emphasis of interest in the problem of the patient, the maintenance of his health, and the treatment of him with his infirmities. At least in my simplistic postulate, the family physician emphasizes the treatment of the patient with a disease rather than the disease in a patient. All physicians should have this humanistic orientation, but the family practitioner is unique in that this is his core. Within the educational center there are a variety of ways we can strengthen the discipline. Our institution was mandated to establish a department which provides an identity, a well-recognized access to administration, and a colleague relationship to other departments. It also provides an exceptionally modest budget. To strengthen the discipline I firmly believe that increased material support will be needed and that, in close association with the clinical and teaching programs, we should nurture a broader social-scientific base whereby the delivery of service, patterns of professional association, and economics can be subjected to scrutiny.

Models for the delivery of medical care. One of our problems in considering education for family practice is the actual context and surroundings in which this can best take place. I believe that educational institutions such as ours can well consider a variety of clinical practice options for a program or department of family practice. First, one of these should ideally be located within the center complex and should be responsible for total care of a defined population. Some of this population might be inner-city poor, but I think it is a mistake to be so limited. The population should include a spectrum of social and economic groups. A practical and useful experience can be gained in comprehensive care, extending from the most humanistic to the most technical and specialized experience with easy availability of all that scientific medicine has to offer.

Second, I believe there should be an active "model" in a non-urban area. This should be designed to be similar to what might be practical in the "real" world. Its functional organization and linkages should be subject to reasonable change and scientific scrutiny, since its successes or failures might be guides to setting up practice groups in the future. It would include ancillary personnel and trainees in fields envisioned as useful in improving the delivery of care. In such a model, the essences of patient care should approximate as closely as possible that which should be achieved in a similar community with a different relationship to an educational center.

Other models may also be appropriate, such as one to provide care for urban disadvantaged people. All models should be strongly tied together by capable, practicing physicians.

Training of specialist in family practice. The family physician should have a high-quality educational experience with ample supervised clinical experience. There can be no substitute for clinical competence in patient care. I can see that portions of the clinical education may exist within specialty services of medical centers, but I firmly believe that the major clinical experience should be in a setting more analogous to the real-life experience of family practice. When needed, the specialist can be brought into this setting to provide a continuum of teaching related to his area. There should be a series of optional experiences also, for the study of social, economic, preventive, and other aspects related to the delivery of medical services.

Greater opportunity of continued professional growth. Few groups have demonstrated such concern with continuing education as has the American Academy of Family Practice. These efforts must be supported and strengthened so that the opportunity for learning is part of the daily life of the physician. We should consider methods for arranging sabbaticals from practice on a regular basis. We could dwell for long periods on technical means for education such as television, telephone consultants, or computer packages for teaching. Suffice it to say that we have in hand the technical capabilities to do it and some of the support required through such agencies as the regional medical programs.

Study means of provision of medical care to a variety of populations. How to provide medical care to various populations is an exceptionally complex and delicate subject. Discussion is likely to center on factors of economics, the role of government-controlled programs, individual liberties, and the like. There is no doubt that there will be a continued profusion of panaceas and all-heals which increase the public's expectations; the failures of these will further frustrate the physician and make him the butt of public indignation. I believe that we will be faced with some form of universal health insurance supported by government and that we should work as constructively as possible with it. In part, one could look on even the most extreme of the proposals as providing the physician the opportunity of living and working where he wishes with less concern over the local economy and the ability of his patients to pay.

Physician shortage

Why do some of the most attractive areas of the world have the most acute shortage of physicians? Syracuse is the jewel of New York State and its surrounding area is of boundless beauty. As I visit this surrounding area I can think of no place in which I would rather live. In the counties surrounding mine, however, there has been a steady decline in the ratio of physicians to population. Many of the remaining physicians are tired, and they drive themselves to work hours we prohibit by law for those employed in industry. Offices are available. Adequate personal income is assured. I don't know the solution to this problem. I suspect some of the answers lie with us. We have taught our students in highly complex medical centers with horizontal patients, where the professors, trailing clouds of charisma, only see patients on the wards. We have taught with a heavy reliance on all of the features available in a large medical center. Having been reared myself in this background, I can appreciate the anxieties of a student when this immediate back up is not available. When he sees a patient in the clinic who is "just sick," the physician feels lost and is likely to find escape either by rejecting the patient as a "crock" or by obtaining endless batteries of laboratory tests and referring him from one specialty clinic to the next. I believe we should center more of our teaching on the vertical patient and that some of our best teachers should be in the clinics. I also see a change in motivation of our students. If they are, indeed, more oriented to the need for them rather than their own personal pleasures, perhaps their audacity can be more acceptable to us.

I further suspect much of the problem of attracting young physicians to areas of greatest need lies in the nature of the problem itself. The new physician is likely to feel deluged with the problems he sees; there is little chance of his doing a truly good job because there is not enough of him to go around. One man who left a small community described his practice there as a method of suicide.

Can those of us in education assist in approaching an answer to this problem? One facet of help may be by training assistants who will be able to work with the physician and be able to provide much of the care under his supervision. We can also move toward strengthening the linkages which will reduce the isolation of the community physician. The Carnegie Commission and other groups have recommended strategic placement of educational centers which could help to do this. Perhaps funding could be obtained for medical schools to develop study teams to look at the specific needs of both urban and rural areas, and assist in establishing a local plan for recruiting teams of physicians and their assistants. One rash idea presented to me by a student is for the school to establish practices in a community, provided that part of the education of a team be accomplished in that community. When a critical mass develops, the emphasis would shift to another area of needed service. I am sure we need novel approaches not unlike this one.

I am also concerned with those factors which may motivate young physicians to serve in urban and rural areas of greatest need. Are there patterns of personality or life-style which could be identified early? I am sure it is not simply an orientation to the place their parents lived. Some of the most urbane of our big-city physicians were literally raised "down on the farm." Medical education must look to those factors which attract people to give services in central urban areas. These areas are in the shadows of our institutions, but only recently have we begun to involve ourselves significantly in their problems. I hope that our constructively militant students will come up with better solutions than we have. In each of these situations, rural and urban, I believe the educational institutions can go a long way by providing a continuing linkage for those who center their work within them. We can certainly move to assist the physicians in continued professional development, in removing the isolation of their practice, and in training people to help them. We can also support them by giving recognition to the specialty they have chosen by granting a home-base organization within the school from which they graduated.

In this report, I have said little that has not been said before. I have tried to think a little from the perspective of a very new dean who has spent his life in the cloister of academic medicine and with training in a so-called ultra specialty. These days, however, deans don't last very long.

Although I intend to continue in my position for the remainder of my professional life, others may decide differently. In any case, I have made an application to Francis S. Caliva, M.D., for his residency program in family practice but he has yet to accept me. He tells me that the competition is quite stiff.

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Family Practice And the American Medical Association

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Much has been said and written about family practice; in fact, so much that one has difficulty not only in finding something new to say but in being able to say the same old things in different ways. However, in spite of this tremendous volume of spoken and written words, there remains much misunderstanding about family practice, and there is a need to work even more diligently to spread the gospel. Unfortunately, and apparently unavoidably, much of what has been said and written has produced heat as well as light.

An old saying points out that sword play and conflict release more epinephrine than a handshake, but the entire history of civilization has been the melting down of swords and the building up of the handshake. I sincerely hope that as I try to increase understanding about family practice, I will at the same time build up the handshake.

I will limit myself to four subjects: (1) blame for our present health care crisis, (2) the difference between general and family practice, (3) the American Medical Association's involvement in the family practice movements, and (4) the relationship between the quality and the financing of health care.

Crisis

One hears and reads repeatedly about the "crisis" in medicine. What we really mean is a crisis in primary medical care, or a deficiency in the amount and quality of health-care services. Since this crisis has occurred, there has been a tendency to try to fix the blame on a group or organization: the public blames organized medicine, and we in the profession, particularly general practitioners, have accused medical schools. Before we start pointing accusing fingers, we should jog our memories and remind ourselves both of a truth and of a fact of history. First, medicine is a social science; the role of a physician is determined by what the profession believes are the needs of society and what the people perceive as the job of physicians.

Second, it is a historic fact that during the first half of this century, it was generally agreed that sickness was a result of disease. If, through research, causes of diseases could be found, they would be prevented; if through research, effective treatments for disease could be developed, people would be cured. Then everybody would be healthy. Since people in this country tended to believe this, they instructed their elected representatives in government to develop the science of medicine through research. Tremendous sums of money were authorized, and medical schools became largely supported by research grants.

The resulting medical-knowledge explosion soon made it clear that no one physician could know it all and, therefore, general practice meant poor practice. Medical students got the word. The resulting decline in the numbers of general practitioners is too well known to more than mention.

Therefore, it was the inadequate perception about the causes of sickness that has led to our present crisis. All of us, the entire medical profession and the public alike, should share the blame.

As medical knowledge and skills increased at an accelerating pace as a result of research, it became evident that to master and apply all of it, physicians would need to divide up the task and each one would limit himself to smaller and smaller segments of the whole. As this so-called "specialization" took place, it became increasingly more difficult, even among more medically sophisticated people, to choose the precise specialist for an individual problem. There has continued to be a need for a generalist, a physician with knowledge and skills "across the board" to correlate this ever-expanding science of medicine for the benefit of people.

General and family practice

One of the semantic problems that has impeded the development of family practice has been the use of the terms "general practice" and "family practice" interchangeably. The "official" definitions of the two terms and the conceptual differences between them is given in the Willard report: "Family practice refers to the function of the practitioner, while general practice refers to the content of his practice." One may amplify these definitions: general practice refers to the depth of knowledge and skills a practitioner has developed in all the clinical disciplines, whereas family practice refers to how he applies these to the care of people. Many traditional specialists such as internists, pediatricians, surgeons, and obstetricians, with contents other than those of general practitioners, now perform some of the functions of a family physician. Probably every physician who ever lived has provided primary care at one time or another for family, neighbors, staff, and other friends. Unfortunately, at the present time, extremely few physicians, including general practitioners, including myself, have had any special training to function as a family physician. We have learned to do so the difficult and inefficient way through experience alone, usually without supervision, while caring for our patients in private practice.

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* *By invitation.*

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American Medical Association and family practice movement

Organized medicine has responded to this recognized need of society. The AMA (American Medical Association) has assumed leadership, and through its Council on Medical Education, an ad hoc committee was appointed in 1964, with William Willard, M.D., as its chairman and given the following charge:

1. To review present AMA policy regarding the future of family and/or general practice and determine whether the goals of such policy are being achieved.
2. To recommend the educational approach by which present goals may be achieved if they are not being achieved now.
3. To define and recommend policies by which these goals may be achieved.

The report that the committee published in September, 1966, entitled *Meeting the Challenge of Family Practice* has become the guiding document for the family-practice movement. In two talks to the congress on medical education in Februray, 1966, and February, 1967—subsequently published in *J.A.M.A.* in the September 19, 1966, and July 10, 1967, issues—Dr. Willard explained in some detail why the AMA became involved, what the report does and does not say, and how the recommendations of the report can be implemented.

The ad hoc committee offered six recommendations in its report, and the AMA House of Delegates, in November, 1966, charged the Council on Medical Education with their implementation. Another ad hoc committee of council members was appointed to do this, and I was employed on a part-time basis to staff this committee. Later, Lynn Carmichael, M.D., was employed in a similar capacity and we now share this responsibility.

Each recommendation is listed separately with a brief, general description of what the AMA's Council on Medical Education's Committee on Family Practice has done to implement each one.

> **Recommendation 1.** Major efforts should be instituted promptly to encourage the development of new programs for the education of large numbers of family physicians for the future, as described in the body of this report. The educational program should relate to all levels of medical education, including premedical preparation, medical school education, internship and residency training, and continuing medical education. Keynotes should be excellence comparable to programs in other specialties and flexibility to permit the design of programs which will meet the needs and interests of the individual physicians.

Major emphasis has been given to the development of graduate medical education for family practice, and to date there are over 50 approved residency programs, about two thirds of which are active (residents in training). Nearly all of the remainder are to become active during this year. At the undergraduate level, many medical schools have or are developing departments of family medicine or practice, most are giving some type of instruction in either family or comprehensive medicine, and several with flexible curricula have a family-medicine pathway for their students. One premed course I know about called "Human Biology" seems ideally suited for preparation for family practice at this level. Continuing medical education for family practice has been given a definite stimulus as many practicing physicians are taking refresher courses in preparation for the American Board of Family Practice examination.

> **Recommendation 2.** Medical schools and teaching hospitals should be urged to explore the possibility of developing models of family practice, in cooperation with the practicing profession.

Implementing this recommendation has not been easy, as directors of programs will agree, but models of family practice are vital as teaching laboratories in which students and residents can develop and refine their skills to function as family physicians.

> **Recommendation 3.** New sources of financial assistance should be developed for the support of family practice teaching programs. Substantial funds should be made available for all aspects of the programs, including the conduct of the educational pro-

> grams, the recruitment and training of full-time faculty, the development of facilities and models of family practice, and the conduct of research in patient care and community medicine.

Even though residency programs can be at least partially self-supporting from fees collected for services rendered to patients, the large sums of money needed to finance the teaching aspects must be supplied by outside sources. The committee arranged a conference in which program directors; representatives from the Department of Health, Education, and Welfare; and other leaders of medicine and experts in this field participated to learn what the needs of the programs for outside money were and to explore the sources for obtaining it. It is a well-known fact that money today is scarce, but what troubles me most are the efforts being made to distribute money to the public to buy health services when there is so precious little to buy. The fate of the recent Family Practice Bill, passed with only three dissenting votes in both houses of Congress, is common knowledge. Even though there has now been an unnecessary delay, I am confident that this bill or a similar one will be reintroduced and that large sums of money to finance training for family practice will finally become available.

> **Recommendation** 4. Recognition and status equivalent to other medical specialties should be given to family practice. An appropriate system of specialty certification should be provided for those who have completed approved educational programs and have demonstrated their competence as family physicians. The graduate programs (i.e., internship-residency programs) should be an integrated whole, evaluated for accreditation by one body rather than two.

John Walsh, M.D., president of the American Board of Family Practice, wrote an article explaining how this new certifying board came into being and many other details about it. His article as well as an editorial by myself were published in the May 18, 1970, issue of *J.A.M.A.* As most of you know, the first examination, given in February 1970, resulted in over 1,600 diplomates; the second examination, to be given to about the same number of applicants, was conducted at the end of February, 1971.

The AMA's Council on Medical Education's interest in this was expressed at a joint conference on family practice last August by the chairman of the Council's Committee on Family Practice, James Haviland, M.D.:

> The Council through liaison efforts with the Advisory Board for Medical Specialties feels a particular responsibility with regard to the American Board of Family Practice, and is very anxious to see that the examination process is going on, that it measures what you think it measures, and that it stands for something. Only in this way can family practice be recognized by the public as representing a specialty equivalent to those already existing.

> **Recommendation** 6. Careful study should be made of the effect of premedical programs and the admission procedures, curricula, and student evaluation policies of medical schools upon the production of family physicians.

Not all of the original ad hoc committee members agree with implications of this recommendation.

Financing and quality of care

> **Recommendation** 5. Careful attention should be given to other factors which should make the environment for family practice more favorable and serve as incentives to medical students and young physicians to enter this field.

The question has been raised: Is family practice economically feasible? This is a good question. Most family physicians do not charge a fee for many of the essential health services that come under the heading of comprehensive: arranging for consultations with traditional specialists and obtaining for their patients other types of health services available in the community, consultations by phone, and just plain talking or giving health education to patients and their families. With our fee-for-service system of financing care, the more patients a physician can see and the more treatments he can give each day, the greater his income. This inducement for quantity does not lend itself to quality of care.

The capitation and prepayment or retainer-fee principle for financing care is more conducive to providing comprehensive care. In this system, the physician's income tends to be greater when patients remain well. However, most practicing physicians know from experience that patients tend to overutilize physician's services if they assume no financial responsibility whatever for each service rendered. Also, most physicians believe that paying a fee for each service enhances the physician-patient relationship and thereby the effectiveness of the physician's care.

I firmly believe that the American Medical Association needs to take the leadership in developing a design for financing health care that will enhance its quality. In my opinion, some combination of the two principles of financing could be developed that would do this. A family might pay a retainer fee to a group of family physicians to provide them comprehensive care. Whenever a medical service was needed, a fee would be paid but at a rate greatly reduced from that usually charged now.

I have suggested that a conference be held in which experts in the field of finance meet with practicing physicians to develop a design of health-care delivery and financing that would make family practice not only economically feasible but in other ways desirable for both physicians and patients.

One noted medical educator pointed out that moon walking was simpler than social progress. On the one hand, one is dealing with machines; on the other, with men's minds. A corollary can be made between the emphasis on diseases in traditional medical practice, including general practice, and on the health of persons in the new field of family practice. Family medicine is a complex new academic discipline involving much behavioral science. It needs to be better understood. It is generally agreed that training programs for family practice are much more difficult to design and establish than any other. Much needs to be done to develop and strengthen this field because, as the Willard report states in one paragraph of the preface:

> The Committee believes that Medicine needs a new kind of specialist, the family physician, who is educated to provide comprehensive personal health care. Preparation of large numbers of such physicians is essential if the public is to receive maximal benefits from American Medicine in the future.

Let's keep working!

678 East Santa Clara Street
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Polypharmacy in Psychiatric Treatment

Physician's treatment preference and practice survey*

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The tendency to administer two or more psychoactive agents concurrently in the treatment of psychiatric disease appears to have progressed to a point where drug combinations can no longer be considered a novel therapeutic approach to mental illness. However, despite a plethora of studies evaluating the efficacy of various drug combinations, well-controlled or double-blind trials still tend to be the exception rather than the rule in this area of psychopharmacology. The literature on polypharmacy has been characterized as consisting ". . . largely of reports of sporadic, uncontrolled, 'one shot' clinical studies, too dissimilar in significant independent variables to be assimilated into an organized body of knowledge."[1] The drug combination investigator has been described as being dissatisfied with the results of single-drug treatment while continuing to seek greater efficacy with fewer untoward effects.[2] Efficacy studies conducted by some of these investigators are apt to be enthusiastic clinical reports characterized by imprecise study design and evaluation. In clinical practice, such an individual might be expected to begin treating a psychiatric syndrome with some form of combination therapy or to add drugs to an existing single-drug regimen at the first sign of less-than-hoped-for patient response.

Our investigations of the incidence and efficacy of polypharmacy began with a survey of the different forms of therapy practiced in the continued-treatment services at Central Islip State Hospital. This survey indicated 28 per cent of all patients treated with psychotropic drugs were receiving polypharmacy.[3] Subsequently, the relative effectiveness of substituting regimens consisting of two drugs-no placebo, one drug-one placebo, and no drug-two placebos for patients previously receiving polypharmacy was assessed in a double-blind study.[4] In general, these data indicated that two drugs were no more effective in controlling psychotic symptoms than one drug. This finding seems consistent with a review of the literature that concluded that, with the possible exception of perphenazine-amitriptyline hydrochloride combinations in schizophrenic patients with depressive features, combinations have shown no improvement over single-drug treatment.[2]

To date, incidence and efficacy studies have focused primarily on chronically ill, hospitalized schizophrenic populations.[3–6] The present study was conducted to ascertain the preferences of a sample of psychiatrists for single- and multiple-drug regimens in the treatment of psychiatric disease with an acute onset. Information related to drug-treatment patterns, as well as characteristics of the single- and multiple- drug-selecting respondents and the patient groups they describe themselves as treating, was obtained by using a questionnaire.

Method

A roster of psychiatrists practicing in New York State hospitals was compiled from current staff listings supplied by the directors of each hospital. Each psychiatrist was sent a four-page questionnaire designed to measure treatment preferences. The questionnaire consisted of a short paragraph explaining the general nature of the study and a number of items designed to elicit information descriptive of the psychiatrists and the patients they treat. The second page presented a case history of an acute paranoid schizophrenic patient with a list of medications that might be used in treating the patient described in the paragraph. The third page was devoted to questions about the case. Physicians were asked to indicate which drug or drugs would be prescribed on the first day of hospitalization and at each of eight stages during the treatment of the case. The fourth page could be used for comments.† Eight weeks later a second mailing was conducted.

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†A copy of questionnaire is available on request from the authors.

A questionnaire was sent to psychiatrists on the staff listings of New York State hospitals, describing a case history of an acute paranoid schizophrenic patient and asking which drugs would be prescribed at eight stages of treatment of the case. Forty-one per cent of the responding psychiatrists recommended polypharmacy as the beginning treatment choice. Chlorpromazine was the most common single-drug choice and chlorpromazine-trifluoperazine was the most frequently selected combination. Another part of the questionnaire asked for descriptions of the psychiatrist and the type of patients he treated. No significant predictive differences were found between the patients of the two groups of psychiatrists, but significantly higher proportions of the polypharmacy selectors were in practice for under five years, had completed their residencies within the last five years, and had been trained in a hospital associated with a government agency. When faced with inadequate symptom control, 60 per cent of the initial polypharmacy recommenders did not deviate from the recommendation of drug combinations and only 15 per cent of the initial single-drug recommenders retained only single-drug use.

TABLE I. Single drug and drug combinations selected by respondents

Drug	Number	Per Cent
Single drugs (182 physicians)		
Chlorpromazine	136	74.7
Thioridazine	26	14.5
Fluphenazine	4	2.2
Perphenazine	4	2.2
Trifluoperazine	2	1.1
Acetophenazine maleate	2	1.1
Chlorprothixene	3	1.6
Thiothixene	2	1.1
Haloperidol	3	1.6
Drug combinations (126 physicians)		
2 tranquilizers		
Chlorpromazine-trifluoperazine	82	65.1
Chlorpromazine-fluphenazine	3	2.4
Chlorpromazine-thioridazine	2	1.6
Chlorpromazine-perphenazine	1	0.8
Thioridazine-trifluoperazine	9	7.1
Thioridazine-fluphenazine	1	0.8
Thioridazine-perphenazine	1	0.8
Chlorpromazine-chlorprothixene	2	1.6
Chlorpromazine-haloperidol	1	0.8
Haloperidol-thioridazine	1	0.8
Haloperidol-fluphenazine	1	0.8
Haloperidol-trifluoperazine	1	0.8
Trifluoperazine-chlorprothixene	1	0.8
3 tranquilizers	3	2.4
Tranquilizer-energizer		
Thioridazine-imipramine hydrochloride	4	3.2
Chlorpromazine-imipramine hydrochloride	3	2.4
Thioridazine-amitriptyline hydrochloride	2	1.6
Trifluoperazine-amitriptyline hydrochloride	1	0.8
Trifluoperazine-desipramine hydrochloride	1	0.8
Trifluoperazine-imipramine hydrochloride	1	0.8
Perphenazine-amitriptyline hydrochloride	1	0.8
Chlorprothixene-amitriptyline hydrochloride	1	0.8
Haloperidol-imipramine hydrochloride	1	0.8
Other	2	1.6

The returned questionnaires were separated into two major groups, single drug and polypharmacy, on the basis of the drug-treatment regimen selected for the patient on the first day of hospitalization. Any drug used alone or with an antiparkinson agent was considered a single-drug program, while any combination of major tranquilizers, minor tranquilizers, and energizers constituted polypharmacy.

Treatment combinations within the polypharmacy group were analyzed, and statistical comparisons of the two groups were made based on the psychiatrists' characteristics and their descriptions of the patients they treat. Treatment preferences at three points in the treatment were selected to ascertain regimen change tendencies for the two groups under study.

Results

A total of 308 (45 per cent) of the 687 psychiatrists polled returned questionnaires that could be sorted on the basis of initial preferences for a single- or multiple-drug-treatment procedure. A single-drug regimen was selected by 182 (59 per cent) of the respondents. Polypharmacy was selected by 126 (41 per cent) as their beginning treatment choice.

Table I summarizes the single drugs and drug combinations selected as preferred initial treatment regimens by the respondents. All of the respondents in the single-drug group initiated treatment of the patient described in the case history with a major tranquilizing agent. Chlorpromazine or some other phenothiazine was selected by 95.7 per cent of this group, with the thioxanthenes and butyrophenones selected by 2.7 per cent and 1.6 per cent of the single-drug preferrers respectively. The type of drug combination used most often by multiple-drug-electing psychiatrists consisted of two or more major tranquilizers (87.2 per cent). Approximately 13 per cent of the polypharmacy combinations included a tranquilizer and an energizer.

Specifically, these data indicate that chlorpromazine was the agent most often chosen by the single-drug group and that chlorpromazine-trifluoperazine was the most frequently selected drug combination. Chlorpromazine was also combined with some other psychotropic agent by 12 (9.5 per

TABLE II. Psychiatrists' characteristics

Variables	Single Drug		Polypharmacy		
	Number	Per Cent	Number	Per Cent	Probability
Age					
Mean age	46.41		46.35		NS
Sex					
Male	154	87.5	106	79.7	NS
Female	22	12.5	17	20.3	NS
Practice					
Full-time	135	81.3	99	88.4	NS
Part-time	31	18.7	13	11.6	NS
Years in practice					
More than five years	115	79.3	60	67.4	0.05
Five years or less	30	20.7	29	32.6	0.05
Completion of residency					
Before 1965	93	63.3	47	44.8	0.01
1965 or later	54	36.7	55	51.2	0.01
Training source					
Governmental	148	85.0	116	94.3	0.05
Private	26	15.0	7	5.7	0.05
Present affiliations					
Governmental	149	88.7	117	97.5	0.01
Private	19	11.3	3	2.5	0.01
Preferred treatment regimen					
Therapy and drugs	146	...	99	...	NS
Drugs only	27	...	22	...	NS
Therapy only	5	...	3	...	NS

cent) of the respondents using combinations. Thus, for the patient described in the case history, chlorpromazine, either singly or combined, is mentioned by almost three of every four respondents. This suggests the respondents in general follow the rule of "primacy" when selecting psychopharmacologic agents. It is interesting to note that trifluoperazine was used alone by 2 psychiatrists but was utilized in combination by 95 (75.4 per cent) of the polypharmacy preferrers.

Table II presents fact-sheet data describing characteristics of the single- and multiple-drug-preferring respondent groups. The variables of age, sex, full- or part-time practice, and generally favored treatment regimens do not appear to distinguish between these two groups. However, significant differences are found for years in practice, recency of residency completion, type of institution in which training was received, and the tendency to have private-practice affiliations. These differences suggest that significantly higher proportions of the polypharmacy selectors were in practice for five or fewer years, had completed their residencies within the last five years, and had been trained in a hospital associated with a local, state, or Federal agency. Proportionally fewer drug combiners had present practice affiliations with a private or university-based hospital. It should be kept in mind that while these differences achieved statistical significance, predictive association was not high, so that cautious interpretation of the data is indicated. For this sample, single-drug treatment as a therapeutic starting point seems to be slightly favored by psychiatrists who completed their residencies prior to 1965 and have had slightly more experience with psychiatry as practiced in privately supported institutions. Greater tendencies toward initial employment of a drug combination in treating mental illness seems evident in psychiatrists trained within the past five years in facilities maintained by some form of government. It should be pointed out that at the time of the survey all respondents were part of the New York State Mental Hygience system.

Table III shows the mean percentages of patients described by the two respondent groups as falling into various sex, income, educational, age, marital status, and type of disorder categories. Both groups basically perceive themselves as treating the same patient population. Thus, it does not appear that the preference for polypharmacy as opposed to single-drug treatment is associated with experiences related to the kinds of patients seen by respondents in the two groups.

Table IV shows the percentages of respondents using a drug combination at three "critical points" in the treatment of the patient described in the case history as a function of the initial selection of a single- or multiple-drug regimen. The first point is at discharge against advice after six weeks of hospitalization. The second is at readmission four weeks later following symptom recurrence in spite of continued medication. The third point occurs six months after readmission with the patient remaining actively ill. These data suggest that the decision to add additional psychotropic drugs to an existing regimen is made fairly early by about one half of the single-drug preferrers, and that subsequent changes involving the addi-

TABLE III. Psychiatrists' descriptions of patients

Variables	Single Per Cent	Poly-pharmacy Per Cent
Sex		
Male	46	48
Female	54	52
Income		
$5,000	51	58
$5,000–$10,000	31	25
$10,000–$20,000	13	12
$20,000	6	4
Education		
Elementary	40	45
High school	40	41
College	16	11*
Advanced degree	3	3
Age		
13 years	5	4
13–19 years	11	14
20–65 years	63	65
65 years	20	15
Marital Status		
Single	32	32
Married	40	40
Separated	10	11
Divorced	9	7
Widowed	9	9
Disorders		
Neurosis	23	21
Psychosis	49	52
Character	10	11
Organic	14	15
Other	3	3

* t significant at 0.05 level

TABLE IV. Percentage of respondents using polypharmacy at three key treatment points as a function of initial treatment regimen choice

Treatment Point	Initial Choice	
	Poly-pharmacy	Single Drug
Six weeks after admission, symptoms stable, patient discharged against medical advice	93	45
After four weeks, on readmission, with symptom recurrence	86	51
After six months, symptoms persist, patient actively ill	68	49

tion or removal of a drug balance out so that the ratio of polypharmacy to single-drug regimens remains approximately 50:50 throughout the course of treatment. The decision to change from a multiple- to a single-drug regimen, on the other hand, appears to be made both less quickly and less often. When the patient is readmitted (point 2) with symptoms recurring in spite of continued medication at home, 86 per cent of the group initially selecting polypharmacy maintain some form of drug combination. Furthermore, 7 of every 10 initial polypharmacy selectors still utilize this form of therapy six months after readmission where the patient is described as grossly psychotic. On the whole, 60 per cent of the psychiatrists in the polypharmacy group did not deviate from drug combinations (employ a single drug at some point) during the course of treatment for the illness. In comparison, only 15 per cent of the psychiatrists who initially indicated a single drug retained only this approach when faced with inadequate symptom control throughout the course of illness. This finding provides some support for a previously stated hypothesis that "the pattern of adding additional drugs ... develops when the original therapy fails to adequately control behavior".[3] However, if one's original preference is for polypharmacy, the tendency to continue using drug combinations in spite of treatment failure appears to be stronger than the desire to employ only a single drug.

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Scientific Sessions held at
Auditorium, St. Luke's Hospital
New York City
November 19, 1971

REPORTS OF PROCEEDINGS

New York Society for Thoracic Surgery

ALLAN ELLIA BLOOMBERG, M.D., Editor

Fall Session

Current concepts of intensive respiratory care

The afternoon session of the Fall meeting of the New York Society for Thoracic Surgery was held on November 19, 1971, at the auditorium of St. Luke's Hospital, New York City. A symposium was held entitled "Current Concepts of Intensive Respiratory Care."

Hugh F. Fitzpatrick, M.D., was the moderator.

Panel participants included Jay L. Ankeney, M.D., Professor of Thoracic Surgery at Western Reserve University, who kindly consented to come on short notice. Dr. Ankeney is a thoracic and cardiac surgeon and is well qualified to speak on these physiologic parameters, having spent some time with R. F. Wiggers, M.D.; A. L. Loomis Bell, Jr., M.D., who is Director of the Cardiopulmonary Laboratory and is in charge of the acute respiratory care program at St. Luke's Hospital Center; Richard L. Keenan, M.D., who is chairman of the Department of Anesthesiology at Roosevelt Hospital; and William C. Shoemaker, M.D., Director of Surgical Intensive Care Unit of The Mount Sinai Hospital, New York City.

The program, including the panel discussion which followed the formal presentations, follows in its entirety.

Priorities of Resuscitation and Subsequent Therapy after Trauma

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New York City

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The major problems of resuscitation after operative or accidental injury to the abdomen and thorax are (1) proper diagnosis, (2) recognition of life-threatening physiologic conditions, and (3) institution of therapy in a rapid, expeditious manner. The therapeutic objectives are relatively straightforward when there is a simple injury or the single organ failure. But the patient with multiple serious injuries and the postoperative patient with multiple vital organ failures may have extremely complex problems both in terms of diagnosis of the specific disease involved, recognition of physiologic alterations which compromise vital organ function, and the clinical management.

Traditionally, the medical literature deals with specific problems each in an individual manner. We have attempted to develop an integrated, coherent approach to resuscitation and subsequent management which takes into consideration physiologic descriptions of various types of shock syndromes in terms of etiologic events, time course, compensatory bodily responses, and underlying mechanisms.[1-3] We have found that organization of diagnostic and therapeutic activities by priorities according to the life-threatening potentiality improved patient salvage. The following lists the most common diagnostic problems of shock states according to the major system involved:

1. Ventilatory failure
    Upper airway obstruction
    Fractured ribs with flail chest
    Pneumothorax
    Hemothorax

  - Anaphylactic and idiosyncratic drug reactions
  - Increased intrathoracic pressure; empyema, pneumothorax, and so on
  - Overadministration of anesthetic agents and postanesthetic depression
  - Subglottic stenosis, crushing injuries to trachea
  - Myasthenia gravis
  - Angioneurotic edema
  - Drowning
  - Vocal cord paralysis
2. Respiratory failure
   - Atelectasis
   - Bronchopneumonia, lobar pneumonia
   - Acute exacerbation of chronic obstructive lung disease
   - Status asthmaticus
   - Pulmonary edema, fluid overload
   - Acute bronchitis
   - Smoke inhalation, noxious fumes
3. Cardiac failure
   - Acute myocardial infarction
   - Arrhythmias
   - Stokes-Adams syndrome
   - Tamponade
   - Myocardial failure or insufficiency
   - Digitalis toxicity
   - Subacute bacterial endocarditis
   - Valvular heart disease
   - Rupture of cordae tendinae
   - Rupture of interventricular septum
4. Peripheral vascular failure
   - Hemorrhage with hypovolemia
   - Dehydration, hyperpyrexia, extrarenal fluid losses
   - Expanded extracellular fluid from crystalloid overload, low plasma albumin
   - Nephrosis
   - Postural hypotension, syncope
5. Renal failure
   - Acute tubular necrosis
   - Acute glomerulonephritis
   - Acute pyelonephritis
6. Hematologic abnormalities
   - Consumption coagulopathy
   - Hemophilia
   - Vitamin K deficiency
   - Hypocalcemia
   - Multiple transfusions
   - Transfusion reactions
   - Snake bites
7. Infections
   - Localized bacterial infections with systemic manifestations
   - Septicemia; gram-negative bacteremia, and so on
   - Viral disorders: hepatitis, influenza
8. Nutritional and hepatic failure
   - Starvation
   - Cirrhosis, hepatic failure
   - Depletion from wasting diseases, such as carcinomatosis, leukemia, nephrosis, chronic diarrhea, malabsorption syndromes, and so on
   - Diabetes
   - Postoperative depletion from multiple complications
9. Central nervous system catastrophes
   - Cerebral vascular accident, subarachnoid hemorrhage, ruptured aneurysm
   - Cerebral ischemia from low-blood flow, arterial desaturation, anemia
   - Head injury, subdural hematoma
10. Injury
    - Fractures
    - Penetrating injuries, stab and gunshot wounds
    - Blunt trauma to chest and abdomen
    - Soft-tissue injury
    - Heat exhaustion
    - Burns
    - Scalds
    - Frostbite

The following briefly categorizes therapy also according to the major system or vital organ failure:

1. Control hemorrhage: restore blood volume and volume load to about 500 to 1,000 ml. in excess of predicted norms
2. Correct fluid maldistributions: extracellular fluid excess, plasma volume deficit
3. Provide adequate ventilation
   - A. Maintenance of patent upper airway
   - B. Frequent coughing
   - C. Endotracheal suction
   - D. Turn side to side every two hours
   - E. Postural drainage
4. Maintenance arterial oxygen pressure above 70 mm. Hg
   - A. Enriched oxygen in inspired air via mask or nasopharyngeal catheter
   - B. Tracheal entubation and mechanical ventilation with high concentrations of oxygen
   - C. Avoid overadministration of oxygen therapy which produces oxygen pressure over 120
5. Correct acid-base alterations
   - A. Respiratory acidosis with endotracheal suction and mechanical ventilation
   - B. Metabolic acidosis with sodium bicarbonate, improve flow
   - C. Respiratory alkalosis by sedation, proper adjustment of ventilator, increase dead space, and so on
   - D. Metabolic alkalosis (when appreciable) with ammonium chloride
6. Use cardiotonic agents for cardiac failure and pulmonary edema
   - A. Digitalis
   - B. Isoproterenol
   - C. Fluid and salt restriction
   - D. Calcium
   - E. Glucagon with glucose
   - F. Blocking agents, such as phentolamine and chlorpromazine
   - G. Rotating tourniquets, phlebotomy
7. Resort to vasopressors when other measures are ineffective
8. Correct extracellular fluid overload
   - A. Establish normal plasma volume and albumin concentrations
   - B. Give diuretics, such as furosemide, ethacrynic acid, mannitol, 50 per cent glucose
   - C. If these are ineffective, resort to dialysis

9. Repair injuries
    A. Explore abdomen for penetrating wounds, covert bleeding, blunt trauma, and so on
    B. Explore chest for uncontrolled hemothorax
    C. Set fractures, elevate depressed skull fractures, and so on
    D. Debride and dress wounds
10. Control infection
    A. Drain abscesses
    B. Wound care and debridement
    C. Appropriate antibiotics, and so on
11. Provide for nutritional needs
    A. 2,000 to 3,000 calories per day
    B. Amino acid solutions
    C. Albumin, 1 to 3 units per day
12. For semiconsciousness which may be associated with cerebral edema, give high doses of steroids, fluid and salt restriction, diuretics, adequate parenteral alimentation, and so on

The clinical means for monitoring the progress of the patient's cardiovascular status and for assessing the effectiveness of therapy include frequent checking of blood pressure, heart rate, hematocrit, central venous pressure, hourly urine output, blood volume, blood gases and pH, cardiac output, and other hemodynamic variables.

By knowing the diagnostic possibilities, the therapeutic agents, and the methods for evaluation in the rough order of importance, it is possible to assemble procedures which will provide the basis for orderly resuscitation of patients with acute injuries, postoperative catastrophes, and other acute medical emergencies. An example of such a protocol is shown as follows:

1. Withdraw blood sample and send for type and cross-match; analysis of electrolytes, blood urea nitrogen, glucose, and so on
2. Start intravenous fluids
3. Central venous catheter for pressures and subsequent fluid administration
4. Examine lungs: do thoracocentesis if pneumothorax or hemothorax suspected
5. Examine heart
6. Place Foley catheter and measure hourly urine output
7. Arterial blood sample for blood gases
8. Measure blood volume
9. Electrocardiogram
10. Pericardiocentesis if tamponade suspected from rising central venous pressure
11. Listen to abdomen: paracentesis if blunt abdominal trauma is suspected of producing intraperitoneal organ damage
12. Examine patient thoroughly for evidence of fractures, wounds, and other injuries
13. Search for sources of obscure bleeding
14. Search for sources of infection; culture available body fluids
15. Hemotologic evaluation; bleeding and clotting time, prothrombin time, and so on

From an operational standpoint, hemorrhage and upper airway obstruction are usually readily apparent from the foot of the bed; they are two correctable life-threatening problems which demand highest priorities. With the understanding that either acute circulatory or respiratory failure must be treated immediately, the following discussion presents systematically an operational approach to acute resuscitation in rough order of priority.

Volume replacement and volume loading

In hemorrhagic shock, the first obvious principle is restoration of blood volume, which deficiency initiated the problem. Similarly blood and fluid must be replaced expeditiously in traumatic shock with associated hemorrhage and in septic shock with dehydration. The volume and rate of fluid administration may be guided by arterial and venous pressures, heart rate, hematocrit, blood volume, and cardiac output determinations as summarized in this report.

Arterial pressure

After massive hemorrhage and severe hypotension, volume therapy should be given rapidly and in sufficient quantities to restore and maintain systolic arterial pressures to values above 100 mm. Hg or mean arterial pressure above 80 mm. Hg.

Central venous pressure

The limiting factor in the rate of fluid administration is elevation of CVP (central venous pressures). Elevation of the normal minus 2 to plus 6 cm. saline to 15 cm. or more during initial plasma volume expansion, often indicates that (1) the blood and plasma expanders are given too vigorously, (2) frank cardiac failure, (3) myocardial insufficiency in the sense that the heart is unable to cope with the added fluid load, or (4) there is peripheral vascular failure from metarteriolar vasodilatation with pooling of blood in the venous system.

In the initial period of resuscitation, when the primary objective is replacement of blood losses as rapidly as possible, arterial blood pressure is the easiest and most readily available criterion for assessing the adequacy of transfusion therapy. Progressive elevation in CVP is the easiest and most available criterion for overtransfusion or too-rapid transfusions.

Heart rate

Tachycardia is thought to represent a compensatory response which increases flow in the face of limited stroke volume. But this response, which initially may have survival value, when excessive and protracted may lead to decompensation because of reduced myocardial oxygen consumption together with increased cardiac work. Thus, tachycardia may improve cardiac output but at great cost; ultimately this may lead to impaired cardiac function. Heart rates should be kept below 140 beats per minute, if at all possible. When tachycardia with reduced ventricular filling occurs, volume loading may be indicated; alternatively, digitalis or other agents may be required.[4]

Blood volume

In the face of massive hemorrhage, initial resuscitation consists of rapid administration of blood and plasma expanders. But sooner or later the inevitable questions arise: When should transfusions be slowed or stopped, and how much volume loading is enough? Obviously, the best measurement of the amount of blood volume deficit is an accurate measurement of the volume remaining.

With hemorrhagic shock there is redistribution of the blood volume that remains. In some instances, blood is pooled in the liver, splanchnic region, and postcapillary venules throughout the body.[1] In these conditions more blood must be given than was lost. The optimal blood volume is about 500 ml. greater than the predicted norms to make up for the volume of pooled blood. In the early stage of traumatic and septic shock, normal values are required to provide optimal circulatory homeostasis.[4,5] Increased ventricular contractility, in the face of tachycardia and low-stroke volume, suggests that the circulatory drive is great relative to the rate of venous return.

In cardiogenic shock the therapeutic goal is optimal blood volume; but insofar as cardiac performance is limited, this may not be attainable. However, packed cells may be judiciously given when hematocrits fall below 30 to maintain myocardial oxygenation.

Blood flow and peripheral circulation

The metarterioles are constricted in the earliest stage after hemorrhage, but not uniformly. This results in redistribution of cardiac output, that is, in altered patterns of local blood flow throughout the body. Vasoconstriction of the skin and kidney with diminished flow occurs with relatively increased flow to the heart, brain, muscle mass, liver, and so on. Volume replacement and some volume overload may ameliorate the regional vasoconstriction. After an initial rise, peripheral resistance usually falls. Additional volume expansion also is required to maintain arterial pressures during the long period of low resistance.

Fluid therapy: whole blood, plasma expanders, packed cells, colloids, or crystalloids?

In rapid hemorrhage hypovolemia limits cardiac output and oxygen transport to the tissues. Compensations include increased heart rate, increased oxygen extraction by the tissues, and transcapillary migration of interstitial fluid into the intravascular space. The latter process lowers hematocrit values, but this compensation takes time; it occurs more extensively in patients who bleed slowly.[6]

Rapid hemorrhage usually requires plasma expanders or whole blood transfusions, while slow hemorrhage may require predominantly whole blood or packed cells. Generally, patients in shock do better with some hemodilution, which is reported to reduce viscosity and improve small-vessel flow.[1] When hematocrit values are greater than 30 or the red cell mass is greater than 850 ml. per square meter, plasma expanders are more efficacious than whole blood. In anemia and myocardial failure judiciously infused packed cells may be needed to maintain the oxygen-carrying capacity of the blood to provide myocardial, cerebral, as well as total body oxygen consumption.

When whole blood and colloids are given, the added volumes tend to stay in the intravascular compartment; but crystalloids and electrolytes are distributed mostly in the interstitial space where they contribute to both peripheral and pulmonary edema. A common iatrogenic postoperative fluid-electrolyte problem is water overload, which produces expanded interstitial fluid in the face of contracted plasma volume. First, it is necessary to establish normal plasma albumin concentrations and plasma volumes, because the kidney may not excrete the excess water when plasma volumes are low. By giving oncotically active agents, such as albumin, water from the interstitial fluid will be drawn up into the plasma volume in accordance with Starling's law of the capillaries. As the plasma volume is expanded, more water is available for urinary excretion; and as water is excreted, the plasma albumin concentrations increase. This permits more water to be cycled from the interstitial fluid into the plasma and excreted into the urine. These effects may be augmented by diuretics such as furosemide (Lasix), ethacrynic acid (Edecrin), mannitol, and 50 per cent glucose.

Respiratory care

Standard procedures for resuscitation include maintenance of patent upper airway, frequent stimulation of coughing, endotracheal suctioning, turning from side to side, postural drainage, avoidance of overadministration of parenteral fluids, and so on.[7-10]

When arterial oxygen pressure values are low, the inspired air may be enriched with 100 per cent oxygen given by pharyngeal catheter or mask; this may elevate alveolar oxygen to about 35 per cent. When this is inadequate to maintain arterial oxygen tensions above 70 mm. Hg, oxygen enrichment up to 100 per cent may be given through an endotracheal tube in a closed system. If arterial oxygen pressure values are not maintained, increased alveolar-arterial (A-a) oxygen gradients indicative of physiologic shunts may be present.[7,8] High inspired oxygen concentrations required for prolonged periods may produce oxygen toxicity.

Therefore, only oxygen enrichment which is needed to maintain reasonable arterial oxygen saturations and adequate tissue perfusion should be used.[9] But when the hemoglobin is not fully saturated on transit through the lung, the heart must compensate by pumping at proportionally greater rates to supply the tissues with equivalent amounts of oxygen.

Acid-base problems

Poor tissue perfusion usually produces metabolic acidosis. It may correct itself as the circulation improves; but when this does not happen, increasing acidosis further compromises an already disturbed circulation. The base deficit may be corrected by sodium bicarbonate or 1:6 molar sodium lactate; Ringer's lactate solution, having only 28 mEq. per liter of lactate, is inadequate to neutralize even moderately severe acidosis. The amount of base needed may be estimated by multiplying the base deficit by the volume of the extracellular fluid. Half of the estimated requirement is given over a one- to two-hour period and the remainder more slowly (not greater than 1 mEq. per minute), while pH values are rechecked at frequent intervals. It is necessary to titrate carefully the effect of the last part of the calculated dose to avoid metabolic alkalosis which also may be rather dangerous.

Respiratory acidosis is commonly associated with hypercapnia, hypoxia, and depressed ventilation; it is commonly seen in postanesthetic states, obstructive lung disease, asthma, drug overdose, and so on, and may be corrected by adequate ventilation with a mechanical respirator.

Respiratory alkalosis is often explained as a compensatory response to metabolic acidosis. For respiratory alkalosis to be considered compensatory, there must be preexisting metabolic acidosis, and the pH may return toward, but not exceed, the normal range. When the pH rises above 7.4, the alkalosis is not explained as a compensatory response to a presumed metabolic acidosis. Respiratory alkalosis may result from hypoxemia. This mechanism and the increased neural stimulation associated with the stress response are major stimuli for increased respiratory drive.[10]

Respiratory alkalosis usually is treated effectively by adding additional tubing to the mechanical ventilator to increase the dead space. On occasion, it may be advisable to use as the inspired gas 1.5 per cent carbon dioxide with various proportions of oxygen and room air. When using 1.5 per cent carbon dioxide, it is necessary to monitor carbon dioxide concentration of the expired gas or measure arterial blood gases frequently to warn of hypercapnia.

Metabolic alkalosis usually occurs in the following clinical settings: (1) after prolonged gastric suction; (2) with prolonged vomiting, such as in pyloric obstruction; (3) twelve to twenty-four hours after massive transfusion therapy when the citrate of the sodium citrate (in anhydrous citrate dextrose anticoagulant) has been metabolized leaving sodium ions (about 25 mEq. per unit of blood) which then become buffered by the bicarbonate-carbonic acid system; and (4) overadministration of sodium bicarbonate following resuscitation from circulatory problems.

When metabolic alkalosis is greater than plus 10 mEq. per liter, it should be corrected with ammonium chloride. This agent should be given no faster than 1 mEq. per minute with frequent pH measurements to warn of overcorrection.

Cardiac problems in shock

Patients with shock have a spectrum of cardiac functional problems. They vary from the pure "pump failure" seen in the patients with cardiac tamponade and myocardial infarctions to the more complex hemodynamic problems of the patient with preexisting cardiorespiratory disorders. Cardiac tamponade represents a special subset of cardiogenic shock, that is, failure from mechanical factors which limit ventricular filling but not ventricular contractility. It is associated with high CVP values which compensate for the reduced effective filling pressure and low-stroke volume. Ordinarily, high CVP warns of volume loading in excess of the heart's capacity to cope with it. But in tamponade, fluid loading increases the CVP still further; this improves ventricular filling, stroke volume, and cardiac output without producing pulmonary edema. Thus, high CVP in tamponade is not a contraindication to fluid loading, because the therapeutic goal is not to restore hemodynamic values to normal but rather to produce optimal interactions which reestablish circulatory integrity.

In patients whose shock arose from noncardiogenic events (hemorrhage, trauma, and sepsis) impaired myocardial performance may develop presumably from long periods of increased cardiac work associated with tachycardia, limited coronary blood flow, and reduced myocardial oxygenation. Thus, there are four distinct clinical settings of shock from central pump failure: (1) myocardial failure (valvular disease, myocardial infarction, and so on), (2) cardiac tamponade, (3) arrhythmias, and (4) shock which arose from noncardiogenic events but now has a significant element of impaired myocardial function. The latter is a common pattern in the terminal stages of most postoperative and post-traumatic shock. Most of our patients in each of these subsets of shock from cardiac factors had low cardiac output, and about a third had high resistance.

Digitalis

Inotropic agents, such as digitalis and isoproterenol, may be used for impaired ventricular contractility. Digitalization should be considered in the elderly patient with preexisting cardiac failure, pulmonary edema, atrial fibrillation, sinus tachycardia, and so on. Contraindications include conduction abnormalities, such as partial or complete heart block, ventricular ectopic beats, and other evidence of myocardial irritability. Some have advocated routine digitalization, unless contraindicated, for shock patients especially when the patient is over fifty years of age. If the patient is to be digitalized, the decision should be reached early in the course of the shock syndrome, since the anoxic myocardium of the late stages of shock often is particularly susceptible to arrhythmias.

Isoproterenol

When given in low doses (1 to 4 micrograms per minute for 70 Kg. man), isoproterenol produces an inotropic effect which results in an average increase in cardiac index over 0.5 L. per minute per square meter usually without appreciable chronotropic effects.[11] With this regimen, we often observed that cardiac output, arterial pressures, and urine outputs gradually improved, while the central venous pressures fell, and the patient achieved a better "physiologic set." Larger doses (5 to 10 micrograms per minute per a 70 Kg. man) frequently produce tachycardia and arrhythmias without appreciably improving flow. Also, if the patient is started on the low dose, it may be easily increased if it is not adequate or when tachyphylaxis occurs.

Blocking agents

Blocking agents have been advocated as the definitive therapy of shock.[11] The assumption of this approach is that the major hemodynamic defect of shock is low cardiac output with increased peripheral resistance, and the improvement of blood flow rather than increased arterial pressure is the major objective. Neither these assumptions nor the blood flow response have been corroborated in the vast majority of cases which we have studied. However, mild blocking agents, such as phentolamine and chlorpromazine, have found a relatively small place especially in the patient in whom volume loading is desired but venoconstriction with high CVP is present. The use of blocking agents enables more fluids to be given with relatively less harm or alternatively protects against deleterious effects when mild degrees of fluid overloading have taken place.[11]

Phlebotomy

When acute respiratory distress occurs with pulmonary edema and abrupt elevation of the central venous pressure, phlebotomy may be indicated. Phlebotomy is most effective immediately after rapid overcorrection of fluid losses. This procedure is less effective in fluid maldistributions, such as extracellular fluid overload in the face of low-plasma volume. When the latter condition is associated with hypotension, phlebotomy may be dangerous, since removal of small volumes of blood may result in further reduction in arterial pressures.

Sympathomimetic agents

Sympathomimetic agents are considered after volume loading with blood transfusions, plasma expanders and other fluid therapy, correction of respiratory and acid-base problems, ventilator adjustments, cardiotonic agents, and other supportive measures have failed to restore arterial pressure and circulatory homeostasis. The use of sympathomimetic agents, such as epinephrine, norepinephrine, metaraminol (Aramine), 1-dopamine, and so on, is often an admission of defeat, a last resort, a sort of chemical last rites. Under no circumstances should sympathomimetic agents be regarded as a substitute for blood-volume replacement; nor are they appropriate as a temporary measure while blood is being typed and cross-matched, since it is just as easy and far more effective to administer fluids, particularly colloids, such as albumin or dextran. In essence, shock is not primarily a levarterenol (Levophed)-deficiency disease; volume loading not artificial elevation of arterial pressure is the first line of therapeutic endeavor.

Correction of fluid overload and oliguria

Usually there is an urgent need for volume loading to maintain blood volume, arterial pressures, and circulatory homeostasis in the immediate post-traumatic and postoperative period (twelve to thirty-six hours) when hypotension and unstable vital signs are present. But after circulatory stability has been achieved, pulmonary edema from extracellular fluid overload as well as renal insufficiency then may become the most life-threatening complications, and it is at this stage that diuretics find their greatest usefulness. Mannitol and 50 per cent glucose produce diuresis by virtue of their osmotic activity. Mannitol, which is administered intravenously as 100 ml. of a 20 per cent solution, is a nonmetabolizable sugar. When not reabsorbed by the renal tubules, mannitol is excreted in the urine along with additional water. However, when mannitol is not excreted either because of inadequate blood volume or renal impairment, it remains in the interstitial fluid where it contributes to peripheral and pulmonary edema. By contrast, 50 per cent glucose, given intravenously by a central venous catheter in 100 to 500 ml. amounts over one to eight hours, has the advantage of either producing an osmotic diuresis, in which the glycosuria it produces will frighten the inexperienced, or of being transported into the cells where it provides the necessary energy for body metabolism. In either case, it does not remain in the interstitial fluid as a continuing influence for fluid retention.

Furosemide and ethacrynic acid, which are given intravenously, act by inhibiting tubular reabsorption of sodium and promoting the excretion of urinary sodium. In contrast to mannitol, they can be given repeatedly, since they are rapidly metabolized. When normal albumin concentrations and plasma volumes are present, but diuretics are ineffective, it may be necessary to resort to dialysis to reduce excess water, high serum potassium concentrations, urea, and other metabolic breakdown products.

Parenteral nutrition

That patients with shock states require normal or increased blood flow and adequate arterial oxygen tension values is axiomatic, but it is not as well recognized that oxidative substrates are also necessary. Since the limited carbohydrate reserves are rapidly exhausted and fat is not available for glycolysis, protein reserves are broken down to supply the energy required for body metabolism. When the labile protein stores are depleted, the lean tissues are cannabalized to provide substrates for the high priority Kerb's cycle metabolism.[4]

Frequently, 5 per cent glucose solutions are given in the vain hope that adequate nutrition is being supplied. Each liter of 5 per cent dextrose contains only 50 Gm. of glucose or 200 calories; it would take an inordinate volume of this solution to meet the caloric needs. However, 500 ml. of 50 per cent glucose has the equivalent of about 1,000 calories. When given slowly by constant infusion over six to twelve-hour periods through a central venous catheter, 50 per cent glucose solutions can provide adequately for caloric needs. Usually 1 unit of crystallin insulin may be used to cover each 4 to 6 Gm. of glucose, but the insulin dose should be titrated carefully on the basis of frequent blood and urinary glucose and osmolarity determinations. When parenteral alimentation is required for more than a few days, amino acid solutions may be added to maintain nitrogen balance.

Albumin solutions are used to maintain the oncotic pressure and plasma volume; they are eventually broken down to individual amino acids and metabolized in the tissues. The immediate advantage of albumin is to redistribute water favorably from the interstitial space to the plasma volume; the ultimate fate of the albumin is to provide for nitrogen metabolism including wound healing and tissue repair.

Support of the unconscious patient

Cerebral edema may be minimized with diuretics, avoidance of extracellular fluid overload, fluid and salt restriction, high doses of steroids, and other supportive measures, such as parenteral alimentation needed to meet nutritional requirements, dialysis for correction of metabolic problems of uremia, correction of hypo-osmolarity, which may be both extracellular and intracellular, and so on. Patients who are semiconscious may be nursed in the semiprone position with, or, if possible without, an endotracheal tube. The completely unconscious patient usually requires tracheostomy and mechanical ventilation to insure adequate respiratory function.

Control of infection

In obviously infected cases, abscesses must be drained and wound care, including adequate debridement, must be carried out. Wounds as well as blood, sputum, urine, and other body fluids should be cultured, and the appropriate antibiotic therapy should be given. Under conditions in which obvious gross contamination has occurred, it may not be advisable to wait for the results of bacterial cultures and sensitivities; broad spectrum antibiotics may be appropriate. Under unusual conditions, prophylactic antibiotic therapy may be deemed advisable.

Summary

Diagnostic problems in shock and trauma states and technics for evaluation are reviewed. Therapeutic principles and a protocol for the immediate cardiorespiratory care of most acute emergency admissions to an intensive care unit, post-anesthesia recovery room, or trauma service are systematically summarized in rough order of priorities.

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Postoperative Intensive Respiratory Care

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A decade ago it was not uncommon to see patients who had undergone upper abdominal surgery without difficulty develop fever and tachycardia on the third or fourth postoperative day. The patients became somewhat dyspneic and blue and rapidly became fatigued. In spite of oxygen, digitalis, and vasopressors, patients "went downhill and died," and it was thought that they died of stress because of the surgery. Perhaps these patients were debilitated to start with, and they "just could not take the surgery or the anesthesia."

Within the past decade, blood gas analysis became clinically available. While such determinations were available on a limited basis as a research tool for many years, the clinical area saw the introduction of blood gas studies in many institutions about six or seven years ago. When blood gases were determined on these patients who "did not do well" on the third or fourth postoperative day, we were shocked to find that the arterial oxygen pressures of these patients were extremely low, often below 40 torr, and it was then that we first realized that these patients were actually suffering from ventilatory failure.

Knowing this, we then began to develop a method of treating these patients with endotracheal intubation, mechanical ventilation, and intensive nursing care. As is now well known, marked improvement was seen in many although not all of these patients. It was this experience that led us to think in terms of intensive respiratory care. In my view, blood gas analysis is probably one of the biggest innovations in clinical medicine in the last decade.

Types of ventilatory failure

It has now become evident that there are two types of ventilatory failure in surgical patients, particularly in the postoperative period. First is the traditional ventilatory failure with hypoxia which is associated with an abnormally high carbon dioxide pressure and which is seen in patients who simply are not ventilating adequately because of central nervous system depression, either from anesthetics or other depressant drugs, and in crushed chest injuries. The mechanism for breathing has become inadequate, and this ventilatory failure is associated with a retention of carbon dioxide. This may be termed "low output" ventilatory failure.

Second, we now recognize patients who have marked hypoxia (a very low oxygen pressure) but have normal carbon dioxide levels. In some cases, even slightly low carbon dioxide levels are seen in the arterial blood. This second type of ventilatory failure may be termed "high output" failure.

Both types of ventilatory failure, low output and high output, exhibit hypoxia as the major problem to the patient. In acute situations, any oxygen pressure below 60 torr in arterial blood may be considered hypoxia.

I define ventilatory failure then as hypoxia, with or without a high carbon dioxide pressure. This latter pressure is used to differentiate between the two types of ventilatory failure: the low-output or classic failure that is associated with poliomyelitis, and high-output failure, in which the patient is inadequately oxygenating his blood in spite of usually strenuous efforts to breathe, even in spite of hyperventilation.

The underlying mechanism of high-output failure is a disturbance in ventilation-profusion relationships.[1] Those areas of the lung that are well ventilated are not being perfused adequately with blood; those areas that are being perfused are not being ventilated adequately. While total air flow and total blood flow may be normal, they are not matching, and, therefore, oxygenation of the blood does not take place in spite of strenuous efforts on the part of the patient to breathe.

One classic form of high-output ventilatory failure is seen following upper abdominal surgery, particularly if peritonitis ensues.

It has been shown that following upper abdominal surgery, both the maximal breathing capacity and the vital capacity are markedly reduced because of pain and distention. Thus the ventilatory "reserve" is encroached on as a natural and expected consequence of upper abdominal surgery.[2] At the same time, oxygen consumption tends to increase in the postoperative period. Thus the need for ventilation is somewhat increased at the very time that ventilatory reserve is reduced. In most cases enough reserve exists to more than compensate for the increased need for breathing, and the problem resolves itself in a few days.

However, if in addition to all this peritonitis develops, the pain and distention become even greater and make breathing even more difficult, thus further reducing the ventilatory reserve. At the same time the need for oxygenation is markedly increased. Ultimately the reserve becomes exceeded by the need, and at that point the patient becomes hypoxic.[3] If this process is not recognized and treated, death ensues. This is what we saw over the years and did not really recognize until we had blood gas analyses.

Another factor involving oxygenation plays a significant role in this picture. To oxygenate his lungs the patient is forced to increase his breathing efforts, thus increasing the oxygen consumption of his respiratory muscles. In many of these states the oxygen consumption just of the respiratory muscles becomes very considerable. Thus, the patient get caught up in a vicious cycle; in a vain attempt to get oxygen he burns more oxygen. This eventually results in fatigue.[1]

Fatigue is the most striking feature of this picture and is usually preterminal. These patients usually die of exhaustion. They simply wear themselves out trying to get oxygen, trying to breathe.

The roentgenogram is usually a little misleading in that it does not show as much as you would expect from the clinical picture. Diagnosis is made by arterial blood gas analysis which demonstrates hypoxemia. Except very terminally, the carbon dioxide tension tends to be either normal or even slightly below normal.

Treatment

Treatment of these patients in the early phases of this derangement involves the enrichment of the inspired air with oxygen. However, when fatigue becomes a significant part of this situation, oxygen alone is probably not enough. Treatment then requires sedation, endotracheal intubation, and mechanical ventilation, preferably with a volume type ventilator.

We were very impressed, when we began doing this, how suddenly, rapidly these patients get better, their clinical picture markedly improving as soon as they are attached to a ventilator.

Three reasons account for the dramatic improvement. First, by initiating mechanical ventilation in a patient at this point, his fatigue is relieved. Patients very often fall asleep with very little sedation and sleep for quite a long time because they are really worn out. Second, oxygen consumption is markedly reduced simply by putting a patient on the ventilator, since he no longer has the burden of furnishing oxygen to his respiratory muscles. Not only is more oxygen delivered, but also the need for oxygen is reduced. Third, we have discovered over the years that positive pressure alone appears to improve oxygenation of the lungs when a large pulmonary shunt is involved.

This latter point is apparently related to the fact that functional residual capacity tends to be increased with positive pressure ventilation. Oxygenation of the blood appears to get better, atelectasis is reduced, and we find that very often we can take a patient who is in severe trouble with an oxygen mask getting 100 per cent oxygen, institute mechanical ventilation, and reduce his inspired oxygen concentration to 40 per cent and still produce a higher arterial oxygen pressure. There is no doubt that positive pressure ventilation in and of itself improves oxygenation even in the face of reducing the inspired oxygen concentration.

There are some other factors beside upper abdominal surgery and peritonitis which can add to the ventilatory problems of the postoperative patient having undergone major surgery. A major factor is obesity. Obesity certainly adds to any other ventilatory problem one might have and does seriously predispose a patient to ventilatory failure in the postoperative period. Another factor is chronic lung disease, as is well known. Chronic cigaret smoking is a serious problem and should raise the index of suspicion in anyone who is having problems treating a patient in the postoperative period.

In addition to obesity and chronic pulmonary disease, a number of anesthesia problems can lead to inadequate ventilation. The most common one, I believe, is hypothermia. I do not think it is recognized widely enough that many patients undergoing major surgery, particularly involving major body cavities, will be hypothermic on arrival in the recovery room. In our experience it is not at all uncommon to see a temperature of 92° or 93°F. on taking the patient from the operating room after major abdominal or chest surgery. Hypothermia is known to reduce minute volume ventilation.

This may well produce some atelectasis as well as carbon dioxide accumulation.

Hypovolemia due to inadequately corrected blood loss may also contribute to hypoventilation. It is known that washout of inhalation anesthetics is slowed in hypovolemia and other states producing reduced blood flow.[4] Furthermore, the redistribution of curare is delayed in low-flow states.[5] Thus, hypovolemia adds to the expected residual effects of anesthesia in delaying the return of normal ventilation.

Hypoxia is commonly observed in the postoperative period even in patients who have no obvious reasons for being hypoxic and whose carbon dioxide pressures denote normal ventilation.[6] Microatelectasis due to constant volume ventilation without a sigh has been believed to be part of this picture.[7] Another factor is now known to be pulmonary blood flow, which is altered as a result of surgery and anesthesia such that the venous admixture appears to increase.[8]

Prophylactic mechanical ventilation

Because all of these problems occur fairly commonly in routine operating room schedules and have worried us for quite some time, we have been leaning in recent years to the prophylactic mechanical ventilation of selected patients in the postoperative period. Indeed, if one considers a typical operating room scene, one sees a patient who is intubated, who is attached to a respirator, even perhaps a humidifier in the case of long operations. He is being intensively monitored and very carefully controlled by several people in the operating room. Traditionally, at the end of the procedure we discontinue ventilation, remove the endotracheal tube, "wake the patient up," take him to recovery room, and by contrast to what has gone before, virtually abandon the patient in the recovery room. Now consider the situation of a patient in an intensive care unit who is being intensively monitored, intensively treated, and carefully controlled as far as ventilation is concerned. He is very much like the patient in the operating room. One can reason that this perhaps ought to be more the picture in the immediate postoperative period, at least in some patients, since the transition is really not abrupt from asleep in the operating room to awake in the recovery room. It takes time for full recovery to occur.

Following such reasoning, we began the practice of leaving the endotracheal tube in place at the termination of surgery in those patients in whom we thought we might have trouble. Patients are then taken to the recovery room, attached to a ventilator, and treated as if they represented an intensive respiratory failure problem. This is continued until the temperature has returned to normal, until the cardiovascular system has stabilized, until we are pretty sure that everything is pretty well back to normal, the patient is entirely awake, and really ready to be extubated.

We have done this now in about 20 per cent of our major cases during the past two years at Roosevelt Hospital. In general, these have been patients who have undergone major surgery which was lengthy, cases in which significant blood loss occurred, cases in which patients were debilitated, and any other situation in which ventilation might be impaired for a few hours in the postoperative period.

We are convinced that the number of ventilatory crises that are seen in the recovery room are less. We believe also that the late complications of ventilatory problems, such as seen in patients in whom severe pneumonia develops, three or four days after surgery requiring intubation and prolonged mechanical ventilation, are now far less common. We believe that perhaps twelve to twenty-four hours of mechanical ventilation in the patient who is prone to develop respiratory failure may just tide him over and keep his lungs clear and open long enough so that the frank ventilatory failure that we have seen in the past does not develop. If this is the case, as we believe it is, it is possible for many patients to avoid the complications of long-term intubation, of superinfection with Pseudomonas and other organisms, and of stress ulceration of the stomach that are seen all too commonly with one- or two-week courses of ventilator therapy in a respiratory care unit.

Simply by leaving the endotracheal tube in place and carrying out the intensive respiratory care that is a normal factor in the operating room and continuing it for twelve to twenty-four hours in the immediate postoperative period, appears to us to be an effective means of avoiding respiratory complications in those patients who are known to be at risk.

Conclusion

My main point is that while we take good care of our patients in the operating rooms, and we take good care of our patients in intensive care units, there tends to be a hiatus in the recovery room for many patients, and it is here that more aggressive therapy is definitely needed.

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Dangers of Intensive Respiratory Care

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If I have any message to present, it would be that whenever possible, intensive respiratory care should be avoided. Putting it another way, before starting the patient on the road to intubation, controlled ventilation, tracheostomy, and all the difficulties these present, indications should be very clear and well understood. For example, in some clinics where a huge number of cardiac patients are operated on each day, all patients are ventilated for the first twenty-four hours postoperatively. In contrast, in our institution there may be only 1 of 20 patients in whom an endotracheal tube remains in place for any period of time during the immediate postoperative period. The others are extubated routinely in the operating room. Which form of treatment is the better is hard to say, but it has been my belief that patients who are awake and breathing on their own do better than those who are intubated with transgression of mother nature's protective manifold, the nose and mouth.

During assisted ventilation through an endotracheal tube or tracheotomy, many opportunities occur for contamination of the tracheobronchial tree as well as reaction of the respiratory mucosa to a foreign body. Needless to say, if a patient has a limited respiratory function, a huge heart, and is not ventilating adequately, we, too, ventilate this patient for as long as necessary; but whenever possible, this form of maintaining ventilation postoperatively is not routine, and I do not think it ever should be.

Postoperative pulmonary problems

Some of the postoperative pulmonary trouble we see in patients is probably related to anesthesia beginning with the type of preoperative medication used. If a patient prior to induction is quite sleepy and lethargic, two and a half hours later after an operation he awakes slowly and may suffer respiratory depression for many hours postoperatively. This type of patient may require assisted ventilation. Intravenous morphine given during the operation may depress respirations during the postoperative period. Thus, the preoperative and intraoperative medications play a very important role in the patient's postoperative pulmonary function, and every effort should be made to prevent as much depression as possible.

Today, during the postoperative period, blood gas and pH determinations are done almost routinely, and then comes the time to decide how intensive therapy should be. It is here, I believe, we have a tendency to overtreat many patients. For example, if the patient's pH is 7.29 and calculated base deficiency is minus 8, is it necessary to inject sodium bicarbonate immediately? If so, why? When I question the necessity for this, especially in the postoperative cardiac patients whom I do not wish to overload with sodium, I am told that it is necessary to correct the pH, so that cardiovascular response and reflexes return toward normal. This, of course, implies that deviations in pH result in changes in cardiovascular function. It is true that there is much in the literature to support this thesis. As one looks at the data critically, including the work of Murray Anderson, M.D., of Buffalo, one realizes that perhaps the detrimental effect of acidosis has been very much overemphasized.

Dr. Anderson measured cardiac output, systemic and pulmonary artery pressure, and peripheral vascular resistance, and then reduced the blood pH to as low as 6.9. There were no changes in these hemodynamic parameters until pH reached 6.9. In other words, a pH of 7.2 or 7.1 had no demonstrable effect on cardiac function. Another reply I often get, when I ask why it is so important to correct deviations in pH, is that patients with acidosis do not respond to catecholamines. Here again, Dr. Anderson showed that this is already accepted as a fact and is not true. For he showed clearly that the cardiovascular bed responded normally to epinephrine until the pH fell to 6.8. He also showed that the same was true for respiratory acidosis. Even if pH is reduced by high carbon dioxide pressure levels, there is very little change in the cardiovascular function and no effect in its response to catecholamines.

Plea for conservative treatment

We also studied the effect of decreased pH on cardiac function in the laboratory in which the venous blood was drained into a reservoir and returned to the right side of the heart by a monitored pump. We could, therefore, measure and control the rate of return of blood to the heart and thereby control cardiac output. We then decreased blood pH by the intravenous administration of 0.1 sodium hydrochloride or produced respiratory acidosis. We then challenged the left ventricle by increasing the return to the heart with simultaneous measurement of the left ventricular end diastolic pressure and systemic pressure. Even when the pH is reduced to 6.9, there is little change in the left ventricular function curve, findings consistent with those of Dr. Anderson. Respiratory acidosis, in a similar fashion, had no effect on the left ventricular function. If anything, it might have improved slightly. Thus, it appears that perhaps the left ventricle, in fact, the entire cardiovascular tree, is not quite as sensitive to reduction in pH as we have been led to believe over the years. The eager administration of sodium bicarbonate, and please remember that each ampule contains 3.94 Gm. of sodium, may not be as necessary as once thought; and if the heart is adequately functioning the buffer system of the body will readily restore pH back toward normal. In other words, I think we should treat less, watch more, and give mother nature a chance in many, many instances.

An instance in which we often run scared is when blood gas comes back with oxygen pressure only 60 mm. Hg. Immediately, the oxygen atmosphere is enriched, and in some instances 100 per cent oxygen is given. I do not object to using oxygen-enriched atmosphere if necessary. I think, however, there is no question that high concentrations of oxygen do affect the respiratory mucosa adversely. A low arterial oxygen pressure per se does not necessarily mean anoxia. It may represent a right to left shunt in the lungs, but it does not necessarily mean that there is tissue anoxia. If we truly want to know about tissue oxygenation, we should measure oxygen saturation of the venous blood leaving various organs. Only if the oxygen content of the venous blood is markedly decreased should we worry about lack of oxygen to the tissues; as long as the venous blood leaving an organ contains oxygen, the oxygen requirement of that organ has been satisfied. This became especially clear to me in studies on shock in which we had dogs with a severe degree of hypoxia, decreased hemoglobin content, and hypovolemia, and yet measured oxygen uptake across a vascular bed showed no decrease over control studies as long as the venous blood contained oxygen. I am sure this is quite clear, since the tissues have an immense ability to take up whatever oxygen is present in the blood perfusing them.

Thus, I would like to suggest that there are many patients recovering from an insult, such as an operation, who have deviation of their measured parameters, such as blood gases and pH. Not all such patients, however, require intensive intervention, as I am sure is done in many instances. I wish to stress that it is not necessary to be too aggressive in many, many cases, thereby preventing some of the complications incurred with active intervention. There is no question that there is a group of patients who cannot ventilate adequately themselves and whose cardiovascular function needs support. In those patients all out efforts have to be put forth in an attempt to maintain life long enough for patients to recover. Parenthetically, we have found a continuous infusion of a dilute solution of epinephrine to be the most effective means of supporting low cardiac output syndrome whether it be due to overwhelming infection or postoperative repair of cardiac defects. In our experience, unless the patient responds favorably to an epinephrine drip, we lose him. We have not been impressed with the use of isoproterenol, levarterenol (Levophed), metaraminol (Aramine), glucagon, and so on. Calcium chloride, however, does appear to be an effective cardiotonic drug which we have used more widely recently. This has been especially true in those patients undergoing perfusion in which citrated (bank) blood has been used for filling the pump.

Summary

I cannot add anything to the subject at hand, "Current Concepts of Intensive Respiratory Care." In contrast, I have tried to stress the avoidance of intensive respiratory care whenever possible. Let us not overtreat patients just because we now have more exact measurements, such as blood bases and pH, and means for treatment, namely, ventilators and trained personnel who need to be kept busy.

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Management of Patients with Respiratory Failure

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I am going to discuss three topics of special interest in managing patients with respiratory failure: (1) the influence of acidemia and alkalemia as well as hypoxia on the incidence of cardiac arrhythmias, (2) the "shock lung," and (3) the role of flexible fiber-optic bronchoscopy in acute respiratory failure.

Acidemia, alkalemia, and hypoxia

I want to emphasize the point that acute respiratory failure occurs with a frequency of less than 50 per cent in patients with pulmonary diseases; a large number were postoperative patients with crushed chest, a sedative overdose, and neurologic disorders. Thus management of acute respiratory failure is not a problem confined to medical patients. Stephen Ayres, M.D., points out the abnormalities of blood gases in a population of patients admitted to an acute care facility. The essential point is that only about 9 or 10 per cent of patients can be said to have truly normal blood gases. Even if patients with mild hypoxia (oxygen pressure of 50 to 70 mm. Hg) are added to the normal group, only about 30 per cent of patients have blood gases in an acceptable range. There is a large number of patients with hypoxia, with respiratory and metabolic alkalosis, and with respiratory and metabolic acidosis.

It is important to consider the base from which the patient begins. For instance, a patient with chronic pulmonary emphysema and abnormal blood gases in his usual state cannot be expected to fall in the normal blood gas group, nor should one aim for normality in his management in the respiratory care unit.

Some cardiac arrhythmias related to blood gas abnormalities can be managed successfully by correction of the blood gas abnormality alone. One patient, for example, was accidentally extubated, and the electrocardiogram monitor picked up a junctional rhythm with a slow rate and hypoperfusion. Atrial flutter developed during the period before the patient was reintubated; and with nothing else done but reintubation and ventilation, this arrhythmia was cured. Presumably both hypoxia and acidosis prevailed here.

An arrhythmia related not to hypoxia but rather to alkalemia was found in a patient who had a carbon dioxide pressure of 22 and a pH of 7.51. He was seen to be in atrial flutter with an abnormal ventricular conduction pattern. When the alkalosis was corrected by a proper adjustment of the respirator, sinus rhythm prevailed again with a conduction disturbance; and a little later with more normal blood gases, normal conduction prevailed. It is well to remember that the incidence of arrhythmias in a respiratory care unit is similar to that encountered in acute coronary patients.

Why do arrhythmias related to hypoxia, alkalemia, and acidemia occur in a human and not in the dog, as was commented on by Dr. Ankeney? I cannot give you the answer. There is a species difference as Neil Moore, M.D., has shown in Philadelphia with some elegant dog studies in which he tested the threshold of ventricular fibrillation in dogs in various types of acidosis. He shows a protective effect in the dog of alkalemia of a metabolic origin and an increased susceptibility to fibrillation during metabolic acidosis. When respiratory acidosis and alkalosis were induced, the dog had an increased resistance or a higher threshold to electrically induced ventricular fibrillation. It is of some interest, too, that the dog does not develop supraventricular arrhythmias in a setting of acidosis and hypoxia. It may be a species difference; it may be that the dogs have normal hearts, whereas our human patient population probably has varying degrees of myocardial disturbances due to coronary artery disease, to altered electrolytes, and to other factors. Hypoxia together with acidosis and alkalosis is an undesirable state from the point of view of an arrhythmia. In one patient with atrial fibrillation and hypoxia, the oxygen pressure was 23, and the carbon dioxide and pH were in acceptable range. The oxygen pressure was corrected with a restoration of a sinus mechanism, which again deteriorated when the patient was allowed to become hypoxic as a result of a mechanical failure.

In troublesome cardiac arrhythmias in the critically ill, abnormal blood gases should always be considered. Such states as hypoxia, alkalemia and acidemia may be a reason why the patient's heart will not respond to drugs and to direct current countershock in certain instances.

Shock lung

The problem of "shock lung" or the acute respiratory distress syndrome is a topic of some current interest. Some of the pulmonary injuries which precede the syndrome are chest trauma; shock, from many causes; drug ingestion; massive aspiration; acute pancreatitis (with shock); prolonged cardiopulmonary by-pass; congestive atelectasis, fluid overload; viral pneumonia; massive fat embolism; and "oxygen toxicity" (inhaled oxygen per cent of greater than 50 per cent).

Shock lung may appear from a few hours up to several days subsequent to one of these injuries. The injury may be chest trauma; it may be shock from many causes as was discussed; it may be from an overdose of drugs such as the typical heroin lung; massive aspiration has been known to cause it, or acute hemorrhagic pancreatitis in which the mechanism may also be shock. We have seen the syndrome in patients who have been on the heart lung machine for long periods of time, with fluid overload, and there are those who believe that the cause of the entire syndrome can be reduced to crystalloid overload by infusion of saline and electrolyte solutions. On the other hand, we have seen viral pneumonia cause an indistinguishable clinical syndrome. We have occasional students who experience typical viral syndromes in the fall who visit the Columbia Health Service with a flu-like syndrome. Suddenly a temperature of 103°F. develops followed by a massively congested lung and hemoptysis. These patients die despite massive efforts in the respiratory care unit. Previously they were young healthy people. Massive fat embolism is a recognized etiologic factor. Oxygen toxicity, as touched on by previous speakers, can occur in prolonged administration of oxygen concentrations over 50 per cent, and can be shown to occur earlier with higher concentrations of oxygen.

The pathogenesis of shock lung is outlined as follows:

Alveolar capillary damage leading to:
- Exudation of fluid in alveoli
- Interference with surfactant activity
- Interstitial fluid accumulation
- Decreased compliance

Alveolar capillary damage apparently leads to exudation of fluid into the alveoli and fluid into the interstitial fluid compartment. This can be shown in experimental as well as clinical material. These events are associated with interference with surfactant activity, and the anatomic integrity of the alveoli is lost. The damage has a spotty but diffuse distribution, and, as elegantly hypothesized by A. P. Fishman, M.D., at a symposium recently, it probably has to do with spotty hypoxia occasioned by spotty vasoconstriction possibly due to hypoxia. In any event, the capillary damage leads to exudation of fluid into these spaces, loss of surfactant activity, and a marked decrease in the compliance of the lung so the patients are desperately dyspneic.

The typical clinical features are dyspnea, tachypnea, and intercostal retraction. There is marked cyanosis and one hears diffuse pulmonary rales in almost every patient, certainly at the bases. I should emphasize that these findings are refractory to nasal oxygen, to intermittent positive pressure breathing by pressure limited respirators, and even to volume respirators. The x-ray film will show an alveolar type infiltration, generally with a normal heart size to differentiate it from typical pulmonary edema from heart disease on the left.

Physiologically, if one measures minute ventilation, it is increased, and hypoxemia, as has been mentioned, is severe in patients who have precapillary shunts. The carbon dioxide pressure is only slightly increased or may even be normal, because the nature of the dissociation curve for carbon dioxide, as differentiated from oxygen, will allow overventilated areas of the lung to compensate for underventilated areas. Therefore, carbon dioxide pressures are usually normal. These patients breathe rapidly, and their respiratory centers are not depressed. There is a marked gradient between the oxygen inspired and the oxygen in the arterial blood; a gradient of 500 mm. Hg or more may be measured in severe cases. Giving a high oxygen flow alone is not going to help these patients. Compliance is markedly abnormal, with mouth inspiratory pressures of 35, 40, and even 50 cm. of water registered on the volume respirators, with usual tidal volume.

Increasing the end-expiratory pressure of the respirator, referred to as PEEP, elevates end-expiratory pressure 10 to 15 cm. of water above zero. This maneuver prevents alveolar collapse with end-expiration and permits the use of lower concentrations of inspired oxygen, hence reduces the likelihood of further alveolar injury. In other words, if one monitors blood gases, enough supplemental oxygen is given to keep the blood oxygen pressure in the 60 to 90 range. Frequently the oxygen concentration in inspired air can be reduced to acceptable levels below 60 per cent by the use of PEEP. The regulation of the circulation and of the urinary output were discussed earlier. The need for fluid restriction in the overload cases, particularly in those patients who have had a lot of saline or other crystalloid solutions has been mentioned. I would not rely on the central venous pressure as a reassuring measurement in these patients, particularly where there is capillary damage. One can see central venous pressures which are erroneously low as well as high in patients who need fluid or who are perhaps overloaded with fluid.

Another principle of management is to prevent further lung injury. Control of oxygen concentration in inspired air by the addition of positive end-expiratory pressure, use of antibiotics to control infection, which can cause further lung damage, and the use of corticosteroids may be helpful in this regard. Corticosteroids have been shown to reduce leukocyte agglutination in this syndrome in which cells are thought to exude a proteolytic enzyme which in turn may cause capillary damage. There is evidence that corticosteroids will aid in the syndrome of massive fat embolism.

Fiberoptic flexible bronchoscopy

I should like to pass on to a discussion of the use of FFB (fiberoptic flexible bronchoscopy) in acute respiratory care. In eight months we have performed 76 procedures on 38 patients (Table I). Indications for FFB in these patients in the respiratory care unit included copious secretions refractory to blind suction, postural drainage, and intermittent positive pressure breathing; bronchial toilet in severe pneumonia, lung abscess, and aspiration pneumonitis; refractory atelectasis; and need to assure proper placement of the orotracheal tube and balloon inflation.

Fifty-seven bronchoscopies were performed during continuous mechanical ventilation, 23 via endotracheal tube and 34 via tracheostomy tube. Nineteen procedures were performed during spontaneous ventilation, 18 via the transnasal approach and 1 via tracheostomy stoma.

The procedure is simple. If the patient is alert, sedation is given. If the patient is sedated, no

TABLE I. Flexible fiberoptic bronchoscopy during respiratory care

Number of Patients	Number of Bronchoscopies
21	1
9	2
5	3
1	4
1	5
1	13

anesthesia or medication is used. Tetracaine hydrochloride (Pontocaine), 0.5 per cent, is an effective topical anesthetic when instilled in the nasopharynx and at the carina in patients who are intubated. The mucosa of the nose and throat and the vocal cords are anesthetized if one is using the nasotracheal route. We give 100 per cent oxygen during the procedure and monitor the electrocardiogram; all patients have intravenous fluids running. We monitor the tidal volume from the respirator and observe the inspiratory pressure, which obviously goes up when a solid 5-mm. tube is passed through the orotracheal or tracheostomy tube.

The unit we use is of Olympic manufacture which has the limitation of a small suction and biopsy lumen common in all fiberoptic scopes. The advantages are its flexibility by precise control of the tip, superb cold light, and improved visibility with a "fish eye" lens. Patients on mechanical ventilators via endotracheal or tracheostomy tubes are bronchoscoped through a special T-tube attachment which allows the FFB to pass directly down the tube through a simple rubber seal, while ventilation from the respirator is maintained from the side arm.

Suction is intermittent to avoid excessive hypoxemia with attendant arrhythmias or other unwanted complications. We have done blood gases on some patients and found a decrease in oxygen pressure and in some an increase in carbon dioxide pressure during bronchoscopy.

One dramatic example of the use of FFB in respiratory care was seen in a business school student who was mugged and shot in the neck. A 45-caliber slug was seen in the right neck on the x-ray film. The lungs were clear. In a roentgenogram taken three days after admission, there was atelectasis of the left lower lobe; the mediastinum was shifted to the left and the diaphragm was up. This atelectasis was resistant to all our measures through the endotracheal tube. The x-ray film taken the day after bronchoscopy showed some improvement in the atelectasis. A roentgenogram taken four days later showed good aeration of both lungs, and the oxygen pressure was appropriately normal.

I should like to conclude with the statement that I do not think FFB has a casual role in the management of acute respiratory problems. But when one has refractory atelectasis, and we have found atelectasis more common in the left lower lobe, it may have to do with sharper angulation of the left lower lobe bronchus which occurs in supine patients. One is able to enter the left lower lobe selectively and quickly and manage plugs of mucus by suctioning, frequently only after they are liquefied by flushing with saline or mucolytic agents, with benefit to the patient.

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Discussion

Emil A. Naclerio, M.D. *New York City.* The principal factors predisposing toward acute respiratory failure in the immediate hours following surgery have been clearly brought out by Dr. Keenan. He rightfully emphasizes the importance of leaving the endotracheal tube in place at the termination of the operation (unlike in the past) in all patients in whom cardiorespiratory complications may develop. These patients are taken to the recovery room where the endotracheal tube is attached to a volume-cycled ventilator. Treatment is then carried out as for any patient in an intensive respiratory care unit. The endotracheal tube should be removed only when effective cardiopulmonary function is restored and the patient fully awake. It is to be mentioned that alkalosis and hypokalemia may be rapidly precipitated by overzealous mechanical ventilation, especially if the patient is in a state of marked hypercapnia. Because hypoxemia, alkalosis, and hypokalemia predispose to atrial and ventricular arrhythmias, these patients should also be subjected to careful cardiac monitoring.

As for arterial blood gas determinations, I find in many instances a house officer will request, by telephone, a gas determination in a postoperative respiratory insufficiency problem without first making any attempt whatsoever toward ascertaining the cause or causes of the physiologic disturbances. In these situations, a blood gas measurement is not the "prime requisite." What the patient needs is an immediate and thorough evaluation of the situation to rule out any one or combination of possible causes of the disturbed function. I have found on more than one occasion the following: the endotracheal tube lodged in the right main bronchus, a kinked endotracheal tube, and significant amounts of bronchial secretions which were not adequately suctioned.

Dr. Fitzpatrick: The idea is to treat the patient with the gas or the gases at any rate. Are there any questions?

W. G. Sommer, M.D. *New York City.* I should like to say just a word for bronchoscopy in selected patients. I think it is somewhat neglected in favor of other procedures. The first thing I learned at the University of Michigan in 1937 was how to do endobronchial suction with a catheter which Cameron Haight, M.D., had just introduced a couple of years before. I really think that of the many real contributions of the late Dr. Haight there is nothing that has done more good for more people over the years.

I think that at times we neglect bronchoscopy in the patient with whom there is just a little difficulty in passing the catheter. Of course, the catheter does have the advantage that if it is easy with the patient and if you are good at it, you may keep repeating suction. It is a little bit hard to do those 12 bronchoscopies. I have never done quite that many on 1 patient, but there are certainly patients who require bronchoscopy. I would not be here if it were not for the fact that I had done a bronchoscopy on a patient, a marginal respiratory risk, who had a bilobectomy done; he had atelectasis in the remaining lobe on the right side. If we have difficulty with endobronchial suction, I think we should go to bronchoscopy which is not that difficult and for some patients it is easier than endobronchial suction. I am sure Dr. Ankeney agrees with that.

Certainly when we look over some of the roentgenograms of patients shown during this session, we realize that some of these patients had suffered with various degrees of atelectasis. I think perhaps those shown in the gunshot case had more atelectasis than appeared to be thought of at the time. I used to think atelectasis was due to bronchial obstruction. I know now that it is not. It is a much more complicated affair than we used to think as has been brought out.

Dr. Fitzpatrick: Jay would you like to answer?

Dr. Ankeney: You know, I may have said this just to be provocative. I think the cases are rare in which you need to do a bronchoscopy. I think that one should keep ahead of these people before they get into the problem of the collapsed lobe. If they still have some spaces into which they can get the air behind the obstructing material and intermittent positive pressure breathing is given, they can cough up their secretions; but once the lung collapses, you cannot get it expanded without removing the obstructing secretions mechanically. One little trick, I think you all know, is just to leave a small nasoendotracheal suction catheter in place. Then you can always go back and use it. If you have had trouble getting it in the first time, leave this small catheter. It is small enough so that it does not interfere with breathing and does not compress or give them any trouble with their cords.

I think the fiberoptic scope is fantastic, and it is so easy to look in and see what you are suctioning out. It is marvelous, and I am almost sure if we had one we would probably use it very often.

Dr. Bell: I would only comment that the patient with the bullet wound had no respiratory musculature but a diaphragm. He was paralyzed totally except for limited diaphragmatic excursion. He was the patient who had so many bronchoscopies, and it was just impossible to sustain a good pulmonary toilet in this patient.

Dr. Naclerio: Do you fully ventilate and oxygenate the patient prior to insertion of the fiberoptic bronchoscope?

Dr. Bell: No, this is what I want to emphasize again. With the T-tube adapter, which I mentioned, bronchoscopy proceeds while ventilation is provided by the mechanical ventilator. FFB can be performed under adequate ventilation in any patient who has a greater than size 6 tracheostomy tube and a 34 or larger endotracheal tube.

Dr. Naclerio: Do you run into airway resistance problems? You said that the patient became hypoxemic, and changes in carbon dioxide pressure also occurred. To what do you ascribe the resultant biochemical aberrations?

Dr. Bell: Inspiratory pressure as measured at the machine increases, but there is a big pressure drop down the tube, so that the trachea and alveoli of the lung are not exposed to the increased pressure. We try to combat the hypoventilation by reducing suctioning. Constant use of suctioning will worsen the alveolar ventilation during bronchoscopy. It is also helpful to turn oxygen flow to 100 per cent oxygen as well as to limit the suctioning while watching the electrocardiogram. The degrees of acidosis and hypoxia are quite acceptable in a fifteen- to twenty-minute bronchoscopy. Then if one has achieved the purpose of the procedure, gotten a mucous plug out, or eliminated a lot of secretions, especially from a big section of the lung such as the left lower lobe in this case, the oxygen pressures come right up afterward.

Dr. Naclerio: But the problem that results while you are doing the procedure is due most likely to an airway resistance problem, since you are looking through a compromised respiratory airway.

Dr. Bell: Yes, that is right, and, as I mentioned, you have to have a large enough endotracheal or tracheostomy tube to get this 5-mm. scope down and allow enough room around for the ventilation to take place.

Voice: We use a fiberoptic bronchoscope very much like Dr. Bell does in our respiratory care unit. Perhaps conceptually it would be better not to consider it a bronchoscope in the classic sense. I like to think of it as a flexible suction catheter with a periscope on the end of it, so that you can selectively suction patients and put it into various bronchi under vision. Dr. Bell, the lumen that you aspirate with the flexible bronchoscope is between 2 to 3 mm. Do you think that is adequate to remove secretion?

Dr. Bell: The limitations of a fiberoptic scope are just those that you speak of, the small lumen through which to work either to irrigate, to suction, or to biopsy. We are trying to work with the manufacturer to make a scope with a much larger suction lumen at the sacrifice of some of the optic fibers, because we do not really have to see as beautifully as one does with the current instruments available. Your point is well taken that there are patients with blood clots particularly, which you just cannot suction through this bronchoscope.

Voice: I should think that when you have very thick secretions you would like to get a nice big suction catheter down there and really clear it out.

Dr. Bell: No question about it. In many cases I think the greatest improvement we produce in patients, who have a cough reflex and have a potentially good clearance mechanism, is to go down selectively to irrigate, to flush, to thin out secretions, and get some secretions out with the fiberoptic scope. Frequently afterward there is quite a copious excretion of mucus possible by suctioning.

E. E. Rockey, M.D. *New York City.* I wish to report that for the past seventeen years we and others have been using curved, semirigid radiopaque catheters, namely, Rockey-Thompson selective bronchial suction catheters, which can be easily inserted into any designated lobe. The smaller catheters go into segments and subsegments of the designated lobes. Using these catheters one can very effectively eliminate retained secretion from any designated lobe or from all the lobes.

The technic is simple. Following the use of a total of only 2 cc. of 5 per cent cocaine as topical anesthetic agent, the patient is intubated usually by indirect laryngoscopic vision. Through the endotracheal tube the Rockey-Thompson selective bronchial suction catheters are inserted repeatedly into each of the lobes of the lungs and into segments and subsegments of designated lobes. The purpose of the repeated catheter insertions is the aspiration of tenacious mucus which is often inspissated in the periphery of the bronchial tree and cannot be otherwise eliminated. This technic we named as selective, systematic tracheobronchial drainage (SSTBD).* It is selective because one is able to insert these catheters into any selected lobe, and systematic because the catheters are usually inserted into all the lobes of the lungs repeatedly. In case of an existing tracheotomy or when the patient has undergone tracheal fenestration operation, the catheters are inserted through the tracheotomy cannula or through the tracheal fenestration stoma. This technic of aspiration is far more effective and less complicated than the transbronchoscopic aspirations, even when the flexible bronchoscope is used. Using the flexible bronchoscope not for diagnostic purposes but only for the aspiration of retained secretion is a waste of this excellent, sophisticated and expensive equipment, and also a waste of professional talent. The selective systematic tracheobronchial drainage technic can easily be taught to nurses, other paramedical personnel, and even to patients. The already intubated patient in the recovery room or intensive care area is aspirated by nurses, and patients with a tracheotomy, and particularly those with healed tracheal fenestration operation, have been instructed to do self aspirations.

Because of the physical characteristics of the Rockey-Thompson selective bronchial suction catheters, their use is very simple. They are semirigid, radiopaque, and marked off in centimeter sections. The lower end of each catheter is curved in almost a 90 degree angle. There is a nodule near the outer end of the catheters which is always on the same side as the tip of the catheter. The catheters come in sets of 6, ranging in sizes from F14 to F24.

R. H. Clauss, M.D. *New York City.* I wanted to inquire of Dr. Bell the method that he used for maintaining the end expiratory pressure and also to inquire about some of the complications you may have had with this? As you showed in your diagram the arterial oxygen pressure rose. At times, when we have used "retard," arterial oxygen pressure has fallen. I would like to know mainly your method of maintaining the PEEP (positive end-expired pressure).

Dr. Bell: Those are very appropriate remarks because one of the complications of positive and expiratory pressure is pneumothorax and pneumomediastinum. The incidence is probably too high in patients with chronic obstructive lung disease, and I think end-expiratory pressure is contraindicated in this group of patients. On the other hand, since most instances of shock lung occur in patients who have normal lungs previously, you can usually use it in most individuals.

The simplest way to convert any respirator to a positive end-expiratory machine is to place the expiratory limb under 10 to 15 cm. of water. This can be done immediately at the bedside. You can also collect the expired effluent into your spirometer and see that you are getting proper tidal volume. The 560 Ohio machine has a retard setting that will retard up to 10 cm. of water pressure, and the Bennett MA-1 can also be equipped for positive end-expiratory pressure. This equipment is designed so that it is responsive to an increase in cough or fighting the respirator, so that the pressure will "pop off" just above the inspiratory pressure that you have set for the machine. The safety pressure of the respirator should be set just above the inspiratory pressure, so that at any time the patient bucks or coughs he does not generate enormously high pressure.

One final remark, physicians taking care of acute respiratory distress syndrome in patients with cystic fibrosis, report that these people frequently develop pneumothoraces, and I understand that thoracotomy tubes are frequently placed in these patients prophylactically for several days while they are on PEEP during their acute infection. These are infants after infection.

Dr. Keenan: We then try to select the largest tidal volume and the slowest ventilatory rate that the patient can tolerate. Very often this will be eight breaths per minute, sometimes a liter or 1.2 L. per breath, rather than tidal volume. We have found that by doing this we can keep the oxygen pressure high even without using positive end-expired pressure. In most patients this works. We have had marked improvement in oxygen pressures without changing the inspired oxygen tension simply by going from a rate of 16 down to 8 and doubling the tidal volume. We will very often push the patient until his blood pressure starts to fall because of a retardation of flow and then back off a little bit. In most cases we get improvement. Once in awhile, we do not. We do this before we go to positive end-expired pressure; but if we have to, we add that as well. There are those patients who do not respond; the oxygen pressure does not go up and, as Dr. Clauss suggested, sometimes goes down. Then I do not think it does much good to use PEEP or even this very slow rate.

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*Rockey, E. E.: Technic of selective systemic tracheobronchial drainage, Int. Surgery 47: 292 (1967).

Lari A. Attai, M.D. *The Bronx, New York.* I should like to ask Dr. Keenan what protocol he follows to prevent or minimize injury?

Dr. Keenan: In the past four or five years, we have ventilated almost 200 cases a year. We know of 3 patients who have had to have a resection of the trachea due to constriction. I am sure we have had more, but they have been lost to us. I think the incidence should be higher.

Dr. Attai: We are looking for the early recognition of these lesions. Do you bronchoscope these patients after prolonged intubation?

Dr. Keenan: Not routinely. If they have any evidence of difficulty or stridor, they are bronchoscoped. We have been using the fiberoptic bronchoscope as they are extubated with suction, and as we pull the scope back we look at the tracheal area. Since the stricture occurs over a period of time, they are usually lost to us. The current feeling is to use as low a pressure as possible in the cuff. There are now low-pressure cuffs available. Various attempts are being made to improve the cuff. I think we should do the best we can to keep the pressure as low as possible and the duration of intubation as short as possible. Once faced with intubation there are certain complications that are unavoidable.

Voice: How often do you suction, and how often do you change the tracheostomy tube?

Dr. Keenan: We aspirate as frequently as is necessary so that there is no accumulation of secretion.

Dr. Ankeney: I think it is important that the tracheal tube be changed once a day. But there is always a lot of accumulation of secretions behind them. There are new low-pressure tube bags that are supposed to obviate the problem of necrosis of the trachea.

Dr. Fitzpatrick: Dr. Shoemaker, do you have any view on routine tracheal tubes?

Dr. Shoemaker: We have maintained endotracheal tubes from one to seven days with the large floppy low-compliance bag on the endotracheal tube that we have used from the onset of our unit, even before they were commercially available; by direct laryngoscopy the trachea can be visualized. If the cords are red and ulcerated where they impinge on the endotracheal tube, the tube should be removed and be replaced by a tracheostomy. On the other hand, if everything looks satisfactory, the tube may be left in place. I think this is just a matter of reasonable judgment.

Dr. Bell: How long do you keep your tubes in your patients?

Dr. Shoemaker: One to seven days.

Dr. Keenan: You mean endotracheal tubes, not tracheostomy tubes.

Dr. Shoemaker: Yes.

Dr. Naclerio: Without changing the tube?

Dr. Shoemaker: No. The tube may be changed as frequently as needed. Approximately every other day or every third day, but not necessarily.

Dr. Bell: I was just going to say something I probably should not. We do not change our tubes every day. We go several days sometimes without changing them, depending on how things are going. If they have a lot of secretions, we may have to. If we can keep the tube clean with careful suctioning, good nursing care, lots of good humidification, and if we think it is clean, we leave it alone. We do deflate the cuff frequently and then suction. I think variables here are humidification of the inspired gases and the materials that the tracheostomy tubes are made of. I think some tubes are much less attractive to the concretions than the older type.

Voice: We recognize there are lots of problems with patients on ventilators. I am interested in what tricks you have in weaning these patients from the respirator and what criteria you use to decide when to take him off the respirator.

Dr. Fitzpatrick: Those are good questions. I would like a response from each of you.

Dr. Shoemaker: The criteria of putting a patient on a respirator are very well defined; the criteria for taking him off have nothing to do with the criteria for putting him on. The criterion of taking him off in my opinion is one and only one, namely, whether the patient is able to tolerate a trial off the ventilator. Some patients may tolerate being off the ventilator with oxygen pressure values as low as 40 or 50. If the patient has a chronic lung condition, it may be impossible to achieve anywhere near normal values. The main objective is to get them back to their preoperative state. The patient with chronic lung disease is able to tolerate more abnormalities than one with acute problems.

Dr. Keenan: Do you give them a trial on their own and measure tidal volumes and things of that nature? What parameters do you measure besides the blood gases?

Dr. Shoemaker: Yes, we do measure tidal volume frequency and blood gases, but the primary criterion is whether the patient can tolerate a short trial period off the ventilator without becoming hyperpneic, anxious, and distressed. Obviously if he becomes blue, gasps, and feels weak, he is still in respiratory failure. But in borderline cases the patient may just feel uncomfortable and tell you he wants to be put back on the ventilator.

Dr. Keenan: Yes, I think fatigue is an important factor. If the patient looks as though he is getting fatigued, I think he should be put back on. It's a "seat of the pants" decision very often in spite of the blood gases.

Dr. Shoemaker: Again, one of the best criteria is a trial period off the ventilator which is increased in frequency and duration as tolerated.

Dr. Keenan: Very often we will decide to put a patient back on the respirator although he has normal or fairly normal blood gases, but we see him tiring. I think with the possible exception of possible pulmonary disease, I do not think there is such a thing as weaning. I think either they are ready or not ready. It is a binary thing; you try them every day and one day they make it.

Dr. Shoemaker: In general, I think it is a good thing not to take them off the ventilator in the evenings or on the weekends unless there is adequate staff to look after them in case they get into trouble. Another important requisite is that the ventilator should be properly adjusted so that the patient has relatively normal carbon dioxide pressure values. If, for example, the Bird is set so that it triggers too easily, the hyperventilation may lower carbon dioxide pressures to below 30; when the patient is taken off the ventilator with low carbon dioxide pressure values, he may feel very uncomfortable. But the patient who is ready to come off of a properly controlled, properly regulated ventilator usually does not require weaning.

Dr. Fitzpatrick: I should like to ask the panel how they wean children with tracheostomy tubes? Do you plug the tubes, how do you get them out?

Dr. Keenan: It is very easy; ours all died. We have had very poor results with children. I wish I knew the answer.

Dr. Ankeney: As you know, in Great Orman Street they do a lot of pediatric cardiac surgery, and every baby with a transposition has a tracheostomy. They do a superb job of nursing care. I do not believe we should plug the tubes to test them. We have used the suture through the tracheostomy tubes so that we can change these tubes safely, and we change them every twelve hours. It is very important to keep the tube as clean as possible. Pseudomonas is a terrible infection, and many lungs are destroyed because of it.

Dr. Keenan: What kind of tube do you use?

Dr. Ankeney: We use a plastic cuffed tube. If we are going to ventilate, we should ventilate and not just assist.

Dr. Clauss: I worked for you, and you are a very stern man. I know that you are an examiner for the American Board of Surgery, and I think you would probably fail the fellows who give you answers such as Dr. Keenan and Dr. Shoemaker did. Taking somebody off a respirator has to be a teachable subject, or else we must all go to Dr. Shoemaker's hospital.

Dr. Ankeney: I more or less agree with what they said. Actually, you know you can go through the mechanics of doing blood gases and measuring tidal volume, but I think that what they say is perfectly true. The patient is going to tell you. Many patients who have been on a respirator get to like it, and they will ask to be put back on even after they do not need it. Sometimes you have to be tough with them, and you have to make up your mind they are ready to come off the respirator; but Dr. Clauss, I cannot be much more specific than that. I think that you have got to follow their blood gases and tidal volume and see how well they do. Watch for fatigue, and so on. I only make a plea for not having a tube cause the obstruction. With small tubes obstructing them, it might be better to take the tracheostomy tube out and let the patient breathe through the stoma rather than let him breathe through the tracheostomy.

Dr. Naclerio: Dr. Fitzpatrick, why do we not ask the members of the panel about what I mentioned, relative to the unreliability of central venous pressure determinations in patients receiving large amounts of noncolloid solutions, particularly those with major multiple body trauma, the elderly, and those with a preexisting pulmonary or renal disorder. I have seen pulmonary edema develop in a number of such patients without any elevation of the central venous pressure, and in each instance, I have been taken to task by a cardiologist who stated that the patient was in congestive heart failure, when the cause was purely one of fluid overload.

Dr. Bell: May I just comment on the previous topic first. There is one other thing that I think is helpful in weaning patients from the respirator. If a patient is on a volume respirator, how much pressure does it take to give him his tidal volume at normal flow rate? If it is high, the patient is not likely to survive off the volume respirator, and I think that it is helpful along with all the other things discussed in determining suitability for weaning. Another factor of importance is sedatives. Very often our house staff will take a patient off the respirator who has just had a dose of morphine or a dose of another sedative. The patient must be alert and responsive for weaning. You cannot just use blood gas studies. The respirator will give you normal blood gases, but you have got to judge how much work he has to use to breathe, and, if you can get some index of that, that is the key as I see it. I think your comments are well taken.

Voice: May I ask one question about weaning when a patient has psychiatric or psychosomatic problems. We have one patient with postoperative septal defect repair without any previous lung problems who starts off fine but then gets fatigued and becomes frightened.

Dr. Bell: If his inspiratory pressure does not show loss of compliance and he is not overloaded, he is not suffering from fluid overload or pulmonary hypertension. Then if his blood gases and other parameters are within normal limits, the problem can generally be handled with reassurance and medications.

Dr. Naclerio: Arterial gas studies are important in this type of patient. What are the gas values?

Voice: The gas figures are fine, and the gas studies are all right. The patient will be fine for the respirator for about two hours, then very suddenly he will build up his carbon dioxide almost precipitously, and then the oxygen pressure will go down to 40.

Dr. Ankeney: He has a problem.

Dr. Bell: He has a stiff lung.

Dr. Shoemaker: I should like to try to answer Dr. Naclerio's question, since I probably have oversimplified the problem by using central venous pressures, rather than left atrial pressures. When we started making these measurements ten years ago, this was all we had available. We presently used wedge pressures with a Swawn-Ganz catheter, but previously we had measured quite a few left atrial pressures in post-thoracotomy patients in whom we were able to put in left atrial catheters and then follow these pressures for three or four days.

Dr. Naclerio: Dr. Shoemaker, I do not think you answered my question. You are talking about left atrial pressure determinations, and I am talking about the unreliability of central venous pressure measurements in specific situations of fluid overload.

Dr. Shoemaker: The central venous pressure is the best measurement of the central venous pressure; but if it is interpreted as meaning something else, then you are correct. The measurement may be satisfactory, but the interpretation may be clouded by the 19 different influences that can affect the venous pressure. These include increased intrathoracic pressure, abdominal distention, high diaphragm, increased airway pressure from the ventilator, pneumothorax, hydrothorax, tracheal obstruction, intravenous administration of norepinephrine or other vasopressors, and so on. Not the least is the artifact of the plugged catheter, not being precise regarding the zero point and not flushing out the system adequately. Since there are many influences that can affect the central venous pressure, interpretation of a low central venous pressure as reflecting a low blood volume may be disastrously incorrect in many instances. Moreover, if the central venous pressure is used to infer the volume of blood on the venous side of the circulation, this interpretation may be equally incorrect. Thus, the measurement of venous pressure is a very explicit measurement of the venous pressure, but extrapolation of this measurement beyond pressures is often unwarranted.

Dr. Naclerio: I have seen a number of patients suffering from interstitial edema and frank pulmonary edema because of fluid overload in whom I made the diagnosis on the basis of roentgenographic evidence of patchy or diffuse ground glass opacification of the lung fields, auscultatory findings of pulmonary rales, and an increase in the pulmonary second sound.

Dr. Shoemaker: We all have. But nobody said that the venous pressure was directly equivalent to either a total or venous blood volume deficit, or solely to the left or right myocardial insufficiency or failure. The combination of pulmonary central venous pressure, blood volume, and cardiac output is much more revealing. Pulmonary edema may occur without an increase in central venous pressure as is well known, particularly in the patient with a low osmotic pressure, low serum albumin, and an overload of saline solutions.

Dr. Fitzpatrick: I think that is the point we are trying to make. All the residents now put a central venous pressure gauge in everyone, and put a great store in what it says. If it is under 15 or 13, everything is jolly; but it really is not the answer to all problems. It is a good central venous pressure, but it is not a left atrial pressure, nor is it an indication of blood volume.

Dr. Keenan: Several of these adult respiratory distress syndromes look for all the world like pulmonary edema. When the cardiologist who is accustomed to seeing pulmonary edema sees it, he will call it that. If, however, there is no good cardiac reason to call it that, he will say that he has too much fluid. I think that the diagnosis of fluid overload is made more often than is justifiable, and, in fact, my experience is that more people are underloaded than overloaded as far as fluids are concerned.

Dr. Shoemaker: I should like to ask Dr. Keenan what his choice for sedation is in a patient who is fighting the respirator and in whom he wants to establish good ventilation at a low rate.

Dr. Keenan: Ideally, I think morphine is a drug of choice, since it does depress respiration and produces a slower rate. Once in awhile we get into trouble with it with depressed blood pressure. I think this is because of fluid underload. This occurs particularly in the patient who has been in incipient respiratory failure for two or three days outside the hospital, and he tends to be very dry and needs fluid. If morphine is given, the patients may fall apart and need more fluid. Once in awhile we give curare to paralyze them, but I do not particularly like to do it.

Voice: What dosage of morphine do you give?

Dr. Keenan: Until the patient is quiet, I have given as much as 200 mg.

Voice: If the patients tolerate the first 15 mg.

they'll tolerate the rest, because they will fall apart on the first dose if they are going to.

Voice: On the question of weaning the patient, I'd like to make a point. I suggest taking the patient off the respirator for five minutes out of every hour for a day, and on the following day ten minutes out of every hour, and then fifteen minutes out of every hour, rather than taking the patient off the respirator say for four hours at a stretch until he is so tired that you have a terrible time getting him off again. I think with this regimen, particularly with a nurse sitting at the bedside reassuring the patient, the patient will get off the respirator very quickly.

Dr. Keenan: Amen, that is a very important comment.

Dr. Shoemaker: That's exactly what we have done. We have had them off for three hours at a time, and then have had to put them back again. There is such a thing as weaning, even though earlier somebody said that you don't have to wean.

Dr. Keenan: Yes. I was going to say that a certain amount of physical retraining of the respiratory muscles is necessary. In patients with a noncompliant lung that is very true, and that is the way to do it. But, if you have a patient with a normal lung it should be totally unnecessary.

Dr. Fitzpatrick: On behalf of the Society, I want to thank Dr. Ankeney, Dr. Bell, Dr. Keenan, and Dr. Shoemaker for being here today.

Drugs on the Horizon

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The Pharmaceutical Manufacturers Association estimates that the American pharmaceutical industry spent $566 million in 1971 on a worldwide basis on research for new drugs and extension of use of new drugs or new formulation of old drugs. Of this figure, $519 million was spent in the United States, and of this total $464 million were allocated to research activities within the firms, and $55 million constituted support of research in institutions primarily for clinical studies. These are sizable sums which are increasing yearly at the rate of about 10 to 13 per cent. Pharmaceutical manufacturers in other countries also spent substantial figures on drug research for the treatment and diagnosis of diseases in human beings, so that the total worldwide figure of research expenditure in this field may approach $1 billion.

The reasons for the increasing cost of drug research are manifold, but there are five areas worthy of mention. Salaries of research personnel have risen constantly. Animal toxicity experiments today must be carried out over a longer period of time than in the past. Costly and sophisticated equipment is used to a greater extent in animal and clinical research. A visit to the commercial exhibits held at the spring meeting of the Federation of American Societies for Experimental Biology, held in Atlantic City, demonstrated the increasing use of costly equipment. Computers and their expensive operation are entering research activities at an increasing rate. New equipment is constantly being offered, and few can withstand the attractiveness of a new apparatus.

In the clinical evaluation of drugs today, we demand well-controlled studies, which require sophisticated instrumentation to record drug reactions. Personnel are needed to observe the patient and read the recording of the instruments during therapy. Laboratory tests to follow the course of disease and the effect of drugs must be made in most instances. Absorption and excretion of drugs must be carefully observed. Clinical data records have become so numerous that only the computer with its added expense can cope with it.

The fourth reason is that the advances in science and our broadening knowledge of physiologic processes and of the action of drugs on such processes require that new drugs be studied from many more angles than was customary in the past. Considering how much time and effort is required before a new drug can be considered safe and effective for marketing, it is much more difficult today to find a new drug that will stand inspection than it was in the past. These considerations apply to all major drug-producing countries where government regulations are being tightened. Consequently, new drug introduction has slowed down on a worldwide basis.

There are always some people who think that all we have to do to solve a problem or to bring about improvements is to do research. They take it for granted that research can be nothing but successful. Part of this fallacy may be due to the fact that we hear only of research that produces all that is expected of it. The failures are rarely mentioned, although we should know more about them and learn from the experience gained. Nobody likes to think of the locked doors and the blind alleys research encounters and of the many disappointments that have to be expected for every drug studied. Thousands of compounds have to be synthesized and their actions observed in animals through screening tests. The Pharmaceutical Manufacturer's Association estimates that in 1970 about 704,000 such pharmacologic and biochemical tests were undertaken. Many drugs investigated clinically are discarded because expectations for efficacy are not fulfilled, or toxic reactions are observed. Sixteen of 40 such drugs which appeared promising in 1970 belong in this class.

Drug research is a constant whittling down process of the number of drugs under investigation. In our various drug information systems, we keep an accurate record of data published in the literature of drugs that are currently in the research stage. An analysis of these voluminous data provides a bird's-eye picture of what drugs are making progress on their road to the market place

This does not mean that no other worthwhile drugs are studied clinically at present, because data are not always published on all drugs investigated, and this analysis can be based only on published reports.

In which direction is drug research going, and what new drugs can the American physician expect to have at his disposal in the next few years? That is, if all continues to go well with the study of these drugs and if they finally pass the final hurdle of the Food and Drug Administration's approval.

At present the major research effort appears to be concerned with new forms of therapy for the following areas of human disorders: diseases of the nervous system, cardiovascular diseases, respiratory disorders, and aberrations of metabolism.

Diseases of nervous system

The first ataractic agent in the form of chlorpromazine became available in 1954 and was followed the next year by meprobamate. Since that time a total of 48 calming agents have been introduced of which 8 have been withdrawn, 11 are of minor importance, leaving 15 phenothiazine drugs and 14 tranquilizers with a different chemical configuration. The most successful of these have been the benzodiazepines developed by Hoffmann-La Roche. One might argue that there is no need for new tranquilizers. But unfortunately neither are the drugs we have available entirely satisfactory to aid all those with severe psychotic disorders and those with mild anxiety problems, nor do all patients respond in an equal fashion. Several drugs must be available for each patient, and there must also be a possibility to change medication when after prolonged therapy it may become ineffective; hence the need for continued drug synthesis in this area.

Three new psychotropic drugs are being studied today for the treatment of schizophrenia. Molindone (Moban) of Endo offers a new chemical structure. Investigations have been made primarily in patients with schizophrenia. Several investigators found molindone to be equal in effectiveness to trifluoperazine which, according to a study by Simpson, Amin, and Edwards,[1] is especially noticeable after four weeks of therapy. In this particular study psychotic target symptoms improved better with the phenothiazine compound, and anxiety and depression responded more readily to molindone. The usual adverse reactions respond to antiparkinsonism drugs. Pimozide (Orap), developed by Paul Janssen in Belgium, which is supported in its research by McNeil, also differs chemically from other compounds. Comparative studies with fluphenazine suggest equal potency in chronic schizophrenia. In a placebo-controlled study Huber *et al.*[2] suggest that "the improved 'sociability' aspect of pimozide treatment probably warrants further investigations."

Oxypertine, developed by Winthrop, may have special value in schizophrenic patients with anxiety neurosis. This was confirmed in a study by Hollister *et al.*[3] who found the drug to be contraindicated for paranoid schizophrenic patients. According to Neal, Collis, and Imlah[4] the effectiveness of oxypertine is equivalent to chlorpromazine. In medazepam (Nobrium) Hoffmann-La Roche presents another benzodiazepin derivative with promising usefulness in anxiety neuroses. Silverstone *et al.*[5] suggested that medazepam might be especially useful in daily office practice. Hartl[6] reported more than 60 per cent satisfactory results in 153 patients with vegetative dystonia and organic disease associated with psychiatric manifestations. There were no noticeable adverse reactions. Favorable results with medazepam are being reported from many countries.

Lorazepam, synthesized by Wyeth, belongs in the same category of antianxiety agents and has so far been marketed in six countries. The dose in milligrams is low, and reactive depressions appear to respond especially well to the drug. Comparison with diazepam in 574 patients carried out by Leube and Hoffkes[7] suggested equal effectiveness at lower milligram dosage. There was no muscle relaxation, and adverse reactions were minor.

Magnesium pemoline (Cylert, Abbott) has been tried for many years for the treatment of various conditions and may now find its greatest usefulness in the treatment of hyperactive children who also appear to respond to methylphenidate (Ritalin) and dextroamphetamine. Attempts to use these drugs to improve the learning task have not been too successful and are also difficult to judge.

Further attempts are being made to develop entirely new analgesic agents. Warner Lambert has come forth with tilidine which, according to Economou[8] may be effective in various dosage forms. Forty-four of 51 patients responded favorably, and their traumatic pain was relieved Propiram fumarate of Bayer, Germany, is currently studied at the Addiction Research Center in Lexington, Kentucky, for its addiction possibilities in comparison with other strong analgesics and narcotics. It is too early to draw any definite conclusions, but an abstinence syndrome sharing features of morphine and nalorphine could be precipitated.[9]

Boots, of England, has marketed the anti-inflammatory agent ibuprofen in various countries. Research in the United States is supported by The Upjohn Company. According to various investigators ibuprofen may prove usefu in those patients in whom salicylates are poorly tolerated and in whom an anti-inflammatory effect is desired. For inflammations of the vein tribenoside (Glyvenol, Ciba) is currently investigated. The drug was marketed in Germany and France a few years ago and is finding application as an adjuvant in phlebitis and related disorders.

Cardiovascular disorders

Promising results obtained with urokinase and streptokinase, given intravenously in the treatment of pulmonary embolism, are intensifying research with these drugs. Urokinase, supplied by Winthrop as Win-Kinase and also by Abbott Laboratories, was used in the cooperative study organized by the National Heart and Lung Institute of Bethesda, Maryland, covering 16 institutions. Although the mortality rate was about the same in urokinase-treated and in control groups, the relatively low mortality rate among patients with massive pulmonary embolism and shock (only 2 of 11 died) was noteworthy. All patients received heparin sodium and later oral anticoagulation after the infusion of urokinase was finished.[10] Research with streptokinase for intravenous infusion is supported by Hoechst Pharmaceuticals. The drug was developed by their German subsidiary Behringwerke, a well-known manufacturer of biologic products. This enzyme was used by Hume *et al.*[11] with promising results in patients with chronic occlusion or stenosis. Chronic arterial obstruction was effectively improved in certain instances. All of these conditions are difficult to treat, and only the expert can gradually evaluate what form of therapy holds promise.

The comprehensive studies by Freis[12] have called attention to the need for prolonged hypotensive therapy even of the mild forms of essential hypertension. The last important hypotensive drug introduced into therapy was methyldopa (Aldomet) in 1963, and the diuretics which also lower blood pressure, furosemide (Lasix) in 1966, and ethacrynic acid (Edecrin) in 1967. There are two new compounds which come from abroad that are under very active clinical investigation in this country. Clonidine (Catapresan, Boehringer) has been studied on a broad basis and was marketed in Germany in 1961; it has since become available on a worldwide basis. In an attempt to reduce blood pressure during labor in preeclamptic patients, Johnston and Aickin[13] recorded a rapid action of long duration with little postural effect on blood pressure. Several investigators found that the antihypertensive effect of clonidine is enhanced by concomitant administration of chlorthalidone, resulting in lower dosage requirements. The most prominent side effects are dryness of the mouth and drowsiness.

Bethanidine sulfate comes from the research laboratories of Burroughs Wellcome, England, and clinical studies in this country are supported by A. H. Robins. Callaway, *et al.*[14] suggested that bethanidine "should be a useful agent for rapid reduction of blood pressure in severe or malignant hypertension." Investigators appear to agree that bethanidine is of similar potency to other hypotensive agents. A preliminary report on the hypotensive effect of prazosine hydrochloride (Pfizer) which may be enhanced by combined administration with a diuretic was published by Cohen.[15] Possibility of interaction with drugs given for therapy other than hypertension should always be considered. These three new antihypertensive drugs offer additional approaches to the treatment of hypertension, but, like others, require careful supervision of the patient.

A whole group of antiarrhythmic drugs is currently under study. All are being subjected to careful clinical pharmacologic studies in regard to their effect on metabolism and cardiac function. Alprenolol (Aptin) comes from Astra in Sweden. The required dosage is small. Lemberg, Arcebal, and Castellanos[16] observed in 77 patients that alprenolol can be used in the treatment of tachyarrhythmias. The drug is given both orally and intravenously. Bretylium tosylate (Darenthin), also developed by Burroughs Wellcome in England, was found by Bernstein and Koch-Weser[17] to be "effective in the management of many patients with serious ventricular arrhythmias refractory to conventional drugs." The antiarrhythmic action of bretylium tosylate appears to differ from other similarly used agents, but the exact mode of action remains to be determined. The drug has been given both intravenously and intramuscularly. Pindolol (Visken, Sandoz) was studied in 27 patients by Aronow and Wyeyama[18] and was found to be "useful in the treatment of cardiac arrhythmias in properly selected patients." A low incidence of adverse effects is emphasized by all investigators. Opinion on the usefulness of adrenergic blocking agents in the treatment of angina pectoris is still divided, and more clinical evaluation is needed in this area.

Observations with the coronary vasodilator perhexiline maleate (Pexid, Merrel-National) in angina pectoris have been encouraging. In a placebo-controlled double-blind study in 12 patients Lyon *et al.*[19] observed a significant reduction in the frequency of anginal attacks and an improvement in exercise tolerance. The daily dose was 100 to 200 mg. twice a day. Nitroglycerin was given when needed. Grupp and Bunde[20] suggested that perhexiline maleate may have a direct effect on the myocardium.

Respiratory diseases

With the increase in air pollution the incidence of asthma and related diseases is increasing. Allergic asthma especially appears troublesome. Three promising drugs are currently studied in this area. Cromolyn sodium (Intal), developed by Fisons in England, has found wide acceptance in the many countries in which it has become available. Clinical investigations in the United States are supported by Fisons and Syntex. Fisons will market cromolyn sodium as Intal and Syntex under the name Arrange. The literature on this drug is rapidly increasing. The drug has been used prophylactically in predictable asthma of the seasonal type and as therapy in acute conditions. Children with allergic bronchial asthma appear to respond especially well. When steroids are required, their dosage may be reduced. The mode of action no doubt differs from those of other antiasthmatic drugs, but the mechanism is not as yet fully explainable.

Metaproterenol sulfate also known as orciprenaline (Alupent) was developed by Boehringer Ingelheim and belongs to the class of adrenergic bronchodilators. Because of a possible cardiovascular effect many carefully controlled clinical pharmacologic studies have been carried out with this drug which has been available in foreign countries for many years. Bogdan[21] observed in 46 patients that the drug has a significant influence on asthma in childhood. Tweel[22] found a dose of 0.3 mg. to be effective in bronchial asthma and chronic bronchitis in 10 patients with an age range of twenty to seventy. Albuterol, also known as salbutamol, originating with Allen and Hanburys of England was found by Milner and Ingram[23] to produce fewer cardiac effects than either metaproterenol or isoprenaline. Bronchoconstriction was equally relieved after each drug. Clinical research with albuterol in the United States is supported by the Schering Laboratories.

Hypoglycemic agents

Investigations with the low dosage and long-acting blood sugar-lowering drug glyburide (Daonil, Hoechst) are continuing. These investigations are carried out on a worldwide basis. Sahgal and Ahuja[24] report that 81 per cent of 100 patients with maturity onset type of diabetes were well controlled with this compound. Herrold, Tzagournis, and Skillman[25] found that glyburide enhances early release of insulin after oral glucose in most patients. Buformin (Silubin), a guanide derivative, has so far been studied primarily in Europe, especially in Germany where it was developed by Chemiewerk Gruenenthal. Several reports have also been published in Hungary. Its exact place in the treatment of diabetic patients remains to be established.

Anti-infective agents

The treatment of urinary tract infections is still not as satisfactory as it should be in spite of several important drugs developed specifically for this form of infection. There is still need for more effective therapy at a price the patient can afford, in particular when prolonged therapy is required. Oxolinic acid originated with the Warner-Lambert Research Institute and may offer additional therapy. Atlas *et al.*[26] prescribed oxolinic acid to patients with chronic or recurrent bacteriuria and observed that this agent has less tendency to evoke highly resistant mutants than other drugs. On the other hand, Lampe[27] reported that in 35 patients with urinary tract infections 10 of 36 initially sensitive organisms developed resistance. Escherichia coli were eradicated in 20 of 25 patients. Nausea and central nervous system stimulation may be observed in some patients. Two new cephalosporin derivatives are currently under clinical investigation: cephradine (Velosef, Squibb) and cephapirin sodium (Cephadyl, Bristol). One published study by Gordon *et al.*[28] suggests that this drug is similar to sodium cephalothin in antibacterial spectrum and pharmacology.

Metoclopramide synthesized by Delagrange, France, has had a checkered career but is now finding an indication for enhancing gastric emptying time and relaxing the pylorus which is especially useful previous to roentgenography of the gastrointestinal tract. Clinical studies are supported by A. H. Robins. The tranquilizer benzquinamide (Emeticon, Pfizer) also has found a new use as an antiemetic for postsurgical use. Favorable results were reported by Lutz and Immich.[29] Fenfluramine hydrochloride appears to find a special usefulness in obesity, because according to Hadler[30] this drug appears to be a safe anorexigenic agent without central nervous system-stimulating properties. Bennett *et al.*[31] found pancuronium bromide, developed by Organon in Holland, to be an "effective, relatively predictable, non-depolarizing muscle relaxant."

Conclusion

This review of drugs that are on the horizon and that eventually may become available for prescription by the American physician can only be sketchy. In many instances not sufficient data have been published to permit a critical consideration. In other instances information in the literature published by independent investigators is contradictory. Only coordinated and carefully tabulated studies submitted in New Drug Application to the Food and Drug Administration permit final judgment on the value of a drug. Unfortunately, such information is only rarely placed at the disposal of the medical profession but is kept in confidential files, a most unscientific procedure. The Food and Drug Administration has recently decided to release some of these data for public view. But it is not known at present in what form they will become available. It is certain, however, that only a few of the drugs currently in research offer significant advances in therapy. Some of these drugs may bring new mechanisms of action, attacking the disease from a different angle. The real novelty in drug research is the prostaglandins. But research in this area is so broad that it requires a special review to do it justice.

A review of journals concerned with clinical research reveals that today many studies are concerned with learning more about disease processes and their relation to normal physiology. Real progress in drug therapy can be expected only after we have learned more as to how disease and aging develop. Studies in molecular biology offer some promise. But these are long-range investigations, and we must be patient before success is achieved.

In the meantime all those concerned with drug production, distribution, and prescription can expect an increased utilization of drugs in therapy, irrespective of whether new and significant drugs are developed or not. There is a great need for palliative therapy. Curing disease with drugs is still difficult. The research community will also spend a great deal more effort on preventive medicine than it has in the past, and this is an area where the private physician can make a great contribution.

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Clinicopathologic Conference

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WILLIAM B. OBER, M.D., Editors

Beekman-Downtown Hospital
New York City
June 23, 1970

Conducted by JOHN T. FLYNN, M.D., and
BASIL MOUMGIS, M.D.

Discussed by DANIEL E. SCHAPIRO, M.D.

Lung Lesion with Progressive Neuropathy

Case History

Gulshan K. Sahni, M.D.: A sixty-seven-year-old white watchman was admitted for repair of bilateral inguinal hernia.

First admission (three months prior to final admission). The patient's general health had been good; a pilonidal cyst had been repaired surgically one year previously.

For many years the patient had had a chronic cough, and for four weeks prior to admission, the patient had developed anorexia but denied other gastrointestinal symptoms. Examination in the outpatient department had revealed an enlarged prostate and bilateral direct inguinal hernias; chest x-ray examination had revealed only hyperaeration in the upper part of the left lung. An intravenous pyelogram had shown a space-occupying lesion in the superior pole of the right kidney, suggestive of a renal cyst; the bladder shadow suggested prostatic enlargement with local calcific densities (Fig. 1).

Physical examination on admission to the hospital revealed a blood pressure of 140/100; his pulse rate was 88, respirations 10 per minute, and temperature 98.8° F. General examination revealed only scattered rales over both lung bases and the inguinal hernias; the prostate was moderately enlarged but smooth and without palpable nodules. The initial urinalysis revealed only 20 to 25 white blood cells and occasional urate crystals. The hemoglobin, hematocrit, white blood cell count, fasting blood sugar, blood urea nitrogen, serum creatinine, serum calcium and phosphorus, acid and alkaline phosphatases, total bilirubin, thymol turbidity, and cephalin flocculation test results were within normal limits. The bacterial count in the urine was below 1,000; culture showed only streptococcus and Klebsiella. Nephrotomogram confirmed the appearance of a right renal cyst. The electrocardiogram showed only ventricular premature contractions.

Sigmoidoscopic examination revealed a sessile, moveable 1- to 2-cm. polyp on the anterior wall of the sigmoid, 18 cm. above the anus. The patient underwent surgical correction of the inguinal hernias and a transurethral prostatectomy; pathologic examination of the resected prostate tissue showed only hyperplasia.

Later in his hospitalization, the patient revealed that he had been having increased difficulty in swallowing, with substernal discomfort and increased cough for about six weeks prior to the admission. About three weeks after admission, he began to complain of hoarseness. The otolaryngology consultant observed bilateral abductor paralysis of both vocal cords. Shortly thereafter the chest x-ray film revealed two small areas of parenchymal infiltration in the second and third anterior interspace on the right, although tomograms failed to identify these densi-

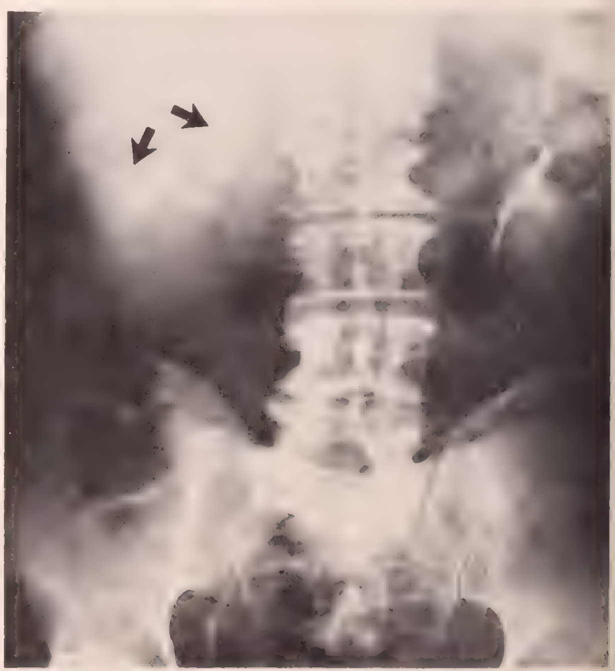

FIGURE 1. Intravenous pyelogram of right kidney showing distortion of upper calyces (arrows) compatible with renal cyst.

ties. A scan of the lungs showed decreased profusion of the upper lobe of the right lung and right apical region, possibly secondary to large emphysematous blebs (Fig. 2). The skull x-ray film and brain scan showed normal findings.

On his initial examination the neurologic consultant noted mild upper eyelid retraction, limitation of motion on the left tonsillar curtain, hoarseness of the voice, a tendency to choke while swallowing, and an absent gag reflex. These findings suggested a lesion of the lower medulla. Barium examination confirmed the tendency to regurgitate barium into the larynx and trachea. Chest roentgenogram six weeks after admission revealed no change from previous films. The patient was discharged on the fifty-second hospital day, at his own insistence.

Two weeks later the patient was readmitted for direct laryngoscopic examination, in view of persistent hoarseness. At that time the urinalysis showed a specific gravity of 1.015, 1 plus test result for albumin, innumerable white blood cells, and clumps of finely granular casts. The result of the chest roentgenogram was unchanged. Direct laryngoscopic examination revealed slight thickening of the vocal cords and limited mobility of the right vocal cord; the right arytenoid appeared to be completely immobile.

Following discharge, the patient continued to have difficulty in swallowing, with frequent regurgitation of food particles and liquids through the nose. With reduced food intake, the frequency of bowel movements decreased; the patient lost a total of 35 pounds in weight over a six weeks' period. He then voluntarily sought readmission.

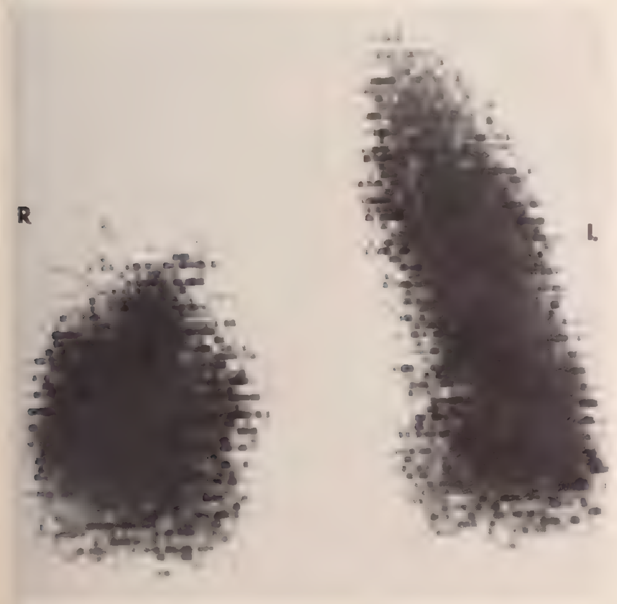

FIGURE 2. Scan of upper lobe of right lung showing decreased perfusion presumably due to emphysematous changes.

Final admission (six weeks following discharge). The patient was admitted complaining particularly of pain in the right side of the neck below the right ear and posterior to the angle of the mandible.

Physical examination revealed a blood pressure of 150/80; his pulse rate was 88 and respirations 16 per minute; his temperature was 97.4° F. The patient was pale, emaciated, and chronically ill. Examination of the lungs showed negative findings; there was marked clubbing of the fingernails and toenails. Neurologic examination revealed persistent hoarseness and dysphasia, weakness and atrophy, with fasciculations in the right trapezius and sternocleidomastoid muscles; the gag reflex was diminished on the right. A lesion in the caudad portion of the brain stem was suspected, possibly involving cranial nerves IX, X, XI, and XII.

The urinalysis revealed a specific gravity of 1.024, with a trace positive test result for albumin, innumerable white blood cells with clumps, and 15 to 20 red blood cells per high-power field. Urine culture showed 32,000 bacteria per milliliter, with Klebsiella as the predominant organism. The hemoglobin, white blood cell count, fasting blood sugar, blood urea nitrogen, total protein and albumin-globulin ratio, acid and alkaline phosphatases, and serum transaminase test results were normal. The sputum showed only alpha hemolytic streptococcus and Escherichia coli and negative results for acid-fast bacilli on smear and on culture.

The spinal fluid initial pressure was 70 mm. of water; the fluid was slightly blood-stained apparently due to trauma; the protein content was 95 mg. and glucose 72 mg. per 100 ml., and the chlorides 122 mEq. per liter. The spinal fluid cell count was 600 red and 98 white blood cells per cubic millimeter. A repeat lumbar puncture revealed an opening pressure of 220 mm. of water, with xanthochromic fluid containing 50 white and 650 red blood cells per milliliter; the protein content was 91 mg. and sugar 76 mg. per 100 ml.

The chest x-ray film showed only the previously described densities in the right lung field. An esophagram showed minimal aspiration of contrast material into the lungs; the result of upper gastrointestinal series was otherwise negative. There was advanced degenerative change in the middle and lower cervical segments of the spine with minimal indentation by osteophytes in the barium-filled esophagus. X-ray films of the skull revealed only sclerotic changes in the left mastoid region; a basal view of the skull showed no evidence of destruction in the region of the jugular foramina. An electroencephalogram revealed diffuse abnormalities without focal accentuation. The Tensilon test result was negative. A right brachial angiogram revealed only mild arteriosclerotic changes with incomplete narrowing and obstruction of the origin of the right internal carotid artery. The electrocardiogram findings were normal.

Ten days after admission neurologic examination revealed, in addition to the previous findings, considerable atrophy of the right pectoralis muscle and nystagmus on lateral gaze in both directions, with a fast component in the direction of gaze and most prominently visible in the abducting eye. Shortly thereafter hypoalgesia of the right side of the face in the entire distribution of the fifth right cranial nerve was noted with questionably similar changes in both hands. At this time acid and alkaline phosphatase levels, protein-bound iodine, erythrocyte triiodothyronine, VDRL results, serum calcium and phosphorus, total protein with albumin-globulin ratio, and transaminase levels remained normal. A repeat scan of the lungs showed decreased perfusion of the upper lobe of the right lung, presumably related to the emphysematous bullae; the nodular infiltrates in the upper and mid-lung fields of the right lung were unchanged. An angiogram of the right renal area showed a mass density in the upper pole of the right kidney, sharply demarcated, and not containing blood vessels. A repeat barium enema revealed a 5-mm. polyp on a pedicle in the sigmoid colon (Fig. 3).

A third lumbar puncture revealed an initial spinal fluid pressure of 120 mm. of water; the fluid was clear and colorless with a protein content of 115 mg. per 100 ml.; cytologic study was positive for tumor cells of undetermined origin. A nasopharyngeal biopsy revealed no evidence of malignant disease. Four sputum specimens for cytologic study gave negative results for malignant cells. A repeat electroencephalogram showed a diffuse abnormality, however, with considerable left-sided predominance and focal accentuation in the left parietal area, compatible with significant deterioration since the previous tracing. The urologic consultant felt that the renal lesion was most likely a cyst but commented that a kidney tumor can be associated with approximately 8 per cent of such cysts.

During the fifth hospital week the urine showed innumerable white and red blood cells. The fourth lumbar puncture showed normal opening and closing pressures, and the fluid was crystal clear with protein 170 mg. and sugar 68 mg. per 100 ml.; cytologic study gave no evidence of tumor cells.

The patient was treated with isoniazid, prednisone, kanamycin, aqueous penicillin, and later tetracycline; the urine thereafter showed negative results on culture. The sputum test result remained negative on smear and culture for acid-fast bacilli. However, the patient began to experience a persistent low-grade fever of from 100 to 101° F. and on several occasions coughed up bloody yellowish sputum. Repeated examinations of the lungs revealed rales only at the lung bases posteriorly. Marked weakness and muscular atrophy of the left arm gradually progressed. In the sixth hospital week the chest x-ray film suggested a pneumonic process in the posterior segment of the upper lobe of the right lung, with some possible widening of the upper mediastinum to the right (Fig. 4).

By the seventh week in the hospital, weakness and muscle wasting was noted in the area of the

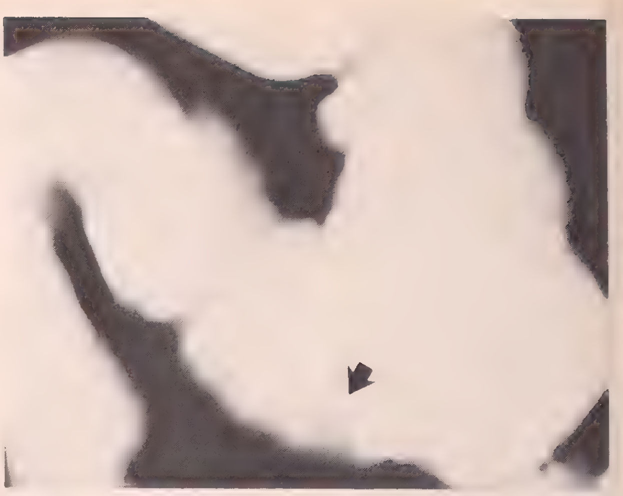
FIGURE 3. Roentgenogram of sigmoid colon showing small polypoid lesion (arrow).

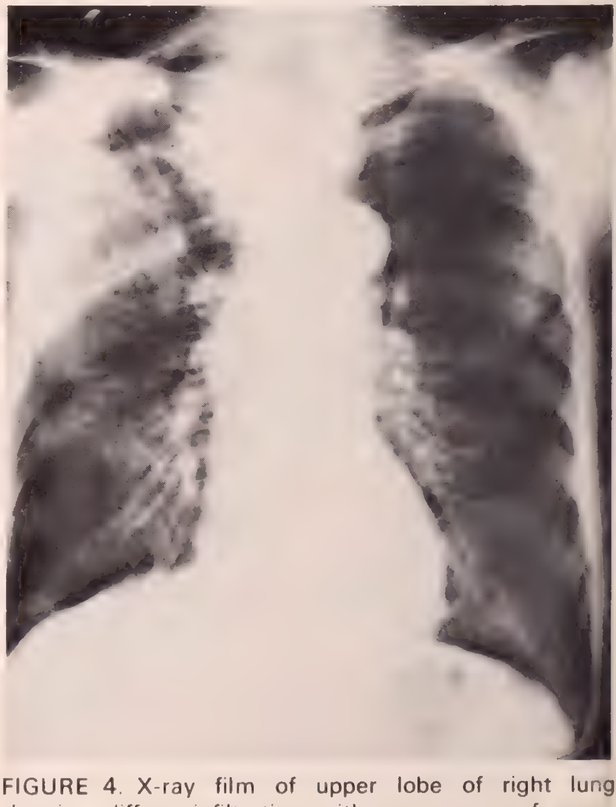
FIGURE 4. X-ray film of upper lobe of right lung showing diffuse infiltration with appearance of pneumonic consolidation and widening of upper mediastinum to right.

right foot; in addition it appeared that proximal muscles in all extremities had been undergoing gradual progressive wasting. Dysphasia and dysarthria persisted. Cell block on a centrifuged urine specimen showed no malignant cells; a repeat sputum test again showed negative results on cytologic study for tumor cells.

On the fifty-fourth hospital day, the patient was taken to the operating room.

Discussion

Daniel E. Schapiro, M.D.*: I would like to preface my discussion of this case by referring to the last three clinicopathologic conferences with which I have been associated at this hospital. They included a case of thrombotic thrombocytopenic purpura with gradual onset and prolonged course, a case of meningioma that bled precipitously on two separate occasions, and a patient with acute myelopathy due to emboli composed of fibrocartilage. If that experience is any criterion, then we must be prepared for the most unlikely diagnoses in this case.

I took the liberty of rewriting the protocol because of the sheer quantity of clinical data presented in the original form. In an attempt to select pertinent information from it, I put aside such items as hernias, prostatism, and edematous changes which seemed to be problems unrelated to this patient's death and to our considerations here.

In my revised history, the initial event takes place six weeks before the first admission here, with the advent of difficulty in swallowing. Nine weeks later, during the first admission, hoarseness appeared; thus the first neurologic symptoms were referable to the tenth cranial nerves. A probable site for a lesion causing an isolated palsy in the left recurrent laryngeal nerve in such a setting would be the mediastinum; but since both the right and left laryngeal nerves seemed to be involved, a lower medulla lesion is suspect.

In addition, at the time of the first neurologic consultation, nearby structures also appeared to be involved, particularly the seventh and ninth left cranial nerves. This clinical picture may be seen in posterior fossa lesions and is less specific for localization of a lesion than are isolated defects in ninth and tenth cranial nerves. Regurgitation and aspiration are revealed on the esophogram, indicating paralysis of the palate and impairment of the swallowing mechanism; an absent gag reflex was also described, further implicating the nerves arising from the lower medulla. The brain scan showed no intracranial mass, but this test has limited utility in determining the presence or absence of masses at the base of the brain or near major vascular structures.

Following the first hospitalization, the otolaryngologist confirmed the paralysis of the vocal cord. During the final admission, most of the pertinent neurologic data became evident, including lumbar puncture findings which revealed a gradually rising protein level in the spinal fluid, ultimately to 170 mg. per 100 ml., together with the presence of white blood cells. The first lumbar puncture revealed 500 to 600 red and 98 white blood cells per cubic millimeter. It was described as a traumatic tap, but the ratio of white to red blood cells indicates that their presence was not merely the result of the trauma of the puncture but probably reflected subarachnoid bleeding and a meningeal reaction.

During the final admission the appearance of nystagmus implicates functional disturbance of portions of the brain stem higher than was initially suspected. We now need to consider, in addition to a lesion of the lower medulla, involvement of the upper medulla or even the pons. The electroencephalogram showed a diffuse abnormality with accentuation in one hemisphere. Subsequently, anesthesia was present on the right side of the face, suggesting that the right trigeminal nerve was affected. The neurologic events seemed to be progressing at an accelerated pace; atrophy became evident in the muscles supplied by the accessory spinal nerves, later in the upper cervical, and ultimately in spinal motor-nerve distributions. There are no indications of long-tract involvement, such as pathologic reflexes or sensory levels on the body or lower extremities. The eventual neurologic status pointed to involvement of the cerebral hemispheres, brain stem, and cranial and spinal nerves.

Important information is the identification of neoplastic cells in the spinal fluid. This is a significant finding and indicates the presence of neoplasia involving the meninges and the ventricular or outer surfaces of the brain.

May we review the x-ray films?

Anthony Vasilas, M.D.: During the diagnostic evaluation prior to herniorrhaphy, the chest roentgenogram showed normal findings. The intravenous pyelogram revealed a space-occupying mass at the upper pole of the right kidney causing extrinsic pressure on the calyces (Fig. 1). The floor of the bladder was elevated, undoubtedly because of an enlarged prostate. The nephrotomogram also identified a sharply delineated mass in the upper pole of the right kidney, as did a selective renal angiogram. Because no abnormal vessels appeared to enter this large avascular mass, it was interpreted to be a renal cyst.

The first barium enema showed essentially negative results except for retention of feces, so polyps were not properly identifiable. The second enema study outlined a small 5-mm. sigmoid polyp, smooth, sharply outlined, and presumably benign (Fig. 3).

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The gastrointestinal series had to be done with the patient in the prone position. Patients who already have difficulty in swallowing find this position particularly distressing because they must suck the barium mixture up through a straw. This patient on two separate occasions aspirated barium into the trachea. The findings in the upper gastrointestinal tract, however, were negative.

The results of routine x-ray examination of the skull were within normal limits. There was calcification of the choroid plexus and of the pineal gland which was in its normal position. The sella turcica was normal, and there was no definite evidence of destruction of the base of the skull. Advanced osteoarthritic changes were noted in the cervical spine. A brain scan revealed a normal pattern, with no evidence to suggest a space-occupying mass; we saw the area of the torcular Herophili quite clearly, and it appeared to be normal.

The right brachial angiogram showed no displacement of vessels, no tumor stains, no advanced arteriosclerotic change in the carotid systems, nor in the vertebral-basilar system.

The series of chest x-ray films included normal findings on the initial film taken in the outpatient department, but a month later we had the impression of two ill-defined areas of nodular infiltration in the right lung; ten days later there was essentially no interval change. This worried us, because after reviewing the renal angiogram, we thought that the right renal lesion might represent metastasis. The mediastinum was not abnormally widened on these earlier chest films. The lung scan showed little or no radioiodinated albumin in the upper right lung field (Fig. 2). This was not likely to represent pulmonary infarction in the absence of an appropriate clinical history, but rather was probably due to large emphysematous blebs which were not defined on the regular chest films or tomography.

On the final admission, we noted a large area of infiltration in the upper right lung field where the nodular infiltrates were previously identified (Fig. 4). This lesion appeared radiologically to be pneumonic. The widened appearance of the superior mediastinum was much more pronounced than on any previous films. Two weeks later we still appreciated this infiltrate, appearing more solid than previously; again we felt it was pneumonic. On the final film, this "pneumonic" area presented numerous highlights suggesting necrotic breakdown and cavitation; the mediastinum on this last film, incidentally, appeared to be within normal limits. At that point, we also seriously considered alveolar-cell carcinoma of the lung with possible metastasis to the mediastinum.

With the history of cerebral findings and because alveolar-cell carcinoma so infrequently metastasizes to distant sites, we tended to discard that possibility. In view of the earlier tendency to aspirate foreign material into the lung, we strongly favored aspiration pneumonia, staphylococcic infection with breakdown, and abscess formation. Of course tumor can never be excluded as an underlying possibility.

John T. Flynn, M.D.: Dr. Vasilas, you say that the renal lesion was most likely a cyst, but in the past Dr. Shanzer and several others have commented on the fact that a certain percentage of renal cysts are associated with renal carcinoma.

Dr. Vasilas: There is a small percentage, from 3 to 10 per cent of cases, in which the radiographic findings are strictly those of a cyst, yet the wall of the cyst harbors adenocarcinoma.[1]

Basil Moumgis, M.D.: Of those last chest x-ray films, did the lateral view help in localizing the lung lesions?

Dr. Vasilas: Very little.

Dr. Flynn: You said that this patient had attempted to swallow barium and had inhaled it into the lung. Would you expect barium or other aspirated material to be deposited in the lung, creating some of these shadows in the upper right lung field, especially in emphysematous blebs?

Dr. Vasilas: The density of these lung lesions was not that of barium sulfate, and they appeared before the initial gastrointestinal series. If aspirated, barium sulfate never reaches the alveoli unless the lung is really flooded; it stays in the trachea and main bronchus and then is coughed up.

Dr. Schapiro: The diagnostic suspicions of the physicians caring for this patient included cancer, and their diagnostic efforts were directed toward locating its primary source. Later during the hospital course when the patient became febrile, other considerations were pursued, mainly tuberculous meningitis. However, in view of the long febrile course during which there was minimal meningeal cellular response, I do not think that tuberculosis should have been a primary consideration. One other possibility might be granulomatous meningitis caused by fungal infection, but no mention is made of cultures for fungus.

One cannot escape consideration of the significance of tumor cells in the spinal fluid, and that must be the primary direction of this discussion. This patient's neurologic involvement initially and primarily seems to have been peripheral, affecting the cranial and spinal nerves, probably indicating that the neoplastic disease was secondarily spread in the nervous system by way of the meninges. On rare occasions glial and meningeal tumors may disseminate through the meninges, but the statistical likelihood favors carcinomatosis arising from the lungs, from the stomach, or from the kidneys.[2] Melanoma also frequently metastasizes widely throughout the meninges. It is not possible to make a histologic diagnosis, but pulmonary neoplasm is the number one possibility. The x-ray studies showed a conspicuous pathologic condition in the kidneys, but renal neoplasm is less apt to metastasize widely to the meninges than are bronchial neoplasms. The most common non-neurogenic neoplasm to metastasize widely to the meninges is carcinoma of the breast, but this was a male patient with no obvious evidence of neoplasm in the breast.

My diagnosis is carcinoma of the meninges with primary site undetermined, probably bronchial. Carcinoma of the stomach, melanoma, and kidney neoplasms are possibilities. I do not think there was neoplasm in the substance of the brain, although there may have been implants on the brain stem and cerebral hemispheres. It is noteworthy that in cases of carcinoma of the meninges, only 30 per cent of patients show neoplastic cells in the spinal fluid.[3]

Dr. Flynn: When you mention carcinoma of the bronchus, you raise also the possibility of secondary syndromes that are not due to metastases but are probably humoral in character. Some of these syndromes include neurologic manifestations.[4] In this case we have only one cytologic report that showed positive findings of malignant cells; the other cytologic studies on the spinal fluid showed negative findings. Did this patient present neurologic symptoms and signs which would point definitely to metastases as their cause? Or could we consider his neurologic findings to be neuromyopathic manifestations of carcinoma of the bronchus and, hence, not related to metastases?

Dr. Schapiro: The neuromyopathic group of symptoms are considered to be remote nonmetastatic effects of cancer. A specific one seen in oat-cell carcinoma of the bronchus, known as Lambert-Eaton syndrome, is primarily a myasthenic condition. In our case, the cerebrospinal fluid abnormalities, pleocytosis, hemorrhage, and elevation of protein were indicative of an active process and are not present in so-called neuromyopathies due to carcinoma. Some of this patient's neurologic abnormalities, such as nystagmus and changes noted on electroencephalogram were due to central dysfunction. Finally we have cytologic evidence in the spinal fluid of direct involvement by tumor which we cannot ignore.

Dr. Flynn: Dr. Shanzer, suppose we never found the cells in the spinal fluid. Would you say that this clinical picture could be due to remote effects of primary neoplasm without metastases?

Stefan Shanzer, M.D.: This question occurred to me, but on a purely intellectual basis. When I first saw this patient, the most striking finding was profound atrophy of the trapezius muscle. This together with dysphagia did not fit the syndrome of neuromyopathy. Even later when the patient deteriorated, the sensory findings were never prominent, admittedly evident on the right side of the face but not in the extremities. The neuropathies which are remote nonmetastatic manifestations of carcinoma are primarily sensory syndromes, much more sensory than motor usually, and severe in intensity. In this patient we did not really consider that diagnosis seriously. His difficulty with swallowing, dysarthria, and atrophy of the muscles of the head and neck were really the most prominent neurologic findings.

This man had blood in his first spinal fluid specimen, which was attributed to trauma; however, there is no question that he actually had subarachnoid bleeding because the second spinal fluid was deeply xanthochromic. There is absolutely no doubt that the presence of blood was due to disease in the subarachnoid space, in this case neoplastic disease.

Stanley S. Yormak, M.D.: Cannot xanthochromia appear when the protein in the spinal fluid is high, in the absence of prior bleeding?

Dr. Schapiro: With only 170 mg. of protein in the spinal fluid, the presence of xanthochromic pigments probably would indicate that there has been prior bleeding. I would also draw attention to the ratio between red and white cells in the spinal fluid as being different from that of pure blood, indicating that this blood could not be due to a traumatic tap alone.

Dr. Flynn: When you speak of an involvement of the meninges, are you implying that the metastases are localized only to the meninges or that perhaps in addition you would expect the substance of the brain and of the spinal cord to be directly involved by metastases?

Dr. Schapiro: Neuropathologists have addressed themselves to that question and some believe that the central nervous system proper may be the original intercranial site and that spread to the meninges is secondary. However, this is difficult to know for certain. I do not think in this patient that pathologic study of the meninges, the brain, and the spinal cord would identify an area in the central nervous system in which metastasis might first have localized and from which meningeal involvement might then have spread.

Harold H. Coppersmith, M.D.: On his final admission there was marked clubbing of the fingers, of which no mention was made at the time of his first admission. The rapid progression of clubbing occurs more often with bronchogenic carcinoma than with other pulmonary lesions.

Dr. Moumgis: At one point, sigmoidoscopic examination showed a sessile polyp. Was there any clinical indication of malignant disease on that examination?

George Schreiber, M.D.: The polyp was actually a sessile, dark-red moveable lesion, about 8 by 5 mm., on the anterior wall of the sigmoid, about 18 cm. above the anus. It appeared to be benign, and I did not see any other lesion up to a distance of 25 cm.

Dr. Flynn: The patient was taken to the operating room for bronchoscopic examination. The immediate findings of that study will be mentioned later. The patient recovered from the procedure. During the remaining three and one-half weeks of his life, he was intermittently febrile to 102° F. Sputum culture showed predominance of Proteus mirabilis but no acid-fast bacilli. Crepitant rales persisted in both lungs, more on the right; during the ninth hospital week, cavitation developed in the upper lobe of the right lung. Radiation of the posterior fossa was initiated with a dose of 25 rads daily, ultimately to a total dose of 175 rads. However, his condition worsened, and he lapsed into coma with increasing shortness of breath and rales over both lung fields. On the eighty-first hospital day, his dyspnea became severe with tachycardia of 100 per minute; he died on the following morning.

Clinical diagnoses

1. *Meningeal carcinoma, of undetermined primary site, most probably bronchogenic, ? renal, ? rectal*
2. *Metastatic infiltration of cranial and spinal nerves*

Dr. Schapiro's diagnosis

1. *Carcinoma of meninges, primary site undetermined, probably bronchial in origin*

Pathologic discussion

Dr. Moumgis: At bronchoscopy a biopsy taken from the upper lobe of the right bronchus showed carcinoma; the bronchial washings taken from that site also contained malignant cells.

To set your minds at ease, at autopsy the kidney lesion was a 9-cm. benign solitary cyst at the upper pole of the right kidney.

The other findings included two abscesses in the upper lobe of the right lung, one on the medial aspect of the apex and the second on the anterolateral aspect. The prosector made a diagnosis of bronchogenic carcinoma only because he knew the findings of bronchial biopsy were positive; grossly the lung changes looked inflammatory. A tracheobronchitis was present; the left lung was essentially normal in appearance. There was some evidence of pulmonary emphysema. Microscopically the two lesions in the right lung, both of which grossly looked like abscesses, proved to be necrotic, inflammed masses of neoplasm which in many areas revealed adenocarcinoma and in others marked anaplasia (Fig. 5A).

In addition there was confluent bronchopneumonia with microscopic abscesses not related to tumor tissue; also present were a few foci of granulomata with foreign-body giant cells, apparently secondary to aspiration. Microscopically the hilar lymph nodes and peribronchial lymph nodes were involved with tumor. In retrospect, we thought that this was primarily adenocarcinoma and could well fit into the alveolar-cell carcinoma group, although we are not absolutely sure. He also had marked pulmonary fibrosis and emphysema with foci of so-called adenomatoid change.

The lesion in the lower sigmoid was a 2-cm. sessile polypoid tumor which proved to be adenocarcinoma (Fig. 5B and C). Although it was invading the bowel wall, there was no evidence of regional lymph-node metastases; the liver was not involved; and there were no metastases below the diaphragm. The question then arose as to whether or not the lung lesions represented metastases. On the basis of a difference in histologic pattern, even though the neoplasm in both lung and colon was adenocarcinoma, we felt that the colonic and pulmonary tumors were completely separate neoplasms. Favoring that opinion was the absence of regional metastases and other parenchymous metastases of the colonic tumor. Also because there was meningeal involvement which is rare in all tumors, the lung rather than the colon is a more likely primary source.

We found no intrinsic neoplastic lesion in the brain or spinal cord at any point. Grossly we did not appreciate any lesions of the meninges with the exception of an area of thickening and induration of the dura at the midthoracic level of the cord; microscopically this proved to be metastatic adenocarcinoma (Fig. 5D). Many sections were taken of the arachnoid, the pial membranes, and the dura. The cranial dura did not show evidence of neoplasm, but microscopically the leptomeninges showed extensive seeding of neoplasm. Sections of the cranial nerves were not obtained, but sections of the nerve roots at all levels of the spinal cord showed tumor invasion of the nerve sheaths and of the nerve bundles (Fig. 5E).

There were no other metastases elsewhere, except in the paratracheal and bronchial lymph nodes and in the pars nervosa of the pituitary.

Dr. Flynn: Dr. Schapiro is to be congratulated on his insistence that the report of neoplastic cells in the spinal fluid was truly significant. Actually such a finding is so rare an event that while considerable effort has been devoted in Europe to cytologic study of the spinal fluid, in the English-speaking countries only a handful of references can be found over the past ten years. Up to 1965 there were only approximately 260 cases reported in which the spinal fluid showed cells suggestive of neoplasm.[2] In most such instances at autopsy only the meninges seemed to be involved, not the substance of the brain and spinal cord.

The carcinomas most likely to cause extensive meningeal metastases tend to originate in lung, stomach, and breast, forming two thirds of the cases in which malignant cells are found in the spinal fluid. Other primary sites are colon, pan-

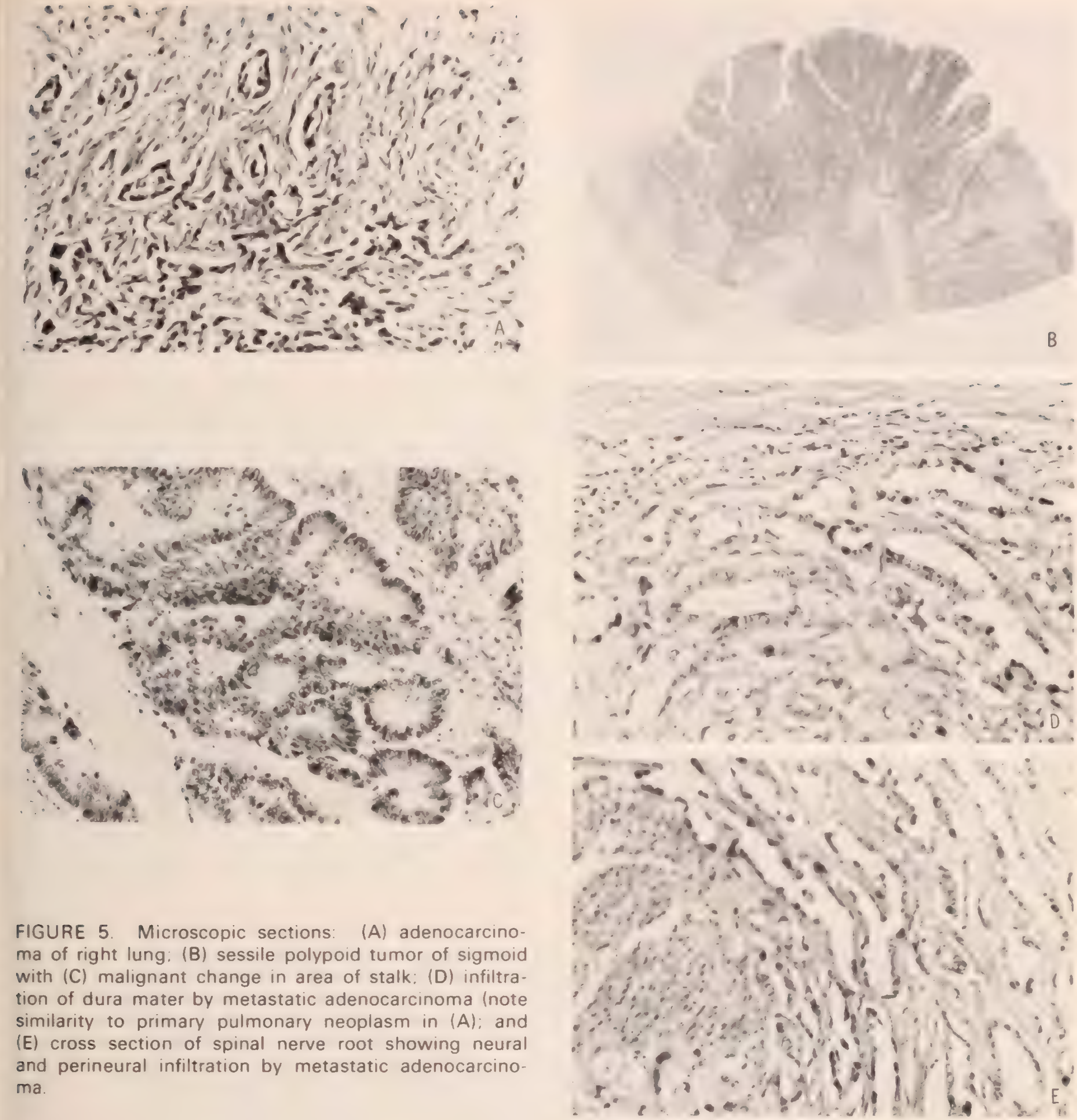

FIGURE 5. Microscopic sections: (A) adenocarcinoma of right lung; (B) sessile polypoid tumor of sigmoid with (C) malignant change in area of stalk; (D) infiltration of dura mater by metastatic adenocarcinoma (note similarity to primary pulmonary neoplasm in (A); and (E) cross section of spinal nerve root showing neural and perineural infiltration by metastatic adenocarcinoma.

creas, and kidney. Thus we had a fairly broad cross section of diagnostic possibilities in this case. Metastatic lesions from these sites are far more liable to disseminate through the meninges than do most tumors which originate in the nervous system itself.

With regard to remote manifestations of carcinoma of the lung, not due to metastases, the list includes Cushing's syndrome, hypercalcemia, excessive antidiuretic hormone effect, carcinoid syndrome, peripheral neuropathies largely sensory but also motor, cortical and cerebellar degeneration, myopathy, clubbing, pulmonary hypertrophic osteoarthropathy, acanthosis nigricans, dermatomyositis, migratory thrombophlebitis, nonbacterial verrucal endocarditis, anemia, and purpura.[4]

Dr. Schapiro: However, the tumors whose metastases are most apt to disseminate through the meninges and into the spinal fluid are two which arise in the central nervous system, that is, medulloblastoma and ependymoma. Statistically, these two tumors are rare; so that meningeal metastases, while they occur infrequently, are numerically more often found with common lesions, such as pulmonary neoplasm.

Abdu-Rauf Afonja, M.D.: There is a high frequency of this kind of invasion of the nervous system in Burkitt's lymphoma. A complication of that disease is the finding of tumor cells in the spinal fluid in 40 per cent of afflicted children at some time during the clinical course of the disease.[5]

Dr. Flynn: Meningeal leukemia, of course, is another condition in which cytologic evidence of the disease can be found in the spinal fluid.[6]

Dr. Shanzer: A bronchogenic carcinoma was removed from this patient's brother about a month prior to our patient's last admission to the hospital. Both smoked cigarets heavily.

Dr. Coppersmith: I wanted to mention one pitfall regarding the finding of malignant or neoplastic cells in the spinal fluid. One should not rest content unless he uncovers an evident source of the malignant disease. Every once in awhile tuberculous meningitis will give rise to atypical cells that may be mistaken for neoplastic cells. The pitfall, of course, is withholding treatment for acid-fast disease when one has a presumptive diagnosis of cellular carcinoma.

Dr. Flynn: I was interested in the statement that neuromyopathic syndromes in carcinoma of the lungs are not necessarily progressive nor permanent.[4] From time to time such symptoms may fluctuate in severity or undergo a complete remission, even though the primary neoplasm itself continues to spread. Apparently the tumor may lose in whole or in part its capacity to produce whatever humoral substance is involved.

Final diagnoses

1. *Adenocarcinoma of right lung, with metastases to regional lymph nodes, meninges, spinal nerve roots, and pituitary*
2. *Polypoid adenocarcinoma of sigmoid colon, without remote metastases*
3. *Pulmonary fibrosis and emphysema*
4. *Bronchopneumonia*
5. *Benign cyst, right kidney*

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Electrocardiograms of the Month

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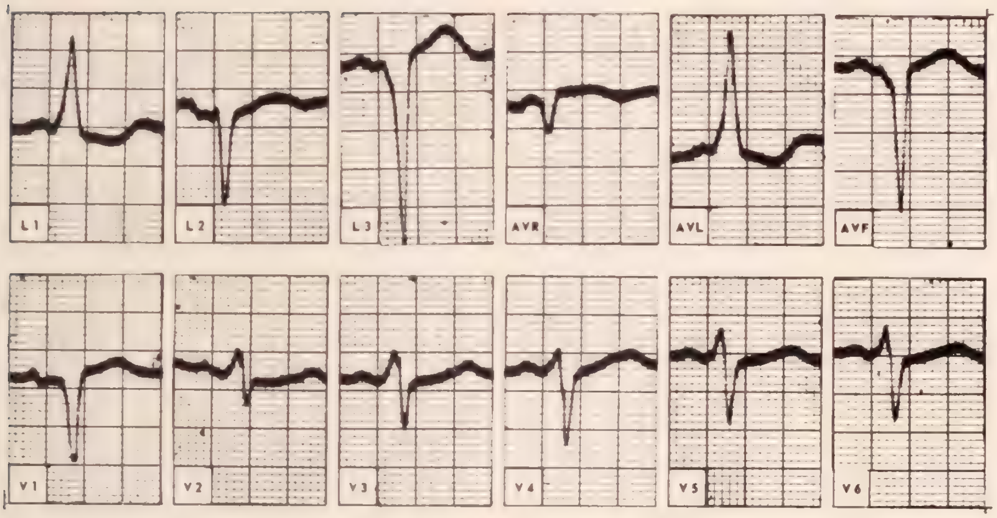
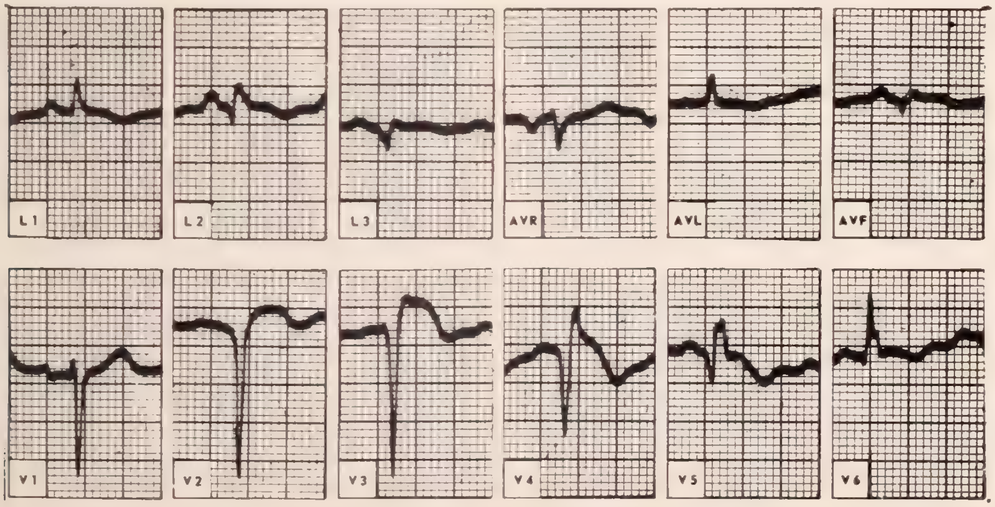


QUESTION 111. The patient was an asymptomatic sixty-year-old man who had been told of electrocardiographic abnormalities following a routine examination. What is the interpretation?



QUESTION 112. What is the interpretation of this electrocardiogram? The patient was a fifty-six-year-old man admitted to the hospital with recurrent chest pain. The present electrocardiogram is unchanged from a tracing taken one month before.

ELUCIDATION

Question 111. The rhythm is sinus rhythm. In leads I and aVl, the P-R interval is very short (0.10 second), and the QRS complex has a slurred initial component. The P-R interval in V_1 appears longer, since the initial portion of the QRS in this lead is isoelectric. The combination of a short P-R interval, QRS duration of 0.14 second, and initial slurring of the QRS complex is characteristic of the Wolff-Parkinson-White syndrome. Such patients, while often suffering from recurrent arrhythmias, may be completely asymptomatic.

Question 112. The rhythm is regular sinus rhythm with S-T elevations in leads I, II, III, aVf, and V_2 to V_6. T is inverted in these leads. There is an abnormal Q wave in leads II, III, aVf, V_5, and V_6. In leads V_2 to V_4 there is a QS pattern. The S-T segment is bowed upward and elevated in leads I, II, V_2 to V_5. These abnormalities are secondary to multiple infarctions. Since the tracing is unchanged from previous records, recent infarction cannot be diagnosed from the electrocardiogram. Patients with persistent patterns of abnormal Q waves with elevated S-T segments often have a ventricular aneurysm.

Clinical Anesthesia Conference

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Allergic Reaction to Succinylcholine

Allergic or anaphylactic reactions are rarely seen during general anesthesia. The following case illustrates such a reaction to succinylcholine.

Case report

An eleven-year-old girl weighing 110 pounds was admitted to the hospital for excision of a lymph hemangioma of the lower lip. History, physical examination, and laboratory findings were within normal limits.

Preoperative medication consisted of 75 mg. pentobarbital and 0.3 mg. atropine sulphate given intramuscularly. Anesthesia was induced uneventfully with nitrous oxide-oxygen and halothane. The percentage concentration of nitrous oxide was 50 and halothane 2. Succinylcholine, 30 mg., was injected intravenously and an endotracheal tube inserted. Following this the face, neck, and shoulder were covered by a raised erythematous rash which became more edematous during the next five minutes. All vital signs remained stable, and there was no evidence of bronchospasm. The surgical procedure was postponed. The edema gradually subsided over the next several hours, and the child was discharged from the hospital with a note from the anesthesiologist stating she was allergic to succinylcholine.

Approximately one year later the child returned to the hospital with a lesion in her groin. All other test results were negative, and her mother showed the anesthesiologist the previous note concerning the allergic response. The child was anesthetized with nitrous oxide-oxygen and halothane, and the surgical procedure was uneventful. It was decided to test the child's skin with commercial succinylcholine, pure succinylcholine, and saline, to ascertain the validity of skin testing in detecting allergic reactions. The child showed a marked urticarial reaction with redness, flare, and pseudopod formation to both succinylcholine preparations and no response to the saline.

Because of the difficulty in interpreting skin reactions and the high incidence of false positive reactions, the following study was made. Twenty-five patients were skin tested with (1) commercial succinylcholine, (2) pure succinylcholine, and (3) placebo, under both general and local anesthesias. There was a high incidence of the triple response occurring in most patients to both succinylcholine preparations, but no patient showed as marked a response as did this child. There were no positive responses to the placebo.

Comment

This case illustrates an uncommon skin reaction to the muscle relaxant succinylcholine. Hypersensitivity to succinylcholine consisting of allergic skin reaction, bronchospasm, tachycardia, and hypotension have been reported.[1-6]

Our case confirms previous observations of the difficulty in applying and interpreting skin testing routinely, to detect allergic manifestation and prevent similar anesthetic complications.

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VENTRICULAR ARRHYTHMIA

Sign of myocardial perforation by transvenous pacemaker electrode

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Implantation of a transvenous electrode pacemaker has become a well-established procedure in the treatment of patients with complete heart block and Adams-Stokes syndrome. Perforation of the heart by the electrode is not an uncommon complication. Most frequently, perforation by the electrode pacemaker is discovered through loss of pacing.[1-5] by roentgenographic demonstration of a change in the position of the tip of the electrode,[1,6] or as an incidental finding at the time of surgical procedure.[1,7] Occasionally, the perforation may be accompanied by signs of cardiac tamponade.[6] Sometimes the perforation is diagnosed by the contraction of the diaphragmatic muscle or the arm synchronous with the pacemaker impulse.[8-10]

Recently, we have encountered a case where perforations of the heart by the pacemaker electrode were present with multiple ventricular premature beats and recurrent ventricular fibrillation.

Case report

An eighty-three-year-old white, hypertensive woman had a history of one "coronary" six years before she was admitted to Mercy Hospital for the first time on April 23, 1969, because of dizziness of two weeks' duration. Her heart rate was 48 per minute. The electrocardiogram on admission revealed complete heart block. The patient was treated with isoproterenol infusion and atropine with less than adequate response. Under fluoroscopy, a temporary transvenous bipolar pacemaker electrode was inserted via the right external jugular vein and positioned at the outflow tract of the right ventricle. The electrode was connected to an external demand pacemaker (Medtronic), set at a rate of 60 per minute with complete ventricular capture.

Approximately twelve hours later, it was noted that the pacemaker electrode failed to pace. A roentgenogram of the chest at this time revealed that the tip of the electrode was dislocated and had slipped into the right atrium. The tip of the pacemaker electrode was repositioned into the apex of the right ventricle with complete capture. However, twenty-four hours after repositioning, multiple ventricular premature beats appeared. A single intravenous injection of 50 mg. of lidocaine hydrochloride (Xylocaine) followed by continuous intravenous infusion of lidocaine hydrochloride failed to suppress the ventricular premature beats. Attempts to suppress the ventricular premature beats by increasing the pacing rate up to 130 per minute were unsuccessful.

Serial chest roentgenograms revealed some changes in the position of the electrode in the heart (Fig. 1). Electrocardiography revealed complete reversal of the pacing pattern from a right ventricular cavity (left bundle branch block) to a left ventricular cavity pattern (right bundle branch block) (Fig. 2). The pacemaker electrode was thought to have perforated through the interventricular septum. Under fluoroscopic control, the tip of the electrode was withdrawn slightly and repositioned into the apex of the right ventricle with return to the previous pattern in the right ventricular cavity.

Thereafter the pacemaker captured completely, and there was no recurrence of ventricular premature beats. However, complete heart block recurred whenever the demand pacemaker was turned off.

On May 2, 1969, under fluoroscopic control, a permanent transvenous bipolar electrode was inserted via the left subclavian vein, and the temporary pacemaker was then removed. The tip of the permanent pacemaker electrode was placed into the apex of the right ventricle. The electrode was

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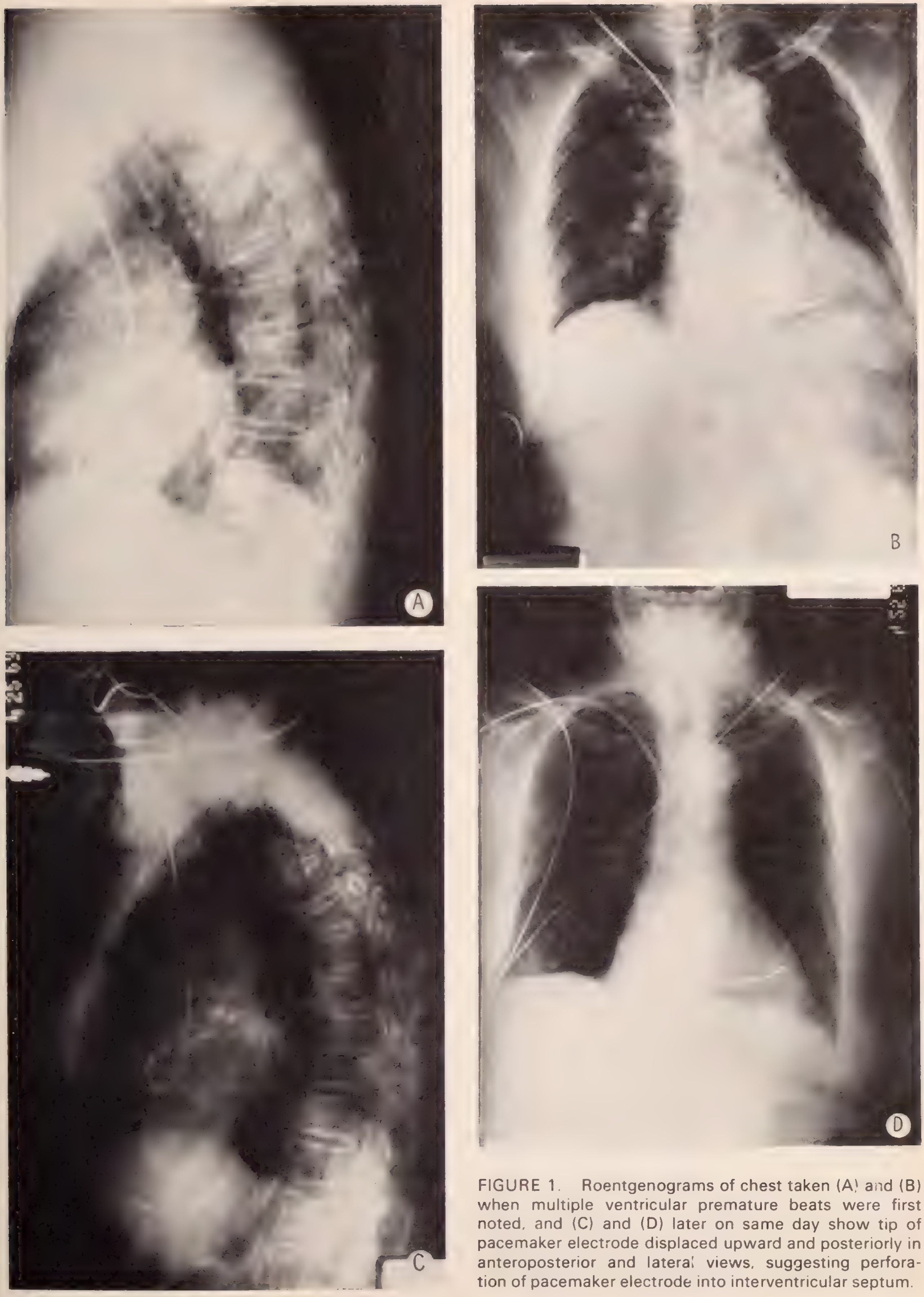

FIGURE 1. Roentgenograms of chest taken (A) and (B) when multiple ventricular premature beats were first noted, and (C) and (D) later on same day show tip of pacemaker electrode displaced upward and posteriorly in anteroposterior and lateral views, suggesting perforation of pacemaker electrode into interventricular septum.

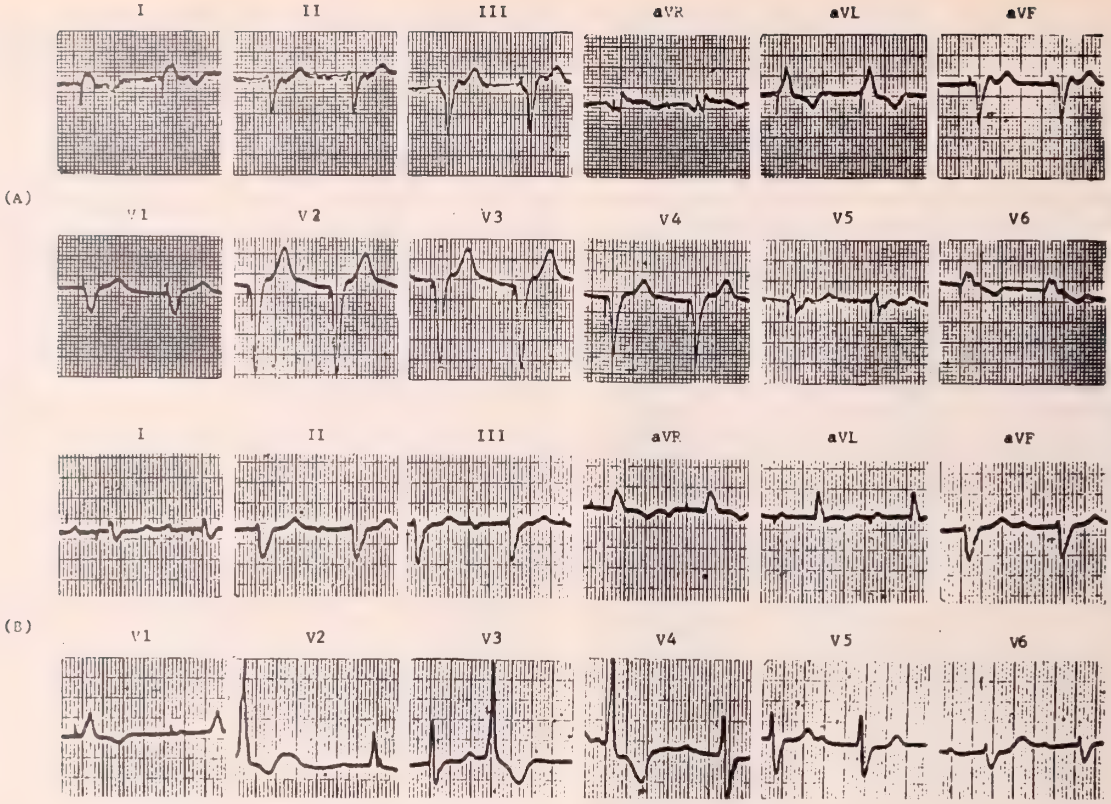

FIGURE 2. Electrocardiograms showing (A) right ventricular pacing showing pattern of left bundle branch block follows pacer artifact; (B) after transvenous pacemaker electrode perforated into interventricular septum showing ineffective pacing and development of pattern of right bundle branch block, and multiple ventricular premature beats.

connected to a Chardack-Greatbatch demand pacemaker, which was implanted into a left subpectoral pocket. The demand pacemaker was set at a rate of 60 per minute and was capturing completely. No ventricular premature beats were noted.

The patient's postoperative course was uneventful, and she was discharged from the hospital on May 11, 1969.

The patient was readmitted to Mercy Hospital on August 12, 1969, because of transient episodes of rapid and irregular heart beats with recurrent dizziness. During the interim, she had been well.

On admission her electrocardiogram revealed a sinus rhythm with first-degree atrioventricular heart block, multiple multifocal ventricular premature beats, and incomplete capture by the demand pacemaker. A roentgenogram of the chest taken on admission revealed no significant change in the position of the electrode tip. Administration of quinidine sulfate, 200 mg. four times a day, nearly abolished the ventricular premature beats. On the fourth hospital day, the patient suddenly exhibited ventricular fibrillation which responded promptly to direct-current countershock with restoration to normal sinus rhythm. Multiple ventricular premature beats continued, requiring continuous infusion of lidocaine hydrochloride solution, 4 mg. per minute.

During the next twelve hours, the patient experienced two more episodes of ventricular fibrillation, responding promptly to direct-current defibrillation without any neurologic sequelae. The demand pacemaker continued to capture completely. Roentgenograms of the chest revealed displacement of the electrode tip, suggesting another perforation of the heart by the pacemaker electrode (Fig. 3). Because of the presumptive diagnosis of electrode perforation with serious cardiac arrhythmia and the rapidly deteriorating condition of the patient, it was decided to perform an emergency replacement of the transvenous endocardial pacing electrode with epicardial electrodes as a life-saving measure.

At the time of thoracotomy, the patient was found to have approximately 50 ml. of blood in the pericardial cavity. The tip of the electrode was seen protruding through the wall of the apex of the right ventricle. This electrode was removed and the right ventricular puncture sutured. Before the epicardial electrodes were implanted, the patient had another episode of ventricular fibrillation which responded promptly to direct-current defibrillation. The patient tolerated the operation surprisingly well, and postoperatively the epicardial electrodes were capturing completely. There were no recurrences of ventricular premature beats or ventricular fibrillation.

Unfortunately, on the second postoperative day the clinical symptoms of abdominal aortic occlusion accompanied by rapid cerebral deterioration developed in the patient. Permission for further surgical intervention was refused. Her general condition continued to deteriorate, and she died eight days after implantation of the epicardial electrodes. Permission for postmortem examination was refused by the family.

Comment

Perforation of the heart is not an uncommon complication with the use of transvenous pacemaker electrode. The incidence of perforation by the pacemaker electrode varies from 0 to as high as 20 per cent in the literature.[3,11-14] These discrepancies are probably due to the different type of electrodes used or, perhaps, to failure to recognize the perforation. Fort and Sharp[1] reported 2 cases of asymptomatic perforation of the heart which were discovered as an incidental finding at thoracotomy. The diagnosis of electrode perforation of the heart sometimes requires a high index of suspicion. Serial electrocardiograms and roentgenograms of the chest with posteroanterior and lateral projections or even fluoroscopy may be needed to confirm the diagnosis.

In the majority of cases reported, perforation of the heart was discovered when the pacemaker was capturing intermittently or failing to capture completely.[1-5] However, uninterrupted ventricular capture does not necessarily rule out electrode perforation.[7] In a few cases, the perforations were reportedly diagnosed by the contraction of the arm or the diaphragmatic muscle synchronous with the pacemaker impulse.[8-10] Perforation into the interventricular septum by the electrode usually can be suspected by the change in the electrocardiographic pattern. Stillman and Richards[15] reported the diagnosis of perforation of the interventricular septum by the change in the pattern of depolarization on the electrocardiogram from a right ventricular cavity pattern (left bundle branch block) to left ventricular cavity pattern (right bundle branch block) (Fig. 2).

It is a common experience during cardiac catheterization that passing a catheter into the right ventricle frequently evokes ventricular premature beats, ventricular tachycardia, and even ventricular fibrillation. The presence of ventricular premature beats has been noted frequently in patients with a transvenous electrode pacemaker, and ventricular fibrillation has been reported to be the cause of death in patients with transvenous pacing.[6,16] However, Harris *et al.*[16] found no electrode perforation of the heart in 3 of his patients at postmortem examination, and all were found to have severe myocardial disease or rheumatic carditis. It was postulated that the combination of myocardial disease together with ectopic rhythms may have contributed to the occurrence of ventricular fibrillation when the pacemaker impulse fell during the vulnerable period of an ectopic beat (R on T phenomenon). Nevertheless, sudden development of frequent ventricular premature beats and recurrent ventricular fibrillation in

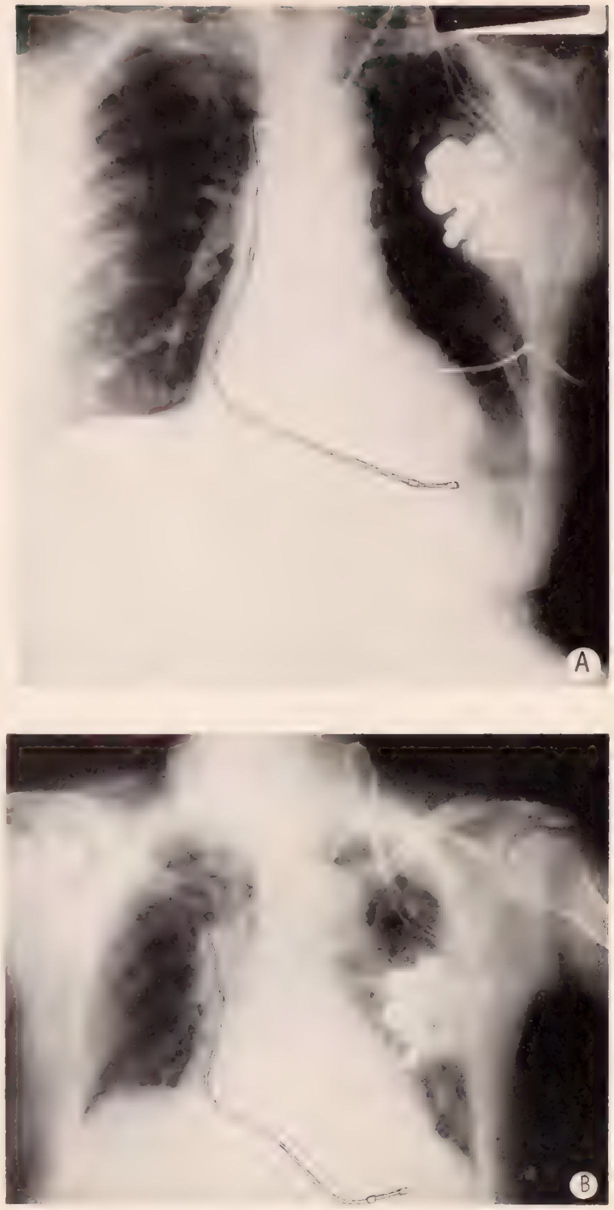

FIGURE 3. Roentgenograms of chest. (A) On second hospital admission compared with (B) four days later showing some displacement of tip of electrode, suggesting perforation of apex of right ventricle (outline by artist).

patients with transvenous pacing should alert one to the possibility of electrode perforation of the heart, as reported in this case.

Recognition of electrode perforation of the heart is important because perforation is a potentially lethal complication. Perforation of the heart may be accompanied by cardiac tamponade, and the patient may die from ventricular fibrillation or from recurrent Adams-Stokes seizures as a result of failure to pace.[6] If the perforation is recognized early, the treatment usually is withdrawal of the pacemaker electrode and repositioning the tip of the electrode. Closure of the perforation of the heart may be done if the perforation is discovered at thoracotomy.

In patients with recurrent perforation of the heart by the transvenous pacemaker electrode, implantation of epicardial electrodes may be attempted if the patient's general condition warrants it.

Summary

A case of recurrent perforations of the heart by the transvenous pacemaker electrode is reported. These perforations induced multiple ventricular premature beats and recurrent ventricular fibrillation. Other diagnostic clues for recognition of perforation of the heart by the pacemaker electrode are discussed. Sudden development of ventricular arrhythmias, such as multiple ventricular premature beats and ventricular fibrillation in a patient with transvenous pacing should alert one to the possibility of perforation of the heart by the electrode, whether the pacing is uninterrupted, intermittent, or completely ineffective.

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PEDIATRIC NURSE PRACTITIONER

Analysis of potential training and utilization in New York State*

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For the past six years, much has been written and discussed concerning various types of "physician expanders" who might be utilized to meet the needs and increased demands for health services. The allied health worker has been purported to be an answer to the personnel shortages in our health delivery system. In the field of pediatrics, the pediatric nurse practitioner has been advanced as the logical professional to fill the gap in the delivery of health services to children.

It is the purpose of this report to present data on the potential training and utilization of pediatric nurse practitioners in New York State, to draw conclusions that have implications for the entire nation, and to suggest ways in which we might proceed in closing the gap between our expressed need and our actual capability for training pediatric nurse practitioners.

Health care crisis

There is no doubt that this country is facing a growing crisis in health care. The crisis is due to a rapidly growing population; a decrease in the relative number of physicians delivering primary health care; an increased demand for medical services, independent of the population explosion, due to (1) an increased awareness of the populace of the advantages of comprehensive, preventive, and continuity health programs, (2) its urbanization, and (3) its increased ability to pay for medical care; and the expansion of medical knowledge resulting in an increasing number of treatable diseases and survival rates for diseases that require more maintenance health care.

Those people involved in the health of children are particularly concerned.[1-4] The health of our children has become an individual and national priority.[5] The pediatric age group currently constitutes 25 per cent of our population, and its numbers will reach 76 million by 1980.[6] Although the number of practicing pediatricians is growing, the number of general practitioners is decreasing so that the number of primary care physicians available for children, particularly for those living in rural and inner city areas, expressed in physician to patient ratios is falling.[7] In 1930, the average child made two physician visits. By 1967, this number had risen to five.[8]

There have been many solutions to the crisis advanced, and considerable controversy exists among medical leaders, health planners, and policy makers as to which of these should be implemented. The four general solutions are: population control, increasing the number of practicing physicians, rationalizing the health services rendered, and altering the health delivery system to increase its efficiency. These solutions aim at reducing or controlling costs as well as increasing access to high-quality health care.

In this report, we will be concerned only with the solutions of rationalization and efficiency. Group practice arrangements including prepayment and health maintenance organizations; use of automated methods in diagnosis, testing, and medical record keeping; and utilization of the allied health professions have been offered as the best means of increasing the efficiency and rationalization of the system.[9-30]

Allied health professionals

There is much confusion concerning the term "allied health professional." It has a variety of meanings to physicians, planners, and the public. It will be useful to review here the various types of allied health professionals currently under discussion.

Physician assistants. The National Academy of Science in its report *New Members of the Physician Health Team: Physician's Assistants*[31] lists three categories of physician's assistants that require one to four years of training. They vary in their scope of function and responsibility on the basis of the content and duration of their training

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and on their experience. The type A assistant represents a new allied health professional. Types B and C do not.

Type A assistant. The type A assistant is capable of approaching the patient, collecting history and physical data, organizing these data, and presenting them in such a way that the physician can visualize the medical problem and determine appropriate diagnostic or therapeutic steps. He is also capable of assisting the physician by performing diagnostic and therapeutic procedures and coordinating the roles of other, more technical, assistants. While he functions under the general supervision and responsibility of the physician, he might, under special circumstances and under defined rules, perform without the immediate surveillance of the physician. Thus, he is distinguished by his ability to integrate and interpret findings on the basis of general medical knowledge and to exercise a degree of independent judgment.

Type B assistant. The type B assistant, while not equipped with general knowledge and skills relative to the whole range of medical care, possesses exceptional skill in one clinical specialty or, more commonly, in certain procedures within such a specialty. In his area of specialty, he is less qualified for independent action. An example of this type of assistant might be one who is highly skilled in the physician's functions associated with a renal dialysis unit and who is capable of performing these functions as required.

Type C assistant. The type C assistant is capable of performing a variety of tasks over the whole range of medical care under the supervision of a physician, although he does not possess the level of medical knowledge necessary to integrate and interpret findings. He is similar to a type A assistant in the number of areas in which he can perform, but he cannot exercise the degree of independent synthesis and judgment of which type A is capable. This type of assistant would be to medicine what the practical nurse is to nursing.

The Medex (Medical Expander) program, which trains ex-medical corpsmen to assist the physician, requires three months of formal training followed by twelve months of preceptorship with a practicing physician.[32] Whether the end-product is a lesser type A assistant or a higher type C assistant is a question that leads to further confusion in classification.

Pediatric allied health professionals. There have been two types of allied health professionals developed for utilization by pediatricians. The concept and the pilot training programs for each were developed at the University of Colorado under the direction of Henry Silver, M.D.

The child health associate.[33] Essentially, the child health associate is a type A physician's assistant. The training consists of two years of undergraduate college work similar to a premedical course followed by two years of study in basic and clinical sciences and one year of internship at a medical center. The graduate would be able to care for almost all the problems of well children and most of the common disease states. Within established limits, the associate would be qualified to diagnose, counsel, and prescribe in both health and sickness under the supervision of a pediatrician.

This program was initiated in 1969 with 9 entering students. There are four somewhat similar programs currently in operation throughout the country designed to train pediatric physician assistants, but prerequisites for admission and duration and content of training differ.[34,35]

The pediatric nurse practitioner.[36] The nurse practitioner model has been most universally adapted and studied since its inception in 1965.[37-46] In a telephone survey conducted by the American Academy of Pediatrics of pediatric nurse practitioner programs conducted in June, 1970, it was determined that there were 66 existing or contemplated programs throughout the United States.[47] Nine of these were operational on a community wide basis, 14 operational for meeting the needs of the training institutions, 20 pending or scheduled to begin operation, and 23 planned or potential programs.

Sanazaro[48] suggests that if funds become available to train up to 15,000 pediatric nurse practitioners by 1975, an estimated 8,000 to 12,000 would be employed by that time and this would represent the ratio of one pediatric nurse practitioner for every two pediatricians in the United States. This is a rather optimistic prediction, since fewer than 250 pediatric nurse practitioners have been trained to date, and some training programs are having difficulty in becoming established or have become inoperative for lack of funding.

Recently, the American Nurses' Association and the American Academy of Pediatrics established guidelines for training pediatric nurse associates (practitioners).[49] These guidelines make recommendations concerning planning, organization, administration, admission of students, course content, faculty, duration of training, services and facilities needed, and evaluation to be used by those who plan to establish pediatric nurse practitioner training programs.

Why nurses?

The professional nurse seems the logical person to train to assume a collaborative role with the pediatrician in the care of children for several reasons.

1. She has always been held in high regard by the public; therefore medical care and advice given by the nurse will most likely be accepted by

parents and patients.[50] Her professional orientation to the total health needs of patients and her skills in communication with patients predict a high degree of success in this expanded role. Many nurses with basic knowledges and skills live in rural areas where they have established homes and families, but are not now working. If nurse practitioner programs could attract such nurses, prepare them, and assist them in finding local placement into the health care delivery system, undoubtedly many such nurses would return to their communities and provide significant services, thus increasing available health care in the rural areas.

2. Physicians and nurses have traditionally worked together as the two major professions providing care. This working together has not always been as coprofessionals sharing the responsibilities involved in meeting health care needs. Physicians have expressed increased willingness to place confidence and responsibility in the nurse as a collaborative colleague while professional nursing education is increasing its preparation in problem solving and decision making.[51] To continue to improve interrelationships, however, nursing and medicine must continue to discover and remove the barriers to teamwork. Recent medical and nursing school graduates and future graduates will undoubtedly be able to work more harmoniously than in the past, recognizing each other's professional skills which, combined, produce a team effort that is more effective than their individual efforts.

3. Current state nurse practice acts allow for wide latitude in services rendered by nurses under the supervision of physicians and for which they have been educationally prepared, so there will be few anticipated medicolegal difficulties in the utilization of pediatric nurse practitioners.

4. Nurses represent the largest active and inactive manpower pool of professionals with the necessary knowledge and experience on which to build those skills required to assume many of the functions in delivering health care presently provided by physicians. In the case of pediatric nurse practitioners, many of the nurses who would be trained in this area would bring with them the added experience in child-rearing learned through rearing their own children in the interval between leaving nursing and seeking re-entry into the health-care field. For child care, female nurse practitioners may be better accepted by mothers than male physician's assistants.

5. The utilization of nurses in expanded roles in ambulatory care may not be in conflict with the acute nursing shortages in hospitals.[52,53] A high percentage of the 285,000 licensed but currently not practicing registered nurses in the United States have no desire to return to full- or part-time hospital nursing because this often requires working hours that are inconvenient for them, is often in situations without supervision and potentially crisis laden, and requires a great percentage of time spent in nondirect patient activities.[54-56] Despite utilization of refresher and retraining courses, day care centers for their children, and arranging more convenient working hours, hospitals have not been able to lure many of these inactive nurses back into practice. For many of the same reasons, 35 per cent of all practicing registered nurses practice outside the hospital setting.[55] Cleland *et al.*[57] found that the "employment of married nurses can most often be characterized by the principle of immediate gratification." This must be a factor in the high turnover rate among nurses. It does not, however, indicate whether or not new career models would be viewed by inactive nurses as careers with long-range goals. With the change in the place of women in our society, decrease in family size, and increased automation making homemaking less demanding, it is anticipated that more married nurses will be seeking challenging careers with long-range goals.[58]

6. Professional nursing associations can be invaluable allies in the dissemination of information regarding nurse practitioner training programs and for encouragement of its members to enroll in them. This recruiting mechanism is not available for other types of physician assistant training programs, except for those which plan utilization of discharged military personnel corpsmen.

7. Training programs designed to develop physician assistants other than nurses will require an entirely new design in curriculum, will need more in the way of demonstrated utilization prior to acceptance by physicians and parents, and can anticipate difficulties in licensing in each of the 50 states. A vocational pursuit of unknown quantity which requires several years of posthigh school training is not likely to attract candidates in sufficient numbers to meet the demand for allied medical professionals. This is not to say that these programs should not be pursued, as all endeavors designed to increase the number of professionals capable of providing any aspect of medical care should be encouraged, but it does point out by comparison the unique potential for the assumption of an expanded role by the professional nurse.

Potential utilization of pediatric nurse practitioners in New York State

In the fall of 1967, a survey of regular fellows of the American Academy of Pediatrics was conducted concerning pediatric practice in the United States with special attention to utilization of allied health worker services. The results of this survey were published in 1970. They included data concerning pediatricians and their practice arrangements, practice hours, office visits and employment patterns, task performance and task delegation in office practice, out-of-office patient-care tasks, and pediatric opinion concerning the utilization of allied health workers in an expanded role in pediatric practice.[59]

The response from pediatricians in New York State (District II, American Academy of Pediatrics) was in general similar to that obtained for pediatricians throughout the United States. The results of answers from New York State pediatricians in the areas of task performance and task delegation, and opinion concerning the utilization of allied health workers is of interest in considering potential pediatric nurse practitioner usage in New York State.

Report of survey data for New York State

Of the members of the American Academy of Pediatrics residing in New York State, 911 responded to the questionnaire. This represents 87 per cent of the membership in New York and 15 per cent of the national sample. Out of the New York State respondents, 593, or 65 per cent, were practitioners and 318, or 35 per cent, were nonpracticing pediatricians (Table I).

Information obtained from the 593 practicing pediatricians regarding the delegation of tasks currently performed in their offices revealed that there is less tendency on the part of New York State pediatricians to delegate many of these tasks to allied health workers, as compared to pediatricians throughout the nation (Table II).

The total sample of respondents (both practicing and nonpracticing pediatricians) were asked to indicate whether they thought "an allied health worker with appropriate special training, responsible to a Board qualified pediatric practitioner," "could and should" perform certain patient care tasks; 877 of the respondents replied to this question. Comparison of the percentage of pediatricians favoring delegation of these tasks with the percentage currently delegating them is shown in Figure 1. The percentage of New York State pediatricians in favor of such delegation is similar to that of 5,798 pediatricians who responded to the questions in the national sample in every category.

Some questions relating to out-of-office patient care tasks were included in the questionnaire. Hospital newborn visits were carried out by 93 per cent of New York State's practicing pediatricians. Home visits for follow-up of an acute illness, to treat chronic illness, for behavior counseling and to observe and evaluate the home situation, and school visits to obtain and exchange information were carried out by less than 50 per cent of practicing pediatricians. These tasks were rarely if ever delegated to allied health workers. Pediatric opinion, however, does favor the delegation of these tasks to the allied health worker "with appropriate special training" to a considerable degree (Fig. 2). The present performance and opinion regarding delegation of these tasks is essentially the same for New York pediatricians and pediatricians throughout the nation.

TABLE I. Survey response from members of the American Academy of Pediatrics in the United States and in New York State

Pediatricians	United States Number	United States Per Cent	New York State Number	New York State Per Cent
Total membership	6,820	100	1,047	100
Total respondents	6,001	88	911	87
Practitioners	4,208	62	593	57
Nonpractitioners	1,793	26	318	30

TABLE II. Current task performance in practioners' offices in New York State (593 practitioners responding to questionnaire)

	Per Cent* Performed by		
Task	Physician	Allied Health Worker†	Not Done
History taking			
Present illness	81	18 (23)**	. . .
Past medical	66	33 (33)	1
Family and social	56	43 (42)	1
Interval, well child	81	17 (17)	2
Interval, sick child	85	14 (16)	1
Physical assessment			
Examination, well child	91	4 (6)	4
Examination, sick child	88	7 (8)	4
Weighing	26	73 (87)	1
Body measurement	38	60 (76)	1
Vision screening	36	47 (65)	16
Hearing screening	47	21 (38)	31
Blood pressure, older child	79	19 (33)	1
Blood pressure, infant	72	3 (8)	24
Developmental screening	71	4 (8)	24
Treatment			
Administer immunizations	70	28 (58)	1
Information, immunizations	71	27 (43)	2
Administration of parenteral drugs	74	22 (50)	3
Interpretation of instructions	54	26 (31)	19
Information, child care (office)	71	24 (26)	5
Information, child care (telephone)	61	37 (47)	2
Information, feeding	81	16 (17)	3
Information, growth and development	88	8 (7)	3
Advice, minor medical (office)	72	27 (30)	. . .
Advice, minor medical (telephone)	53	46 (55)	. . .

* Percentages are rounded to nearest whole number. Nonresponse rates are not shown but were less than 3 per cent for any single task category.

† Allied health workers include registered nurses, licensed practical nurses, and medical assistants.

** Figures in parentheses indicate the percentage of the 4,208 pediatricians practicing in the United States who answered the questionnaire that delegate tasks to allied health workers.

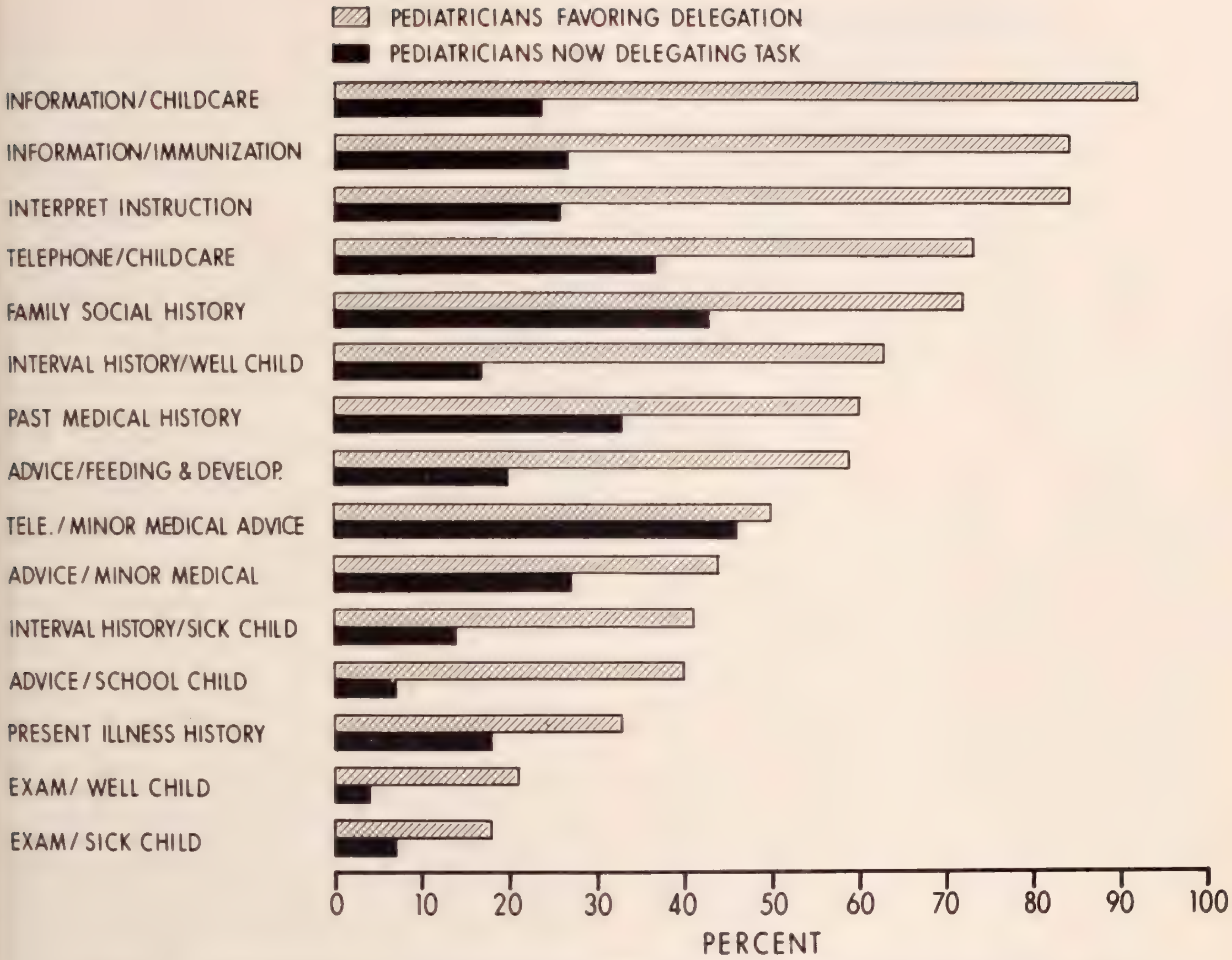

FIGURE 1. Office patient-care tasks according to present performance and opinion about their delegation.

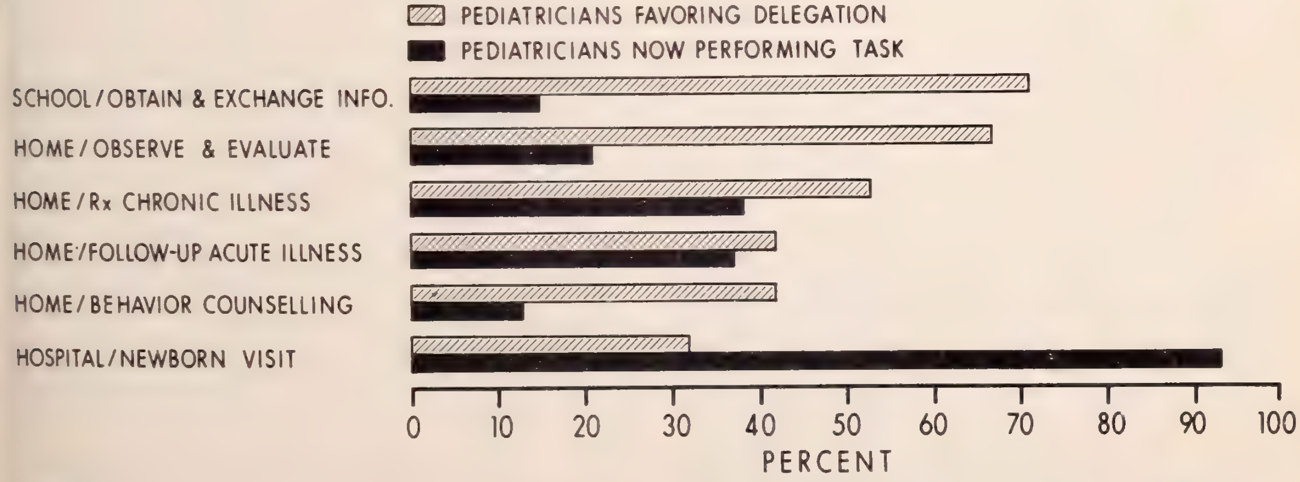

FIGURE 2. Out-of-office patient-care tasks according to present performance and opinion about their delegation.

On reviewing these data, we see a strong tendency on the part of pediatricians to delegate many of the tasks they currently do and do not perform to appropriately trained allied health workers acting under their supervision. It is reasonable to assume that the pediatric nurse practitioner would meet these qualifications.

Potential obstacles to the utilization of allied health workers in expanded patient care roles have been raised and will have an effect on the pediatrician's decision to convert his opinions into action. The questionnaire sought pediatric opinion regarding these potential obstacles on a three-point scale. Specific obstacles were considered as very serious, somewhat serious, or not serious. Figure 3 shows the percentage of pediatricians who considered these obstacles to be very serious or somewhat serious. Nonpractitioners were less apt to be concerned about potential obstacles than practitioners.

It should be noted that except for the "lack of trained workers" and concerns regarding "insurance liability," less than 25 per cent of New York State pediatricians considered any of the listed obstacles as being "very serious." Since these opinions were obtained, a considerable amount of data concerning the obstacles listed, particularly as they pertain to the utilization of pediatric nurse practitioners, has been presented which indicates most of the expressed concerns are not justified.[38–46]

Of interest is pediatric opinion concerning the effects on the quality and volume of practice (Table III). Fifty-six per cent felt there would be an improvement in the quality of care, 19 per cent felt there would be no change in quality, and 22 per cent felt that quality of care would deteriorate. Seventy-three per cent were of the opinion that the use of allied health workers would increase the volume of practice, and 24 per cent felt no change in volume would occur. In essence, 75 per cent of New York State pediatricians consider the utilization of allied health workers as a means of increasing health care services to children without jeopardizing the quality of that care.

The translation of pediatric opinion regarding delegation of patient-care tasks and prediction of effects of such action on the quality and quantity of pediatric care rendered in a practice setting into actual utilization of allied health workers with appropriate special training is of prime importance in making decisions regarding preparation of pediatric nurse practitioners. Table IV reflects the opinion of practicing pediatricians in New York State as to whether or not they would hire a specially trained allied health worker if such were available. Whether or not these figures can be utilized in assessing the potential job market for pediatric nurse practitioners is a moot point. The concept of the pediatric nurse practitioner is one of expanding the role of the nurse in child care as a collaborative effort under a collegial relationship with the pediatrician. This necessitates a basic change in philosophy in the system of delivery of health care to children wherein the responsibility for the health of the child is shared by both professionals. The opinions expressed in the data presented here reflect willingness to delegate tasks but do not touch on sharing responsibility and decision making. This is, perhaps, another issue but it is of prime importance in any consideration of how well pediatric nurse practitioners and pediatricians will work together and how effective this relationship will be in improving the quality and quantity of health care available to the children of this State and nation.

Issue of liability

Seventy per cent of New York State pediatricians considered insurance liability a serious obstacle to utilization of allied health workers in an expanded role; 54 per cent felt current medical practice laws were serious obstacles (Fig. 3). These concerns with personal liability on the physician's part for acts performed by new kinds of paramedical personnel are well founded. Bergen[60] states: "In considering the risks of liability in the use of new kinds of paramedical personnel to assist physicians in new ways, it seems inevitable that such medical innovations must increase risks." He goes on to say that these risks are lessened if: (1) the assistant is thoroughly trained and carefully supervised; (2) a formal training program is established and effectively operated by a medical school or a teaching hospital; and (3) appropriate medical and specialty societies establish standards for training and a program for private certification of students who satisfactorily complete the approved training. Finally he states, "Official state certification would add only a little protection. Compulsory state licensing would not further reduce the risk for the employing physician."

Curran,[61] commenting on the recently passed Colorado child health associate law, states that its passage was unfortunate because it is too restrictive. It spells out in detail the nature of the training required, what the child health associate can and cannot do, for whom he can work, and the exact nature of the supervision required. Perhaps of more importance, it limits the development of other types of allied health personnel on an experimental basis.

In the case of pediatric nurse practitioners, new legislation enabling them to assume an expanded role in pediatrics care taking is not necessary. Bergen[60] states,

> Without any change in the Nursing Practice Act, in

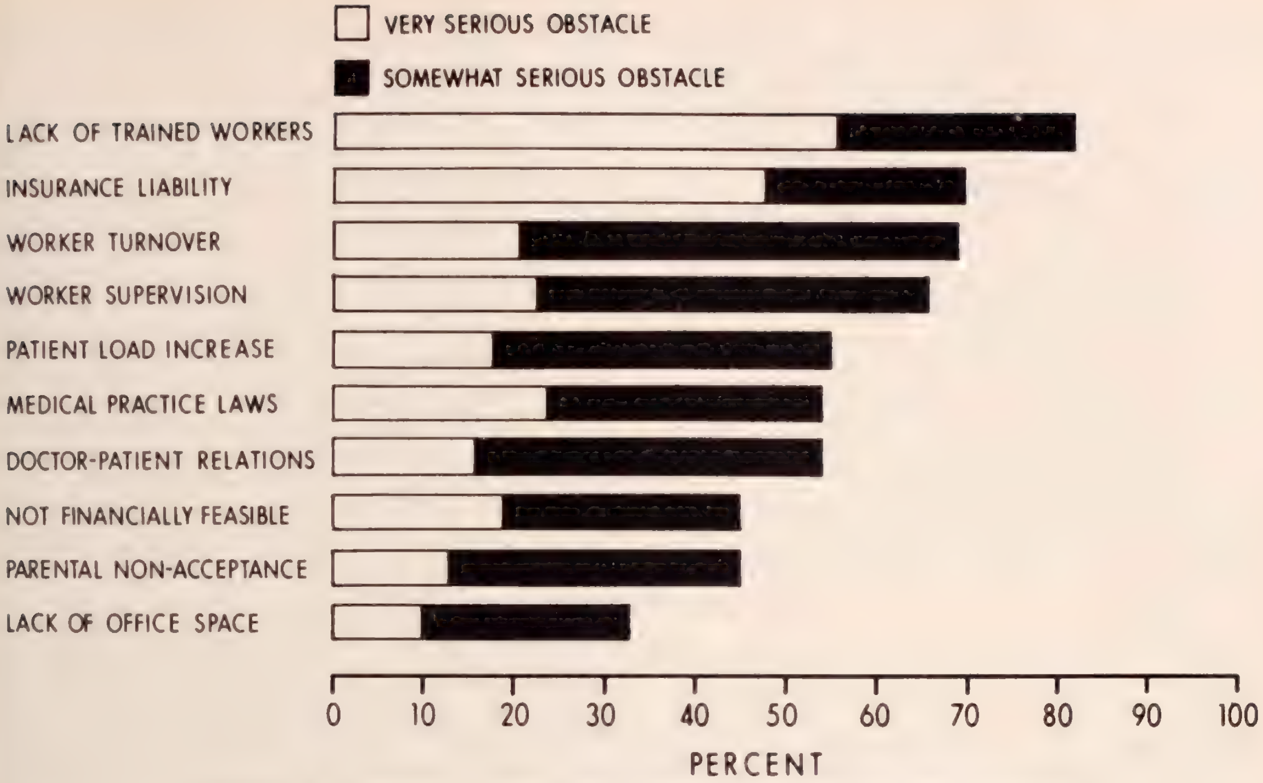

FIGURE 3. Obstacles to greater use of allied health workers in pediatric practice.

most instances, it is probable that delegation to nurses under physician supervision can be made of virtually any medical procedure that does not, on a scientifically determined basis, require the personal knowledge, skill, and judgment of a physician. This has already been accomplished with respect to nurse anesthetists without the benefits of any special statute. It seems likely that it can be done gradually in relation to many other important medical functions, provided that the competence of the nurses for the assigned duty is assured by comprehensive special training.

Legislation will be introduced during 1971 to revise the present New York State nurse practice act which will recognize nursing as an independent, primary, and distinct health discipline. This will, among other things, provide a legal framework within which the nursing profession may continue to broaden its scope in relation to scientific and sociologic changes. Although these changes are appropriate to the future of nursing and will enhance the expanding role of nurses in the delivery of health care, they are not required to legally allow for the utilization of the pediatric nurse practitioner in the role defined by the American Nurses' Association and the American Academy of Pediatrics.[49]

Potential for training pediatric nurse practitioners in New York State

Training of pediatric nurse practitioners, if done according to the guidelines suggested by the American Nurses' Association and the American Academy of Pediatrics, requires an accredited collegiate nursing program working in collaboration with a department of pediatrics of a college of medicine.[49]

TABLE III. Pediatric opinion concerning effect on pediatric practice of greater utilization of allied health workers

Effect on Practice			
Quality	Volume	Number	Per Cent
Improvement	Increase	337	38
Improvement	No change	158	18
No change	Increase	169	19
Deterioration	Increase	141	16
Deterioration	No change	50	6
Not answered	. . .	22	3
Totals		877	100

TABLE IV. Potential job market for allied health workers: general opinion of practicing pediatricians in New York State

Respondent Opinion	Number	Per Cent
Would hire full time	212	35
Would hire part time	167	28
Would not hire*	196	33
Not answered	26	4
Totals	601	100

* Some of these respondents already have a satisfactory arrangement.

The cost of training amounts to $1,500 to $3,000 per student, depending on the size of the training class. Support for institutions undertaking the training has been limited and many programs have not been instituted or have been discontinued because funds have not been available. The costs, when compared to those of training type A physician assistants, are quite reasonable, even when the costs of basic nurse training are included. From an economic point of view, considering the earning potential of graduates, trainees or their employers should be able to bear these costs in the form of tuition fees.[41,45] However, direct institutional support or indirect support through student scholarships must be provided by Federal, state, or private agencies initially to encourage the establishment of training programs.

That this support has not been generally available is evident when one views the current status of training pediatric nurse practitioners in New York State.

Pediatric nurse practitioner training in New York State

Yankauer and Duiker[47] have arbitrarily classified pediatric nurse practitioner training programs in operational status categories:

- I. Operational programs presently ongoing:
  - A. Community-wide: programs designed to accept and train nurses working in settings other than those of the training institution.
  - B. Agency only: programs developed to serve only their own institutional needs. Some of these could become community-wide.
- II. Pending or scheduled: programs designed, but not operational. Operations may be scheduled definitely, awaiting outcome of a grant request, or delayed or in limbo because of lack of funding.
- III. Planned or potential: discussions in progress. Substantial interest, but no formal planning. Further development is slow or questionable without funding to get off the ground.[47]

In January, 1971, the author conducted a telephone survey of all medical schools in New York State and of nursing schools and health agencies known to be interested in training pediatric nurse practitioners to determine the current level of, and future potential for, such training. The results of that survey are shown in Figure 4.

Conclusion

It is quite evident that "lack of trained workers," the major obstacles to utilization of allied health personnel expressed by 82 per cent of New York State pediatricians in the survey conducted in 1967, remains (Fig. 3). That obstacle will not be removed in the foreseeable future unless health planners and educators in the fields of pediatrics and nursing provide the mechanism for pediatric nurse practitioner training and funding for the establishment of programs can be obtained.

Perhaps, if seed money had been available from governmental and private agencies in the past, our training resources might currently be sufficiently developed to give promise of meeting needs. It can also be said that if the need for pediatric nurse practitioners and pediatric assistants had been critical, pediatricians and health care administrators would have brought more pressure to bear on those institutions and agencies capable of conducting training programs. Clearly, the indication and support for action must come from them soon if this one solution to the health care crisis is to be of any immediate consequence.

The implications drawn from this analysis of potential utilization of pediatric nurse practitioners in New York State can be applied throughout the country. The feasibility studies, pilot programs, and preliminary evaluations indicate that pediatric nurse practitioners do enhance the delivery of health care to children, are acceptable to parents, are economically feasible, and do conserve pediatricians' time.[39-46,62,63] The time has come to train and utilize them in sufficient numbers to improve the health of our children.

Summary

The pediatric nurse practitioner has been advanced as the allied health worker most capable of relieving the crisis in delivery of health care to children. Despite five years of study indicating adequacy and acceptability of the care rendered by pediatric nurse practitioners, there is limited current capability for training sufficient numbers to have any immediate effect on the growing needs and demands for pediatric care.

The gap between expressed support for utilization of pediatric nurse practitioners by pediatricians and the limited development of training programs in New York State is a reflection of the thinking and activity present throughout the entire country. The lack of action is largely due to insufficient start-up funds needed to initiate the educational programs. Pediatricians must apply the necessary pressures on pediatric and nursing educators to establish community-wide training programs, and on legislators to provide the initial funding needed.

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LOCATION	Operational		Pending or Scheduled	Planned or Potential
	Community-wide	Agency only		
Albany				
Albany Medical College, Community Health Center		X^2		
Buffalo				
State University of N.Y.				X^4
Garden City				
Adelphi University, School of Nursing				X^4
New York City				
Albert Einstein College of Medicine		X		
Martin Luther King Health Center		X		
Mt. Sinai School of Medicine			X^3	
N.Y. City Department of Health		X		
State University of N.Y.				X^4
Rochester				
Neighborhood Health Center		X^2		
University of Rochester	X			
Syracuse				
Neighborhood Health Center				X^5
Total	1	5	1	4
Number of Graduates	25	59	--	--

FIGURE 4. Operational status of pediatric nurse practioner-training programs in New York State. Agencies were contacted on the basis of word-of-mouth information received from pediatric educators and practitioners. There may be other agencies currently training pediatric nurse practitioners for their own purposes, but they are probably few in number. The training in "agency only" programs is not formalized and does not meet the criteria established by the American Nurses' Association and the American Academy of Pediatrics. X^2 indicates that pediatric training is only a portion of a broader-based nurse practitioner-training program. X^3 indicates that the program was scheduled to begin in September, 1971, on a community-wide basis pending funding. X^4 indicates definite interest in establishing a community-wide training program providing funding can be obtained. X^5 indicates definite interest in establishing training for agency use only.

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OTOSCLEROSIS

Development of surgical therapy 1860 to 1960

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Otosclerosis is a chronic progressive disease, causing hearing loss of the conductive type. It is characterized by overgrowth of a bony substance at the labyrinth, causing fixation of the footplate of the stapes in the oval window, with subsequent prevention of normal vibration and transmission of sound. Although a hereditary tendency has been noted, the exact cause of this disease process has never been clearly explained, nor is the nature of the otosclerotic process well understood.

Despite gaps in this knowledge, however, attempts at alleviation of deafness have been attempted, and it is of this effort that our report concerns itself. An historical survey of surgical technics devised will be presented in chronologic order to the present day. Lack of space precludes an extensive discussion of the research with regard to the cause, pathogenesis, and so on that has paralleled all advances in therapy.

Two basic types of surgery will be discussed: (1) opening of the semicircular canal through the mastoid; and (2) surgery of the stapes itself, through mobilization, total and partial removal, and prostheses.

Early surgical procedures

Surgical treatment for progressive otosclerotic deafness has been described in the medical literature extensively for over one hundred years. Perhaps the ancients, too, exorcised their devils of deafness by similar means. However, all that came to pass before 1938 may be briefly summarized; it is of note primarily because our colleagues at the turn of the century came perilously close to modern-day technic but abandoned all further attempts at success just at the crucial time.

Miot,[1] a great French otologist of his day, wrote, "L'ankylose de l'etrier peut-etre constatee d'une maniere certaine avec le stylet simple ou a palette introduit dans la caisse a travers une ouverture praticque au tympan, et aponiye contre l'articulation incudostapedale de maniere a snalever l'etrier. Des que celui-ci se meut dans la fenetre ovale, le malade entend une espece de bruissement ou de bouillonment plus ou moins distinct fin dure seulement pendant le temos que l'etrier execute des mouvements." His contemporary, Boucheron in 1882 mobilized the stapes after separating it from the incus and excising the posterior half of the drum.[2] Kessel in 1876, at first unsuccessful at mobilization, removed drum membrane, malleus, and incus, and later went on with the mobilization and removal of the stapes. Faraci also had success in 1899, but only a year later Siebermann, in Germany, flatly expressed the belief that all stapes operations were useless. In America, Jack, Blake, and Burnett were all mobilizing and performing stapedectomies. Like their European counterparts, all these procedures were done through a myringotomy incision. Fifty years ago, however, all these procedures were abandoned. The tide was turning toward the fenestration concept, and it was believed that the future of surgery lay in that direction.

In 1937 Sourdille,[3] addressing the New York State Society of Medicine, discussed the procedures currently available for the surgical treatment of otosclerosis. Two were based on theories of pathogenesis: (1) The Alonso-Chiari operation involved removal of the left parathyroid gland or ligature of the thyroid arteries to decrease gland secretion; this was based on the hypothesis that otosclerosis was a product of dysfunction of the parathyroid gland. The Wittmaack-Heyninx-Rollins procedure involved endocranial separation of the supratympanic dura mater from the anterosuperior surface of the petrous bone. The blood vessels were lacerated to decrease perilabyrinthine circulation and blood stagnation, the first anatomic lesion of the disease. This did stop progression of the disease and decreased tinnitus.

Still two others were used based on the fenestration principle. In 1936, Holmgren, modifying an original operation, opened the semicircular canals and closed them with gold leaf kept in place by a graft of adipose tissue filling the mastoid bone. This principle made no effort to reconstruct the normal mechanism of transmission, fistula formation serving to regulate labyrinthine hydrostatics. In 1929 Sourdille himself devised a new tympanic system to carry vibration to the labyrinth in addition to opening the canal. This procedure he called "tympano-labyrinthopexy." It was a formidable three-stage operation, performed at four- to five-month intervals, involving in order, the external ear, middle ear, and labyrinth. First the external auditory canal was cut to develop strong tissue without hair or glands. Then the mastoid was opened, exposing the additus; the head of the malleus was removed, scar tissue being used to cover the incus and close the additus. This left a large pretympanic labyrinthine vestibule. Finally, the horizontal canal was opened, and the scar tissue was used as a covering for this. If new bone grew following surgery, it was removed, and osteogenesis then stopped. Although relatively safe, this was indeed a long and tedious form of therapy. The problem at this time appeared to be how to prevent subsequent closure of the labyrinthine openings by bony processes.

Fenestration technic

In 1938 Lempert[4] published his now classic article describing a technic which provided a surgical means of obtaining a permanently open fistula of the labyrinth by mechanically preventing regeneration of bone, using a one-stage endaural plastic reconstruction of the auditory mechanism. The main features of this operation included decompression of the perilymph by construction of a trough-shaped fenestra in the external semicircular canal, preservation of this by covering with a durable membrane inserted into the fenestra in contact permanently with the perilymph, and arrest of progressive labyrinthine venous stasis by decompression of the temporal lobe dura over the epitympanic recess.

This operation was done under the following conditions: (1) clinical evidence of stapes fixation, (2) air conduction loss of between 40 and 60 per cent, (3) normal or slightly impaired hearing by bone conduction, (4) complete absence of middle ear suppuration, (5) completely normal drum and cutaneous lining of the bony walls of the external auditory canal, and (6) normal state of health.

Lempert's technic was studied and performed widely over the next decade. As late as 1950 Lempert[5] said, "It is the duty of every otologist when consulted by a patient whose hearing function can probably be improved by the fenestration operation to unhesitatingly recommend this form of relief to him first, last and always since there exists no other treatment today which could improve the hearing function in this type of deafness." He went on to point out that degeneration always occurred more rapidly when a hearing aid was used instead of surgery. He found that when fenestration was performed for clinical otosclerosis in existing advanced cochlear nerve changes in the high frequencies, further spread of the cochlear nerve degeneration to the lower frequencies was avoided while the window stayed open. When faced with bilateral otosclerosis, he chose for fenestration the ear with the greater audiometric air-conduction loss for pure tone.

Stapes mobilization

However, despite the superb technic presented by Lempert's fenestration and its superiority to preceding operations, another major step forward occurred in 1952. Rosen[6] at that time published a preliminary report to describe a simple method of palpation of the stapes to determine whether it was partially or completely fixed. He believed that this was the only way to establish a definite diagnosis. Prior to fenestration, he recommended stapes palpation. Totally fixed stapes offered the best conditions for good fenestration, and this operation might be postponed if only partial fixation was present.

To-and-fro palpation of the partially fixed stapes rendered the footplate even more mobile. This increased mobility, he found, could restore hearing via the normal ossicular chain and oval window. Could it be that rocking palpation of a partially fixed stapes might be of therapeutic as well as diagnostic use?

By the following year, Rosen[7] had developed a procedure to restore lost hearing based on the premise that ankylosis was not necessarily permanent or irreversible. His relatively simple procedure, which resulted in maintained better hearing, could easily be followed by fenestration, should success not be achieved by stapes mobilization.

His method was to expose the incudostapedial joint under local anesthesia through an ear speculum in the external auditory canal. The lower half of the drum was lifted out of its sulcus and folded upward on itself, exposing the chain, an operation similar to that performed in Meniere's disease with section of the chorda tympani. The degree of mobility of the stapes was determined by applying gentle downward pressure with a probe against the long process of the incus, close to its articulation with the stapes. When the stapes was freely moveable, the incudostapedial joint and entire stapes with its tendon moved as one. When the stapes was rigidly fixed, only the long process of the incus alone moved slightly. To loosen the footplate, downward pressure on the neck of the stapes in the line of the tendon was applied. There was a sudden loosening, and hearing returned. The drum was replaced, and the patient was free to leave the hospital after twenty-four hours with no postoperative treatment necessary. This in itself represented vast improvement over fenestration, which required general anesthesia, more extensive hospitalization, and long-range follow-up care.

Two years after the patient in Rosen's first case had a sudden dramatic return of hearing in April, 1952, during a stapes palpation procedure, Rosen and Bergman[2] issued a follow-up report. This showed that patients whose hearing had improved after this surgery had maintained their improvement for periods up to twenty-six months. Two groups appeared to be helped by stapes surgery: (1) those patients with pure conductive or mixed-type deafness with good cochlear potential for hearing without mechanical aid, and (2) those patients with mixed deafness in which reversal of the conductive factor allowed more efficient aided hearing. Some of the reasons for failure that Rosen was able to list were an extreme degree of fixation (rare), thin and fragile crura which fractured easily, faulty technic, and unknown.

Myers and Ronis[8] studied a series of 139 patients who had undergone 161 operations over a period of eighteen months in 1955 and 1956. Operations were performed on early and late deafness (stapes surgery now permitted early surgery), unilaterally and bilaterally (unilateral deafness was rarely operated on in the past), on patients with accompanying cochlear-nerve deafness, and on patients with old fenestrations.

Some of the negative by-products of surgery in this series were trauma to the chorda tympani with taste disturbances lasting for some weeks (Scheer[9] reported similar disturbances lasting up to eight months); perforations of the drum; fracture of the crura (studies done by Rosen[7] on 31 stapes dissected from cadavers, with footplates encased in cement showed an average weight of 166 Gm. was needed to fracture the crura of the stapes); and occasional vertigo and nystagmus believed due to sudden mobilization of labyrinthine fluids. A consistent nuisance was the presence of blood in the external auditory canal and middle ear. It was found, also, that mastery of the technic on cadavers did not ensure success on the living patient.

In this study, furthermore, it was easier to determine the causes of failure. They appeared to be fibrous union refixing the stapes, locking of the bones by means of the rough fracture lines, fractures of the crura and incudostapedial separation (both accidents giving rise to "false positives" of motion), and simple surgical fracture being insufficient to mobilize the footplate.

Some of the observations Myers and Ronis[8] made included: (1) Diagnosis of otosclerosis could be made clinically and audiometrically without actual palpation of the stapes. (2) The amount or degree of fixation could not be predicted preoperatively. (3) The successful candidate could not be predicted preoperatively nor could the amount of improvement. (4) There could be no correlation between degree of fixation, degree of deafness, length of time deafness persisted, age of patient, and amount of pull needed to obtain proper mobilization. (5) The middle ear appeared to show no disturbance; all changes were in the capsule of the temporal bone. Another researcher, Covell,[10] found typical otosclerotic foci in the malleus and incus of one individual, a fact remarkable because it represented the first time an otosclerotic lesion was found outside the otic capsule.

The results of this series were impressive. Of 139 patients, 47 per cent had shown improvement, some of them following revision for previous stapes surgery. Most of the patients were restored to 15 to 25 decibels, the average gain being 18 decibels. None were made significantly worse by surgery; there were no appreciable morbid effects, labyrinthitis, facial paralysis, or persistent drainage.

In 1955 Rosen[11,12] reported the results of two groups. The first showed 42 per cent of patients were restored to between normal and 35 decibels and 36 per cent between normal and 30 decibels; the second group showed 39 per cent and 35 decibels or better, and 30 per cent reached 30 decibels or greater. The most important single element in success or failure of the operation, he believed, was the degree of fixation of the stapedial footplate and the thickness of the crura. He made it clear that when the stapes moved and the stapedius tendon along with it without hearing improvement, it signified fracture of the crura. It appeared hard to tell a mobilized footplate from a fracture of the crura, because the stapedius tendon moved with both on palpation of the long process of the incus. He also noted that the otosclerotic focus did not heal over nor did a fracture through the labyrinthine capsule.

Needless to say, proponents of the Rosen technic for mobilization of the fixed stapes were numerous throughout the land (abroad, too.) Although many mourned the passage of the brilliant technic and know-how demanded by the fenestration and decried the lack of it so often seen in those attempting mobilizations, the operation was performed widely. The fenestration became reserved, more or less, for those in whom mobilization had failed and for those who could not bring themselves to see the value of mobilization in the first place. Rosen was not without his share of dissidents. In reply to the charge that he had merely revived an obsolete operation without refining it, thereby setting back the advance of otology by fifty years, he drew attention to the fact that his operation was done by drawing back the tympanic membrane, thus giving much larger exposure than that achieved through the old myringotomy incision of the turn of the century. Said Rosen[13] with much spirit at a professional meeting, "The results that I have I find encouraging, and regardless of what anybody thinks, I am going to go ahead and mobilize until the cows come home; I am going to do my best to get better results, improve my technique, just as the evolution of fenestration has gone ahead, and so I hope and expect that this will also happen in the mobilization."

Improvements in technic

Many other otologists joined the bandwagon, and improvements of all sorts with variations in technic and method began to be reported in all the journals of otolaryngology. Goodhill,[14] in California, for example, developed a mechanized microvibrator to help dislodge the stapes and an incudostapedial prophylactic cement to guard against subluxation at the crucial joint. He also developed an operative audiometric control method, enabling the surgeon to monitor the patient's response more accurately directly during surgery. The inability to evaluate objectively the patient's immediate improvement in the operating room had been a great handicap, for it was well known that patients in their desire to hear again, had given more sparkling appearances than their hearing really warranted.

Among further contributions was one by Rosen[15] himself, making good his vow to continue his work. A review published at thirty-nine months made a distinction between the "indirect" method of mobilization formerly done, with pressure transmitted from the neck of the stapes to the footplate. He now advocated the "direct" method, involving the footplate itself, to be done when the first "indirect" method was insufficient to effect mobilization. The same technic was used, except that now one chipped away 2 to 3 mm. of the edge of the posterior bony canal wall just external to the incus and stapes prior to mobilizing the footplate. Pressure was applied at the periphery.

In 1956 Rosen[16] reported a third procedure which was to be performed when the two earlier procedures were not successful because of a fractured crura, and so on. This involved creation of a fenestra in the oval window which permitted sound passage directly through the oval window to the cochlea. This window was made through the inferior peripheral margin of the footplate at the junction of the bony margin and the oval window or through the footplate itself. A small fenestra appeared most effective, the opening being one-quarter to one-half the head of a pin in size. An explorer penetrated the vestibule for 0.5 mm., and often perilymph was seen to escape.

Fenestration of the oval window restored hearing despite the absence of the transformer action of the ossicular chain.[17] This introduced a new and significant factor, the nature of which was still not understood. What is the nature of the two different ways we hear? Transformer action of the intact ossicular chain, or "window hearing," whereby competent windows at either end of the cochlear fluid system are necessary for the propagation of sound energy from the middle ear to the cochlea?

Rosen's technic has since been discontinued, for it was discovered that hearing improvement continued only while the tympanic cavity was opened and dropped as soon as the drum was replaced.[18]

House[19] pointed out that the round window is the second most frequent site of otosclerosis, although no hearing loss could be attributed to this factor unless the window was totally occluded. This window was opened by means of a newly developed diamond drill technic.

During the 1950s a new spurt of research took place dealing with the fundamental nature of otosclerotic bone, its histology, "life-cycle," and pathology. One great aid to studies of this nature was the newly developed use of the microscope as an operative instrument rather than the binocular loupe previously used. The Zeiss operation microscope, capable of magnifications up to ×40 began to be utilized for photography during surgery.[20] The camera was attached to a sidearm which might be used for viewing by an observer. This was remarkable when one considers that surgery takes place through a speculum with a distal opening of only 5 to 7 mm. with many technical problems of focusing in depth.

Bypass technic

In 1954 the first bypass procedures were begun. This type of surgery for otosclerosis was based on the concept that the otosclerotic focus of bone, rather than being mobilized and left free to reankylose, might be bypassed entirely, using the normal bone left. That is, when the footplate could not be easily mobilized by the previously discussed technics, one could still maintain ossicular continuity with a mobile section of the footplate.

A team at Columbia-Presbyterian Medical Center in New York City began chiseling the footplate, combined with cutting the anterior crus of the stapes with various instruments.[21] It was believed that the modus operandi in stapes mobilizations was fracture of the normal portion of the footplate rather than lysis of the stapediovestibular joint, and it was known that 90 per cent of cases showed the otosclerotic focus at the anterior border of the oval window. Their studies showed that fracture of the footplate usually occurred if stapes mobilization was achieved. By studying rabbits, they ascertained that the normal footplate does not heal when it is fractured. They believed that lasting mobilization of the stapes footplate could only be achieved on a permanent basis when the mobilization was not through contiguous otosclerotic surfaces. The method of choice for ankylosed stapes was to crack the footplate in its normal portion and then make the connection to the incus with a strut of bone. Normally the posterior crus is just in position for this. However, they even went so far as to place the stapes on one side after cutting the stapedius tendon, so that it looked like "one arm of a wishbone stuck to a piece of chewing gum on a table." They also had success when no connection existed between the membrana tympani and the footplate at all.

This procedure of Fowler[21] was modified somewhat by Schuknecht and Oleksiuk.[22] They inserted a tantalum pin between the incus and the footplate to replace the crura, thereby introducing all the hazards and complications of a foreign body in the ear. The thin, central area of the footplate was fragmented in this procedure and the dura removed. Disturbance of vestibular contents was claimed to be minimal.

The next step in the bypass technic came from Juers[23] who developed a stapedioplasty technic which he called the "monocrural transposition technic." First he performed the Fowler anterior crurotomy described previously. Then, using microscopic crurotomy saws, he sawed through the posterior crus and relocated it in the center of the fractured footplate at a point of optimum contact. This assured the best possible conduction available through the normal monocrural chain replacing the old otosclerotic focus.

These "chisel procedures," developed after reports by Heerman, were facilitated by many new delicate picks, chisels, and assorted fine tools. Reports made it apparent that a still more effective means of freeing the footplate from its otosclerotic bonds was provided, for the footplate might be cut directly free in diffuse or disseminated types of otosclerosis. However, it became increasingly apparent also that there were many cases of otosclerosis which involved the footplate so densely and so widely, the chisel procedures were not of much help. It was also found that the otosclerotic focus was frequently much more extensive than met the naked eye.

Shea[24] developed a method of fenestration of the oval window which was an excellent method of handling extensive, disseminated otosclerosis. For those patients with otosclerosis confined to the anterior 30 per cent of the footplate Shea did a modified Fowler procedure. For those with widespread process throughout the footplate and window or in those patients who had not responded to anterior crurotomy, he fenestrated. "The oval window was attacked at the footplate with sharp picks and a small burr, taking great care not to allow minute bone chips or blood to enter the vestibule. Persistent labyrinthitis might have resulted. The fenestra was covered with a short length of previously measured subcutaneous vein, dissected in advance from the patient's forearm. The vein was stripped of subcutaneous tissue and placed over the fenestra with the intima up and adventitia toward the window. It was thin walled, large enough in diameter to cover the fenestra. Polyethylene tubing was placed in the center of the vein, and the other end, also premeasured, was attached to the lenticular process of the incus. The patient was kept flat in bed the first day, permitted a pillow the second, hospitalized for five to six days, and asked to avoid excess activity for a week following surgery. The disturbance to vestibular contents in this operation was, of course, much greater, although many otologists had been discovering that the vestibule could take more exposure to insult than had formerly been imagined. Other grafting substances have since been used by various operators, the first common substitute being gelatin sponge (Gelfoam).

The proliferation of surgical technics by the beginning of the 1960s was such that Farrior,[25] of Tampa, Florida, set forth a new system of classification of indications for the various technics, stating that all otologists should be equipped to perform any or all of them, depending on the needs of the patient.

Among the first to evaluate the new technics were Kaplan and Shembaugh[26] who reported on 10,000 cases submitted by 17 surgeons in 1961. They found the current procedure of choice to be the use of polyethylene strut on the mobile portion of the footplate or stapedectomy. Some preferred crurotomy and footplate fracture. No one prosthesis appeared to be holding up better than any of the others. Most surgeons held to the belief that mobilization of the stapes by breaking through the otosclerotic lesion led to refixation in a high percentage of cases.

Addendum: 1960–1970

During the past decade long-term results of early surgery, including development of adverse effects, granuloma, cholesteatoma, surgical failures, poor hearing maintenance, and so on, have been reported. Comparative studies of fenestration, stapes mobilization, stapedectomy, and stapedioplasty have appeared, with multiple modifications of surgical procedures. Similarly, literature dealing with prostheses has multiplied (vein plug, fat and wire, polyethylene, Teflon piston stapedectomy, wire-loop, absorbable gelatin sponge, and so on.) Finally, postperative complications, nursing care, anesthesia, and other more peripheral concerns are being further considered.

Summary

Although surgical therapy for otosclerosis is largely a development of mid-twentieth century workers in the United States, the foundations of this surgery began in Europe a century ago. Although the surgical approach has been used consistently during these years, only recently have procedures been devised to restore and maintain hearing at a level satisfactory to surgeon and patient. This has been done despite lack of thorough understanding of the fundamental nature of the lesion.

After early mobilization attempts were abandoned, fenestration of the lateral semicircular canal in a one-stage operation was achieved in 1938. Following this the revival of stapes palpation and mobilization, direct and indirect, occurred with fenestration of the oval window occurring shortly after. Following the realization that fracture of otosclerotic bone did not prevent reankylosis, bypass surgery was developed. Anterior crurotomy with footplate fracture, monocrural transpositioning, synthetic prostheses, and finally chisel technics giving way to fenestration of the oval window with vein graft and polyethylene conductor mechanism, mark the next steps forward. This paved the way for more sophisticated technics developed during the decade, 1960 to 1970. Statistics for long-range hearing improvement and maintenance are still being collected, and no attempt has been made to clutter this historical survey with figures that can have no meaning.

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Necrology

Leon A. Bader, M.D., of New York City, died on June 13 at the age of eighty-one. Dr. Bader received his medical degrees from the University of Yurieff in 1917 and the University of Paris in 1933. He was a clinical assistant surgeon at City Hospital Center at Elmhurst. Dr. Bader was a member of the New York Academy of Gastroenterology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard Arlington Bahn, M.D., of Norwich and Oxford, died on July 4 at the age of forty-five. Dr. Bahn graduated in 1952 from the University of Buffalo School of Medicine. He was an attending surgeon at Chenango Memorial Hospital. Dr. Bahn was a member of the Chenango County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Benjamin Joseph Chester, M.D., of Staten Island, died on July 6 at the age of fifty-eight. Dr. Chester graduated in 1938 from George Washington University School of Medicine. He was associate medical director of the Jewish Institute for Geriatric Care and in 1969 retired as a medical director for the United States Public Health Service. Dr. Chester was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology, the New York Academy of Medicine, the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Preston Robinson Clark, M.D., of New Hartford, died on June 22 at the age of sixty-three. Dr. Clark graduated in 1933 from Columbia University College of Physicians and Surgeons. Since 1936 he has been an Oneida County coroner. At the time of his death he was chairman of the general practice service at Faxton Hospital (Utica). Dr. Clark was a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Virgil Green Damon, M.D., of New York City, died on July 9 at the age of seventy-seven. Dr. Damon graduated in 1921 from Ohio State University College of Medicine. In 1966 he retired as a clinical professor of obstetrics and gynecology at Columbia University College of Physicians and Surgeons. At the time of his death he was a consulting obstetrician and gynecologist at Presbyterian, Good Samaritan (Suffern), and Tuxedo Memorial (Tuxedo Park) Hospitals. Dr. Damon was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York Obstetrical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leo Falkenstein, M.D., of New York City, died on January 13 at the age of eighty-one. Dr. Falkenstein received his medical degree from the University of Breslau in 1914. He was an assistant pediatrician (affiliate) at Metropolitan Hospital. Dr. Falkenstein was a Diplomate of the American Board of Pediatrics and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul A. Fernbach, M.D., of Buffalo, died on June 16 at the age of fifty-six. Dr. Fernbach graduated in 1939 from the University of Buffalo School of Medicine. He was an associate surgeon at Children's Hospital. Dr. Fernbach was a Diplomate of the American Board of Surgery, a Fellow of the American College of Angiology, a Fellow of the American College of Surgeons, and a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lionel Ovid Friedman, M.D., of New York City, died on June 23 at the age of forty. Dr. Friedman graduated in 1956 from Downstate Medical Center of Medicine. He was an associate attending psychiatrist at The New York Hospital. Dr. Friedman was a member of the American Psychiatric Association, the Academy of Psychosomatic Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Helen Gavin, M.D., of New York City, died on June 25 at the age of eighty-three. Dr. Gavin graduated in 1922 from Cornell University Medical College. Retired, she had been a pioneer in tuberculosis work at Bellevue Hospital. Dr. Gavin was a member of the American Thoracic Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Benjamin A. Gilbert, M.D., of New York City, died on July 9 at the age of sixty-seven. Dr. Gilbert graduated in 1930 from New York Homeopathic Medical College and Flower Hospital. Dr. Gilbert was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander David Gross, M.D., of Queens Village, died on May 31 at the age of seventy. Dr. Gross graduated in 1926 from Long Island College Hospital. He was an associate attending pediatrician at Queens Hospital Center. Dr. Gross was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Charlotte Heinemann, M.D., of New York City, died on January 22 at the age of seventy-nine. Dr. Heinemann received her medical degree from the University of Munich in 1921. She was a member of the American Geriatric Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans Gustav Henning, M.D., of Farmingville, died on June 2 at the age of sixty. Dr. Henning received his medical degree from the University of Frankfurt in 1934. He was a member of the American Thoracic Society, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Henry Lede, M.D., of New York City, died on June 13 at the age of fifty-seven. Dr. Lede graduated in 1943 from New York Medical College. He was an attending physician in general practice at Columbus Hospital. Dr. Lede was a member of the Aerospace Medical Association, the American Academy of General Practice, the Industrial Medical Association, the Westchester Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Enrique Alonso Lopez, M.D., of Baytown, Texas, formerly of Yonkers, died on May 8 at the age of eighty-five. Dr. Lopez graduated in 1912 from Columbia University College of Physicians and Surgeons. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leo Mayer, M.D., of New York City, died on June 5 at the age of eighty-seven. Dr. Mayer graduated in 1909 from Columbia University College of Physicians and Surgeons. He was a consulting orthopedic surgeon at the Hospital for Joint Diseases and Long Beach Memorial Hospital. Dr. Mayer was a Diplomate of the American Board of Orthopedic Surgery and a member of the American Orthopedic Association, the American Academy of Orthopaedic Surgeons, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Benjamin Messinger, M.D., of Fort Lee, New Jersey, formerly of The Bronx, died on June 9 at the age of seventy-one. Dr. Messinger graduated in 1924 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Howard Osgood, M.D., of Buffalo, died on May 23 at the age of eighty-two. Dr. Osgood graduated in 1917 from Harvard University Medical School. He was an honorary physician at Edward J. Meyer Memorial Hospital, a consulting physician at Buffalo General Hospital, and a consulting physician in allergy at Children's Hospital. Dr. Osgood was a Diplomate of the American Board of Internal Medicine (Allergy), a Fellow of the American College of Physicians, and a member of the American Academy of Allergy, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold J. Reist, M.D., of Phoenix, Arizona, formerly of Buffalo, died on May 26 at the age of seventy-six. Dr. Reist graduated in 1916 from the University of Buffalo School of Medicine. He was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Rumstein, M.D., of The Bronx, died on July 1 at the age of seventy. Dr. Rumstein received his medical degree from the University of Vienna in 1927. He was an associate attending dermatologist at Bronx-Lebanon Hospital Center and an assistant attending physician at Lincoln Hospital. Dr. Rumstein was a member of the American Academy of General Practice, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter L. Sittner, M.D., of Floral Park, died on June 15 at the age of eighty-four. Dr. Sittner received his medical degree from the University of Berlin in 1912. He was an assistant physician (affiliate) at Metropolitan Hospital and Bird S. Coler Memorial Hospital. Dr. Sittner was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Porter A. Steele, M.D., of Buffalo, died on June 3 at the age of seventy-nine. Dr. Steele graduated in 1916 from the University of Buffalo School of Medicine. He was a consulting surgeon at Millard Fillmore Hospital. Dr. Steele was a Fellow of the American College of Surgeons and a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Manfred Stern, M.D., of New York City, died on June 27 at the age of seventy-five. Dr. Stern received his medical degree from the University of Frankfurt in 1922. He was an attending surgeon in otolaryngology at New York Eye and Ear Infirmary. Dr. Stern was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Beckwith Ubel, M.D., of Grand Island, died on May 24 at the age of seventy-nine. Dr. Ubel graduated in 1915 from the University of Buffalo School of Medicine. He was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leslie Alvaro White, M.D., of Whitehall, died on December 21, 1971, at the age of seventy-five. Dr. White graduated in 1920 from the University of Vermont College of Medicine. He was a member of the Washington County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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acute, e questionante que drogas debe esser prescribite in octo (8) phases del tractamento del caso. Le 41 pro cento del psychiatros respondentes recommendate le polypharmacia como le tractamento initial de selection. Le chloropromazina esseva le plus selectionate inter le compositos singule, e le combination chloropromazina-trifluoperazina esseva le plus frequentemente selectionate. In altere parte del questionario esseva questionate le descriptiones del psychiatros e le typo de patientes tractate. Non esseva trovate differentias significative predecibile inter le patientes del duo gruppos de psychiatros, mais un significativemente plus elevate proportion de selectores del polypharmacia esseva in practica medic per minus de cinque (5) annos; ille habeva completate su residentia psychiatric durante le ultime cinque annos, e habeva essite insegniate in hospitales associate a un agentia governamental. Quando le symptomas es non adequatemente controlate, le 60 pro cento del recommendatores del polypharmacia initial non deviate del recommendation del combination de drogas, e solmente le 15 pro cento del recommendatores del tractamento initial con un droga sol manteneva iste sol composito.

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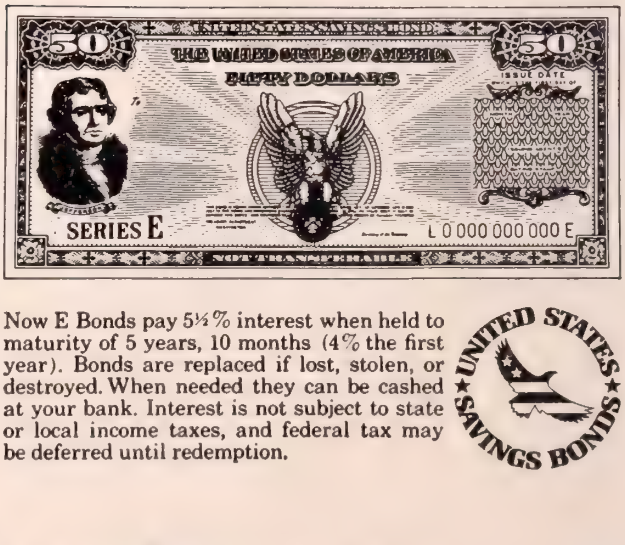
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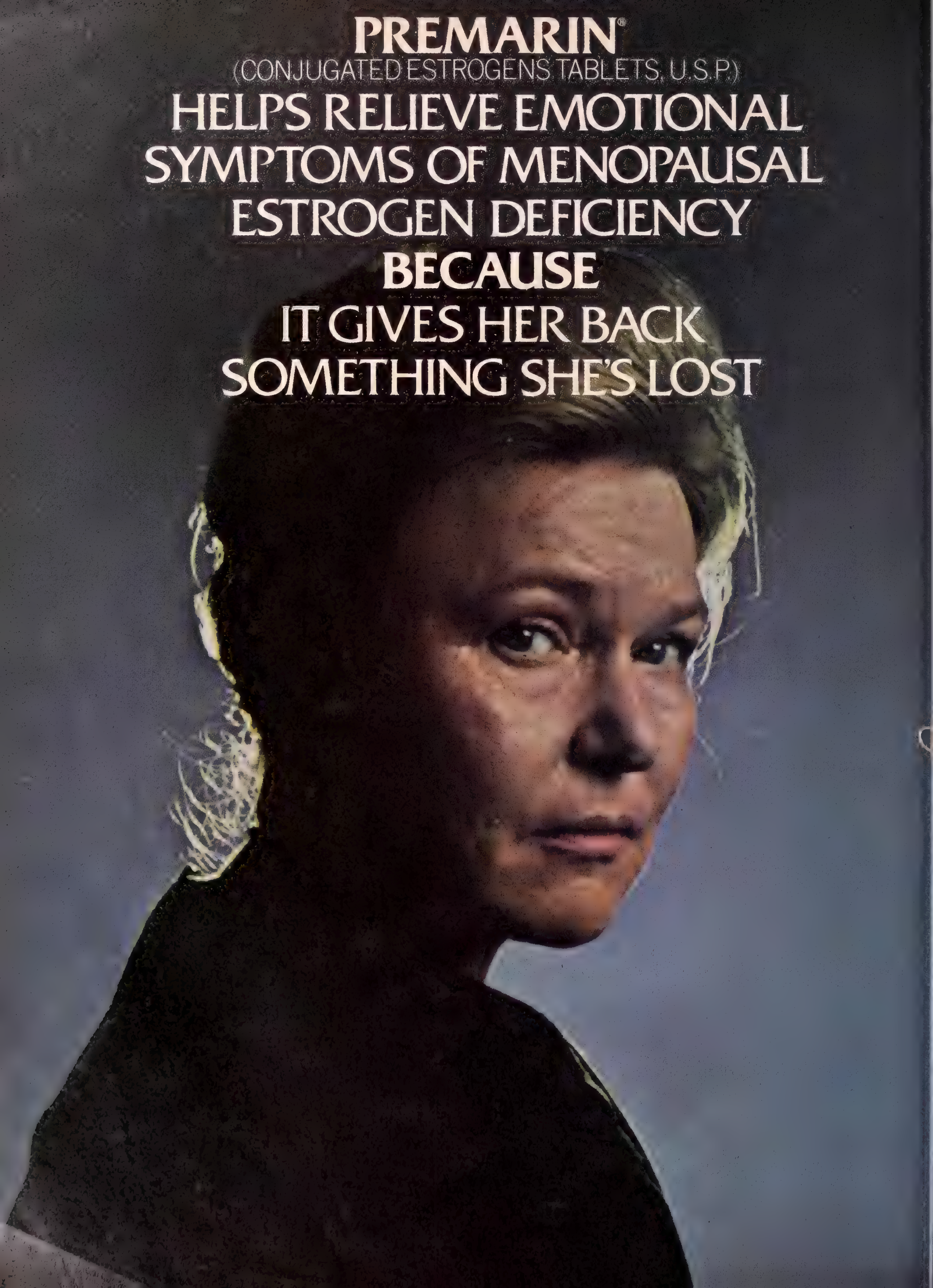
PREMARIN®
(CONJUGATED ESTROGENS TABLETS, U.S.P.)
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BECAUSE
IT GIVES HER BACK SOMETHING SHE'S LOST

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Emotional symptoms, such as anxiety, depression, nervousness, and fatigue, may be related to a diminishing production of estrogen. In such cases, PREMARIN, by providing specific replacement of estrogen, can help relieve much of the emotional distress of the menopause . . . in addition to the classic symptoms of hot flushes and sweats.

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Many psychosomatic symptoms which occur at this time of life appear to correlate fairly well with declining estrogen levels.[2-5] And in patients where emotional instability has been latent, such manifestations may be unmasked and even magnified.[4]

Anxiety and depression resulting from estrogen deficiency usually respond to estrogen therapy in a relatively short time.[2] Other "psychogenic" symptoms such as headaches, crying spells, insomnia, feelings of weakness and fatigue due to estrogen deficiency may also be relieved.[1,3,5] And in the large majority of patients, PREMARIN imparts a renewed sense of well being.[6]

When your menopausal patient suffers emotional distress resulting from estrogen deficiency, PREMARIN can often help—because it gives her back some of the estrogen support she's lost.

BRIEF SUMMARY. *(For full prescribing information, see package circular.)*
PREMARIN® (Conjugated Estrogens Tablets, U.S.P.)

Indications: PREMARIN provides specific replacement therapy in the management of estrogen deficiency states, notably in the menopause and postmenopause.

Precautions: *In the female:* To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

Failure to control breakthrough bleeding or unexpected recurrence is an indication for curettage.

In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.

Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

Estrogen Deficient Atrophic Vaginitis, Kraurosis Vulvae, and Pruritus Vulvae—1.25 mg. to 3.75 mg. daily, or more, cyclically—depending on the tissue response of the individual patient.

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References: 1. Kupperman, H.S.: Medical Aspects of Human Sexuality *1*:64 (Sept.) 1967. 2. Rhoades, F.P.: J. Amer. Geriat. Soc. *15*:346 (Apr.) 1967. 3. Kerr, M.D.: Mod. Treatm. 5:587 (May) 1968. 4. Greenblatt, R.B., in Conn, H.F. (Ed.): Current Therapy 1970. Philadelphia, W.B. Saunders Company, 1970, p. 757. 5. Astwood, E.B., in Goodman, L.S., and Gilman, A. (Eds.): The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970, Chap. 69 p. 1538. 6. Tramont, C.B.: Geriatrics *21*:212 (Nov.) 1966.

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New York State Journal of Medicine

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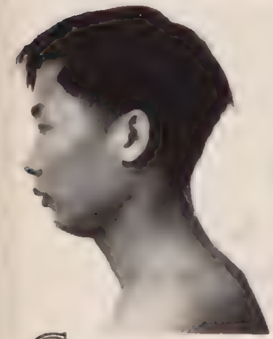

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Month in Washington

The 1972 Democratic campaign platform calls for establishment of a federally-administered, comprehensive national health insurance system to cover all Americans and to incorporate eventually all federal health programs.

The majority of the Democratic platform committee proposed that the system be financed by the Federal government. A minority wanted it financed under social security.

The health care plank was hammered out by Democratic policy makers in Washington prior to the presidential nominating convention in Miami Beach. Several positions, including the stand on Health Maintenance Organizations, in the health care plank were similar to those of the American Medical Association.

Health care parts of the platform proposed by the majority of the drafting committee include:

Good health is the least this society should promise its citizens. The state of health services in this country indicates the failure of government to respond to this fundamental need. Costs skyrocket while the availability of services for all but the rich steadily decline.

We endorse the principle that good health is a right of all Americans.

America has a responsibility to offer to every American family the best in health care wherever they need it, regardless of income or where they live or any other factor.

To achieve this goal the next Democratic administration should:

—Establish a system of universal national health insurance which covers all Americans with a comprehensive set of benefits including preventive medicine, mental, and emotional disorders, and complete protection against catastrophic costs, and in which the rule of free choice for both provider and consumer is protected. The program should be federally-financed and federally-administered. Every American must know he can afford the cost of health care whether given in a hospital or a doctor's office;

—Incorporate in the national health insurance system incentives and controls to curb inflation in health care costs and to assure efficient delivery of all services;

—Continue and evaluate Health Maintenance Organizations;

—Set up incentives to bring health service personnel back to inner-cities and rural areas;

—Continue to expand community health centers and availability of early screening diagnosis and treatment;

—Provide Federal funds to train added health manpower including doctors, nurses, technicians, and paramedical workers;

—Secure greater consumer participation and control over health care institutions;

Expand Federal support for medical research including research in heart disease, hypertension, stroke, cancer, sickle cell anemia, occupational and childhood diseases which threaten millions and in preventive health care;

—Eventual replacement of all Federal programs of health care by a comprehensive National Health Insurance System;

—Take legal and other action to curb soaring prices for vital drugs using anti-trust laws as applicable and amending patent laws to end price-raising abuses, and require generic-name labeling of equal-effective drugs; and

—Expand Federal research and support for drug abuse treatment and education, especially development of nonaddictive treatment methods.

On birth control, the platform states:

—Family planning services, including the education, comprehensive medical and social services necessary to permit individuals freely to determine and achieve the number and spacing of their children, should be available to all, regardless of sex, age, marital status, economic group, or ethnic origin, and should be administered in a noncoercive and nondiscriminatory manner.

On rights of veterans:

—**Medical care:** The Federal government must guarantee quality medical care to exservicemen, and to all disabled veterans, expanding and improving Veterans Administration facilities and manpower and preserving the independence and integrity of the VA hospital program. Staff-patient ratios in these hospitals should be made comparable to ratios in community hospitals. Meanwhile, there should be an increase in the VA's ability to deliver outpatient care and home health services, wherever possible treating veterans as part of a family unit.

We support future integration of health care for veterans into the national health care insurance program, with no reduction in scale or quality of existing veterans care and with recognition of the special health needs of veterans.

The VA separate personnel system should be expanded to take in all types of health personnel, and especially physician's assistants; and VA hospitals should be used to develop state medical schools and area health education centers.

The VA should also assume responsibility for the care of wives and children of veterans who are either permanently disabled or who have died from service-connected causes. Distinction should no longer be made between veterans who have seen "wartime," as opposed to "peacetime," service.

For the elderly:

—Establish Federal standards and inspection of

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Contraindications: Orinase alone is not effective in juvenile or growth-onset diabetes nor in unstable brittle diabetes where insulin therapy is required.

Orinase should not be used: when diabetes is complicated by acidosis, ketosis, or coma, or when a history of repeated bouts of acidosis or coma is obtained; in the presence of other acute complications such as fever, severe trauma, or infections; and in patients with severe renal insufficiency. Insulin is indicated in these circumstances.

Pregnancy Warning: The safety and usefulness of Orinase during pregnancy has not been established either from the standpoint of the mother or the fetus. Animal studies have demonstrated feticidal and teratogenic effects of doses of 1,000-2,500 mg./kg./day, but application to human subjects unknown. Therefore, Orinase is not recommended for the pregnant diabetic, and when administering Orinase to women of childbearing age, these facts should be borne in mind.

Precautions: Diagnostic and therapeutic measures necessary for optimal control with insulin are also necessary with Orinase. The patient on Orinase must be fully instructed: about the nature of his disease; how to prevent and detect complications; how to control his condition; not to neglect dietary restrictions, develop a careless attitude or disregard instructions relative to body weight, exercise, personal hygiene, and avoidance of infection; how to recognize and counteract impending hypoglycemia; how and when to test for glycosuria and ketonuria; how to use insulin; and to report to the physician immediately if he does not feel as well as usual.

Caution, very close observation, and careful adjustment of dose are necessary when: insulin is withdrawn during the trial period in order to avoid ketosis, acidosis, and coma; thiazide diuretics are administered which may result in aggravation of diabetic state and increased tolbutamide requirement, temporary loss of control, or even secondary failure; treating patients with impaired hepatic and/or renal function and debilitated, malnourished, or semistarved patients in order to avoid severe hypoglycemia which may require corrective therapy over several days; and treating patients with severe trauma, infection, or surgical procedures where temporary return to insulin or addition of insulin may be necessary. Response to tolbutamide is diminished in patients receiving therapy with beta blocking agents.

As some diabetics are not suitable candidates, it is essential that the physician familiarize himself with the indications, limits of application, and selection of patients for therapy.

Patients must be under continuous medical supervision, and during the initial test period should communicate with the physi-

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You also know the importance of close monitoring of the patient. Although uncommon, severe hypoglycemia may occur if the dosage is not tailored to suit his requirements.

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cian daily, and during the first month report at least once weekly for physical examination and definitive evaluation. After a month, examinations are recommended monthly or as indicated. Appearance of ketonuria, increase in glycosuria, unsatisfactory lowering or persistent elevation of blood sugar, or failure to obtain and hold clinical improvement indicate nonresponsiveness to Orinase (tolbutamide). Orinase does not obviate need for maintaining standard diet regulation. Uncooperative patients should be considered unsuitable for therapy. Prescriptions should be refilled only on specific instruction of physician. In treating mild asymptomatic diabetic patients with abnormal glucose tolerance, glucose tolerance tests should be obtained at three- to six-month intervals. Orinase is not an oral insulin or a substitute for insulin and must not be used as sole therapy in juvenile diabetes or in diabetes complicated by acidosis or coma where insulin is indispensable.

If phenformin is prescribed in combination with Orinase, appropriate package literature should be consulted.

Adverse Reactions: Severe hypoglycemia, though uncommon, may occur and may mimic acute neurologic disorders such as cerebral thrombosis. Certain factors such as hepatic and renal disease, malnutrition, advanced age, alcohol ingestion, and adrenal and pituitary insufficiency may predispose to hypoglycemia and certain drugs such as insulin, phenformin, sulfonamides, oxyphenbutazone, salicylates, probenecid, monamine oxidase inhibitors, phenylbutazone, bishydroxycoumarin, and phenyramidol may prolong or enhance the action of Orinase and increase risk of hypoglycemia. Orinase long-term therapy has been reported to cause reduction in RAI uptake without producing clinical hypothyroidism or thyroid enlargement and at high doses is mildly goitrogenic in animals. Photosensitivity reactions, disulfiram-like reactions after alcohol ingestion, and false-positive tests for urine albumin have been reported.

Although usually not serious, gastrointestinal disturbances (nausea, epigastric fullness, and heartburn) and headache appear to be dose related and frequently disappear with reduction of dose or administration with meals. Allergic skin reactions (pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions) are transient, usually not serious, and frequently disappear with continued administration. Orinase should be discontinued if skin reactions persist. Recent reports indicate that long-term use of Orinase has no appreciable effect on body weight.

Orinase appears to be remarkably free from gross clinical toxicity: crystalluria or other renal abnormalities have not been observed; incidence of liver dysfunction is remarkably low and jaundice has been rare and cleared readily on discontinuation of drug (carcinoma of the pancreas or other biliary obstruction should be ruled out in persistent jaundice); leukopenia; agranulocytosis; thrombocytopenia; hemolytic anemia; aplastic anemia; pancytopenia; and hepatic porphyria and porphyria cutanea tarda have been reported.

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nursing homes and full Federal support for qualified nursing homes;

—Pending a full national health security system, expand Medicare by supplementing trust funds with general revenues in order to provide a complete range of care and services; eliminate the Nixon Administration cutbacks in Medicare and Medicaid; eliminate the part B premium under Medicare and include under Medicare and Medicaid the costs of eyeglasses, dentures, hearing aids, and all prescription drugs and establish uniform national standards for Medicaid to bring to an end the present situation which makes it worse to be poor in one state than in another.

Before the platform was drafted, two of the Democrats' big guns on health care in Congress appeared jointly for the first time at a platform subcommittee predrafting hearing in St. Louis. They were Rep. Wilbur D. Mills of Arkansas and Sen. Edward M. Kennedy of Massachusetts. They showed themselves together in support of a broad national health insurance but still were not in agreement over how it should be financed and administered.

The platform committee accepted Kennedy's views on these two points but Mills' ideas probably will carry more weight when Congress gets around to taking up such legislation.

"The Federal government should establish a system of compulsory national health insurance which covers all Americans with a standard, comprehensive set of basic health insurance benefits supplemented by protection against catastrophic costs," said the Mills-Kennedy statement which included four "freedom guarantees":

—The Federal government should not own and operate the various elements of the health care system.

—The Federal government should not remove the freedom of every physician and every patient to choose where and how they will give or receive health care.

—Neither the Federal government, nor any of its agents, shall make any medical judgments in a patient's care; this function is reserved solely to the physician and his peers.

—The Federal government shall not make community health policy but shall offer financial and technical support and information and guidelines based on national planning to support local policy formulation.

. . .

John R. Kernodle, M.D., then vice-chairman (now chairman) of the AMA Board of Trustees, urged that any national health insurance program supported by the Democratic party be feasible as to benefits, financially responsible, and be built on the present proved system of health care delivery.

"In considering any proposal for national health insurance, it is important that several factors receive a careful evaluation," Dr. Kernodle said. "First, the program must be feasible in terms of services offered and promises made. It should not hold out promise of benefits which cannot be fulfilled. We urge that any program should be financially responsible, so that public funds are utilized principally to provide financial assistance to those individuals who cannot finance their own medical care through their personal resources. The adoption of any national health insurance plan which undertakes the total medical care of everyone, regardless of their financial circumstances, and does this at public expense, is unwarranted. We would further urge that any plan which is adopted by your Committee also incorporate the use of those private institutions and those private resources and those proved methods of health care delivery which have provided to the people of the United States high quality medical care. Any plan should build on those strengths of the present system and be the means by which a new era of good health and productivity is ushered in for the American People . . . .

The physicians of America have always maintained that high quality medical care should be available for all Americans, including those who need financial assistance in meeting the cost of such care. We believe that the public health care dollar is used most effectively when it is applied principally for the benefit of those individuals and families whose financial circumstances preclude them from acquiring health insurance protection from their own funds. We believe strongly that to a maximum degree possible any national health insurance program should utilize those mechanisms which have proved themselves to be beneficial in the provision of care to private patients. At the same time we favor experimentation, innovation, and the trial of multiple alternative methods for health care delivery to promote the evolutionary development of productive and viable systems of health care appropriate to the needs of a variety of communities."

"We believe that this policy of providing most financial help to those who require help and to permit them the dignity of private care is best incorporated in a proposal which was written by the medical profession known as Medicredit and which has been sponsored by 172 members of the present 92nd Congress. This program, using tax credits, enables all individuals to acquire the type of health care services they prefer. It provides a uniform level of benefits—comprehensive in scope."

. . .

Sen. George McGovern of South Dakota, who all but tied up the Democratic nomination for president before the party's convention, recently outlined his views on health care in a Senate speech which could be termed his "white paper" on the subject.

"The nation's health care system is in critical condition," McGovern said.

"Overall, it costs about $70 billion a year in private payments and public taxes.

"But it is not delivering the treatment Americans need, when they need it, where they need it, and at prices they can afford.

"And it is falling far behind in recruiting and training the people we must have to preserve the nation's health in the future . . . .

"The Federal government cannot and should not attempt to solve all health problems by itself. It cannot do the work of state and local governments, doctors, and other health personnel.

"But certainly it must take the leadership role in medical care. It is the Federal government's ultimate responsibility to assure the health and welfare of the American people."

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He proposed five "new directions to help fulfill" that Federal obligation:

—"First, we must adopt legislation to insure against the spiral in health bills borne by the individual . . .

—"Second, we should greatly improve the organization and efficiency of the entire health delivery system . . . .

—"Third, emergency medical services should be dramatically improved . . . .

—"Fourth, medical services must be delivered to areas of acute shortage, particularly in rural areas and central cities . . . .

—"Fifth, action is needed to stem the rising cost of drugs."

Abstracts in Interlingua

Brisman, R., McMurtry, J. G., Renaudin, J., e Hogan, P. A.: Tractamento del hydrocephalus; anastomosis e plexectomia choroid, ***New York State J. Med.* 72:** 2045 (15 de Augusto) 1972.

Le resultatos del tractamento del hydrocephalus congenital mediante solmente le anastomosis extracranian e le anastomosis extracranian con plexectomia choroid esseva analysate e comparate quatro (4) annos depost le operation initial. Le resultatos esseva considerate bon quando le patiente habeva un quotiente de intelligentia de, al menos, 70 o appareva completemente normal in relation con le comportamento e intelligentia; solmente satisfactori, quando le quotiente de intelligentia esseva inter 50 e 69 o quando le patiente recipeva assistentia special pro le retardate educabile; e insatisfactori quando le quotiente de intelligentia esseva minus que 50 o esseva completemente inope (sin adjuta) e ineducabile. Le superviventia occurreva in 27.8 pro cento in le gruppo con "anastomosis con plexectomia choroid," e in 27.3 pro cento in le gruppo con "anastomosis sin plexectomia choroid." Le rationes possibile pro iste resultatos similares es discutite.

Sobel, G.: Tractamento del pollinosis ab herba e "ragweed"; studio de 17 annos (1955 a 1971), ***New York State J. Med.* 72:** 2048 (15 de Augusto) 1972.

Cinque (5) preparatos differente de herbas e "ragweed" esseva studiate: solution aquose, emulsion, pyridina-alum precipitate, pyridina-alum precipitate in "algivant," e solution aquose in algivant pro le tractamento del pollinosis. Approximatemente, 2,781 patientes esseva observate inter un (1) e 17 annos. Le cinque preparatos esseva analysate per le resultatos clinic, le effectos del dosification, le grado pretherapeutic del pollinosis, le reactiones local e constitutional, e le duration del morbo.

Herbert, W. H., Emirgil, C., e Sobol, B. J.: Gradiente valvular pulmonar (?), ***New York State J. Med.* 72:** 2063 (15 de Augusto) 1972.

In un effortio pro resolver le question de si existe o no un gradiente tensional trans le valvula pulmonar con un flucto pulmonar normal o mesmo elevate, le information obtenite de un gruppo de diverse patientes studiate tanto in reposo como durante le exercitio, esseva revistate. Le gruppo studiate includite 106 patientes. Trenta-duo (32) patientes habeva un tension differential inter le arteria pulmonar e le ventriculo derecto inter 1 e 4 mm./Hg. Le tension del arteria pulmonar esseva plus elevate in 13 patientes, e in 19, iste tension esseva plus basse que le registrate simultaneamente in le ventriculo derecto. Le resultatos de iste studio esseva contrario a illos informate in reportos anterior.

Abstracts

Brisman, R., McMurtry, J. G., Renaudin, J., and Hogan, P. A.: Treatment of hydrocephalus; shunts and choroid plexectomy, ***New York State J. Med.*** **72:** 2045 (Aug. 15) 1972.

The results of treating congenital hydrocephalus by extracranial shunting alone and by extracranial shunting with choroid plexectomy were analyzed and compared four years after the initial operation. Results were considered good if the patient showed an intelligence quotient of at least 70 or appeared completely normal in behavior and intelligence, only fair if he had an intelligence quotient between 50 and 69 or was receiving special assistance for the educable retarded, and poor if he had an intelligence quotient below 50 or was completely helpless and uneducable. Survival occurred in 27.8 per cent of the "shunt with choroid plexectomy" group and in 27.3 per cent of the "shunt without choroid plexectomy" group. Possible reasons for these similar results are discussed.

Sobel, G.: Grass and ragweed pollinosis therapy; seventeen-year study (1955 to 1971), ***New York State J. Med.*** **72:** 2048 (Aug. 15) 1972.

Five different grass and ragweed preparations were studied: aqueous, emulsion, alum-precipitated pyridine, alum-precipitated pyridine in algivant, and aqueous in algivant, for the treatment of pollinosis. Approximately 2,781 patients were followed for one to seventeen years. The five preparations were analyzed for clinical results, effect of dosage, pretreatment degree of pollinosis, local and constitutional reactions, and long-term course.

Herbert, W. H., Emirgil, C., and Sobol, B. J.: Normal (?) pulmonary valvular gradient, ***New York State J. Med.*** **72:** 2063 (Aug. 15) 1972.

In an effort to resolve the question of whether or not a pressure gradient across the pulmonary valve exists with normal or even high pulmonary flow, the data obtained from a diverse group of patients studied both at rest and during exercise were reviewed. The study population included 106 patients. Thirty-two patients demonstrated a pressure differential of from 1 to 4 mm. Hg between the pulmonary artery and right ventricle. The pulmonary artery pressure was higher in 13 patients, and in 19 it was lower than that simultaneously recorded in the right ventricle. Results of this study were contrary to previous reports.

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Medical Meetings

Course on coronary artery disease

The American College of Chest Physicians will sponsor a postgraduate program on "Coronary Artery Disease, 1972" at the Page and William Black Postgraduate School of Mt. Sinai School of Medicine, New York City. The program will be directed by Leslie Kuhn, M.D., and Arthur M. Master, M.D.

Dr. Reuben to speak at assembly

The American Academy of Family Physicians will hold its 1972 Convention and Scientific Assembly at the New York Coliseum on September 25 through 28. David Reuben, M.D., author of the best-selling "Everything You Have Always Wanted to Know About Sex (but Were Afraid to Ask)" and "Any Woman Can" is one of the featured lecturers. Others are Melvin Belli and Beverly Mead, M.D.

The medical implications of space exploration will be the main attraction of the first day. Alan C. Harter, M.D., chief medical services officer of the National Aeronautics and Space Administration will speak on "Lunar Man and Terrestrial Ecology." The second day will center on emergency medicine and trauma via videotapes recorded at the emergency department of Bellevue Hospital. Counseling technics will be the focus of the third day's lectures, and the last day will be devoted to lectures by Perry S. MacNeal, M.D., on "Headache," Kermit Krantz, M.D., on "Prenatal Care, 1972," and attorney Melvin Belli on "The Doctor in Court."

Clinical seminars will be held in the morning, midday, and afternoon. There is a $15.00 registration fee for each course, and each registrant may sign up in advance for six courses. In addition, registrants will be offered programmed instruction, live teaching demonstrations, and scientific exhibits.

For the first time, this year a registration fee will be charged to registrants. The fee will be $15 for members and $25 for nonmembers, except for residents, interns, nurses, and medical students, for whom the fee is waived.

Celebrate insulin discovery

The New York University Post-Graduate Medical School announces that a symposium on diabetes mellitus will be held on September 27 through 29, to celebrate the fiftieth anniversary of the discovery of insulin. The symposium will be held in Alumni Hall, New York University Medical Center, 550 First Avenue, New York City. Tuition is $150 payable in advance when submitting application. Applications may be obtained from the Post-Graduate Medical School at the same address.

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

Uses of drugs

The American College of Physicians will offer, in cooperation with the New Jersey College of Medicine, Newark, New Jersey, a postgraduate course on "The Non-Medical Uses of Drugs: Challenge to the Physician," on October 2 through 6, at the Downtowner Hotel, in Newark. Registration forms and requests for information may be directed to Registrar, Postgraduate Courses, American College of Physicians, 4200 Pine Street, Philadelphia, Pennsylvania 19104. Tuition for ACP members and Fellows, $80; for nonmembers, $125; associates, $40; and for other residents and research fellows, $80. The director of the course will be Edward A. Wolfson, M.D., F.A.C.P.

Hemispherectomy

The New York University Post-Graduate Medical School will offer a symposium on "Hemispherectomy" on October 12 and 13. The objective of the symposium is to re-examine all aspects of the subject including neuropathologic, neurophysiologic, neuroanatomic, clinical, and psychologic considerations. The symposium will feature documentation of residual functions after right and after left hemispherectomy; a comparison of the effects of hemispherectomy in the laboratory animal and the human subject, with emphasis on the comparative neurophysiology of motor function; a review of clinical studies of hemispherectomy and the reevaluation of traditional concepts of organization, development, and localization of human hemispheric function; and implications for future research. Applications may be procured from Office of the Recorder —Room 156B, N.Y.U. Post-Graduate Medical School, 550 First Avenue, New York, New York 10016. Tuition is $100, payable in advance when submitting application.

Courses for hospital emergency department staff

The American College of Surgeons' Committee of Trauma, with financial support from Johnson and Johnson Company, has launched a series of three- to four-day courses in continuing medical education on "Treatment of the Seriously Injured or Ill in the Emergency Department" for all physicians who work in hospital emergency departments. Nurses may also attend. One of the courses will be offered in Brooklyn on October 11 through 14. The course is approved for credit by the American Medical Association toward its Physicians' Recognition Award. The curriculum of the courses will cover specific aspects of trauma, acute medical problems, psychiatric problems, and pediatric problems. Formal announcements for the course con-

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taining a registration form may be requested from the Trauma Division, American College of Surgeons, 55 East Erie Street, Chicago, Illinois 60611.

Electromyography and electrodiagnosis

The New York Medical College Department of Rehabilitation Medicine announces a one-week course in "Electromyography and Electrodiagnosis" to be given October 16 through 20. The course is for physicians only, and is planned to provide detailed instruction in the principles, technics, and instrumentation involved in electromyography and electrodiagnosis. It will consist of lectures, seminars, clinical demonstrations, and laboratory sessions. Tuition will be $175. Applications will be accepted from physicians only, and enrollment is limited. Applications may be obtained from Mrs. A. J. Washington, Jr., Course Secretary, Department of Rehabilitation Medicine, Bird S. Coler Hospital, Welfare Island, New York, New York, 10017.

Radiology of the kidney

The New York University Post-Graduate Medical School will offer a symposium on "Radiology of the Kidney" on October 18 through 20. It will include a review and discussion of recent advances in the radiology of both medical and surgical diseases of the kidney; presentations of the radiologic and clinical aspects associated with renovascular hypertension, renal failure, renal transplantation, vascular and inflammatory disease of the kidney, and neoplasms and pseudoneoplasms of the kidney; presentations and discussion of the various radiologic technics utilized in studying the kidney—including angiography, pharmacoangiography, magnification angiography, renal venography, ultrasonography, and nuclear medicine. Tuition will be $150. Residents and fellows in approved training programs will be eligible for a $80 fee. Applications may be obtained from N.Y.U. Post-Graduate Medical School, 550 First Avenue, New York, New York 10016

Course in cancer chemotherapy

The Memorial Hospital for Cancer and Allied Diseases and Sloan-Kettering Institute for Cancer Research announce a one-week course in "Cancer Chemotherapy" to be offered from October 23 through 27. The course will include lectures and panels on screening methods, pharmacologic technics, methods for the clinical evaluation of potential chemotherapeutic agents, and a review of the chemistry and pharmacology of the alkylating agents, the antimetabolites, steroid hormones, and miscellaneous agents in the treatment of cancer. The course is principally designed for physicians interested in cancer chemotherapy. Enrollment is limited, and applications should be submitted as soon as possible. The fee for the course is $150, payable at the time of application. Requests for application forms should be sent to Dr. Irwin H. Krakoff, Memorial Hospital, 444 East 68th Street, New York, New York 10021.

Environment and health

The Eighth Annual Symposium on the Environment and Health, sponsored by the New York State Action

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for Clean Air Committee, will take place on October 25, in the Hotel Syracuse, in Syracuse. Registration is $10 per person if received before October 16. After that date and at the door, registration will be $20. Information about registration may be obtained from the New York State Action for Clean Air Committee, 105 East 22nd Street, New York, New York 10010.

Dermatology

The New York University Post-Graduate Medical School will offer a symposium on "Current Developments in Dermatology" on October 25 through 27, at Alumni Hall, 550 First Avenue, New York, New York. Subjects to be discussed will emphasize material of interest to the clinical dermatologist and include modern concepts of the pathophysiology and treatment of acne, psoriasis, and warts. Senior clinicians will discuss therapeutic approaches to difficult management problems. The highlight of the symposium will be the Howard Fox lecture, given by J. Graham Smith, M.D., of the Medical College of Georgia, on "The Metabolism of Burns." Tuition for the symposium is $125, but residents in approved training programs are eligible for a $75 fee. Detailed information is available at the Office of the Recorder, New York University Post-Graduate Medical School, 550 First Avenue, New York, New York 10016.

Genetics and birth defects

The New York Medical College Department of Obstetrics and Gynecology and the Obstetrical and Gynecological Society are offering a symposium on "Perinatal Aspects of Genetics and Birth Defects" on October 27 and 28. There will be no charge for the course, and it has been approved by the American Academy of Family Physicians. Participants will receive 12 credits. The curriculum will cover basic concepts of genetics, heredity and disease, clinical aspects of birth defects, and the right to survive. Registration is at 8:00 A.M., Friday, October 27.

Cancer therapy

The Page and William Black Post-Graduate School of Medicine of the Mount Sinai School of Medicine will offer a postgraduate course in medicine: a "Symposium on the Experimental and Immunochemotherapy of Cancer," on November 8 and 9, at The Mount Sinai Medical Center, Fifth Avenue and 100th Street, New York, New York 10029. The fee for the course will be $50. Catalogue and applications may be obtained from Registrar, The Page and William Black Post-Graduate School of Medicine, Fifth Avenue and 100th Street, New York, New York, 10029.

Ophthalmology

The Department of Ophthalmology of the State University of New York Upstate Medical Center at Syracuse will present its Twenty-third Annual Postgraduate Course in Ophthalmology at the Hotel Syracuse on December 1 and 2. Guest lecturers will include Donald M. Gass, M.D., Miami, Florida; David L. Knox, M.D., Baltimore Maryland; and Whitney G. Sampson, Houston, Texas. Tuition is $35 and will cover tuition, daily luncheons, and dinner on Friday night. The course is limited to 90 members, and they will be accepted in the order in which applications accompanied by checks are received. Inquiries regarding the course may be sent to James L. McGraw, M.D., State University of New York Upstate Medical Center, 750 East Adams Street, Syracuse, New York 13210.

Medical News

Consultant panels on medical malpractice

HEW Assistant Secretary for Health and Scientific Affairs Merlin K. DuVal, M.D., recently announced the appointment of four consultant panels to advise the Secretary's Commission on Medical Malpractice. The panels, comprised of 43 men and women from private, professional, and public sectors, will advise the HEW Commission on specific health, consumer, legal, and insurance issues connected with the rising number of medical malpractice claims and their effects on the health care system. Selection of the panelists was based on individual expertise in the areas concerned. The panels will analyze and evaluate important issues in health, consumer, legal, and insurance areas—those affected most by medical malpractice claims. The issues will be presented by the Commission as discussion questions to be reported on periodically by the panels. Each panel will meet in Washington approximately once a month and will report directly to the Commission.

Leukemia researchers

Twenty-eight skilled medical and scientific investigators will begin working under the aegis of the Leukemia Society of America, Inc., research program with grants scheduled to become effective July 1, 1972. Included among the new investigators are nine scholars, each funded with $100,000 for five-year periods; ten special fellows and nine fellows, whose two-year projects are supported by grants of $31,000 and $19,000 in their respective categories. During the time covered by their grants the researchers will be working in the fields of virology, chemotherapy, and the basic sciences. The recent appointments bring the Society's research roster to a total of 68 men and women whose efforts are being funded this year by a record $1,050,000.

Material for inclusion in the medical news section must be received six weeks prior to publication.

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Leukemia Society grant requests

Investigators interested in pursuing careers in the field of leukemia research may apply now to the Leukemia Society of America, Inc., for financial grants to support their future work. Applications must be submitted by November 1, 1972, and approved grants will become effective July 1, 1973. Three types of funding are available: scholarships, for five-year periods totalling $100,000; and special fellowships and fellowships, for two-year periods in each category, for $31,000 and $19,000 respectively. Funding is not limited to United States citizens and is available to qualified individuals working in other countries. Application forms may be obtained by writing to the Vice-President for Medical and Scientific Affairs, Leukemia Society of America, Inc., 211 East 43rd Street, New York, New York, 10017.

Bill of Rights for mentally retarded

Senator Jacob K. Javits, R-N. Y., and 18 other senators recently introduced a "Bill of Rights for the Mentally Retarded." A companion bill introduced in the House has over 40 cosponsors. The legislation would for the first time establish strict standards to protect the human rights of the mentally retarded. It would create a partnership of governmental agencies, professional organizations, practitioners, and consumer representatives working together to improve services to the mentally retarded while stimulating states to establish plans for regional and community programs. One objective of the bill is to minimize admission to institutional residential care facilities and provide funds for alternative programs of community care.

Certification for physicians' assistants

A new national project leading to the certification of physicians' assistants is being undertaken by the American Medical Association and the National Board of Medical Examiners, Max H. Parrott, M.D., Chairman of the AMA's Board of Trustees, and John P. Hubbard, M.D., President of the National Board, announced jointly recently. The National Board will appoint such committees as it deems necessary to deal with evaluation of competence and development of the certification examination. There will be interlocking membership between the AMA advisory body and the National Board committees. The National Board of Medical Examiners is undertaking to obtain the necessary financial support needed for the study and development of the new program.

Research grants

A total of $989,022 was received in April and May, 1972, by the State University of New York Downstate Medical Center, Brooklyn, for 41 research and training grants. The awards provide for 11 new projects, 20 renewals, and 10 supplements.

Boating safety

July 2 through 8 was National Safe Boating Week. Dr. Hollis S. Ingraham, State health commissioner

continued on page 2115

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Editorials

Re: pollution

Pollution has become a grave life threat simply because the conditions promoting it have been disregarded—no one seemed to be aware of the import, and it was just easier to pay no heed to it. We must now pay the grim price in ever mounting damage to health and comfort. The damage to our environment is now so great that a broad, many-faceted approach to correct the situation is imperative. We must repair the damage so that our rivers again are clean and our drinking water palatable.

Further contamination of the air we breathe—more evident in urban areas, but present everywhere—can be prevented more easily. Eliminating SMOG requires a concerted effort by the individual, organized groups, and by the government. There must be an individual concern when we see damaging black smoke, no matter what its source may be. All of us undoubtedly are disturbed when the passing diesel motored truck or bus, often municipally owned, spews forth its black exhaust with its sickening fumes. Does any one of us, singly or as an organized group, or does "the law" do anything about it? Our individual failure to act is attributable to our reluctance "to snitch," to our ethic that condemns such action, to our strong desire not to become involved and, finally, to let the other fellow do it.

Today the situation is so critical that reviews and revisions of these mores and attitudes are urgent. If we cannot combat all pollution in one fell swoop, then let us begin with a single, small step. Let us endorse the procedure of reporting to some central health agency—by telephone or by mail—the license number of the truck or bus that we see despoiling our atmosphere.

This may later be extended to other forms of pollution. Let this be done as a clear cut duty, and failure to do so be considered as shirking of a citizen's responsibility. Let us make such reports with a sense of concern for the well-being of all and for the common good. This may be the first step with great potential in attacking the overall problem of pollution.

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The September 1st ***New York State Journal of Medicine*** will publish corrections of erroneous biographic material appearing in the 53rd edition of the *Medical Directory of New York State.* The corrections will be printed on gummed paper in the same typeface and format of the *Directory* so they may be cut out and pasted over the original entries in the book itself.

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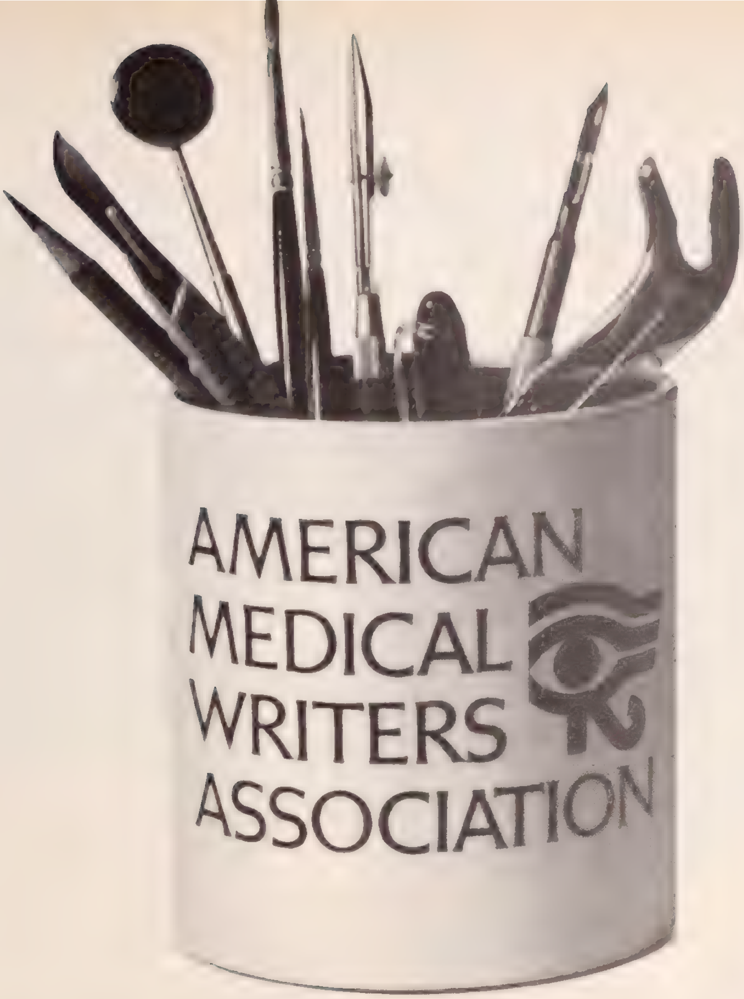

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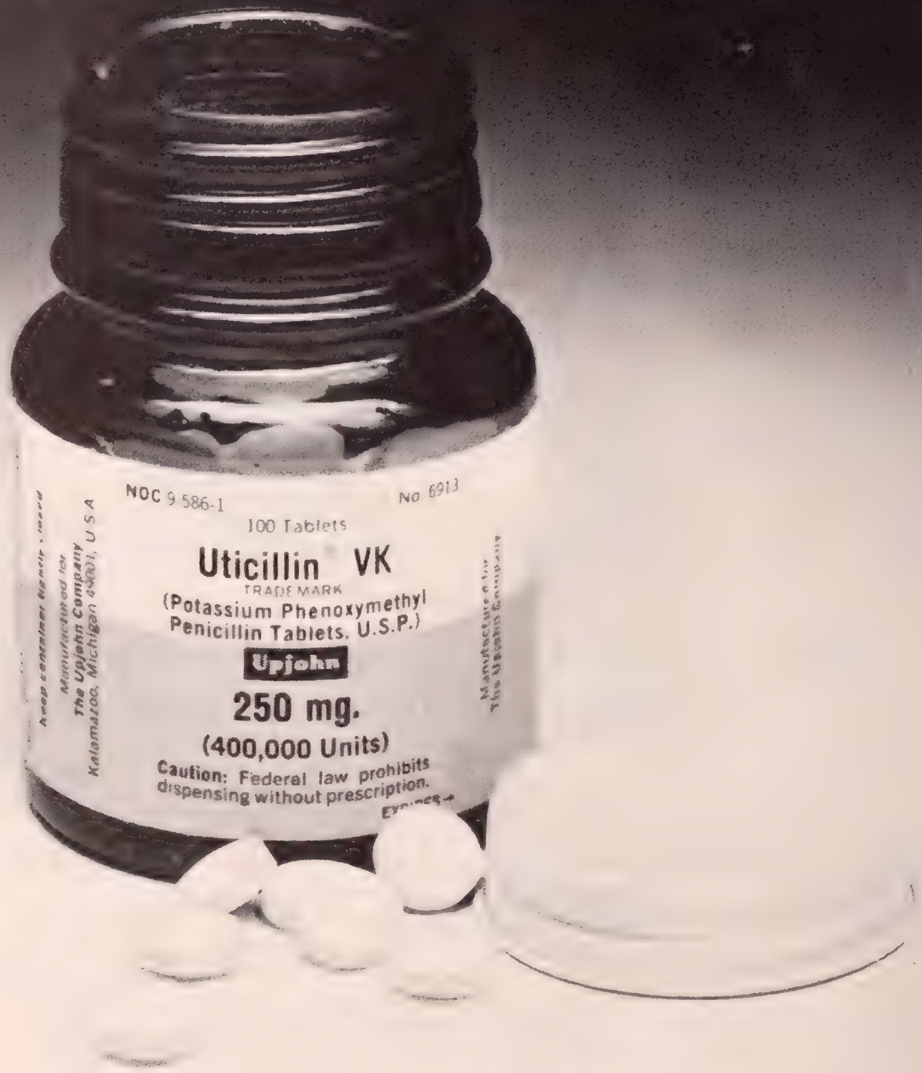
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Treatment of Hydrocephalus

Shunts and choroid plexectomy

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The results of treating congenital hydrocephalus by extracranial shunting alone and by extracranial shunting with choroid plexectomy were analyzed and compared four years after the initial operation. Results were considered good if the patient showed an intelligence quotient of at least 70 or appeared completely normal in behavior and intelligence, only fair if he had an intelligence quotient between 50 and 69 or was receiving special assistance for the educable retarded, and poor if he had an intelligence quotient below 50 or was completely helpless and uneducable. Survival occurred in 27.8 per cent of the "shunt with choroid plexectomy" group and in 27.3 per cent of the "shunt without choroid plexectomy" group. Possible reasons for these similar results are discussed.

Choroid plexectomy is an operation for treating hydrocephalus by decreasing the amount of cerebrospinal fluid production. Clinical results from this procedure have been reported and reviewed. Extracranial shunting technics have emerged as the primary method for treating most forms of congenital hydrocephalus. In the earlier years of the extracranial shunt, some thought that choroid plexectomy and shunting might be more effective than either procedure alone. A review of the hydrocephalic patients treated at the Neurological Institute of New York during the past fifteen years provides a long-term follow-up of a group of patients who were treated with choroid plexectomy and extracranial shunting. A comparable group of patients treated exclusively with shunts provides a control for evaluating the effectiveness of choroid plexectomy.

Patient selection

Seventy-seven children with congenital hydrocephalus were shunted for the first time between 1955 and 1965. Eighteen had choroid plexectomies in addition to their shunting procedure and either expired or were available for follow-up at least four years after their initial operation. These 18 patients will be analyzed as the "shunt with choroid plexectomy" group.

Fifty-nine patients who were treated exclusively with extracranial shunting procedures between 1955 and 1965 either expired or were followed for at least four years after their initial operation. Twenty-two of these were selected for controls. They will be analyzed as the "shunt without choroid plexectomy" group.

Results

The two groups were comparable as to average age at time of first shunt and the degree and type of hydrocephalus (Table I). Hydrocephalus was considered massive when the cerebral mantle was less than 2 cm. Obstructive hydrocephalus referred to block of cerebrospinal fluid pathways at either the aqueduct or the fourth ventricle outlet. Hydrocephalus was "primary" if it was not due to known intrauterine infection (toxoplasmosis), postnatal cerebral trauma or infection, spina bifida cystica, or other complex multiple congenital deformities. The number of operations per patient was similar in both groups. Thirteen of the "shunt with choroid plexectomy" patients re-

---

*Present address: Letterman General Hospital, Box 282, San Francisco, California 94129.

TABLE I. Comparison of two groups

Variable	Shunt With Choroid Plexectomy	Shunt Without Choroid Plexectomy
Number	18	22
Average age at first operation (months)	5.2	5.2
Cerebral mantle less than 2 cm.	16	14* (of 18)
Communicating hydrocephalus	7*	9*
Obstructive hydrocephalus	10*	12*
"Primary" hydrocephalus	14	15
Neonatal meningitis	1	2
Average number operations per patient	5.3	4.5

* Data not available on all patients.

ceived choroid plexectomy because of failure of their initial extracranial shunt. All of the "shunt without choroid plexectomy" patients required at least two shunting operations. The choroid plexus was removed from the lateral ventricle unilaterally in 4 patients and bilaterally in 14.

Gross survival was considered good (competitive) if patients had a formal IQ (intelligence quotient) equal to or above 70 on the Merill-Palmer-Wechsler Intelligence Scale for Children, or were maintaining themselves in their appropriate grade in a regular school and were found to have grossly normal mentation on neurologic examination. Since it is easy to overestimate an IQ on neurologic examination in a young child, only those children who appeared completely normal in behavior and intelligence in the absence of formal IQ testing were included in the "good" group. It is recognized that an IQ of 70 is in a borderline retarded group, and this figure is used mainly to facilitate comparisons with other studies of hydrocephalus. Survival was considered fair in children with an IQ between 50 and 69 or in those without IQ testing who were receiving special assistance for the educable retarded. Survival was considered poor in those with an IQ less than 50 or in those who were completely helpless and uneducable. Survival was good in 5 of the 9 survivors of the "shunted without choroid plexectomy" group and in 6 of 13 of the "shunted with choroid plexectomy" group. When computed on the basis of the entire population, the quality of survival was very similar in the two groups—good survival in 5 of 18 (27.8 per cent) in those with "shunt and choroid plexectomy" and 6 of 22 (27.3 per cent) in those with "shunt and no choroid plexectomy" (Table II).

TABLE II. Number of patients in given clinical condition at least four years after treatment

	Group	
Clinical Condition	Shunt With Choroid Plexectomy	Shunt Without Choroid Plexectomy
Good	5	6
Fair	2	1
Poor	2	6
Died	9	9
TOTAL	18	22

Comment

Untreated hydrocephalic patients have been reviewed by Hagberg and Sjorgen,[2] Lawrence and Coates,[3] and Yashon, Jane, and Sugar.[4] They report long-term survival in 35, 45, and 51 per cent of patients, respectively. "Good" survival was reported in 21, 19, and 20 per cent.

The ventriculopleural shunt was one of the early mechanical extracranial shunts used in the treatment of hydrocephalus. It was first described by Heile[4a] in 1914, and was later refined and extensively used by Ransohoff.[5,6] In the late 1950s, the ventriculoatrial shunt with the one-way valve was introduced, and use became widespread in many centers.

Studies by Foltz,[7] Nulsen and Becker,[8] Guthkelch and Riley,[9] and Lorber and Zachary[10] suggest the effectiveness of the ventriculoatrial shunt. They report long-term survival in 61, 69, 80, and 83 per cent of their patients, respectively. "Good" results, with an IQ greater than 74, were found in 34 and 47 per cent of the initial group, and an IQ greater than 69 was found in 52 and 72 per cent.

Choroid plexectomy was first described by Dandy[11] and later by Scarff[1] and others. In Scarff's series of 39 patients with communicating hydrocephalus, 49 per cent survived, with good results in 26 per cent of the original group. The inadequacy of choroid plexectomy in treating hydrocephalus may reflect an incomplete reduction in cerebrospinal fluid production, which may persist either from the remaining choroid plexus or from extraventricular sources. Bering and Sato[12] showed that much of the cerebrospinal fluid is formed in the subarachnoid space and that a substantial portion of intraventricular cerebrospinal fluid is formed by ependyma and not by choroid plexus. Milhorat *et al.*[13] suggest that in hydrocephalus, the choroid plexus may have a substantial absorptive role. In the present study, no additional benefit could be detected from the combined treatment of choroid plexectomy and extracranial shunting over shunting alone.

Several factors have contributed to the relatively poor results (27 per cent good survivors) in the present study. Some of the patients who had "shunts and choroid plexectomy" were failures of their initial procedure—either choroid plexectomy or ventriculoextracranial shunt. This may have resulted in the selection of patients with a worse prognosis. The ventriculopleural shunt was the main shunt used in most of these cases. Subsequent evidence suggests that the ventriculoatrial shunt is less likely to obstruct and is therefore more effective for long-term treatment of hydrocephalus. A poorer prognosis also results from patients with congenitally obstructive and postmeningitic communicating hydrocephalus, a number of whom were included in the present study.

Summary

The combined effect of choroid plexectomy and extracranial (ventriculopleural and/or ventriculoatrial) shunting on congenital hydrocephalus has been evaluated in a group of 18 patients who were followed for at least four years. A comparable group of 22 hydrocephalic patients treated exclusively with extracranial shunts was selected for controls. Quality of survival was good (IQ of 70 or higher) in 5 of 18 (27.8 per cent) of those with "shunt and choroid plexectomy" and in 6 of 22 (27.3 per cent) of those with "shunt and no choroid plexectomy." No benefit could be detected from the combined treatment of choroid plexectomy and shunting over shunting alone.

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Acknowledgment. We would like to thank Joseph Ransohoff, M.D., and the neurosurgical and pediatric neurologic staffs of the Neurological Institute for the inclusion of their patients and their helpful comments.

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Grass and Ragweed Pollinosis Therapy

Seventeen-year study (1955 to 1971)

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The purpose of this report is to compare the annual results and long-range findings of different preparations used in the treatment of grass and ragweed pollinosis, namely, aqueous, emulsion, alum-precipitated pyridine (Allpyral), alum-precipitated pyridine in algivant, and aqueous in algivant.

Prior to 1960 the author used only aqueous extracts for the treatment of pollinosis. From 1960 through 1967 other preparations were added. The emulsion form was used from 1960 to 1965. Alum-precipitated pyridine grass and ragweed extracts were employed from 1963 through 1971. In 1965 two additional combinations were added, alum-precipitated pyridine grass and ragweed extract suspended in algivant, and aqueous grass and ragweed pollen extract suspended in algivant. This work was conducted in private practice, and no controls were performed.

Method

This study covered a period of seventeen years, 1955 to 1971. There were approximately 2,781 patients treated in private practice ranging in age from five to sixty-five years. Some of the patients were studied for one year, but the majority were followed for several years. Some patients received only one type of grass or ragweed preparation, while others received different preparations during several years of treatment.

Only clinically grass- and ragweed-sensitive patients were included in this survey. Some patients had only grass or ragweed pollinosis or both, and other patients had additional allergies with definite aggravation of symptoms during the pollen season. Patients were given a preliminary test by the puncture technic. This was followed by the intradermal test. All patients had confirmatory evidence of their clinical grass or ragweed pollinosis by these tests. In addition, some patients received conjunctival threshold and serial dilution intracutaneous threshold tests.

Five different grass and ragweed preparations were used for treatment; aqueous, emulsion, alum-precipitated pyridine, alum-precipitated pyridine in algivant, and aqueous extract in algivant. The alum-precipitated pyridine pollen preparation was introduced in 1959.[1] The reported advantages over traditional aqueous extracts are fewer injections and decreased systemic reactions. Algivant* is a combination of calcium gluconate and the sodium salt of alginic acid. The theory is that on injection a gel is formed topically, which provides a depot of sustained stimulus for antibody production, thus allowing for fewer injections and greater protection.[2] Algivant was mixed with equal volumes of grass or ragweed alum-precipitated pyridine for one group, and with equal parts of grass or ragweed aqueous extract for another group.

In the late 1930s Freund, Casals, and Hosmer[3] found that the antibody production in animals could be enhanced and prolonged by the use of emulsions containing Falba, paraffin oil, killed mycobacteria, and various antigens. Loveless[4] employed Freund's technic with encouraging results, without the killed mycobacteria in the treatment of 33 patients with ragweed pollinosis. The emulsion used in this study consisted of one part of emulsifier (mannide monooleate-arlacel A), nine parts of mineral oil (Drakeol 6VR), and ten parts of aqueous ragweed or grass extracts.

The top dosage reached before the onset of the pollinating season ranged from 1,000 to 10,000 P.N.U. (protein nitrogen units). Some of the aqueous-treated patients received lower doses. Selection of the top dosage for the emulsion-treated patients was determined primarily on their preliminary skin and conjunctival threshold test results. Determination of treatment dosage for the other preparations depended primarily on the patients' ability to tolerate the amount given and only secondarily on the preliminary test findings.

The number of injections given for a course of hyposensitization varied with each extract. With the aqueous extracts, between 16 to 24 weekly injections were required. In the emulsion form of treatment, one to four injections were given for a complete course approximately two to three months before the onset of the pollinating season. Approximately 7 to 10 injections were given for alum-precipitated pyridine, 5 to 8 for alum-precipitated pyridine-algivant, and 8 to 14 for aqueous algivant.

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*Product of Colab Laboratories, Chicago, Illinois.

TABLE I. Results of grass treatment: comparison of various preparations 1955 to 1971

PREPARATIONS	YEAR	NUMBER OF PATIENTS	SATISFACTORY RESULTS
AQUEOUS	1955	25	48%
	1956	36	44%
	1957	49	68%
	1958	53	70%
	1959	50	66%
	1968	30	63%
	1969	55	82%
	1970	61	67%
	1971	54	59%
		413 total	63% average
EMULSION	1960	64	69%
	1961	72	77%
	1962	72	59%
	1963	46	70%
	1964	18	39%
	1965	11	64%
		283 total	66% average
ALLPYRAL	1963	67	66%
	1964	68	38%
	1965	30	57%
	1966	24	58%
	1967	38	58%
	1968	52	71%
	1969	46	80%
	1970	46	76%
	1971	47	83%
		433 total	68% average
ALLPYRAL-ALGIVANT	1965	36	64%
	1966	22	71%
	1967	21	68%
		79 total	67% average
AQUEOUS-ALGIVANT	1965	11	64%
	1966	29	62%
	1967	16	62%
		56 total	62% average

Investigators have used many standards in the evaluation of results. The patients in this study were classified as either "satisfactory" or "unsatisfactory." The "satisfactory" group consisted of patients whom the author, as well as the patients, believed had benefited from their course of treatment. The reverse was true for the "unsatisfactory" group; patient and physician were dissatisfied with the results of hyposensitization. Patients were seen during the pollinating season, telephone contact was made with others, and some reported by correspondence. The author was the only person to evaluate the data.

Results

The results of injection treatment with various grass preparations are seen in Table I. The results of ragweed treatment are seen in Table II. The aqueous preparations were studied from 1955 to 1959 and 1968 to 1971. There were 863 grass- and ragweed-sensitive patients studied. Satisfactory results varied from 44 to 82 per cent, with an average of 63 per cent for grass and 62 per cent for ragweed. The emulsion form of therapy was studied for six years from 1960 to 1965. There were 752 patients. Satisfactory results ranged from 39 to 77 per cent with an average of 66 per cent for both grass and ragweed preparations. The alum-precipitated pyridine extract was studied for nine years, 1963 to 1971. There were 894 patients with satisfactory results ranging from 38 to 83 per cent, with an average of 68 per cent for grass and 66 per cent for ragweed preparations. The alum-precipitated pyridine-algivant group was studied for three years with 65 per cent satisfactory results. Aqueous algivant was followed for three years with 62 per cent satisfactory results.

Five different grass and ragweed preparations were studied: aqueous, emulsion, alum-precipitated pyridine, alum-precipitated pyridine in algivant, and aqueous in algivant, for the treatment of pollinosis. Approximately 2,781 patients were followed for one to seventeen years. The five preparations were analyzed for clinical results, effect of dosage, pretreatment degree of pollinosis, local and constitutional reactions, and long-term course.

Tables III and IV show the relationship of results to dosage. No correlation could be found between dosage and results. In the aqueous-treated group the patients were divided into three groups depending on the dosage given, 100 to 1, 000, 1,000 to 5,000, and 5,000 to 10,000 P.N.U. There was no difference in clinical results in these three divisions. With the other prepara-

TABLE II. Results of ragweed treatment: comparison of various preparations 1955 to 1971

PREPARATIONS	YEAR	NUMBER OF PATIENTS	SATISFACTORY RESULTS
AQUEOUS	1955	40	58%
	1956	52	56%
	1957	53	66%
	1958	62	52%
	1959	64	63%
	1968	30	73%
	1969	48	73%
	1970	51	63%
	1971	50	62%
		450 total	62% average
EMULSION	1960	103	65%
	1961	101	76%
	1962	114	66%
	1963	77	57%
	1964	41	59%
	1965	33	70%
		469 total	66% average
ALLPYRAL	1963	68	64%
	1964	72	46%
	1965	34	50%
	1966	33	75%
	1967	44	68%
	1968	60	70%
	1969	54	81%
	1970	48	68%
	1971	48	70%
		461 total	66% average
ALLPYRAL-ALGIVANT	1965	34	67%
	1966	22	86%
	1967	21	66%
		77 total	71% average
AQUEOUS-ALGIVANT	1965	9	67%
	1966	30	60%
	1967	18	61%
		57 total	62% average

TABLE III. Results analyzed in relation to dosage 1955 to 1971 (grass)

				DOSAGE							
				<100 PNU		100-1,000PNU		1,000-5,000PNU		5,000-10,000PNU	
PREPARATION	YEARS	PTS.	RESULTS	Pts.	Satis.	Pts.	Satis.	Pts.	Satis.	Pts.	Satis.
AQUEOUS	1955-59 1968-71	413	63%	15	47%	133	62%	236	68%	32	69%
EMULSION	1960-65	283	66%					184	63%	99	74%
ALLPYRAL	1963-71	433	68%	9	67%	47	74%	333	67%	41	56%
ALLPYRAL-ALGIVANT	1965-67	82	67%	1	100%	7	43%	68	69%	6	83%
AQUEOUS-ALGIVANT	1965-67	56	62%			10	69%	46	63%		

TABLE IV. Results analyzed in relation to dosage 1955 to 1971 (ragweed)

				DOSAGE							
				100 PNU		100-1,000PNU		1,000-5,000PNU		5,000-10,000PNU	
PREPARATION	YEARS	PTS.	RESULTS	Pts.	Satis.	Pts.	Satis.	Pts.	Satis.	Pts.	Satis.
AQUEOUS	1955-59 1968-71	450	62%	11	55%	114	63%	257	65%	68	50%
EMULSION	1960-65	469	66%					306	65%	163	69%
ALLPYRAL	1963-71	461	66%	8	37%	30	73%	303	69%	118	58%
ALLPYRAL-ALGIVANT	1965-67	77	71%	1	100%	5	20%	51	76%	19	80%
AQUEOUS-ALGIVANT	1965-67	57	62%			1	100%	51	62%	5	80%

TABLE V. Grass: results analyzed in relation to severity of pollinosis 1955 to 1971.

				DEGREE OF POLLINOSIS					
				Light		Moderate		Severe	
PREPARATION	YEAR	PTS.	RESULTS	Pts.	Satis.	Pts.	Satis.	Pts.	Satis.
AQUEOUS	1955-59	413	63%	37	92%	209	67%	106	50%
EMULSION	1960-65	283	66%	84	77%	120	62%	79	62%
ALLPYRAL	1963-71	433	68%	90	83%	243	70%	100	46%
ALLPYRAL-ALGIVANT	1965-67	82	67%	7	86%	44	67%	31	48%
AQUEOUS-ALGIVANT	1965-67	56	62%	7	86%	29	62%	20	55%

TABLE VI. Ragweed: results analyzed in relation to severity of pollinosis 1955 to 1971

				DEGREE OF POLLINOSIS					
				Light		Moderate		Severe	
PREPARATION	YEAR	PTS.	RESULTS	Pts.	Satis.	Pts.	Satis.	Pts.	Satis.
AQUEOUS	1955-59	450	62%	40	78%	280	63%	130	54%
EMULSION	1960-65	469	66%	123	82%	239	64%	107	54%
ALLPYRAL	1963-71	461	66%	62	85%	292	69%	107	48%
ALLPYRAL-ALGIVANT	1965-67	77	71%	8	87%	50	80%	19	53%
AQUEOUS-ALGIVANT	1965-67	57	62%	5	80%	33	69%	19	42%

TABLE VII. Reactions following grass therapy 1955 to 1971

PREPARATION	YEAR	PTS.	CONSTITUTIONAL REACTIONS			NODULES
			Mild	Mod-Severe	Total	
AQUEOUS	1955	25	4%	-	4%	-
	1956	36	6%	-	6%	-
	1957	49	4%	-	4%	-
	1958	53	5%	-	5%	-
	1959	50	2%	-	2%	-
	1968	30	3%	3%	6%	-
	1969	55	2%	4%	6%	-
	1970	61	3%	3%	6%	-
	1971	54	5%	-	5%	
		413	3%	1%	4%	-
EMULSION	1960	64	3%	5%	8%	3%
	1961	72	6%	4%	10%	7%
	1962	72	1%	-	1%	4%
	1963	46	2%	-	2%	12%
	1964	18	-	-	-	15%
	1965	11	-	9%	9%	18%
		283	3%	2%	5%	9%
ALLPYRAL	1963	67	-	-	-	-
	1964	68	-	-	-	2%
	1965	30	-	-	-	-
	1966	31	3%	-	3%	-
	1967	46	3%	3%	6%	-
	1968	52	-	4%	4%	-
	1969	46	2%	-	2%	-
	1970	46	4%	-	4%	-
	1971	47	3%	2%	5%	-
		433	2%	1%	3%	1%
ALLPYRAL-ALGIVANT	1965	36	3%	-	3%	9%
	1966	24	4%	-	4%	17%
	1967	22	5%	-	5%	14%
		82	4%	-	4%	12%
AQUEOUS-ALGIVANT	1965	11	9%	-	9%	18%
	1966	29	3%	-	3%	17%
	1967	16	-	14%	14%	7%
		56	3%	6%	9%	14%

TABLE VIII. Reactions following ragweed therapy 1955 to 1971

PREPARATION	YEAR	PTS.	CONSTITUTIONAL REACTIONS			NODULES
			Mild	Mod-Severe	Total	
AQUEOUS	1955	40	4%	4%	8%	-
	1956	52	6%	-	6%	-
	1957	53	4%	-	4%	-
	1958	62	6%	-	6%	-
	1959	64	8%	-	8%	-
	1968	30	3%	6%	9%	-
	1969	48	-	2%	2%	-
	1970	51	3%	-	3%	-
	1971	50	2%	-	2%	-
		450	4%	1%	5%	-
EMULSION	1960	103	13%	3%	16%	3%
	1961	101	7%	-	7%	7%
	1962	114	-	-	-	4%
	1963	77	1%	-	1%	10%
	1964	41	2%	-	2%	14%
	1965	33	3%	-	3%	19%
		469	4%	1%	5%	10%
ALLPYRAL	1963	68	-	-	-	-
	1964	72	-	-	-	-
	1965	34	6%	-	6%	-
	1966	33	-	2%	2%	-
	1967	44	4%	4%	8%	-
	1968	60	-	3%	3%	-
	1969	54	2%	-	2%	-
	1970	48	2%	-	2%	-
	1971	48	3%	2%	5%	-
		461	2%	1%	3%	-
ALLPYRAL-ALGIVANT	1965	34	5%	-	5%	6%
	1966	22	8%	-	8%	11%
	1967	21	9%	-	9%	9%
		77	7%	-	7%	8%
AQUEOUS-ALGIVANT	1965	9	-	-	-	11%
	1966	30	9%	-	9%	18%
	1967	18	-	16%	16%	11%
		57	5%	6%	11%	13%

tions, dosages ranged from 1,000 to 10,000 P.N.U. These were subdivided into two groups, namely, 1,000 to 5,000 and 5,000 to 10,000 P.N.U. There was no statistically significant difference in this dosage range.

Tables V and VI show the results analyzed in relation to the severity of pollinosis. The pretreatment grade of pollinosis was divided into light, moderate, or severe. Tables V and VI show that the patients with the most severe degree of pollinosis fared less well and those with mild degrees of pollinosis responded better to hyposensitization with all the preparations. Alum-precipitated pyridine showed a slightly poorer response with the most severely sick patients; however, it is questionable whether this is statistically significant.

Tables VII and VIII show the incidence of local and constitutional reactions following treatment with the various preparations. Constitutional reactions with aqueous grass and ragweed extracts averaged 4 to 5 per cent. Constitutional reactions were more common (12 per cent) with emulsion therapy in the first years of treatment. As greater

TABLE IX. Grass: results following hyposensitization for two to ten years

	Aqueous Pts.	Aqueous %	Emulsion Pts.	Emulsion %	Allpyral Pts.	Allpyral %	Total Pts.	Total %
Satisfactory - Same	81	42%	34	49%	79	32%	194	38%
Unsatisfactory - Same	30	15%	6	9%	26	11%	67	12%
Satisfactory - Continued Improvement	21	12%	2	3%	29	12%	52	10%
Unsatisfactory - Continued Decline	13	7%	12	17%	38	15%	63	13%
Fluctuation	46	24%	15	22%	75	30%	136	27%

TABLE X. Ragweed: results following hyposensitization for two to ten years

	Aqueous Pts.	Aqueous %	Emulsion Pts.	Emulsion %	Allpyral Pts.	Allpyral %	Total Pts.	Total %
Satisfactory - Same	82	42%	33	46%	93	41%	228	46%
Unsatisfactory - Same	30	15%	9	8%	16	7%	55	10%
Satisfactory - Continued Improvement	21	11%	5	4%	17	8%	43	8%
Unsatisfactory - Continued Decline	22	11%	21	18%	20	9%	63	12%
Fluctuation	41	21%	27	24%	20	35%	146	24%

knowledge was acquired with this technic, the incidences diminished. There was an average of 5 per cent reactions for the six years studied. Alum-precipitated pyridine extracts gave constitutional reactions ranging from 2 to 3 per cent. These extracts combined with algivant gave 4 to 7 per cent constitutional reactions. Aqueous extracts combined with algivant gave 8 to 9 per cent constitutional reactions.

Tables VII and VIII also show the incidence of delayed local reactions noted at the site of injection. No delayed local reactions were seen following aqueous extracts. Continued yearly treatment with emulsion extracts revealed a marked increase in delayed local nodules. Many of these patients had received additional emulsion injections with other pollens, dust, and mold during previous years. In the great majority of patients, these residual nodules were pea-sized and persisted for years. In some patients the nodules were larger, about 1 to 2 cm. in diameter, and occasionally fluctuated in size throughout the year. With alum-precipitated pyridine extracts there was a 2 per cent incidence of delayed local reactions in the earlier years. The reactions consisted of a pea-sized nodule which disappeared after several months. No delayed nodules occurred in the last several years. With the use of algivant, some of the injection sites were painful for several days and showed diffused areas of thickening which disappeared after several weeks. This occurred in 9 per cent with alum-precipitated pyridine-algivant and in 18 per cent with aqueous algivant extracts.

Many of the patients were hyposensitized with the same preparations for two to ten years. Records were noted whether patients remained satisfactorily or unsatisfactorily the same, had further yearly improvement, decline, or had fluctuations in results from year to year. These findings were noted on Tables IX and X. Satisfactory results with a similar degree of success each season were seen in 42 per cent. Continued further improvement with each year's treatment was noted in an additional 9 per cent. Unsatisfactory results with approximately the same degree of discomfort despite repeated yearly injections were noted in 11 per cent. Increased discomfort despite yearly hyposensitizatiom was seen in 12 per cent. Yearly fluctuation from satisfactory to unsatisfactory results were noted in 25 per cent. These results were similar with ragweed and grass and with the

TABLE XI. Grass: results following hyposensitization for two to four years

	Aqueous		Emulsion		Allpyral		Total	Total
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Satisfactory - Same	74	43%	32	50%	65	34%	171	40%
Unsatisfactory - Same	29	17%	5	8%	24	13%	58	13%
Satisfactory - Continued Improvement	20	11%	1	1%	27	14%	48	11%
Unsatisfactory - Continued Decline	13	7%	12	19%	31	16%	56	13%
Fluctuation	38	22%	14	22%	45	23%	99	23%

TABLE XII. Ragweed: results following hyposensitization for two to four years

	Aqueous		Emulsion		Allpyral		Total	Total
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Satisfactory - Same	75	44%	48	45%	65	45%	188	44%
Unsatisfactory - Same	28	16%	9	8%	13	9%	50	12%
Satisfactory - Continued Improvement	18	10%	4	4%	11	8%	33	10%
Unsatisfactory - Continued Decline	20	11%	21	20%	14	10%	55	13%
Fluctuation	32	19%	24	23%	40	28%	96	21%

TABLE XIII. Grass: results following hyposensitization for five to ten years

	Aqueous		Emulsion		Allpyral		Total	Total
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
Satisfactory - Same	7	42%	2	40%	14	25%	23	30%
Unsatisfactory - Same	1	6%	1	20%	2	4%	4	5%
Satisfactory - Continued Improvement	1	6%	1	20%	2	4%	4	5%
Unsatisfactory - Continued Decline	-	-	-	-	7	13%	7	9%
Fluctuation	8	47%	1	20%	30	54%	39	51%

five different vehicles in which they were combined.

The two- to ten-year study following repeated grass or ragweed yearly injections was subdivided into a two- to four-year period and five- to ten-year period. Results are seen in Tables XI, XII, XIII, and XIV. In the ragweed and grass groups studied for the longer period of time, there was an increase to 47 per cent noted in fluctuations from satisfactory to unsatisfactory for one season and occasionally more than one season.

Many of the patients received one type of grass or ragweed extract for several years and then changed to another preparation for one or several more years. The purpose was to compare the results of different preparations in the same individual. Tables XV, XVI, XVII, and XVIII show these findings. The results were essentially the same with the various vehicles under study with no clear-cut superiority noted with any product or combination.

Comment

Despite sixty years of hyposensitization treat-

TABLE XIV. Ragweed: results following hyposensitization for five to ten years

	Aqueous Pts.	Aqueous %	Emulsion Pts.	Emulsion %	Allpyral Pts.	Allpyral %	Total Pts.	Total %
Satisfactory - Same	7	30%	5	56%	21	34%	40	35%
Unsatisfactory - Same	2	9%	-	-	3	4%	5	5%
Satisfactory - Continued Improvement	3	12%	1	11%	6	8%	10	9%
Unsatisfactory - Continued Decline	2	9%	-	-	6	7%	8	7%
Fluctuation	9	40%	3	33%	38	47%	50	44%

TABLE XV. Aqueous extracts compared with other preparations (grass)

PREPARATION	PTS.	SAME	BETTER	WORSE
EMULSION	11	82%	18%	
ALLPYRAL	41	95%	2%	2%
ALLPYRAL-ALGIVANT	7	57%	14%	29%
AQUEOUS-ALGIVANT	19	89%		11%

TABLE XVI. Aqueous extracts compared with other preparations (ragweed)

PREPARATION	PTS.	SAME	BETTER	WORSE
EMULSION	17	88%	6%	6%
ALLPYRAL	29	82%	10%	7%
ALLPYRAL-ALGIVANT	10	100%		
AQUEOUS-ALGIVANT	23	87%	4%	9%

TABLE XVII. Alum-precipitated pyridine extracts compared with other preparations (grass)

PREPARATION	PTS.	SAME	BETTER	WORSE
EMULSION	20	90%	10%	
AQUEOUS	15	93%	7%	
ALLPYRAL-ALGIVANT	44	98%		2%
AQUEOUS-ALGIVANT	8	88%		12%

TABLE XVIII. Alum-precipitated pyridine extracts compared with other preparations (ragweed)

PREPARATION	PTS.	SAME	BETTER	WORSE
EMULSION	42	79%	21%	
AQUEOUS	26	100%		
ALLPYRAL-ALGIVANT	57	96%	4%	
AQUEOUS-ALGIVANT	8	100%		

ment for pollinosis, the medical profession is still debating its value. Hyposensitization with aqueous extracts has been the accepted form of treatment with allergists since Noon's[5] introduction in 1911. Frankland and Augustin[6] reported 79 per cent results and placebo 33 per cent; Loveless[4] reported 79 per cent results and placebo 44 per cent. Lowell and Franklin[7] showed slight but statistical advantages of aqueous therapy over placebo in 12 pairs of patients followed for one year. In contrast to these reports, Fontana, Holt, and Mainland[8] treated approximately 60 patients a year for five years and found no difference between aqueous pollen treatment and placebo.

There has been a wide range of reported success regarding emulsion therepy. Brown[9] had over 90 per cent excellent results; Gaillard, Schellin, and Mayers[10] 83 per cent; Mitchell *et al.*[11] 75 per cent; Loveless[4] 68 per cent; and Arbesman and Reisman[12] 60 per cent. Sherman *et al.*[13] and Friedman and Crisp[14] found emulsion and aqueous to give equivalent results. Dworetzky and Isaacs[15] followed 45 patients for three years with low dose emulsion (387 to 1,935 P.N.U.). Both emulsion and placebo gave two-thirds satisfactory results. In 1965 the Food and Drug Administration discontinued the commercial production of the emulsion for pollen therapy because of potential carcinogenicity. Nevertheless, many allergists are in disagreement and are preparing their emulsions and continuing their use.

The reported clinical results for alum-precipitated pyridine have varied from excellent to worthless. Gaillard, Schellin, and Mayers[10] had 86 per cent good results; Tuft and Torsney[16] found alum-precipitated pyridine effective in 80 per cent and stated that it was slightly better than aqueous extracts. Tuft and Torsney[16] found significant hemagglutinin titer increases to ragweed antigens in patients with the alum-precipitated pyridine preparation. However, they did not find a relationship between clinical results, dosage of ragweed extract, or antibody titers. Maurer and Strauss[17] reported 60 per cent success with oral administration of alum-precipitated pyridine in 30 patients. Reisman and Arbesman[18] found this preparation ineffective and equivalent to placebo.

The different preparations mentioned previously gave similar clinical results. No superiority for relief of clinical symptoms was found with any one of the five preparations in which grass or ragweed was incorporated. Great annual variability (44 to 82 per cent) was noted with an average of 63 per cent satisfactory results. Most of the previous workers have reported on one season's treatment. There are relatively few studies conducted for several years' duration. The problem of pollinosis is beset with many variables. Some of the other excitants are molds, wind, humidity, smog, amount of exposure, infection, atmospheric pollen concentration, multiple patient allergies, and emotions. The lack of control of any of these additional factors can greatly influence the results of any hyposensitization program from what could have been a satisfactory season to an unsatisfactory one. Long-range studies with adequate controls must be conducted to evaluate more carefully any therapeutic modality. This work was conducted in private practice. As a result, there were no controls to serve as a basis of comparison.

An important fact which affected the results was the pretreatment degree of pollinosis. It was found that the mild cases fared very well, while the more severe cases responded less successfully with all preparations. Alum-precipitated pyridine appeared to give slightly poorer results with the most severe patients. This difference was extremely small and requires more study to be statistically significant. One of the possibilities accounting for the wide range of reported clinical results by other workers may stem from differences in the degree of pollinosis. The proportion of mild, moderate, and severe cases must be clearly defined for the interpretation of results. Superior results may be due to a milder group; poorer results may be due to a more severely affected group of pollen patients. While the overall results of hyposensitization treatment with all the preparations averaged 66 per cent, the most severe group averaged 52 per cent. Other workers who have conducted placebo studies report results ranging from 30 to 60 per cent. It is disquieting to find such a closeness in figures.

Optimum dosage in grass and ragweed therapy has long been disputed. The current trend has been for the highest tolerated doses giving maximum protection. Frankland and Augustin,[6] Levin,[19] Johnstone,[20] and others have published work to support this contention. Ratner[21] stated that moderate doses were optimal, that is, 0.3 cc. of 1:4,000 dilution. Hansel[22] advised low doses, namely, 0.5 cc. of 1:10,000,000 dilution. Contrary to specific high- or low-dosage recommendation, Reisman and Arbesman[18] noted that dosage was not related to clinical results with either aqueous or emulsion extracts. The findings in this work show that there is no relationship between results and dosage within the range employed. It is not known what the placebo would have given. It is possible that small amounts of extract are sufficient to stimulate the immune mechanism of the host.[23] Further work is required on the problem of dosage and the efficacy of hyposensitization.

One of the disadvantages of aqueous therapy is the incidence of constitutional reactions. This can be minimized by frequent injections and by very slow increments. Despite these precautions, mild constitutional reactions with aqueous extracts were encountered every year ranging from 2 to 6 per cent. In the exquisitely hypersensitive patient, hyposensitization with aqueous extracts can be fraught with danger. The physician administering these extracts is frequently beset with fear. The constitutional rate with aqueous extracts would probably have been higher had not very slow and cautious increases been given. When emulsion therapy was first employed, constitutional reactions were fairly common. As more experience was gathered, the incidence was markedly lowered but never eradicated. Alum-precipitated pyridine had the lowest incidence of constitutional reactions, but it did not possess complete immunity from reactions. Algivant proved a disappointment in eliminating or minimizing constitutional reactions. Algivant was originally introduced as having the ability to form a depot from which there was slow release of antigen. Because of this theoretic advantage, increases in dosage were made rapidly. The highest index of constitutional reactions in this study came from the algivant group.

Delayed local reactions at the site of injection did not occur with aqueous extracts. They were rarely seen following alum-precipitated pyridine.

They were found in approximately 15 per cent following algivant and gradually disappeared in several weeks. The greatest problem of delayed nodules was associated with emulsions. With continued administration, the incidence rose, especially with those patients who had repeated yearly injections. The nodules were usually small and pea-sized and persisted for several years. Unfortunately, a few were larger and fluctuated in size for years. This was a marked deterrent to the continued use of emulsions.

The number of injections required for a course of hyposensitization was most numerous for aqueous, moderate for alum-precipitated pyridine, and least for emulsion. Algivant was combined with alum-precipitated pyridine-algivant, especially the number of injections. Unfortunately, too many constitutional reactions occurred with alum-precipitated pyridine algivant, especially with aqueous algivant, indicating that incorporation of algivant did not retard release of antigen.

The algivant preparation was used from 1965 to 1967. The overall clinical results were similar to other preparations; however, there were too many disadvantages to continue its use. Algivant did not act like the adjuvant of Freund, Casals, and Hosmer[3] to increase antibody titer, hence protection. The local reactions were troublesome. Constitutional reactions were markedly increased indicating a rapid release of the aqueous phase of the antigen; algivant did not delay the release of incorporated vehicles. The use of algivant was discontinued in 1967.

Some of the patients received the same type of extract for several years. As the number of years of repeated treatment increased, fluctuations in seasonal results rose to 47 per cent. Satisfactory results for any one year of treatment was 64 per cent with any of the preparations, but on repeated yearly injections one-half had one and occasionally more than one season which was not satisfactory. In the study of hay fever and rose fever, it is important to recognize the many other possible contributing factors in addition to ragweed and grass pollen which can cause trouble. It is conceivable that these additional factors could convert an otherwise successful season to failure. On the other hand, because of the variability of yearly results, it is not known whether hyposensitization treatment altered the natural course of pollinosis. It is important to have a large series of untreated patients or patients given placebo followed for several years. Only by having comparative long-term treated and untreated cases will the efficacy of hyposensitization be determined.

Summary

The purpose of this study was to compare the results of grass and ragweed pollinosis with various injectable preparations: aqueous, emulsion, alum-precipitated pyridine (Allpyral), alum-precipitated pyridine in algivant, and aqueous extract in algivant. There were 2,781 grass- and ragweed-sensitive patients studied from 1955 to 1971. The clinical results of grass and ragweed in the five different preparations were essentially the same, approximately 64 per cent satisfactory results. The work was carried out in private practice, and no placebo studies were done. The number of injections required for a course of hyposensitization with aqueous was 16 to 24, alum-precipitated pyridine 7 to 10, emulsion 1 to 4, alum-precipitated pyridine-algivant 5 to 8, and aqueous algivant 7 to 12. On analyzing the results in relation to the pretreatment degree of pollinosis, the severe cases gave poorer and the milder cases gave better results. There was no correlation between results and dosage. Comparison of different preparations in the same patients during different years revealed similar results. Constitutional reactions were least frequent with alum-precipitated pyridine. Algivant did not prevent constitutional reactions, and local reactions were numerous. The incidence of residual nodules following emulsion injection increased with yearly injections.

Results following two to ten years of repeated yearly pollen injections gave approximately a similar degree of relief in 42 per cent, an additional 10 per cent continued to show further improvement with each succeeding year, 11 per cent continued to have a similar degree of discomfort, 12 per cent showed further decline, and 25 per cent had yearly fluctuations. Results following five to ten years of repeated yearly injections showed an increase in fluctuations to 47 per cent from satisfactory to unsatisfactory results for one season and occasionally more than one season. Of the five preparations used, only two are being actively employed at the present time, aqueous and alum-precipitated pyridine. The latter had a slight advantage over aqueous, since it required fewer injections per season and had a lower incidence of constitutional reactions, but results were slightly poorer in the patients with the most severe pollinosis.

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SYMPOSIUM

MINIMAL BRAIN DYSFUNCTION AND THE HYPERKINETIC CHILD

Clinical Aspects

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The subject of this report is a neurologic entity, the existence of which was revealed by a social revolution, that is, by the push toward universal literacy. In a modern industrial state literacy is a prerequisite of economic well-being. When the first attempts to achieve universal literacy were made, barely one hundred years ago even in western Europe, it did not take long to discover that some children had marked difficulty in learning to read when compared with their fellows. This difficulty is not based, as is the acquired dyslexia of adults, on pathologically verifiable and anatomically localized lesions in the posterior portion of the dominant parietal lobe. At first, under the influence of Hinshelwood's thinking, attention was focused on this dyslexia as a genetically conditioned neurophysiologic defect. Today, while some cases are still consigned to the category of "specific" dyslexia on a genetic basis, most cases are thought of as the result of a degree of brain damage usually sustained at the time of birth. The term "minimal brain dysfunction" is to be preferred to the term "minimal brain damage," since it does not immediately commit the clinician to an anatomic etiology, but may cover both anatomic and neurophysiologic causes. The clinical dimensions of the problem are enormous. Not only are the educational requirements of the Second Industrial Revolution increasing the strain on children with learning disabilities, but in many countries also the problem has barely begun to surface. Almost half the adult population of the globe is illiterate, since they have not been exposed to appropriate educational opportunity.

It is important to state at the outset that we are discussing the learning disabilities of children with minimal cerebral dysfunction, not cases in which the failure to read is due to inadequate exposure to educational stimulus, to retardation, or to the rare and usually easily recognized learning disability that is purely psychogenic. As will be emphasized later, children with learning disabilities which are primarily organic may well have their problems complicated by psychiatric factors.

Historical data in diagnosis

The historical data which one seeks first in the diagnosis and treatment of a child with minimal cerebral dysfunction relate to the mother's pregnancy and the child's birth history. The commonest histories encountered are those of prematurity, cesarean section, or breech delivery; but many other causes of dystocia present themselves, such as twin birth, nuchal cord, and other less specific histories of difficulty in labor. As an example of the kind of history which may be encountered, one may instance the child whose birth is stated to have been normal, although further questioning reveals that he weighed well over 9 pounds at birth and that his maternal grandmother suffered from diabetes. Presumably while carrying the patient the mother passed through an unrecognized phase of the so-called prediabetes of pregnancy. The child's cerebral dysfunction may relate either to some metabolic defect from the prediabetes or perhaps merely to birth difficulties

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of a mechanical type produced by the baby's large size.

Occasionally in the child with minimal cerebral dysfunction one may obtain a history of delay in motor milestones or in the acquisition of speech, but a clearcut history in these areas is usually lacking. In any case the range of normal for speech acquisition is so wide as to render most of the histories obtained in this area valueless for diagnosis. They are of most value when the mother can clearly contrast the child's speech milestones with those of older siblings. There are, however, two important areas of historical information in the child with minimal cerebral dysfunction. These are (1) the acquisition of handedness and dominance, and (2) hyperactivity.

The normal history of a child born into a family of right-handers is that for the first year of life he is ambidextrous. He then begins to show right-handed preference. This preference is currently assumed to arise on a genetic basis, however much the predisposition may appear to be encouraged by family and social pressures. The brain-damaged child from such a family background may deviate in two ways. He may remain ambidextrous throughout life, or he may not acquire right-handedness until a later age than normal, such as at the time he begins to attend school. Of course, in those families in which there is a history of familial left-handedness, the presence of ambidexterity or of delayed acquisition of definite handedness is not of value in evaluating the brain-injured child.

The second historical factor in evaluating the child with minimal cerebral dysfunction is a history of overactivity. The history may often be traced back to early infancy, if the mother gives an account of the child as having been colicky or always a restless sleeper. The overactivity or hyperkinesia becomes increasingly apparent as the child is able to move about. It is not difficult usually in a clinical situation to distinguish the fidgety, ceaslessly active child whose hyperkinesia is organic in origin from the goal-oriented disruptiveness of the child with psychogenic overactivity. Moreover, there are other points of differentiation. The organic hyperkinesia tends to remit spontaneously at the ages of seven to nine, and persistence of a complaint of overactivity beyond that age raises the suspicion of important psychogenic factors. Second, hyperkinesia of an organic type may be accompanied by a paradoxic response to drugs. The chloral hydrate or barbiturate administered in the electroencephalographic laboratory to sedate the child may have the paradoxic effect of making him more restless and make it impossible to obtain a satisfactory tracing. Moreover, the brain-damaged child may respond paradoxically to such stimulants as amphetamines or methylphenidate and become more tractable on such a regimen. Despite our ignorance in this area, it is usually safe to accept history of such a paradoxic response as pharmacologic support of a clinical suspicion of organic involvement.

Hyperkinesia

Hyperkinesia may be a more prominent symptom than any learning disability, clumsiness, or ambidexterity in a child with minimal cerebral dysfunction; hence the preference of some physicians for the term "hyperkinetic syndrome." The facet of the dysfunction which most often presents itself may depend on one's sources of referral. These need not be restricted to school authorities anxious for help with class placement. They may be merely distracted parents. It is appropriate to add at this point that many children with minimal cerebral dysfunction may never be referred to a physician if their only symptom is a moderate hyperkinesia. This is often dismissed by the parents as an excessive joie de vivre or proof of masculine aggressiveness. What arouses parental anxiety is an associated learning disability and their consequent fears for the child's future employability.

The results of a conventional neurologic examination in a child with minimal cerebral dysfunction may be negative, but the examination must always be scrupulously performed. Unsuspected and significant abnormalities may be found, such as a unilateral Babinski reflex in a five-year-old child with no history of gait difficulty. Perhaps the commonest overt abnormality on physical examination is strabismus. This abnormality should be taken as evidence of minimal brain damage rather than mislead the physician and parents into thinking that the child's reading difficulty has a purely ocular basis. Neurologic testing for "soft signs" may reveal minor defects of coordination, but these have often been revealed by the history, for example, clumsiness is often manifest as a delayed ability by the child to lace his own shoes.

Laboratory confirmation

After the history taking and the neurologic examination, especially in such an ill-defined and heterogeneous entity as minimal cerebral dysfunction, in which diagnosis still depends on clinical opinion rather than neuropathologic findings, the physician turns with special hope to laboratory confirmation. In very rare cases, he may uncover a specific cause, such as phenylketonuria in a mild form or histidinemia. Usually he will attempt to support or elucidate his clinical judgment by reference to less specific tests, such as the electroencephalogram and psychometric evaluation.

These tests may be less specific, but that must not be taken to imply that they are entirely valueless. Normal electroencephalographic findings, it is true, are of no value in deciding for or against an organic basis to the patient's learning disability of hyperkinesia. However, abnormal findings on the electroencephalogram would certainly lend weight to a clinical suspicion of organ involvement. In the author's experience, two types of abnormality are especially common: (1) 3 cs. per second sinusoidal slowing from the occipital region, and (2) generalized defects of rate and organization, the evaluation of which is perforce more subjective. More rarely, solitary foci of spike discharges may be present. It is my belief that the value of the electroencephalogram in minimal cerebral dysfunction has in general been underrated, because the tracing may be read by an electroencephalographer physically remote from the patient and physician and not encouraged by the requisition to report abnormalities of the type described previously. Moreover, we are very ignorant of the changes which take place in such abnormalities in the older child and of the possible response of these abnormalities to pharmacologic treatment.

Psychometric testing is an important adjunct to clinical evaluation, but one in which there also looms a significant gap between the physician and the psychologist. Most neurologists profess to receive confirmation of clinical suspicion and help in recommending placement from psychometric testing, especially from the Wechsler Intelligence Scale for Children, with its emphasis on discrepancy between verbal and performance scores. However, it is startling to find that in many cases the inferences drawn by the neurologist from the breakdown of the subtests are at variance with the interpretation given by the psychometrist in his own summary of his results, let alone with the statements which may be culled from various textbooks.

It is appropriate to add at this point that in those cases in which the patient suffers from a specific dyslexia of a genetic type, the diagnosis is usually easily made on the evidence of a positive family history, absence of birth trauma, absence of hyperkinesia or other stigmas of brain damage, an electroencephalogram with normal results, absence of significant psychogenic factors, and often the presence of normal or above-average ability in intellectual areas not involving linguistic skills whereas the dyslexia of the anatomically brain-damaged child may often be accompanied by less-obvious learning deficits in the area of mathematics.

Treatment

In the treatment of children with minimal cerebral dysfunction several approaches are indicated. In the first place, an attempt should be made to control the hyperkinesia by drugs. Currently the drug of choice is methylphenidate, which may achieve quite remarkable results. First, the control of motor restlessness may bring direct relief to both patient and family. Second, the lessening of restlessness in school may enable the child to sit still longer and learn better. Third, it appears that in some cases the methylphenidate, apart from controlling motor restlessness, has some directly integrating effect on the cerebrum. The child's writing may become less atactic, and even the clumsiness in the gymnasium may be lessened. The dramatic effects seen in some cases give one great hope for the future of pharmacotherapy in this area.

Special class placement and special reading classes may be of great value. Even negatively, such placement removes the child from a too-competitive environment, which often leads to secondary behavioral problems. This beneficial effect is independent of the type of maneuver used in the special class to advance the child's intellectual skills. As is well known, there are many schools of thought on the best means of overcoming dyslexia.

Since our intensified interest in the child with minimal cerebral dysfunction is of such recent date, our knowledge of prognosis is poor. It is best in the subcategory which was first recognized, that is, the familial dyslexias usually present in males without hyperkinesia or psychiatric complications. These patients usually show a gradual improvement in their reading ability as they grow older, but they never read for pleasure. This need not prevent their being in other respects well integrated into society and even overachievers in areas which do not depend on linguistic skills.

Of the cases due to trauma sustained at birth we know much less. Hyperkinesia may remit spontaneously at the age of seven to nine, but the combination of dyslexia and other learning deficits may prove a disadvantage of significance in today's world. Its effects in a world increasingly controlled by intelligence and intelligent machines are a subject for speculation.

Finally, I would like to caution my readers against any simplistic tendencies discernible in this brief account. Many cases clinically are a complex of factors. A patient may have an inherited susceptibility which would have remained asymptomatic had he not sustained the second insult of some minor birth trauma. The insufficiently demanding education standards of an urban school may in some cases conceal an organic deficit revealed by the stress of a suburban school system. It may be almost impossible to disentangle the coexistence of extreme maternal deprivation and minor birth trauma in a single child. But these difficulties of judgment and management should not deter us from a study of what is socially and statistically one of the most important problems facing the field of neurology today.

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Structural Basis

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Details of the cause and pathogenesis of clinical minimal cerebral dysfunction have been elusive. Nonetheless, features of the examination and longitudinal observation of these children have led to the tacit assumption that brain damage is present.

The presence or absence of acquired destructive foci has yet to be confirmed, since there is no retrospective neuropathologic study available. The subject is of continuing interest to pediatric neuropathologists, since there is an abundance of neonatal material available from which to project possible analyses. Anatomic correlation of the clinical findings in the minimal brain damage syndrome tallies with certain lesions recognized in neonatal material, and a suggested clinicopathologic correlation may be permitted.

Clinical analysis of these patients, including the electroencephalographic aspect, makes it clear that gross cortical disturbance is not present. References to pneumonencephalographic study indicate that no abnormal findings are to be expected. Clinical experience with infantile hemiplegia and with hemispherectomy shows that under the age of one year lateralized cerebral functions of the damaged hemisphere are transferred to the other. The clinical phenomenology in minimal cerebral dysfunction is a striking borderline mental retardation and no focal deficit, coupled with formidable integrative and personality difficulties.

These generalities, therefore, lead to three major physiologic predictions. The structural lesions in minimal brain damage would be discrete and highly focal with little or no volume loss and therefore no atrophy. The lesions by their small size or location would not produce classic long-pathway deficit such as hemiparesis or hemisensory deficit. The lesions must be diffuse, or at least bilateral, and produce dysfunction in the aggregate as a function of their totality rather than by individually large destructive foci. The visuospatial difficulties, motor integrative dysfunction, and abnormal personality function suggest disorder in the central gray matter, preferentially the limbic system and thalamus, and/or association pathways in white matter.

Pathologic analysis of neonatal deaths long centered on the classic "cerebral palsy" findings of a grossly destroyed brain. Important in the interpretation of such material, however, is the realization that broad areas of macroscopic destruction are due to a vascular mechanism, from associated or superimposed hypotension at or around the time of birth. It is possible to show such brains with damage perfectly outlining the perfusion territories of one or several cerebral arteries.

The newborn brain is imperfectly developed, exemplified by the paucity of myelin and by the as yet not fully completed migration of neurons. The cortex, not yet fully developed, is not specifically or selectively vulnerable to the effect of hypoxia. The brain stem is highly resistant to anoxia alone.

Anoxic lesions of newborn infants

With these facts in mind, three well-recognized, very interesting forms of discrete, clinically nonlocalizing anoxic lesions of the newborn infant may be demonstrated. These are observed in neonatal cases with other causes or mechanisms which explain death and may display a cellular reaction which date the lesions as being slightly older than the time or parturition. These three types of lesion are those which, if an infant survives, are thought to provide a likely explanation of minimal cerebral dysfunction.

The first lesion is selective neuronal necrosis. Foci of nerve-cell loss in both thalami are individually small yet multiple. Difficulties in observer estimation of decline in cell numbers are avoided when mineralized carcasses of cell bodies and their processes can be seen. These persist for indefinite periods and are reliable markers. The view has previously been put forward that these extensive microthalamic lesions are the most likely explanations for the clinical finding.[1,2] Bilateral thalamic lesions could also account for abnormal electroencephalographic findings. These lesions are not evident on gross examination of brain slices, and multiple routine sections from both sides of the brain must be taken for their appreciation.

A second lesion is periventricular leukomalacia. Spotty foci of white matter liquefaction necrosis have been known for many years, but interest in them was subordinate to interest in hemorrhages and gross softenings. Current awareness may be traced to the work of Banker and Larroche.[3] More recently Gilles and Murphy[4] have published a survey expanding this work even further. These foci may be seen grossly but are more often microscopic. Even when macrophage-filled cavitation is not evident, microscopic foci of reactive astro-

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cytosis may be seen. The implications of these multiple foci of destruction in developing white matter are straightforward. Found most frequently in the parietal and occipital regions, interruption of visuointegrative pathways would be a logical presumption.

The third lesion is that of matrix infarction. The periventricular zone in the newborn child contains a band of maturing neuroblasts not yet migrated. This area is at special risk because of the location beneath ventricular ependyma where venous stasis and anoxia are common. Our information on this area began with the recognition of the ventricular hemorrhage of the newborn infant and the further recognition that this was nontraumatic but was the result of anoxia with congestion. Although the end point in this sequence is rupture within the subependymal venous system, Towbin[5] has been responsible for focusing attention on the inevitable association of matrix necrosis. It is a reasonable assumption to suggest that congestive anoxia in some babies has developed enough to kill matrix without being sufficiently severe to cause lethal ventricular hemorrhage. This would also selectively damage the cells in a critically developing zone without producing widespread or gross lesions. A rich source of oligodendroglia for future white-matter associative pathways, and of thalamic and perhaps some cortical neurons, would have been destroyed.

In all three of these lesions, important integrative anatomy is damaged while preserving the gross architecture of the brain and sparing classic long pathways. These lesions, even when fresh in a newborn brain, may not be grossly evident and are mostly realized in microscopic survey. The difficulties of locating these lesions several or many years later in an adult-sized brain will be immediately obvious.

Even in well-surveyed brains from state school material in obviously brain-damaged individuals a small number are "normal."

A relevant point is that these lesions in a newborn death may show a cellular reaction clearly older than the time of birth. The histologic dating, preceding the time of birth, shows that in a number of these cases the damage has occurred in utero in the late third trimester. These cases may correspondingly have a "normal" birth history yet equally clearly have sustained anoxic damage. This is a little-explored region.

The least explored area is that which is most difficult, the ultrastructural survey. It will be sufficient to draw attention to a target report by Gonatas and Goldensohn[6] of a cortical biopsy of a child in which birth damage was not present by history. Numbers of abnormally enlarged axons were observed, making it appear likely that this abnormality of gray matter association circuits was a likely explanation for the mental retardation in this case. This area of electron microscopic or axodendritic disorder may in the future become relevant.

Summary

The clinical phenomena of the minimal brain-damage syndrome of mental, emotional, visuospatial, and motor integrative difficulties suggest anatomic involvement of deep gray matter regions and/or association pathways. Three lesions observed in autopsied neonatal material would correlate with these findings. These are selective neuronal necrosis, matrix infarction, and periventricular leukomalacia. In addition, ultrastructural studies in the future may reveal axodendritic disturbance. Although there has never been neuropathologic study of the minimal brain damage syndrome, the presence or absence of the lesions previously mentioned may be confirmed in appropriate material by presently available technics.

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Normal (?) Pulmonary Valvular Gradient*

In an effort to resolve the question of whether or not a pressure gradient across the pulmonary valve exists with normal or even high pulmonary flow, the data obtained from a diverse group of patients studied both at rest and during exercise were reviewed. The study population included 106 patients. Thirty-two patients demonstrated a pressure differential of from 1 to 4 mm. Hg between the pulmonary artery and right ventricle. The pulmonary artery pressure was higher in 13 patients, and in 19 it was lower than that simultaneously recorded in the right ventricle. Results of this study were contrary to previous reports.

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There has been disagreement as to whether there is normally a systolic pressure gradient across the pulmonary valve. An RV-PA (right ventricular-pulmonary artery) pressure drop when associated with a right ventricular pressure below 30 mm. Hg has been considered by some observers to be a normal gradient and has been explained on two bases. First, the differential is related to a flow phenomenon.[1-4] That is, the ratio of the pulmonary valvular cross-sectional area to stroke volume is such that a relative stenosis exists, thereby causing a pressure drop. Second, since the cross-sectional area of the main pulmonary artery may be greater than that of the valve itself, a Venturi effect causes a drop in measurable pressure with the decrease in velocity.[5-10]

The normal gradient has been reported as high as 10 to 15 mm. Hg.[1,3,4,6,8-11] These findings were described in a study in children by Brotmacher and Fleming.[1] These authors, acknowledging the unavailability of pediatric volunteers for catheterization, therefore reported on patients who had been referred with a diagnosis of congenital heart disease. Nine of their 10 patients had an RV-PA systolic gradient. Since the right ventricular systolic levels were still within the normal range, the systolic gradient was reported to be normal as well. Krovetz *et al.*[3] in further support of the small RV-PA gradient as a normal variant chose the upper limit of 15 mm. Hg since patients with gradients greater than this had electrocardiographic evidence of right ventricular hypertrophy.

On the other hand, other observers consider any pulmonary valvular gradient to be abnormal.[12-16] They cite the numerous patient studies with high pulmonary blood flows without a demonstrable gradient. Dow *et al.*[12] reported a case with a cardiac index of 10 L. without a gradient and therefore concluded that even pathologically high pulmonary blood flows do not produce "relative pulmonary stenosis."

The basic question is whether a pressure gradient across the pulmonary valve exists with normal or even high pulmonary flow. In an effort to resolve this question we undertook a review of the data obtained from a diverse group of patients studied both at rest and during exercise.

Methods

The records of the last 500 catheterizations performed in this laboratory were reviewed. All patients with congenital heart disease were eliminated from the study to avoid the inclusion of patients with pulmonary stenosis. Pulmonary valvular involvement secondary to rheumatic heart disease was considered so rare that it might safely be ignored. All patients who had manifested dysrhythmia were excluded. This further criterion obviated the variations of systolic pressure (atrial fibrillation and flutter) which make accurate measurement difficult.

A total of 106 patients, 58 males and 48 females, comprised the study population. Their ages ranged from fourteen to seventy-four years. The most frequent diagnoses were rheumatic and arteriosclerotic heart disease. A number of patients had undergone evaluation for the resection

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TABLE I. Means and ranges for pressure and flow determinations

	Rest					Exercise				
	O_2/M^2	C.O.	HR*	PA > RV	RV > PA	O_2/M^2	C.O.	HR	PA > RV	RV > PA
				(mm. Hg)					(mm. Hg)	
Number	42	42	42	3	4	41	41	41	6	4
Mean	127.3	5.6	81.5	...	...	300.2	7.3	103.8	...	...
SD†	21.3	1.7	18.4	...	...	102.8	2.5	24.8	...	...
Range	93 to 173	2.8 to 10.5	38 to 132	1 to 3	1 to 3	120 to 605	3 to 12.8	66 to 156	1 to 3	1 to 2
Number	64	64	64	10	15	...	...	...	...	...
Mean	125.9	4.9	84.5	...	...	...	...	...	...	...
SD	23.7	1.6	17.0	...	...	...	...	...	...	...
Range	87 to 214	2.2 to 8.6	36 to 122	1 to 4	1 to 2	...	...	...	...	...

* HR = heart rate.
† SD = standard deviation.

of a peripheral pulmonary lesion. A few patients' conditions were diagnosed as cardiomyopathy, and several findings were considered to be within normal limits.

Studies of the left side of the heart were accomplished by retrograde catheterization of the left ventricle via the right brachial artery. RV-PA pressures were recorded simultaneously with a number 9 double-lumen catheter* or by the withdrawal of a number 6 or 7 Cournand catheter* from the pulmonary artery to the right atrium while recording continuously.

All catheters were connected to matched Statham p23db gauges with short sections of rigid high pressure tubing.[17] The technics for establishing a two- or three-gauge system with all units having equal sensitivity and reflecting true pressure have been reported previously.[17] In instances in which the double-lumen catheter was used, the similarity of the recording characteristics of each lumen was documented by positioning the catheter, so that both recording tips were in the same chamber or vessel both before and after the recording of the transvalvular pressures.

Flow and RV-PA pressures were recorded in 64 patients at rest and in an additional 42 patients at rest and during mild exercise. Cardiac output determinations were by the direct Fick method.

Results

The means and ranges of the measurements recorded appear in Table I.

Oxygen consumption per square meter (O_2/M^2). The resting and exercise values of 127.3 and 300.2 cc., respectively, yield an average increase of 172.9 cc., a small increment indicating a modest degree of exercise.

Cardiac output (C.O.). In the group of 64 patients studied only at rest, cardiac output ranged from 2.2 to 8.6 L. per minute. Within the group studied both at rest and during exercise, the ranges for cardiac output were from 2.8 to 10.5 L. per minute and 3 to 12.8 L. per minute, respectively.

Right ventricular-pulmonary artery pressures. In the group of 64 patients studied only at rest a pressure difference of from 1 to 4 mm. Hg was observed 25 times. In 10 patients the pulmonary artery pressure was higher, and in 15 the right ventricular pressure was higher.

Within the smaller group of 42 patients in whom both resting and exercise determinations were recorded, 7 patients had a difference between their right ventricular and pulmonary artery pressures of from 1 to 3 mm. Hg at rest. In 3 the pulmonary artery pressure was higher, and in 4 it was

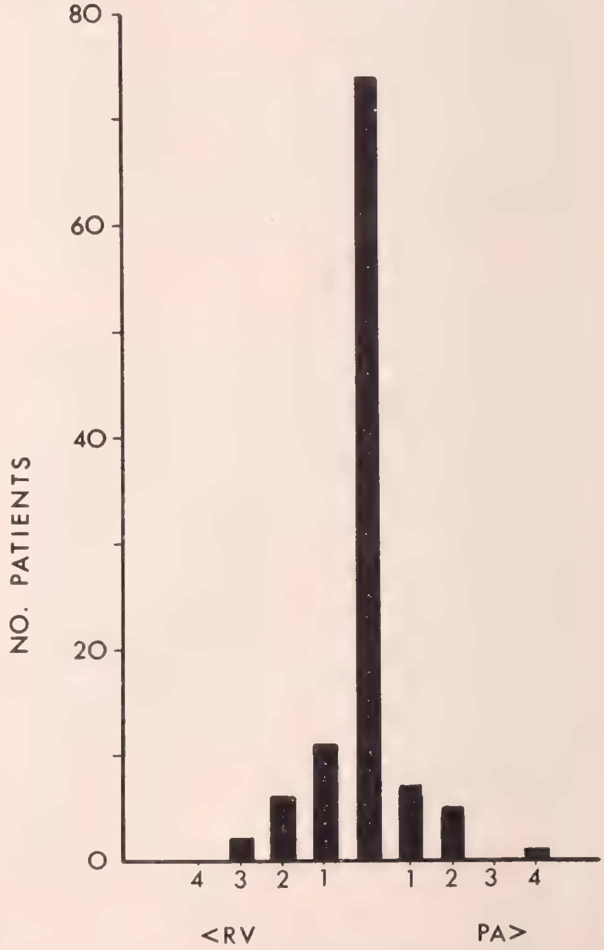

FIGURE 1. Graph demonstrates that 74 patients had no demonstrable pressure difference between right ventricle and pulmonary artery. Thirteen patients had pulmonary artery pressures (PA >) greater than right ventricular pressures, and 19 patients had right ventricular pressures (RV >) which exceeded pulmonary artery pressures.

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*United States Catheter and Instrument Corporation, Glens Falls, New York.

lower. The exercise study demonstrated a similar RV-PA difference in 10 patients. In 6 patients the pulmonary artery pressure was higher, and in 4 it was slightly lower. Only 3 patients demonstrated a pressure discrepancy both at rest and during exercise.

Figure 1 demonstrates the variation from zero gradient in 106 patients at rest.

Comment

The finding that a small RV-PA pressure gradient occurred as often in one direction as the other suggests that the differences are a reflection of measurement error. The very small gradients recorded together with the striking consistency of the RV-PA systolic pressures in the majority of patients strongly supports the contention of those observers who consider any gradient beyond measurement error to be abnormal. There is no evidence to support the concept of a normal 10 to 15 mm. Hg gradient. This certainly does not appear at rest nor was it observed during the mild exercise.

If after careful attention to the integrity of the recording system a peak systolic pressure drop of greater than 5 mm. Hg is measured in the resting state across the pulmonary valve, a diagnosis of pulmonary stenosis should be made. A right ventricular systolic pressure below 30 mm. Hg should not preclude such a diagnosis.

Summary

To determine whether a gradient normally exists between the right ventricle and the pulmonary artery, 500 sequential catheterization studies were reviewed. All patients with a diagnosis of congenital heart disease or dysrhythmia were excluded; 106 patients comprised the study group. The most frequent diagnoses were rheumatic and arteriosclerotic heart disease.

Thirty-two patients demonstrated a pressure differential of from 1 to 4 mm. Hg between the pulmonary artery and the right ventricle. In 13 patients the pulmonary artery pressure was higher, and in 19 patients it was lower than that simultaneously recorded in the right ventricle.

These findings suggest that the pressure differences recorded are related to measurement error. The results of this study are contrary to previous reports of normal 10 to 15 mm. Hg gradients across the pulmonary valve.

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Clinicopathologic Conference

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September 1, 1971
Conducted by JOHN T. FLYNN, M.D. and
BASIL MOUMGIS, M.D.
Discussed by HENRY A. SAMPSON, M.D.

Progressive Diffuse Neurologic Deterioration

Case history

Chi-Tao Lai, M.D.: A forty-nine-year-old male cook was transferred from a nursing home for neurologic evaluation.

Six years earlier a pre-employment examination at another hospital revealed a 1 plus positive test result for sugar in the urine; the chest x-ray film showed normal findings. Fifteen months later the patient was seen in the emergency department of that hospital after head lacerations and loss of consciousness for three to four minutes. Three weeks later during outpatient follow-up, the patient reported headaches, dizziness, weakness, and fever. His past history revealed only allergy to penicillin. His physical examination at that time revealed a healthy-appearing white man with a blood pressure reading of 150/90, pulse 120, respirations 20 per minute, and temperature 103° F.

The general physical examination revealed only the recent healing of a laceration over the forehead. The results of the initial urinalysis were normal, with a specific gravity of 1.023; a subsequent urinalysis revealed a 2 plus positive test result for sugar. The hemoglobin was 11.5 Gm. per 100 ml. and the white blood cell count 11,100 with 76 per cent polymorphonuclear leukocyte forms. The fasting glucose was 159 mg. per 100 ml.; the blood urea nitrogen, cholesterol, and liver function test results were normal. The chest x-ray film was not remarkable; the skull x-ray film revealed only a localized area of calcification apparently in the falx cerebri with calcification of the pineal gland. The lumbar puncture revealed an opening pressure of 160 mm. and a closing pressure of 140 mm. of water; the spinal fluid was described as slightly milky with deposition of particles in all three collection tubes; and the protein content was 34 mg. and glucose 80 mg./per 100 ml. Chloride content was 110 mEq. per liter. Microscopic examination of the spinal fluid showed 25 red blood cells with 9 crenated forms and 12 white blood cells per cubic millimeter; small "milky" particles of an amorphous nature were also noted. The initial blood culture was negative. Without antibiotics the patient's temperature returned to normal within forty-eight hours, and he was discharged six days after admission.

Two and one-half years later the patient was readmitted to that same hospital with a history of having had a fall, pain in the back, and difficulty in walking over an interval of two years. Physical examination on admission revealed a blood pressure of 190/100, respirations 20, pulse 88, and temperature 98.4° F. The pupil of the right eye was larger than the left with good reactivity bilaterally; the fundi were normal. The general physical examination was otherwise negative.

The neurologic examination revealed terminal adiadochokinesia on finger-to-nose testing; the right patellar reflex was more active than the left; and the Babinski reaction was positive on the right. The patient tended to fall toward the right, whether he had his eyes open or closed.

The urinalysis revealed specific gravities of from 1.013 to 1.025, with from negative to 4 plus test results for sugar and negative findings on microscopic examinations. The serologic test result for syphilis was negative. The sedimentation rates were 34 and 59 mm. per hour. The fasting blood sugar ranged from 180 to 230 mg. per 100 ml. Liver function tests, total cholesterol, protein-bound iodine, and chest x-ray film findings were not remarkable; x-ray film of the spine showed minimal arthritis only with calcifications within the ligamentum nuchae. Routine films of the skull revealed a calcification close to the midline in the posterior-anterior projection, presumably within the falx; a minute density was superimposed on the sphenoid bone on the right side.

The initial spinal puncture was unsuccessful; a second attempt produced only a few drops of fluid which were clear but again with precipitated particulated matter possibly resembling a blood clot. The amount of fluid was too small to permit chemical examinations; 4 white and 64 red blood cells per cubic millimeter were noted. A third spinal tap revealed clear fluid with a protein content of 45 mg. and a sugar content of 26 mg., together with 4 white and 1,015 red blood cells per

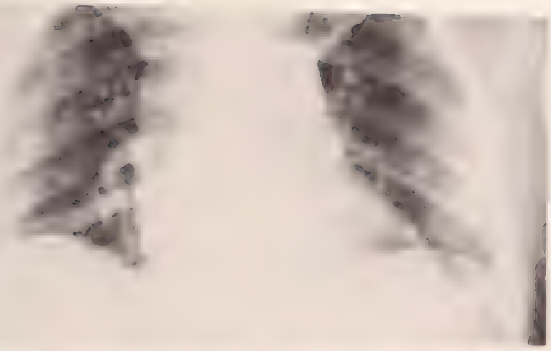

FIGURE 1. Roentgenogram showing normal heart and lungs with mild tortuosity of aorta.

cubic millimeter. Routine culture of the specimen was negative.

Pathologic examination of a cell block of this fluid revealed amorphous debris mixed with occasional inflammatory cells and circular PAS (paraaminosalicylate)-positive, yeast-like forms which were thought to represent either artifact or possibly true yeast forms of an unidentified fungus. The electroencephalogram revealed a background pattern of 8 to 10 per second and low-voltage activity; there were no asymmetries or paroxysmal features and no change on hyperventilation. The interpretation was that of a normal electroencephalogram.

The neurologic consultant found that the patient walked with a broad-based gait with mild ataxia, and that Romberg sign was not present; optic atrophy and possible degenerative cerebellar disease were diagnosed. The ophthalmologic consultant confirmed the impression of bilateral optic atrophy, but visual fields were not determined in detail. During the eight weeks in the hospital, the patient remained afebrile with blood pressure of from 130 to 180/80 to 100. The glycosuria was well controlled with oral medication.

The patient was discharged to his home where he remained for one year. Thereafter he was admitted to a nursing home with a diagnosis of suspected multiple sclerosis; his diabetes was easily controlled during the next fifteen months during which time his symptoms remained unchanged. Repeated neurologic evaluation at the nursing home again revealed bilateral optic atrophy, absence of nystagmus, a wide-based ataxic gait, difficulty with heel-to-knee test especially on the left side, but with normal deep-tendon reflexes and absence of Babinski signs.

Fifteen months after admission to the nursing home, he began to complain of weakness, pain in the neck, headache, and aching of the entire body; intention. The impression at that time was diffuse disease of the cerebrum including the basal ganglia, cortex, and possibly cerebellum. A brief trial of penicillin therapy was unsuccessful; his blood pressure was found to be 190/100 in both arms.

On referral to the hospital for admission, the patient was drowsy and unable to answer questions but continued to complain of pain in the neck and in the left anterior side of the chest. Physical examination on admission revealed a blood pressure of 180/90, pulse 76, and respirations 20 per minute; the temperature was 97.2° F. The general examination gave negative results except for an erythematous rash on the outer aspect of the lower part of the left leg.

The hemoglobin and hematocrit levels were normal; the white blood count was 13,600 with 68 per cent mature polymorphonuclear leukocytes and 5 per cent eosinophils. The urinalysis showed a specific gravity of 1.020 with a 2 plus positive test result for sugar and a large amount of acetone. The true fasting blood glucose was 188 mg.; the blood urea nitrogen, carbon dioxide content, serum electrolytes, calcium, phosphorus, and serum transaminase levels were all within normal limits. A catheterized urine specimen showed no growth after forty-eight hours; a blood culture was negative after eleven days' incubation. The serologic test result for syphilis was negative.

The chest x-ray film showed negative findings; the aorta appeared tortuous (Fig. 1). The skull x-ray films again showed the previously mentioned calcification in the region of the falx cerebri (Fig. 2). The initial electrocardiogram gave negative findings.

During the patient's eight-day hospital stay, his temperature rose gradually to 103° F., where it remained until a terminal reading of 104.6° F. His blood pressure remained at approximately 140/80. With insulin therapy, his diabetes was under good control. The neurologic consultant observed severe dysarthria, with very slow speech, obvious disorientation, and inability to cooperate with tests of intellectual function. The pupil of the left eye was slightly irregular; there was marked pallor of both optic disks. A weakness of the lower left side of the face, marked snout reflex, proximal weakness of the left arm, marked impairment of motion of all four limbs, mild generalized tremor of the extremities, increased rigidity of the lower part of the right leg, and a Babinski sign on the right side were noted. The posterior fossa structures were suspected to be the site of a neurologic lesion, possibly with involvement of the basal ganglia.

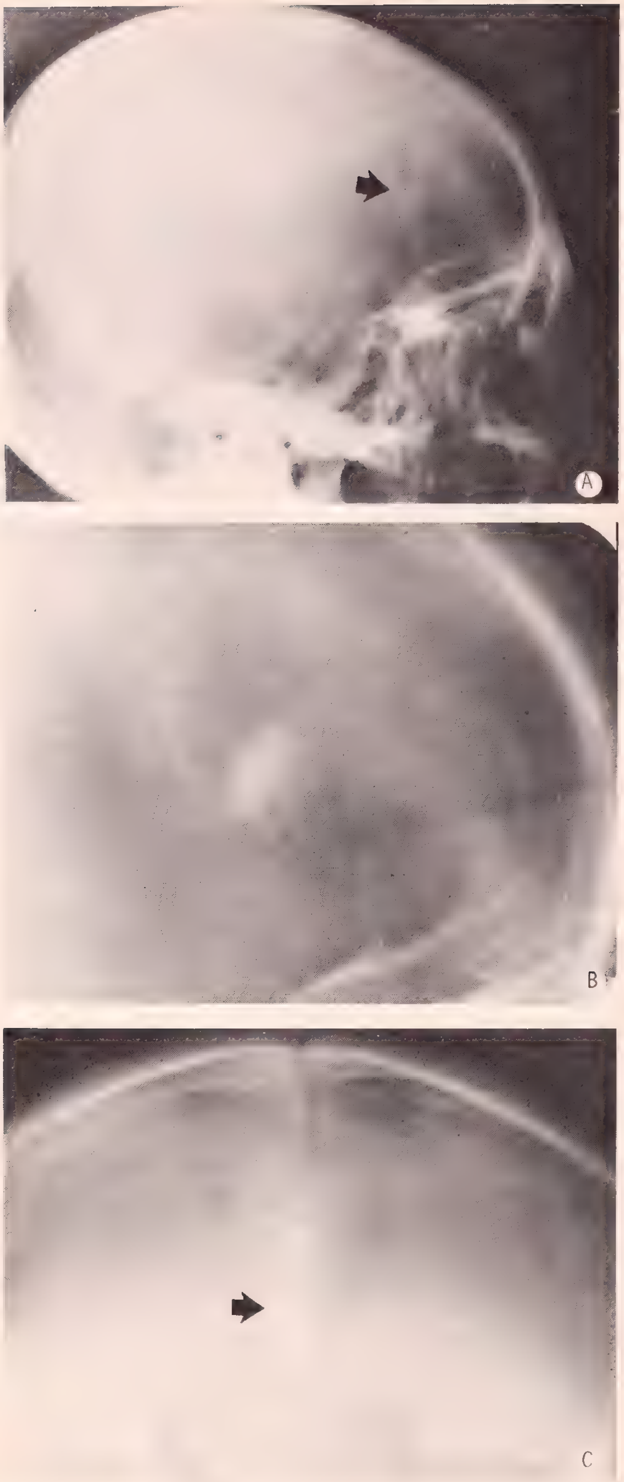

FIGURE 2. (A) Lateral view of skull x-ray film showing calcification in anterior portion of calvarium (arrow), (B) in detail, and (C) posteroanterior view (arrow).

Spinal tap revealed an opening pressure of 270 mm. of water, with a closing pressure of 240 mm. after removal of 5 to 7 cc. of clear spinal fluid. The spinal fluid glucose was 140 mg., the protein 105 mg., and no cells were seen on microscopic examination. The electroencephalogram showed a markedly diffuse abnormality with some anterior accentuation and preponderance on the right side, indicative of irritative as well as depressed activity.

By the fifth hospital day, the patient developed tachycardia, sweating, moist rales over both lung bases, and fever not responsive to penicillin. He developed increased difficulty in swallowing food with frequent coughing and choking; large mucus accretions were repeatedly removed from the pharynx, and finally a tracheostomy was performed. Shaking and tremor of all extremities recurred; the patient became progressively less responsive with increasing rales at both lung bases and a pulse rate of 160 per minute. The electrocardiogram showed only a rapid rate; a repeat chest x-ray film showed increased bronchovascular markings. His blood pressure fell progressively to unobtainable levels; dyspnea and pulmonary edema increased in spite of therapy with digitalis, diuretics, nasal oxygen, and intermittent positive pressure breathing. Early on the morning of the eighth hospital day his blood pressure and pulse could not be obtained, and the patient was pronounced dead.

Discussion

Arthur W. Schappell, M.D.*: I am going to summarize the basic clinical facts in the protocol, eliminating material which may be extraneous to the pathology in this case.

This forty-nine-year-old diabetic man suffered a head injury with unconsciousness five years prior to his final admission. This was followed by headaches, weakness, dizziness, fever, and leukocytosis. The spinal fluid was described as milky with particles, with 80 mg. of glucose per 100 ml. and 5 red and 12 white blood cells per cubic milliliter. Blood culture showed hemolytic Staphylococcus epidermidis, coagulase negative. The patient recovered without further treatment.

Two years prior to the final admission, the patient had back pain and difficulty in walking and was admitted to the other hospital. He had hypertension of 190/110, the right pupil was larger than the left, but both were reactive to light, and the fundi were described as normal. There was terminal ataxia of finger-to-nose testing, increased right patellar reflex, and a positive Babinski sign on the right, indicative of a lesion of the pyramidal tracts on the left, predominantly affecting the right side of the body. Mild ataxia and optic atrophy were described bilaterally. The positive Romberg sign with the patient falling to the right also could be due to weakness.

The patient was afebrile with normal findings on electroencephalogram. The sedimentation rates were again recorded as 34 and 59 mm. per hour, indicative of some type of infectious process; the fasting blood sugar was 180 and 230 mg. per

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100 ml., and the serum bilirubin increased to 1.6 micrograms. The spinal fluid had precipitated particulate matter resembling a blood clot; a few white and red cells were present together with a protein level of 45 mg. The spinal fluid glucose of 26 mg. was low; the amorphous debris with inflammatory cells included circular PAS-positive, yeast-like cells. Almost all yeast organisms are PAS-positive staining.

The patient was eventually admitted to this hospital because of weakness, neck pain, headache, body aches, and increasing mental confusion, suggesting some type of diffuse cerebral dysfunction. The neck pain might have been due to local disease in the neck or to increased intercranial pressure; pain extending into the neck region can result from herniation of the brain stem into the foramen magnum. A leukocytosis of 13,600 with 5 per cent eosinophils was present.

After eight days the temperature was 103° F. and terminally was 104.6° F.

The neurologic consultant described the patient as disoriented, confused, with loss of recent memory, dysarthria, optic atrophy, and increased tremor bilaterally. There was weakness in the lower left side of the face, which I assume means a central facial weakness, because there was also proximal weakness of the left arm, positive snout reflex which often accompanies bilateral pyramidal tract signs, tremor bilaterally, and positive Babinski sign on the right. Paresis of upper gaze was not mentioned in the protocol, but Dr. Shanzer observed it in this patient on his final admission. The spinal fluid pressure was increased to 270 and 240 mm., with a normal level of sugar and 105 mg. of protein. The electroencephalogram showed diffusely abnormal findings with preponderance on the right side and with irritative and depressed activity. The patient developed rales over both lung bases, had difficulty in swallowing, cough, choking, increased dyspnea, and signs suggestive of pulmonary edema just before his death.

So essentially, we have findings of optic atrophy, ataxia, organic mental changes, weakness on the left side of the face, Babinski sign on the right side, snout reflex, calcification in the sphenoid, electroencephalogram showing predominantly right-sided focus, and increased pressure of spinal fluid. All these findings suggest involvement of basal structures progressing to diffuse cerebellar and cerebral dysfunction, probably in the terminal stages of a destructive hydrocephalus. There was also a suggestion of a spinal block with lack of fluid on the first lumbar tap; later findings included increased spinal fluid protein, and decreased glucose, both of which can also be due to spinal block in its late stages.

Dr. Batillas, would you like to discuss the x-ray films?

John Batillas, M.D.: The chest film on admission demonstrates the lung fields to be clear. There is left ventricular prominence, and the aorta is unfolded (Fig. 1). In the final x-ray film of the chest, which is a portable study, we see the tracheotomy tube in place; the heart and mediastinal structures are in the midline; increased pulmonary markings are present bilaterally, and there is coalescence at both bases representing pneumonic infiltration.

There were three sets of skull films, on which we see no evidence of either fracture or destruction of the tables of the cranial vault; the sella turcica is normal in size, but there is demineralization of the dorsum sella which is compatible with increased intercranial pressure. There is calcification in the midline corresponding to the falx cerebri, and I believe that this calcification corresponds to that seen in the lateral view. There is a small radiodensity in the Townes view which actually overlies the right occipital bone; it may represent an artifact, but I do not know its significance. In the posteroanterior view, we see an ill-defined area of increased density superimposed on the right orbit and also on the sphenoid wing. I cannot localize it exactly, because I do not see it on the lateral views. It could be located in the orbit itself.

Dr. Schappell: Among the possible etiologic factors in this case, the most obvious is a diabetic condition with elevated blood sugar on many occasions. We know that diabetes may in some cases cause diffuse neurologic deficits, generally secondary to multiple vascular occlusion. We have to remember also that diabetes is a predisposing factor to various infectious diseases, either bacterial or fungal in nature.

The second possible etiologic factor is the role that trauma may play in this particular condition. There was a history of head injury five years prior to this patient's death. Trauma may in some cases cause optic atrophy, either from immediate hemorrhage, from scar formation subsequent to adhesive arachnoiditis, or from direct injury to the optic chiasma. Often these injuries are associated with basal skull fracture. Trauma also may be followed by epidural and subdural abscesses, meningitis, or brain abscess even without a definite skull fracture. However, acute infectious conditions of the nervous system are rather rapid in their progression.

The third possibility has been mentioned in the protocol: multiple sclerosis. Multiple sclerosis is never a cause of death. It is never associated with increased spinal fluid pressure as in this case, nor with signs of infection except for incidental bed sores, pneumonia, or infection in the genitourinary tract. I do not think that this was the clinical picture of multiple sclerosis, even though there was a remitting course of symptoms.

The fourth possibility, the one that I think we will most need to discuss, is some type of infectious disease. In discussing bacterial infections, I would like to refer to 3 cases reported from the Massachusetts General Hospital. The first was a girl who developed ethmoiditis, sphenoiditis, and thrombophlebitis of the cavernous sinus after an upper respiratory infection; she was given anticoagulant therapy and subsequently developed cerebral hemorrhage and infarction as a complication.[1] Another diabetic, alcoholic patient developed a bacterial meningitis with a subdural hematoma after an upper respiratory infection.[2] A third patient developed meningococcal meningitis after a fall and an upper respiratory infection.[3] We have good precedent to say that a fall and a head injury may have been associated with the onset of our patient's condition. Pyogenic meningitis may be due to meningococci, pneumococci, streptococci, hemophilus influenza, and staphylococci.

In some cases with encephalitic foci, evidences of focal brain involvement may be found in the form of monoplegia or cranial nerve palsy and may include optic atrophy. Remissions may occur during the course of these acute infections, although it is exceptional. Leukocytosis is found, and blood culture may be positive. The spinal fluid may show a white cell count of 100,000 to 200,000 per cubic millimeter, increased pressure, increased protein content, and glucose levels below 40 mg. Later, such patients may develop occult or low-pressure hydrocephalus; unsteady gait; frontal or Brun's ataxia; progressive dementia; hyperreflexia; Babinski signs; paraparesis; grasping, sucking, or snout reflexes; and diffuse slow waves in the electroencephalogram.

There is a form of chronic posterior basilar meningitis with internal hydrocephalus, clear or purulent spinal fluid, papilledema, optic atrophy, and other cranial nerve lesions. Tuberculous meningitis is a basal meningitis with thrombosis of local vessels; if untreated, it is uniformly fatal in three to four weeks, so that I think it would be most unlikely in this case. Sarcoidosis may affect cranial nerves with meningitis and multiple lesions of the spinal cord; the disease pursues a subacute course with remissions and eventually death from increased intercranial pressure or from tuberculosis as an associated illness. Cerebral subdural empyema causes death within three to six days if untreated, which eliminates that possibility in our case. Neurosyphilis of meningovascular or parenchymatous variety is highly unlikely; the VDRL test result was consistently negative. Meningiomas can be chronic and frequently may affect basal structures in the sphenoid or ethmoid regions, but they expand and cause only local disturbances, not diffuse ones as in this case. Metastatic neoplasm in the nervous system may be multifocal and may spread to the spinal canal and affect the nerve roots or spinal cord itself. These illnesses are generally more rapid in progression and do not run a five-year course.

Staphylococci are present in the permanent bacterial flora of the skin and nasopharnyx of man; 20 to 40 per cent are potentially pathogenic. S. epidermidis is an aerobic infrequent pathogen that also could have been a contaminant in this case.

At one point in the protocol of our case, it is mentioned that a yeast form was found. Several fungus infections, involving yeast forms, must be considered. The first such yeast infection is coccidioidomycosis which usually enters the respiratory tract from a dusty environment and spreads via the blood stream; it is more common in rural environments. Twenty per cent of patients develop erythema multiforme or nodosum. Many show lesions of skull and vertebrae similar to osteomyelitis and evidence of expanding masses. Death is usually due to terminal meningitis, usually within a few months, but survival has been recorded to be as long as ten years with the development of progressive obstructive hydrocephalus.

The other fungus of interest is Cryptococcus neoformans (Torula), a thick-walled, budding sphere surrounded by a capsule, which causes the most common mycotic infection of the central nervous system. Thirty to 50 per cent of cases are associated with other debilitating diseases including diabetes; the route of entry is through the respiratory tract with subsequent hematogenous spread, leading to subacute or chronic meningitis, granulomata compressing the spinal cord, and intercranial calcifications. There may be remissions without treatment or progression to hydrocephalus from meningeal scarring. The organisms may fill the subarachnoid space with whitish gelatinous collections of mucopolysaccharide, compatible with the milky spinal fluid described in this case.

In conclusion a chronic progressive remitting meningitis with yeast forms and a milky spinal fluid with terminal hydrocephalus and spinal cord block suggests the most probable cause to be Cryptococcus meningitidis with possible concomitant infection with hemolytic S. epidermidis. The portal of entry may have been from the sphenoid sinus secondary to trauma or possibly a basal skull fracture. The cause of death was probably aspiration pneumonia and central cardiopulmonary failure.

John T. Flynn, M.D.: Dr. Botwin, why, at the nursing home, were you disturbed about the diagnosis of multiple sclerosis? After all the patient had ataxia, optic atrophy, and cerebellar signs; what made you suspicious?

Nathan Botwin, M.D.: This man was about twenty years younger than the average patient in the nursing home, so he at once aroused my curiosity. He had marked proptosis, a wide-based gait, mental deterioration, no speech defect except as related to defective memory, and no clonus.

The proper neurologic diagnosis escaped me, but he evidently had a diffuse lesion which could not possibly fit the picture of multiple sclerosis, according to my experience.

Within a week or two after I first saw him, I arranged for neurologic consultation and further studies in the hospital. While we were waiting for an available bed, he became semicomatose and was admitted as an emergency case.

Reuben Hoppenstein, M.D.: I tend to agree with Dr. Schappell. Cryptococcosis, or torulosis, if you will, was my impression as the case has unfolded, especially in view of the fact that the man was debilitated, had diabetes mellitus, and had multiple lesions of the nervous system. Torula can cause multiple abscesses, although rarely in the posterior fossa; I have seen one such case and so am sure that it does occur. It is common to get basal adhesions with Torula, which could explain the multiple cranial nerve signs.

With an intermittent recurring meningitis, in a man who had experienced head trauma, I think one has to consider basal skull fracture, through the cribriform plate. The man may have had an unrecorded cerebrospinal fluid rhinorrhea, could have developed repeated bacterial infections, which could lead to basal meningitis and, again, the same clinical findings.

With subdural empyema, the patient is acutely ill, and even with antibiotic therapy, if there is no evacuation of the empyema, death is rapid, within a few weeks or even days. I would tend to agree to torulosis as the first diagnosis.

Melpakkam D. Kasy, M.D.: Our inclination in clinicopathologic conferences is to think always of exotic diseases, but I wonder if the possibility of multiple metastatic lesions to the central nervous system was seriously considered. In pursuing that possibility, of course, one would need a brain scan and an angiogram. We should not overlook the possibility that the final clinical picture may have been due to metastatic neoplasm, which might be unrelated to his earlier clinical course during most of the six years of his illness. We should keep in mind also the possibility of neuromyopathy due to neoplasm, particularly cancer of the lung. Neuromuscular symptoms and cerebellar dysfunction can be seen in such a condition.

Stefan Shanzer, M.D.: A brain scan was ordered early in this patient's hospital course but was not carried out due to the patient's inability to cooperate satisfactorily.

I would challenge Dr. Hoppenstein's comments about evidence of multiple cranial nerve involvement in this patient. I observed only optic atrophy, which by itself does not mean that the optic nerves are primarily involved by a lesion. I think it would be proper to say rather that there was evidence of involvement of multiple systems in this patient, but that does not mean that there would have to be multiple lesions. One lesion may involve, for example, the neurons and neurologic pathways which control speech, sensory appreciations, muscular coordination, and others with resulting multiple interferences with bodily function but not necessarily indicating many lesions scattered through the brain or spinal cord. Personally I do not believe that there was any evidence of spinal cord disease in this patient.

Dr. Hoppenstein: I would still insist, however, that mulitple lesions could explain the variety of symptoms and neurologic findings in this patient.

Norman S. Blackman, M.D.: The protocol indicates the presence of a yeast-like organism or artifact in the spinal fluid during admission to the other hospital. Was this investigated further in any way?

Dr. Flynn: All of the earlier clinical information in this protocol was obtained from the other institution, more than two years after the patient's death at this institution. During the patient's actual six-day hospitalization period here, none of the previous clinical facts were at hand. In reviewing the charts from the other hospital, we came on a cell block cytologic study of the spinal fluid in which these organisms or artifacts were first observed. The hospital records carry no other information about, or reference to, this interesting finding.

Daniel E. Schapiro, M.D.: When I first saw this patient in our outpatient department, prior to his admission here, I was at a disadvantage due to the almost complete lack of any earlier clinical information about him. He presented the picture of a seriously ill man who had signs referable to the cerebellum, to the basal ganglia, and to cerebral function as a whole. I concluded at the time that a diffuse disease involving the intracranial structures was more likely than a series of multiple discrete lesions. I could not decide, on the basis of the neurologic examination alone, the most probable cause of this difficulty, but I felt that multiple sclerosis was most unlikely because of the severity of his mental disturbance and the lack of specific focal findings. I contacted two neurologic colleagues who had seen the patient at the other hospital, but they were apparently not impressed by the report of debris in the spinal fluid and did not recall that such had been observed. Apparently at the time they had dismissed the findings as an artifact or contaminant of some sort.

Basil Moumgis, M.D.: Since this observation was made on formalin-fixed tissue in a cell block, it would not have been possible to culture out any organisms at that point. Certainly it would have been an indication to repeat the spinal puncture and send a specimen of the fluid for appropriate fungus culture.

Dr. Shanzer: We frequently face clinical problems in which we have little or no history to help us in the diagnosis; in this case that lack of information had special importance.

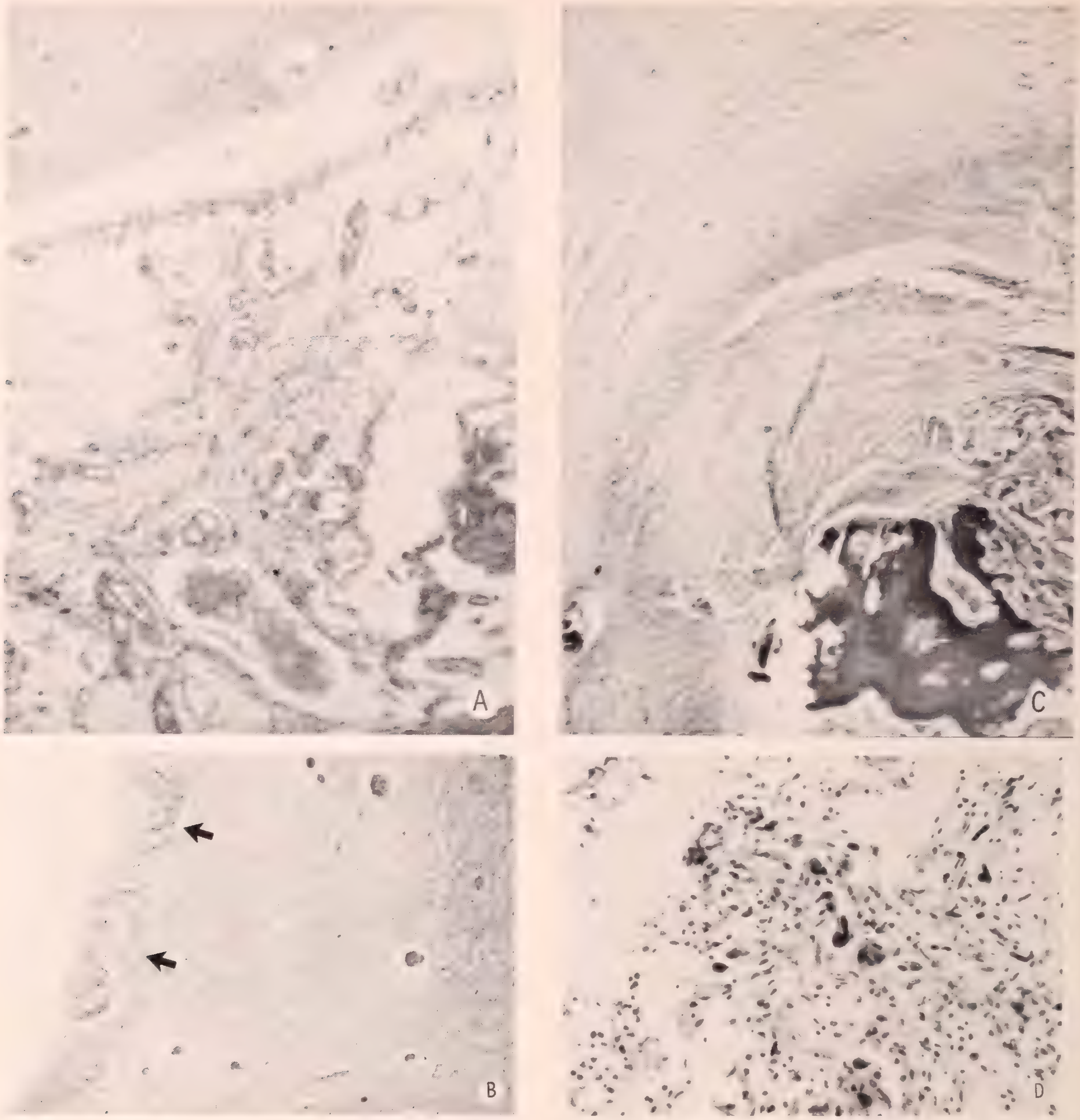

FIGURE 3. Microscopic sections showing (A) diffuse dense thickening of meninges at base of brain; (B) diffuse granular thickening of ependymal lining (arrows) of cerebral ventricle; (C) granulomatous change within wall of cyst in right frontal lobe, calcification and bony metaplasia in medial wall of cyst adjacent to midline; and (D) bizarre multinucleated giant cells within granulomatous tissue, without tubercle formation.

Dr. Flynn: Dr. Moumgis, would you clarify for us what was found by the pathology department and what you would judge to be the cause of this patient's final illness.

Clinical diagnosis

Chronic brain syndrome, secondary to ? old trauma, with subarachnoid hemorrhage, blockage of Sylvian aqueduct, and internal hydrocephalus

Dr. Schappell's diagnoses

1. *Chronic basal meningitis, cause undetermined, probably associated with C. neoformans infection*
2. *Internal hydrocephalus, secondary to diagnosis 1*

Pathology discussion

Dr. Moumgis: I would like to emphasize that we are unable to give a complete diagnosis in this case but to make only an approximate judgment of the cause of the overall illness.

This man was apparently in good general health and presented no serious pathologic lesions outside of the central nervous system. He had none of the pathologic signs associated with diabetes; his kidneys appeared to be perfectly normal as did the pancreas. There was severe pulmonary congestion with terminal bronchopneumonia.

The outstanding finding in the central nervous system was diffuse adherent dense meningitis with thick tough membranes and adhesions, mainly at the base of the brain about the optic chiasm, along the undersurface of the brain, and surrounding the pineal gland (Fig. 3A). There was evidence of an internal hydrocephalus; the ventricular system revealed diffuse granular thickening of the ependyma, extending down the aqueduct of Sylvius into the fourth ventricle (Fig. 3B). We were thus dealing with meningitis, ependymitis leading to blockage of the aqueduct, and internal hydrocephalus. The blockage did not appear to be complete, since the hydrocephalus was not a massive one.

On the inferior-medial aspect of the right frontal lobe, the brain substance appeared extremely thin and was more or less held together by the meninges. Within the brain substance in this area was a cystic lesion about 4 to 5 cm. in diameter, extrinsic to the ventricular system. However, both this system and the ventricles contained a material which was granular and showed glistening highlights, which might be due to lipid or cholesterol crystals. After fixation this material coagulated, and we were not able to determine exactly its nature. Special stains failed to reveal any fat, and we felt that we were probably dealing with some type of inflammatory process.

Microscopically, the lesion was granulomatous without tubercle formation and without any suggestion of tuberculosis (Fig. 3C). There were many multinucleated giant cells of somewhat peculiar appearance in this dense connective tissue, together with proliferation and chronic inflammation (Fig. 3D). The overall impression was that of a fungus infection, most probably torulosis. Special stains of the involved tissues revealed some PAS-positive material which might possibly represent some form of fungus but which we could not identify with certainty.

We were, however, obviously dealing with a granulomatous meningitis, ependymitis, and an old abscess in the right frontoparietal region close to the inferior surface of the brain. Within this area was a small calcified mass which on section showed bony metaplasia (Fig. 3C). There were no other intrinsic lesions within the brain substance except as I have mentioned; the cerebellum and brain stem were free of lesions. There was some compression and destruction of the anterior portion of the basal ganglia on the side of this cystic mass.

We concluded that the patient was the victim of a long-standing yeast or fungus type of inflammatory disease at the base of the brain.

Dr. Flynn: Dr. Coppell, what should we do with spinal fluid in which we suspect a fungus of this type? Suppose we had found milky fluid in the ventricles of the brain at autopsy?

Suzane Coppell, Ph.D.: First of all, an India-ink preparation test should have been made on the spinal fluid, since this method outlines the capsules of the Cryptococcus organism, which are easily visible if the yeast forms are present in sufficient numbers. Naturally in forwarding the spinal fluid or ventricular fluid to the laboratory, a special request for tests for fungus or acid-fast bacilli must accompany the specimen, in addition to a notation about routine culture.

In addition certain serologic studies are currently being developed, including the indirect fluorescent antibody test and latex agglutination test for the antigen. Of course at autopsy we would have the advantage of a culture for fungus, for routine bacteriologic study, and for acid-fast bacilli. C. neoformans grows well on various types of culture media, but you must observe the cultures over a considerable period of time. If the bacteriologist is not warned about the search for fungus, he may inadvertently discard the specimens prior to the appearance of the suspected fungus.

Dr. Shanzer: One of the major problems in the current case arose from the fact that the spinal tap produced clear colorless spinal fluid with a high protein level, and no cells were noted. We did not observe here any milky spinal fluid, and we were not aware of its presence on his earlier admission to the other hospital. Most neurologists are quite well aware of the need for India-ink preparation tests, but the appearance of this patient's spinal fluid gave us no immediate reason to request such a special staining technic. And obviously we cannot ask for such preparations on the majority of similar fluids which we get from other patients.

Dr. Flynn: Since the pathologists cannot confirm the presence of C. neoformans at the postmortem examination, we must resort to certain statistical information which might help to put this man's illness in a broader perspective of fatal fungal infections.[4] In cryptococcosis or torulosis, two thirds of the patients are between the ages of thirty and fifty years, and men are much more likely to be affected than women. The white male is prone to this disease much more so than any other sex or group, particularly from the standpoint of the respiratory aspect of the infection.

Between 1950 and 1966, 102 cases of cryptococcosis were reported in New York City; 60 of these patients died of the infection. However, many other patients and many healthy people carry this particular fungus with them in the respiratory passageways and appear to suffer no ill effects from it. A positive culture from these surfaces in such persons may leave in doubt the significance of the organism's presence.

Looking at the statistics of deaths from fungal infections in general, during the twelve years from 1950 to 1962, histoplasmosis caused 820 deaths in the United States, cryptococcosis was second with 788 deaths, coccidioidomycosis resulted in 733 deaths, and North American blastomycosis 257 deaths. The most likely cause, therefore, of this patient's illness was one of the four most common pathologic fungi. However, the patient with histoplasmosis or coccidioidomycosis will frequently show evidence on x-ray film and at autopsy of a scattering of small calcifications throughout the lung fields, which we do not find in this patient. Similarly, there were no other disseminated lesions in other organs to suggest these two fungi.

North American blastomycosis rarely involves the central nervous system and is much more liable to cause lesions of the skin and lungs, neither of which were identified in this patient. This leaves us with the likelihood of cryptococcosis or torulosis, if you will, even though we are short of actual histologic proof. True, the patient did not have symptoms of lymphoma or steroid therapy, as is most commonly present with torulosis in the adult. His diabetes was not severe; he had imbibed considerable alcohol during his lifetime, but we must remain in doubt as to the influence of that habit on the pathogenicity of the organism which eventually led to his death.

Bernard M. Wagner, M.D.: This case gives me the opportunity to plead with the clinicians to forward to the laboratory a tube of spinal fluid which has been placed in a beaker of ice at the bedside. This gives the bacteriologic laboratory the opportunity to freeze the spinal fluid specimen and hold it for future study, which can include virus isolation at the New York City laboratories, or for other studies which we can do here, including fungus studies.

Review of the pathologic lesions in this case reveal only granulomatous meningitis and the suggestion that we are dealing with mycotic infection. It is no surprise, however, that the spinal fluid on the last admission was clear; the inflammatory process appeared to be completely burned out, leaving behind it considerable fibrosis but little other evidence of active inflammation. The so-called PAS-positive bodies which were seen can be misleading; when a meningitis destroys a surface portion of the outer cortex, small bodies called corpora amylacea may be dislodged into the spinal fluid. I do not believe that is what was visible here. However, when myelin breaks up, it may form small globules, and this can create an artifact appearance, similar to the so-called PAS-positive material.

Dr. Flynn: Prior to the introduction of amphotericin B as an antifungal agent, 70 to 80 per cent of patients with central nervous system involvement by cryptococcosis died of the disease or one of its complications.[4] With the use of amphotericin B, approximately 75 per cent of patients will have a complete clinical remission for at least one year after treatment. Thereafter, there may be as high as a 30 per cent relapse rate, but with retreatment of these same patients, there is a subsequent relapse rate of only 15 per cent in the retreated group. Return of central nervous function is usually good and may actually return to normal. Hence, our discussion is not merely an academic exercise.

Dr. Schapiro: I would like to point out, however, that clinical remission can be obtained with amphotericin B, but many patients who have been asymptomatic for as long as ten years following treatment may continue to have pleocytosis and positive cultures of cryptococcosis from the spinal fluid. Consequently, such patients should be followed carefully with appropriate diagnostic studies.

Dr. Moumgis: We can only speculate on the original portal of entry of the Cryptococcus into the central nervous system. Because of the possibility of a prolonged clinical course of such infections, it is quite possible that the head injury which occurred two years prior to his first hospitalization for this condition may have resulted in a fracture through a sinus and permitted the entry of the organisms directly into the subarachnoid space. Many such cases may have a rapid course with a fatal outcome, but in this instance we feel that the course of the illness was a prolonged one. Certainly the presence of the calcification in the wall of the cyst, together with the bony metaplasia within it, suggests a prolonged clinical course. We did not at this late date, however, find any lesion of the skull that was suggestive of a head injury, but that would not be surprising.

Hugo Paganelli, M.D.: Epidemiologic studies of this infection have revealed that the only identifiable vector within our civilized society for C. neoformans is pigeon feces. Consequently, the cases of infection are more liable to be concentrated in urban areas. The pigeon appears not to be actually infected by the organism which apparently flourishes on the seeds which the pigeon eats and merely passes through the bird's gastrointestinal tract. The pigeon's body temperature is approximately between 40 and 43° C., and Cryptococcus is not supposed to grow well at this temperature. However, it manages to survive this thermal hazard as it passes through the bird's gastrointestinal tract and on into the deposit of feces. The banishment of pigeons from urban areas is practically impossible, but it does behoove us to exercise appropriate caution in their vicinity.

Dr. Shanzer: In spite of the high mortality rate of patients with central nervous system infections by Cryptococcus prior to the advent of amphotericin B, there were isolated reports of cases which persisted in a chronic course as long as twelve or thirteen years. Admittedly these were exceptional cases.

So we are dealing with a chronic, smouldering, low-grade, slowly progressive illness about which one has to be suspicious, even in the absence of clear-cut diagnostic laboratory findings.

Final diagnosis

Chronic granulomatous basal meningitis and ependymitis, with internal hydrocephalus, probably due to fungus (C. neoformans) (torulosis)

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PERITONEAL AND HEMODIALYSIS FOR ACUTE GLUTETHIMIDE OVERDOSAGE

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The efficacy of peritoneal dialysis utilizing an aqueous dialysate for glutethimide intoxication is considered questionable at the present time because of its low order of efficiency in removing this lipid soluble compound.[1] However, cases have been reported showing clinical improvement after peritoneal dialysis.[2] The present case of glutethimide intoxication fulfilling the criteria of Maher, Schreiner, and Westervelt[3] for poor prognosis illustrates that peritoneal dialysis may have a place in early treatment of glutethimide intoxication when used in tandem with hemodialysis.

Case report

At 3:00 P.M. on the day of admission, a thirty-nine-year-old Caucasian female was found comatose at home and was brought to the hospital by 5:00 P.M. In the previous two months, prescriptions for glutethimide were filled totalling fifty 500-mg. capsules. Therefore, the amount ingested could not have exceeded 25 Gm. Toxicologic studies excluded other drugs including alcohol.

Physical examination on admission revealed obesity with a weight of 182 pounds, blood pressure of 140/90, pulse 120 per minute, and respirations 30 per minute. Slight cyanosis of the face and fingernail beds was noted. Pupils reacted to light and accommodation in a sluggish fashion. The heart revealed a sinus tachycardia, but no murmurs. The deep-tendon reflexes were absent. No corneal reflex or gag reflex was present. There was no response to painful stimulation. The remainder of the examination results were normal.

The admission hematocrit was 40, and the white blood cell count was 11,200 per cubic millimeter with a normal differential. The admission blood glucose was 155 mg., blood urea nitrogen was 11 mg., and creatinine was 0.9 mg. per 100 ml. The urinalysis revealed a specific gravity of 1.026 with no sugar or protein and a normal urinary sediment. Roentgenographic examination of the chest on the fifth hospital day revealed pneumonic infiltrates in both bases and midlung fields.

During gastric lavage on admission, the patient developed respiratory arrest requiring intubation and assisted respiration with a Bennett respirator. No capsules were recovered during lavage. Rectal temperature on admission was initially 96° F. and within the next six hours decreased to 95° F. During the next twenty-four hours, the temperature slowly rose to 101.5° F. The original blood glutethimide level obtained at approximately 7:00 P.M. on the day of admission was 7.5 mg. per 100 ml.[4] Because of the elevated glutethimide blood level associated with areflexia, respiratory arrest, and unconsciousness, peritoneal dialysis with 1.5 per cent glucose peritoneal dialysis (Dianeal) solution was begun at 10:00 P.M. on the day of admission. The dialysis ran well until 5:00 P.M. on the following day with 19 2-L. exchanges (2 L. per cycle per hour) during this time interval. Total urinary output during the first forty-eight hours of hospitalization was 1,375 ml. Due to a kink in the endotracheal tube, the patient developed respiratory and subsequent cardiac arrest at approximately 1:00 P.M. during peritoneal dialysis, but responded well to replacement of the endotracheal tube and cardiac massage. The glutethimide blood level was 3 mg. per 100 ml. at 5:00 P.M., after the conclusion of peritoneal dialysis. Because of the continued areflexic state and dilatation of the pupils eight hours after termination of peritoneal dialysis, the patient underwent six hours of hemodialysis utilizing a full-size twin-coil artificial kidney with a surface area of 1.9 square meters. At the end of the hemodialysis, the patient's pupils reacted sluggishly to light and were no longer dilated. The glutethimide level at 9:00 A.M., two hours after finishing the hemodialysis, was 0.8 mg. per 100 ml. After seventy-two hours of coma, the patient was able to open her eyes and move her arms for the first time since

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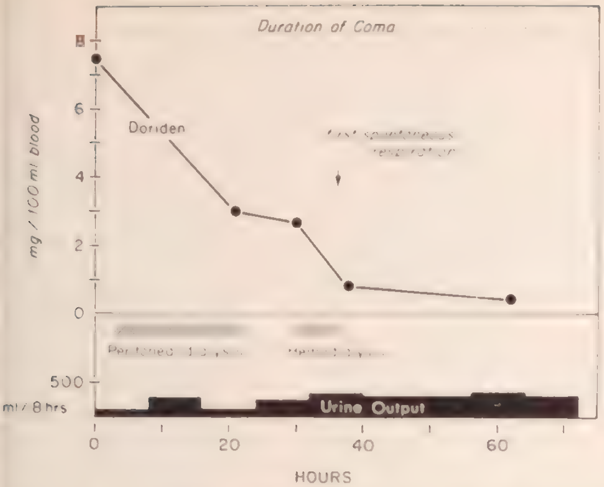

FIGURE 1. Clinical course illustrating effects of peritoneal and hemodialysis on the blood glutethimide level

admission. The final toxicologic examination of the blood done on the third hospital day revealed a glutethimide level of 0.4 mg. per 100 ml. By the fourth hospital day, the patient was fully conscious. The remainder of her hospitalization was uneventful except for the development and treatment of a pulmonary infection.

Comment

The present case with an initial blood level of 7.5 mg. of glutethimide per 100 ml., illustrates the major clinical abnormalities associated with severe glutethimide intoxication: dilated pupils, apnea, areflexia, unresponsiveness to painful stimulation, and hypothalmic dysfunction in the form of hypothermia. This constellation of findings fulfills Reed, Driggs, and Foote's[5] criteria for grade IV coma and the criteria of Maher, Schreiner, and Westervelt[3] for patients with glutethimide intoxication manifesting a poor prognosis for which dialysis should be considered.

The initial dialytic procedure chosen was peritoneal dialysis because of the speed with which it could be implemented. Within one-half hour after receiving the report of the markedly elevated blood glutethimide level, peritoneal dialysis using an aqueous dialysate was instituted and was running smoothly, averaging a 2-L. exchange each hour. During the subsequent nineteen hours of dialysis, the blood level of glutethimide decreased from 7.5 mg. to 3 mg. per 100 ml. (Fig. 1). This represented a decrease of 60 per cent in the blood level, which is far greater than the theoretical decrease that could be expected from conservative nondialytic measures.[3,6] Even though the blood level changed so markedly, the coma continued, prompting the hemodialysis. At the end of six hours, the patient showed the first signs of clinical improvement. At this point, the blood glutethimide level was 0.8 mg. per 100 ml., a 73 per cent decrease during hemodialysis. In Figure 1, the conclusion could be drawn—by extrapolating the glutethimide blood level curve during peritoneal dialysis—that the level of 0.8 mg. per 100 ml. could have been reached at about the same time if peritoneal dialysis had been continued. However, this is fallacious reasoning, since the efficiency of any dialysis decreases asymptomatically as the concentration gradient decreases.[7] The plateau in the glutethimide blood level curve between the two dialyses represents the theoretical decrease to be expected under nondialytic conditions.[3]

The 60 per cent decrease in the glutethimide blood level during peritoneal dialysis is respectable enough for this procedure to be considered useful. Unfortunately, the amount of glutethimide in the dialysate was not determined, but it is logical to assume that this is where the major portion of the drug went. Table I lists the range of recovery of glutethimide in the dialysate from reported cases utilizing peritoneal dialysis. The urinary output during this time period certainly was not great enough to have accounted for the marked drop in the blood level according to published data.[3,8] Part of the decrease in the blood level of this moderately obese patient could have been due to the absorption of glutethimide into adipose tissue.[9,10]

The use of peritoneal dialysis and hemodialysis in tandem for severe glutethimide intoxication has certain advantages. By initiating peritoneal dialysis first, a dialytic procedure capable of significantly lowering the blood glutethimide level as illustrated by the present case may be initiated quickly and easily. Peritoneal dialysis is an extremely simple procedure requiring only simple equipment, no specially trained personnel, and only minor patient preparation. Compared with hemodialysis, peritoneal dialysis has inherently few serious hazards. Because of the simplicity of the equipment required, the procedure is widely available even at small community hospitals. Once peritoneal dialysis is decided on, it may be set up and running within fifteen to thirty minutes. In contrast, hemodialysis is not widely available because of the specialized expensive equipment needed and because of the specially trained personnel required to set up and monitor this sophisticated procedure. Even in centers having a well-staffed and well-equipped hemodialysis unit, the required prerequisites such as procuring and typing blood, determining coagulation status of the patient, and providing arteriovenous connections are time consuming.

By utilizing peritoneal dialysis first, the high concentration gradient between blood and peritoneal fluid may be used to greater advantage, since peritoneal dialysis is more efficient at higher con-

TABLE I. Glutethimide recoveries with peritoneal dialysis

Author	Glutethimide Level Dialysate (Milligrams Per Liter)	Glutethimide Level Blood (Milligrams Per 100 ml.)	Analysis Method	Comment
Mc Donald *et al.*				
Case 1	3.0	3.8	Goldbaum, Williams, and Koppanyi[14]	Ingested 7.0–7.5 Gm.
Case 1	0.2	2.3		
Case 2	8.0	3.5	Goldbaum, Williams, and Koppanyi[14]	Ingested 10 Gm.
Case 2	0.5	. . .		
Case 3	8.1	. . .	Goldbaum, Williams, and Koppanyi[14]	Ingested 13 Gm.
Case 3	2.9	. . .		
Barbour[12]	10.0	. . .	. . . .	Average concentration in 5 L. dialysate.
Ellis, Lea, and Drysdale[2]	10.0	. . .	. . .	Ingested 25 Gm.; concentration in first exchange.
Shinaberger[13]*	8.5	2.3	Goldbaum, Williams, and Koppanyi[14]	Concentration in first exchange.
MEANS	5.7	3.0	. . .	. . .

* Average of 13 dog experiments.

TABLE II. Glutethimide extraction rates

Mode of Extraction	Starting Blood Level (mg. per 100 ml.)	Per Cent Blood Level Change In Ten Hours	Extraction Rate (mg. Per Hour)
Hemodialysis	3.4*	43*	150.0†
Peritoneal dialysis	7.5**	31**	11.4††
Kidney	3.3*	10*	0.67†

* Average of 10 cases extrapolated from Maher Schreiner, and Westervelt.[3]

† Extrapolated from Chandler *et al.*[8]

** Extrapolated from present case.

†† Based on 2-L. exchanges per hour, extrapolated from Table I.

centration gradients. As the concentration gradient falls, hemodialysis can be utilized since it is a more efficient system, once begun, when utilizing aqueous dialysates. With peritoneal dialysis running, time is gained to prepare for hemodialysis or to make arrangements for transfer of the patient to a hemodialysis center if this is deemed necessary. Furthermore, the peritoneal dialysis may shorten the duration of the subsequent hemodialysis. In addition cardiovascular instability —commonly found in severe glutethimide intoxication—is only minimally aggravated, if at all, by peritoneal dialysis. On the other hand, hemodialysis may be a major factor in aggravating the cardiovascular instability inherent in this type of overdosage. By first utilizing peritoneal dialysis, cardiovascular stability may be gained permitting an uneventful subsequent hemodialysis. It should also be noted that hemodialysis inherently has the potential for more serious complications than peritoneal dialysis does.[11]

In patients with glutethimide intoxication, hemolysis and hemoglobinuria may be associated with hemodialysis.[3]

The question arises: Can peritoneal dialysis be utilized alone for acute glutethimide intoxication? Unfortunately, the literature is sparse on this subject, except that peritoneal dialysis is far less efficient in removing glutethimide than hemodialysis when both are compared on the basis of aqueous dialysate. Table I gives a brief review of those cases giving adequate data on blood levels, quantity of drug ingested, or levels of drug found in the peritoneal dialysate. The amount found in the dialysate varies widely, from 0.2 mg. per liter to 10 mg. per liter, and appears to be related to the blood level. The data obtained from several sources and compared in Table II appear to show that peritoneal dialysis with aqueous dialysate is certainly more efficient than the kidneys in removing glutethimide, but less efficient than hemodialysis. Peritoneal dialysis appears to be 10 to 20 times more effective than the kidneys in drug removal.

Consequently, it can help to more quickly lower the blood level, the important parameter associated with unconsciousness, and militates against the often-heard statement that peritoneal dialysis is so inefficient that it is not worth trying in glutethimide intoxication.[9]

At the present time, it would appear that the use of peritoneal dialysis and hemodialysis in tandem for "poor prognosis" glutethimide intoxication presents a rational approach to a fairly common present-day problem, especially when one considers time, availability of personnel, and availability and distribution of equipment. More clinical experience is needed with this particular arrangement to determine its true usefulness.

Summary

A case of severe glutethimide intoxication is presented. The therapeutic measures included nineteen hours of peritoneal dialysis with a concomitant 60 per cent decrease in the glutethimide blood level. Eight hours later, the patient underwent six hours of hemodialysis with a concomitant 73 per cent decrease in the glutethimide blood level, and at this point regained consciousness. The rationale of using peritoneal dialysis and hemodialysis in tandem for severe glutethimide intoxication is discussed.

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IATROGENIC PNEUMOTHORAX

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The purpose of this report will be to discuss a case of pneumothorax which followed "trigger-point" injection of muscles in the neck. This complication has never been described following this procedure and is not enumerated among the iatrogenic causes of pneumothorax. Pneumothorax has been classified as spontaneous, traumatic, and artificial (therapeutic). Spontaneous pneumothorax occurs frequently as a complication of pulmonary emphysema, tuberculosis, pneumonia, asthma, and other lung conditions. Spontaneous pneumothorax may also be seen in infants predisposed by congenital lung defect.

Artificial pneumothorax has been used for the treatment of pulmonary tuberculosis with cavitation. Discussion of this type will be deliberately omitted, since in these instances it is readily recognized and accepted.

Traumatic pneumothorax may follow injuries by penetrating objects, such as knives and needles, and fractures of the ribs, but it may also occur when there is a blow to the chest without fracture.[1] Pneumothorax may also develop as a result of a physical strain such as lifting heavy objects.[2]

Another category of pneumothorax might be classified as iatrogenic or physician-induced. Antoni and Ponka[3] reviewed 226 cases of pneumothorax occurring in patients treated at the Henry Ford Hospital during the period 1955 to 1959; 76 of these cases were iatrogenically produced. They found that many of the newer technics used by general surgeons, thoracic surgeons, neurosurgeons, otolaryngologists, internists, gastroenterologists, and anesthesiologists could be complicated by a pneumothorax and therefore urged that all physicians be cognizant of this complication, recognize it, prevent it, and institute immediate treatment after its occurrence. It should be noted that not one of these cases was due to a "trigger-point" injection of the neck. Under iatrogenic causes is included scalene node biopsy, arterial catheterization, pneumoperitoneum,[4] and tracheotomy.[5] Thomas and Hux[6] emphasized that this complication may accompany radical neck resection and suggested that the diagnosis be considered in any patient in whom unexplained respiratory or cardiovascular difficulties develop in association with surgical procedures about the neck. Aiken and Smith[7] stress that this complication carried a 50 per cent mortality rate in these cases. Although Osler[8] mentions the occurrence of pneumothorax as a result of exploration with needles, he does not indicate after which procedure or explorations this may occur. Mediastinal emphysema has been reported after the use of air turbine dental drills.[9] It appears that air which activates the water spray may be diverted toward the drill point. Pneumothorax will develop because the air is forced into the space between the tooth fragment and the gum and then dissects along the cervical fascial planes to the mediastinum. This complication during dental operation may be fatal. Therefore, spontaneous pneumothorax must be kept in mind after such a simple procedure as filling a tooth. Pleural biopsy, now a widely accepted procedure, may be complicated by pneumothorax as well as intercostal nerve injury or hemorrhage.[10] Rajagh *et al.*[11] described pneumothorax as a complication of pneumonectomy on the opposite side. Skinner[12] described pneumothorax as a complication of scalene node biopsy. Macklin and Macklin[13] point out that excessive pressure in a closed anesthetic system may cause air to leak into the pulmonary interstitial tissues and into the mediastinum. Pneumothorax occurring in the course of a liver biopsy is quite rare, being reported in from 0.5 to 1 per cent of various series. This complication may be so small as to be asymptomatic or may be life threatening in the form of a tension pneumothorax.[14] Finally, pneumothorax has been reported as a complication of infant resuscitation. When pneumothorax follows this procedure, it usually requires surgery. Abnormal labor or delivery and fetal distress should suggest pneumothorax, pneumomediastinum, or both as a primary or contributing cause of neonatal respiratory distress. If the infant has had positive-pressure resuscitation, the index of suspicion should be increased.[15]

We recently encountered a case of traumatic pneumothorax as a result of injection of "trigger-points" on the neck with a local anesthetic. To stimulate more widespread interest and awareness that this unusual complication may follow a simple, commonly performed office procedure, the following case is presented.

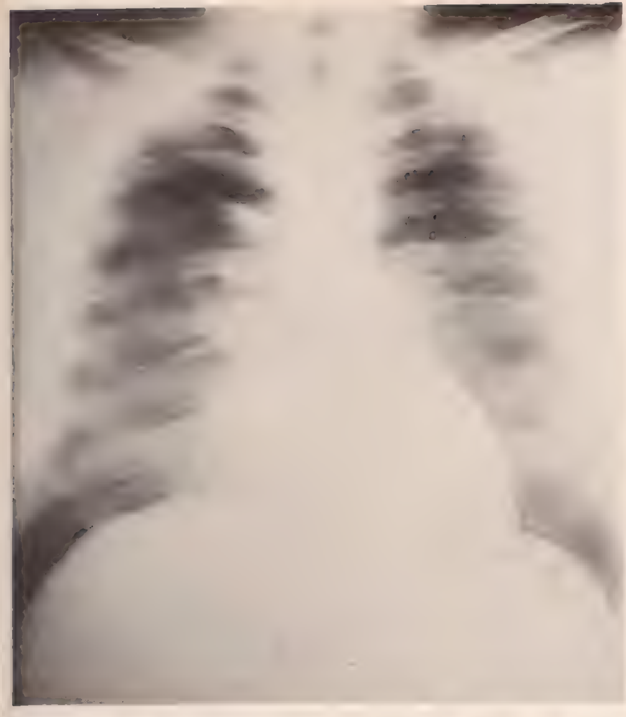

FIGURE 1. Roentgenogram showing 70 per cent pneumothorax on right side

Case reports

Case 1. A twenty-nine-year-old white male was admitted to University Hospital, New York University Medical Center, because of chest pain of two days' duration. For two to three weeks preceding his hospitalization the patient had been complaining of severe pain over his neck, especially on the right side, with radiation of the pain into his right arm. The pain was associated with limitation of motion. He stated that this condition was precipitated by emotional factors. Findings on roentgenograms of the cervical spine were normal, and he was treated with analgesics, muscle relaxants, and physiotherapy with little relief. Because of the persistence of severe pain he was given a course of "trigger-point" injections of a local anesthetic into the site of maximal pain over the neck, the last injection being given two days prior to his hospitalization. Immediately afterward severe pain in his chest developed which radiated across the anterior chest wall to the right and left, requiring meperidine (Demerol). Because of persistence of symptoms an x-ray film was taken the following morning and revealed a 70 per cent pneumothorax on the right side, and he was hospitalized as an emergency case (Fig. 1). He was in excellent health prior to this episode. There was no history of tuberculosis, pneumonia, rheumatic fever, or hypertension. Physical examination revealed a well-nourished, well-developed male who was in distress. A needle aspiration of the right chest was performed with moderate expansion of the lung. Because of the persistence of the pneumothorax, chest tube drainage was instituted, and the right lung expanded completely. The course was complicated by pneumonitis, but after recovery from this condition, the chest x-ray film revealed no abnormality, failing to disclose any predisposing causes of the pneumothorax such as tuberculosis or emphysema. Findings on further work-up for these conditions were normal.

As a result of our preliminary communication regarding the occurrence of pneumothorax after injections about the chest wall, we subsequently learned of the second case.[16]

Case 2. This was a fifty-five-year-old female in whom a pneumothorax developed after a "trigger-point" injection of the back muscles. Her physician treated her with an injection of procaine and cortisone into the back at the level of the ninth or tenth ribs. She had previously sustained a fracture of her foot which distorted her posture, resulting in severe back pains. Two days later the patient complained of pain in the chest and dyspnea. Examination revealed hyperresonance with absent breath sounds in the right lung. A roentgenogram of the chest showed a pneumothorax in the extreme apex of the right lung. A closed thoracotomy with underwater drainage was performed, and the patient was discharged from the hospital four days postoperatively.

Comment

The causal relationship of the needle injection to the development of pneumothorax cannot be disputed, since symptoms followed immediately after the procedures. Review of the literature has failed to disclose the occurrence of this complication following the injection of "trigger-points." The patients, moreover, had no preexisting lung disease which may have predisposed them to this complication. It is not sufficiently known that the cupola of the lung is nearly 2 inches above the first rib and that it may be damaged in procedures about the neck, as occurred in our first case. Thus, an awareness that the possibility of a pneumothorax exists in these situations is of great importance.

The following is a compilation of procedures which may result in iatrogenic pneumothorax:

Artificial positive pressure ventilation
Thoracentesis
Tracheotomy[5,20,30,31]
Brachial block (supraclavicular)[33]
Arteriogram (subclavicular)
Radical mastectomy
Pneumoperitoneum[4]
Air turbine dental drills[9,17]
Intercostal block
Nephrectomy

Stellate ganglion block
Pleural biopsy[16,18,19,25,26]
Translumbar aortography
Opposite pneumonectomy[11]
Bronchoscopy
Scalene node biopsy[12,29]
Subclavian vein cannulation[27]
Radical neck operations[24,28,34]
Liver biopsy[22,23]
Infant resuscitation[19]
Thyroidectomy[32]
Parathyroid surgery
Paravertebral cardiac catheterization
Lung biopsy[21]
Subdiaphragmatic surgery[16]

Summary

Two cases of pneumothorax have been reported following "trigger-point" injection with a local anesthetic, one into a spastic neck muscle and the other into a spastic back muscle.

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Radical Right Hepatic Lobectomy for Hepatoblastoma in Infancy*

Five-year survival

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Prolonged survival after resectional surgery for hepatoblastoma of the liver in infancy was first reported in 1961 by Peterson, Varco, and Good.[1] Since that report, the pathologic definition of the lesion has been clarified, and resectional surgery for liver disease has been performed more frequently. However, in January of 1969, Martin and Woodman[2] could document only 25 hepatic lobectomies for hepatoblastoma in infants, with 7 patients surviving. Of these, only 2 had survived over five years. Operative mortality in their own series of 5 patients was zero, but in the collected series of 25 patients it was 24 per cent.

Fish and McCary in 1966[3] analyzed 130 cases of liver cancer in childhood and found that most of them occurred in children under two years of age. In their series, the sex incidence was equal. The presenting complaints were vague abdominal distress, anemia, and the presence of an abdominal mass. Liver function study findings were usually normal. The tumor was confined to a single lobe in 70 per cent of the cases. In none of their cases did radiation or chemotherapy offer any help, and the average survival of 47 untreated patients was five months. Forty-seven cases were operated on, with a 21 per cent mortality rate. Seven patients were reported as surviving more than five years. This report includes tumors other than hepatoblastoma, however.

The pathologic features of hepatoblastoma have been carefully documented by Ishak and Glunz,[4] in an analysis of 47 cases published in 1967. They carefully outlined the differences between hepatoblastoma, or embryonal hepatic neoplasm, and hepatocarcinoma, the malignant condition arising from adult hepatocytes. They divided the cases of hepatoblastoma into those of an epithelial type and those of a mixed epithelial and mesenchymal type, depending on the cells present in the tumor. The latter group has, in addition to epithelial cells, collagenous septa and some primitive mesechymal cells. Hepatoblastoma was seen in 35 of the 47 cases registered at the Armed Forces Institute of Pathology. Of the hepatoblastoma cases, most occurred in children under two years of age, and males predominated over females 2.5:1. Eighteen cases were treated by resectional surgery. Five survived over five years, a survival rate of 28 per cent.

On the other hand, those patients with hepatocellular carcinoma, 12 in their series, were children aged five to fifteen years; the male to female ratio was 11:1, and all patients died of tumor within two years, with a mean survival rate of 6.6 months. Surgery seemed to offer little to these patients.[4]

The degree of cellular differentiation in the tumor is thus of great importance in prognosis. Hepatoblastoma shows immature, undifferentiated epithelial cells, scanty cytoplasm, poorly developed organelles, and irregularly shaped large nuclei; hepatocarcinoma cells show more advanced differentiation.[5] Resectional surgery offers cure (five-year survival) in up to one third of hepatoblastoma patients. Chemotherapy and radiation seem to have no effect. Hepatocarcinomas have been uniformly fatal regardless of treatment.

The technics of major hepatic lobectomy and the metabolic disturbances to be expected following such surgery have been well reported.[6-8] The major problems are (1) alteration in carbohydrate metabolism with a postoperative fall in the blood sugar, often requiring glucose infusion, and (2) hypoalbuminemia which may require the administration of serum albumin. Other abberations observed have been a fall in the prothrombin content and elevation of the serum bilirubin, presumably from decrease in effective hepatic cell mass.

Case report

A four-and-one-half-month- old male infant was first seen at the Mary Fletcher Unit of the Medical Center Hospital of Vermont in Burlington, Vermont, on August 16, 1965. Physical examination two weeks prior to this date had shown no abnormalities. Three days prior to admission, his mother had noted a swelling in the right upper abdomen. This was confirmed by the infant's pediatrician. The pediatrician also documented, by measurement, an increase in size of 2 cm. in the

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*Presented at the New York Surgical Society, May 13, 1970.

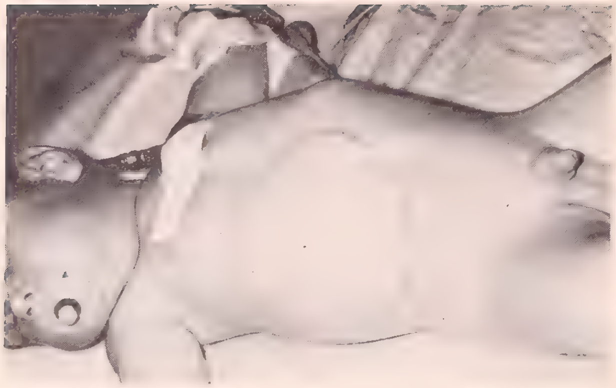

FIGURE 1. Preoperative condition of child. Liver mass outlined. Costal arch indicated by faint row of dots.

apparent diameter of this mass during the three days prior to admission. A chest roentgenogram and intravenous urogram taken prior to admission showed normal findings.

Physical examination revealed a well-developed and healthy-appearing infant with an obvious swelling of the right upper abdomen, approximately 15 cm. in diameter (Fig. 1). Serum electrolytes, liver function, and hemogram results were essentially normal. No further investigation was undertaken, and on August 17, an exploration of the abdomen was performed. The right hepatic lobe was found to be replaced by a large tumor mass, and right radical hepatic lobectomy was performed, transecting the liver just to the left of the falciform ligament (Fig. 2). This procedure was done through a transverse curved incision with extension at the midportion to the costal arch, without entering the thorax. All structures in the porta hepatis were controlled, and those leading to the right lobe were ligated and divided. The right hepatic veins were controlled, and the liver tissue was divided using mattress sutures and specific ligation of bile ducts and blood vessels. The estimated blood loss was 85 cc.; the infused blood was 110 cc. The remaining portion of the left lobe was of good color. The common bile duct was not cannulated due to fragility and small size. The raw surface of the liver was covered by a free graft of omentum. A sump drain was placed in the right subdiaphragmatic space and brought out through a flank stab wound.

The postoperative course was quite satisfactory. The wound healed well. The drainage decreased over the next two or three days, and the drainage catheter was removed. The patient became clinically jaundiced in the postoperative period with the serum bilirubin rising to 15 mg. per 100 ml. on the fourteenth day, returning to normal by the time of discharge. Abdominal distention was noted on the tenth postoperative day, and on the fourteenth postoperative day 450 ml. of yellow-green fluid were removed by paracentesis. One

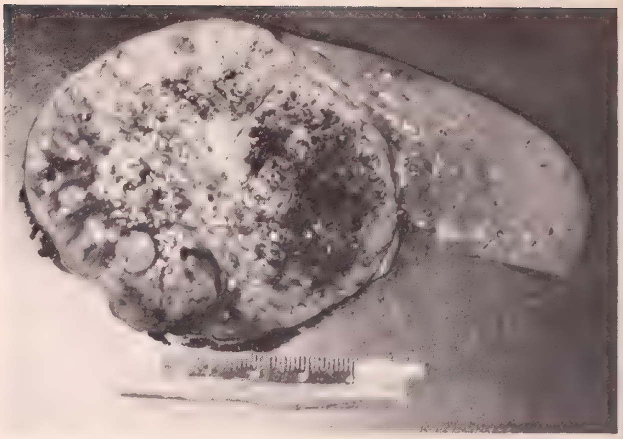

FIGURE 2. Cross section of resected portion of liver showing tumor with recent hemorrhage and adjacent normal parenchyma. Specimen weighed 330 Gm.

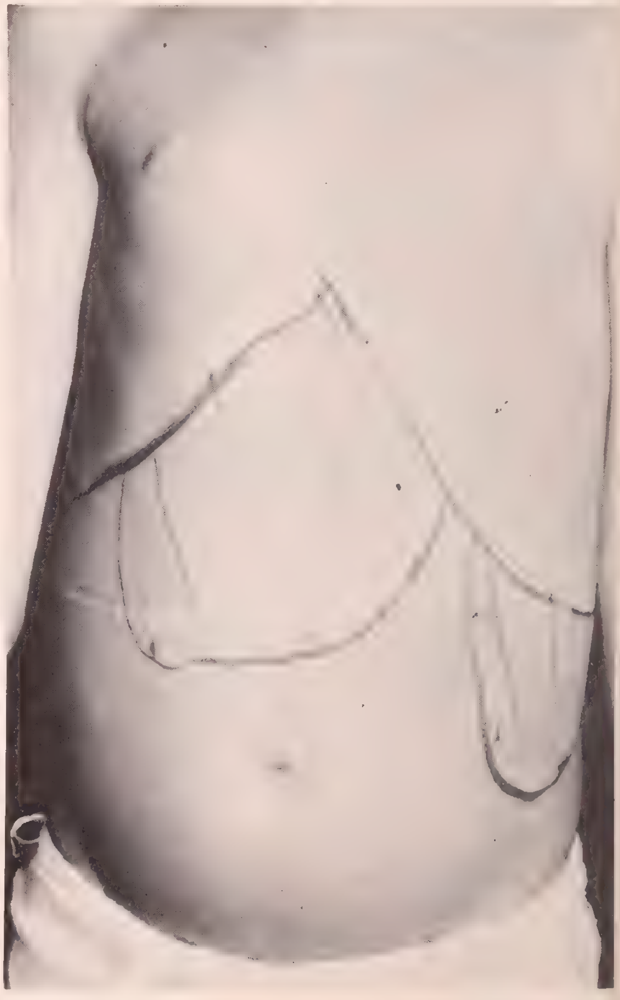

FIGURE 3. Condition of child in spring of 1970, almost five years postoperative. Scar of transverse incision with vertical extension may be seen. Outlined on abdomen are mass of regenerated liver, enlarged spleen, and costal arch. (Courtesy James L. Talbert, M.D., Department of Surgery, University of Florida, Gainesville, Florida.)

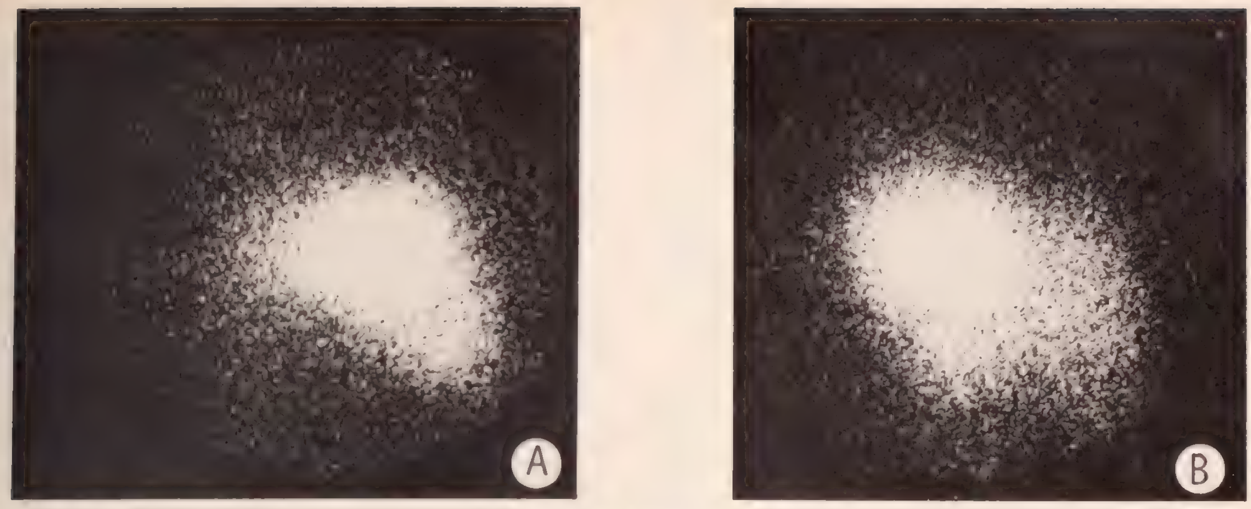

FIGURE 4. Radioactive scan of liver taken in spring of 1970. (A) Right lateral scan. (B) Anteroposterior scan. Configuration on (A) nearly normal. Configuration of (B) however, remains abnormal with large regenerated liver mass in midline. (Courtesy Capt. Charles C. Scott (MC) U.S. Air Force, Department of Pediatrics, U.S. Air Force Regional Hospital, MacDill Air Force Base and Tampa General Hospital, Tampa, Florida.)

week later, 220 ml. of similar fluid were removed. He was discharged three and one-half weeks following surgery.

The pathologic diagnosis was hepatoblastoma, epithelial type.

The child's course since the operation has been excellent. He required two subsequent paracenteses, but accumulated no more fluid following this. His growth and development has been normal for his age. Regeneration of liver in the midline has been documented by liver scan, and his liver function test results have remained normal. On last examination the firm regenerated liver was palpable 11 cm. below the xiphoid in the midline. The tip of the spleen was palpable 6.5 cm. below the left costal arch, but there were no chemical abnormalities noted (Figs. 3 and 4).

Summary

Radical (85 to 90 per cent) right hepatic lobectomy was performed for hepatoblastoma of the liver in a four-and-one-half-month-old child. The patient remains well nearly five years (fifty-six months) following surgery. This patient represents one of the few (2 to 5) five-year survivors of this disease reported in the literature. The importance of proper pathologic diagnosis in the prognosis of liver tumors in infancy is stressed. In hepatoblastoma, radical surgery is the treatment of choice and should result in survival of 20 to 30 per cent of cases for more than five years.

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Bromide Intoxication

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The first case of bromide intoxication appeared in the literature in 1850.[1] Since that time numerous cases have been reported.[2-6] So common was this type of intoxication that, in 1927, Wuth[7] stated that 21 per cent of the patients admitted to the psychiatric division of the Johns Hopkins Hospital over a period of six months had bromides in their blood and signs of poisoning. The reasons for such an alarming frequency were varied; but principally, the ease with which drugs containing bromides could be obtained was involved. At the present time, bromide-containing products such as Bromo-Seltzer, which contains 2.5 grains potassium bromide, and Sleep-eze, containing 0.125 mg. of scopolamine hydrobromide, are readily available without prescription.

A case of chronic bromide poisoning is reported in which the patient presented herself with obscure neurologic and psychiatric findings. A review of the literature indicates that these symptoms are common in bromism and that diagnosis should be sought in cases with similar findings.

Case report

A fifty-five-year-old woman was seen on July 1, 1962, at the request of her family. They claimed she had developed drowsiness, marked depression, confusion, and hallucinations over a period of a few weeks. The patient herself complained of generalized weakness and difficulty in ambulating. She stated that she had been taking "2 or 3 bottles" of Sleep-eze a week for a period of three or four months. Past history revealed a radical mastectomy in 1957 with no evidence of recurrent disease. She claimed that she had been treated with radioactive iodine-131 for thyrotoxicity. Because of her state of confusion and disorganization, she was admitted to Mid-Island Hospital.

Physical examination revealed a thin, white female with a blood pressure of 130/80 mm. Hg, pulse 96 per minute, and respirations 16 per minute. The remainder of the examination results were essentially normal. Her skin was very dry but without rashes. Neurologic examination elicited no localizing findings. The reflexes were hyperreactive, and her gait was ataxic.

Laboratory findings included: hemoglobin 12.8 Gm. per 100 ml.; white blood cell count 7,400 with a normal differential; serum sodium 136, potassium 5.1, chlorides 98 mEq. per liter; glucose 69, cholesterol 354 mg. per 100 ml.; sedimentation rate 45 mm. per hour; and protein-bound iodine was within normal limits. Urinalysis showed: albumin trace, acetone trace, glucose negative; microscopic examination revealed 35 to 40 white blood cells per high-power field.

For two days the patient was treated with ammonium chloride (eight 2-Gm. tablets four times a day) and prochlorperazine (Compazine) for restlessness. Before the results of a serum bromide determination were reported, the patient became more confused, wandered about, and cried out in a loud voice. It became necessary to transfer her to the psychiatric division of the Meadowbrook Hospital on July 3.

According to a psychiatric note at Meadowbrook Hospital, the patient was acutely psychotic and unmanageable, retarded in speech, demonstrating inappropriate behavior and delusional thinking. She was observed to walk about unclothed and declared her displeasure with her husband because he had not seen her off on a rocket ship to the moon.

Laboratory reports on July 3 showed hemoglobin 10.6 Gm. per 100 ml. Urinalysis showed albumin trace, acetone trace, glucose negative, and 20 to 30 white blood cells per high-power field. Serum bromide levels were 105 mg. per 100 ml.

She was treated with enteric-coated tablets of sodium chloride, imipramine hydrochloride (Tofranil) and sulfisoxazole (Gantrisin). A diagnosis of acute brain syndrome secondary to bromide intoxication was made. The patient made substantial improvement and, on July 12, was transferred for convalescent care to a private psychiatric facility, South Oaks Hospital, Amityville, New York.

On admission she was noted to be restless, confused, and bewildered. She alternated between depression and overactive euphoria, making pointless remarks such as "how now brown cow." The diagnosis of psychosis due to exogenous poison (bromide) was confirmed. Salt therapy was continued and her bromide levels fell to 37 mg. per 100 ml. Notes from August 11, 1962, revealed that the patient was markedly improved, interested in occupational therapy, relaxed, and conversing normally. She was discharged from psychiatric care at that time and has remained well until the present time.

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Comment

Difficulty in the diagnosis of bromide intoxication may be due to a paucity of physical signs. In a series of cases studied by Perkins[8] at the Boston City Hospital, the most commonly encountered symptom was weakness (21 out of 27 cases). It should be noted that it was not unusual for the weakness to involve one leg and one arm, thus suggesting a lesion of the opposite cerebral hemisphere. One of Perkins' patients complained of difficulty in swallowing, a protruding tongue, and ptosis of both eyelids resulting in an initial impression of myasthenia gravis.

Pains in the back and shoulders were common and 1 patient had visited many physicians and undergone numerous diagnostic roentgenographic examinations to determine the cause of her pain. As is typical in such cases she ingested even larger amounts of bromides in an effort to gain relief. The pain disappeared after hospitalization and treatment for bromide poisoning.

The state of consciousness was disturbed in 14 of the 27 patients studied by Perkins.[8] It was described as drowsy, stuporous, semicomatose, or comatose. Frequently the speech was described as dysarthric or unintelligible (20 of 27 patients). A striking finding in this group was the marked changes in reflex responses from day to day. The occurence of changing reflexes should lead one away from the diagnosis of organic lesions and suggest the diagnosis of bromide intoxication. Ataxia was the most common cerebellar sign; less common were tremors and nystagmus.

Psychiatric changes were prominent. Extreme excitement was very characteristic. At least 12 of the cases had to be restrained to the bed at some point in their illness, as was our patient. Emotional lability with easy laughing and crying was frequent, as were memory defects, confusion, disorientation, and delirium. Marked dehydration was frequently noted. A rash was present in over one third of the patients, generally manifested by a pustular eruption resembling acne. This rash was located in the same areas as acne would be found.

The diagnosis of bromism is substantiated by a serum bromide determination. Concentrations of 75 mg. per 100 ml. or more are suggestive of intoxication; concentrations of more than twice this level are definitely toxic. Urinalysis and blood counts ordinarily reveal no abnormalities in this disease.

The most frequent findings in cerebrospinal fluid examinations were elevated total protein levels. Initial pressures tended to be elevated, but this was thought to be due to the excited state of the patients.

Wuth, in 1927,[7] brought about a clearer understanding of the treatment of this disease entity. The foundations of bromide action were also those of treatment, based on the relationship between chlorides and bromides. The excretion of chlorides may be hastened by the administration of bromides and vice versa. If bromides are introduced into the body, they are excreted very slowly. Even twenty days after the administration of bromine the excretion of bromide is not completed.[9] Hence a retention of bromides takes place, causing a constant saturation of the body with bromide. The concentration of chloride in the blood is then diminished. A replacement of more than 40 per cent of the chlorides by bromides in the blood is fatal according to Bernoulli.[10] Ulrich[11] stated that intoxication symptoms usually become noticeable after 25 to 30 per cent replacement of total halogens by bromide.

Of great importance is the fact that toxicity of a given dose of bromide can be estimated only when total halide intake is known. An amount which might be totally ineffective in a person with a high salt intake may rapidly produce severe poisoning in a person on a cardiac regimen with a markedly limited chloride ingestion.

It was Wuth[7] who first recommended sodium chloride administration in bromism to promote the excretion of bromide ions from the body. Wohl and Robertson[12] treated 7 patients with a combination of desoxycorticosterone and sodium chloride. The blood bromide levels were reduced by 50 per cent in four to eight days. Cornbleet[13] noted that ammonium chloride produced a more rapid decline in bromide levels than did sodium chloride administration. Palmer and Clarke[14] and Bodansky and Modell[15] have demonstrated that in dogs the kidney excretes chlorides preferentially over bromides, thus permitting the accumulation of bromides in the system. It has been postulated that the preferential excretion of chloride results from the fact that the bromide ion moves across the membranes slightly more rapidly than the chloride ion; it is therefore more quickly reabsorbed in the tubules from the glomerular filtrate than the chloride ion.[16] If this excretion of chloride depends on the extent of the preferential reabsorption of bromide in the tubules, one would expect that mercurial diuretics would reverse this situation, since this diuretic has a primary effect on the tubular epithelium, rendering reabsorption of salts and water difficult. It was on this premise that Hussar and Holley[17] investigated the value of mercurial diuretics in bromism. They noted that when meralluride sodium (Mercuhydrin) was combined with the administration of sodium chloride, renal bromide excretion was increased by 60 per cent. With meralluride sodium and ammonium chloride combined, excretion was increased by 130 per cent. The advantage of ammonium over sodium chloride is the known potentiating effect of ammonium chloride on mercurial diuretics. Also, it can be administered to patients whose intake of sodium must be restricted.

They recommended treatment with 6 Gm. per day of ammonium chloride with 2 cc. of meralluride sodium every second or third day.[17]

Attempts to lower bromide levels by Wangensteen suction were unsuccessful. The use of dialysis will effectively remove bromide ions from the body, but such extreme measures are not indicated.

Summary

After ingesting large quantities of a proprietary drug containing bromide, a patient developed obscure neurologic and psychiatric symptoms. The acute psychotic episode which followed was successfully treated with sodium chloride and tranquilizers. Although the incidence of bromism is not frequent today, physicians should be alert to this possibility because of the ease with which nonprescription drugs containing bromine may be obtained.

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Meningoencephalitis Due to Mima polymorpha

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The many reports of human infections caused by Mima polymorpha, ranging from cutaneous involvement to generalized sepsis, establish its human pathogenicity beyond doubt.

In their recent review of the English literature, Donald and Doak[1] were able to collect 30 cases of Mima meningitis and added 3 of their own. A partial survey of foreign literature likewise reveals scattered reports of meningitis caused by Mima polymorpha.[2,3] These cases occurred in the neonatal period or in individuals who sustained head trauma, underwent brain surgery, were chronic alcoholics, or had a debilitating illness.[4,5] Most neurologic findings have been confined to meningeal signs. We were not able to find a case of Mima polymorpha meningitis with well-documented focal neurologic signs.

The purpose of this report is to present the clinical course of Mima polymorpha meningoencephalitis with reversible focal neurologic symptoms supervening in a previously healthy young woman.

Case report

A twenty-one-year-old Negro female was admitted to Cumberland Hospital on June 17, 1966, because of headache and confusion. Three days prior to admission the patient had complained of a sore throat. The following day she left work because of headache, chills, pain in the neck, and fever; that evening she had nausea and projectile vomiting. Her symptoms worsened and on the next day she was noted to be disoriented, incontinent of urine, and agitated. She was brought to the hospital that night. The patient had had a normal childhood with the exception of an appendectomy at age six. Menarche had occurred at age thirteen. There had been no recent history of head injury or ear or urinary tract infection. Diabetes mellitus, syphilis, and tuberculosis were denied. The patient was a high school graduate and had been living in New York for the last year working as a secretary.

Physical examination revealed a well-nourished Negro female, agitated and uncooperative. Vital signs were: blood pressure 130/70 mm. Hg, temperature 103° F., respiration 15 per minute, and pulse 96 per minute and regular. There was no evidence of trauma. Funduscopy revealed no papilledema. Both ear drums were intact; no discharge was present. Lung percussion and auscultation were normal. The heart sounds were clear without murmur or thrill. There were no signs of abdominal organomegaly, masses, or tenderness. Bowel sounds were present and normal. The patient withdrew from painful stimuli and moved all extremities. Periods of somnolence alternated with delirious manifestations. The significant findings were otherwise limited to meningeal signs; marked neck stiffness along with positive Brudzinski and Kernig signs.

The following laboratory data were procured. Hemoglobin was 13 Gm. per 100 ml. There were 20,100 white blood cells per cubic millimeter with a differential of 88 per cent polymorphonuclear leukocytes and 12 per cent lymphocytes. Urea content was 11 mg. per 100 ml.; sodium 149, potassium 3.8, and chloride 122 mEq. per liter. Urinalysis revealed proteinuria and red blood cells (traumatic catheterization). Lumbar puncture revealed cloudy fluid under a pressure of 450 mm. of water and a white blood cell count of 1,200 per cubic centimeter with 85 per cent polymorphonuclear leukocytes and 15 per cent lymphocytes. Sugar content was 0 mg. per 100 ml.

On admission, antibiotic therapy was started for meningitis of unknown bacterial origin. Initial smear of the patient's spinal fluid revealed what was interpreted as a gram-negative diplococcus, a finding similar to one previously reported by Burrows and King.[4] Subsequent examination of smears of the spinal fluid obtained at the second lumbar puncture were examined* and found to be compatible with Mima polymorpha. Cultures of the spinal fluid later confirmed the findings; cultures of urine, sputum, and pharynx remained negative. The clinical events during hospitalization and further laboratory data are summarized in Figure 1. The patient was treated with aqueous penicillin (40 million units per day intrave-

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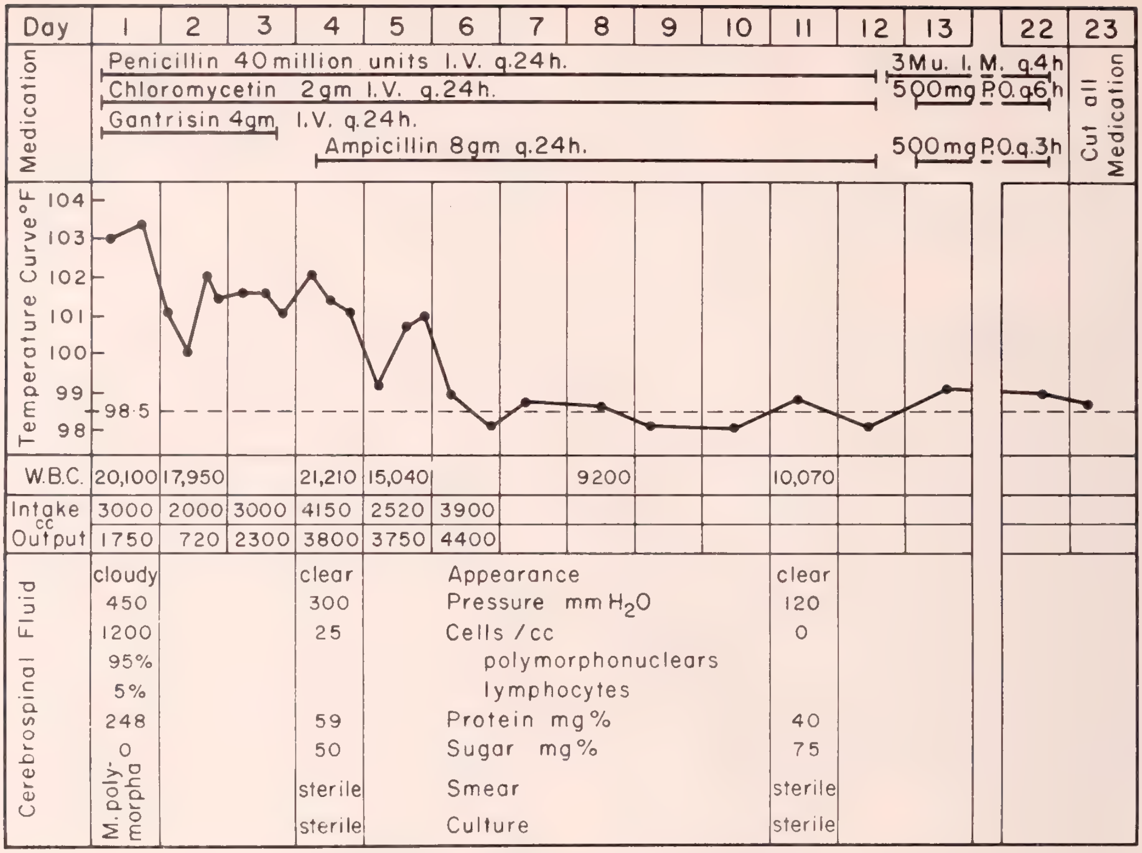
*By Edward Steers, M.D., Director of the Bacteriological Laboratory, Brookland-Cumberland Medical Center.



Day	1	2	3	4	5	6	7	8	9	10	11	12	13	22	23
W.B.C.	20,100	17,950		21,210	15,040			9200			10,070				
Intake cc	3000	2000	3000	4150	2520	3900									
Output cc	1750	720	2300	3800	3750	4400									

Cerebrospinal Fluid	1	4	11
Appearance	cloudy	clear	clear
Pressure mm H_2O	450	300	120
Cells /cc	1200	25	0
polymorphonuclears	95%		
lymphocytes	5%		
Protein mg%	248	59	40
Sugar mg%	0	50	75
Smear	M. polymorpha	sterile	sterile
Culture		sterile	sterile

FIGURE 1. Laboratory data and therapy.

nously), chloramphenicol (2 Gm. per day intravenously), and sulfisoxazole (4 Gm. per day intravenously), which was changed on the fourth day to ampicillin (8 Gm. per day intravenously). Eight hours after admission the patient became comatose. A right hemiparesis with depressed deep-tendon reflexes and a right Babinski sign became evident. The meningeal signs were marked with opisthotonos and positive Kernig and Brudzinski signs. The head was deviated to the left. Hyperemia of the left disk was present. An electroencephalogram revealed diffuse, high-voltage 1 to 3 cycles per second activity with slight focal accentuation (Fig. 2). Occasional generalized bursts were present. Anticonvulsant therapy with diphenylhydantoin (100 mg. intramuscularly every six hours) was started. Twenty-four hours after admission the patient became more responsive, but head and eye deviation and meningeal signs were still present. On the third hospital day the patient regained consciousness. The meningeal signs were still marked, and there was paralysis of the right upper extremity. On the fifth hospital day the patient was alert without any motor deficit; the meningeal signs were no longer present. There was, however, disorientation to time and inability to differentiate left from right. She would not answer such questions as "Where were you born?" or "What is the last thing you remember before coming to the hospital?" Her behavior was regressive, with dependence and temper tantrums. She lacked insight into her situation. Ten days after admission mild dyscalculia and dysgraphia were present (Fig. 3). The latter continued until the patient's discharge. Serial electroencephalograms showed at first voltage depression on the left and bilateral slowing, then normalization (Fig. 2). The patient returned to work at the time of the first outpatient visit six weeks after discharge. At that time she was still slower in typing than prior to her illness and had difficulty with recall of unusual words. Three months after the onset of her illness she had made a full recovery.

Comment

Mimeae and other herella species have been isolated from almost every location in the human body.[6] Clinical infections have been reported to include the meninges, urinary tract, lung, and endocardium.[5–16] Four cases of septicemia have been recently described.[10] Although in most cases these isolates are considered secondary invaders, the primary human pathogenicity of these organisms has been recognized. Much confusion re-

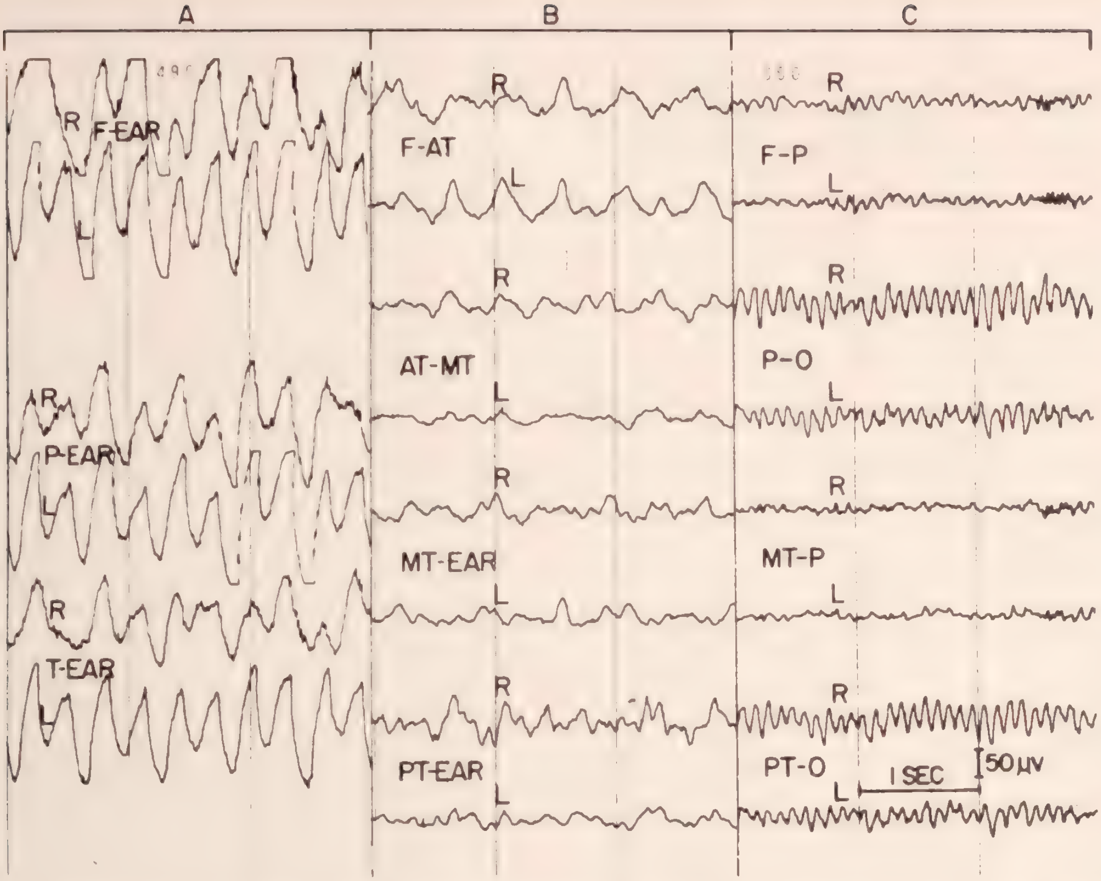
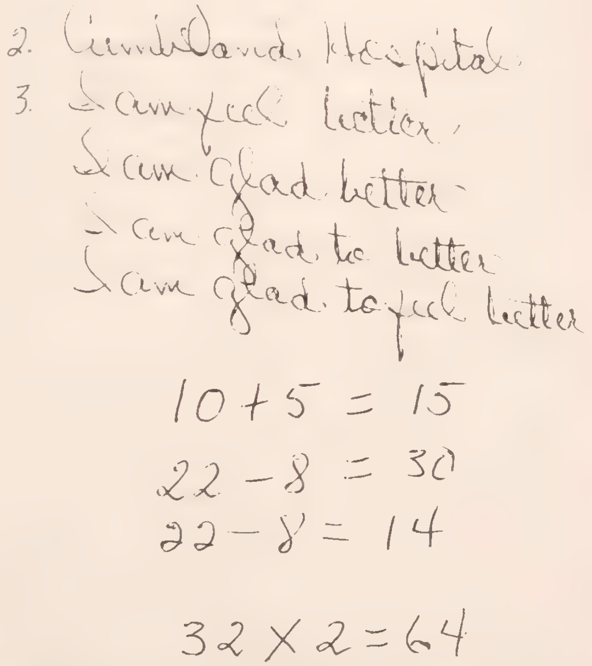


FIGURE 2. Serial electroencephalograms. (A) On admission. (B) On seventh hospital day. (C) On discharge. Note asymmetric high-voltage delta slightly accentuated on left in (A), and voltage depression with asymmetric slowing on left in (B). (C) Shows normal activity.

mains concerning the classification of this group of organisms, although bacteriologic criteria have been established for their identification.[11,17]

There is great disagreement concerning the antibiotic of choice in treatment of Mima infections.[7,14] In general, the herella group of organisms responds in varying degrees to different antibiotics, with local strains showing unusual resistance and sensitivity patterns. In the past, tetracyclines and chloramphenicol were found to be successful agents for the treatment of human infections with Mima and herella organisms. An unpublished report of antibiotic sensitivity of Mimeae isolates at the Jefferson Medical College Hospital from 1960 to 1962 revealed 100 per cent sensitivity to polymyxin B, 96 per cent to polymyxin E, 96 per cent to kanamycin, 83 per cent to sulfisoxazole, 73 per cent to chloramphenicol, and 63 per cent to tetracycline.[18] The disk method was utilized in performing these studies. Martin[19] suggests kanamycin and polymyxins as the drugs of choice but notes the marked variation in sensitivity requiring study of each isolate. Since our patient improved on the initial therapy, it was continued, with ampicillin being substituted for sulfisoxazole. The patient's rapid response was probably due primarily to the chloramphenicol or



2. Cumberland Hospital.
3. I am feel better.
I am glad better
I am glad to better
I am glad to feel better

10 + 5 = 15
22 − 8 = 30
22 − 8 = 14

32 × 2 = 64

FIGURE 3. Sample of patient's handwriting showing dysgraphia and dyscalculia. Four successive attempts at writing "I am glad to feel better" are particularly illustrative.

TABLE I. Summary of neurologic signs

Neurologic Status	On Admission	Eight Hours Post Admission	Twenty-four Hours Post Admission	Third Hospital Day	Fourth Hospital Day	Fifth Hospital Day	Seventh Hospital Day
State of Consciousness	Agitated delirious	Coma	Stuporous	Conscious	Alert	Alert	Alert
Funduscopy	Hyperemic left disk	Same	Improving	Normal	Normal	Normal	Normal
Aphasia	Not demonstrable	Not demonstrable	Not demonstrable	Present, motor	Present	Improving	Improving
Hemiparesis	None	Present on right	Present on right	Monoparesis (right upper extremity)	Mild	Absent	Absent
Deep-tendon reflexes	Hyperactive	Depressed on right	. . .	. . .	. . .	Symmetric	Symmetric
Babinski sign	. . .	Present on right	Present on right	Absent	Absent	Absent	Absent
Head deviation	. . .	To left side	To left side	Absent	Absent	Absent	Absent
Neck rigidity	Marked	Opisthotonos	Marked	Moderate	Moderate	Absent	Absent
Brudzinski sign	Positive	Positive	Equivocal	Negative	Negative	Negative	Negative

sulfisoxazole, although no definite conclusions can be made as to which of the four agents administered was responsible for clearing the infection.

Despite interest in Mimeae infections, little consideration has been given to neurologic manifestations of the disease. Mimeae meningitis has been reported frequently, but focal symptoms or signs are seldom noted.[1,4,8,9,12] The neurologic manifestations we were able to collect from previous reports are limited to 3 cases. The first is that of a thirty-five-year-old woman who was first seen with a two-week history of nausea and headache. In addition to meningeal signs she had a questionable left facial weakness and left ankle clonus. Mima polymorpha was identified in the cerebrospinal fluid; after treatment the neurologic signs disappeared in three days.[4] The remaining 2 patients had convulsions. One, a three-year-old child, had fever and generalized convulsions and was found to have Mima polymorpha meningitis.[1] The other, a four-day-old infant had tonic-clonic convulsions during the first two days of his illness. Other neurologic findings were a deficient sucking reflex and a deep-tendon reflex asymmetry. The infant was discharged from the hospital asymptomatic after two weeks of treatment.[3]

Our case presents two unusual features. The presence of individualized focal signs is the most striking (Table I). The other is the persistence of nuchal rigidity for the first six days in spite of the normalization of the cerebrospinal fluid in three days. Of interest too is the fact that this patient had been in excellent health with good nutritional status prior to developing her illness.

One might speculate on the nature of the pathologic events underlying the presence of the neurologic focal findings. At the time of their appearance, we were concerned with the possibility of a brain abscess or a venous thrombosis. But because of the prompt improvement of the state of consciousness and the motor deficit and the lack of confirmatory signs of increased intracranial pressure or increasing pleocytosis in the cerebrospinal fluid, such diagnoses were eliminated and that of meningoencephalitis retained.

The clinical course of this case with definite central nervous system involvement followed by complete recovery with appropriate antibiotic therapy is unique and should encourage clinicians faced with similar problems to be aggressive in their treatment of Mima polymorpha infections.

Summary

A case of meningoencephalitis developing in a previously healthy young female adult caused by Mima polymorpha is reported. Unusual characteristics of this case include focal neurologic findings and abnormal electroencephalographic recordings, both of which returned to normal with successful antibiotic therapy.

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Guillain-Barre' Syndrome in Herpes Zoster

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Herpes zoster, an ancient disease of man recognized since the time of "Celsus," is well known as a benign viral infection affecting the dorsal nerve roots and dorsal root ganglia. Associated motor weakness, although rare, is well recognized and was first reported by Broadbent in 1866.[1] Since then, there have been several reports of isolated paralysis or paresis of facial, trunk, respiratory, and extremity muscles.[2-5] Grant and Carter,[6] reviewing 101 patients with herpes zoster from Massachusetts General Hospital, reported motor weakness affecting the same segment as the rash in 5 patients.

Wohlwill[7] reported occurrences of Guillain-Barré syndrome in association with herpes zoster. Since then there have been a few reports of ascending polyneuritis developing following herpes zoster. To the best of our knowledge, only 13 such cases have been reported in the literature.[8-16] . The present case included herpes zoster of the left dorsal fourth and fifth spinal segments, and ascending paralysis developed within eight days of appearance of herpetic rash. The rarity of this complication and good response to steroid therapy has prompted us to report this case.

Case report

A twenty-two-year-old Sikh male was admitted as an emergency case to the surgical unit of Victoria Jubilee Hospital following acute intestinal obstruction. Laparotomy revealed a partially rotated pelvic colon and distention of the cecum, the ascending colon, and the transverse colon. The postoperative period was uneventful. A week after the operation the patient complained of pain in the region of the left upper dorsal portion of the spine, radiating to the front of the left upper part of the chest. Examination showed vesicular eruptions in the left scapular region, the axilla, and the anterior axillary fold. Diagnosis of herpes zoster was made, and the patient was treated with cyanocobalamine injections and local application of Lact-Calamine. No steroids were given at this stage.

Eight days after the onset of vesicular eruptions, the patient started having weakness of both lower limbs accompanied by pain but no paresthesia. The weakness ascended upward rather rapidly, and within the next twenty-four hours he became unable to move his upper limbs and developed a nasal twang in his voice. He started experiencing difficulty in swallowing, and fluids regurgitated out through his nose. However, sensorium was clear. When he started having respiratory embarrassment he was transferred to the medical unit.

Examination revealed a moderately well-built but poorly nourished young man, having vesicular eruptions starting from the left scapular region extending up to the left anterior axillary fold. He had a pulse rate of 120 per minute and regular and blood pressure of 115/70 mm. of mercury. He was in respiratory distress, respiration being very shallow and rapid, rate being around 32 per minute (chest expansion 0.5 cm.). The intercostal muscle function was very poor. Cardiac examination did not reveal much except tachycardia. Chest auscultation showed wide-spread moist sounds and rhonchi. Examination of the nervous system revealed an intact sensorium. The ninth, tenth, and eleventh cranial nerves were involved as evidenced by difficulty in swallowing, nasal regurgitation, absent gag reflex, palatal paralysis, and inability to shrug the shoulders. No pupillary abnormality was seen. Fundi examination results were normal. The remaining cranial nerves were intact. All four limbs were flaccid with power grade 0. Deep-tendon jerks were absent and plantaris flexor was absent on both sides. All sensory modalities were intact, although the patient had hyperalgesia in the legs. Bladder and bowel function were intact.

Laboratory data. Hematocrit was 39.6 and the hemoglobin was 12.8 mg. per 100 ml. The white blood cell count was 9,200 per cubic millimeter with 3 per cent stabs, 71 per cent segmented, 24 per cent lymphocytes, and 2 per cent eosinophils. Blood glucose was 86, blood urea nitrogen 23, and serum proteins 6.8 mg. per 100 ml. Electrophoretic study of serum proteins revealed a normal pattern.

TABLE I. Serial cerebrospinal fluid changes*

Date (1969)	Protein (milligrams per 100 ml.)	Sugar (milligrams per 100 ml.)	White Blood Cells (Per high-power field)
January 7	74	74	4 to 8
January 10	82	70	3 to 5
January 31	110	84	2 to 4
February 15	96	70	3 to 5
March 10	90	70	3 to 5
April 15	70	82	0 to 2

* Globulins were present at each examination.

The patient had repeated spinal taps; the constant feature was raised protein content varying between 70 and 110 mg. per 100 ml. with a maximum cell count of 4 to 8 cells per high-power field at the onset of the weakness (Table I).

Repeated urinalyses failed to give any evidence of porphyria. Electromyography was done about six weeks after the onset of symptoms: it showed a denervation pattern in the calf muscles. No fibrillation potentials were seen. Motor-conduction velocities in the peripheral nerves in the upper and lower limbs were still moderately reduced.

Roentgenograms of the dorsal spine gave normal findings.

Hospital course. The patient was given intermittent positive-pressure breathing; in addition he was given dexamethasone, 4 mg. every six hours, parenterally and high dosages of vitamins B_1, B_{12}, and B_6 by the same route. He was fed by stomach tube and intravenous drip. He started showing gradual recovery and could be taken off the assisted breathing after twenty-four hours. Within five to six days he started showing better bulbar function, and in another two weeks' time he was able to swallow his food well. In about four months, he regained almost normal muscle function except for girdle-muscle weakness. He was tapered off the steroids and discharged after a four and one-half months' stay in the hospital.

Comment

Nervous-system involvement in herpes zoster varies from localized involvement of dorsal root ganglia to intensive involvement of the peripheral and central nervous systems. The involvement may be classified as follows:

1. Flaccid paralysis localized to the region involved by the rash. This is attributed to the involvement of the anterior nerve root in its course across the necrotic posterior route.[17]
2. Spastic weakness and sensory impairment with a definite upper boundary. This is thought to be due to involvement of the spinal tract and may be related to demyelinating disease.[18]
3. Spastic weakness, with or without sensory loss, alone with a disturbed level of consciousness and other signs pointing to involvement of brain substance.[19]
4. Widespread flaccid paralysis, with or without sensory disturbances, developing a short time after the rash and showing features of polyradiculitis.[16]

Our patient fits into the last group.

Polyradiculopathy following herpes zoster has been reported in 13 cases. Table II shows the main features of these reported cases. It will be noted that most of the cases reported fall into the age group of forty to sixty years, but our patient was only twenty-two years old and happens to be

TABLE II Clinical features and cerebrospinal fluid findings in cases reported in literature and the present case

Author	Sex and Age	Site of Eruption*	Latent Period	Site of Paresis	Central Nervous System Involvement	Protein in Cerebrospinal Fluid (Milligrams Per 100 Ml.)	Onset
Wohlwill[7]	F, 44	R. Th. 5	2 weeks	All limbs	No	Raised +	Acute
Schuback[8]	F, 62	R. Th. 3	7 days	All limbs	No	? +	Acute
Riser and Sol[9]	M, 30	L. Th. 3–5	2 months	All limbs	No	1.750	Insidious
Gilpin, Moersch, and Kernohan[10]	M, 52	R. Trig.†	Few days	Bilateral face, all limbs	Bilateral 7th	Raised +	Subacute
Maggi *et al.*[11]	M, 68	L. Th. 4	1 month	All limbs	Right 7th	Normal +	Insidious
Friart and Jeanty[12]	F, 72	L. Lu. 5	?	Both legs	No	3,300 max.	Subacute
Stammler and Struck[13]	F, 66	Lu. 3	3 days	All limbs	Bulbar	5,000	Acute
Palffy and Balazs[14]	F, 63	R. Th. 6–7	2 months	All limbs	No	146	Insidious
Palffy and Balazs[14]	F, 53	L. Th. 11–12	7 days	All limbs	Bulbar	24	Acute
Duperrat and Pringuet[15]	M, 53	R. Th. 2–3	2 days	All limbs	Right 7th	480	Acute
Knox, Levy, and Simpson[16]	M, 69	L. Th. 1	2 weeks	All limbs	No	50	Insidious
Knox, Levy, and Simpson[16]	M, 54	R. V.†	7 weeks	All limbs	No	89–150	Subacute
Knox, Levy, and Simpson[16]	F, 65	L. Th. 11–12	7 weeks	All limbs	Right 3rd	162	Acute
Present study	M, 22	L. Th. 4–5	8 days	All limbs	Bulbar	70–110	Acute

* Key: L. = left; R. = right; Th. = thoracic; Trig. = trigeminal; Lu. = Lumbar; V. = vagus.
† First division.

the youngest in this group. The latent period between the appearance of eruption and start of neurologic symptoms and signs varies from a few days to two months. It has been observed that the shorter the latent period, the more violent and fatal the illness. Our observations also confirm this finding since in our case the latent period was only eight days and the paralysis was of acute onset with quick progression.

Guillain-Barré syndrome includes a group of polyradiculoneurotic conditions of undetermined etiology. It is accompanied by a rise of cerebrospinal fluid proteins without any rise in cells. Our patient fits well into this category, since his weakness started in the lower limbs, and ascended upward to the upper limbs and subsequently the lower cranial nerves. This was accomplished by a rise in cerebrospinal proteins without much rise in cell count.

The occurrence of Guillain-Barré syndrome in herpes zoster could either be due to the spread of the herpes zoster virus within the central nervous system or to an allergic process as is known to occur in the Landry-Guillain-Barré syndrome or demyelinating diseases complicating chickenpox or other exanthemata.[16] If the disease process is secondary to allergic phenomena, corticosteroids should be useful in the treatment. There are controversial reports as regards the use of corticosteroids in herpes zoster. According to Knox, Levy, and Simpson[16] corticosteroids should be used since polyradiculoneuritis is an allergic phenomenon, and in one of his cases therapy with heavy doses of steroids resulted in excellent recovery. Tako and Rado[20] reported a case that took a violent course, with development of meningoencephalitis, when a patient with herpes zoster was given steroids. In our case, however, we feel that steroids have definitely helped the patient as evidenced by both good recovery seen clinically and serial cerebrospinal fluid examination.

Summary

An unusual case of ascending paralysis (Guillain-Barré syndrome) appearing eight days following herpes zoster is presented. A good response to steroid therapy, contrary to some reports in the literature, is stressed.

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Electrocardiograms of the Month

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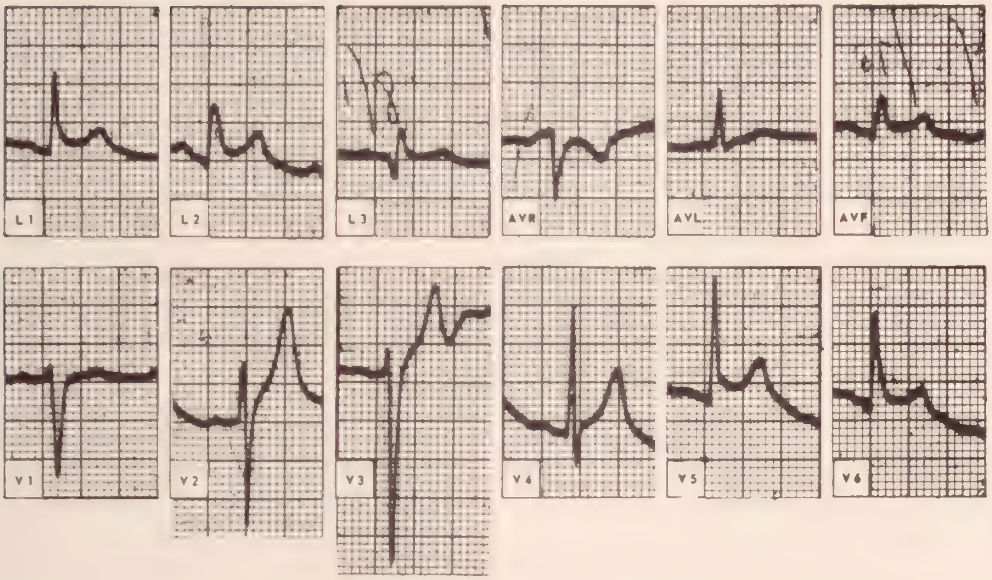
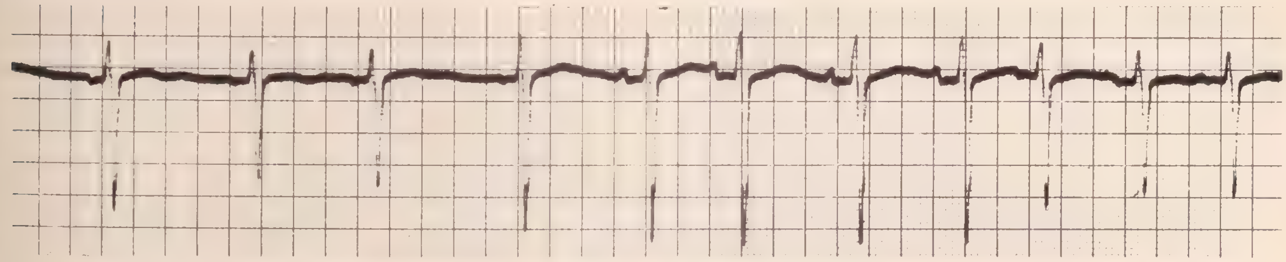


QUESTION 113. The patient, a thirty-seven-year-old woman, was admitted to the hospital with fever and vague chest pain. What is the interpretation?



QUESTION 114. What is the rhythm, long lead V_1?

Electro-
cardiograms
of Month

ELUCIDATION

Question 113. The rhythm is a regular sinus rhythm. In leads I, II, III, aVf, V_5, and V_6 S-T is elevated. These S-T elevations are suspicious of pericarditis, although they may occur early in the course of an acute myocardial infarct. Occasionally, in younger patients particularly, they may be seen as a normal variant. Serial observations demonstrated that this patient did indeed have a viral pericarditis. The T waves became inverted, and the S-T segments returned to the base line.

Question 114. Each QRS complex is preceded by a P wave, and the P waves vary in their configuration. They are quite irregular. The diagnosis is sinus arrhythmia with a wandering atrial pacemaker. The P-R interval varies slightly but is never less than 0.12 second. This is a benign condition which may be seen in normal individuals but is occasionally a manifestation of atrial disease.

Ambulatory Heroin Detoxification in Municipal Hospital

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Heroin addiction is now one of the more common diseases occurring in the United States. Exact incidence and prevalence figures are difficult to ascertain, not least because of the legal status of the drug and the difficulty of defining "addiction." However, it has been estimated by Phillipson[1] of the National Institute of Mental Health that there are at least 200,000 "heroin addicts" in this country. Other more current estimates place that number of addicts, or more, in New York City alone and range up to 600,000 nationally.[2] These figures may be compared with estimates for incidence of diabetes, at 4 million cases; alcoholism, 5 million cases; disability-causing peptic ulcer, 450,000 cases; disability-causing tuberculosis, 160,000 cases; and the figures for such relatively rare but well-known diseases as cystic fibrosis, with an annual incidence of 1,000 cases, and hemophilia, with a prevalence of 6,000 cases.[3–7]

To date, the major emphasis in the approach to heroin addiction has been on treatment. Preventive measures have been largely limited to health education, although some efforts to interrupt the transmission cycle are made by various law-enforcement agencies. Current treatment modalities have been reviewed elsewhere by one of us and by others.[2,8–10] One important element in all treatment modalities, with the exception of methadone maintenance, is detoxification: the removal of heroin from the patient's system so that he or she becomes drug-free.

Approaches to detoxification range from no medication in a punitive environment ("cold turkey" in jail) to the use of gradually decreasing doses of methadone in a hospital setting, a method that has been practiced extensively at the Morris L. Bernstein Institute of the Beth Israel Medical Center in New York City.[11] Other approaches between these extremes include "cold turkey" in a friendly, controlled environment, as practiced by Synanon; using non-narcotic drugs such as tranquilizers; and using symptomatic medications in a controlled environment.[12,13]

The use of methadone for withdrawal is fairly straightforward. Forty mg. of the drug, given daily orally, will prevent the occurrence of withdrawal symptoms.* The dosage can then be tapered gradually over a variable time period, until the patient is drug-free. Methadone withdrawal by itself cannot be considered definitive treatment, because experience has shown that most addicts require a great deal of social and psychologic support to remain drug-free after detoxification. On the other hand, detoxification of some sort is an essential element of most treatment programs.

To date, most efforts of detoxification using methadone have been carried out on an inpatient basis.[11] Evaluation of a long-term, outpatient, detoxification program using methadone plus extensive social-service support in Philadelphia has been published.[14] Starting in 1970, several programs have been undertaken in New York City to provide heroin detoxification using methadone on a short-term outpatient basis. One of the largest of these is at the Harlem Hospital in New York City.[15] Lincoln Hospital in The Bronx, New York, has undertaken a similar program.[16] The Health Services Administration is currently undertaking to expand this type of program throughout the city.[17] The rationale for such an approach follows.

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*Such a dose will not prevent a concurrent intravenous injection of heroin from producing a "high." The dose which will block a "high" is about 120 mg. Such a dosage level must be achieved gradually, building up from 40 mg. This is the approach of methadone maintenance programs.

First, limited experience to date indicates that the ambulatory approach to detoxification is medically sound. Addicts can be brought from a state of physiologic addiction to heroin to a state of nonaddiction, using methadone dispensed on a daily basis, without going through a withdrawal syndrome. Second, there is a growing demand for heroin detoxification. In New York City, there are an increasing number of community-based programs which are contacting addicts at the local level and are recruiting them for treatment. The prototype for this sort of activity is the Community Orientation Center of the New York City Addiction Services Agency.[9] Addicts walk into the center or are spoken to on the street by members of the center staff. "Kicking the habit" is discussed, often quite vigorously. For those addicts who are thought by staffers to be at least somewhat seriously interested in getting off drugs, attempts are made to place them in treatment and rehabilitation programs of their own or of other agencies. A significant bottleneck to entry into many of these treatment programs has been detoxification.[18]

The one major inpatient detoxification service in New York City has been the Bernstein Institute at the Beth Israel Hospital, and as the disease has spread the Institute has become increasingly unable to carry the load. Since inpatient detoxification is expensive and properly staffed municipal hospital beds are in short supply, it seemed appropriate to attempt ambulatory detoxification, as at Lincoln and Harlem Hospitals. This is a report of the first six months' experience with a small pilot project in ambulatory heroin detoxification, using methadone in a municipal hospital outpatient department.

The setting

The Morrisania City Hospital is a 331-bed municipal general hospital serving about 400,000 people in the West-Central Bronx. It provides about 10,000 hospitalizations and 275,000 ambulatory visits annually. Medical and certain other staffing is provided to Morrisania by the Montefiore Hospital and Medical Center under an affiliation contract with the New York City Health and Hospitals Corporation. The Morrisania Youth and Community Services Center (M.Y.C.S.C.) is a community-based social action agency serving part of the Morrisania City Hospital district, which provides programs in athletics, housing, day care, employment, education, and narcotics addiction. The M.Y.C.S.C. addiction program provides confrontation, referral to existing programs, and ongoing group therapy and social services on an outpatient basis. The M.Y.C.S.C. asked the Morrisania City Hospital, among other local health care agencies, to provide an outpatient detoxification service as an adjunct to existing M.Y.C.S.C. services, having concluded that detoxification was a vital link in rehabilitation which they were, so far, unable to provide. Using existing resources, the Morrisania City Hospital agreed to establish a pilot ambulatory heroin detoxification program under the aegis of the Department of Social Medicine. A fairly detailed research effort was built into the program. This paper is a report of the first six months of operation of the program and of the results of the research.

Treatment program

Intake. All intake is carried out by the M.Y.C.S.C. Any patients who come directly to the hospital seeking detoxification are referred to the M.Y.C.S.C. The M.Y.C.S.C. conducts daily exaddict-led group therapy sessions. New candidates for the program are required to attend at least four consecutive sessions before being referred to the hospital for detoxification. During these sessions, the M.Y.C.S.C. staff attempts to determine the seriousness of the patient's intent and begins to help him gain insight concerning himself and his addiction. When the M.Y.C.S.C. staff is satisfied that the patient is a reasonable candidate by its own standards, he or she is then referred to the hospital for physical examination and detoxification.

Registration, physical examination, and medical problems. Registration is performed outside of the hospital on Wednesdays; the registration list is compiled each week by the M.Y.C.S.C. from its list of candidates for detoxification. On Thursdays, each registrant reports to the hospital for a complete history, physical examination, and laboratory work-up including complete blood count and hematocrit, blood urea nitrogen, blood sugar, liver function studies, serologic test for syphilis, and a chest x-ray. Further tests including electrocardiographs are performed when indicated. Urine testing for narcotic and other drugs is not done because of the expense involved. Each patient is started routinely on a course of tetanus immunization.

With the exception of their addictive disease, most of the patients were in reasonably good health. However, among the 126 patients examined, a number of major pathologic conditions were found (for review of the medical complications of heroin addiction, see Nelson,[19] Louria,[20] and Cherubin[21]). While the majority of patients were reasonably well nourished, about 25 per cent were underweight, and a few showed evidence of severe malnutrition and vitamin deficiency due to poor eating habits. A history of previous hepatitis was very common, occurring in about 25 per cent of patients. However, the only residual effects found among them were abnormal liver function test results. None showed evidence of chronic hepatitis or cirrhosis. Three cases of severe acute hepatitis were diagnosed and admitted to the hospital for treatment and concomitant withdrawal.

About 10 per cent of patients had positive serologic test results for syphilis (VDRL) and were presumed to have latent lues, although there is evidence that biologic false positive results occur in heroin addicts.[22] These patients were referred to the venereal disease clinic at the City of New York Department of Health for diagnosis and treatment. One young girl was found to have an acute pelvic inflammatory condition, which appeared gonorrheal.

Several patients had infections of the extremities in areas where they had injected themselves. These included thrombophlebitis, cellulitis, and localized abscesses. The patients were sent to the emergency room for appropriate antibiotic and surgical treatment. A large asymptomatic lung tumor was discovered in a thirty-four-year-old white male in the course of routine examination. He was admitted to the thoracic surgery service where it was removed. Pathologic examination revealed it to be a rare fibrous mesothelioma of the pleura.

The oral hygiene of most of the patients was poor. More than half had numerous teeth missing, while most of the remainder were severely carious. In some cases the condition of the remaining teeth was so bad that complete extraction would seem the only possible treatment. Many of these were young people in their teens and early twenties. All dental problems were referred to appropriate agencies for treatment.

Detoxification. Detoxification for all patients begins the Monday following the Thursday physical examinations. No holding medication is provided over the weekend. Methadone tablets are crushed and given to the patients by the nurse in "Tang," an artificial orange juice, in a single dose each morning for five days. The decision to use a single, rather than the usual divided dose was made for reasons of administrative simplicity, for both program and patients, in concert with M.Y.C.S.C. staff. Methadone does have a twenty-four- to thirty-six-hour time course of action. The first dose is 40 mg., the amount which will block the effects of withdrawal. The succeeding doses are 30 mg., 20 mg., 15 mg., and 10 mg. All patients get the same dose each day, and all patients follow the same Monday through Friday dosage schedule. Patients are told in advance that there will be no dose adjustment. The patients must come in for the methadone between 9:30 and 10:00 A.M. each morning. If a patient is late, he does not receive his medication and is referred back to the M.Y.C.S.C. They decide whether the patient may be readmitted to the next cycle, or dropped completely. There were no reported cases of heroin withdrawal syndrome occurring in patients either during or after completion of this regimen. Furthermore, during the course of this program it has not been considered necessary to hospitalize any patients for purposes of withdrawal only.

TABLE I. "Survivorship" for the detoxification program

Stage Completed	Number of Patients	Per Cent of Patients Registered	Per Cent of Patients Reaching Stage Who Completed Previous Stage
Registration	186	100	. . .
Physical examination	128	69	69
Started detoxification	110	59	86
Completed two days	104	. . .	. . .
Completed three days	102	. . .	. . .
Completed four days	95	. . .	. . .
Completed detoxification (five days)	84	45	76*

* This represents 66 per cent of those patients who completed the physical examination.

Rehabilitation and follow-up. The M.Y.C.-S.C. has responsibility for the patients once detoxification is finished. Patients are offered several alternatives: referral to a methadone-maintenance program, referral to a therapeutic community, or continuation in the M.Y.C.S.C.'s own group-therapy program with help in obtaining employment and/or in returning to school. To date, the M.Y.C.S.C. has not established organized procedures for maintaining good follow-up records. The hospital is currently attempting to help them do that. However, at this time no adequate follow-up data are available.

Research program

Introduction and method. There are few published data on ambulatory heroin detoxification programs using methadone. Indeed, at the time of this writing, only one report could be found.[14] There is also one reported program which provides ambulatory heroin detoxification using symptomatic medications.[23] The study described here presents the results of almost six months' experience with ambulatory detoxification. The total number of patients is still quite small, but the data do give some indication of what happens in such programs and do provide a base for further research.

A special history form is compiled for each patient by the nurse as part of the history and physical examination. From those forms, the following data were extracted: age, sex, marital status, ethnic group, education, number in family, time of residence in New York City, and length of heroin use. Information is also collected on other drugs used and previous treatment history, but this information did not lend itself to statistical analysis.

Results. Through April 15, 1971, a total of 186 patients registered for detoxification. As shown in Table I, 128 (69 per cent) arrived as scheduled the next day for their physical examination. De-

TABLE II. Characteristics of patients treated

Attribute	Distribution Among 128 Patients Who Completed Physical Examination Number	Per Cent of Total
Ethnic Group		
Black	80	62.5
Puerto Rican	46	36.0
Male	112	87.5
Under age twenty-five	78	60.9
Less than ten years of education	21	16.4
Married	29	22.6
No other family members in household	88	68.7
Spent more than five years in New York City	117	91.3
Used heroin more than five years	46	36.0

TABLE III. Per cent of patients completing physical examination who survived detoxification program analyzed according to specific characteristics deemed pertinent to success rate

Variable	Number Completing Physical Examination	Per Cent Completing Detoxification Program
Ethnic group		
Black	80	65
Puerto Rican	46	65
Sex		
Male	112	66
Female	16	62
Age		
Under twenty-five	78	59
Twenty-five or more	50	76
Education		
Nine years or less	21	32
Ten years or more	107	68
Marital status		
Married	29	73
Unmarried, widowed, divorced, separated	99	64
Family size		
No others in household	88	64
At least one other	40	38
Time in New York City		
Five years or less	11	46
More than five years	117	68
Duration of heroin use		
Five years or less	82	63
More than five years	46	70
All patients completing physical examination	128	66

TABLE IV. Per cent of patients completing physical examination who survived entire program according to age ($\chi^2 = 5.34$, 2 degrees of freedom, $0.05 < P < 0.10$)

Group	Age		Total
	Twenty-four or Less	Twenty-five or More	
A*	18	8	14
B†	22	18	20
C**	60	74	66
Total	100	100	100
Number of patients	78	50	128

* Group A: Patients (18) who completed the physical examination but did not start the actual detoxification.

† Group B: Patients (26) who started the detoxification but did not complete the five-day program.

** Group C: Patients (84) who completed the full five-day program of detoxification.

mographic and other characteristics could be determined only for those patients arriving for physical examination. One hundred ten patients (59 per cent of the registrants and 86 per cent of those having physical examinations) actually started detoxification by taking their first dose of methadone; 84 patients (45 per cent of those registering and 76 per cent of those who started the program) completed the full five days of detoxification.

The characteristics of the patient population are shown in Table II. In general, the group could be described as black or Puerto Rican, male, age under twenty-five, ten or more years of education completed, unmarried, living alone, living in New York City more than five years, and using heroin less than five years.

Table III shows survivorship in the program for specific groups of the patients. Although the differences do not quite reach statistical significance at the 5 per cent level, it appears that patients who had less than nine years of education or who had been in New York City less than five years were less likely to complete the program than were the other patients. Conversely, patients aged twenty-five or more, who were married, or who had used heroin more than five years were more likely to complete the program.

To consider the pattern of attrition in greater detail, the patients in the program were divided into three survivorship groups. Those patients who dropped out between the physical examination and the start of the detoxification program (18 patients) are labeled Group A; those patients who dropped out between the start of detoxification and the completion of detoxification (26 patients) are labeled Group B; and those patients who completed the full five days of detoxification (84 patients) are labeled Group C. Tables IV through VI show the survivorship patterns for patients in each of the three groups, with differences in those characteristics which appear to most influence attrition.

Table IV shows the detailed survivorship by age of patient. The higher attrition among the younger patients was largely due to the fact that almost one fifth of them dropped out before receiving their first dose of methadone. In Table V, which shows the influence of education, the pattern is similar. The survivorship for those who have lived in New York City for a shorter or a longer time is shown in Table VI. Again the higher total attrition in the group who had lived in New York City for five years or less was due to much higher attrition in the period between the

TABLE V. Per cent of patients completing physical examination who survived detoxification program, according to education* ($\chi^2 = 2.52$, 2 degrees of freedom, $p > 0.25$)

Group	Nine Years or Less	Ten Years or More	Total
A	24	12	14
B	24	20	20
C	52	68	66
TOTAL	100	100	100
Number of patients (100 per cent)	21	107	128

* Groups as defined in Table IV.

TABLE VI. Per cent of patients completing physical examination who completed detoxification program according to time spent in New York City* ($\chi^2 = 5.03$, 2 degrees of freedom, $0.05 < p < 0.10$)

Group	Five Years or Less	More than Five Years	Per Cent of Total
A	36	12	14
B	18	21	20
C	46	68	66
TOTAL	100	100	100
Number of patients (100 per cent)	11	117	128

* Groups as defined in Table IV.

TABLE VII. Per cent of patients completing physical examination who completed detoxification program according to age and number of years spent in New York City*

	Patients Aged Fifteen to Twenty-four Years Number of Years in New York City		Patients Aged Twenty-five or More Number of Years in New York City	
Group	Five Years or Less	More than Five Years	Five Years or Less	More than Five Years
A	60	15	17	7
B	20	22	17	18
C	20	63	67	76
TOTAL	100	100	101	101
Number of patients	5	72	6	45

* Groups as defined in Table IV.

TABLE VIII. Per cent of patients completing physical examination who completed detoxification program according to age and number of years of heroin use*

	Patients Aged Fifteen to Twenty-four Years Number of Years of Heroin Use		Patients Aged Twenty-five Years or More Number of Years of Heroin Use	
Group	Five Years or Less	More than Five Years	Five Years or Less	More than Five Years
A	22	0	0	13
B	22	21	11	22
C	56	79	89	66
TOTAL	100	100	100	101
Number of patients	63	14	19	32

* Groups as defined in Table IV.

physical examination and the initiation of methadone.

Because the data for age, for years spent in New York City, and for years of heroin use were confounded—that is, the patients who were older, who had lived longer in New York City, and who had used heroin longer, were all more likely to complete the program—an attempt is made in Tables VII and VIII to separate out these three factors. Table VII confirms that age is a stronger determinant of ability to complete the program than is length of residence in the City. For patients aged twenty-five or more, whether they had lived in New York City for more or less than five years, survivorship to the end of the program was greater than it was for patients under twenty-five. However, within each age group, those who lived in New York City for more than five years were more likely to complete the program than were those who lived in the city for five years or less.

Age and number of years of heroin use are examined simultaneously in Table VIII. Members of the most successful group were those patients aged twenty-five years or more who had been using heroin for five years or less.

Comment and conclusions

The program. It would appear that a five-day ambulatory program using the dosage schedule outlined is effective in achieving safe withdrawal from heroin addiction. This conclusion must be doubly hedged, however. The level of addiction is not known for any of the patients. Since it is generally thought that street heroin is of poor quality these days, it may be that many of our patients never achieved very high levels of heroin addiction in the first place. They may indeed be "needle addicts," a phenomenon discussed by the senior author elsewhere.[2] Further, it is not known how many, if any, of the patients are using heroin either during or after the withdrawal program. Nevertheless, unless it is to be assumed that all or most patients were still on heroin at the end of the regimen, it can be concluded that since there were no known patients who went into withdrawal syndrome, this program is effective in achieving physical withdrawal from heroin.

However, in being pleased with these results, one must also agree fully with Gay *et al.*[23] of the Haight-Ashbury Free Clinics who, in describing their ambulatory, symptomatic treatment, heroin detoxification program, said:

> The point of vital importance, however, is that physical detoxification touches only the top of the iceberg. We found individual medical problems transient and soluble. It is the more underlying aspect of the head-trip of heroin that requires prolonged and tenacious support if a psycho-social rehabilitation is to be effected . . . . By the fourth or fifth day we see the emerging picture of a patient who is essentially clean but who, as soon as he begins to feel physically well again, discovers that he still has all of the old psycho-social problems that originally led him into the heroin scene. The persisting heroin hunger and heroin head-trip are quite another matter.[23]

A further conclusion of our program is that it is possible to mount an organized program—with medical evaluation and treatment of patients as well as physical detoxification—as part of a municipal general hospital outpatient department. The program was limited in size only by the availability of funds for staff and space.

A more important conclusion is that it is possible for a hospital of this sort to develop a program of this type successfully in cooperation with a community-based organization. Both sides approached the problem of establishing the detoxification unit at the hospital with a positive attitude, agreeing that the program was necessary and that all obstacles to its initiation could be overcome by hard work and good will on both sides. Starting small certainly had its advantages. The full-time nurse, the one-fifth time clinician, the over-all medical direction, the space, the methadone, and the supplies were made available from existing hospital resources. The hospital could not, of course, have done this for a large-scale program. However, we were able to mount this pilot project because it was felt that it was most important to at least begin to meet this urgent community need and demand while the search for resources to do it on a large scale was being pursued.

Most interestingly, the question of "control" never came up. Probably, the most important reason for that was that we were doing something, and had the necessary resources available, not just talking about doing something and having to obtain the resources. Since we were busy serving patients in a way which was acceptable to them, we didn't really have the time, it seemed, to get into such discussions. What we did have, in both agencies, was a mutual, sincere desire to produce such a program and a mutual respect for the interest and skills of one another. Thus we quickly devised a workable division of labor among the various staffers in the hospital and the M.Y.C.S.C. which utilized the specialized skills, knowledge, and experience of all to the advantage of the patients. It was, we felt, an example of hospital-community group, professional-nonprofessional, and black-white-Latin cooperation of a high order; all worked together to produce a positive result.

It should be pointed out that we do not believe that treatment of sick individuals will lead to control of heroin addiction in the population.[2] Change in environmental factors and development of adequate preventive measures, notably unavailable at the present time, will be required to achieve that goal. However, treatment of sick individuals is important for the sake of the individuals. We do believe that outpatient heroin detoxification using methadone is feasible and useful in the treatment of this condition.

The research. Once it can be concluded that outpatient heroin detoxification is feasible, one is interested in looking at its efficacy. The program is probably producing a drug-free state in about two thirds of the patients who appear for the physical examination. We must say "probably" because we were not equipped to test for morphine derivatives or anything else in the urine of our patients. What it is doing in the long run we do not know. Neither the hospital nor the M.Y.C.S.C. is equipped to do long-term follow-up of such patients.

The major attrition in the program occurred between registration at the M.Y.C.S.C. and appearance at the hospital for physical examination. We can only guess at the factors affecting this. Original patient screening may be inadequate, instructions for reaching the hospital may be incomplete, and the program may not be properly explained to patients. However, another factor may be that patients knew that even if they appeared for physical examination on Thursday that they would not be receiving any methadone at all until Monday. This almost certainly influenced the lesser attrition between Thursday and Monday, and may have affected the attrition between Wednesday and Thursday. Thus, after the end of this study period, a policy of giving patients a holding dose of 40 mg. of methadone per day over the weekend was instituted. How this has affected the program has not yet been determined.

In terms of the relationship between patient characteristics and survivorship, although the numbers are small and the differences not statistically significant, the evidence suggests that of all factors, age tends to differentiate best among those who will be successful in detoxification; the older the patients, the more successful they are in completing the program in general, regardless of the length of heroin use or other factors. Those older patients who have used heroin for a relatively short time are the most successful. Other factors which appeared to influence survivorship favorably included having more than nine years of education and having lived in New York City more than five years. Assuming that the staff was available, such data would lead one toward giving special attention and support to higher-risk patients as they go through detoxification.

Summary

Heroin addiction is a major health problem in the United States. Control of this disease will require change in environmental factors and the development of adequate preventive measures. However, improvements are also needed in the treatment of sick individuals. Detoxification is an important element in treatment. Until recently, most detoxification was carried out within one kind of inpatient institutional setting or another. In this report a short-term ambulatory

heroin detoxification program is described, and a research program to evaluate it is reported and discussed. Ambulatory heroin detoxification using methadone works to the extent that no instances of withdrawal syndrome were reported. Because urine testing could not be provided for financial reasons, it is not known what proportion of patients who started the program were actually drug-free when they completed it. However, about three quarters of those commencing the withdrawal schedule did finish it. It was determined that of all patient-characteristics recorded, age tends to differentiate best among those who will be successful in detoxification and those who will not. Further, it was found that a hospital and a community-based drug-treatment organization were successful in cooperatively mounting a program of this type, with an appropriate division of labor.

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Necrology

R. Joseph Bacchi, M.D., of New York City, died on July 5 at the age of seventy-six. Dr. Bacchi graduated in 1921 from Fordham University School of Medicine. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Samuel Ernest Bilik, M.D., of New Rochelle, died on June 25 at the age of eighty. Dr. Bilik graduated in 1925 from University and Bellevue Hospital Medical College. He was a Diplomate of the American Board of Physical Medicine and Rehabilitation and a member of the New York Society for Physical Medicine and Rehabilitation, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene Clark, M.D., of New York City, died on July 18 at the age of sixty-seven. Dr. Clark graduated in 1932 from University and Bellevue Hospital Medical College. He was an associate attending physician at Bellevue and University Hospitals and an associate attending physician in cardiovascular disease at Lenox Hill Hospital. Dr. Clark was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Diplomate of the American Board of Internal Medicine (Cardiovascular Diseases), a Fellow of the American College of Physicians, and a member of the American Association of Pathologists and Bacteriologists, the New York Academy of Medicine, the New York Pathological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Isidore Samuel Faust, M.D., of New York City, died on July 3 at the age of eighty-four. Dr. Faust graduated in 1911 from University and Bellevue Hospital Medical College. Retired, he was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Angelo A. Franco, M.D., of New Berlin, died on July 10 at the age of sixty-four. Dr. Franco graduated in 1935 from Long Island College of Medicine. He was an attending physician and pediatrician at Chenango Memorial Hospital (Norwich). Dr. Franco was a member of the American Academy of General Practice, the Chenango County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles K. Friedberg, M.D., of New York City, was killed in an automobile accident on July 14 at the age of sixty-six. Dr. Friedberg graduated in 1929 from Columbia University College of Physicians and Surgeons. He was a consulting cardiologist at The Mount Sinai Hospital (and former chief cardiologist), a consulting physician at City Hospital Center at Elmhurst, and a consulting cardiologist at Elizabeth A. Horton Memorial Hospital (Middletown). A former clinical professor of medicine at Mount Sinai Medical School, Dr. Friedberg was a Diplomate of the American Board of Internal Medicine (Cardiovascular Diseases), a Master of the American College of Physicians, a Fellow of the American College of Cardiology, and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans Hesse, M.D., of New York City, died on July 3 at the age of seventy-one. Dr. Hesse received his medical degree from the University of Berlin in 1928. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph Andre Kling, M.D., of New York City, died on July 19 at the age of seventy-one. Dr. Kling received his medical degree from the University of Frankfurt in 1924. He was an assistant attending physician at Flower and Fifth Avenue Hospitals and an honorary physician at Southampton Hospital (Southampton). Dr. Kling was a member of the Pan American Medical Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sigmund Manheim, M.D., of New York City, died on July 1 at the age of seventy-nine. Dr. Manheim graduated in 1918 from Columbia University College of Physicians and Surgeons. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Mordecai McLane, M.D., of New York City, died on July 13 at the age of sixty-nine. Dr. McLane graduated in 1928 from Johns Hopkins University School of Medicine. He was formerly an attending obstetrician and gynecologist at The New York Hospital and a clinical professor of obstetrics and gynecology at Cornell University Medical College. Dr. McLane was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists, and a member of the American Fertility Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Louis Margolies, M.D., retired, of East Meadow, died on July 22 at the age of seventy-seven. Dr. Margolies graduated in 1917 from University and Bellevue Hospital Medical College. He was a member of the American Academy of General Practice, the American School Health Association, the American Geriatrics Society, the Nassau Academy of Medicine, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Isidor Ochs, M.D., of The Bronx, died on July 15 at the age of seventy-two. Dr. Ochs graduated in 1931 from Tulane University School of Medicine. He was an associate attending radiologist at Bellevue Hospital. Dr. Ochs was a Diplomate of the American Board of Radiology (Diagnostic Roentgenology) and a member of the Radiological Society of North America, Inc., the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

N. Jerome Schulman, M.D., of New Rochelle, died on July 15 at the age of sixty-eight. Dr. Schulman graduated in 1929 from Syracuse University College of Medicine. He was director of obstetrics and gynecology at New Rochelle Hospital. Dr. Schulman was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the International College of Surgeons, and a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

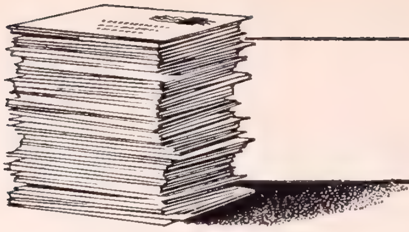
Aaron Seth Werner, M.D., of Brooklyn, died on June 26 at the age of sixty-seven. Dr. Werner graduated in 1930 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was an assistant attending obstetrician and gynecologist at Caledonian Hospital. Dr. Werner was a member of the American Academy of General Practice, the American Geriatrics Society, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Albert Thompson York, Jr., M.D., of Washington, D.C., formerly of New York City, died in an automobile accident on June 13 at the age of thirty-four. Dr. York graduated in 1964 from the University of Virginia School of Medicine.

Apology to John Dorsey Craig, M.D.

Owing to an inadvertent error, John Dorsey Craig, M.D., of New York City, was erroneously listed in this Department in the issue of July 15, 1972, page 1888. The ***Journal*** sincerely regrets this error and apologizes herewith to Dr. Craig.

FOR CORRECTION
SEE p. 245



Letters to the Editor

Irrelevance of relevance

To the Editor: After defeating the Ephraimites, the Gileadites seized the fords of the Jordan. Thereafter, whenever a fugitive from Ephraim tried to cross over, he was asked by the Gileadites to say, "shibboleth." If the fugitive replied, "sibboleth," as the Ephraimites pronounced it, he was seized and slain. And so 42,000 Ephraimites died.

Today's shibboleth is "relevance." Is God relevant? Is the church relevant? Is man relevant? Is society relevant? Is school relevant? Is work relevant?

What is not relevant cannot cross over. It, too, must be eliminated.

The search for relevance has been particularly intense and widespread among college students. Thus, a poll for the Carnegie Commission on Higher Education of 70,000 college undergraduates revealed that 91 per cent wanted "course work to be 'more relevant to contemporary life and problems.'" Fifty-four per cent wanted to elect all their courses. At the same time, 97 per cent stated they came to college for a "well-rounded general education."

What is a relevant college education? Is relevance the right stimulant to prescribe for a depressed educational system? Or is it more likely to be hallucinogenic, perhaps even lethal to the concept of a proper education?

Relevance is an alluring siren that suggestively offers simplicity, expediency, and quick results with minimal effort. Thus, it appears to be pragmatic and, therefore, especially congenial to the American penchant for getting things done—the "know-how" instead of the "know-why."

Relevance is goal-oriented. Having defined the mission, one then decides what is necessary to achieve the objective. Any facts or procedures which do not seem to be applicable to final solution of the problem are irrelevant.

The more information and actions which can be eliminated because of their irrelevance, the simpler life becomes. Maximal elimination leads to pristine simplicity, an attractive prospect in an increasingly complex world. Also, by seeming to offer simpler and faster results, relevance offers a kind of instant gratification of desires. Frustration in the realization of goals is minimized. Happiness is relevance.

Assume a student is interested primarily in solving the problem of poverty. What courses will comprise a relevant curriculum? Suppose the educational objective is ecology, economic recessions, decline of the American railroad system, infant mortality or, delivery of health care?

Even momentary reflection indicates that the choice of a relevant curriculum will depend on one's perceptions of the qualitative and quantitative nature of the problem and of the factors contributing to its origin and perpetuation.

Although the various factors underlying a problem may be recognized, an immediate, relevant solution will depend on available technics and information. Relevancy cannot encompass the unknown; this is its fundamental weakness. Insistence on relevance is therefore restrictive, anti-intellectual, anti-imaginative, and anti-progressive.

In this sense, relevance is irrelevant to the present and future well-being of society and mankind. Flexner* emphasized this truism many years ago in his essay, "The Usefulness of Useless Knowledge." Among the examples he gave were the apparently irrelevant and useless mathematical equations of James Clerk Maxwell, whose predictions were confirmed by Heinrich Hertz's experimental production of electromagnetic waves. This led to Marconi's wireless telegraphy and finally to modern radio.

A post-Flexner example of an apparent irrelevance is the observation by Fleming of the lysis of bacteria by a mold, the beginnings of the discovery of penicillin.

Can any of these observations help us evolve a desirable college curriculum? Can we agree on the general content of courses appropriate to a student who will reach the age of senior executive responsibility in our various institutions during the twenty-first century?

College should indeed provide a well-rounded education. This view implies the desirability of established requirements for a wide spectrum of courses. To rely largely on elective courses is to ignore the lessons of past educational history.

Without appropriate educational measures, the intellectual gap between the "two cultures," scientific and nonscientific, will widen. We need a common intellectual and cultural language in which these two segments of society can communicate with each other, especially if they are to coexist in a surviving democratic society.

ABRAHAM G. WHITE, M.D., F.A.C.P.
10 Nathan D. Perlman Place
New York, New York 10003

*Flexner, A.: The usefulness of useless knowledge, in Locke, L. G., Gibson, W. M., and Arms, G.: Readings for Liberal Education, New York, Holt, Reinhart and Winston, 1952, vol. 1, p. 406.

continued from page 2035

recently stated that nearly 60 New Yorkers are killed each year in small craft accidents. He suggested the following tips for safe boating: (1) If you are a novice, get someone with experience to give you lessons in boating safety. (2) Remember that your life and lives of your passengers depend on your handling the boat with care and good judgment. (3) Pay heed to approaching bad weather and small craft warnings. (4) Don't overload your boat. (5) If your boat overturns, stay with it until help arrives—your chances are much better than if you try to swim to shore. (6) Provide life preservers for each occupant of the boat and make sure that nonswimmers and children wear them. (7) Give docks and swimming areas wide berth and slow down when approaching congested areas, bathing beaches, and the shore. (8) Remember that alcohol and gasoline don't mix in boating. (9) Allow 100 feet of clearance of the red and white skin divers' flag; otherwise you could run over a surfacing diver. (10) Keep your boat well maintained. (11) Learn to give mouth-to-mouth resuscitation, a skill all boaters should have. For a free copy of the State Health Department's pamphlet, "Rescue Breathing," write to Public Inquiry Section, State Health Department, 84 Holland Avenue, Albany, New York 12208.

Blood transfusion statement notes

At the annual meeting of the American College of Legal Medicine at Miami Beach on May 13, 1972, the membership adopted a resolution to the effect that the present state of medical science does not permit the detection of all possible contaminants in blood, and the administration of blood so contaminated leads to patient morbidity and mortality. The application of the theories of implied warranty and strict liability to the administration of blood will lead to lawsuits against doctors, hospital, and blood banks. Such lawsuits will raise the cost of the blood to be administered and prevent physicians, researchers, and hospital personnel from concentrating their time on activities designed to prevent disease and discover methods for detecting known contaminants.

Telephone consultation service

On July 15, 1972, a new organization known as the Physicians' Telephone Consultation Service began to provide telephone consultation to all doctors who need help when a patient has a disease which is difficult to diagnose and treat. Outstanding medical and surgical leaders will be available at all hours to give assistance over the telephone. Because of their remote geographic locations within the United States, many physicians are unable to attend lectures and meetings which could help them to keep abreast of recent advances in medicine, surgery, and technology. This new service will provide a means by which these physicians may take advantage of the most advanced forms of treatment currently in use. The telephone number is 312-872-7888.

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Bactocill (Beecham-Massengill Pharmaceuticals) . . 2031
E-Mycin (Upjohn Company) 2118
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Totacillin (Beecham-Massengill Pharmaceuticals) . . 2035
Uticillin VK (Upjohn Company) 2044

Antidiabetic agents

Orinase (Upjohn Company) 2026, 2027

Antipyretic analgesics

Empirin (Burroughs Wellcome & Company) 2019

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Diaphragm (Ortho Pharmaceutical Corp.) 2029

Diagnostic laboratory services

KCRL (Roche Clinical Laboratories) 2025

Enemas

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Kinesed (Stuart Pharmaceuticals, Div.
  I.C.I. America Inc.) . . . . 2nd cover, 2015

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Mellaril (Sandoz Pharmaceuticals) . . . . 4th cover

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Berocca (Roche Laboratories) 2037

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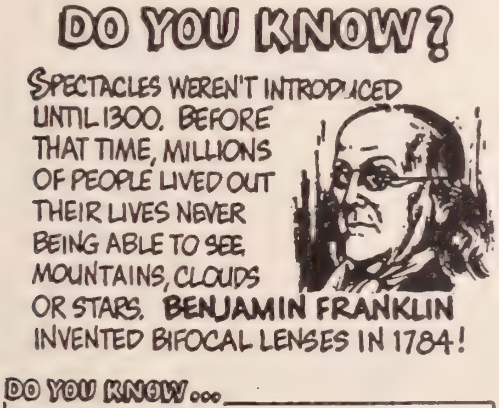
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NEW YORK STATE **September 1–15, 1972**

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Meeting Dates	*Deadline Dates*
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November 1–15	September 10
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25

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Mrs. Evelyn G. Clark, Editor
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Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

NEW YORK CITY AREA

September 1, 1972 / June 1, 1973

2:30–3:30 p.m., Fridays

Downstate Medical Society

The Long Island College Hospital
Residents' Conference Room
Department of Radiology
340 Henry Street
Brooklyn

PHYSICS OF RADIATION

ROBERT L. PINCK, M.D., and
MR. VITO L. FODERA, M.A., F.A.S.R.T.
with MR. G. SHAPIRO, M.S., F.A.C.R.

To register, contact: MR. VITO L. FODERA, at the above address. Tel. (212) 780-1717.

FRIDAY, SEPTEMBER 1

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25 Victory Boulevard
Staten Island

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I. EMERY BREITNER, M.D.
Institute of Human Relations

Contact: Sid Herling, MSW, Dir., above address

September 1972 / May 1973

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Offers basic courses and continuing education in Nursing Home Administration to meet the requirements of the Board of Examiners of Nursing Home Administrators of the New York State Department of Health.

Write The Dean, at above address

Fall 1972 (time and dates to be announced)

Downstate Medical Society

Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

TREATMENT OF SEXUAL INADEQUACY

DAVID MUMFORD and SALLIE SCHUMACHER, M.D.'s with invited lecturers

CREDIT: 14 Elective hours AAGP

To register, contact: DR. MUMFORD, Dir., Medical Education, Coney Island Hospital, above address. Tel. (212) 743-4100, Ext. 460.

Time and Dates by Special Arrangement

Twenty-five sessions

Department of Anesthesiology

Jewish Hospital and Medical Center
555 Prospect Place
Brooklyn

EPIDURAL ANESTHESIA FOR LABOR AND DELIVERY

ALBERT E. CHIRON, M.D. with the Staff

FEE: $100

To register, contact: ALBERT E. CHIRON, M.D., Dir., above address. Tel. (212) 240-1452.

Time and Dates by Special Arrangement

Twenty sessions

Department of Anesthesiology

Jewish Hospital and Medical Center
555 Prospect Place
Brooklyn

RESUSCITATION OF THE NEWBORN

FEE: $85

To register, contact: Dr. Chiron (see above)

September 5 / 15, 1972

9:00 a.m.–6:00 p.m., Tuesday thru Friday

The Page and William Black Post-Graduate School of Medicine and the Department of Ophthalmology of the Mount Sinai Medical Center

Fifth Avenue at 100th Street

TEMPORAL BONE SURGERY

HARRY ROSENWASSER and
SIMON C. PARISIER, M.D.'s
Mount Sinai School of Medicine

FEE: $600

(Course Repeated Monday, February 19, 1973 thru Saturday, March 2, 1973.

September 5 / 26, 1972

9:00 a.m., Tuesdays

New York Infirmary

Toscanini Room
Stuyvesant Square East and 15th Street

September 5

Pulmonary Embolism

MAXWELL L. GELFAND, M.D.

September 12

The Newer Treatment of Sickle-Cell Anemia

PETER GILLETTE, M.D.
Rockefeller University Hospital

September 26

Carcinoid Tumor of the Bowel

RICHARD R. PICHEL WARNER, M.D.
The Mount Sinai Hospital

WEDNESDAY, SEPTEMBER 6

4:00–5:30 p.m.

Westchester Square Hospital in collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

RECENT ADVANCES IN CARDIAC SURGERY

CHARLES P. BAILEY, M.D.
Misericordia Hospital

NO FEE CREDIT: AAGP $1\frac{1}{2}$ hours

THURSDAY, SEPTEMBER 7

9:00–11:00 p.m.

Albert Einstein College of Medicine

The Forchheimer Building
First Floor Lecture Hall
1300 Morris Park Avenue
Bronx

PSYCHIATRY

GEORGE GOTTESMAN, M.D.

For information on this meeting, which is a session of the Annual Postgraduate Course in Family Practice, please contact Mrs. Frieda Fagin at the above address or telephone (212) 430-2822.

September 9 / December 2, 1972

10 a.m.–12:00 noon, Saturdays

Downstate Medical Center

State University Hospital
Room A7-383
445 Lenox Road
Brooklyn

QUANTITATIVE ANALYSIS OF MEDICAL RECORDS

MISS SUZANNE STEPHAN, B.S., with
MR. DWIGHT D. DIXON, B.B.A. and
MISS MURIEL BRANDFORD, RRL.

FEE: $45

To register, contact: MR. DWIGHT D. DIXON, Chm., Medical Record Administration Program, College of Related Professions, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Tel. (212) 270-2588.

September 10 / 12, 1972

Registration: 6:30–9:30 p.m., Saturday, September 9 or 7:30 a.m., Sunday

American Academy of Orthopaedic Surgeons

Committee on Sports Medicine
Americana Hotel
Seventh Avenue at 52nd Street

Postgraduate Course

INJURIES TO THE NECK AND UPPER EXTREMITY IN SPORTS

JAMES A. NICHOLAS, M.D., Chairman
Cornell University Medical College

FEES: $150 Physicians
50 Residents, Nurses and Allied Health Personnel

Write: JAMES A. NICHOLAS, M.D., 150 East 77 Street, New York, N.Y. 10021.

September 11, 1972 / June 7, 1973

9:00 a.m.–12:00 noon, Mondays & Thursdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
Fifth Avenue at 100th Street

INTRODUCTION TO GROUP PSYCHOTHERAPY FOR GRADUATE PSYCHIATRISTS

AARON STEIN, M.D.
Mount Sinai School of Medicine

FEE: $100

September 12, 1972 / June 26, 1973

11:00 a.m.–12:00 noon, Tuesdays

Downstate Medical Center

Kings County Hospital Center
Conference Room, B Building, 7th Floor
451 Clarkson Avenue
Brooklyn

CLINICAL PEDIATRICS

RAMON RODRIGUEZ-TORRES, M.D., with the Staff of the Department of Pediatrics of DMC

NO FEE

To Register contact Dr. Rodrigues-Torres, Acting Chairman, Department of Pediatrics, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Tel. (212) 270-1625

September 14, 1972 / June 28, 1973

11:00 a.m.–12.:00 noon, Thursdays

Downstate Medical Center

ADVANCES IN PEDIATRICS

(See Above)

FUTURE EVENTS

MONDAY, OCTOBER 2

8:30 p.m.

Rudolf Virchow Medical Society

2 East 103rd Street

Annual Rudolf Virchow Lecture

CHANGING PATTERN OF OFFICIALLY INVESTIGATED DEATHS

MILTON HELPERN, M.D.
Chief Medical Examiner, City of New York

Presentation of the Rudolf Virchow Medal and Scroll to Dr. Helpern.

October 3 / 24, 1972

3:00–5:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

ORTHOPAEDICS IN INFANCY AND CHILDHOOD

ROBERT S. SIFFERT, M.D., and Staff
Mount Sinai School of Medicine

FEE: $15

October 3 / 31, 1972

8:00–10:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

CLINICAL NUTRITION

GEORGE CHRISTAKIS, M.D., and Staff
Mount Sinai School of Medicine

FEE: $35

October 5 / December 14, 1972

4:30–6:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

HYPNOSIS AND CONDITIONING THERAPIES FOR PSYCHIATRISTS: A CRITICAL EVALUATION

ELLIOT N. WINEBURG, M.D.
Mount Sinai School of Medicine

FEE: $75

October 5 / 7, 1972

Pre-Registration 7:00–9:00 p.m., Wed., Oct. 4 or 7:30 a.m., Thurs., Oct. 5

American Academy of Orthopaedic Surgeons

The Americana Hotel
Seventh Avenue and 52nd Street

Postgraduate Course on

BONE AND SOFT TISSUE TUMORS

(Designed for orthopaedic surgeons, pathologists, radiologists, and all interested physicians)

FEE: $150 (Residents $50)

CREDIT: 17½ Elective Hours AAGP

Contact: KENNETH C. FRANCIS, M.D., 215 East 68th Street, New York, N.Y. 10021. Tel. (212) UN 1-2100.

SUNDAY, OCTOBER 8

9:00 a.m.–5:00 p.m.

American Association of Medical Assistants

New York State Society Chapter

SEMINAR—CMA mini-Test

Contact: Mrs. Elvira Orso, Chairman, Education Committee, 813 Spring Street, Syracuse, N.Y. 13208

October 10 and 11, 1972

9:00 a.m.–5:00 p.m., Tuesday and Wednesday

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

TREATMENT IN NEUROLOGY

MORRIS BENDER, M.D., and Staff
Mount Sinai School of Medicine

FEE: $100

October 12 and 13, 1972

8:30 a.m., Thursday—Registration

N.Y.U. Post-Graduate Medical School

Auditorium—Alumni Hall
550 First Avenue

SYMPOSIUM ON HEMISPHERECTOMY

FEE: $100

Write for Program and application: Office of the Recorder—Room 156 MSB, above address

October 18 / 20, 1972

N.Y.U. Post-Graduate Medical School

550 First Avenue

Three-Day Symposium on

RADIOLOGY OF THE KIDNEY

FEE: $150

Write: Office of the Recorder—Room 158 MSB above address.

October 25 / 27, 1972

9:00 a.m. Wednesday, Registration

N.Y.U. Post-Graduate Medical School

Alumni Hall
550 First Avenue

Three-Day Symposium on

CURRENT DEVELOPMENTS IN DERMATOLOGY

FEE: $125

Apply: Office of the Recorder—Room 158 MSB, above address.

October 26 and 27, 1972

8:30 a.m.–5:00 p.m., Thursday and Friday

New York Medical College

Department of Ophthalmology
1249 Fifth Avenue (106th Street)
Room R 113

ANNUAL FALL SECTIONAL MEETING OF THE ASSOCIATION FOR RESEARCH IN VISION AND OPHTHALMOLOGY

In addition to research papers, there will be two clinical symposia, as follows:

1. **Thursday, a.m.**
   Ocular Tumor Symposium
2. **Friday, a.m.**
   Glaucoma Symposium

For further information, please contact the Department of Ophthalmology, 212-TR6-5500, Ext. 117, 118.

SATURDAY, OCTOBER 28

8:30 a.m.–6:00 p.m.

New York Medical College

Department of Ophthalmology
Main Auditorium

GLAUCOMA SYMPOSIUM

An expert faculty has been assembled to approach the glaucoma problem from a pathophysiologic viewpoint. For further information, please contact the Department of Ophthalmology, 212-TR6-5500, Ext. 117, 118.

February 11 / 15, 1973

Medical Society of the State of New York

The Americana Hotel
Seventh Avenue and 52nd Street

167th ANNUAL CONVENTION

February 15 / 24, 1973

New York Medical College

Department of Ophthalmology
Princess Hotel
Acapulco

Fourth Annual Seminar

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1. **Simplified Hard Lens Fitting**
2. **The Soft Lens Story**
3. **Therapeutic Soft Lens—Fact or Fancy**
4. **A Continuously Worn Soft Lens—Is It Feasible?**
5. **Practical Soft Lens Fitting**
6. **Routine Cataract Extraction—A Fresh Approach**
7. **Is Cataract Phacoemulsification a Step Forward?**
8. **Results of 500 Phacoemulsification Cases Compared with Results of 500 Routine Cataract Extractions**
9. **Do Cryopreserved Corneas Work?**
10. **Keratoprosthetics—Good or Bad**
11. **An In-Depth Review of Intracameral Prosthetics**

Further information may be obtained by writing: Department of Ophthalmology, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029

RENSSELAER COUNTY

THURSDAY, SEPTEMBER 14

11:30 a.m.

Rensselaer County Academy of Medicine

UROLOGICAL PROBLEMS IN INFANTS AND SMALL CHILDREN

W. HARDY HENDREN, M.D.
Massachusetts General Hospital

TUCKER'S TOWN, BERMUDA

September 10 / 16, 1972

The American Society of Gastrointestinal Endoscopy

Castle Harbour Hotel
Tucker's Town
Bermuda

CLINICAL GASTROENTEROLOGY

Write for Program and Registration, to: VERNON M. SMITH, M.D., Dir., Postgraduate Course, 301 Saint Paul Place, Baltimore, Maryland 21202

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ATTICA, N.Y., Wyoming County, needs a G.P. for new Medical Center.

CONTACT: ANN MUNIAK, Exchange Road, Attica N.Y. 14011; or J. WYSOCKI, D.D.S., 14 Market Street.

BINGHAMTON, N.Y., Broome County. G.P.'s, Internists, Ophthalmologists, Dermatologists.

CONTACT: MR. CHARLES E. ROBBINS, Broome County Medical Society, 4500 Old Vestal Road, Box 987, Binghamton, N.Y. 13902. Tel. (607) 729-9261.

BOONVILLE, N.Y., Oneida County. G. P. for Medical Center.

CONTACT: MR. JAMES MERCER, Sunset Drive, Boonville, N.Y. 13309. Tel. (315) 942-4691.

BROADALBIN, N.Y., Fulton County. G.P.

CONTACT: MR. ROBERT H. LESLIE, Chm. Citizens' Committee to Obtain a Doctor, R.D. #1, Broadalbin, N.Y. 14025.

BROOKLYN, N.Y., needs a Medical Director Bd. Qual. with some administrative experience; a Psychiatrist, N.Y. lic. with 5 yrs. experience limited to Psychiatry; a Pediatrician, Bd. qual. N.Y. lic.

CONTACT: Personnel Director, Provident Health Center, 584 Myrtle Avenue, Brooklyn, N.Y. 11205. Tel. (212) 789-2594.

MAHOPAC, N.Y., Putnam County, needs Specialists in Pediatrics, Internal Medicine, Ob/Gyn and General Practice.

CONTACT: BERNARD M. PORITZKY, M.D., 22 Putnam Professional Park, Mahopac, N.Y. 10541. Tels. (914) 628-3474 or 8454.

POUGHKEEPSIE, N.Y., Dutchess County. E.N.T. Certified or Eligible Assistant wanted for busy practice. Eventual partnership.

CONTACT: WILLIAM R. UPDEGRAFF, M.D., 202 Hooker Avenue, Poughkeepsie, N.Y. 12603. Tel. (914) 454-0620 or 0621.

RED CREEK, N.Y., Wayne County. Family Physician.

CONTACT: MR. RALPH DeMAS, Chm., The Red Creek Physicians Committee, Red Creek, N.Y. 13143.

MEDINA, N.Y., Orleans County. Medical Director, Internists, Pediatricians, Family Physicians and G.P. needed for developing group practice at community hospital site. Newly expanded 116 bed hospital servicing 37,000. N.Y. State license required.

CONTACT: MR. JOHN HAMILTON, Medina Memorial Hospital, 500 Ohio Street, Medina, N.Y. 14103. Tel. (716) 798-2000.

SALAMANCA, N.Y., Cattaraugus County. G.P.'s and Emergency Room Physicians wanted.

CONTACT: MISS B.J. SOMERVILLE, Adm., Salamanca District Hospital, 150 Parkway Drive, Salamanca, N.Y. 14779.

SIDNEY, N.Y., Delaware County, recruiting physicians for outpatient clinic.

CONTACT: MR. GEORGE A. NUFFER, The Hospital, Pearl Street, Sidney, N.Y. 13838. Tel. (607) 563-9934.

CUBA, N.Y., Allegany County, needs a Specialist in Ob/Gyn (man or woman) and G.P.'s.

CONTACT: MR. GERALD B. COLE, Adm., Cuba Memorial Hospital, Cuba, N.Y. 14727. Tel. (716) 968-2000.

EVENTS RECEIVED AFTER DEADLINE

September 11 and 25, 1972

3:30 p.m., Mondays

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

September 11

Alcoholic Liver Disease

FENTON SCHAFFNER, M.D.

September 25

Current Therapy of Cardiac Arrhythmias

CHARLES K. FRIEDBERG, M.D.

Speakers are from Mount Sinai School of Medicine

September 14 / for ten sessions

3:30–5:15 p.m., Thursdays

The Queens Hospital Center Affiliation of the Long Island Jewish-Hillside Medical Center and School of Medicine, State University of New York at Stony Brook

Triboro Hospital
Jamaica

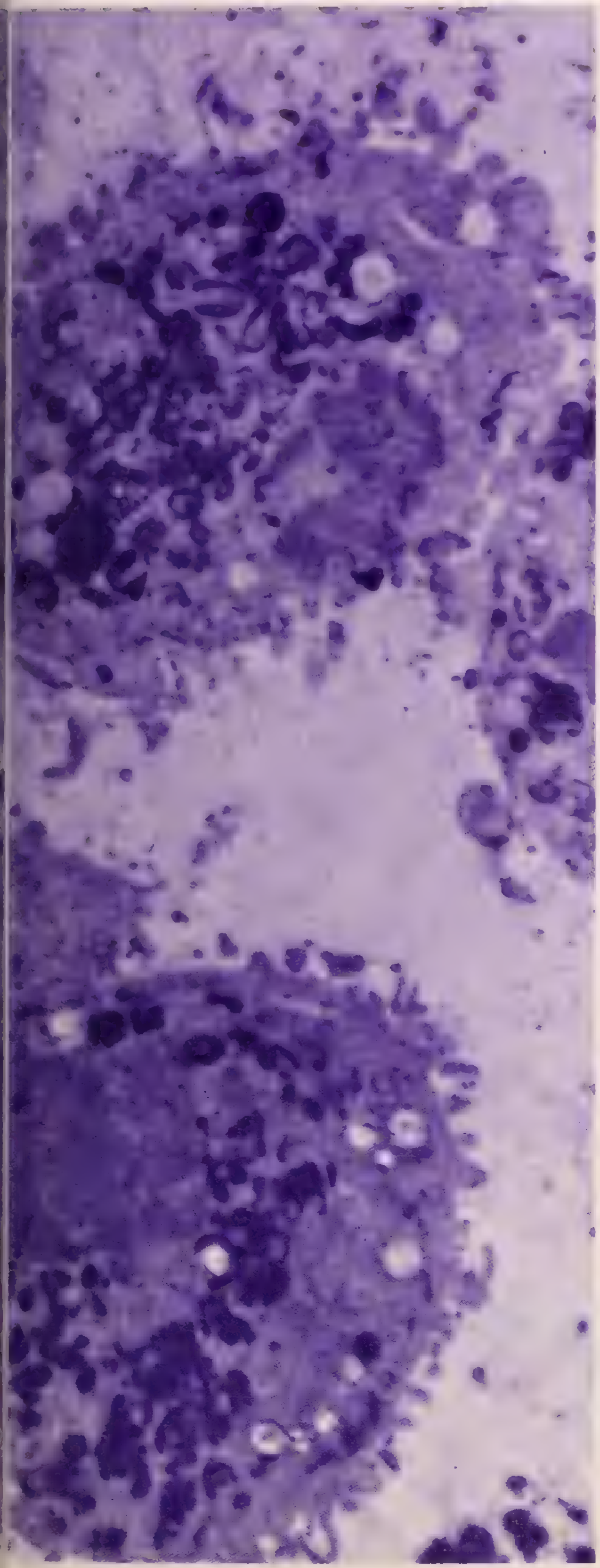
POST GRADUATE COURSE IN PULMONARY DISEASES

Under the direction of
HARRY H. EPSTEIN, M.D.
Long Island Jewish Medical Center

NO FEE CREDIT: 18 hours Prescribed AAFP

For further information, please contact MRS. MARGARET R. CERNIGLIA, Professional Education Consultant, Queens TB and RD Association, 159-29 90th Street, Jamaica, N.Y. 11432. (212) JA 6-2557.

but few have seen.



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New York State Journal of Medicine

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"...a more satisfactory treatment..."[1]

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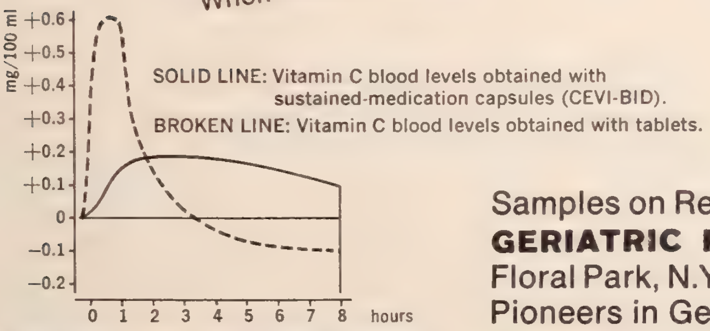

*Comparison of ascorbic acid blood levels after administration of 1 gram of ascorbic acid in effervescent tablet form and 1 gram of CEVI-BID (2 capsules). *Adaptation

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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2253 WHAT GOES ON

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Warnings: Tolerance usually develops within a few weeks. When this occurs, the recommended dosage should not be exceeded in an attempt to increase anorectic effect.
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Letters to the Editor

Oral diabetes drugs; a warning

To the Editor: In the warning to the physicians by the FDA (Food and Drug Administration) there is a contradiction. The U.G.D.P. (University Group Diabetes Program) concluded that oral diabetes drugs appear to increase the risk of the fatal heart attacks and circulatory disease they are intended to prevent. (This was recently confirmed in England when it was found that there was a significantly greater frequency of myocardial infarctions in the 71 patients treated predominantly by oral antidiabetic agents—19.7 per cent than in the 115 patients treated predominantly by diet alone—9.5 per cent.)[1] While based on the U.G.D.P. studies it warns physicians against prescribing the drugs, the FDA nevertheless recommends their use as a *last resort* (my italics), that is, if the condition cannot be adequately controlled by other measures. Yet if lowering the blood sugar level by oral diabetes drugs involves increased risks, evidently such risks must be kept away from the patient for whom it is given as a last resort, just the same as from all diabetics. It is true that in medicine, as in life in general, there is sometimes no ideal solution to a problem, sometimes it is necessary to choose the lesser of several evils even if it is not without risks. This occurs when a treatment, for instance surgical, although risky, is less hazardous than no treatment at all. But is reduction of the blood sugar level with oral diabetes drugs less hazardous than withholding the drugs? Not so. It is the giving of the drugs that involves higher risks, as shown precisely by the studies on which the FDA warning is based. That which the withholding of the drugs entails is a higher blood sugar level. This being the case, is it reasonable to expose the patient to danger in exchange for a pretty laboratory report?

I suspect that the source of the misunderstanding is the mistaken belief that oral diabetes drugs have two effects, the one beneficial, lowering of the blood sugar level, while the other harmful—predisposing to heart and circulatory disease. It is not realized that the two effects are not separate and that the harm is not caused by some inherent toxicity. The two effects are one and the same; lowering the blood sugar level and the consecutive stimulation of the anterior lobe of the pituitary are fundamental.[2] That explains why the several oral drugs of various chemical structures have similar harmful effects, which might even be shared by the blood sugar lowering insulin molecule of an altogether different composition.[3,4]

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New York, New York 10021

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Comparative vital capacities with aminophylline

To the Editor: Aminophylline has long been used in the standard regimen of adult asthma. Administered either alone or in combination with isoproterenol (Isuprel mistometer) or subsequent intramuscular epinephrine when successive aminophylline injections fail to clear residual wheezes or dyspnea, it has been given either intravenously, intramuscularly, or through rectal suppositories. It may be alleged that the intravenous injection, although mostly prompt in effect, is traumatic to physician and patient. The intramuscular injection however produces tissue pain and rectal suppositories are slower in absorption.

In this study these three methods of administering aminophylline have been compared. The vital capacity tracings were obtained on a Pulmonor electric spirometer. Several individual and sequential respirations were recorded for all post-therapy asthmatic patients about one-half hour after cessation of wheezing.

Uniform vital capacity readings of 3,400 to 3,600 were obtained in the many patients receiving 10 cc. of intravenous aminophylline. Although this is above the normal range of 2,400 to 3,200, no observable excitation or unusual behavior could be ascertained. In a few patients who received intramuscular injections, intermediate levels of 1,600 to 2,400 were obtained. In those patients receiving one or two stat rectal suppositories, subjective symptoms declined and the patients felt better clinically, and vital capacity levels of 1,400 to 1,600 were uniformly recorded. These values are considerably below normal and raised the question whether or not the patients were clinically improved by the suppositories, for in most cases slight residual wheezing remained although the patients insisted they felt better and dyspnea did disappear. In two of these cases, subsequent intramuscular epinephrine was used resulting in an improved breath sound. The absence of excitation with suppositories may perhaps account for the lowered vital capacity but would appear preferable clinically both with respect to ease of administration and absence of undesirable side effects.

The significance of the vital capacity attained with the different routes of administration and its correlation with the clinical condition of the patient is open to considerable discussion. The frequent combination with barbiturates in many frequently used drugs suggests that clinicians do not favor an excited, hyperventilating, hyperkinetic individual. Use of clear breath sounds rather than absence of dyspnea as the criterion of cessation of the asthmatic attack frequently leads to many additional unnecessary intravenous injections. The decreased vital capacity with suppositories suggests that higher-dose suppositories be used either alone or in combination with a smaller intravenous injection.

HOWARD S. ZUCKER, M.D.
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Brooklyn, N.Y. 11230

Individual psychotherapy of drug abuse

To the Editor: Individual psychotherapy, except in carefully selected cases, is seldom the treatment of choice in drug abuse and addiction. Historically and philosophically this form of psychologic treatment has failed to meet the needs of not only the growing numbers of such patients, but also those of the individual patient. This is a difficult fact for many physicians who are not psychiatrists to understand.

Discomfort vs. comfort

There are several reasons for this failure. To be successful, psychotherapy, even supportive psychotherapy, requires a commitment from the patient plus a willingness to be somewhat introspective. It requires also some philosophic concordance between therapist and patient. Perhaps most significantly, it is necessary on the part of the patient to be willing or able to bear some discomfort in the process of working through his internal tensions and external problems to a solution.

In psychotherapy, the therapist offers short-term discomfort in exchange for long-term self-respect and the capacity to make choices. Growth, whether in adolescence or in therapy, only occurs in those who learn to accept such discomfort, which is an inevitable component of the human condition. To be alive is to have problems. Developing problem-solving technics is an uncomfortable process.

Any therapist or clinic staff member dealing with drug abuse finds a wide variety of patients with varied clinical diagnoses. Some seek treatment willingly and others because of external societal or legal pressures. Whatever their basic illness, they have in common inadequate defenses against anxiety and a pattern of finding surcease from such anxiety through "turning off" by the use of some drug. Psychotherapy, particularly individual psychotherapy, as part of its inherent nature requires the patient as well as the therapist to bear the anxiety placed on them.

Conflict in value systems

In addition, there are certain inherent values in individual psychotherapy that make it difficult for many patients. If they used drugs as a way of declaring a moratorium on anxiety and thus a moratorium on growth, their value system is in conflict with the value system of therapy and the therapist. In addition to the requirement to bear some anxiety, other subtle values are involved: the need to be honest, the value in self-regulation by conscious choice, and the value of long-range versus short-term goals are but a few. In contrast, the addict's personality often has been fixated at a level of dishonesty with others as well as self, a denial of the need for, or possibility of, conscious choice, and the substitution of instant comfort for long-term gain.

Parallel problems in alcoholism and borderline schizophrenia

The history of the treatment of alcoholism by individual therapy is only one example of the failure of individual psychotherapy when the patient has readily available a method of evading this requirement to bear anxiety.

The patient with borderline schizophrenia is another example. These patients, with their limited capacity to handle anxiety without regression to more primitive defenses when confronted in therapy, have also presented great difficulties in individual treatment. They, too, have difficulty in making one-to-one relationships. Similar social, cultural, and psychologic circumstances go into producing the drug abuser. The requirement in therapy that a patient be open and candid with the therapist is as contrary to the ethics of the "street" drug abuser as it is to the underdeveloped capacities of the patient with borderline schizophrenia. Both lack basic trust.

In a recent article Breggin[1] wrote of psychotherapy as applied ethics. He felt psychoanalytic psychotherapy should, and by its nature did, promote the ethic of autonomy. The drug abuser is promoting escape from responsibility for self.

The subtle gaps in value between the therapist and his patient with "street-world" values presents one of the biggest challenges in treatment by any modality. Chessick[2] details much that is applicable. The establishment of a treatment relationship requires an empathetic approach by the therapist. This gap in ethics or values presents a countertransference problem for many therapists. Even the healthier drug abuser, immature but nonschizophrenic in his capacities, suffers a philosophic chaos that is often frustrating to the therapist, who sees it as psychopathology rather than different or absent values.

Given a different value system and underdeveloped defenses against anxiety and discomfort and the difficulty in forming one-to-one relationships, the one-to-one confrontation of psychotherapy or the therapeutic alliance may break down. Where value systems are more in concordance and defenses are less shattered, individual psychotherapy may be possible. The older the patient, the more successful he was in solving problems before drugs became his chief symptom or defense, the better the prognosis for individual therapy.

If a therapeutic alliance is formed and individual therapy is begun, there are many difficulties in its course. With drugs as readily available as alcohol,

continued on page 2138

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> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
>
> *– George Sarton, from "The History of Medicine Versus the History of Art"*

Would it be useful in clinical practice to have government predetermine drugs of choice?

Opinion

Results of a survey of physicians:

13.3%
Yes, it would be useful.

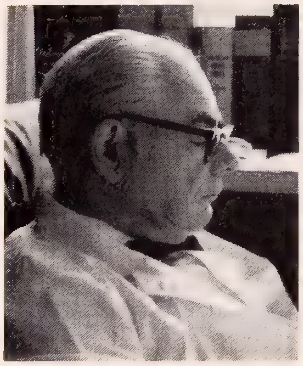
86.7%
No, it would not be useful.

Dialogue

Would it be useful in clinical practic to have government predetermine drugs of choice?

Doctor of Medicine

Walter Modell, M.D.,
Professor of Pharmacology,
Cornell University
Medical College,
Editor,
Clinical Pharmacology
& Therapeutics,
Drugs of Choice,
Rational Drug Therapy



The proposition that government should determine one or two "drugs of choice" within a given therapeutic class reflects the belief that a similarity in molecular structure insures a close similarity in pharmacologic effect. But this is by no means the rule. An obvious example would be in the field of diuretics, where a small change in chemical structure accounts for substantial differences in concomitant effects such as potassium excretion.

Any attempt to dictate the "drug of choice" would be complicated by the fact that some populations demonstrate a bimodal distribution in their reaction to drugs. If the data on drug response are mixed for the total population, one drug will appear to be as useful as the other. But if drug response is reported separately for different segments of the population, drug A will be found to be better for one group and drug B for the other.

It may, of course, be possible to determine drugs of choice in particular categories on a broad statistical basis. But there are always certain patients in whom a drug produces odd, unpredictable or idiosyncratic reactions. So, though a drug might statistically be the most useful one in a given situation, individual variations in response might make it the *incorrect* one.

The point I wish to make is that if two, three, four or more drugs in one class are of approximately equal merit, that in itself is justification for their availability. Exceptional cases do arise in which one drug would be useful to a certain segment of the population and another drug would be of no use at all. In the practice of medicine, the physician must be prepared to treat the routine as well as the unusual case.

Another objection to the determination of a drug of choice is that precise statements of *relative* efficacy are very difficult to make—much more difficult than statements of efficacy. For example, in testing drug efficacy, it is easy to determine the difference between a drug that is effective in treating a condition and one that is not at all effective. Thus, it is fairly easy to determine whether a drug is more effective than a placebo. But if you compare one drug that is effective with another drug that is also effective, and the relative differences between them are very slight, statements of relative efficacy may be very difficult to make with assurance.

I do not mean to imply that relative efficacy statements are not useful or can never be made. With some groups of drugs (e.g., analgesics), extensive study and precise methodology have yielded useful information on relative efficacy. But in most situations, such information can be acquired only through studies encompassing three to five years of use in many more patients than are used to compare drugs with a placebo for the introduction of a drug into commerce. It is really only after practitioners use a drug extensively that relative safety and efficacy in practice can really
determined.

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my opinion, it is not unction of any government or private regulatory cy to designate a "drug oice." This determina- should be made by the ician after he has re- d full information on properties of a drug, then it will be based on experience with this and his knowledge of ndividual patient who eking treatment.

an evaluation of comtive efficacy were to be e, particularly by goviient, at the time a new is being approved for ceting, it would be a t disservice to medi- and thus to the patient consumer. For exam- when a new therapeu- gent is introduced, on basis of limited knowl- , it may be considered e more potent, more ctive, or safer than lucts already on the ket. Conceivably, at time the new drug i be labeled "the drug hoice." But as addi- l clinical experience is mulated, new evidence become available. r, it may be apparent that the established products should not be so easily dismissed.

Variation in patient response to drugs constitutes one of the major obstacles to the determination of "drugs of choice." We are just beginning to open the door on pharmacogenetics, but it is evident that genetic differences cause wide variations in the way drugs are absorbed, metabolized, etc. This fact alone is sufficient to make unrealistic the idea that there is one drug in each class to be used for every human being.

The problem of determining relative drug efficacy is an extremely complicated one. Comparison with other drugs of the same class should not be a prerequisite for marketing a new substance. In some therapeutic areas, it may be difficult to make accurate comparisons. For example, in the treatment of infections it is not possible to conduct crossover studies. Recovery may be influenced by factors which cannot be controlled or measured, i.e., natural host resistance and virulence of infective agents. A drug's acceptability must often be judged on the basis of its own performance, and this may be limited to experience in a relatively small patient population. If the introduction of a new drug must await the adequate establishment of relative efficacy, the duration of clinical trial and extent of studies would be greatly prolonged, particularly for rare or unusual conditions. The availability of a new drug would be delayed. Many patients might suffer needlessly and lives might be lost.

Relative efficacy can best be established by experience in a general patient population through regular channels of clinical practice. The physician considers the patient as a whole, which means the patient often has multiple problems and drugs must be selected with this in mind. Hence, a "drug of choice" in an uncomplicated case may not be the best drug for a patient with associated problems. Publication of well-controlled studies in medical journals may provide comparative evidence; discussions at medical meetings, presentations at postgraduate courses, and the new audio-visual technology may bring evidence to physicians on comparative therapy. In a free medical marketplace, a drug that does not measure up will fall into disuse. For example, broad clinical experience has established vitamin B_{12} as the "drug of choice" for the treatment of primary pernicious anemia. No amount of advertising or promotional effort by the manufacturer could increase the use of liver extract for this anemia. However, a physician may wish to employ parenteral liver preparations for a special purpose.

In the field of surgery, peer review in the hospital has brought significant improvement in the use of new techniques and procedures. Something of this nature would be useful in the area of drug therapy. However, it should be developed by the medical profession itself and would necessitate, for its proper function, an improvement in the dissemination of reliable data on clinical pharmacology of drugs under consideration.

Ideally, information on the relative efficacy of drugs should be gathered and assessed by the physicians who actually administer the specific agents to a specific patient population. To do this, they will need even more information on the drugs they use – information that the pharmaceutical manufacturers must begin to provide if government regulation of *"drugs of choice"* is to be avoided.

Opinion & Dialogue

What is your opinion, doctor?
Send us your comments on the above issue.

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continued from page 2134

should anxiety become too great because of inner pressure or external realities, escape from autonomy back to the drug as a method of coping is much too easy. If the work of Fink and others to develop a long-acting antagonist to heroin were successful, such escape would be impossible, and new methods of coping could be supported, indeed would have to be developed by the patient.

Comment

How then are we to offer help? An individualized approach would show us that some patients require the protection of a therapeutic community where they may be helped to develop new values and new alternatives to their painfully inadequate street style. Others with more strength or more support from others in the non-addict world may be helped initially in group therapy. Group therapy may offer more affirmation, more confirmation, more confrontation in a supportive, less threatening fashion than traditional one-to-one therapy. The other patients offer supportive positive identifications in the therapeutic alliance. There is greater latitude and variability in role in group therapy which lessens the pressure on the still fragile patient. As he gains ego strength, he may then find individual treatment a useful and possible next step.

The key word to emphasize in considering individual treatment of the drug abuser is just that—individual. Each is an individual person requiring an individualized approach. No lock-step single method offers a panacea. The answer for a few is individual psychotherapy; for others it is group therapy on an outpatient basis; and for yet others a whole therapeutic milieu, now called a therapeutic community. For most patients, before individual psychotherapy becomes appropriate treatment, some maturation of defensive systems must be fostered. The primary need is usually philosophic reeducation so that alternatives to the drug culture become philosophically possible for the troubled drug user.

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Abstracts

Litchfield, H. R.: Headache in children, ***New York State J. Med.*** 72: 2151 (Sept. 1) 1972.

Children can suffer from headaches, and this article examines the diagnosis and treatment of several major types of headache: migraine, usually unilateral, and what is termed the "stress headache are seen in children." Allergy is a frequent cause of headaches in children. Psychologic factors are often of primary importance. Important in the treatment of headache is drug therapy.

Ament, R.: Delivery of anesthesia care; present and future, ***New York State J. Med.*** 72: 2179 (Sept. 1) 1972.

This report gives a comprehensive profile of anesthesiologists presently practicing in the United States. An attempt is made to predict the manpower needs for persons involved in anesthesia care in the future, and suggestions are given for the realization of these needs and for more efficient utilization of present personnel.

Abstracts in Interlingua

Litchfield, H. R.: Cephalea in pueros, ***New York State J. Med.*** 72: 2151 (1 de Septembre) 1972.

Pueros pote suffrer cephaleas, e in iste reporto le diagnose e tractamento de diverse typos principal de cephaleas es describite. Generalmente, le migraine unilateral e le nominate cephalea de "stress" es observate in pueros. Allergia es un causa frequente de cephaleas in pueros. Le factores psychologic es, frequentemente, de prime importantia. Le tractamento medicamentose es importante in le dolor del capite.

Ament, R.: Delivrantia del attention anesthetic, presente e futuro, ***New York State J. Med.*** 72: 2179 (1 de Septembre) 1972.

In iste reporto es describite in detalio le activitate del anesthesiologistas que actualmente practica in le Statos Unite. Un effortio es facite pro predicer le requerementos del personas implicate in le attention future del anesthesia. Suggestiones es, etiam, donate pro le realisation de iste requerementos, e pro un utilisation efficiente del personal actualmente in practica.

Correction: In the editorial in August 1, 1972, issue of the ***New York State Journal of Medicine,*** on "Our Failure to Prepare for Disaster" some inadvertent errors warrant noting. The State Civil Defense Commission was abolished as a funded unit, and its functions were redistributed. Actually, this occurred last year! Several individual localities, as Erie County and others, maintained their Civil Defense operation and were ready when needed.

Note: The wording "in the Department of Health" following State Civil Defense Commission was inappropriate. It is unlikely that emergency plans were not formulated by responsibilities such as Civil Defense.

Medical News

Nassau County water quality

Nassau County Commissioner of Health John J. Dowling, M.D., recently announced the release of a preliminary report on the quality of bathing waters in Nassau County. The early ratings from samples taken during April and May revealed improvements in water quality at 33 of 57 sampling points used by the department to rate the quality of the waters at 90 beaches. An additional 18 of the sampling points remained at the same quality levels as last year. Dr. Dowling expressed satisfaction with the results so far, and stated that the testing program would continue through the summer. He added that, "This report shows that while Nassau County still has continuing problems in the area of water pollution, departmental efforts are resulting in some improvements in certain areas."

Physician's award

The American Medical Association and the President's Committee on Employment of the Handicapped are accepting recommendations for the 1972 Physician's Award from chairmen of governor's committees on employment of the handicapped and presidents of state medical societies. Physicians who have made outstanding contributions to the welfare and employment of the handicapped workers of our country are eligible. Recommendations should be addressed to Chairman, Medical Committee, President's Committee on Employment of the Handicapped, Washington, D.C. 20210.

Glorney-Raisbeck Fellowship

The Committee on Medical Education of the New York Academy of Medicine will award a Glorney-Raisbeck Fellowship in the Medical Sciences for one year of research and/or study in the United States or abroad, in any field of medicine and its allied sciences, beginning July 1, 1973. Deadline for receipt of applications is November 1, 1972. Requests for applications should be addressed to: Office of Medical Education, The New York Academy of Medicine, 2 East 103 Street, New York, New York, 10029.

Personalities

Elected. New Officers of the New York State Chapter of the American College of Radiology are Jay P. Sackler, M.D., President; E. Robert Heitzman, M.D., President-Elect; Samuel H. Madell, M.D., Vice-President; and John J. Magovern, M.D., Secretary-Treasurer. Dr. Edward D. Joseph, of New York City and Scarsdale, assumed the Presidency of the American Psychoanalytic Association at its 59th Annual Meeting. He succeeded Robert S. Wallerstein, M.D., San Francisco. Dr. Joseph

Material for inclusion in the medical news section must be received six weeks prior to publication date.

continued on page 2143

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TIPS FOR THE IDENTIFICATION OF DRUG ABUSERS

The following chart was adapted by the Suffolk County Medical Society from one prepared by the Suffolk County District Attorney's Office

Drugs Used	Physical Symptoms	Look For	Dangers
Glue Sniffing	Violence, Drunk Appearance, Dreamy or blank expression	Tubes of glue, Glue smears, Large Paper Bags, or Handkerchiefs	Lung/Brain/Liver Damage, Death through suffocation or choking, Anemia
Heroin, Morphine, Codeine	Stupor, Drowsiness, Needle marks on body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose	Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle Caps or Spoons, Glassine envelopes	Death from overdose, Addiction, Liver and other infections due to unsterile needles
Cough Medicine containing Codeine and Opium	Drunk appearance, Lack of coordination, Confusion, Excessive Itching	Empty bottle of cough medicine	Addiction
Marijuana ("Pot," "Grass")	Sleepiness, Wandering mind, Enlarged pupils, Lack of co-ordination, Craving for sweets, Increased appetite	Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers	Inducement to take stronger narcotics. Psychological dependence. Possible physical damage?
Hallucinogens: (LSD, DMT)	Severe Hallucinations, Feelings of detachment, Incoherent speech, Cold hands & feet, Vomiting, Laughing & crying	Cube sugar with discoloration in center, Strong body odor, Small tube of liquid	Suicidal tendencies, Unpredictable behavior, Chronic exposure causes brain damage
Stimulants: Amphetamines ("Pep Pills," "Ups")	Aggressive behavior, Giggling, Silliness, Rapid Speech, Confused thinking, No appetite, Extreme fatigue, Dry Mouth, Shakiness, Insomnia	Pills or capsules of varying colors, Chain smoking	Death from overdose, Hallucinations, Psychosis
Sedatives Barbiturates ("Goof Balls," "Downs")	Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting	Pills or capsules of varying colors	Death or unconsciousness from overdose, Addiction, Convulsions in withdrawal

MEDICAL SOCIETY OF THE STATE OF NEW YORK
ORGANIZED 1807

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is Professor of Psychiatry at the Mt. Sinai School of Medicine and is Attending Psychiatrist and Coordinator of Inpatient Services at The Mount Sinai Hospital. Rudolf L. Baer, M.D., George Miller MacKee, professor and chairman of the Department of Dermatology of New York University School of Medicine, was elected president of the International League of Dermatological Societies at the XIV International Congress of Dermatology held in Venice-Padova, Italy. He will also lead the International Committee of Dermatology (the Executive Committee of the International League of Dermatological Societies). William H. Becker, M.D., was unanimously elected president of the Brooklyn Tuberculosis and Respiratory Disease Association.

Address. His Eminence, Terence Cardinal Cooke, Archbishop of the See of New York addressed the full assembly of the first annual American Health Congress on Tuesday, August 8, at 11:00 A.M.

Appointed. University of Rochester School of Medicine and Dentistry: Michael D. Turner, M.D., head of the gastroenterology unit in the Department of Medicine, has been named Segal-Watson Professor of Medicine effective July 1, 1972. A symposium honoring Dr. Segal was conducted by his former and current associates on May 19, 1972. Paul F. Griner, M.D., Associate professor of medicine and associate chairman and director of Clinical Services in the Department of Medicine, has been named to the Samuel E. Durand Chair in Medicine.

Memorial Sloan-Kettering Cancer Center. Patrick James Fitzgerald, M.D., has been appointed chairman of the Department of Pathology at Memorial Hospital for Cancer and Allied Diseases. Dr. Fitzgerald, formerly chairman of pathology of State University of New York Downstate Medical Center, assumed his new post on July 1. He will also be a member of the Sloan-Kettering Institute. His field of interest is the differentiation and regeneration of the pancreas. Dr. Fitzgerald has also been appointed professor of pathology at the Cornell University Medical College.

Promotions. Downstate Medical Center. Alfred Stracher, Ph.D., has been appointed chairman of the Department of Biochemistry. He had been acting chairman since 1970. Other promotions include John P. Craig, M.D., to professor of microbiology and immunology; Lucy F. Squire, M.D., to professor of radiology; and Peter B. Neubauer, M.D., to clinical professor of psychiatry.

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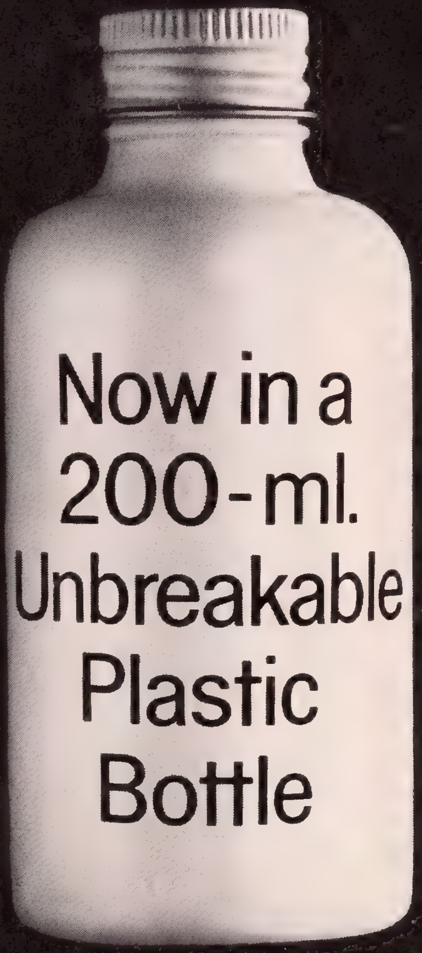
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THE INGATHERING: E PLURIBUS UNUM

The Return of Divergent Groups to the Fold of Organized Medicine

Resolution #71-62 (introduced by the County of Monroe) showed great statesmanship; it has led to the amendment of Chapter II, Section One (1) of the Bylaws of the Constitution of the Medical Society of the State of New York, whereby each and every medical college in New York may now select its own delegate to the House of Delegates.

This delegate will have full rights and all privileges, including the right to vote, to introduce resolutions and to discuss and argue all matters before the Reference Committees, Subcommittees, and the House. They may present their own views, or those of medical colleges as directed, on any and all subjects. These delegates may form their own caucus based on geographic, philosophic, or any other considerations; they may organize their own separate sessions and then a Section on Medical Education.

Our medical colleges determine the nature of medical education and train most of the new medical graduates who will practice in this State. In this manner they very significantly influence the Medical Society of the State of New York.

The preamble to Resolution #71-62 noted the "growing need for all major components of the medical profession to work together to respond to the increasing varieties of outside influence on the practice of medicine," and "that the previous close relationship between the academic community and the practicing physician,—which has deteriorated in the last two decades—needs to be strengthened again for the benefit of both groups and the general public."

The "voice" of medicine has been fragmented. The diverse groups are all single minded in their own efforts, and stress their own particular viewpoints. Each often disregards all other groups and arrives at separate decisions which create more problems than they resolve. The efforts of all groups must be set in proper perspective in relation to all others and to all aspects of medical practice. Only thus can we achieve proper priorities and avoid conflicts.

The academic community and organized medicine are on common ground in striving for and attaining the basic goals of better care for the patient and promotion of research to this end. We surely agree in our desires to preserve the freedom and independence of every physician, whether he be in the academic or full-time hospital communities, or in old-fashioned or modified group practice, or in health maintenance organizations, or whether he works as a solo free lance individual practitioner.

Medicine is changing in a kaleidoscopic fashion and with accelerating speed. Our medical faculties are already all too aware of this from the standpoint of relationships of school to teachers, to students. There have been many changes in medical education and more are in the making. Some of the changes are for the good, others have doubtful value; all remain to be proved. Both the practitioner and the academician ask the same questions. Is the three-year curriculum the final answer? Does student and/or community control—not just participation—offer the right solutions? Do not many simultaneous sudden changes in policy and curriculum make for additional problems? No parallel controls were nor are still used, nor do any standards exist! Therefore, how are we to know or measure the benefits or failures? Then there is the so-called Hawthorne effect of any change, that is the known, temporary benefit of any change whatsoever. After all, what we seek are long-term advantages.

Is the physician to remain a professional? Is he to be a technician only? How will he relate to paramedical personnel? Shall there be physicians with training so geared to relevance as to be mere "felchers?" Is he to be a member of a union? Surely, these problems concern both our faculties and organized medicine. Let us train horses but educate physicians.

The number of full-time physicians has increased exponentially in recent years. The relationship of the doctor to the hospital has been altered considerably. So have the authority and the power of the medical boards in hospitals. The control of institutions by lay boards of trustees is being exercised more frequently. Local community councils are attaining greater authority and even full control. All of this encroaches on the independence of the physician. Will the physician become a mere employe? Will the doctor individually be compelled to act alone in his contract arrangements with an overwhelmingly powerful organization—hospital, insurance company, government agency, or labor organization? Must he negotiate alone and on his own, without guidance or precedent, and with no source of appeal for assistance and support? Surely, both the practitioner and the academician are deeply involved in these problems.

Group practice has become widespread and is being supported more than ever—whether on the basis of fee for service or capitation payments with and without insurance coverage. Third-party coverage now involves most physicians and more and more of their practice. The government has a greater presence than ever in medicine. All doctors must contend with all of these practical problems. Realistically, this all means more paper work and red tape.

An increasing amount of the doctor's energy is being spent in this nonproductive manner, that is, away from the patient. The research physician also has his grant applications and reports to submit!

In lieu of the town versus gown schism, we must cooperate and combine our endeavors to control abuses that adversely affect or degrade the physician. Faculties should encourage students to join organized medicine; this has not been done thus far; and more often the contrary is true. All must prepare students for the changing scene ahead by adequate instruction in the social and economic, as well as in the scientific aspects of medicine.

Above all we must have meaningful, progressive programs of continuing education. For this the participation of all medical schools is imperative. The State Society has given programs of continuing education the highest priority.

Organized medicine is making similar overtures to the students in our medical colleges, to interns and residents, as well as to all full-time hospital-based physicians. All are being urged to participate in the deliberations and the decision making process of organized medicine. The objective is to improve the care of the patient and safeguard the freedom of the physician. Without freedom, no physician can care for his patient properly, nor do creative, basic, or applied research. Medical care is a labor of love; no physician can function effectively if he is pressed into service, or lacks all security, or is harried.

First, let all groups of doctors desist from denigrating each other. We now have the opportunity at last for all groups to work with organized medicine, and for organized medicine to work for them. We can now heal the breaches and attain our mutual goals by pulling together in parallel, if not in tandem, but in the same direction. Let all the separate divergent and dissident groups again become part of organized medicine, all of us gaining thereby.

The State Society has a Subcommittee on Hospital-Based Physicians; this can be enlarged and become a permanent Committee or Section of the Medical Society to represent all varied individual groups. Effective, forceful backing to meet the wants and needs of each group by the whole Society, could be obtained thereby. This would forestall all further talk—already under actual consideration in some areas of the country—both on campus and off, of forming separate unions.

The *future* of medicine depends on bringing all these groups into the fold, for the *younger* physicians are there among these very splinter groups. An increasing proportion of the present membership of county medical societies consists of older members. The listings of newly-elected members in the publications of local county medical societies will show that now most are foreign graduates. Further, these new members are and usually remain inactive. If organized medicine is to survive as a dynamic force in our society, we must encourage our own graduates to join and be active.

The physician must not only take care *of* his patient; he must care *for* his patient; this extrapolates to concern for the health and welfare of the whole community. He must be concerned and be active in all directions that promote the common good to this end; he, therefore, should be active in the affairs of his local county medical society and of organized medicine. It is not that the old cliche, "united we stand and divided we fall," applies, but that together we are strong and can do much more for the patient, for the community, and for each other.

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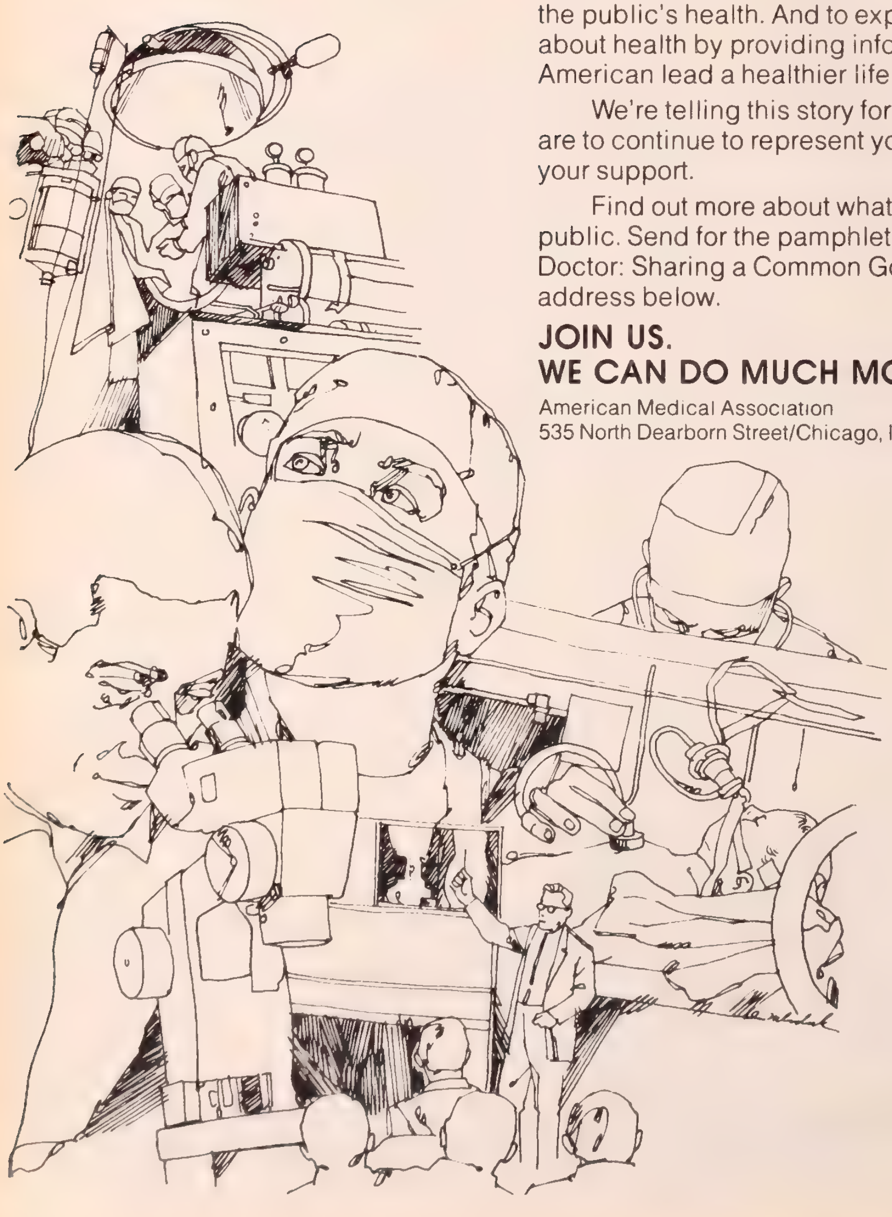

Scientific Articles

Headache in Children

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Brooklyn, New York

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Children can suffer from headaches, and this article examines the diagnosis and treatment of several major types of headache: migraine, usually unilateral, and what is termed the "stress headache are seen in children." Allergy is a frequent cause of headaches in children. Psychologic factors are often of primary importance. Important in the treatment of headache is drug therapy.

"When the head aches, all the members partake of pain," we are told by Don Quixote in the memorable account of his life and times by Miguel Cervantes. Thus, the plaintive Knight of La Mancha sounds a note familiar to many millions of people who are frequent, if unwilling, hosts to one of man's oldest and most persistent ailments—headache.

It is one thing to have a patient like the hero of Cervantes' novel, someone who can be very voluble in describing his symptoms. It's quite another matter, however, when the patient is an infant or a very young child, unable to say where it hurts. Again and again in recent years, as a pediatrician formerly associated with a large outpatient children's clinic, I have been asked: "How does a physician diagnose headache in an infant or a child too young to speak?"

Symptoms of headache

Undoubtedly, the infant's range of expression is limited, but it may provide some clues by rubbing its head, crying, and wrinkling its forehead during an attack. One carefully observes the pattern of behavior in infancy and later, when the child is older and able to speak, correlates the early observations with the additional information. It was not surprising, therefore, to learn from a physician treating a child for migraine that he had evidence indicating that the child apparently had suffered his first attack at the age of two weeks.

In 1949, two Swedish clinicians, Vahlquist and Hackzell,[1] of Stockholm, reported a study of 31 children in whom headache first appeared between the ages of one and four years. They noted in particular a boy, the son of a woman who suffered recurrent attacks of menstrual migraine, who had his first severe headache at the age of one year. His attacks were manifested by his becoming pale and then vomiting. During the following two years, the child had several such attacks a week. Later, at the age of three, he began to complain of pain in his head during the attacks.

In another somewhat larger study, one of the patients, a boy of three, had had his first severe headache when he was two years old.[2] It was learned from the mother that he suffered sharp pains on the left side of his head in association with nausea and vomiting. In every instance, the attacks occurred when the child had become overtired from play or when he had been exposed to cold weather. The child's father had been suffering from migraine for fifteen years.

We have been writing of infants and very young children, but it is a matter of record that even when a patient seemingly is competent to describe his complaint, an accurate diagnosis requires a complete and thorough examination. The tragic story of George Gershwin, the celebrated composer of *Rhapsody In Blue* and other classics of contemporary American music, is a case in point.

Gershwin had a long and painful history of headaches which were blinding in intensity and left him exhausted when they had passed. During most of his adult life, the composer was under the care of a psychiatrist who sought the cause of the headaches through psychoanalysis. Meanwhile, Gershwin's headaches increased in frequency and became more ravaging in effect. Ultimately, it became clear that psychoanalysis left much to be desired as a tool in diagnosing, and Gershwin submitted to an examination by a neurologist. With the aid of roentgenograms and electroencephalograms it was determined that Gershwin's headaches were caused by a tumefacient growth which pressed on the brain. Surgery was begun, but it was too late for the youthful composer. Unsuspected for too long and unchecked, the tumor had become too large to remove without fatal consequences. And Gershwin lived out the brief remainder of his life wracked by the recurring pains in his head.

Diagnosis

Headaches in association with other symptoms are a common complaint. To pinpoint the problem, the parents, and the child if possible, are asked to give a careful and detailed history of the complaint including the "where" and "when" of the headache. After the initial interview, the child is examined in the laboratory. The skull is x-rayed to determine whether the headache may be caused by a tumor or by a fracture in the boney framework of the head. An electroencephalogram is taken to establish the level of electrical activity developed by the action of the brain. Roentgenogram and electroencephalogram are checked against each other to rule out the presence of tumefacient growth. Following the laboratory examination, the questioning of the parents is resumed for the purpose of developing a complete history of the child's diet, school work, play patterns, and environment. The findings are evaluated and the appropriate treatment is prescribed.

Types and causes of headaches

One type of headache frequently encountered in the course of the study at the clinic was migraine. Characteristically, this type of headache affects only one side of the head. Usually, it is accompanied by an upset stomach or dizziness and is brought on either by a psychologic or visual disturbance—a family quarrel or a typical television program. Generally, as the headache subsides, the child succumbs to an overwhelming desire for sleep.

Another type of headache frequently observed during this study was the so-called "stress headache." This type of headache occurs without a warning symptom and usually affects both sides of the head, either at the front or the back. Often, the stress headache is accompanied by nausea, vomiting, or anxiety. A headache of this type, which may last for days or weeks, also produces spasms of the head, neck, and skeletal muscles, and sometimes involves the eyes and sinuses.

Allergy, particularly food allergy, was found to be a frequent cause of headache in children. Among the foods which caused the allergic reaction were eggs, wheat, milk, fish, certain oils, and chocolate.

As the investigation proceeded, it was found that more than two thirds of the patients studied had a parent who suffered from headaches. In several instances it was found that when a mother constantly complained of headache in the presence of her child, the child was prompted to follow the mother's pattern. Quite possibly, the child complained of headache in an effort to avoid punishment or to gain an advantage. Frequently, the headache was preceded by a demonstration of open hostility or resentment of the parents or other members of the family. In these instances, the headache was an expression of the child's hostility toward his loved ones; a hostility which the child apparently was unable to control.

Headaches in school children often occurred just before an examination and could be considered as evidence of great stress. Remarkably, these headaches seemed to disappear during the summer vacation.

Certainly the emotional and environmental aspects should be investigated thoroughly in tracing the onset of the headache in children. Studies of adults have shown that psychologic conflicts produce a variety of symptoms, such as headaches, ulcers, and hypertension.

There are few slight differences in the symptoms of headache in children and adults. In a child the warning symptoms are loss of appetite, abdominal discomfort, and tiredness. Adults, on the other hand, become hungry and extremely irritable. At first a child's headache may be minor and the abdominal distress greater. As the headache increases in severity the abdominal symptoms subside, usually after vomiting. The symptoms in children usually are of a shorter duration and the nausea may be more intense than in an adult.

Still another symptom observed in children suffering from migraine has been characterized by a British physician as "the Alice-in-Wonderland syndrome." Like Alice in the popular stories by Lewis Carroll, the young migraine sufferer has hallucinations of becoming shorter, shorter, and shorter or taller, taller, and taller.

Experience has shown that a nervous child—one given to nail biting and unable to sit quietly for any length of time—may be more prone to headache than a child who is calm and apparently well adjusted. But even a well-adjusted child may suffer severe headache following overexposure to television and movies or because of fatigue due to insufficient rest, or irregular or inadequate meals.

Treatment

In children, the chances for effective treatment are good when the condition is recognized early. The physician who proceeds from the principle that he must treat the patient as a unit, and not merely the symptom, is in a better position to determine the specific cause of the complaint. The experiences at our children's clinic show that the combined technics of extensive interviews, careful observation, and efficient laboratory examination assured the chance of eventual recovery from migraine or headache caused by allergies, stress, or other environmental factors.

When faced with the problem of treating a child for headache, the physician first determines the physical condition of his patient. Then he proceeds to investigate the underlying cause of the complaint: testing for allergy, anemia, effect of diet, effect of environmental factors, infections, psychosomatic factors, and particularly stress. Once it has been determined that the patient is otherwise physically well, one may proceed with the treatment of the headache.

Although the causes of headache are numerous, treatment may be divided into relief for the acute headache and prevention of future attacks. The latter is usually very involved and, to be discussed properly, would be a story by itself. Prevention of future attacks is the ultimate ideal, but medical research to date has fallen short of realizing this ideal. Drugs inhibiting the autonomic nervous system and some of the present-day tranquilizers, such as chlordiazepoxide (Librium) meprobamate (Equanil), or diazepam (Valium), have proved helpful. The effectiveness of the drug, however, depends on the physician who prescribes it and the frequency of his consultations with the patient. For it has been observed that patients generally improve more rapidly if they are seen at frequent intervals. In the words of one observer, "The treatment of headache may be compared to that of diabetes. If the patient needs 100 units of insulin and receives only 80 units, the results are therapeutically inadequate."

Types of treatment of acute episodes of headache falls into four groups: (1) surgery, as for a brain tumor, which is rare in adults and even rarer in children; (2) mental therapy; (3) physiotherapy; and (4) drug treatment. Treatment with drugs is widespread, and these are separated into various categories. For practical purposes in discussing drug treatment, headaches can be divided into two main groups: a throbbing type of head pain such as migraine and a steady, prolonged pain such as is encountered in stress headache.

The throbbing head pain results from an enlargement of the blood vessels in the head. With each beat of the heart the blood further extends these already expanded vessels. As they are expanded these vessels press against the nerves causing a severe, throbbing type of pain. Analgesics such as aspirin have little effect on this type of head pain. Ergotamine (Gynergen), one of the natural-occurring substances in ergot (a fungus that grows on rye), is specific for vascular or throbbing headache. Ergotamine constricts these distended blood vessels, returning them to their normal size and thereby relieving the pressure on the nerves. This results in complete relief of pain. When an adequate dose is administered, ergotamine will relieve 90 per cent of the throbbing (vascular) headaches.

To enhance absorption of ergotamine when administered by swallowing and to compliment the effectiveness, caffeine has been added (Cafergot). For those people with headache and upset stomach, belladonna has been added to the caffeine ergotamine mixture (Wigraine). For those headache patients with upset stomach and nervous stress, a sedative has been combined with belladonna, caffeine, and ergotamine mixtures (Cafergot PB). These combinations may appear confusing, but they serve a useful purpose in that the medication is designed specifically for the individual patient problem. During a migraine attack taking an extra medication is no easy task, as any migraine patient will attest.

Over 80 per cent of headaches are the nonvascular type which respond to analgesics such as aspirin or aspirin-like products. Because aspirin causes irritation of the stomach many times, various attempts to buffer aspirin (Bufferin) have been made with some success. This also has led to the search for preparations with equivalent pain-killing properties, but without the undesired effects such as stomach upset. One such product is acetaminophen (Tylenol).

Numerous combinations of analgesics have been made such as APC (aspirin, phenacetin, and caffeine), which was so popular during the World War II era. However, more specific studies have demonstrated that combining analgesics does not necessarily mean more pain-killing power. As with the vascular headache patients, many patients with nonvascular headache have associated symptoms precipitated by stress. These stress-induced headaches show response to a combination of acetaminophen, caffeine, and butalbital (Esgic) which calms the patient and eliminates the undesirable effects of aspirin.

Comment

During the past decade, medical research has registered greater progress toward a better understanding of the problem of headache in children than had been seen in the previous one hundred years. This progress, evidenced by the development of new drugs and new technics, may be expected to continue. Happily, it is based on a sound scientific concept which is winning even wider acceptance among medical practitioners, whatever their specialty: the concept that the physician must treat the patient, not simply the disease. It is from this approach that the view of the future appears most reassuring.

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SYMPOSIUM

VIOLENCE OF MAN

Changing Patterns of Homicide in New York City

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Homicidal deaths occurring in New York City during the last fifty-three years have been investigated in great detail, the county coroner system having been replaced in 1918 by a municipal Medical Examiner's Office. Prior to 1918 it is very likely that many subtle homicides went undiscovered or were misinterpreted during the postmortem examination. The coroner was most often a layman, poorly trained for his work, and often dependent on so-called coroner's physician who was not astute in recognizing homicidal deaths in all cases.

The purpose of this communication is to present the statistics on homicides and their variety since 1918, to illustrate fluctuations in their incidence, and to indicate events with which they reasonably may be associated. In New York City the Medical Examiner Law requires a visit to the scene and investigation of every death reported to the Office, not only the obvious, violent deaths reported and investigated, but any death that is medically unattended, sudden, unexpected, suspicious, or unusual. This routine visit by a medical examiner or medical investigator and subsequent postmortem examination and autopsy result in the discovery each year of approximately 100 previously unsuspected, criminally violent deaths. Those which are obviously violent are confirmed, and all the details of the findings are recorded.

Under any system of official investigation, subtle, unlabeled and mislabeled homicidal deaths may escape discovery either for the reason that they are not reported, or because those responsible for effective investigation leading to discovery are not thorough and do not have the expertise to recognize such deaths when they are presented for investigation. Despite an effective organization staffed by trained professionals with broad authority and clearly defined responsibility, there can be no doubt that a small number of criminally violent deaths go undiscovered because they are not initially recognized as reportable deaths, and usually because there has been previous medical attention. In some undetected cases of homicide the body is never recovered, or there is a long delay before discovery with resultant postmortem decomposition and destruction so that evidence of criminal violence is obliterated. With these relatively few exceptions the following statistics are reasonably complete and accurate (Fig. 1).

Classification of homicides

For the purpose of this report homicides are classified in the following broad categories: (1) by gunshot, including handguns, shotguns, rifles, occasionally submachine guns, and bombs; (2) by stabbing, cutting and chopping weapons including knives, ice picks, hatchets, meat cleavers, and occasionally shards of broken glass; and (3) by assault. Under this broad category are included blows with blunt weapons of various types, by punching and kicking, as well as manual and ligature strangulation, choking, and smothering. Also included with the large assault category in this report are uncommonly encountered assaults with strong alkali or acids, chemical corrosives, poisoning, and miscellaneous methods, such as burning, scalding, and conflagration.

Homicide during the perpetration of another crime is being encountered with increasing frequency, occurring most often during a robbery or sexual assault. Homicide during robbery often occurs by shooting and less frequently by stabbing or blunt-force injury. Homicide arising from sexual assault is most often by traumatic asphyxia, manual and ligature strangulation, blunt-force

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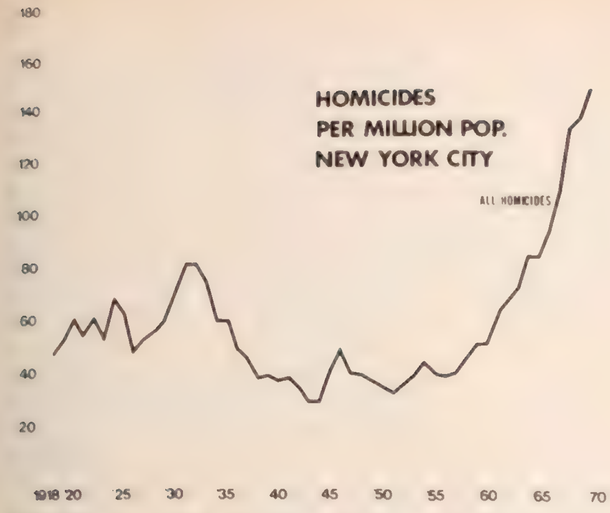

FIGURE 1. Graph showing incidence of all homicides from 1918 to 1970.

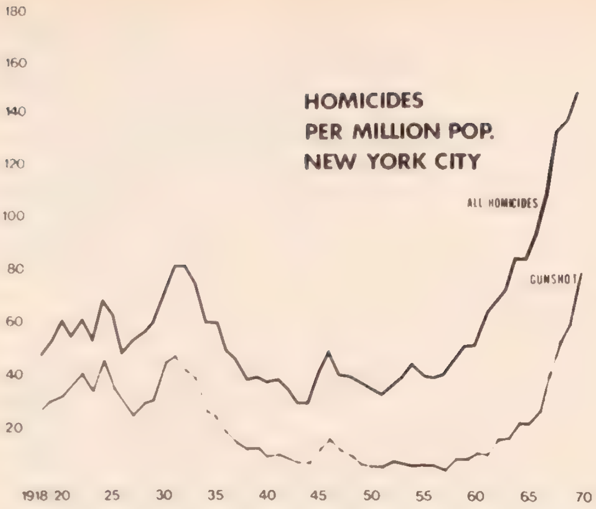

FIGURE 2. Graph depicting rise in number of gunshot deaths from 1918 to 1970.

injury, and stabbing, and less frequently by shooting. There are individual problems in connection with the recognition and discovery of the homicidal character of the death, especially those resulting from smothering and strangulation. Most easily recognized immediately are those resulting from blunt-weapon assault, shootings, and stabbings.

Homicidal poisoning is not frequently encountered in New York City. Assaults during robbery by punching or by the use of blunt weapons on elderly and feeble persons or those with serious illnesses may hasten or precipitate death from the preexisting illnesses. In such cases the traumatic injury inflicted is not sufficient by itself to cause death. Nevertheless, the perpetrator can be prosecuted for the crime of homicide on the principle that death was hastened or life shortened by the assault. Prior illness, even though it contributes to and is the major component in the cause of death, does not mitigate criminality, and the law permits prosecution for homicide. A defense that the trauma alone was not sufficient to cause death in a healthy person is not acceptable.

The possibility of traumatic asphyxia in any death in which there is indication of a sexual encounter should always be considered even in the absence of the usual external signs of such injury. As a corollary, in any homicidal death from asphyxia, the possibility of a sexual assault should be explored.

Factors involved in homicide

The means employed for the commission of homicide may vary to some extent among the ethnic groups in the population. Alcoholism is an important factor and a frequent finding in all ethnic groups both in the perpetrators and in the victims. Drug abuse also plays an increasingly important role. The immediate effect of narcotic drugs, such as heroin, is a reduction in the urge to commit crimes; but when the effects of the drug have worn off, the renewed intensive craving for drugs impels the addict to criminal acts which may entail homicide. Among members of the black and Puerto Rican community homicide is usually unpremeditated and is carried out by stabbing and cutting with pointed and sharp-edged weapons, such as ice picks and knives. Among the yellow population, for the most part Chinese in New York City, homicide is perhaps lowest of all, and knives and chopping weapons are used more often than handguns.

There is great variety in the methods resulting in homicide among the white population. Some, especially under the influence of alcohol, engage in fist fights and unintentionally may produce fatal intracranial injury if the victim is knocked down causing his skull to strike a hard surface. Relatively few homicides occur in this manner. Black as well as white persons may strike a victim with a blunt weapon on the head and cause fatal intracranial injury. Such blunt-weapon assaults occur during a robbery or commission of another felony. The use of guns in homicides is most often encountered in robberies or for deliberate assassination. Virtually all homicides resulting from police intervention are by shooting. These are relatively small in number and are fairly constant from year to year, ranging from 20 to 30 annually (Fig. 2).

There is a wide range in the ages of victims of homicide. Among the elderly there is a variety of methods used, including blunt-force injuries, choking with a gag, manual strangulation, and, occasionally, stabbing and gunshot. Homicides on the very young comprise cases of the battered child syndrome, in all representing a very small part of the total. Rarely one encounters the homicide of the very young infant by only slightly older children.

While the ethnic composition of New York City

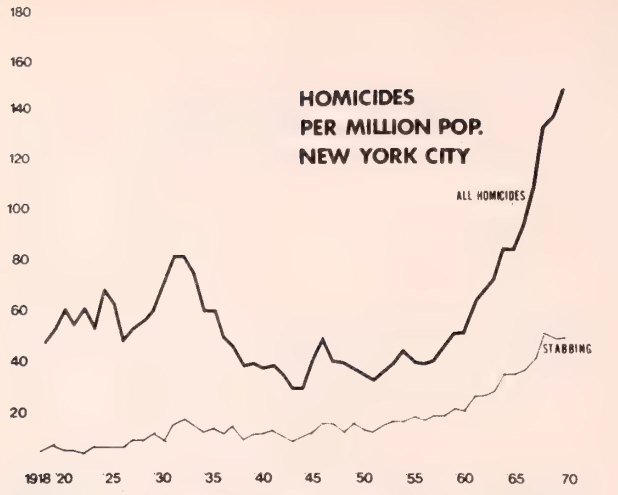

FIGURE 3. Graph showing incidence of death by stabbing 1918 to 1970.

has changed notably with substantial increases in the black and Puerto Rican communities, the population has remained fairly stable, at about 8 million since 1940. Between 1918 and 1930 the population ranged from 5½ million to 7 million. From 1934 on the population has ranged between 7 and 8 million. Therefore, the total number of homicides is approximately parallel to the rate of homicides per 100,000 population.

Since the inception of the Medical Examiner's Office the incidence of homicide has fluctuated significantly and not always for an evident reason. In 1918 there were 270 homicidal deaths, and this coincided with the end of World War I. Between 1919 and 1923 there were small fluctuations varying from 300 to 350 per annum. The Volstead Act prohibiting the sale of alcoholic beverages was passed in 1920; the era of Prohibition which followed continued until 1933 when the law was repealed. During that period homicides increased rapidly and with some annual fluctuations reached a peak of 568 for 1931. After repeal, homicides decreased rapidly with minor annual fluctuations until a low point was reached in 1943, when the incidence was only 225 for the year. It is interesting that the lowest incidence of homicides in fifty years occurred in the midst of World War II. There was an abrupt rise in the year following the termination of World War II, and subsequently there were broad fluctuations varying from 272 in 1951 to 395 in 1946. Beginning with 1956, when the incidence was 313, an increasing, precipitous rise began culminating in an incidence of 1,150 homicides in 1970 and further increase in 1971 with an incidence of 711 for the first six months (Figs. 3 and 4).

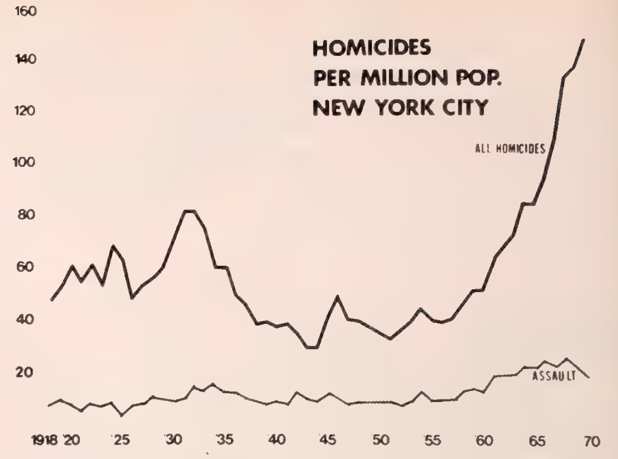

FIGURE 4. Graph illustrating incidence of death due to assault 1918 to 1970.

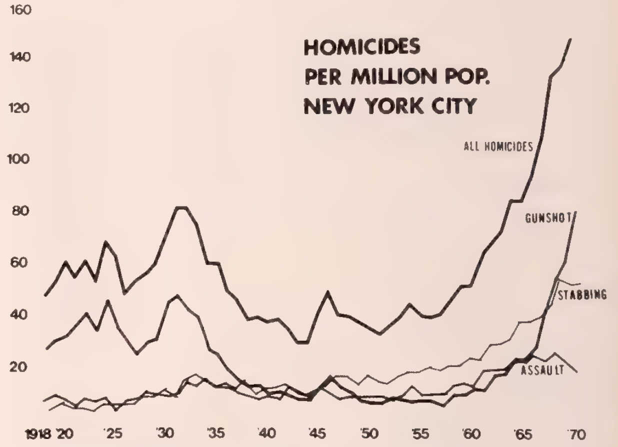

FIGURE 5. Graph comparing deaths by gunshot, stabbing, and assault with all homicides.

Incidence

The population of New York City has been fairly stable at about 8 million since 1940. When one considers the rates of homicides per million population, the curve of incidence does not vary significantly from the total number of homicides. The curves of homicides by gunshot almost parallel the curve for the total homicide incidence. Stabbing shows slight fluctuations but remains fairly stable until 1960 when the number increases but not as abruptly as gunshot homicide. The rate for homicide by assault is fairly level without the abrupt increase of total homicide in recent years. It is evident that the striking increase in homicide is made up principally of gunshot cases. Many more small-caliber handguns have been used in recent years for homicidal purposes (Fig. 5).

The marked recent increase in homicide has been facilitated by the easy availability of handguns. While in New York State and City there is a stringent law regulating the purchase of handguns, there are many jurisdictions which do not have similar restrictions. A further explanation for the sharp increase in homicides is the enormous rise in drug abuse among the adolescent and young-adult population, and there has been increasing evidence of homicides by shooting in this group.

Summary

The incidence of homicide in New York City during the fifty-three-year period from 1918 to 1971 has been analyzed. Homicides were separated into three main categories of gunshot, stabbing, and assault, the last including blunt-weapon injuries, asphyxiation by various means, poisoning, corrosives, burning, and conflagration. There was a sharp increase in the number of homicides in 1931 to 1933, attributable to the consequences of Prohibition. The lowest incidence occurred during World War II. There has been a strikingly high increase in homicides principally by gunshot during the past five years. In 1970 and in the first six months of 1971 the incidence is more than double the previously high point of 1931. The phenomenon must be considered in the light of the current widespread, illegal use of and traffic in narcotics.

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Violence and the Law

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On the subject, violence and the law, a definition of terms might serve a useful purpose.

Violence in the context in which I propose to discuss it involves the unjust, unwarranted use of force, used or directed against the rights and the laws under which we live and operate.

Law is a broad term which has many different aspects and various classifications. Judge Crane of the Court of Appeals, in Matter of *Koenig* v. *Flynn* (258 N.Y. 292, 301) described a law as "[t]hat which must be obeyed and followed by citizens subject to sanctions or legal consequences." For our purpose let us consider law as a set of principles or rules promulgated by government, which are intended to control civil conduct and establish legal relations in an ordered society.

Under the definitions proposed we exclude any discussion of the violence of war. Equally evident is the fact that violence within the orbit of our discussion is the very antithesis of law. Violence as used here contains an element of illegality which places it without the pale of legal protection, because it contemplates the breaking and destruction of law.

Disobedience to law

Disobedience to law is not necessarily to be equated with violence. A law might be enacted which, theoretically, represents the will of the majority, when in fact it is only the result of effective lobbying or the response to organized pressure by a disciplined minority. The Eighteenth Amendment, which prohibited the manufacture, sale, or transportation of intoxicating liquors; the Volstead Act which had to do with Prohibition enforcement; and the era of the great experiment of Prohibition fostered a climate of disrespect for law and, in my opinion, first provided the financial resources for organized crime as we know it today. There appears little doubt that included among the corrupt were police, judges, and politicians. Raw violence, including homicides, was not unknown. Prohibition failed because the majority willed its failure, but the greater evil of violence and its challenge to law continued and, it might even be said, prospered.

More recently civil disobedience has moved to the center of the stage in public consciousness. The uninitiated have tended to confuse civil disobedience with violence. In some instances violence has resulted from civil disobedience, as in Alabama and elsewhere and more recently in Ireland. The two, however, may be distinguished. Involved in civil disobedience is an element or aspect of morality. Thoreau in his essay, "Civil Disobedience" asserts that "a government in which the majority rule in all cases cannot be based on justice, even as far as men understand it." In America government exists by the consent of the governed, and all of us contribute something to that government in greater or lesser degree. Thoreau notes that some serve with their bodies, some with their heads, and some in addition serve with their consciences as well.

The question might be posed whether or not one is justified in disobeying what he in good conscience considers an unjust or immoral law to test its validity. Even though our country was founded in revolution, we would not hesitate to condemn the use of destructive force or violence if that were the sole means of testing such a law. But what of the man who merely quietly refuses to obey a law which demeans and reduces him as a person? In some such instances it has been the law represented by its enforcement bodies which has engaged in violence. In short, in our history the line of demarcation between violence and the law has not always been so clearly drawn that each stood at opposite ends of the spectrum. The

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first step toward change or the achievement of a desirable goal is recognition of the necessity therefore. How best, within the law, to obtain that recognition is the troublesome problem.

The right of men to assemble peaceably to petition their government for a redress of their grievances is a constitutional right. Our forefathers in their wisdom realized that inevitably there would be challenges to law, specific or general, or to abuses perpetrated under law and the general legal system. Prof. Edgar M. Schur in his book, *Law and Society,* noted that "civil disobedience may attempt direct interference with some official act considered unjust or it may instead simply seek to have an indirect impact upon legal processes, but invariably it goes beyond private law violation or it involves an attempt to dramatize publicly what is considered to be a major injustice within the legal order." The danger, of course, in even such proper action, is overreaction by the undisciplined with resulting violence and destruction.

Mechanisms of violence

Turning now to the more prevalent or common use of violence as a means of conflict with the law—such as bombings with or without political overtones, robbery, wanton killings without a clearly defined purpose, and so on—law, and this includes its institutions and agencies, is society's chief response in an effort to cope with the problems posed. It contemplates speedy and certain apprehension, prosecution, and appropriate disposition. This may entail imprisonment, probation, and, in rare instances, execution. Law in this sense is utilized as a means of control. When law probes deeper to ascertain what factors exist which might properly be considered causative and seeks to remedy any deficiencies found, it becomes corrective. Both the corrective and the controlling aspects must go hand in hand if any hopeful solution is to be found.

Violence may be identified as the actions of a lawless, destructive element of society, expressing its resentment against what it considers the establishment and determined to destroy it. Here, immediate and decisive action is demanded to restore sanity and a balanced order. On the other hand, violence could be an expression of the will and possibly the moral right to resist because of inhuman and substandard conditions under which the protesters are compelled to live. Relief for the weaker might be sought in an escape from reality by the use of drugs or alcoholic beverages. The stronger persons, looking about them at an affluent and apparently unconcerned society, build up a resentment which eventually explodes in violence. All too frequently our reaction is merely to replace the lid by suppression and the restoration of "law and order."

The cycle is sure to repeat itself unless we remove the cause and at the same time develop desirable social alternatives.

Proposed changes in legal process

If the law and the legal process are to function with any degree of adequacy, they must have the tools and the means to do so. It is equally clear that the system of law as an element of control has not functioned adequately. Arrest is not certain; immediate prosecution and prompt and adequate disposition for all persons accused of crime remain goals rather than realities. Correction is synonymous with detention and rarely includes rehabilitation or other required treatment because funds are not available. A similar observation as to a lack of adequate financing applies to the courts and the auxiliary services, such as probation, prosecution, and defense.

Nonviolent acts such as nondisorderly public intoxication and prostitution should be removed from the category of crimes. They could be handled and properly treated best in another forum. If they were no longer classified as crimes, more time would be available for the handling of serious crimes and crimes in which violence is directly involved. The courts represent a midway point, and the emphasis is largely on speedy disposition of cases.

We should concern ourselves with what happens to the individual before he becomes involved with the law, and this refers particularly to the youngsters, the so-called juveniles. Society and the law should make a demonstrable effort to head off future trouble when these youngsters become delinquents. All too frequently when a child becomes involved in a conflict with the law and is brought to court, we lack the resources to provide necessary psychiatric treatment and guidance. We are forced to commit the child to a detention center or a state training school because the funds are lacking to do otherwise. It has been correctly said "The child is father of the man," and a juvenile delinquent's potential for violence and disrespect for law becomes realized when he reaches manhood, if his needs are neglected or his deficiencies overlooked. There should be some priority in the expenditure of public funds because today's children are tomorrow's men, and in their hands will rest the destiny of our country.

I have referred to the young, but adult defendants are sometimes problems also. After disposition of a case comes probation or incarceration. If incarceration does not provide some of the elements for rehabilitation or useful investment of time in preparation for release, very little is accomplished. Punishment can and should be balanced and sure; but if the end of punishment is merely retaliation, it fails as a deterrent to future violations and future violence. Law is a part of and indeed is responsible for a well-ordered society. A thorough reexamination of the entire criminal justice process, including law enforcement, is advisable if violence as an escapist mechanism or violence as a purely destructive force opposed to law is to be controlled. A climate of respect for law cannot be mandated; it must be created, and this is an individual as well as a group responsibility. If laws exist which are so obviously unjust that they cannot be sanctioned on any moral basis, such laws tend to foster or create a climate in which violence thrives. A distinction should be made between abuses within the system not sanctioned by law but imposed by a majority, and specific laws which may fairly be termed unjust by all reasonable men. The cure for the abuses within the system not sanctioned by law requires a moral climate of disapproval. The cure against unjust laws is their amendment or repeal.

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Impact of Violence on Law Enforcement

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The rise in violence in America and throughout the world has had a great impact on law enforcement. A number of the traditional methods of responding to specific crimes, handling demonstrations, and curbing and containing disorders have been revised to keep pace with the complexities of our ever-changing dynamic society. Accordingly, law enforcement has made advances as a direct result of the violence that is emerging in our society. The traditional isolation that has characterized many police agencies is breaking down. Police administrators are taking progressive steps and are asking the assistance of other professional groups to address the violence problem. A number of innovative programs that have been implemented in an attempt to reduce violence, conflict, and crime will be described later.

Violence has permeated much of the history of mankind. In the United States violence has sown its seeds of discord particularly in the decade of the 1960s which was considerably more violent than the preceding decades. This period was marked by assassination, campus rioting, fire bombing, ghetto uprising, and vandalism. The lives of many Americans have become impoverished because of a real fear of violent crime. Violent crimes, such as robbery, mugging, rape, and assault, have negatively affected the quality of life in our society. The cost of violence in our society is tremendously high. Many millions of dollars are spent to maintain the numerous agencies that comprise the criminal justice system. However, the cost in money is negligible when one considers the damage violence does to the fabric of our society. The most damaging effect of violence is the climate of fear and mistrust of others which it creates. It causes people to limit social interaction with each other. Indeed, it feeds polarization. In a reaction to some types of violence particular individuals or groups tend to overreact or act as vigilante groups, and this causes violence to escalate.

People tend to look at violence from their own perspective. For example, if one is sympathetic with the motives underlying a specific usage of violence it is likely to be called protest. Violence used by public officials such as police or soldiers might typically be referred to as legitimate force.

Individual or collective acts of violence may be regarded as good, bad, or neutral depending on who engages in it and against whom. The concept of force is a more general one; it may be defined as the actual or threatened use of violence to compel others to do what they might not otherwise do. Law enforcement agencies are often called on to use force to restore order. On occasion law enforcement agencies are accused of overreacting in their use of force in attempting to control specific situations. When this does in fact occur, the entire governmental process suffers, since the police officer is the visible representative of government and the concepts of liberty, justice, and freedom that government represents.

Violence in other countries

The problem of violence and crime is not unique to the United States. In a recent article the *New York Times* describes the situation as it now exists in Africa:

> Crime is becoming a growing problem and a public preoccupation in Africa. In most cities residents are frightened to walk the streets at night or to move freely in any section. Although violent crime has become a major concern in some nations of Africa the violence has not been accompanied by violence against police as it has in many cases in the United States. The rise in crime contrasts with a more tranquil past and clashes with a stern African sense of justice. The suppression of robbery has become a national priority in such nations as Nigeria in West Africa and Uganda in East Africa. Governments are taking drastic measures against criminals. More than forty men have been executed publicly so far

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> this year in Nigeria. The Kenyan Government announced last month that it would introduce legislation to authorize punishment for the crime of robbery with violence.[1]

Violence, a symptom of complex problems

Police administrators throughout the United States are generally well aware of the social evils that plague our society. They recognize that violence is merely a symptom of deep-rooted complex problems of society. They also recognize that there is no simple panacea that will cause the social problems of society to evaporate. The hard reality is that necessary measures must be taken to control violence on a short-term basis, while always striving toward a more just and humane society wherein compliance with the norms of society would be more widely accepted.

As this nation mobilizes its resources in an effort to take the comprehensive action needed to curb crime, eliminate racial discrimination, and alleviate problems of the poor, the police are placed in the unenviable position of dealing with the violent incidents which occur daily, and which stem largely from these inequities in our society. To get an idea of the dimension of the violent contact faced by a police officer one need only review the principal case file of the New York City Police Department, which is a copy of a report summarizing the most important cases in a twenty-four-hour period. It is an anatomy of crime, violence, hatred, civil dissent, and disturbance.[2]

Firearms control

I have recommended a strong uniform policy of domestic disarmament. It is my belief that the American people tolerate assault, robbery, murder, and street crime at gun point under the deceptive guise of freedom and the belief that citizens must be armed to resist tyranny. This is neither the social nor political freedom which our founding fathers intended it to be. The widespread use of firearms in our society today offers freedom for violent and wanton self-destruction. There are few more urgent domestic problems for Congress to address than the reduction in senseless slaughter that our current national firearms policy permits and indeed even encourages. The frightening ease with which criminals secure guns is especially critical for policemen.

Heroic policemen have been slain in the line of duty as a direct result of the violence that permeates our society. This has left me with a deep feeling of personal sorrow. The tragic slayings of policemen will not be eliminated as long as crime, tension, and bitterness survive. But there is one step that can be taken immediately to reduce the level of violence and the number of lethal confrontations both with policemen and with other law-abiding citizens. That major step is more stringent controls, ordained by the Federal government, over the manufacture, distribution, and sale of hand guns and parts for hand guns. This writer is of the belief, and I have made my views known in the past, that there is a definite need for more stringent Federal firearms control.[3]

Enactment of stringent gun-control legislation would save thousands of American lives each year and reduce human misery. These benefits more than outweigh the possible disappointment to gun enthusiasts whose opposition has blocked this critical reform too long.

Causes of violence

Police administrators throughout the country are acutely aware of the complex underlying causes of violence in America, and they deeply appreciate the contributions of noted social scientists such as Wolfgang, Sonitz, and Johnston[4] and Franco Ferracuti who gave us an insight into the subculture of violence, and the numerous other social scientists who have advanced our knowledge as to the causal factors of violence.

They also recognize that progress toward reducing violence in America cannot be achieved without the implementation of necessary steps to improve the quality of family and community life of all of our citizens, particularly those who are in the lowest socioeconomic bracket and reside in the ghetto slums. The National Commission on the Causes and Prevention of Violence pointed out that it is the ghetto slum that is disproportionately responsible for violent crime, which is by far the most acute aspect of the problem of violence in the United States today.[5]

While police administrators enthusiastically endorse positive programs that hopefully, will, in the long run, improve the quality of life in the United States, they are in fact deeply concerned about the daily acts of violence that have caused injury and death to too many citizens and police officers. They have not wrung their hands in hopelessness. On the contrary, they have responded to the violence crises with creativity and innovation. In a number of instances innovative programs have been implemented by police administrators in an effort to eliminate violent confrontations where possible or to reduce their intensity where they cannot be eliminated completely.

Prevention of violence

Toch,[6] a member of the faculty of the School of Criminal Justice at the State University of New York at Albany, speaks about the Violence Prevention Unit (as proposed to the Oakland Police Department) from the viewpoint of the academician:

> The unique feature of the project lies in the choice of personnel. Other things constant, we employ offi-

> cers who have themselves participated in more conflict than their peers. We've shown that these men can become not only personally effective but especially powerful agents of professionalization. The police officer who over eagerly responds to the hostility of citizens invites physical confrontations. If we can induce such an officer to adopt a more sophisticated perspective we can draw upon a wealth of data about violence not possessed by less aggressive police officers. Moreover, he is uniquely able to see the point of the violence prevention effort. He can think back to his own narrow escapes—the near-riots, injuries, and reprimands from superiors. He can recall the necessary deceptions, and their risks.
>
> In all of this, I think the fundamental rule to remember is Lewin's adage that you cannot induce change through frontal assault. A person moves if and when he wants to, and he must arrive at this juncture himself. The best many of us can do is to provide an atmosphere that facilitates innovative thinking.
>
> What we have done in the Oakland Police Department is to create an environment in which violence-experienced officers can become experts on violence. In this environment, the officers can evolve ways of reducing conflict for themselves as well as for others.
>
> Change agents who are change students understand their role, and control it. They know process as well as content. And they acquire skills. In this sense I suppose, our police officers are social scientists, in the best sense of the term, whether they like it or not.

There is, of course, no simple solution, no panacea for the problem of crime and violence. We may never be able to banish criminality, but certainly, with energy, imagination, and hard work, life in urban America can be made safer and more satisfying. In New York City we are moving vigorously in that direction. Since our resources are limited, we are emphasizing the need to innovate so that we may make more effective use of the resources we have to accomplish the primary police function of preventing and controlling crime.

Confrontation management and legal observers program

In dealing with civil disorders police administrators should formulate flexible plans to insure the effective use of available manpower and equipment. Confrontation management is an alternate way of dealing with disorders and potential disorders.[7] The concept envisions the maintenance of an acceptable level of intensity at the gathering of large groups of people. Group acts of violence and disorder that are prejudicial to public law and order are not acceptable. An acceptable level would not only allow the demonstrators to "do their thing" but would also assure that the general public and their property are protected from harm. The objective is to minimize the development of secondary or derivative hostilities. The ultimate aim is an eventual dispersion without disorders. This concept allows for intensity reduction (or maintenance) rather than the total suppression, especially if the latter will cause expansion or escalation of the confrontation. Any decision concerning police action should be guided by the answer to the question: Will such actions reduce or intensify the seriousness of the situation?

While the concept of confrontation management has been incorporated into the training of the New York City Police Department, further efforts have been expanded to have neutral observers at the various scenes of disorders. The Association of the Bar of New York City was joint sponsor with the Police Department in a model program that would have an independent corps of "civilian" lawyers to serve as impartial observers at protests and demonstrations. Reports made by impartial observers, who are skilled practitioners of the law, provide objective, reliable information which may be vital to a later inquiry concerning the actions of demonstrators or police. The volunteer lawyers were trained at the Police Academy in such topics as police training for demonstrations, psychology of crowds, function of the special crowd control units, and background and procedures of the Civilian Complaint Review Board. Those who received this training were issued special identification cards and armbands to permit them to pass within police lines at demonstrations. Reports of legal observers have been placed on file at the Association of the Bar, and copies have been forwarded to the Police Department and submitted to this writer. The reports that have been received to date have been objective, candid, and generally favorable to the police. What is most significant about the legal observer program is that while the Police Department extends its full cooperation, it has no control over what is reported.

Family crisis unit[8]

In cooperation with the New York City Police Department and with the support of a law enforcement assistance grant from the U.S. Department of Justice, the Psychological Center of the City College, the City University of New York, undertook the training of a police family crisis intervention unit in the thirtieth police precinct of New York City from June 1, 1967, to April 30, 1969.

Training police in family crisis intervention was intended to demonstrate innovative methods of crime prevention and preventive mental health. Processing family disputes constitutes a major aspect of police work. There is evidence that a significant proportion of injuries and fatalities suffered by police occur in the highly volatile family conflict situation. One of the most ominous statistics mutely testifying to the importance of the disturbance call as an identifiable police function in need of scrutiny is revealed in a report by the

Federal Bureau of Investigation; it was found that 22 per cent of policemen killed in the line of duty died while responding to complaints of "disturbances."[9] In view of the disproportionate number of police deaths and injuries related to family disputes, 18 volunteer patrolmen were assigned as interracial teams to respond to all family disturbance calls on all tours of duty. The experiment was conducted within the confines of the thirtieth precinct, located in upper West Harlem. The objectives of the experiment were centered on developing effective intervention technics as well as demonstrating that policemen, properly trained, could avoid personal injury and reduce violence in family crisis situations. The project was organized in three stages:

1. **Preparatory phase.** In the first month the 18 police volunteers were selected; all had at least three years of service and gave evidence of motivation and aptitude for family crisis specialization. The second month entailed an intensive, one hundred sixty-hour, on-campus training course involving the entire unit. In addition to lectures and field trips, there was active participation in "learning by doing" through family crisis laboratory demonstrations. These demonstrations involved specially written plays depicting family crisis situations enacted by professional actors in which the patrolmen in the unit actively intervened in pairs. Practice interventions were subjected to group critique and discussion. Finally, human relations workshops were conducted to sensitize the patrolmen to their own values, attitudes, and automatic responses.

2. **Operational phase.** For the two-year duration of the project one major patrol car was reserved for family crisis work in the experimental precinct. It was dispatched on all complaints or requests for assistance that could be predetermined as involving a "family disturbance."

The officers met in discussion groups of six men each with group leaders who were familiar with the work of policemen. Crisis situations were examined in depth with a view to giving the men involved insight into assumptions, preconceptions, and misapprehensions about human behavior and family relationships.

In addition to continuous group experience, each family specialist was assigned an individual consultant for at least one hour's weekly consultation. The individual consultants were advanced clinical psychology students.

3. **Evaluation phase.** The evaluation phase encompassed the last four months of the project, although normal operations of the family crisis intervention unit continued during that time. Systematic data collection took place over the duration of the project, with an emphasis on simple tabulation to assess changes over time in a number of variables. For comparative purposes a control precinct was selected that had a similar population composition to that of the demonstration precinct. Comparisons were made based on changes in the total number of family complaints in the demonstration precinct as compared with the control precinct, differences in recurrence of complaints by the same families within the demonstration precinct and within the control precinct, and changes in the number of homicides and assaults involving both family members and policemen responding to family fight complaints.

The demonstration in police family crisis intervention was evaluated primarily in relation to a police function as it affects certain categories of crime. Over the life of the project, the demonstration precinct reported a significantly greater number of interventions; there was an increase in the total homicides (significantly) and in total assaults (not significantly); there was an increase in family homicides, but there were no homicides in any of the 962 families previously seen by the unit.

It was concluded that sensitive and skillful police intervention in family disturbances may serve to reduce the occurrence of family assaults and homicides and greatly increase the personal safety of police officers through the use of psychologically sophisticated technics in dealing with highly charged human conflict situations. As a result of this project, training in family crisis intervention was given to the entire patrol force through the decentralized training unit of the Police Academy.

Conclusions

It is quite evident that violence has had an impact on law enforcement causing police administrators to respond with innovative and progressive steps in an effort to curb violence. However, it must be recognized that the problem of dealing with violent crime is not exclusively a police matter. The police are but one part of a criminal justice system that has many defects. Indeed, at times some of the agencies in the criminal justice system appear to be working at cross purposes. The police officer has a vested interest in seeing that the rehabilitation of criminals becomes a reality and that there is justice for all in our courts; for when any part of the system fails, it is he, the visible representative of government, who has to bear the brunt of society's wrath. He is a skilled practitioner in the art of human relations, but he is not the panacea for solving the problems of crime and violence. Crime has been increasing for many years. All indicators point to a continued rise. Criminal activities will not relent. Crime and violence are woven into the fabric of our society, and they will not abate until housing, education, and employment are adequate, there is equal opportunity and full citizenship for all, and poverty is eliminated. Through social change we must remove not only the causes of crime but also the deadly instrument of violence, the firearm.

The police do not operate in a vacuum. To function effectively they must have the cooperation of every citizen. The community itself cannot remain neutral on the theory that the police are paid to do the job, and the police alone are the public protectors. Law enforcement is everybody's business. Public safety on the street and in the home requires a total commitment, not only of the entire criminal justice system but also of the community as a whole.

In the effort against crime and violence the policeman asks for a reasonable climate in which he can function effectively. He openly welcomes the assistance of the professions and the social sciences in addressing the problems of violence. Indeed, he would be eternally grateful to the medical profession if they could develop a substance that would reduce the hostility in man and enable him to enjoy a harmonious relationship with others in society. He asks for public acceptance not accolades. Working together, the citizen and the police officer will, with resolute purpose, attain that majestic human quality of mankind that is so elusive in our society, namely, the ability to live at peace with our neighbors and to be free of criminal intrusion and violence.

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Determinants of Violence

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Man's history of violence is very old, and the written record is replete with a cruelty and savagery not readily admitted. At the same time, we know that man also has been capable of creating a material and spiritual world with structures which reflect his sensitivity and compassion. These contradictions were already puzzling to our ancestors centuries ago, and today the problem of violence, which is still with us, is more critical than ever.

Early explanations attributed this cruelty and carnage to the wishes of the gods, and only after many centuries did this begin to change. Finally, man slowly began to assume the responsibility for his own acts. He was now beginning to see his fellow men in a new way, and a peaceful world appeared to be dawning. However, the pattern of violence did not disappear despite all man's good intentions; and as his thinking became more sophisticated, his dangerousness became much greater and today threatens the entire world. In Tinbergen's[1] opinion, "We have created a social environment in which, rather than ensuring our survival, we are about to do the opposite."

In this report our concern will be only with the aspects of personal violent behavior. Perhaps before going any further we should define these two words, namely, aggression and violence. The former involves an attacking pattern of behavior as well as the forceful, assertive, and persistent endeavors of achieving a goal. Violence, a form of aggression, whether with intent or not, is a damaging and destroying behavior directed at a person or his property. Without question, man's aggressive behavior was indispensable for his survival, but also responsible, as well, for many of his achievements.

The study of violence has attracted the attention of various scientific disciplines, and the many different theories only attest to the complexity of the problem. Nevertheless, we are progressing and beginning to recognize the fallaciousness of some of our earlier beliefs. These patterns of behavior are not immutable as originally conceived, for we are not dealing with simply an instinct with man blindly obeying. As a matter of fact, serious questions are being raised, even to the very existence of instincts in man.

Instinct theory

Freud[3] believed that aggression was part of man's instinctual endowment which he later conceived of as the drive toward death or the death instinct, as it came to be known. Although Freud realized that there was no direct evidence for the existence of a death instinct, he was confident

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that it would be validated in the future by physiologic research. Most psychoanalysts today reject his formulation of the death instinct, but many still view aggression as an instinct,[4] and others consider it a derivative of anxiety, strongly influenced by the cultural factors.[5,6]

Recently there has been an attempt to revive this simplistic approach of explaining man's violence as the "spontaneous instinctive drive as in most other higher vertebrates."[7] This thinking, which goes back to Hobbes[8] and Darwin,[9] no longer has validity and serves only to create further confusion. It is simply incomplete and inadequate. Our biologic heritage should not and cannot be disregarded, but to it we must also add the important psychodynamic elements as well as the particular social structure. Only then can we begin to understand this complex behavior of man.

The development of man has been dependent on his ability to adapt to the environment, and his behavior has slowly evolved through the process of learning in conjunction with his physiologic state. Violence is one kind of response to a stimulus, but there are other and better ways, and it is incumbent on us to learn them.

Stimuli to violence

Neurophysiologic advances have enabled us to understand that violence is not an innate genetically programmed instinct which accumulates energy and must be discharged periodically. In violence we cannot demonstrate the chemical and physical changes within the body as we can the changes in the case of hunger.[10] In the latter, when the cells use up the blood sugar, centers of the brain are stimulated which cause hunger contractions of the stomach. There is no such mechanism for building the first stimulation for violence from within, but the physical or psychologic threat from the outside will set into motion a complex reaction resulting in anger.

The emotion of anger originates in the hypothalamus, and by stimulating this area in an animal with electrodes, we can produce reactions very similar to anger. We also know that the hypothalamus is under the inhibitory control of the cerebral cortex which can release this control and stimulate it into action when threatened or frustrated. Experimental work on the frustration-aggression hypothesis confirms the fact that anger is experienced, accumulated, and ultimately discharged.[11,12] Again, we are observing the external stimulus rather than an internal driving force which has to be satisfied. However, in our atomic age, violence without anger can also exist, for the electronically controlled push-button nuclear missile can be sent on its way in a very depersonalized manner. This form of destruction needs no anger or rage and, in fact, would only be hindered by it.

The knowledge that there is no known internal physiologic state that requires aggression to restore equilibrium places on us a heavy responsibility for the future of man. The rationalization that this is man's fate can no longer be utilized. Human behavior, because it is learned, enables us to look forward to future generations growing up without the use of violence. To achieve this, we must begin to focus on educating our children on the unacceptability of violence. It has to be incorporated both intellectually and emotionally into a philosophy of life for the child. The principle of reward or success training which we use on adult levels now must be fully utilized in teaching the child without resorting to physical punishment.[13,14] It is also interesting to note that the Hopi Indians were able successfully to develop a culture of peaceful living and would not resort to violence except when they were attacked. In this culture, which enforced peaceful living, there was also no manifestation of any increased psychopathic behavior.[15]

Only as we continue to augment our knowledge of man through research in medicine and the social sciences will we be able to understand the complex causes of violence and successfully resolve them.[16]

Symptomatology

An important area which is receiving more and more attention in this period concerns the work being carried out on the brain. Our interest is specifically in the "limbic system" which is the oldest part of the cerebrum and includes the cingulum, hippocampus, thalamic and hypothalamic nuclei, the basal ganglia, midbrain, and the amygdala.* It is this area which governs the violent behavior of man so that any malfunctioning here is of the utmost importance. Unfortunately, in most cases the patient is first seen by the physician either in a prison or a hospital after a tragedy has occurred. Our hope is that they will be seen earlier and that these tragedies can be averted. The eruption of violence is always preceded by lesser symptoms which have been ignored by the patient but at times also by ourselves. We are now more alert to the seriousness of such symptoms as uncontrolled anger which may result in an assault, the fear of doing injury to oneself or to another human being, and also the wanton destruction of property. Frequently there may be a history of childhood fire setting and cruelty to animals with the accompanying earlier parental brutality and rejection. Intimately interwoven with the psychiatric implications is also the recognition that there may be organic features which can now be more thoroughly investigated.

The chromosomal or cytogenetic abnormalities and their significance in relation to violence is being carefully studied and evaluated. Of particular interest are the XYY males, who exhibit an antisocial behavior with violence and also appear to be far less amenable to rehabilitation than males with a normal XY configuration. It is a challenging area for further investigation and will provide us with another instrument for future use.[17,18]

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*The last three are now included in the limbic system by modern brain physiologists.

Violence is also one of the symptoms of structural brain damage, which may be caused by an oxygen insufficiency, infectious tumors, or trauma. It may also be observed in the functional abnormality of the brain, specifically a temporal lobe epilepsy. The recording of brain waves by applying electrodes to the surface of the head or brain enables us to observe the neuroelectric activity and thereby understand the specific behavioral changes. By means of more refined technics, electrodes can be implanted in the brain and are made use of both diagnostically and therapeutically. Further advances by Delgado, *et al.*[19] have given us instruments for remote stimulating and for recording deep focal areas of the brain without the need of the earlier wire connections. Three channels of stimulation can be operated within a range of 100 feet, and the recording part of the instrument is operational within a range of 50 to 200 feet. The patient now is able to move about perfectly freely and can be observed, while the electrical activities of his brain are being recorded or receiving treatment by stimulation.

There is a great deal of confusion and also fear about former hospitalized psychiatric patients. The mistaken belief that this group readily engages in assaultive and violent behavior still exists. Our studies, however, indicate that there is no basis in fact for this, and they constitute no greater a hazard than the general population.[20] Our basic concern remains the problem of violence, and a history of psychiatric hospitalization does not provide the wished-for solution.

Conclusion

As we reflect on man's monumental achievements and the long road he has traversed, we have reason to be confident that the problem of violence will also be solved. For the first time physicians are now working in this area and recognizing that their rich scientific training and experience are sorely needed. By combining all our skills, we can look forward to man finally fulfilling his dream of learning to live together with others in peace. Walt Whitman[21] said it most simply and eloquently:

> Each of us inevitable
> Each of us limitless and each
> of us with his or her right
> upon earth.

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SYMPOSIUM

PHARMACOLOGY OF COMMONLY USED THERAPEUTIC AGENTS

Modes of Action of Antibiotics on Bacteria and Man

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The purpose of this report is to present, in brief form, the presently available information concerning the pharmacology of the antimicrobial agents. There are now over 40 such drugs of clinical usefulness. I shall limit my remarks primarily to two areas of their activity: (1) their mode of action on bacteria and fungi and (2) the manner in which they act in man to eradicate infection and to produce untoward effects.

Mechanisms of action of antibiotics on bacteria and fungi

Antibiotics presently available may be classified into several groups on the basis of their mechanisms of action.[1-4]

1. Agents acting on the bacterial cell wall: the penicillins, cephalosporin derivatives, cycloserine, vancomycin, ristocetin, and bacitracin.
2. Agents affecting the cell membrane and acting as detergents: the polymyxins, colistin, and the polyene antifungal agents nystatin and amphotercin.
3. Agents that modify the molecular mechanisms of replication, information transfer, and protein synthesis by their effects on ribosomes: chloramphenicol, the tetracyclines, kanamycin, neomycin, novobiocin, gentamicin, paromomycin, streptomycin, and the macrolide antibiotics containing a large lactone group, namely, erythromycin and lincomycin.
4. Agents that alter nucleic acid metabolism: griseofulvin and novobiocin.
5. Drugs affecting intermediary metabolism: the sulfonamides and the tuberculostatic agents isoniazid and para-aminosalicylic acid.

I will not enlarge on the fifth group because they are not true antibiotics.

Antibiotics acting on cell wall of bacteria. The two most commonly used antibiotics that interfere with bacterial cell-wall synthesis are the penicillins and the cephalosporin derivatives, cephalothin and cephaloridine. For these drugs to exert their effects, bacterial cells must be actively dividing. I shall discuss only the details of the mechanism of action of the penicillins; that of the cephalosporins is probably similar.

Park and Strominger[5] first suggested that the primary effect of penicillin on bacteria was interference with cell-wall formation by inhibition of the synthesis of mucopeptide. The most complex of these "Park nucleotides" is made up of uridine diphosphate, N-acetylmuramic acid, and a peptide containing l-alanine, d-glutamic acid, l-lysine, and two molecules of d-alanine; it accumulates as a result of impairment of cell-wall synthesis. The lethal action of the antibiotic is related to the formation of osmotically sensitive cells (cell-wall-deficient forms) during multiplication in hypotonic media. The accumulation of the "Park nucleotides" indicates that penicillin affects the formation of the mucopeptide portion of the cell wall. This accounts for the selective action of the antibiotic, since the muramic acid-containing mucopeptide appears to be a component unique to bacteria and is not present in human or animal cells. Recent observations by Tipper and Strominger[6] have indicated that an uncross-linked monomer, a peptidyl glycan unit, accumulates in cells of Staphylococcus aureus treated with low concentrations of penicillin G, ampicillin, methicillin, or cephalothin. This suggests that cross linking of the monomer is inhibited by penicillin G. At high concentrations of the antibiotic, cell-wall synthesis ceases abruptly, and nascent peptidoglycan units do not accumulate. These observations support the hypothesis that the penicillins are substrate analogs of the d-alanyl-d-alanine

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end of the nascent peptidoglycan units and that they acylate the transpeptidase which catalyzes the cross-linking reaction.

Agents acting on cell membrane and producing detergent effect. Polymyxin is a surface active agent that contains both lipophilic and lipophobic groups separated within the molecule. It is thought that when these groups become oriented between lipid and protein films that constitute the bacterial cell membrane, the membrane is no longer able to function as an effective osmotic barrier. This results in escape of the contents of the cell. Changes in the permeability of organisms develop immediately after they come in contact with the drug. Bacteria sensitive to polymyxin appear to take up more of the antibiotic than those that are resistant. The phospholipid fraction of the cell is the prime determinant of sensitivity to polymyxin. The mechanism of action of colistin is probably similar to that of polymyxin.

The modes of action of nystatin and amphotericin appear to be similar. Both are bound by drug-sensitive yeasts and fungi but not by resistant strains. The antifungal activity of these antibiotics is dependent on binding to a sterol present in the membranes of sensitive cells. The interaction between the sterol and the antibiotic leads to a change in the permeability of the cell membrane, which results in leakage of essential intracellular substances.

Agents that alter protein synthesis. Some antibiotics exert their antibacterial effects by altering normal synthesis of cell proteins. Although the end result is the same, the mechanisms involved in producing this general effect varies with different drugs in the group.

Antibiotics that inhibit protein synthesis by acting on ribosomes. Several possible mechanisms have been suggested to explain the mode of action of the tetracyclines on bacteria: (1) active chelation of cations, (2) inhibition of essential enzyme systems, (3) inhibition of the electron transport system, and (4) suppression of protein synthesis.[7]

The role of chelation in the antibacterial activity of these compounds is still not completely settled. However, their effects appear to be more subtle than simple chelation of magnesium ions which may be required for correct combination with ribosomal units. Inhibition of protein synthesis appears to be the primary mechanism responsible for the antimicrobial activity of these compounds. The tetracyclines are effective inhibitors of polypeptide synthesis in vitro. Tetracycline binds specifically to 30 S ribosomes in vivo as well as in vitro.[8] The drug prevents binding of aminoacyl-t-RNA (transfer ribonucleic acid) to the specific acceptor site (amino acid) on the 30 S subunit.[9] Tetracycline does not affect peptidyl transferase action on the 50 S subunit. Only ribosome-bound drug is inhibitory. The binding of tetracycline to ribosomes is dependent on the concentration of magnesium and potassium ions.

Chloramphenicol inhibits protein synthesis in bacteria and in cell-free systems. It acts primarily on the 50 S ribosomal unit and specifically prevents binding of m-RNA (messenger ribonucleic acid) to the ribosomes of sensitive bacteria. The activity of peptidyl transferase which directly forms a peptide bond is inhibited.[2,3,10] The majority of the protein found associated with the RNA synthesized in the presence of chloramphenicol is nonribosomal protein existing in the cells at the time of exposure to the drug.[11]

Erythromycin inhibits protein synthesis in sensitive bacteria by binding to the 50 S ribosomal unit. The association between the antibiotic and the ribosome is reversible, but only when the 50 S subunit is free of t-RNA molecules carrying nascent peptide chains. The bound drug inhibits polypeptide synthesis in ribosomal complexes that contain it. The production of small peptides proceeds normally in the presence of the antibiotic; that of the highly polymerized homopeptides is suppressed.

Lincomycin also binds exclusively to the 50 S subunit of ribosomes and suppresses protein synthesis by inhibiting the formation of peptide bonds. Erythromycin reverses this effect because it acts on the same site on the ribosome. If an organism is resistant to erythromycin and the drug is bound to the ribosomes, the activity of lincomycin may be blocked even if the organism is sensitive to this agent, because its attachment to the cell is blocked. Resistance to one of these drugs may, therefore, reduce or eliminate the action of the other which, used alone, might be effective.[12] Clindamycin appears to be more active than lincomycin against some bacterial species. This may be related to its greater solubility in the lipids of the cell membrane which might facilitate its transport, or to its increased affinity for a partly lipophilic binding site on the cell membrane.[3]

Agents that produce misreading of the genetic code. The aminoglycoside antibiotics—streptomycin, kanamycin, neomycin, and gentamicin—appear to produce their antibacterial effects by causing misreading of the genetic code as well as by other effects on protein synthesis. Exposure of sensitive organisms to streptomycin results in cessation of respiration; excretion of nucleotides, amino acids, and potassium; inhibition of protein synthesis; and stimulation of RNA production. The drug inhibits aminoacyl-t-RNA from binding to 70 S ribosomes and to isolated 30 S subunits. The inhibition of protein synthesis on these may result from prevention of attachment of m-RNA, interference with the movement of m-RNA relative to the 30 S subunit (translocation), or blockade of the acceptor (aminoacyl) site.

Streptomycin precipitates polyanions including nucleic acids and ribosomes. When the aminoglycoside cross-links polymer molecules, an insoluble lattice is formed. The rapid attachment of the antibiotic to the bacterial cell and to its ribosomes is probably brought about by the cationic groups of streptomycin, which orient polyanions into the insoluble form. It has been suggested that the requirement for entry of the antibiotic into the bacterial cell is an induced permease.[13]

Streptomycin alters the translation of information at the ribosomal level by producing specific misreadings in the genetic code.[14] It causes misreading, inhibition, or both, of peptide bond formation, depending on the nature of the m-RNA and the concentration of magnesium.

Carter and McCarty[3] have suggested that the following series of events takes place as streptomycin kills sensitive bacteria. After an initial exposure to the drug and attachment of some molecules of it to anionic receptors on the surface of the cell, it reaches the cytoplasmic ribosomal-m-RNA complexes. Here it allows coupling of an m-RNA with a "wrong" t-RNA; this results in the insertion of an incorrect amino acid into the nascent polypeptide. Synthesis of this faulty protein may then lead to failure of a vital structural or metabolic function within the cell. It is presently thought, however, that misreading does not necessarily mean bacterial killing because it has been shown that cells full of faulty proteins are able to grow again when streptomycin is removed from the medium. It is clear, therefore, that other or additional mechanisms must be operative to explain the irreversibility of death of sensitive bacteria. Among those that have been suggested are irreversible binding to the sites specific for misreading and the occurrence of very odd misreadings. Most of the evidence favors the concept that the lethal activity of streptomycin is the result of irreversible binding of the drug to ribosomes and the subsequent interference with some phase of protein synthesis on the ribosome.

Agents acting on nucleic acid metabolism. Novobiocin appears to inhibit the synthesis of both DNA (deoxyribonucleic acid) and RNA. This property has recently been applied to a study of the inhibition of viral replication by this agent. Preliminary data indicate that novobiocin suppresses the multiplication of both DNA and RNA viruses in vitro at a pH of about 6.5 but not at pH 7.

The mechanism of action of griseofulvin on fungi is directly the opposite of that of novobiocin on bacteria. The drug is bound to cell lipids but not to DNA or RNA. Nevertheless, the synthesis of DNA is more continuous and prolonged and results in a greater content of this nucleic acid in drug-treated than in untreated fungal cells. Carbon incorporation into RNA is 25 to 50 per cent greater in griseofulvin-exposed than it is in unexposed organisms.

Modes of action of antibiotics in man

Time does not allow a discussion of the modes of action of antibiotics in man in relation to their absorption and excretion. In this respect, these drugs can be classified into several groups: (1) those excreted in unchanged form by the kidney, either by tubular excretion (the penicillins and cephalothin) or by glomerular filtration (streptomycin and cephaloridine); (2) those metabolized in the liver and excreted in the urine as biologically inactive compounds (chloramphenicol and erythromycin); and (3) those metabolized by hepatic mechanisms and excreted in the urine in both unchanged and active forms in varying proportions (tetracyclines).

The modes of action of antibiotics in man that I want to discuss in somewhat more detail are two: (1) the mechanisms by which these agents produce their untoward effects and (2) the processes involved in the elimination of infectious agents and eradication of disease.

Reactions to antibiotics. Three mechanisms are involved in the pathogenesis of reactions to the antimicrobial agents—hypersensitization, direct toxicity, and biologic alterations unrelated to either sensitivity in toxicity. Only a few examples of the effects of these will be presented.

Hypersensitization. All of the antibiotics may sensitize persons who receive them. There is, however, considerable variation in the frequency, nature, and intensity of these reactions among the different drugs. The penicillins are commonly associated with this kind of untoward effect. The nature of the syndromes that may follow treatment varies from mild to high fever, with or without eosinophilia; a large variety of skin rashes ranging from mild morbilliform lesions to purpura to severe exfoliative dermatitis; exudative erythema multiforme, including the Stevens-Johnson syndrome; serum sickness; anaphylactoid and rapidly fatal anaphylactic reactions; and various types of allergic vasculitis, some of which may lead to death. The mechanism involved in the pathogenesis of this class of untoward effects is the development of humoral or cell-associated antibody.

Direct toxicity. Most of the antibiotics of present clinical importance are toxic or irritative to a varying degree. Even penicillin, considered the least toxic of these agents, is highly irritative as indicated by the pain that follows its intramuscular injection, the phlebitis associated with its intravenous infusion, and the convulsions that result from its excessive concentration in spinal fluid. Ototoxicity and nephrotoxicity are properties of the aminoglycosides such as kanamycin, neomycin, and gentamicin. The problem is compounded by the fact that these agents, innately toxic for the kidney, are excreted in unchanged form by this organ and are often used to treat renal infections. Colistin and polymyxin behave in similar fashion. The dose-related toxicity of chloramphenicol for erythrocytes is well established; this may also involve circulating leukocytes and platelets. The basic mechanism involved in this phenomenon appears to be inhibition of protein synthesis. It has been suggested that the mode of action of this antibiotic on reticulocytes is different from that on bacterial cells.[15] The main effects on these cells are inhibition of the conversion of polysomes to single ribosomes and decrease in the content of adenosine triphosphate. Native messenger-enriched RNA-stimulated synthesis is also inhibited in the reticulocyte.[16] The association between toxicity and dose of chloramphenicol is well illustrated by the so-called "gray syndrome," a disorder that kills premature infants exposed to conventional doses of this drug. Because their livers produce an inadequate quantity of glucuronyl transferase, the enzyme involved in the conjugation of the drug with glucuronic acid, these babies are exposed to levels of biologically active drug that are excessive and toxic. The poisonous effects of the tetracyclines are probably related to their ability to inhibit protein synthesis in mammalian cells. This explains the delay in bone growth and the hypoplasia of dental enamel associated with their use in young children. The hepatotoxicity of these antibiotics has been proved by the deaths of pregnant women from liver failure when they have been treated with one of these drugs in the presence of renal insufficiency.

Biologic alterations. A large variety of untoward effects unrelated to hypersensitization or toxicity of the antibiotics have been described. Only a few examples will be presented here. Negative nitrogen balance is a common consequence of the administration of conventional doses of tetracycline compounds. The mechanism involved here is probably the suppression of protein synthesis by these agents. Decrease of circulating levels of prothrombin, sometimes to a degree associated with spontaneous bleeding, has been noted when "broad-spectrum" antimicrobial agents have been administered orally in recommended quantities. This appears to be caused by a reduction or elimination of the intestinal bacterial species that produce vitamin K. Urobilinogen and stercobilinogen concentrations are low in patients with hepatocellular disease receiving some antibiotics by mouth. This is due to changes in the normal biota of the intestine so that the organisms that convert bilirubin to the "bilinogens" are markedly reduced in number or totally suppressed. Early treatment of streptococcal pharyngitis with penicillin reduces, and in some instances completely abolishes, the immune response to these organisms. Rapid elimination of the antigen, the streptococcus, is probably the mechanism involved in this type of immunosuppression. All persons given therapeutic doses of any antibiotic exhibit qualitative and quantitative changes in the normal microbiota of the upper respiratory and intestinal tracts. In most instances, this phenomenon is of purely microbiologic significance. In others, however, clinical evidence of a new infection may appear during the course of treatment of the primary one. This is the syndrome of suprainfection, the incidence of which is highest in children under three and adults over fifty years of age, in patients with underlying acute or chronic disease of the bronchopulmonary tissues, and in individuals treated with "broad-spectrum" compounds. The mechanism involved in suprainfection is a change in the numerical relationship in the normal microflora leading to alterations in the complicated system of checks and balances that maintains stability in mixed bacterial populations. This results in overgrowth of potentially pathogenic organisms to the point where they become predominant and invade tissues.

Eradication of infection. The primary mechanism involved in the response of infections to treatment with antibiotics is the functional state of the humoral and cellular defense mechanisms of the host.[17] This is emphasized by the relatively poor therapeutic response of infections in patients with Hodgkins' disease, lymphoma, leukemia, cancer of various types, uremia, vasculitis and granulomatous disease of childhood, disorders featured by immunosuppression, abnormal activity of immunoglobulins, or inadequate phagocytosis. The drugs commonly employed to treat these disorders (cytotoxic agents, antimetabolites, corticosteroids) often add to this difficulty because they are also immunosuppressive. The fact that the activity of defense mechanisms is also an absolute requirement for the therapeutic effectiveness of all antimicrobial agents, even in patients in whom these are perfectly normal, is frequently overlooked. The tetracyclines, sulfonamides, and chloramphenicol, all of which are bacteriostatic, should, by definition, never completely eradicate even sensitive organisms. However, cure of some infectious diseases is accomplished by these drugs, and relapse does not occur when treatment is stopped. This is strong evidence for the intervention of effective host defenses which, acting on microorganisms after they have been injured by one of these compounds, are finally responsible for the eradication of infection.

Clinical experience suggests that even bactericidal antibiotics probably require the adjunct activity of cellular and humoral defenses to dispose of bacteria.

Concluding remarks

This has been a brief review of the present state of our knowledge concerning the mechanisms of action of some of the antibiotics on microorganisms and in man. One might wonder whether or not it is of any importance for the internist or any physician to burden his mind with much of the biochemical, microbiologic, and immunologic information presented in this report. I believe that every physician who uses antibiotics should, and in fact must, have an interest in and knowledge of these facts for several reasons.

1. No drug should be administered to patients without a thorough knowledge on the part of the physician of exactly how it acts.
2. Information concerning the mechanisms of action of antibiotics on bacteria and fungi yields clues to their activity in man and forms the basis for an understanding as well as the proper therapy of many of the untoward effects that they produce.
3. Only if the basic mechanisms involved in the eradication of infection are known, is it possible to understand and define the reasons for failure of the antibiotics to produce cure of infectious diseases in particular situations.
4. A thorough knowledge of all of these facts and their application to clinical practice is essential if patients are to be treated with antibiotics with the greatest likelihood of benefit and the smallest risk of harm.

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Psychotropic Drugs

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The remarkable clinical effects produced by psychotropic drugs have been catalysts for the study of the mechanism of drug action. These studies in both man and animals have served as research tools to formulate hypotheses bearing on the pathogenesis of psychiatric disorders. In turn, the research findings have suggested new therapeutic technics. In the end we may be able to identify and quantitate the degree of illness so that we can rationally select appropriate therapy. The possibility of eventual prophylaxis also rests on understanding of pharmacodynamics.

Antidepressants

The depressant and antidepressant actions of drugs have received a great deal of investigative attention. Reserpine, which depletes biogenic amines, can cause depression in man.[1] Monoamine oxidase inhibitors, which increase the level of biogenic amines, can lead to elevation of mood.[2] These observations have led to many studies of the role of biogenic amines in depression centering around the metabolism of norepinephrine, dopamine, and serotonin. The major pathways of biosynthesis and metabolism of norepinephrine, dopamine, and serotonin are illustrated in Figure 1.

Reserpine depletes tissue stores of norepinephrine, dopamine, and serotonin in both the central and the peripheral nervous systems.[3] Norepinephrine synthesis is also decreased. The sedative ef-

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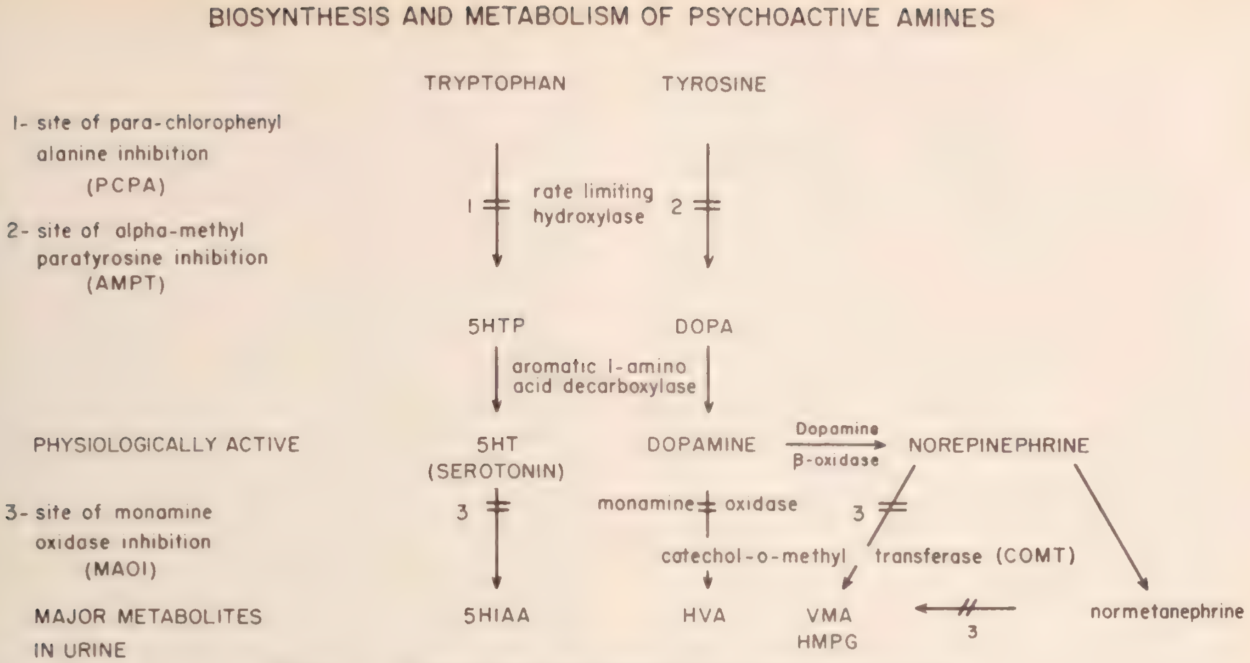
BIOSYNTHESIS AND METABOLISM OF PSYCHOACTIVE AMINES
TRYPTOPHAN
TYROSINE
1- site of para-chlorophenyl alanine inhibition (PCPA)
2- site of alpha-methyl paratyrosine inhibition (AMPT)
1
rate limiting hydroxylase
2
5HTP
DOPA
aromatic l-amino acid decarboxylase
PHYSIOLOGICALLY ACTIVE
5HT (SEROTONIN)
DOPAMINE
Dopamine β-oxidase
NOREPINEPHRINE
3- site of monamine oxidase inhibition (MAOI)
3
monamine oxidase
3
catechol-o-methyl transferase (COMT)
MAJOR METABOLITES IN URINE
5HIAA
HVA
VMA HMPG
3
normetanephrine

FIGURE 1. Biosynthesis and metabolism of psychoactive amines.

fect of reserpine is not, however, well correlated with the absolute concentration of any of these compounds in the brain. The importance of the role of norepinephrine depletion versus serotonin depletion in reserpine-induced sedation and depression remains controversial.

Monoamine oxidase inhibitors. Monoamine oxidase inhibitors inactivate monoamine oxidase by forming stable complexes with the enzyme. Thus tissue concentrations of norepinephrine and serotonin rise because the intraneuronal mechanism that normally inactivates these amines is inhibited.[4] During monoamine oxidase inhibition, endogenous norepinephrine, dopamine, and serotonin increase in a variety of tissues including brain, heart, intestines, and blood. Extraneuronal degradation of the catecholamines by catechol-o-methyl transferase does not seem to be affected by the monoamine oxidase inhibitors. Thus, the deaminated metabolites 3-methoxy-4-hydroxymandelic acid and 5-hydroxyindoleacetic acid excreted in the urine decline during monoamine oxidase inhibition while normetanephrine excretion increases.[5]

Monoamine oxidase inhibitors also have these actions. They interfere with the metabolism of a variety of drugs including central nervous system depressants, sympathomimetic drugs, insulin, and others.[6] Moreover, they do not interfere with the release of stored norepinephrine by tyramine. This inability of the monoamine oxidase inhibitors to block the release of norepinephrine brought about by tyramine or parenteral amphetamine is the basis for the hypertensive crises that have been observed in some patients who inadvertently receive these substances during treatment.[7] They also interact with other humoral systems; for instance in a recent study monoamine oxidase inhibitors were found to suppress plasma renin concentration in animals, which may explain, in part, their commonly observed hypotensive action.[8]

A fundamental and still controversial question is whether or not the reversal of depression with monoamine oxidase inhibitors is the result of these enzyme inhibitors acting on a specific biogenic amine. In some studies, behavioral excitation in animals was noted when brain norepinephrine—rather than serotonin—rose.[9] In other animal studies, behavioral changes were more directly related to changes in serotonin.[10] Furthermore, during monoamine oxidase inhibition certain other compounds (dopamine and octopamine) which may act as false neurochemical transmitters accumulate, blocking the action of norepinephrine.[11] If this concept of false neurochemical transmission during monoamine oxidase inhibition is correct, there may actually exist a state of functional adrenergic hypoactivity rather than hyperactivity.

Altogether, these observations indicate a potent effect of the monoamine oxidase inhibitors on a variety of biogenic amines.

Tricyclic antidepressants. The structures of tricyclic compounds closely resemble those of the phenothiazine derivatives. However, instead of sedating agitated patients, their major action is to elevate the mood of depressed patients. These compounds affect both norepinephrine and serotonin metabolism.

Tricyclic antidepressants potentiate the peripheral effects of both norepinephrine and serotonin in animals.[12] The pressor response to norepinephrine in man has also been shown to be increased during treatment with tricyclic compounds. One mechanism that may account for this potentiation of the amines by tricyclic compounds is that imipramine, as well as chlorpromazine, blocks the uptake of norepinephrine.[13] Therefore, the blockade of uptake and degradation of norepinephrine permits more norepinephrine to be available at the receptor site. In animals, the deaminated metabolites are reduced. Clinical studies have shown that 3-methoxy-4-hydroxymandelic acid excretion is reduced during the administration of tricyclic compounds.[14] It seems possible, and has been suggested by others, that imipramine may also potentiate the central actions of the norepinephrine.[15]

Serotonin uptake has been noted to be inhibited by tricyclics in in vitro studies, and similar findings have also been observed in vivo.[16,17] The disappearance of serotonin may also be slowed by imipramine, suggesting decreased serotonin turnover.

In summary, the mechanism of action of the tricyclic antidepressants appears closely related to their effects on the biogenic amines. However, it is uncertain at the present time whether a change in a specific amine is completely responsible for their antidepressant action. Alternatively, it is possible that a summation of changes induced by the tricyclics in several biogenic amines is responsible for the antidepressant actions.

Lithium. The observation that lithium, a monovalent cation, is effective in the prophylaxis and treatment of mania and the prophylaxis of depression has stimulated many laboratory and clinical studies of its mechanism of action. These studies have considered the electrolyte actions of lithium and the effects of lithium on biogenic amine metabolism.

There is now general agreement that when lithium is administered under carefully controlled conditions of sodium metabolism, transient sodium diuresis followed by sodium retention can be observed in man.[18] Patients rapidly return to their base line state of sodium balance within the first week of lithium treatment. In rats, chronic lithium administration has been shown to cause negative sodium balance, and brain sodium concentration is decreased.[19] Acute administration of large doses of lithium has also been observed to lower brain sodium concentration in rats.[20] In another recent study, lithium was found to be selectively deposited in the ground substance of the brain, thereby possibly altering neural transmission.[21]

The propagation of nerve impulses depends on movements of sodium and potassium ions across cell membranes. This close relationship between electrolyte metabolism and electrical activity in neurons, together with the observed changes in electrolyte metabolism induced by lithium, has stimulated clinical studies to determine whether or not electrolyte metabolism is altered in the affective disorders. Increased sodium retention has been observed during depression.[22] Decreased sodium retention and decreased total body sodium have been reported after recovery from depression.[22,23] Isotope dilution studies have shown an increased intracullular sodium pool in depression as well as in mania.[24,25] However, these latter findings have not yet been confirmed. Total body potassium does not seem to be altered either in depression or in recovery from depression.[23]

These provocative findings of changes in sodium metabolism in depressive illness are of great conceptual interest. However, several observations make it appear unlikely that lithium's action can be explained merely on the basis of its electrolyte effects. Lithium-induced sodium diuresis is usually of small magnitude and can be observed in all subjects, even those that are not manic or depressed.[26] In addition, the acute changes in sodium balance occur during the first few days of lithium administration, several days before the clinical effects of lithium become manifest. Thus, while lithium alters sodium handling in man and animals, these changes have not yet been related directly to lithium's mechanism of action.

In contrast to the theoretic nature of the electrolyte studies vis-a-vis lithium's possible mechanism of action, renal lithium handling and lithium toxicity are directly related to changes in sodium balance. The degree of lithium retention has been shown in both animals and man to depend primarily on the state of sodium balance. Sodium depletion results in lithium retention and, conversely, sodium loading causes increased excretion of lithium and a lowering of plasma lithium levels.[26] If sodium depletion is rapidly induced by the administration of diuretic agents, lithium toxicity can rapidly appear with relatively low plasma lithium levels.[26] However, lithium may be safely administered to patients on chronic low-sodium diets—patients with heart failure, nephrosis, or cirrhosis with ascites—although it may be necessary to reduce the dose of lithium. The dose can readily be titrated against serum lithium levels. Renal lithium handling has been shown in a number of studies to be regulated primarily by the proximal tubule of the nephron.[26,27] Thus decreased proximal tubular reabsorption induced by sodium loading, urea, mannitol, or dextran volume expansion is an effective means of treating lithium toxicity. Polyuria and polydipsia are among the early signs of toxicity. These symptoms of diabetes insipidus are due to a direct effect of lithium on the kidney resulting in a diminished renal response to antidiuretic hormone.[28] Recent studies demonstrate that patients without clinical signs of lithium toxicity also may exhibit decreased response to antiduretic hormone.[29,30] This state of nephrogenic

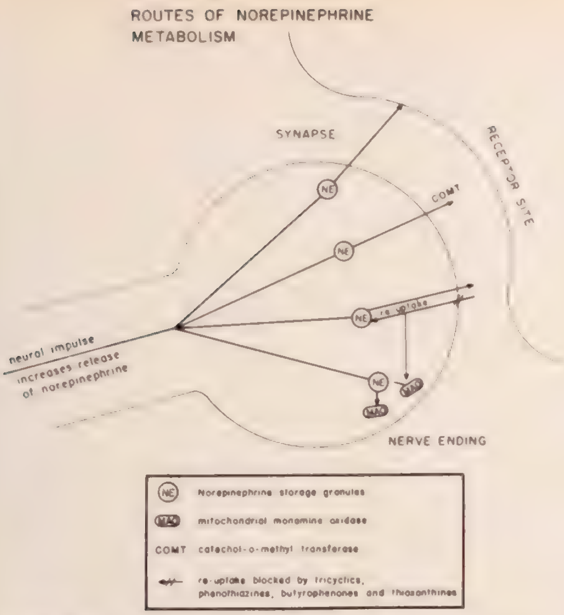
ROUTES OF NOREPINEPHRINE METABOLISM
SYNAPSE
RECEPTOR SITE
COMT
NE
re-uptake
MAO
neural impulse increases release of norepinephrine
NERVE ENDING
NE Norepinephrine storage granules
MAO mitochondrial monamine oxidase
COMT catechol-o-methyl transferase
re-uptake blocked by tricyclics, phenothiazines, butyrophenones and thioxanthines

Figure 2. Routes of norepinephrine metabolism.

diabetes insipidus disappears when lithium is discontinued or the dosage is reduced. Lithium treatment may be associated with goiter formation.[31] However, goiters regress within two to three months after lithium is discontinued or with thyroid hormone treatments.[31]

Lithium administration has also been shown to alter norepinephrine metabolism so that there may be less norepinephrine available at receptor sites (Fig. 2).[32] A shift in the metabolism of norepinephrine has also been observed resulting in a relative increase of 3-methoxy-4-hydroxymandelic acid excretion.[33] Lithium has also been reported to increase the turnover of norepinephrine in brain tissues.[34]

These actions of lithium on electrolyte and biogenic amine metabolism may be interrelated. A variety of inorganic ions have been shown to affect the uptake, storage, and metabolism of biogenic amines.[35]

Electroconvulsive therapy

Electroconvulsive therapy has been shown to have a number of effects on biogenic amine metabolism. Brain norepinephrine concentration in animals rises, and turnover increases.[36] Serotonin levels may also increase.[36,37] Thus, the antidepressant actions of electroconvulsive therapy may also be based on changes in biogenic amine metabolism.

Amphetamines

The amphetamines not only reduce neuronal norepinephrine uptake; they also can release stored norepinephrine and dopamine.[38] Thus, amphetamines may make more norepinephrine available to the receptor sites. Amphetamines decrease brain serotonin uptake in vitro, but in at least one study inhibition of serotonin synthesis did not appear to diminish the stimulant properties of amphetamines.

Major tranquilizers

Phenothiazines. Chlorpromazine has been shown to decrease the uptake of norepinephrine, dopamine, and serotonin by the brain.[39] The metabolism of tritium-labeled norepinephrine is also increased. The impaired uptake of norepinephrine and dopamine may be a partial basis for the extrapyramidal symptoms which are frequently encountered during treatment with the phenothiazines. Chlorpromazine may also have an antiadrenergic action peripherally. A recent hypothesis has suggested that the chlorpromazine-induced blockade of catecholamine uptake by neurons may also block uptake of some pathologic hallucinogenic compound. However, no definite link has yet been established between the actions of phenothiazines on catecholamine metabolism and the antipsychotic action of these drugs.

The phenothiazines, because of their potent action especially in the hypothalamus, can decrease urinary gonadotrophin excretion, block ovulation, and produce oligo- or amenorrhea.[40] Chlorpromazine also interferes with adrenocorticotropic hormone, growth hormone, and oxytocin release from the pituitary gland. It stimulates release of prolactin.[41] The orthostatic hypotension frequently encountered with chlorpromazine may also be secondary to a central effect of the drug.[42]

Butyrophenones and thioxanthines. The butyrophenones and thioxanthines inhibit the uptake of catecholamines by neuronal cell membranes. Also, these agents may interfere at the receptor site blocking the actions of norepinephrine and dopamine.

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Pharmacology of Antihyperglycemic Drugs

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Among antihyperglycemic agents, insulin is without question the preparation which is most uniformly useful and effective. It is a naturally occurring hormone, its action is reasonably predictable, the dosage may be adjusted according to the changing needs of the patient, and even in patients with insulin resistance, with very rare exceptions, a dose of insulin can always be found which will lower the blood glucose to any desired level. Although there is still a great deal which is not clear regarding the action of insulin, immense amounts of data have been collected in the past fifty years, and the important facts are matters of common knowledge. Consequently, in this report I will confine my comments to the oral hypoglycemic compounds which are currently attracting much attention.

Sulfonylureas and related compounds

The era of the oral hypoglycemic agents began in a practical sense with the announcement from Berlin, in 1955, by Franke and Fuchs[1] that carbutamide, an arylsulfonylurea compound, when given by mouth, lowered the blood glucose of nondiabetic individuals and of selected persons with

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* *By invitation.*

diabetes. However, as early as 1930, there had been reports of the blood glucose-lowering effect of certain sulfonamide-related compounds.[2,3] Furthermore, beginning in 1942, Loubatières,[4] working in France at Montpellier, had begun a long series of studies regarding the hypoglycemic effect of certain thiodiazole derivatives of the sulfonamides. In fact, it was in the early 1940s that Loubatières proposed the thought, still held today, that the sulfonamide-related compounds act by stimulating the release of insulin from the beta cells of the pancreas. This has been demonstrated repeatedly. Following the administration of a sulfonylurea, there is a rise in the insulin level of the pancreatic-vein blood, and in animals one can demonstrate a migration of insulin crystals toward the periphery of the beta cell.[5,6] Other modes and sites of action have been suggested, including a direct drug effect on the liver and/or peripheral tissues as well as a potentiation of the action of insulin. None of these has stood the test of time and careful scrutiny, although it seems possible that a great deal of the effect of the insulin released by the sulfonylureas may take place in the liver, resulting in a decrease in the amount of glucose released from that organ into the blood stream. It seems likely that the maximal amount of insulin released daily by sulfonylurea stimulation is in the order of 20 units.

It has been stated that since 1955 literally tens of thousands of sulfonamide-related compounds have been synthesized in the hope of finding the ideal oral hypoglycemic agent. Some of these have seemed promising enough for animal study. Relatively few have reached the stage of clinical trial with human patients. Of these, only tolbutamide, chlorpropamide, acetohexamide, and tolazamide are available in the United States. Carbutamide, the compound used initially by Franke and Fuchs,[1] was not made available here because during clinical trials a frequency of hepatotoxicity, considered to be too high at the time, was encountered. However, it is in use today in other countries. Another sulfonylurea, metahexamide, although quite effective in lowering the blood glucose, was withdrawn from further clinical trial in 1959 because of hepatotoxicity.[7] Two other compounds deserve mention: (1) glycodiazine (glymidine), a sulfonamide pyrimidine, which is available in certain countries, and (2) glibenclamide (HB419), a new sulfonylurea, now on clinical trial in the United States and already available elsewhere.[8,9] In responsive individuals, glibenclamide is effective in extremely small doses, 5 to 20 mg. daily. It is said to be relatively free from side effects (except hypoglycemia) and toxic manifestations. However, longer experience is required to determine whether or not it provides any important clinical advantages over currently available sulfonylureas.[10]

Biguanides

The second class of oral hypoglycemic agents, the biguanides, attracted attention first when, in 1957, Ungar, Freedman, and Shapiro[11] reported that certain of these compounds were highly effective in lowering the blood glucose of animals. After clinical trials, phenethylbiguanide (phenformin) was admitted to the market. Two related compounds, metformin and buformin, are rather widely used in other countries. The biguanides bear a chemical relationship to the diguanidines, synthalin A and B, which were studied in the 1920s by Frank, Nothmann, and Wagner.[12] Synthalin B enjoyed considerable usage at that time in the treatment of certain diabetic patients, but clinical trials were abandoned when there were reports of toxic effects on the liver and kidneys.[13] Fortunately, in the doses tolerated by human subjects, the biguanides presently used, such as phenformin, appear free of toxicity. It is true that side effects are common, but these disappear when the dose is decreased or the drug is discontinued. Such side effects include a metallic taste, anorexia, nausea, vomiting, abdominal distress, and diarrhea. As for lactic acidosis, it is probable that phenformin may aggravate a preexisting state, but it is doubtful if phenformin causes de novo a condition of lactic acidosis of clinical importance.[14]

Despite many studies in the laboratory and clinic, the chief mode of action of the biguanides remains controversial. One knows that these compounds exert a hypoglycemic effect in many diabetic patients, including some with onset in early life. However, contrary to some reports, it is doubtful that these agents lower the blood glucose unless there is some insulin, endogenous or exogenous, available in the body. Their chief use, either alone or in combination with a sulfonylurea, is in those patients with stable diabetes who are also good candidates for sulfonylurea therapy. A "smoothing-out" effect on the blood glucose in persons with unstable diabetes has been described, but real successes along this line are uncommon. Phenformin does not lower the blood glucose in nondiabetic individuals, although it may improve glucose tolerance as measured in a standard oral test.

Although there is general agreement that the biguanides do not act by stimulating the release of insulin, various hypotheses have been advanced to explain the mode of action of those compounds. Since the administration of phenformin is accompanied by a rise in the serum lactic and pyruvic acids, the early in vitro studies of Williams, Tanner, and Odell[15] are of interest. However, their findings, which suggested increased anaerobic glycolysis as the mechanism of action, have been challenged by others who deny applicability of such findings to the hypoglycemic effect ob-

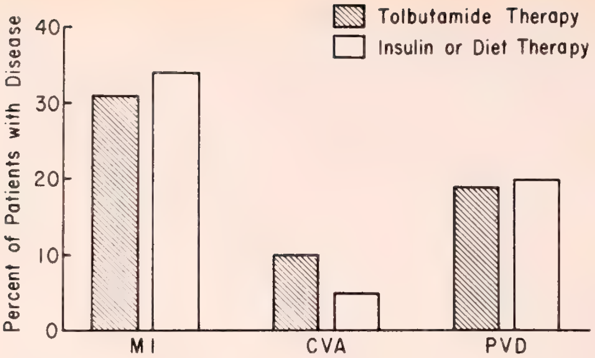

FIGURE 1. Cardiovascular disease after eight to ten years of tolbutamide therapy. MI = angina or myocardial infarction; CVA = cerebrovascular accidents; and PVD = peripheral vascular disease.[22]

served in living subjects.[16] Other studies have yielded data which have been interpreted as indicating decreased gluconeogenesis in the liver, an effect on the processes of electron transport and oxidative phosphorylation, and increased peripheral oxidation of glucose.[17-19] Most recently, Kruger *et al.*[20] found that pretreatment of rats with phenformin resulted in an inhibition of active transport of glucose by the intestine. They suggest that this action may explain the fact that phenformin increases the tolerance to glucose given orally but not to that given intravenously. Obviously the final word has not been said, and judgment must be reserved as to the primary mode and site of action of the biguanides.

Cardiovascular effects of sulfonylureas

Sulfonylureas were first used at the Joslin Clinic in 1955. Since then, from time to time our experience has been reported in a series of articles. The earlier reports were concerned with clinical effectiveness, side effects and, in a certain few instances, toxic effects of an acute nature. Later accounts also gave the results of long-term treatment and analyzed "secondary failures" as to frequency and cause. Finally, by 1966, enough time had elapsed to begin a study of the possible effect of sulfonylurea treatment on the late vascular complications of diabetes. In that year Balodimos, Rippey, and Marble[21] reported the results of a study of 125 living patients of the Joslin Clinic who had received sulfonylurea compounds for eight to ten years. The frequency of vascular complications in 101 of these patients was compared with that in 87 matched control patients who had been treated either with diet alone or with insulin in daily doses of 30 units or less. The data indicated that in this series coronary heart disease, cerebral vascular accidents, and peripheral vascular disease occurred with essentially equal frequency in the tolbutamide-treated patients and the controls (Fig. 1).

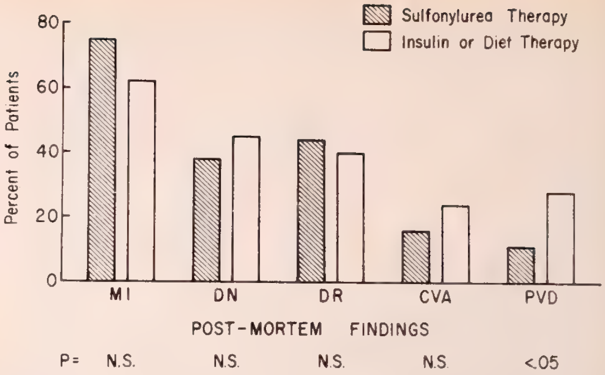

FIGURE 2. Postmortem findings after long-term sulfonylurea therapy. MI = myocardial infarction; DN = diabetic nephropathy; DR = diabetic retinopathy; CVA = cerebrovascular accidents; and PVD = peripheral vascular disease.[22]

TABLE I. Deaths from coronary heart disease in diabetics of both sexes

Type of Treatment	Number Patients	Coronary Heart Disease Number	Coronary Heart Disease Per Cent	Difference From Sulfonylureas
Sulfonylureas	410	229	56	. . .
Diet alone	114	48	42	P <0.02
Insulin	1,092	566	52	N.S.
Miscellaneous	187	99	53	. . .
TOTAL	1,803	942	52	. . .

In a second study Balodimos *et al.*[23] compared the autopsy findings of 55 patients who had received sulfonylureas for an average of forty-six months with those of matched controls who had been treated with insulin or diet alone. Pathologic evidence of myocardial infarction, diabetic nephropathy, diabetic retinopathy, and cerebrovascular accidents was found with equal frequency in sulfonylurea-treated and control patients. The frequency of peripheral vascular disease as evidenced by gangrene and/or amputation of a lower extremity was actually greater in the insulin-treated patients ($p < 0.05$), as shown in Figure 2. This was attributed to the customary use of insulin in patients with infection and gangrene.

More recently Balodimos *et al.*[24] have studied the records of 1,803 patients first seen at the Joslin Clinic since January, 1957, and who were known to be dead as of the end of 1968—a span of twelve years. Only those with onset of diabetes over the age of forty were included. Tabulations were made regarding deaths ascribed to coronary heart disease. No significant difference was found between the sulfonylurea-treated and the insulin-treated groups. There was a significant difference between the sulfonylurea and "diet alone" groups, which may reflect the small number of patients in the diet group and perhaps the relative "mildness" of the diabetes in these individuals (Table I).

If one now analyzes the data according to sex,

TABLE II. Deaths from coronary heart disease in diabetic males

Type of Treatment	Number Patients	Coronary Heart Disease		Difference from Sulfonylureas
		Number	Per Cent	
Sulfonylureas	220	127	58	. . .
Diet only	81	38	47	N.S.
Insulin	498	242	49	$P < 0.05$
Miscellaneous	102	51	50	. . .
TOTAL	901	458	51	. . .

TABLE III. Deaths from coronary heart disease in diabetic females

Type of Treatment	Number Patients	Coronary Heart Disease		Difference From Sulfonylureas
		Number	Per Cent	
Sulfonylureas	190	102	54	. . .
Diet alone	33	10	30	$P < 0.025$
Insulin	594	324	55	N.S.
Miscellaneous	85	48	56	. . .
TOTAL	902	484	54	. . .

one finds that in males there was a significantly greater percentage of deaths due to coronary heart disease among the sulfonylurea-treated patients whereas in females the frequency was almost exactly the same. Analysis of the data showed no difference in results when sulfonylurea-treated patients were divided into those who had received the drugs for less or more than three years. Similarly, there was no difference between the results with insulin-treated patients who had taken 30 units or less daily as compared with those whose dose had been more than that amount (Tables II and III).

In evaluating the results of studies of any pharmacologic agent on the longevity and cause of death of middle-aged and elderly persons with "mild," stable diabetes, one must keep in mind the increased vulnerability of the diabetic to vascular disease. Fully 75 per cent of diabetic patients die of cardiovascular-renal disease. Well over 50 per cent of all deaths are due to arteriosclerotic heart disease. There is very little room between these high percentages and 100 per cent and, since the diabetic is subject to death from nonvascular causes such as cancer, infections, accidents, and so on, to as great or greater extent than other persons, no drug or other factor can increase the frequency of death from vascular disease very much. Consequently, one can interpret the results in the University Group Diabetes Program[25] report only as indicating that, in that study, the giving of tolbutamide hastened death from cardiovascular disease by a means not yet identified.

The University Group Diabetes Program report summarized the results of a 8.5-year study of 823 older patients with stable, nonketotic diabetes who were treated in 12 centers across the country. There were 5 treatment groups: (1) tolbutamide, (2) tolbutamide placebo, (3) insulin (lente) in fixed dose of 10 to 16 units daily, (4) insulin with dosage varied in conventional fashion, and (5) phenformin. The phenformin results were not included in the report. Simply stated, the principal conclusions were: (1) tolbutamide may be toxic since there were more than twice the number of cardiovascular deaths in the tolbutamide-treated than in the placebo group (26 versus 10), and (2) treatment with tolbutamide was no more effective in controlling the blood glucose than diet alone.

I do not doubt the accuracy of the University Group Diabetes Program results as regards gross, basic items of data such as numbers of patients and causes of death. I do, however, question the interpretation of the findings and their applicability to the millions of patients over the world who are receiving oral hypoglycemic agents. I believe that the number of subjects—about 200 in each of 4 treatment groups—was too small. In my opinion, no amount of intricate statistical analysis can overcome this simple fact and the very real possibility that, inadvertently, the selection of subjects and their distribution among the treatment groups was uneven so that true matching did not take place. One suspects this from these considerations: (1) most of the cardiovascular deaths took place in 4 of the 12 treatment centers and no deaths in the tolbutamide-treated group occurred in 4 centers; (2) by chance, each of many factors (except hypertension) which might favor cardiovascular disease was present to a slightly greater degree in the tolbutamide group; (3) no account was taken of other important factors such as smoking, history of vascular disease in close relatives and, above all, the duration of diabetes. Admittedly the last named is extremely difficult to estimate in view of the insidious onset of diabetes in the age group concerned. However, this factor will continue to plague all investigators in this field because duration of diabetes is universally recognized as a most important factor in the development of vascular disease. One must recognize that studies among middle-aged and elderly persons with mild diabetes such as that conducted by the University Group Diabetes Program participants are fraught with tremendous difficulties because of the marked basic tendency to vascular disease and the many variables—diabetic and nondiabetic, biologic, psychologic, and others—which influence the outcome of such investigations. In addition, long-term studies are affected by matters arising from human frailty both on the part of the patient and the investigator. In an attempt to iron out these many variables, any study aimed at repeating the University Group Diabetes Program study should include truly large numbers of subjects per treatment group and be carried on for at least ten years under conditions of selection and treatment which are rigorously controlled.

Our own studies are, of necessity, retrospective in type, but we are attempting to make them as reliable as we can. For some months we have been engaged in a cohort study involving a follow-up of each of several thousand patients, regardless of treatment program—insulin, oral agents, or diet alone—first seen at the Joslin Clinic from January, 1957, through December, 1968. Only patients with onset of diabetes over the age of forty years and those first seen within one year of onset of diabetes are included. It is hoped that a study carried out in this manner will yield definitive and valid results.

Final comment

In conclusion, a word is in order regarding the effectiveness or lack of effectiveness of the sulfonylureas. Abundant clinical experience attests to their efficacy in lowering the blood glucose until such time, as happens in some patients, as a secondary failure occurs. It is then the responsibility of the physician to alter treatment so that control of diabetes may be reinstated. As for the broader question of whether or not control of diabetes delays or minimizes the late vascular complications in patients already middle-aged or elderly, this cannot be settled by the results of a single study. Much more needs to be learned. Until conclusions can rest on a firmer basis, we plan to continue using diet, insulin, oral agents, and exercise, as before, in an attempt to maintain as good control of diabetes as is possible or practicable for a given individual.

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Delivery of Anesthesia Care*

Present and future

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This report gives a comprehensive profile of anesthesiologists presently practicing in the United States. An attempt is made to predict the manpower needs for persons involved in anesthesia care in the future, and suggestions are given for the realization of these needs and for more efficient utilization of present personnel.

In 1968, it was my privilege to inaugurate the E. Dean Babbage Memorial Lectureship and to introduce the first E. Dean Babbage Memorial lecturer, Albert Betcher, M.D.[1] Dr. Babbage, whom I knew personally for many years, was a highly gifted and articulate physician who emboded many of the virtues to which physicians aspire. He did not confine his activities to teaching or clinical anesthesiology alone but was a most enthusiastic participant in all areas of organized medicine. As speaker of the House of Delegates of the Medical Society of the State of New York and as chairman of the A.S.A. (American Society of Anesthesiologists) Committee on Economics, Dr. Babbage became deeply involved with the problems which beset us in the delivery of health care. Knowing Dr. Babbage's far-ranging concerns, it is fitting that I dedicate these remarks to his memory.

To rationally predict manpower needs for the future delivery of anesthesia care, one first needs to determine the comprehensive profile of the present anesthesia manpower supply. The A.S.A. Committee on Manpower, under my chairmanship, assumed the task of collating data about physicians who list anesthesiology as their primary specialty. As a first step the committee has examined and correlated data related to age, sex, A.S.A. membership, certification, geographic distribution, graduation from U.S. or foreign medical schools, and year of graduation.

A July 1, 1971, computer readout of physicians who listed anesthesiology as their primary specialty was obtained from Medical Mailing Services, Inc. This corporation receives information on all physicians in the United States through questionnaires circulated by the A.M.A. (American Medical Association). Its data are updated weekly and are purported to be a total and accurate listing. The actual counts obtained from the A.S.A., the A.B.A. (American Board of Anesthesiology), and the A.C.A. (American College of Anesthesiologists) indicates a 10 to 15 per cent disparity when compared with the Medical Mailing statistics. Since the computer information is in readout and graph form and represents a reliable sample, conclusions will be presented from these data. Additional information was obtained from the A.S.A., the A.M.A., the A.B.A., and from Harold Carron, M.D.,[2] A.S.A. secretary, who has personally accumulated such data.

Computer profile

The computer readouts profiled anesthesiologists by year graduated from medical school and by age (Table I). Measured against these indices, the total group was divided into several subgroupings: (1) those engaged or not engaged in patient care (Fig. 1), (2) those graduated from U.S. medical schools or from foreign medical schools (Fig. 2), (3) membership in the American Society of Anesthesiologists (Fig. 3), and (4) certification by the American Board of Anesthesiology and/or the American College of Anesthesiologists (Fig. 3).

As one looks at the profile of the 8,885 physicians in the United States who list anesthesiology as their primary specialty and are engaged principally in patient care, it is noted that their ages extend from twenty-three years to over seventy years, with an average age of forty-five years. The average age of those certified by the A.B.A. is also forty-five years. In addition, these physicians graduated from medical school anywhere from one to over fifty years ago, with an average of eighteen (average for all physicians—24.3 years).

It has been suggested that there will be a high attrition rate among anesthesiologists in the next ten years as a result of a peak influx of physicians into anesthesiology immediately after World War II. The computer data do not support this.

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*Fifth E. Dean Babbage Memorial Lecture.

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TABLE I. Profile of physicians listing anesthesiology as their primary specialty

		Involved in Patient Care		A.S.A.	Certification		Medical School Graduated From		
Age	Number	Yes	No	Member	A.B.A.	A.C.A.	U.S.	Foreign	
24	3	...	3	...	...	...	1	2	...
25	18	...	18	4	...	...	7	11	1
26	35	1	34	5	...	...	20	15	2
27	114	6	108	27	...	...	82	32	2
28	211	22	189	100	...	7	146	65	9
29	314	59	255	197	...	13	187	127	24
30	275	88	187	180	2	20	159	116	34
31	353	148	205	237	19	39	175	178	75
32	333	143	190	212	38	52	163	170	80
33	355	219	136	263	65	74	196	159	85
34	386	247	139	289	112	96	217	169	108
35	310	215	95	210	89	78	170	140	94
36	379	289	90	271	147	119	212	167	130
37	387	299	88	294	146	111	213	174	131
38	409	321	88	315	197	161	254	155	127
39	394	310	84	322	197	143	249	145	120
40	452	373	79	364	214	169	275	177	159
41	428	365	63	332	211	164	262	166	144
42	418	355	63	343	207	171	247	171	158
43	390	336	54	305	195	140	224	166	153
44	372	343	29	316	203	154	243	129	124
45	422	384	38	348	219	165	284	138	134
46	367	326	41	306	203	148	248	119	113
47	426	392	34	369	222	183	304	122	119
48	367	320	47	311	209	155	263	104	99
49	404	372	32	348	211	162	287	117	112
50	391	355	36	333	202	151	300	91	89
51	326	282	44	278	156	126	237	89	83
52	236	207	28	191	121	96	181	54	52
53	242	216	26	208	119	106	193	49	48
54	226	202	24	189	115	88	185	41	40
55	217	199	18	185	102	92	168	49	48
56	185	172	13	164	96	79	140	45	44
57	216	194	22	187	103	102	161	55	...
58	148	132	16	127	71	67	114	34	33
59	166	154	12	136	73	68	122	44	...
60	155	137	18	124	71	72	118	37	...
61	133	121	12	118	45	54	103	30	...
62	132	117	15	115	58	58	100	32	...
63	118	107	11	99	52	47	90	28	...
64	96	80	16	72	33	37	77	19	...
65	63	51	12	54	24	32	53	10	...
66	65	49	16	49	22	29	55	10	...
67	53	37	16	39	22	22	45	8	...
68	41	26	15	27	13	16	35	6	...
69	35	23	12	29	10	12	28	7	...
+70	190	91	99	131	49	62	155	35	...
Unknown	1	...	1	1	...	...	...	1	...
TOTAL	11,756	8,885	2,871	9,124	4,663	3,940	7,748	4,008	...

Anesthesiology is a young specialty since 82 per cent of anesthesiologists are under fifty-five years of age, compared with all specialties where only 73 per cent are under fifty-five years of age. Therefore, the contention that anesthesiologists have a higher average age than other physicians is fallacious.[3]

Those physicians indicated as not engaged in patient care in this readout include the resident component of the profile. Subtracting the 1,652 residents reported in this profile leaves a group of 1,219 physicians who are primarily involved with teaching, administration, research, or some other activity not involving primary clinical care. A study has now been initiated by the A.S.A. Committee on Medical Schools to assess this vital component of our specialty and to project the needs for academic anesthesiologists to the year 1980. According to the A.M.A. 1970 to 1971 report on medical education, there has been a steady increase over the past ten years in the number of unfilled full-time medical school faculty positions in anesthesiology (from 33 to 98), and 10.1 per cent of budgeted faculty positions in anesthesiology are now vacant (the average for all specialties is 5.3 per cent).[4]

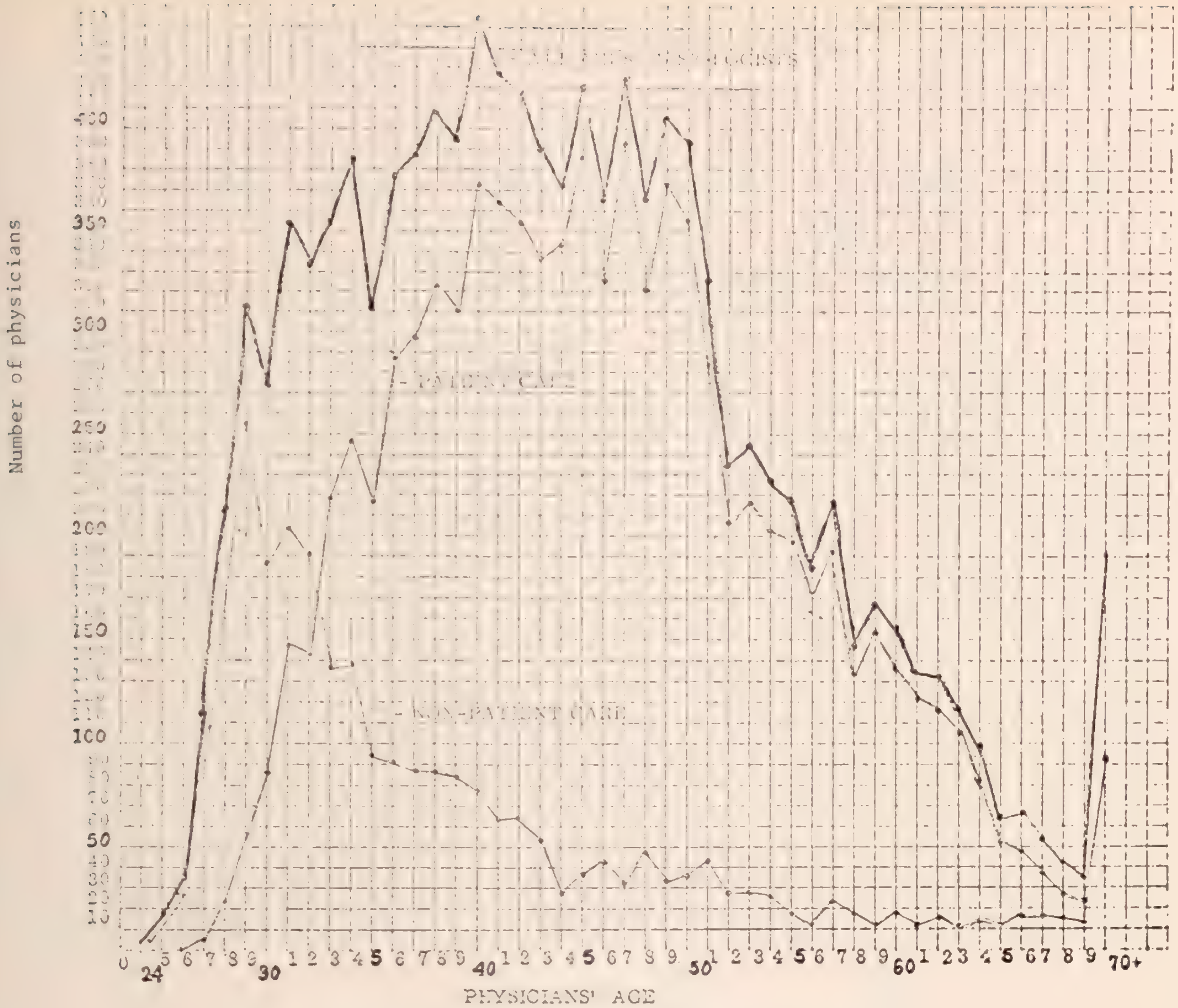

FIGURE 1. Anesthesiologists engaged in patient care.

Incentives necessary to reverse this trend must be found.

In the past ten years, an increasing percentage of anesthesiology residencies have been filled by graduates of foreign medical schools (from 35.5 to 51.1 per cent). This is reflected in the number of foreign medical school graduates in the clinical practice of anesthesiology in the United States representing, for the past five years, 40 per cent of new active A.S.A. members. Analysis of the computer data indicates that 30 per cent of the total anesthesiologists reported in this profile are graduates of foreign medical schools as compared with 22 per cent of all physicians in the United States.

Recently published data indicates that while 3 per cent of all physicians in the United States are in the practice of anesthesiology, 6 per cent of the foreign medical graduates in the United States list anesthesiology as their major professional activity.[5]

The sex distribution of anesthesiologists is also of interest. In 1970, for all physicians, women constituted a greater percentage of foreign medical graduates (15.3 per cent) than of United States graduates (6 per cent). Female graduates of foreign medical schools accounted for 34.5 per cent of all female physicians in the United States. As of December, 1971, women anesthesiologists constituted an even greater percentage of foreign medical graduates (23.4 per cent) than they did U.S. graduates (9.6 per cent), and 14.5 per cent of all anesthesiologists are women. Among residents in anesthesiology, women constitute 30 per cent of the foreign medical graduates and 9.7 per cent of the U.S. graduates. Thus, in anesthesiology residencies, females comprise 22 per cent. This compares with females being 31 per cent of all pediatric residents and 10 per cent of all resident physicians.

Attrition

A ten-year projection of those physicians in clinical practice listing anesthesiology as their primary specialty has been examined. Application

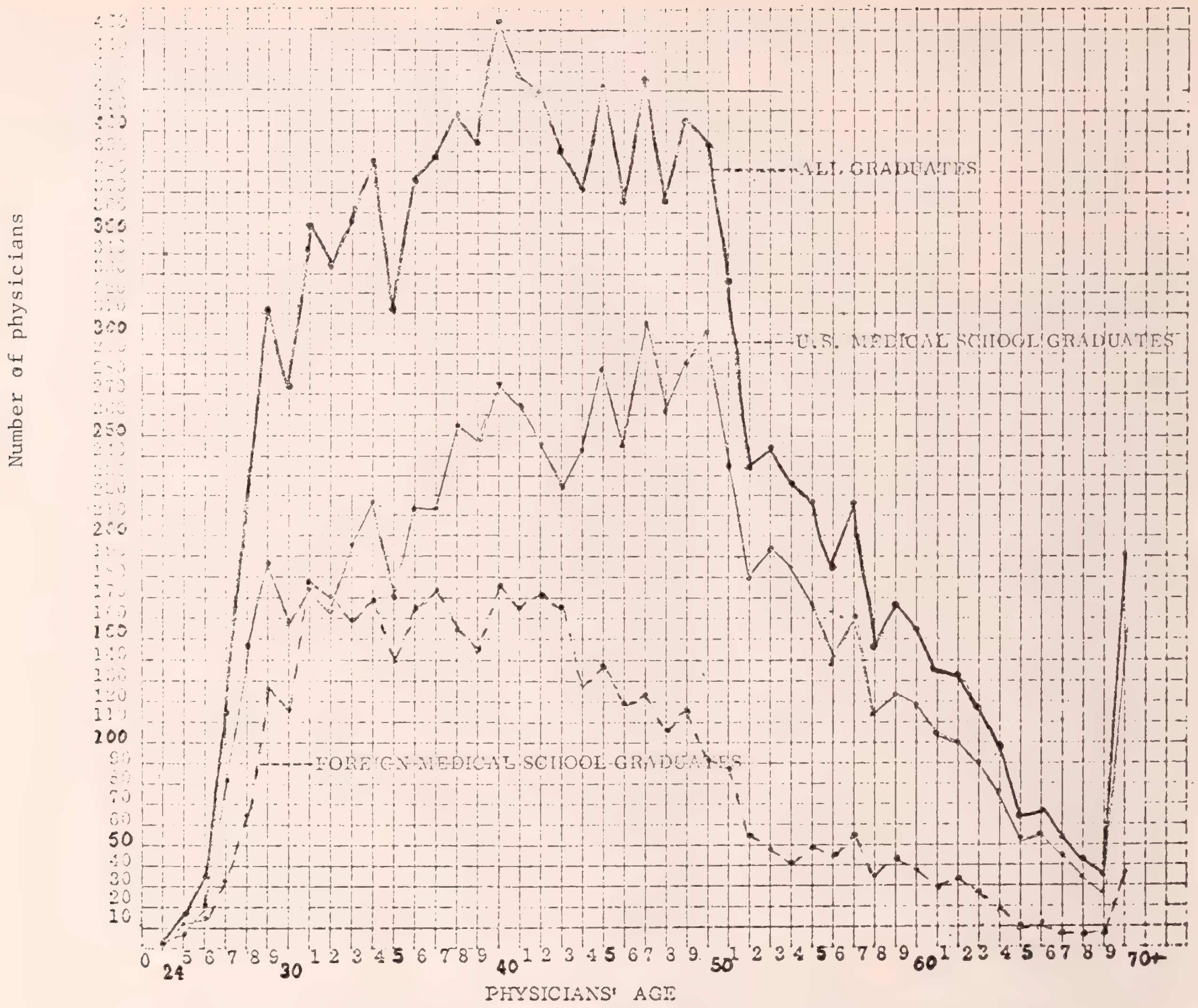

FIGURE 2. Anesthesiologists graduated from United States and foreign medical schools.

of an actuarial table to this group reduces the number by 1,155, or 13 per cent.[6] If we consider as retired all those individuals over the age of fifty-five at present who will not have died, an additional 1,020 individuals or 11 per cent will no longer be practicing. An additional 6 per cent (540 individuals) has been added to cover other attrition possibilities for a total of 2,715 or 30 per cent of the group. This would leave approximately 6,300 of the present group of clinical anesthesiologists in practice ten years from now.

Resident trainee pool

A rapid expansion of medical school facilities and increase in size of classes has occurred in the past decade. A 40 per cent increase in graduates between 1960 and 1972 is largely due to the establishment of new medical schools and the enlargement of existing schools. The number of medical schools has increased from 86 in 1960 to 103 in 1971. Estimates range as high as 135 for 1980.[7] Projections for medical school graduates now far exceed those established by the National Advisory Commission on Health Manpower. The number of medical graduates is estimated at 9,363 for 1972, 14,660 for 1975, and 17,350 for 1980.[7] This does not fully take into account the facts that one third of the medical schools have begun or are developing three-year curricula and that the internship will be eliminated by 1975. Availability of the medical graduate for resident training will be accelerated by these two measures.

Approximately 500 U.S. born and educated students, graduates of foreign medical schools, may be added yearly to the physician manpower pool in the United States. According to A.M.A. statistics a surprising 10.4 per cent of foreign medical school graduates now practicing in the United States are American born.

A recent A.M.A. report on physician manpower notes the changes in immigration laws which permit foreign medical school graduates to remain in

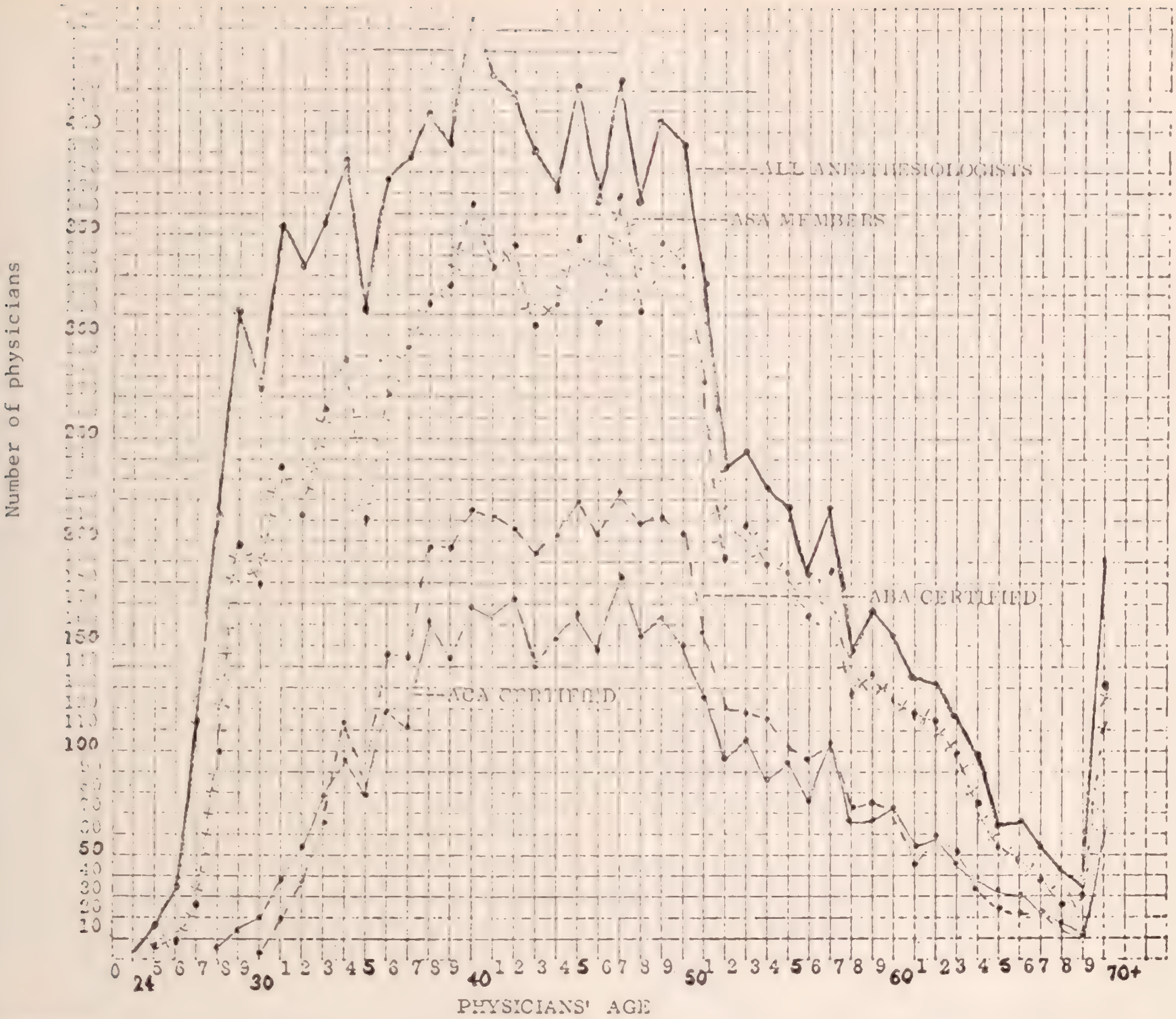

FIGURE 3. Anesthesiologists belonging to the American Society of Anesthesiologists and certified by the American Board of Anesthesiology and/or the American College of Anesthesiologists.

this country and the increasing numbers who are securing state licensure.[8] They comprised 3,036, or one fourth, of all physicians licensed in 1970. In New York State an even higher proportion of foreign medical graduates were licensed in 1970. At present, 27.9 per cent of all foreign medical graduates in the United States reside in New York State.[5] Concerns are now being expressed in the lay press regarding the significance of the large numbers of foreign medical graduates entering practice in the United States, particularly in anesthesiology, pathology, and psychiatry.[9] It is the A.M.A.'s opinion that foreign medical school graduates will enter practice in the United States in increasing numbers in the next ten years; they will not be restricted from emigration from their countries of origin. Because of these increases in both U.S. and foreign medical graduates over the next ten years, and despite projected population increases, the A.M.A. projects a significant increase in the ratio of physicians to population from 150 to 190 per 100,000.[8]

Concerns have already been expressed that an overabundance of physicians may result from the very rapid expansion of medical school enrollment.[10-12] A recent review of the 1970 U.S. Census reports a 15.5 per cent drop in the numbers of children under five years of age.[13] Continuation of this drop in births could lead to a zero population growth within the next decade.

Recruitment into anesthesiology

Data related to residents in anesthesia training over the past ten years have been accumulated from the A.M.A., the A.B.A., and from the Medical Mailing Services, Inc., computer readout (Table II).

While the number of residents graduated from foreign medical schools has increased over the past ten years from 35 to 51 per cent, an analysis

TABLE II. Profile of anesthesiology residents in the United States from 1961 to 1970

Year	First Year	Second Year	Third Year	Total	—Foreign Graduates— Number	Per Cent	—A.S.A Members— Number	Per Cent
1961	603*	600	. . .	1203	428	35.5	995	84.0
1962	600*	599	. . .	1199	418	34.7	890	75.0
1963	600*	585	. . .	1185	456	38.5	888	75.0
1964	694*	600	. . .	1294	539	41.6	880	70.0
1965	657*	600	. . .	1257	560	44.6	884	70.0
1966	694*	600	. . .	1294	649	50.0	934	80.0
1967	700*	620	. . .	1320	660	50.0	1061	80.0
1968	694	588	211	1493	743	50.0	1303	87.0
1969	737	669	245	1651	842	51.0	1486	90.0
1970	697	687	356	1740	903	51.8	1616	93.0

* Estimate.

of the number of residents graduating from U.S. medical schools substantiates that 4 to 4.5 per cent of U.S. medical school graduates are choosing anesthesiology as a career. With the advent of the three-year training program, there has been an increasing number of trainees in anesthesiology residencies at one time. However, the 4 per cent figure has remained constant. Since a rapid expansion of medical schools is occurring, the future recruitment of U.S. medical school graduates into anesthesiology will double by 1980 if this 4 per cent ratio is maintained. It can be estimated that the number of first-year anesthesiology residents will increase from 375 to 700 by 1980. This potential pool represents a total of from 9,000 to 10,000 trainees in the next ten years.

However, the long-term effects on recruitment of the A.S.A. preceptorship program, new elective medical school curricula, elimination of the internship, changing modes of delivery of anesthesia care, and national health insurance programs cannot be ascertained at this time. There are indications that certain countries may limit the number of their medical school graduates permitted to emigrate to the United States for training. This further complicates predicting the numbers of physicians who will be added to the roster of anesthesiologists in the next ten years.

It is anticipated that the 184 residency training centers have sufficient facilities to expand their programs to accommodate increased numbers of resident anesthesiology trainees. Examination of the A.M.A. Directory of Medical Education shows that of 2,046 positions offered as of September 1, 1970, 1,681 or 82 per cent were filled (average for all specialties is 85 per cent).[4] Fifty-two per cent of these positions were filled by foreign graduates as compared with an average of 33 per cent. Total positions offered for 1972 to 1973 is listed as 2,301.

If the numbers of residents is doubled by 1980, an expansion of the numbers of full-time academic anesthesiologists appears essential.

Manpower prediction

Analysis of membership data of the A.S.A. indicates a steady and impressive increase over the past twenty years from 2,400 members in 1950 to 6,880 members in 1960 and 10,660 members in 1971. One indication of the professional capacity of the specialty is the fact that the number of anesthesiologists certified by the A.B.A. during this same twenty-year period rose from 706 in 1950 to 5,114 in 1971.

Application of the attrition and recruitment estimates to the present profile of anesthesiologists results in a conservative estimate of 16,000 anesthesiologists by 1980. If we assume a population of 228 million by the year 1980, the current ratio of 5.5 anesthesiologists per 100,000 population will be altered to 7 anesthesiologists per 100,000 population.

Geographic distribution

The uneven geographic distribution of anesthesiologists and the influence of surgical utilization produces uneven levels of care and geographic voids of trained personnel.

Data related to geographic distribution of anesthesiologists and other physicians have been accumulated from A.M.A. and Medical Mailing Services sources and comparative ratios developed with U.S. Bureau of Census population figures.[2,14] As noted in the 1966 survey of anesthesia services in New York State, anesthesiologists tend to be clustered in the cities where there are larger hospitals, medical centers, and more physicians.[15,16] This observation is substantiated by A.M.A. data.

The ratio of anesthesiologists per 100,000 population parallels in most states the ratio of physicians per 100,000 population (Table III).[17] A comparison has been made of the per cent of anesthesiologists by states to each state's percentage of the total population. Only one third of the states have more than the average number of anesthesiologists (5.5 per 100,000). All Southern states are below the average. Only three states, California, Massachusetts, and New York, all largely metropolitan, are favored with a large share of anesthesiologists. In the majority of states, the share of anesthesiologists lags more than 5 per cent behind the share of population.

The distribution of certified nurse anesthetists

TABLE III. Number of anesthesiologist and all physicians per 100,000 population in 1970, by states, including the District of Columbia and Puerto Rico*

Upper Third			Middle Third			Lower Third		
State	Anesthesiologists	Physicians	State	Anesthesiologists	Physicians	State	Anesthesiologists	Physicians
District of Columbia	15.0	295	Indiana	5.5	88	Michigan	3.7	107
Massachusetts	10.0	166	Arizona	5.4	117	Hawaii	3.6	127
New York	9.4	193	Florida	5.2	118	West Virginia	3.5	88
California	8.7	162	Texas	5.0	100	Montana	3.4	107
Rhode Island	8.0	135	Illinois	5.0	117	South Carolina	3.4	75
Connecticut	7.9	156	Minnesota	4.9	130	New Mexico	3.3	88
Washington	7.7	122	Wisconsin	4.9	105	Missouri	3.1	107
Maryland	7.7	147	Pennsylvania	4.7	126	Louisiana	3.1	100
Vermont	7.6	147	Kansas	4.7	95	Idaho	3.0	81
New Hampshire	7.5	112	Iowa	4.7	90	Nebraska	2.9	98
Maine	6.9	90	Virginia	4.4	103	Arkansas	2.8	75
Colorado	6.9	150	Georgia	4.4	91	Alaska	2.4	73
Utah	6.8	115	Wyoming	4.3	86	Alabama	2.4	75
Ohio	6.7	112	Kentucky	4.3	89	Puerto Rico	2.3	73
Nevada	6.4	99	Oklahoma	4.2	87	Mississippi	2.1	69
Oregon	5.9	122	Delaware	3.9	113	North Dakota	1.8	86
New Jersey	5.7	122	Tennessee	3.8	99	North Carolina	1.7	89
						South Dakota	1.1	78

* Anesthesiologist average, 5.5; median, 4.7. Compiled from American Medical Association-Medical Mailing Service data.

per 100,000 population by states indicates a reciprocal relationship to the number of anesthesiologists in each state.[2] Data from a 1971 survey conducted by the American Association of Nurse Anesthetists indicates that the larger the hospital, the higher the percentage of anesthesia administered by anesthesiologists.[18]

A demographic study of nurse anesthetists is being initiated under the joint sponsorship of the American Society of Anesthesiologists and the American Association of Nurse Anesthetists to provide baseline data parallel to that collated for anesthesiologists.

Utilization

A pilot surgical utilization study, conducted by the A.S.A. Committee on Surgical Anesthesia during 1969 and 1970, utilized a random sample of hospitals in various size categories.[19] The utilization distributions obtained in the 1969 study were substantiated by the 1970 survey of an additional 500 hospitals. An overall average utilization of 47.1 per cent was noted in 1970, as compared with 45.25 per cent in 1969. Hospitals of over 500 beds were somewhat better than the average, having 53 per cent utilization, while hospitals under 200 beds had 40 per cent utilization. This committee has now initiated a computerized operating room utilization study in 10 cooperating hospitals in an effort to provide objective information on the dynamics of operating room utilization. It is hoped that better utilization of operating room facilities and personnel can be achieved through a better understanding of these dynamics. Future studies of utilization should include a consideration of the optimal size of a comprehensive medical center.

Allied health personnel

Thus far the major planning emphasis on the part of government and others to solve the problems of health care delivery has been in the development of new categories of allied health personnel. Over the past several years, almost 2 billion dollars a year has been provided in Federal funds through a number of agencies to stimulate development of new health professions. Whether or not the development of this plethora of physicians' assistants can be of significant importance in the delivery of health care is a question that remains to be evaluated. While physicians' assistants may increase the productivity of physicians, there is considerable concern that these assistants may further fragment care, increase malpractice problems, and contribute little to reducing health care costs.

In recent years the A.S.A., through various committees and planning groups, has considered seriously the need for new categories of allied health personnel and their relationship to the anesthesiologist on the anesthesia care team. Guidelines for improved relationships between anesthesiologists and nurse anesthetists are being shaped by a joint liaison committee of the A.S.A. and the American Association of Nurse Anesthetists in continuing dialogue. In its recommendations on the anesthesia care team which were approved by the 1971 A.S.A. House of Delegates, the A.S.A. Committee on Manpower indicated that,

> . . . nurse anesthetists are already members of the Anesthesia Care Team and, in fact, are involved in the administration of a significant number of the anesthetics given each year in the United States. To improve the quality of anesthesia care, more anes-

> thesiologists and nurse anesthetists need function as an Anesthesia Care Team, since nurse anesthetists can provide better patient care when administering anesthesia under the direction of a physician who is trained in anesthesiology. Anesthesiologists should be directly involved in teaching nurse anesthetists in their training programs and refresher courses, and should collaborate with nurse anesthetists to determine standards of training, curricula, and certification for nurse anesthetists.[20]

Realizing that the future need for anesthesia care may necessitate the training of other levels of personnel and that nursing training may not be the ideal prerequisite for an anesthesia technologist, the A.S.A. Committee on Manpower has recommended that,

> Baccalaureate and Master programs to develop anesthesiologist's assistants (technologists in anesthesia) should be investigated at the present time on a limited and experimental basis, and that such training programs should be based upon demonstrable need and advantages of this new type of personnel and include evaluation of the available pool of trainees, the level and efficiency of training (time and cost of the program), the curriculum content and curriculum equivalency (to provide vertical and lateral mobility), and finally, the skills and effectiveness of the graduates of such programs.[20]

It is the joint opinion of the A.S.A. and the American Association of Nurse Anesthetists that individuals trained in a two-year program as specialist technicians and not versed in total patient care should not administer anesthesia even under the direction of a qualified physician, since this would represent an unacceptable lowering of the quality of anesthesia care.

The professional and economic relationship of anesthesiologists and allied health personnel involved in anesthesia care need to be assessed further. Common policies need to be established with other specialties in medicine. Relationships that strengthen the delivery of quality care rather than stress professionalism are paramount. New categories of allied health personnel cannot provide quality anesthesia care in areas where anesthesiologists are not available for supervision.

Health care system—distribution of facilities and manpower

All of us are aware of the current challenges to medicine to cope with the increasing cost of health care delivery and to provide greater availability to health care, particularly in the rural and ghetto areas. As anesthesiologists, we are not often involved with entry systems into health care or in the delivery of primary care, but our skills do include emergency care. Thus we should profess not only a concern for the quality and distribution of emergency and resuscitation facilities, but also a deep concern with the development of a transportation system for medical emergencies which could expedite the transfer of acute care patients to comprehensive medical centers. The Military Assistance to Safety and Traffic program, as well as other experimental transportation programs, should be vigorously supported. The A.M.A. House of Delegates in November, 1971, finally adopted a strong position in this regard.[21]

The multiplicity of environmental situations we face, both rural and urban, requires a pluralistic approach to the delivery of health care. No single mode of delivery will suffice. As one examines our present concerns for better manpower distribution and utilization and for controlling costs of comprehensive care, it becomes evident that they are intertwined.

In rural areas the demands for comprehensive service cannot be met without consolidation or establishment of regional centers. In addition to primary care facilities, these centers might include space and personnel for emergency care, housing of a transportation team which would utilize both ground vehicles and helicopters, and a surgicenter for minor procedures on ambulatory patients. To insure an improved level of patient care, facilities for surgical and obstetric care should be projected for hospitals with no fewer than 100 beds so that a full spectrum of laboratory, blood bank, roentgenographic, and specialist services are available. Perhaps the evolution of such a care system would attract more physicians to practice in rural areas, since the isolation of such practitioners could be obviated. The skillful use of physicians' assistants combined with communication technology as conceived by the Medex program could provide immediate availability of sound medical advice in all small communities.[22]

Guidelines for classifying emergency care facilities have recently been proposed by the Commission on Emergency Medical Services.[23] Hospital facilities need to be categorized from the point of view of emergency and acute care services, and the spectrum of all available services should be placed on a regional planning basis. This approach will provide not only more efficient utilization of manpower but also can direct our attention toward better standards of patient care.

In urban areas, a reassessment of available facilities appears essential. Since anesthesia services are derivative in nature, anesthesiologists must be concerned with how comprehensive care facilities are distributed. The existing comprehensive medical planning councils have thus far failed to come to grips with this primary problem. In addition, failure to provide adequate facilities for long-term care has adversely effected utilization in comprehensive medical centers. While public demand and vested interests inhibit rational planning, a significant factor in this ineffectiveness lies in the administrative structure of the regional councils.

The duplication of hospital facilities, which has been engendered by demands usually based on patient and physician convenience, must be weighed against the need to upgrade patient care, to conserve medical manpower, and to control health costs. American medicine must face the necessity of studying the distribution, utilization, and training of medical specialists. The dynamics of our manpower requirements are such that goals for quality care at reasonable cost cannot be reached unless these parameters are defined. The questions raised by Bunker[24] regarding the proportionate number of surgical procedures performed in the United States as compared with Great Britain emphasizes this dimension. If the availability of resident training positions were equated in some way by the needs for clinical manpower in particular specialties, we would be moving more decisively toward solutions in manpower distribution and utilization. The A.M.A. Council on Medical Education has finally been charged with the task of fact finding in this area.[25]

The manpower studies conducted by the American Society of Anesthesiologists,[20] the American Academy of Orthopedic Surgeons,[26] the American Urological Association,[27] the American College of Obstetricians and Gynecologists,[28] and by other specialty organizations substantiate the fact that most specialists are located in urban centers. To provide definitive care, these physicians require the complex instrumentation available in the comprehensive medical centers. More emphasis should be placed on mechanisms to bring the patient to the comprehensive medical center rather than on providing a full spectrum of medical services in the small community hospital.

The 1970 Survey of Obstetric Practice and Associated Services in Hospitals in the United States, conducted by the American College of Obstetricians and Gynecologists,[28] supports the contention that comprehensive medical centers can provide better support for quality patient care in obstetrics. In that survey only 24 per cent of hospitals had an obstetric service of 1,000 or more births per year (64 per cent of the total births). The smaller the obstetric service, the less likely an obstetric specialist would attend the birth or that an anesthesiologist would administer the anesthetic. Newborn care, emergency blood, laboratory and x-ray facilities, and personnel also became less available as obstetric services diminished in size.

A Yale University survey of Connecticut hospitals pointed out that large obstetric services—those with 2,000 or more deliveries a year —were able to operate without losing money, while smaller ones lost money at rates which increased as size diminished. By limiting the number of hospitals offering obstetric services, millions of dollars in hospital capital and operating costs could be saved.

In my own community, 12 hospitals provide obstetric care. Most of these institutions have less than 1,000 deliveries per year, yet "around-the-clock" nursery, labor and delivery, and anesthesia personnel are required. At the present time, obstetric coverage by anesthesiologists is extremely limited in all 12 hospitals. In the course of preliminary discussions on consolidation of services, anesthesiologist coverage for all deliveries was offered provided obstetric services could be restricted to three or four institutions. This suggestion, which might have upgraded obstetric care for all of western New York State, was discouraged.

Recently the A.M.A. Council on Maternal and Child Care advocated the establishment of regional hospital-based newborn intensive care units for high-risk infants. Sprague A. Gardener, M.D., committee chairman and president-elect of the American College of Obstetricians and Gynecologists, estimated in the report of this committee to the 1971 A.M.A. House of Delegates that the nation's infant mortality rate could be reduced almost 50 per cent if consolidated units were available.[29]

Similarly, from the point of view of the anesthesiologists, such special services as open-heart surgery and hyperbaric chambers need to be consolidated. There are five institutions in the Niagara frontier with facilities for open-heart surgery. As indicated in a survey of 360 hospitals conducted by the Inter-Society Commission for Heart Disease Resources[30] in 1969, only 15 hospitals had over 200 such operations a year, while almost one half performed only 10 to 49 procedures. This commission concluded that this represented underutilization to a degree that raises serious questions about the value of such services.

I fully realize the danger of arbitrary determinations in planning for the distribution of facilities, but because of the potential advantages of improved quality of patient care and increased cost efficiency, we must come to grips with such a planning process. For specialties such as anesthesiology, concentration rather than diffusion of personnel could be a significant step in satisfying future manpower needs.

One cannot predict which recommendations I have presented to you will come to fruition. The A.M.A., through its Councils on Health Manpower and Medical Education; the medical specialty societies; the Health Services and Mental Health Administration and other divisions of the Department of Health, Education, and Welfare; and congressional committees are all proposing programs designed to improve the delivery of health care. Of utmost significance for anesthesiologists may be the study on surgical services for the United States, recently initiated by the American College of Surgeons and the American Surgical Association,[31] and the coordinated efforts of the A.S.A. committees in a study of anesthesia services in the

United States. Hopefully, the questions I have raised in these remarks will be effectively dealt with by our surgical confreres as well as our own associates in anesthesiology. Then we will be able to improve the quality of anesthesia care for all patients in the United States, not only in the operating room, but also in the emergency room, obstetric suite, and acute care units as well. This must be our obligation as well as our goal.

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Hodgkin's Disease*

Recent concepts in management

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In recent years a variety of new diagnostic technics have yielded fresh insight into the biology, natural history, response to treatment, and prognosis of Hodgkin's disease. The histopathologic classification of Lukes, Butler, and Hicks[1] has resulted in a better prediction of the prognosis in Hodgkin's disease as well as the relative rate and mode of its spread.[1,2] More precise clinical staging has been accomplished through a better understanding of the benefits and limitations of lymphangiography.[3,4] The introduction of staging laparotomy with splenectomy has added new dimensions to the management of Hodgkin's disease.[5-7] Finally, extended-field megavoltage radiotherapy and the use of chemotherapeutic agents in combinations have made possible the extension of aggressive, potentially curative therapy, even to the advanced form of this disease.[8-12]

Histopathology

A relationship between survival and histopathology, long appreciated, has been given more meaning by the new histopathologic classification of Lukes, Butler, and Hicks.[1] In this classification the prognosis is favorable if lesions containing predominant lymphocytic proliferation are found and unfavorable if there is lymphocytic depletion. The group with nodular sclerosis is outstanding for its high radiosensitivity. Nodular sclerosis is twice as common in females and usually involves cervical nodes and/or mediastinum with less-frequent involvement of liver and bone marrow. Nodular sclerosis also runs a relatively benign course even when found in the pulmonary parenchyma when compared with other histopathologic forms of Hodgkin's disease with pulmonary parenchymal involvement. Rappaport and Strum[13] have recently emphasized the ominous prognostic significance of vascular invasion, a pathologic feature which may indicate hematogenous dissemination. A high incidence of vascular invasion was noted in the lymphocyte depletion forms, whereas an absence of this feature was noted in disease with lymphocyte predominance.

The histopathologic classification is related directly not only to survival but also to the clinical stage and the presence or absence of symptoms. Whereas most cases of lymphocyte predominance initially present signs of Stage I or II disease with a lack of systemic symptoms, most cases of the lymphocyte depletion group are seen as Stages III or IV, usually with significant systemic symptoms.

Clinical staging

The relation between the clinical stage at the time of diagnosis and the prognosis of Hodgkin's disease was first stressed by Peters.[10] Clinical staging determines not only prognosis but also the current best modalities of therapy. Thus the accuracy of clinical staging appears paramount. The Rye classification of 1965 divided Hodgkin's disease into four stages: Stage I disease was limited to one anatomic region; Stage II disease was limited to disease above or below the diaphragm but still confined to lymph nodes; Stage III disease represented nodal involvement above and below the diaphragm with the spleen considered as part of the lymphatic system; and Stage IV dis-

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ease represented visceral involvement of organs such as bone marrow, pulmonary parenchyma, or liver. Stages were subdesignated A when there were no systemic symptoms such as fever, night sweats, and pruritus, and B when these symptoms were present.

Since the Rye conference, the concept of the radiosensitivity of extranodal Hodgkin's disease adjacent to nodal disease put forth by the Stanford and Freiburg groups and the introduction of laparotomy and splenectomy have necessitated a reconsideration of our staging concepts. The Freiburg and Stanford groups have suggested that extranodal Hodgkin's disease adjacent to nodal disease deserves special consideration and management. Involvement of nonlymphoid structures contiguous to involved lymphoid tissue, such as lung adjacent to hilar lymph nodes, bone adjacent to lymph nodes, and skin involvement extending from underlying lymph-node masses, does not necessarily indicate the poor prognosis heretofore associated with nonlymphoid organ involvement. Patients with localized extralymphatic disease respond as well to radiotherapy as do comparable patients of the same stage without extralymphatic spread.[14,15]

The increased information obtained regarding the extent of disease beneath the diaphragm by laparotomy with splenectomy and the realization of the radiosensitivity of extranodal disease contiguous to nodal disease have made it now necessary to reconsider the Rye classification and to introduce a modified scheme at the recent Ann Arbor Conference.[16] This conference recommended the simultaneous recording of a CS (clinical staging) and a more detailed PS (pathologic staging) in which classification is subscripted by symbols indicating the tissue sampled and the result of histopathologic examination. The abbreviations recommended are as follows:

N+ or N−	For other lymph node positive or negative for disease by biopsy
H+ or H−	For liver positive or negative for disease by liver biopsy
S+ or S−	For spleen positive or negative for disease following splenectomy
L+ or L−	For lung positive or negative for disease by biopsy
M+ or M−	For marrow positive or negative for disease by biopsy or smear
P+ or P−	For pleura involved or negative for disease by biopsy or cytologic examination
O+ or O−	For osseous involvement or negative for disease by biopsy
D+ or D−	For skin involvement or negative for disease by biopsy

Histopathologically a plus (+) is indicative of the presence of Hodgkin's disease and a minus (−) is indicative of an absence of Hodgkin's disease.

Since the CS is determined by history, physical examination, initial biopsy results, and blood tests, it is easily performed and reproducible from one institution to another. However, the PS can be obtained only after vigorous staging procedures, which restrict its application to relatively fewer treatment centers throughout the United States.

Clinical staging

Stage I: Involvement of a single lymph-node region (I) or of a single extralymphatic organ or site (I_E).

Stage II: Involvement of two or more lymph-node regions on the same side of the diaphragm (II) or localized involvement of extralymphatic organ or site and of one or more lymph-node regions on the same side of the diaphragm (II_E). An optional recommendation is that the number of node regions involved be indicated by a subscript, such as II_3.

Stage III: Involvement of lymph-node regions on both sides of the diaphragm (III), which may also be accompanied by localized involvement of extralymphatic organ site (III_E) or by involvement of the spleen (III_{SE}).

Stage IV: Diffuse or disseminated involvement of one or more extralymphatic organs or tissues with or without associated lymph-node enlargement. The reason for classifying the patient as Stage IV should be identified further by defining site by symbols.

The A and B subclassification regarding unexplained fevers and night sweats has been modified so that unexplained weight loss of more than 10 per cent of body weight for six months prior to admission places the patient in the B category, whereas pruritus alone no longer qualifies a patient for the B classification.

Staging classification examples

CS IA PS $I_{S-H-N-M-}$ Implies clinical Stage I without symptoms and pathologic Stage I, spleen with negative findings following splenectomy, and liver, additional lymph-node, and marrow biopsies with negative results.

CS IIA_3 PS $III_{S+N+H-M-}$ Implies clinical Stage IIA, three lymph-node regions involved, PS III with positive findings in the spleen and abdominal lymph nodes, and negative results on liver bone-marrow biopsies.

CS IIIB PS IV_{H+M+S+} Implies clinical Stage IIIB with pathologic Stage IV due to positive findings on liver, marrow, and spleen biopsies.

CS IVB_{LH} PS IV_{H+M-} Implies clinical Stage IVB with gross evidence of lung and liver involvement, and pathologic Stage IV due to positive results on liver biopsy; marrow biopsy revealed negative findings.

Lymphangiography

Lymphangiography has now made lymphadenopathy in the periaortic and deep iliac node chains more readily appreciable. In examining 300 lymphangiograms of patients with Hodgkin's disease seen at Memorial Hospital in New York City, Stephenson and Lee[4] found that 9 of 36 (25 per cent) of clinical Stage I patients had abnormal lymphangiograms; and that 26 of 58 (45 per cent) with clinical Stage IIA and 36 of 45 (80 per cent) with clinical Stage IIB had abnormal studies resulting in a reclassifying of these cases to Stage III.

Brickner, Boyer, and Perry,[17] reviewing 71 lymphangiograms of documented Hodgkin's disease, found only 3 of 50 Stage I and IIA (6 per cent) to be positive for Hodgkin's disease, but these cases were not confirmed by diagnostic laparotomies or subsequent follow-up data. The reliability of lymphangiography is somewhat limited (10 per cent error). Thus, Johnson and Cook[3] noted that among 35 patients with reportedly negative findings on lymphangiograms, 4 (11 per cent) subsequently developed para-aortic or iliac lymph-node involvement. Aisenberg *et al.*[18] have questioned the significance of a positive lymphangiogram in some cases which showed negative results on abdominal node biopsy specimens. Careful abdominal exploration in these patients failed to reveal evidence of Hodgkin's disease despite generalized lymphangiographic findings of moderate-sized filling defects or slightly enlarged and rounded nodes. The authors conclude that these lymphangiograms indicate an abnormality of the retroperitoneal nodes related to Hodgkin's disease but not necessarily a progressive malignant process. This situation may be analogous to the focal hepatic granulomas which, although found in Hodgkin's disease, are not evidence of malignant hepatic involvement. These patients with positive findings on lymphangiograms and negative results on biopsies are staged as if the lymphangiogram was an error, but treated nevertheless, to include the possibility of retroperitoneal lymphoma by irradiating the para-aortic nodes.

Thus, although lymphangiography enhances our clinical evaluation of disease beneath the diaphragm and is useful in planning radiation ports and follow-up of abdominal lymph nodes, it has limited value as a staging procedure, because in a significant number of cases it may fail to reveal significant abdominal disease or falsely suggest that abdominal disease is present.

Staging laparotomy

Accurate staging is essential for proper planning of treatment of Hodgkin's disease, since it is obvious that clinically occult disease left untreated will often extend in a more disseminated form. A laparotomy performed to stage patients more accurately should include the following procedures: (1) splenectomy and removal of hilar splenic lymph nodes; (2) multiple liver biopsies; (3) multiple lymph-node excision biopsies at designated sites along para-aortic and iliac chains, mesentery, and porta hepatis, including any nodes that are suspicious by vena cavography, lymphangiography, inspection, or palpation; (4) the placement of metallic clips at sites of lymph-node biopsy and along the lateral margins of obvious disease; and (5) bilateral oophoropexy when indicated.

Data analyzed from various centers where exploratory laparotomies have been performed have shown that the greatest value of the surgical procedure is the provision of accurate assessment of involvement of the spleen.[5-7,18-20] About one third of spleens of normal size are involved with Hodgkin's disease, whereas half of clinically enlarged spleens are found to be without Hodgkin's disease. Spleens weighing over 350 Gm. are involved in almost all cases.[19] It has also been shown that the spleen may be the only area of infradiaphragmatic involvement.[18] Unsuspected involvement of the liver by Hodgkin's disease is identified only rarely at laparotomy.[18-20] Liver biopsy revealed Hodgkin's disease in 4 of 120 cases not suspected of liver involvement among 151 patients undergoing laparotomy for staging. On the other hand, only 3 of 31 patients with abnormal clinical findings suggesting hepatic involvement were found to show Hodgkin's disease involving the liver.[19] An interesting observation by Rosenberg[21] is that liver involvement has not been observed without the concomitant involvement of the spleen. Another important observation has been that patients who develop extension to lymph nodes in atypical disease sites, such as porta hepatis or mesentery, are those who initially usually have grossly positive lymphangiograms in the upper lumbar region.[2]

The finding of hepatic involvement in patients with Hodgkin's disease is of extreme importance, since this excludes these patients from radiotherapeutic programs. This finding is however often difficult to establish. Liver scans and liver-function tests are unreliable. In fact, it has recently been suggested that abnormalities in liver-function tests may be indicators of a nonspecific hepatic reaction to the presence of Hodgkin's disease elsewhere in the patient, as is the finding of focal hepatic granulomas. Percutaneous liver biopsy is also inaccurate, since it frequently fails to reveal Hodgkin's disease when present. Indeed, the frequency of positive biopsies for Hodgkin's disease was approximately doubled by performing laparotomy or peritoneoscopy after a percutaneous biopsy with negative results. Histologically, the nonspecific inflammatory infiltrates may be found in the portal tracts, but only atypical mononuclear reticulum-cell infiltrates correlate with the presence of Reed-Sternberg cells and suggest hepatic involvement.[22]

The decision to perform a diagnostic laparotomy and splenectomy is dependent on the clinician's therapeutic approach. If he believes in total nodal radiotherapy in the absence of identifiable abdominal disease, laparotomy rarely contributes to the therapeutic management, since the spleen can be effectively irradiated without complications provided it is not grossly enlarged. In addition, only rarely will laparotomy disclose unsuspected disease in the liver or atypically located lymph nodes outside the standard treatment fields in the absence of clinical evidence of upper abdominal disease (lumbar nodes or spleen).[23]

If, however, the approach is to administer radiotherapy only to known sites of disease or to limit radiotherapy only to those pateints with Stages I or II disease, with treatment above the diaphragm only, exploratory laparotomy and splenectomy are indispensable for reliable true staging and objective therapeutic decisions. Patients with radiographically demonstrable disease in the upper lumbar lymph nodes or with splenomegaly run a higher risk of unsuspected liver involvement and disease in atypically located lymph nodes outside the standard treatment field and should therefore have a laparotomy with splenectomy.

Finally, the improved accuracy in determining areas of involvement in patients with Hodgkin's disease prior to treatment has provided us with insight into the pattern of disease. There appears to be a correlation between the presence of disease in the left side of the neck and abdominal involvement, whereas involvement of the right side of the neck correlates with mediastinal involvement. This pattern of disease suggests that the abdomen is linked to the left side of the neck, probably via the thoracic duct which could bypass the mediastinum.[24]

Therapy of Hodgkin's disease

Radiotherapy. The fact that radiotherapy can achieve cure in a substantial number of cases of Hodgkin's disease was first emphasized by Easson and Russell in 1963.[25] The recurrence rate is inversely proportional to dosage. The deliverance of a 4,000-rad or greater tumor dose prevents recurrence in more than 95 per cent of cases. Johnson, Glover, and Marshall[26] have shown that the spread of this dosage over a six- to eight-week period is not only as effective but also decreases the acute-delayed and normal-tissue reactions to radiotherapy.

The term "local radiotherapy" refers to treatment to the area grossly involved by tumor with a variable margin of normal tissue; "extended-field" treatment for involvement above the diaphragm usually refers to the T-mantle technic in which neck axilla and mediastinum to the level of the diaphragm are irradiated in continuity; extended-field treatment for involvement below the diaphragm refers to the inverted Y pattern in which splenic pedicle, celiac, para-aortic, iliac, inguinal, and femoral nodes are irradiated in continuity; total nodal irradiation refers to a combination of the mantle and Y technics. The current treatment for Stages IA, IIA, IB, IIB, and IIIA should depend on radiotherapy with curative intent (Table I).

TABLE I. Five-year survival with intensive wide-field megavoltage radiotherapy

Stage	Survival (Per Cent)
I and II	85 to 90
IIIA	65 to 70
IIIB	40 to 50

The need for prophylactic total nodal irradiation for Stages IA and IIA remains questioned because Kaplan[9] and Peters[10] failed to show increased survival in Stages IA and IIA with prophylactic irradiation. However, Johnson, Glover, and Marshall[26] recently achieved a 98 per cent five-year survival in 61 patients with Stages IA and IIA treated with total nodal radiotherapy. In addition, these authors have shown that whereas recurrent disease developed in a third of 34 patients without prophylactic therapy, recurrent disease developed in none of 33 patients receiving prophylactic therapy.[26] Thus, while further studies are in progress to confirm the best therapy for Stages IA and IIA disease, the most recent studies appear to favor strongly total nodal radiotherapy down to the symphysis pubis.

Total nodal radiotherapy with curative intent would appear to be the treatment of choice for Stages IB, IIB, and IIIA. A 70 per cent five-year relapse-free reported survival has been most encouraging.[26] However, patients with nodular sclerosis have survived as well after extended field radiotherapy as after total nodal radiotherapy. For this reason Stages I and II patients with this histologic classification currently are frequently treated only with extended-field therapy.[19] The excellent radiotherapeutic response of extranodal disease contiguous to involved lymph nodes has been discussed.[14]

Patients with Stage IIIB Hodgkin's disease represent a major therapeutic challenge, since only 40 per cent survive five years despite total nodal radiotherapy.[19] Survival in these patients appears to be somewhat longer with MOPP (nitrogen mustard, vincristine (Oncovin), procarbazine, and prednisone) chemotherapy.[27] However, prospective studies, currently under way, should determine whether radiotherapy and chemotherapy in tandem can provide better survival than either modality alone.[27]

Chemotherapy

Stage IIIB and Stage IV Hodgkin's disease is usually responsive to various forms of chemotherapy. Chemotherapy is the preferred treatment provided it is accompanied by spot radiotherapy to vital organs when under pressure from contigu-

TABLE II. Results of MOPP chemotherapy in 43 patients

Results	Patient Statistics
Complete remissions	35 (81)*
Median duration of remission	36 months
Remaining continuously free of disease at five years	15 of 35 (43)
Remaining alive at five years	27 of 35 (77)

* Figures in parentheses indicate per cent.

TABLE III. Recent combination chemotherapy protocols for Hodgkin's disease

Group and Initial Regimen	Maintenance
National Cancer Institute	
MOPP (6 2-week cycles repeated monthly):	(a) No treatment (b) BCNU (c) MOPP
Nitrogen mustard, 6 mg. per M^2,* days 1 and 8 intravenously	
Vincristine, 1.4 mg. per M^2, days 1 and 8 intravenously	
Procarbazine, 100 mg. per M^2 per day orally × 14 days, cycles 1 and 4 only	
Prednisone, 40 mg. per M^2 per day orally × 14 days, cycles 1 and 4 only	
Acute Leukemia Group B	
(a) BCNU, 80 mg. per M^2 intravenously, day 1	(a) Chlorambucil, 6 mg. per M^2 per day
Prednisone, 40 mg. per M^2 per day × 14	(b) Chlorambucil as in (a) + monthly "reinduction courses"
Vincristine, 1.4 mg. per M^2 per week × 2	
(b) Procarbazine, 100 mg. per M^2 per day × 14 days orally	(c) Vinblastine, 6 mg. per M^2 per week
Vincristine + prednisone as in (a)	
(c) BCNU, procarbazine, vincristine, prednisone as in (a) and (b)	
(d) MOPP	
Southwest Cancer Chemotherapy Cooperative Group	
MOPP (6 courses)	(a) Actinomycin D 0.6 mg. per M^2 per day × 3 intravenously every 2 months × 9 (b) Methotrexate, 12 mg. per M^2 per day × 5 intravenously every 2 months × 9 (c) Vinblastine, 10 mg. per M^2 intravenously every 2 weeks × 39

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* Square meter of body surface.

ous nodes, such as spinal cord, and superior vena cava. The fact that relapses after complete responses to combination chemotherapy often recur at sites of the largest involvement of initial disease suggests that local radiotherapy to these sites given in addition to combination chemotherapy will improve overall clinical control.[28]

Numerous individual agents have been shown to exhibit antilymphoma activity: nitrogen mustard, chlorambucil, cyclophosphamide (Cytoxan), vinblastine (Velban), vincristine, procarbazine, BCNU (1,3 bis (2-chlorethyl)-1-nitrosourea), CCNU (urea, 1-(2-chlorethyl)-3-cyclohexyl- 1-nitroso), bleomycin, and corticosteroids. When used singly, these agents can be expected to show at best a 60 per cent response rate, but only 10 to 15 per cent of these are complete responses of approximately thirty weeks' duration even when the single-drug chemotherapy is maintained. Recent studies have been concerned with the best ways to employ these agents either in simultaneous combination or in cycles of different sequence to obtain maximal survival and, if possible, to eradicate disease totally. In 1965 Lacher and Durant,[29] employing the alkylating agent chlorambucil, together with the periwinkle derivative vinblastine, reported a 40 per cent complete response rate. The four-drug combination MOPP resulted in a complete remission rate approaching 81 per cent in DeVita's[29] series of 43 patients. A surprising finding was the fact that the median duration of unmaintained remission approached thirty-six months. Most noteworthy was the observation that 77 per cent of the responders were alive after five years, and 43 per cent were continuously free of disease during the five years (Table II).[12] Cyclophosphamide in equivalent doses, instead of nitrogen mustard, in the COPP combination, produced similar results in 12 of DeVita's 43 patients. An interesting feature of this study was that 70 per cent of the patients were anergic prior to therapy, but 66 per cent of these recovered from their impaired delayed hypersensitivity after the chemotherapy. Currently, the National Institutes of Health has established a randomized collaborative study to evaluate the maintenance therapy after a MOPP induction remission. No maintenance is being compared to maintenance with MOPP or BCNU alone. Although data are yet insufficient, there appears thus far to be no clear advantage in the two groups treated with maintenance chemotherapy as compared with control patients.[30] Another group has, however, demonstrated an advantage for MOPP maintenance every two months for an additional nine cycles of treatment.[28]

The Southwest Cancer Chemotherapy Study Group has achieved a 63 per cent complete remission rate after six courses of MOPP. After complete remission these cases have been randomized in a maintenance therapy study with either actinomycin D, methotrexate, or vinblastine.[31] The sequential use of five agents (vincristine, vinblastine, procarbazine, prednisone, and chlorambucil) was found to be inferior to the simultaneous MOPP chemotherapy in a study by the Acute Leukemia Group B.[32] The substitution of triethyleneiophosphoramide (Thio-tepa) for nitrogen mustard in the MOPP protocol (TOPP) by the Memorial Hospital group also has resulted in inferior results compared with the standard MOPP regimen.[33] Currently, Acute Leukemia Group B is comparing several regimens with MOPP (Table III). Another group has included the new drugs bleomycin and adriamycin in a combination with nitrogen mustard, vincristine, and prednisone.[34]

In a British study the substitution of vinblastine instead of vincristine in the MOPP regimen did not reduce the high complete response rate from an 86 per cent level in patients with advanced disease who had received no prior therapy.[35] In this study an additional group of patients who had previously received radiotherapy in the past also showed a complete remission of 79 per cent compared with only a 36 per cent remission rate in patients treated previously with chemotherapy. A study from the National Cancer Institute confirmed the British findings that patients who had received prior chemotherapy responded relatively poorly, but patients who had received only radiotherapy responded almost as well with subsequent chemotherapy as those who had previously been untreated.[36] Thus it is obvious that even after treatment with extensive radiotherapy, much benefit results from the use of drug combinations.

The current concept that some patients with far-advanced Hodgkin's disease are possibly being "cured" with combination chemotherapy is based on findings that (1) the 43 per cent of Stage III and IV patients treated with MOPP or COPP who achieve a complete response after six initial cycles have remained continuously free of disease for five years without further therapy, (2) that the relapse rate is highest in the first two years followed by a sharp decrease thereafter, and (3) relapses have not been observed in patients who have remained free of disease in excess of forty-two months following MOPP.[30] The continuation of chemotherapy after the initial six cycles and the place of radiotherapy are questions now under investigation.

Two new agents with activity in Hodgkin's disease, a unique Japanese antibiotic bleomycin and the liposoluble aqueous-insoluble nitrosourea compound, BCNU, are currently being incorporated into combination chemotherapy programs. Lacking cross resistance to other conventional agents, these can be used singly in the far-advanced terminal resistant cases to achieve short-term meaningful remission with additional survival of perhaps four to seven months's duration.[37,38] A recent report by Selawry and Hansen[39] appears to show that CCNU, an agent similar to BCNU but administered orally, may be superior to BCNU.

Patients with Stage IB and IIB disease, usually treated only with radiotherapy, now appear to be logical candidates for prospective evaluation of long-term adjuvant chemotherapy as initiated in a study at Stanford University.[40] In these apparently early cases there are some individuals with vascular invasion on initial lymph-node biopsy or with the histologic characteristic of mixed cellularity or lymphocyte depletion who have a high incidence of extranodal dissemination at the time of diagnosis. Such patients might benefit from sustained maintenance adjuvant chemotherapy, but further collaborative studies will be necessary to provide reliable data to reach any therapeutic conclusions.

Summary

Aggressive diagnostic technics have provided a more accurate clinical staging of patients with Hodgkin's disease leading to a more precise approach to optimum therapeutic regimens. The histopathologic classification of Lukes, Butler, and Hicks[1] has allowed a better prediction of prognosis in these afflicted individuals. Megavoltage radiotherapy is now able to achieve cures in the majority of patients with Stages I and II and in a substantial number of IIIA.

Combination chemotherapy has yielded impressive disease-free five-year survival rates approaching 40 per cent. A group of patients remain who appear to have disease limited to the nodes, but who have a predilection for extranodal dissemination. Earlier use of chemotherapy in addition to radiotherapy may afford these patients in the future the optimistic prognosis now confirmed for patients with nodal Hodgkin's disease. More time is needed to assess the possibility that some Stage IV patients treated with combination chemotherapy have had their disease eradicated and are apparently cured after five years of a disease-free state.

A greater understanding of the biology and immunology of tumors, the identification of new and active drugs, and further refinements in their optimum employment or combination with radiotherapy are future advances which may cure patients with even far-advanced Hodgkin's disease.

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Case Reports

Congenital Coronary Artery to Left Ventricle Fistula with Angina Pectoris

Coronary steal syndrome?

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With the advent of selective coronary arteriography, congenital anomalies of the coronary arterial system have been reported with increased frequency.[1-8] However, congenital coronary artery fistula is a rare anomaly. Of 6,000 selective coronary arteriograms, Effler *et al.*[4] found 15 patients with congenital coronary artery fistulas, or an incidence of 0.25 per cent. To our knowledge, 161 cases have been reported to date.[1] By far the most commonly occurring congenital fistula is between the coronary arterial system and the right side of the heart (149 patients). Only 12 cases in whom the fistulas entered the left side of the heart have been encountered.[1] Of the latter, only 5 patients have been reported to have a fistulous tract between the coronary arterial system and the left ventricular chamber.[1,9-11] Of these cases, 2 occurred in infants and were associated with aortic atresia; both patients died within thirty-eight hours after birth.[10,11] The remaining 3 cases occurred in adults. In 1, this was a coincidental finding at autopsy.[9] The other 2 were diagnosed by selective coronary arteriography.[1] In 4 cases the fistula originated from the left coronary artery.[9-12] In 1 case it originated from the right coronary artery. All of the reported cases involved a diastolic murmur. A continuous "machinery-like" murmur, sometimes accompanied by a thrill, was not uncommon when the shunt was to the right side of the heart. No murmur was heard in 1 case, and at necropsy the fistula to the right side of the heart was found to be occluded by a thrombus.[13]

The patient discussed herein, is the sixth such case to be reported. This patient also is of interest because she presented symptoms of "atypical" angina—electrocardiographic abnormalities compatible with anterior-wall ischemia, and/or subendocardial infarction and possible old posterior-wall infarction. This was seen, with anatomically patent coronary arteries, at coronary arteriography.

The various pathophysiologic mechanisms of this patient's myocardial hypoxia and the possibility that this represents a "coronary steal syndrome" will be discussed.

Case report

A fifty-six-year-old white female had been first admitted to the Northern Westchester Hospital at Mt. Kisco, New York, in August, 1966, because of severe prolonged retrosternal pains. She had started complaining of "chest pains" in 1962 at age forty-nine, when an abnormal electrocardiogram result was recorded. The chest pains were not clearly related to exercise, did not radiate, and varied in duration from a few minutes to three hours. Since 1962, these episodes had recurred, with increasing frequency and duration, accompanied by waxing and waning T-wave inversions in leads 1, 2, aVl, and V_2 to V_6. A Q3 was noted. Sublingual nitroglycerin did not clearly relieve the symptoms.

Diabetes mellitus and hypertension were discovered in 1964. Consistently normal or minimally elevated blood sugars were obtained after oral antidiabetic therapy was begun.

Total hysterectomy had been performed in 1953, at age forty. Family history revealed that her father and several paternal relatives suffered from diabetes.

On physical examination, she appeared to be a moderately obese white female, in no acute distress. Pulse rate was 80 per minute and regular, blood pressure was 180/100 mm. Hg. The heart was not enlarged; no murmurs or gallops were

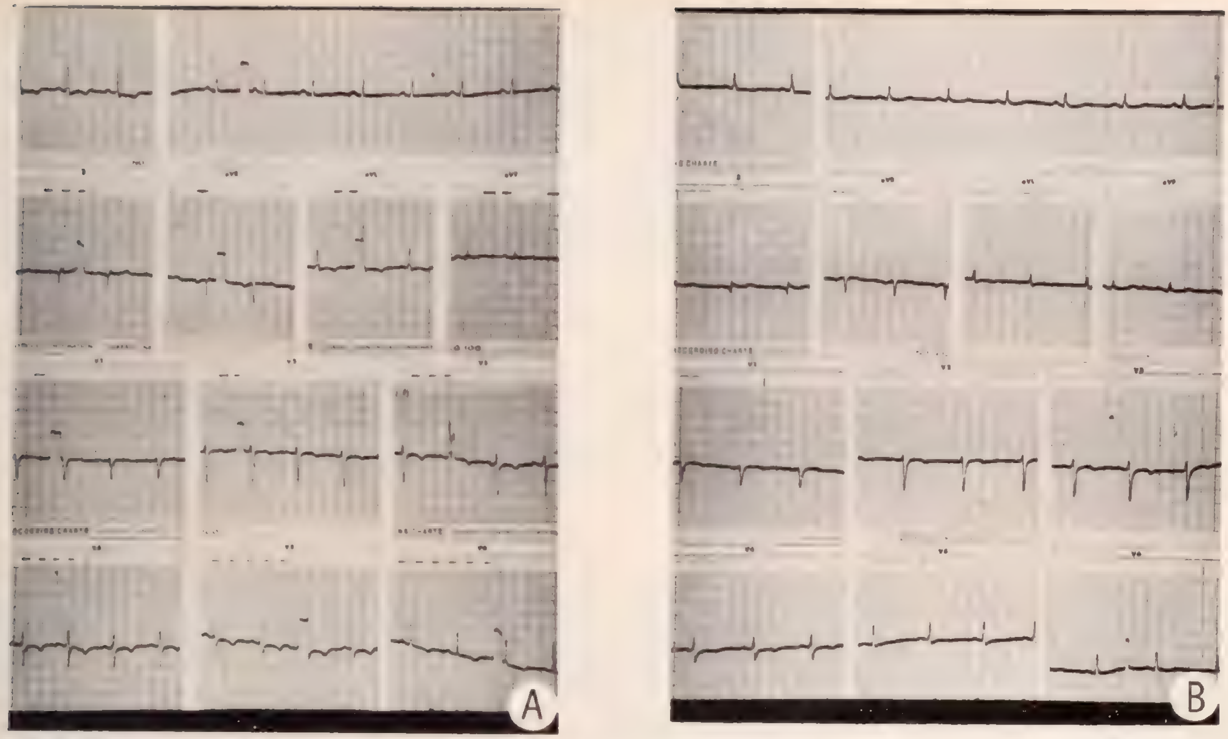

FIGURE 1. Representative electrocardiograms. (A) During an episode of anginal pains. (B) During an asymptomatic period.

heard. The fundi were normal, and the peripheral arteries were equal and full. No abnormality was observed on physical examination. The heart was of normal size roentgenographically. The fasting blood sugar fluctuated between 120 to 150 mg. per 100 ml.; cholesterol was 274 mg. per 100 ml., complete blood count and analyses of urine, serum electrolytes, and blood urea nitrogen were all within normal limits. Serial electrocardiograms demonstrated progressive T-wave inversions in leads 1, aVl, and V_2 to V_6, with regression of these changes toward the tenth hospital day. Serial enzyme determinations remained within normal limits.

She remained free of symptoms until May, 1967, when her next hospital admission occurred, again because of severe, prolonged intractable chest pains. The electrocardiogram pattern was similar to the one described during her first hospitalization; the serum enzymes remained within normal limits as did all other laboratory parameters tested. Her carbohydrate metabolism was under control on chlorpropamide and phenformin, and her blood pressure was 140/80 mm. Hg.

The course of her illness after discharge followed the same peculiar pattern with occasional chest pains, varying in frequency, intensity, and duration, occurring mostly at rest, and not responding to nitroglycerin. The electrocardiograms continued to show the described T-wave abnormalities during the chest-pain episodes but never returned to normality during the asymptomatic periods (Fig. 1).

She was asymptomatic until September, 1967, when recurrent attacks of "atypical" anginal pains set in again.

In December, 1967, the patient underwent catheterization of the left side of the heart, selective coronary arteriography, and selective left ventriculography. The coronary arteries were normal in origin and distribution with no obstructive lesions in any of the visible branches. An abnormal communication between the diagonal branch of the left anterior descending coronary artery and the left ventricular cavity was demonstrated (Figs. 2 and 3). Multiple small radicles originating from the diagonal branch of the left anterior descending coronary artery were seen plunging into the left ventricular myocardium. These areas were filling during ventricular diastole, while during systole, they emptied their contents into the left ventricular chamber. The magnitude of the shunt appeared to be small.

The patient again remained asymptomatic and normotensive until January, 1969, when for the third time she was admitted to the hospital with the same complaint of intractable chest pain. The electrocardiograms and enzyme determination results followed the same pattern as in her previous hospitalizations. She was discharged five days later, asymptomatic and in good general condition.

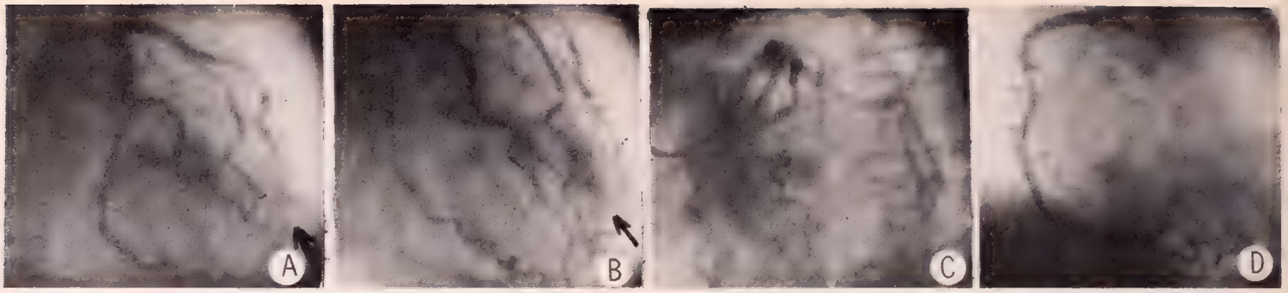

FIGURE 2. Angiographic findings. (A) and (B) Left coronary arteriograms, right anterior oblique projection, with cardiac apex to right lower quadrant, base to left portion of frame. (A) Major portion left coronary artery. (B) Distal segments in focus. Arrow indicates left ventricular myocardial surface (distal anterior wall) in (A) and (B) and demonstrates contrast media shadow during ventricular systole in (B). (C) Left coronary artery, left anterior oblique projection with anterior descending coursing to the left, circumflex to the right, and diagonal branch between the two. Near lower midportion are distal radicles of diagonal branch of anterior descending coronary artery. This represents the area of fistula formation. (D) Right coronary artery, left anterior oblique projection. No significant obstructive change evident.

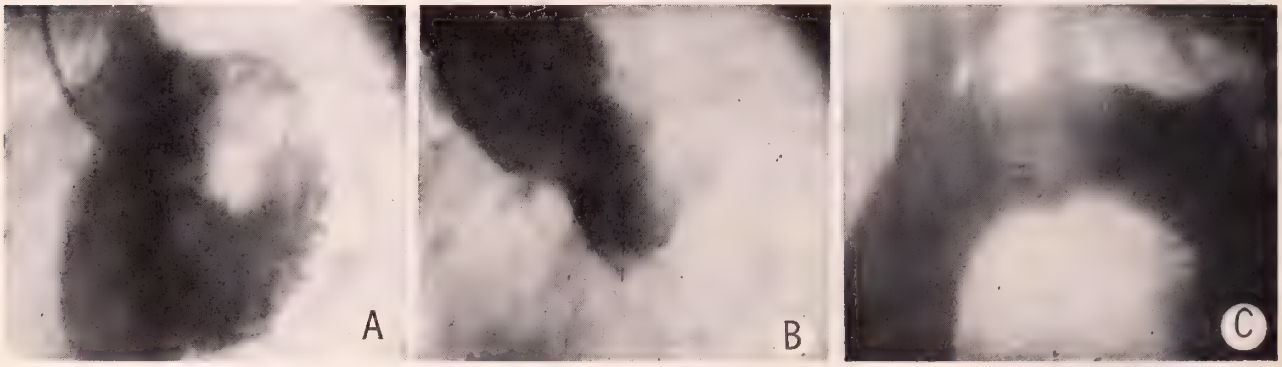

FIGURE 3. Ventriculographic findings. Left ventricle, left anterior oblique projection. (A) During ventricular diastole. (B) During ventricular systole. During motion study, chamber demonstrates normal size, shape, and contractility. Interventricular septum intact. During motion study mitral and aortic valves demonstrate free mobility with no evidence of mitral regurgitation. (C) Later in injection cycle, aortic arch system clearly visualized, demonstrating no aneurysm, dissection, obstruction to major branches arising from origin, or aorta-pulmonary artery communication. Not shown, no early recirculation of contrast media to right side of central circulation.

No consistent pattern concerning the fasting blood sugar, cholesterol, hematocrit values, or change in pulse pressure during the symptomatic episodes was noted.

Comment

Various classifications of the congenital coronary artery fistulas have been offered. They have recently been summarized by Schechter.[12] Effler's[4] anatomic classification divides them into two groups: group A includes those involving abnormal origin of a coronary artery, and group B includes those with a normal origin but with abnormal drainage to the right side of the heart. No mention is made in this classification of abnormal drainage to the left side of the heart, attesting to the rarity of this condition. Acquired posttraumatic coronary vascular fistulas have also been reported.[14,15]

The patient presented here has an unquestionable abnormal communication between the coronary arterial system and the left ventricular cavity. The flow to the left ventricle occurs during diastole, confirming Dedichen's prediction.[3] The small shunt, at rest, probably accounts for the absence of a murmur. The electrocardiographic pattern associated with the retrosternal pains is puzzling. In view of the consistent occurrence of an "ischemic" electrocardiographic pattern only in association with the retrosternal pain, it is safe to assume that it signifies a hypoxemic state of the myocardium.

Myocardial hypoxemia with patent coronary arteries, as ascertained by selective coronary arteriography, has been previously reported.[16-21] Likoff, Segal, and Kasparian[21] have reported on a group of premenopausal women with angina, abnormal electrocardiographic findings, and normal results shown on coronary arteriograms. They have postulated two possible mechanisms: (1) oxygen diffusion impairment in the myocardial microcirculation, or (2) inappropriate oxygen utilization by the myocardial cell.

Neill, Kassebaum, and Judkins[16] have studied a premenopausal woman, similar to those reported by Likoff, Segal, and Kasparian's[21] group, in whom they very elegantly demonstrated the presence of myocardial hypoxia by lactate-pyruvate and oxygen consumption assessments in the coronary circulation. They have postulated inadequate size or distribution of histologically normal coronary arteries, or failure of normal coronary vasodilatation in response to increased metabolic needs of the myocardium.

We believe that our patient cannot be incorporated in this category because she is postmenopausal.

Myocardial hypoxemia in the presence of normal coronary arteries can also occur in the presence of myocardial hypertrophy secondary to aortic stenosis.[17] No evidence of aortic valvular disease was present in this patient. No gradient across the aortic valve at the time of left heart catheterization was demonstrated.

An interesting finding in premenopausal women with myocardial ischemia and necrosis and normal coronary arteriograms was reported by Eliot and Bratt[18] and Eliot and Mizukami.[20] They demonstrated an abnormal hemoglobin-oxygen affinity apparently related to smoking. Although no hemoglobin-oxygen disassociation studies were done in the present case, the fact that she was postmenopausal and a nonsmoker makes this possibility less likely.

Obstructive disease of coronary arteries too small to be visualized by arteriography, of course, cannot be ruled out. However, "small-vessel disease" involving the coronary circulation is usually associated with well-recognized clinical syndromes such as systemic lupus erythematosus, hypersensitivity angiitis, and so on, none of which were present in this patient.[19]

Angina pectoris and an ischemic electrocardiographic pattern is a rare occurrence in congenital coronary artery fistulas, and was reported in only 5 cases.[3,6-8,22] In 1 case, angina with normal electrocardiographic findings was reported.[5] In 2 cases the patients had sustained myocardial infarction but had obstructive disease of their coronary arteries demonstrated by coronary arteriography.[4] In all these patients the fistulous tract drained into the right side of the heart. Neufeld *et al.*[5], first postulated the presence of a "coronary steal syndrome" as the pathogenesis of angina and electrocardiographic abnormalities in these patients. They suggested that a "run-off" to a route of lesser resistance (right side of the heart) of the coronary blood via the fistulous canal was a plausible mechanism for the myocardial ischemia. Our patient certainly has a "run-off" from the left anterior descending coronary artery to the left ventricle, where a very significant gradient exists in diastole. The shunt, as visualized during the study, is small and the patient did not have angina or electrocardiographic changes while the procedure was performed. It is conceivable that under circumstances which are not clear and not necessarily related to physical exertion, a larger amount of coronary arterial blood is diverted from its normal pathway, via the fistulous tracts, consequently depriving a portion of the myocardium of its blood supply. It is perhaps not coincidental that the electrocardiogram abnormalities indicate ischemia of the lateral left ventricular wall, which is in part supplied by the diagonal branch of the left anterior descending coronary artery. We are suggesting that indeed a "coronary steal" is likely and accounts for the myocardial hypoxemia occurring in this patient.

Corrective surgery, with ligation of the fistula, is advocated by some, even in asymptomatic patients, to prevent such complications as subacute bacterial endocarditis, congestive heart failure, and ruptured aneurysmal fistula.[3,4,23] In the present case, we feel that the congenital abnormality is too small to be detected at surgery and safely corrected. This option however, will be kept open, in case the future clinical course will warrant such consideration.

Summary

A case of a fifty-six-year-old postmenopausal diabetic woman with "atypical" angina is presented. Electrocardiographic abnormalities suggestive of lateral wall ischemia consistently occurred during episodes of chest pain, while serial enzyme determinations remained normal. Selective coronary arteriography disclosed patent coronary arteries. A small coronary artery fistula connecting the diagonal branch of the left anterior descending coronary artery and the left ventricle was demonstrated.

The various pathophysiologic mechanisms of myocardial hypoxia in the presence of anatomically patent coronary arteries, as assessed by coronary arteriography, are discussed. A brief review of congenital coronary artery fistulas is presented.

It is suggested that in this case the mechanism of myocardial hypoxia is a "coronary steal." The "run-off" to the left ventricle, via the fistulous tract may become important enough to divert significant amounts of coronary arterial blood from the myocardium and induce hypoxemia as expressed by the precordial pains and the electrocardiographic "ischemic" changes.

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Nonsurgical Aspects of Surgery of Hand

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Publications and presentations on hand surgery properly stress the technical aspects, but how nonsurgical, particularly sociologic, factors limit the results of our surgery is often unrecognized or unacknowledged. The Bronx-Lebanon Hospital Center serves a community whose economic status produces sociologic difficulties and problems which are often the most important determinants of the results of our surgery of the hand.

All hand surgery patients present certain inherent characteristics which influence the end result. The agent producing the original injury, amount of tissue damage, patient's age, diathesis for fibrosis, psychologic motivation, sociologic milieu, and whether or not the injury is compensable under law are all factors which often outweigh the technical surgical approach and the skill of the surgeon. The importance of these nonsurgical factors is difficult to impress on a resident who just "wants to do a tendon graft." It is hard to get him to understand that the hand surgeon must involve himself, to a greater extent than in other types of surgery, in engaging the patient's cooperation in follow-up, anticipating the slow often discouraging progress, and understanding the importance of home exercises. He must get the patient to the physiotherapy service, supervise the splint maker, engage the help of the social service and psychiatric departments, and, above all, get the patient to like his surgeon and to want to cooperate. The patient who does not want to let his surgeon down is the one who will get a better result, other things being equal.

Very often the traumatic cases seen at the hospital are truculent drunks who have fallen through a plate glass window or door or become involved in a knife fight at 2:00 A.M. Many are drug addicts. Such a patient may well not be the cooperative sympathetic type whom we like to treat. Even so he is our medical responsibility. If we fail him, he becomes a community responsibility, and his financial support falls on all of us. His welfare, compensation, and disability payments come from all our resources; so that even from a selfish point of view, it pays us to make him functional, quite aside from our moral obligation to give our best even to patients who resist help or who are unappreciative of our efforts.

Case reports

Case 1. A forty-seven-year-old female suffered a fracture of the fifth right metacarpal in April, 1968. The accident causing the fracture was the subject of a legal suit. The fracture was treated under other auspices by immobilization with a malleable aluminum-foam rubber splint. A hand-shoulder syndrome developed with the usual vicious cycle of stiffness and pain producing a frozen shoulder with an internal rotation-adduction deformity (Fig 1A). The right wrist could not be extended, and flexion was limited to 15 degrees. The fifth metacarpophalangeal and distal interphalangeal joints were hyperextended and the proximal interphalangeal acutely flexed. Index, middle, and ring metacarpophalangeal joints flexed 30 degrees, but their proximal and distal interphalangeal joints were fixed in extension. The range of motion of the thumb was normal. The patient was uncooperative in her physiotherapy. She suffered progressive pain and stiffness of the shoulder, with atrophy of the deltoid muscle. She appeared in the hand clinic in October seven months after injury, and under closely supervised physiotherapy the range of motion of shoulder and wrist were markedly improved. Surgery for improvement of the function of the hand was carried out on January 28, 1969.

A midlateral radial incision was made in each digit except the thumb, curving on to the dorsum of the middle phalanx to expose interossei, extensors, and the proximal interphalangeal joints. Capsulotomies of the metacarpophalangeal joints, excision of the oblique collateral ligaments of the proximal interphalangeal joints of the four fingers, dissection of the intrinsics from the dorsal hood and extensors to permit flexion of the proximal interphalangeal joints, and compensatory tenotomies of the extensors over the middle phalanx were all carried out. At the close of surgery there was full metacarpophalangeal flexion, the proximal interphalangeal joints flexed to 100 degrees, the distal interphalangeal joints flexed fully except for the fifth finger where the proximal interphalangeal flexion was not released by the preceding maneuvers, probably because of contracture of the flexor superficialis (Fig. 1B). Because of our previous experience with this patient, it was decided to keep her in the hospital for daily physiotherapy. This might be considered uneconomic because of the cost of hospitalization. Nevertheless, we believed that this drawback was outweighed by the certainty of failure if she were not to have the supervi-

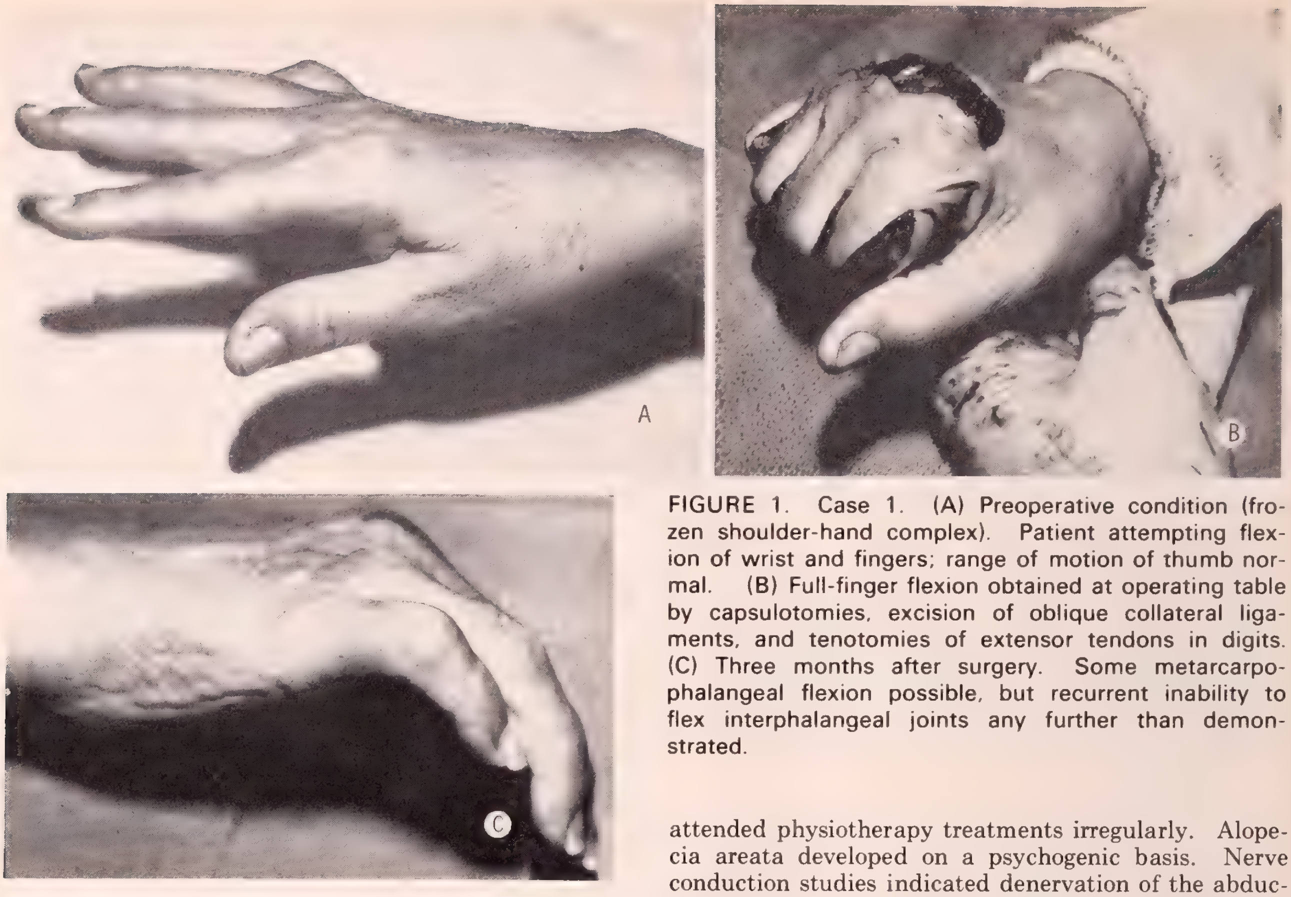

FIGURE 1. Case 1. (A) Preoperative condition (frozen shoulder-hand complex). Patient attempting flexion of wrist and fingers; range of motion of thumb normal. (B) Full-finger flexion obtained at operating table by capsulotomies, excision of oblique collateral ligaments, and tenotomies of extensor tendons in digits. (C) Three months after surgery. Some metacarpophalangeal flexion possible, but recurrent inability to flex interphalangeal joints any further than demonstrated.

sion and encouragement of the staff on daily rounds. Under these circumstances she did cooperate well and was discharged about five weeks after surgery, at which time she could actively flex her fingers to 1 inch from the palm, the improvement in metacarpophalangeal flexion was maintained, and the hand was useful for clothing herself and holding a drinking glass and eating utensils. A dynamic splint was ordered and adjusted, and the patient was instructed in its use on several occasions.

After discharge from the hospital the previous pattern of complaints of pain and disability returned. She had family quarrels and difficulties, a legal suit was in process, and even with the cooperation of the social service department it was impossible to get her to the physiotherapy facilities, to hand clinic sessions, or to use her splint. Stiffness of the finger joints reappeared. Two months after operation the metacarpophalangeal and interphalangeal joints were injected with triamcinolone under intravenous lidocaine (Xylocaine) block; there was satisfactory easy mobilization of the joints. However, the improvement was transitory, and the preoperative deformity recurred (Fig. 1C).

Case 2. Six months prior to admission, a nineteen-year-old male sustained broken glass lacerations of the right forearm, severing median and ulnar nerves and the flexors of the wrist and fingers. Primary repair of all these structures was performed. Postoperative follow-up was irregular. The patient had a hostile personality with little understanding of the need for cooperation. He refused to wear his dynamic splint and attended physiotherapy treatments irregularly. Alopecia areata developed on a psychogenic basis. Nerve conduction studies indicated denervation of the abductor pollicis brevis and the opponens pollicis, but tests were incomplete because the patient would not cooperate. ("I can't stand" the electrical stimulation.) Psychiatric counseling and social service cooperation were enlisted, but the patient's attitude did not improve. Atrophy of the intrinsic, thenar, and hypothenar muscles, a typical claw hand deformity, and adduction contracture of the thumb all developed rapidly (Fig. 2A).

Because it was so difficult to get the patient to accept readmission and surgery, it was decided that he had to have an all-or-none operation and to do as much as possible in one procedure, even though it was evident that too much surgery was really being attempted. Midlateral incisions were made on all digits but the thumb to approach the superficialis tendons and the intrinsic mechanisms. All the flexor superficiales were cut and withdrawn into the palm. To correct the clawing, the tendon of the middle finger was split into four strands which were then drawn through the intrinsic canal to each digit, woven through the tendinous portion of the intrinsics, and attached over the dorsum of each proximal interphalangeal joint. The superficialis of the ring finger was used for a Bunnell opponens transfer to the thumb using the flexor carpi ulnaris as the pulley. The transferred tendon was divided into two slips, one of which was passed through a drill hole through the head of the first metacarpal, brought around the extensor, and sutured to itself, and the second was passed under the extensor over the dorsum of the metacarpophalangeal joint, looped back, and sutured to itself. The adduction contracture of the thumb was treated by subperiosteal stripping of the adductor and first interosseus muscles. The superfici-

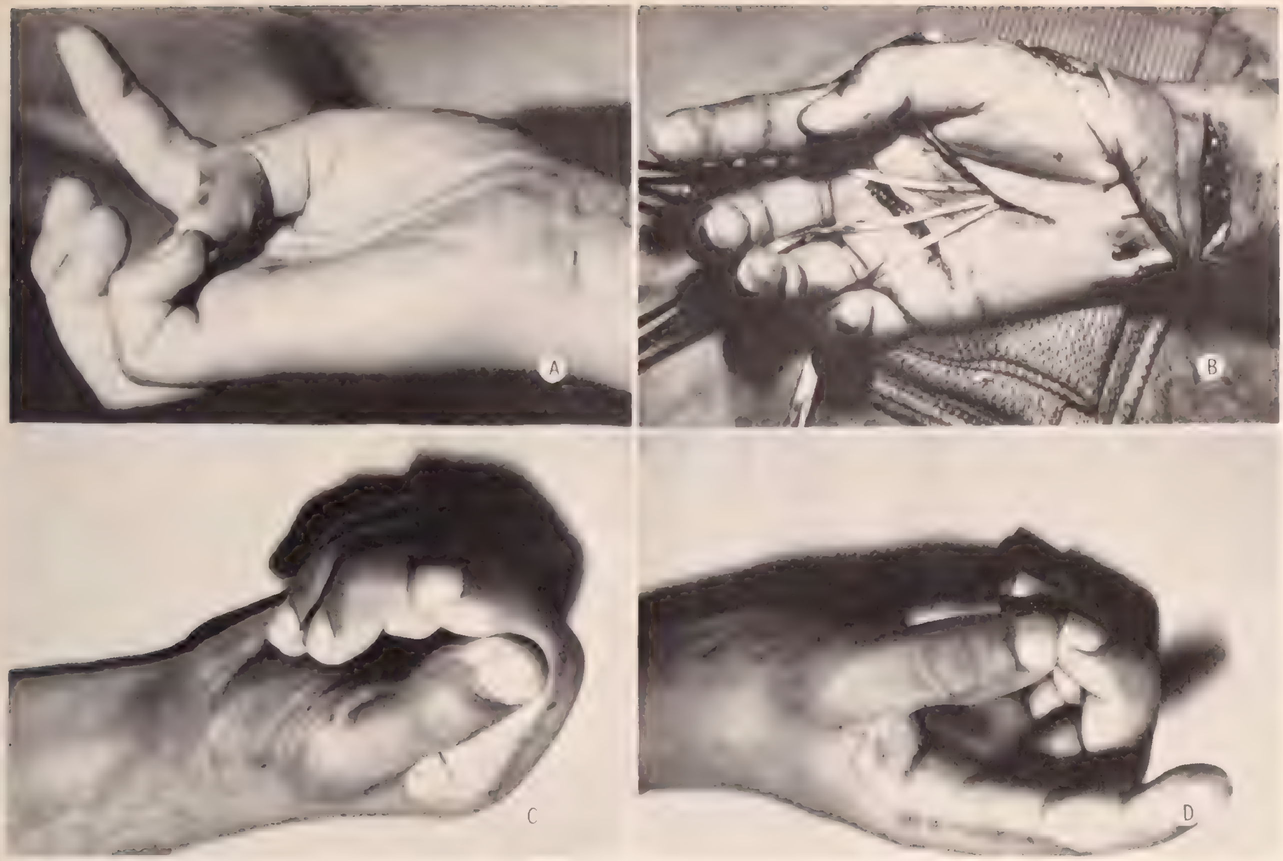

FIGURE 2. Case 2. (A) Clawing of digits following laceration of flexor tendons, median, and ulnar nerves at wrist. Thumb adducts but cannot oppose. (B) Surgery in progress. Flexor superficiales tendons prepared for transfers to produce metacarpophalangeal flexion, thumb opposition, and pinch, and restoration of transverse metacarpal arch. (C) Postoperative ability to flex digits. (D) Postoperative ability to oppose thumb.

alis of the fifth finger was used to reconstruct the transverse metacarpal arch (Littler procedure). It was slit into two slips, one of which was inserted into the base of the proximal phalanx of the thumb with the thumb held in abduction, and the second was attached to the base of the proximal phalanx of the lateral aspect of the fifth finger. A Fowler procedure was employed to improve pinch, rerouting the extensor indicis proprius around the first metacarpal, weaving it through, and suturing it to the first interosseus tendon (Fig. 2B).

The extensive reconstruction was carried out uneventfully although the procedure was very lengthy. The postoperative course was unremarkable. The patient was discharged on the tenth postoperative day. He cooperated very poorly postoperatively, turning up occasionally to have compensation and disability forms completed. However, his cooperation in follow-up, in the use of his splint, and his attendance at physiotherapy sessions improved to a gratifying degree after he was spoken to at length and his transport to the clinic arranged by social service. Consequently and subsequently a very useful hand has developed. Opposition of the thumb is good, clawing has been overcome, and, except for some residual adduction contracture of the thumb, the hand is very satisfactory in appearance and in function. Sensory return was only patchy, however (Fig. 2C and D).

Comment

We have presented 2 cases representative of some problems in surgery of the hand not directly related to the surgery. The patients of whom we write are hard to control. Location of the patients is often very difficult. They change residence frequently and seldom have telephones. They often disappear, and we learn that they have returned to their native areas for a vacation or work for several months. The records of Spanish-speaking patients are often filed under two names, since many hospital clerks do not realize that the double Spanish surname lists the father's name first followed by the mother's maiden name. Or the mother may remarry and the surname changes between one admission and the next.

In fairness to patients of this economic level it must be pointed out that failure to cooperate after leaving the hospital is not always their fault. Bus or subway fare to reach the hospital may be beyond their means; family matters may require their attention, when they have an appointment at the clinic; a sick child or a school problem may take precedence; and they have to hold part-time jobs during hours when they might have appointments. These are all problems which even the social service department cannot always solve.

The surgical problem in the second case presented was more complex than that in the first case; the amount of surgery performed was much more extensive. Yet the result was better. Of course, this must be attributed largely to his youth, but more than that we believe the essential difference was the fact that he had fewer family obligations, he wanted to return to work, he was not involved in litigation, and his personality permitted us to elicit his cooperation in the after-surgery care.

Summary

Hand surgery is that branch of surgery par excellence whose result is unpredictable without evaluation of the patient's age, social status, and psychologic motivation, and without dedicated preoperative preparation, postoperative follow-up, close supervision of physiotherapy and use of splints, encouragement, cajolery, and instruction. Even then, sociologic considerations may defeat us.

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Lymphangioma of Mediastinum

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Lymphangiomas of the mediastinum are extremely rare and very little has been written about them. Schlumberger,[1] in describing this pathologic entity, listed the following synonyms and related terms used in describing lymphangiomas: cavernous lymphangioma, chylous cyst, cystic hygroma, cystic lymphangioma, lymphatic cyst, and multiloculated hygroma.

The first surgical resection of a mediastinal lymphangioma, credited to Skinner and Hobbs,[2] was a two-stage procedure performed in 1934. In 1946, Blades[3] reviewed 109 cases of mediastinal tumors collected from various Army thoracic centers and noted no instances of lymphangioma. The following year, 1947, Watson and Diamond,[4] in a review of thoracic tumors in Naval personnel, found only 1 case of lymphangioma.

Michaelis,[5] in 1934, collected 7 cases from the literature and added 1 of his own. Subsequent case reports have been added to the literature by Sanes, Macmanus, and Scatchard[6] and others.[7–15] In 1964, Ricci, Santoro, and Moretti[16] reviewed the literature and presented 2 cases of their own. They were able to collect 51 cases of mediastinal lymphangiomas which were limited to the mediastinum. In addition, they collected 42 cases of mediastinal lymphangiomas which extended to the cervical region. In 1968, Dische[17] reported a case of spontaneous chylothorax in a six-and-one-half-week- old infant with a posterior mediastinal lymphangioma.

Ringertz and Lidholm[12] point out that there is always some difficulty in differentiating mediastinal lymphangiomas from thymic cysts and pericardial cysts. In their opinion, thymic cysts seldom have smooth muscle in the wall; if one has adequate material, one will always find rests of thymic tissue with Hassall's corpuscles adjacent to the cyst wall. Pericardial cysts do not show any smooth muscle, and the lining cells are at times cuboidal and not of the flat, endothelial type. Graham and Johnson[8] point out that mediastinal lymphangiomas are most often situated anteriorly.

Lindskog and Kausel[18] vividly point out that:

> The indication for surgical excision of a presumptively benign mediastinal tumor rests on the demonstration of its existence. Whereas many are asymptomatic and remain so for many years, others increase appreciably in size, and cause pressure manifestations in the bronchial tree, esophagus or large vessels. Severe pain is not a common manifestation, and is usually associated with the neurogenic group of tumors. However, a completely satisfactory differential diagnosis cannot be made without surgical excision and pathologic study; this is the chief reason for recommending surgery in all cases.

Herlitzka and Gale[19] indicate that once a diagnosis of mediastinal tumor is made, regardless of location or suspected type, surgery should not be delayed. This concept is further expressed by Brewer and Dolley[20] who state: "Risk of operation is slight and the percentage of cures is high."

Ringertz and Lidholm[12] were able to remove mediastinal lymphangiomas radically in all 7 of their cases, and all patients in their series were alive and well one-and-one-half to ten years after surgery. Childress, Baker, and Samson,[21] in a collective review of mediastinal lymphangiomas in 1956, found only 1 recurrence after surgical removal in 18 cases reviewed by them.

Case report

A twenty-one-year-old white male was admitted to the Naval Hospital, St. Albans, New York, on January 12, 1970, for a work-up because of an abnormal chest roentgenogram finding. He was completely asymptomatic on admission and had never noted any symptoms referable to the chest.

He was told that his purified protein derivative test result had been negative on entering grammar school and again on entering the Army in May, 1967. A review of the patient's health record revealed that in October, 1967, the tine test result was 8 mm. and a purified protein derivative test result was 10 mm. The patient gave a six-year history of smoking two packages of cigarets a day;

The opinions contained herein are the private ones of the writers and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

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†Present address: Naval Hospital, San Diego, California.

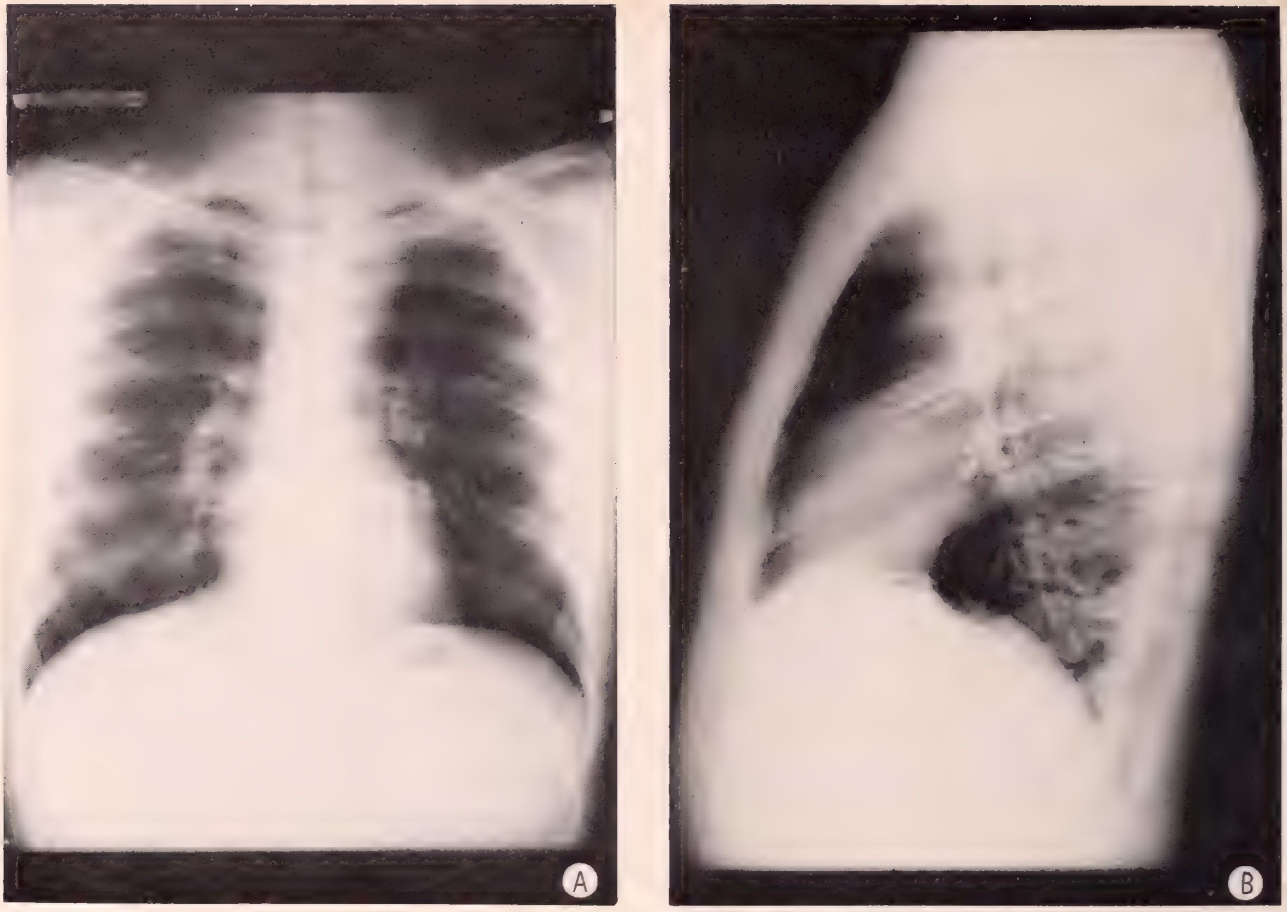

FIGURE 1. Preoperative chest roentgenograms. (A) Posteroanterior view. (B) Lateral view.

otherwise the patient's past history, review of systems, and family history were noncontributory.

Examination on admission revealed a well-developed, well-nourished white man, height 6 feet 1 inch, weight 180 pounds, temperature 98.6° F., pulse 70, and blood pressure 110/70. The entire physical examination revealed nothing abnormal.

All laboratory determinations were within normal limits. Skin test battery revealed purified protein derivative-S 10 mm., purified protein derivative-B 12 mm., purified protein derivative-G 8 mm., coccidioidin 10 mm., and histamine 0 mm.

Preoperative roentgenographic studies. Chest roentgenograms demonstrated a left paramediastinal mass with sharply outlined lateral borders extending from the lower hilar region to the left clavicle where it abruptly ended (Fig. 1). Tomograms of the superior mediastinum revealed a mass density noted to project from the left side of the superior mediastinum seen well on cuts 8 through 10 cm. measured from the back (Fig. 2). Angiography demonstrated normal anatomy of the left innominate vein and superior vena cava (Fig. 3). The pulmonary angiogram revealed normal pulmonary arteries. Azygos vein angiography results were also within normal limits, as was the result of the retrograde aortogram.

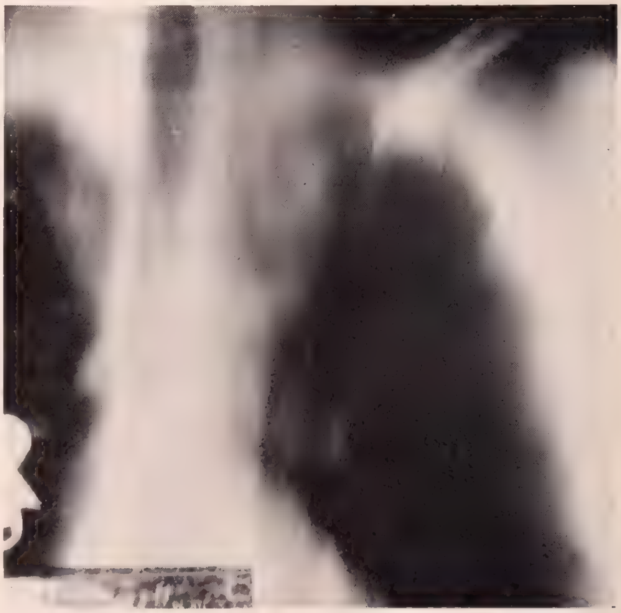

FIGURE 2. Preoperative tomogram.

Surgical procedure and findings. The left pleural space was entered through a posterolateral thoracotomy incision (fourth intercostal space). A mediastinal mass was noted in the upper mediastinum encompassing the arch of the aorta,

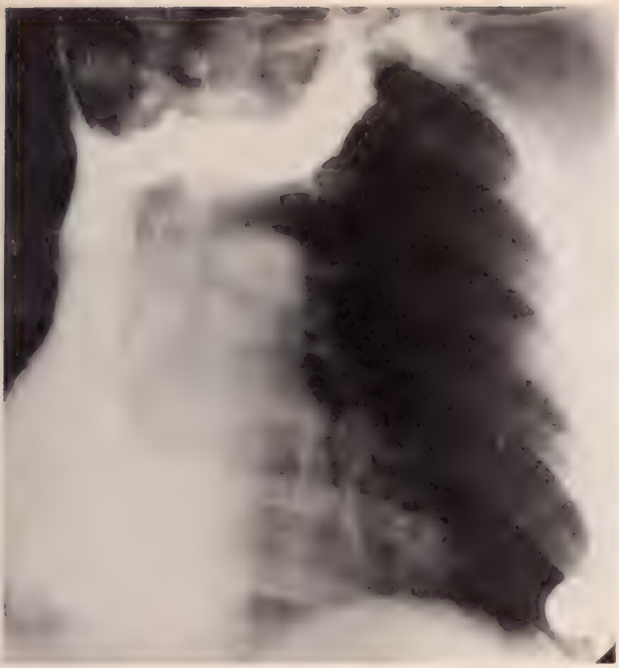

FIGURE 3. Preoperative angiogram of left innominate vein.

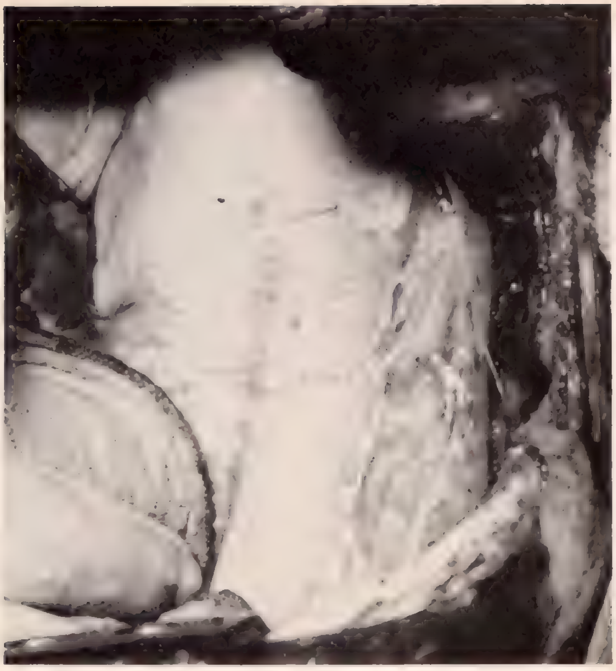

FIGURE 4. Mediastinal tumor mass overlying arch of aorta. Photograph taken at surgery.

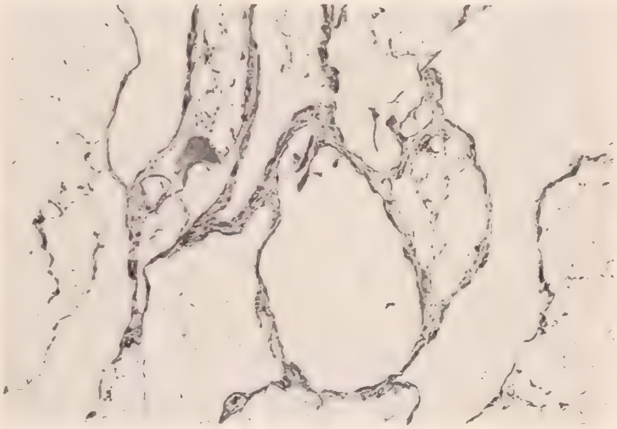

FIGURE 5. Photomicrograph showing dilated thin-walled lymphatic channels embedded in adipose tissue typical of lymphangioma.

left subclavian artery, left vertebral artery, left phrenic nerve, left vagus, and recurrent laryngeal nerves (Fig. 4). The thymus was adjacent to the tumor superiorly and medially but was separate from it. The mass was irregular in outline, brownish-tan in color, and rubbery in consistency.

The tumor mass was dissected free of adjacent structures with a moderate degree of difficulty since the mass was somewhat firmly adherent in areas. It was entered on two occasions, and lymph was noted to exude from its cut surface. Hemostasis was obtained, the tumor was completely excised, the chest tube was placed, and the chest wall was closed.

Microscopic examination of the specimen revealed findings compatible with lymphangioma of the mediastinum (Fig. 5).

The patient's postoperative course was uneventful. Chest roentgenograms revealed minimal postoperative reaction (Fig. 6). The patient returned to full active military duty and has remained asymptomatic.

Summary

Mediastinal lymphangiomas are rare tumors about which little has been written. A case of mediastinal lymphangioma successfully treated by surgical excision is added to the literature. A review of the literature has been accomplished, and salient features of the tumor and recommended mode of therapy are substantiated. Prognosis is excellent following wide excision of the tumor.

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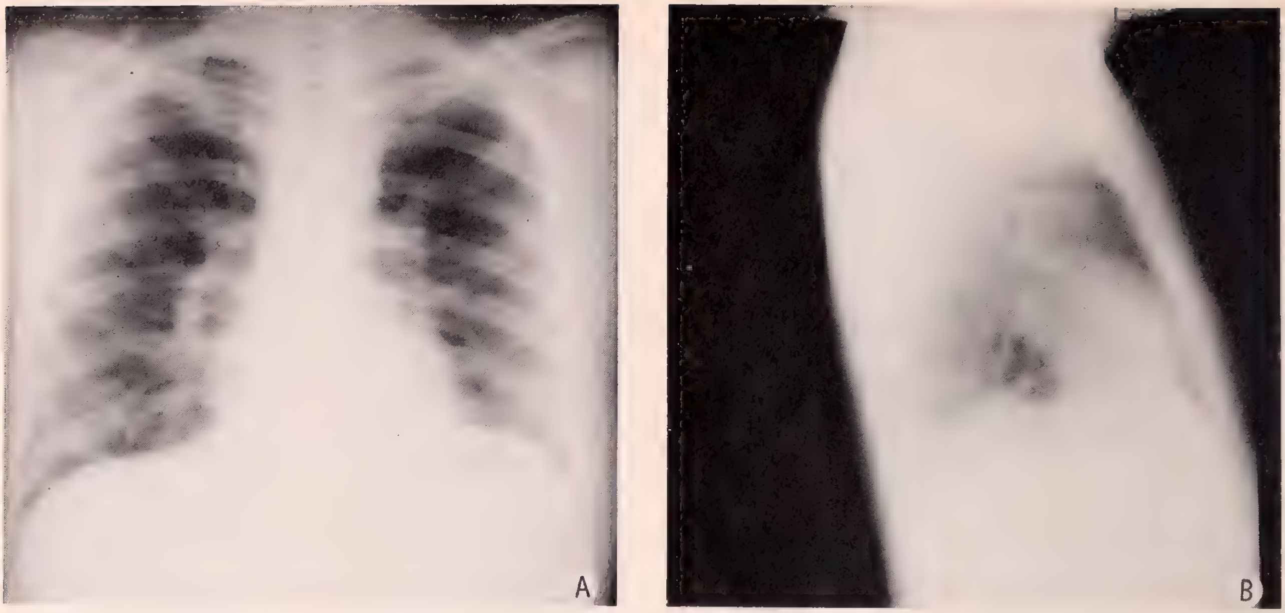

FIGURE 6. Postoperative roentgenograms. (A) Posteroanterior view. (B) Lateral view.

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Postnephrectomy Arteriovenous Fistula

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Arteriovenous fistula is recognized as a rare complication following nephrectomy. To date, 24 examples have appeared in the English literature.[1-22] Abnormal renal vascular intercommunications may be congenital or acquired. The latter may exist with or without an ipsilateral intact kidney. Congenital forms are considered to be derived from cirsoid or angiomatous dilatations of the arterial wall which may erode, enlarge, and ultimately rupture into a venous channel.[23] Acquired varieties which have been described include instances of traumatic, neoplastic, infectious, arteriosclerotic, postneedle biopsy, or surgical origin.[23,24] It is believed that erosion, perforation, or infiltration of contiguous arterial and venous channels results in fistula formation.

Cardiovascular decompensation accompanying the high output state associated with intra-abdominal arteriovenous communications is usually an insidious process requiring years for its evolution. Hence, these cases may escape the clinician's detection unless the characteristic bruits are sought and angiographic studies performed. Since Hunter's[25] early report, in 1762, of an arteriovenous fistula complicating surgery, fistulous complications of laminectomy, thyroidectomy, splenectomy, hysterectomy, and other major surgical procedures have been documented.[2-24] The overall incidence of these complications following surgery is low. Elkin[2] reported 650 arteriovenous aneurysms, of which only 6 could be attributed to operation. Unusual trauma to the operative site, mass ligation of vessels, transfixion sutures, and infection have been implicated in instances of postnephrectomy fistulas.[1,2,4,8,9,13-16,18,20]

Postnephrectomy arteriovenous fistulas have been reported less frequently than fistulas existing with an intact kidney, of which more than 60 cases are recorded.[24] The present report describes an additional example which was studied pre- and postoperatively by cardiac catheterization. Only 3 previous cases have involved hemodynamic measurements obtained at catheterization.[20,21] Of paramount importance is the salient characteristic of slowly evolving high-output congestive heart failure. This case will be described in some detail to emphasize (1) the relentlessly slow progression to cardiac decompensation twenty-one years following the original surgery, (2) the discovery of a bruit in the flank which suggested the diagnosis, and (3) the confirmatory angiographic and hemodynamic evidence leading to surgical intervention.

Case report

A fifty-nine-year-old Negro female was admitted to the Nassau County Medical Center in June, 1968, with abnormal postmenopausal bleeding. She was obese, with both known diabetes mellitus and arteriosclerotic heart disease of seven years' duration. In 1947, following a fall down a flight of subway steps, hematuria and right flank pain occurred; she subsequently underwent a right nephrectomy elsewhere for "clots." She recalled a postoperative drain present for three months, but other details were lacking. Reasonably good health was maintained until 1960 when episodic wheezing, dyspnea on exertion, and precordial chest pains occurred.

Her first admission to this hospital, in 1961, for these symptoms led to diagnoses of diabetes mellitis, arteriosclerotic heart disease, hypertension (210/100), and osteoarthritis involving the spine and large joints. In addition, chest roentgenograms revealed diffuse cardiomegaly and pulmonary vascular engorgement consistent with congestive heart failure. Electrocardiograms showed nonspecific ST-T wave changes. She was discharged on chlorpropamide, digoxin, and diuretic therapy. On readmission, in 1964, the history and clinical findings were again indicative of heart failure. An electrocardiogram revealed left bundle branch block. The patient was discharged moderately improved after bed rest and diuretic therapy.

In December, 1966, severe precordial chest pain occurred and the patient was hospitalized with a diagnosis of myocardial infarction as documented by S-T changes and enzyme elevations. Obesity had become marked; in addition, alveolar hypoventilation (carbon dioxide tension of 125 mm. Hg) developed, necessitating temporary tracheostomy and respiratory assistance. Results of the electrocardiograms varied between left bundle branch block and anterior wall injury patterns during the two-month hospitalization period.

TABLE I. Comparison of data obtained at heart catheterization before and after surgical correction of the fistula

Variable	Pre-operative	Post-operative
Weight (kilograms)	102	124
Body surface area (square meters)	2.12	2.31
Heart rate (beats per minute)	80	75
Pressure (millimeters Hg)		
Right atrium	9*	10*
Right ventricle	55/8†	41/14†
Main pulmonary artery	63/27† (38*)	43/23† (28*)
Cardiac output (liters per minute)	13.8	6.67
Cardiac index (liters per minute per square meter)	6.51	2.89
Stroke volume (milliliters)	172	89
Stroke volume (milliliters per square meter)	81	39

* Mean Value.

† Pressures indicated as systolic/end-diastolic.

TABLE II. Blood gas data at time of catheterization

Variable	Pre-operative	Post-operative
Arteriovenous oxygen difference (volume per 100 ml.)	2.01	4.80
Oxygen saturation (per cent)		
Main pulmonary artery	81	70
Brachial artery	94	96.5
Gas partial pressures in arterial blood (millimeters Hg)		
Oxygen	71.2	80.0
Carbon dioxide	47	36

The average blood pressure was 190/90. She was discharged with compensated congestive heart failure, to be followed.

Dysfunctional uterine bleeding occurred in June, 1968, and she was admitted to the gynecology service. However, chest pain recurred and she was transferred to the medical service. Her weight was 102 Kg., blood pressure 150/100 supine with standard cuff and 120/60 with large cuff. Mild arteriovenous nicking was present in the fundi. The neck veins were distended at 30-degree elevation with bibasilar rales audible in the chest. The heart rate was 80 per minute and regular. The apical impulse was displaced to the sixth intercostal space 2 cm. lateral to the midclavicular line. The abdomen was obese, and organomegaly was not perceived. Peripheral edema was absent, but the large joints displayed advanced osteoarthritic deformities. Homan's sign was positive on the right without obvious phlebitis. The patient was given anticoagulants. Electrocardiograms showed a left bundle branch block pattern. Circulation time arm-to-tongue (dehydrocholate) was 15 seconds. Central venous pressure was 120 mm. of water. Chest roentgenogram revealed cardiomegaly and congestive changes. The hemoglobin was 11.4 Gm. per 100 ml., white blood cell count 7,000, fasting blood sugar 121 mg. and blood urea nitrogen 21 mg. per 100 ml., and electrolyte concentrations normal.

Cardiology consultation was sought and one of us (C.T.L.) detected a continuous bruit with systolic accentuation over the right flank, maximally audible in the area of the previous nephrectomy scar. A thrill was not palpable. This finding suggested an arteriovenous fistula. An intravenous pyelogram showed a normal left kidney and absence of the right kidney. It was elected to explore the probability of a postnephrectomy fistula and resultant high-output failure by cardiac catheterization (Tables I and II). Pressures of the right side of the heart were recorded, but a pulmonary artery wedge pressure was not obtainable. The arterial circulation was studied via the left brachial artery, since massive girth of the thighs precluded a retrograde transfemoral approach. Passage of a standard angiographic catheter through the great vessels was impeded by their marked tortuosity. A smaller, more flexible Sones catheter was therefore employed and manipulated with difficulty to the descending aorta. This was positioned at the T-10 level where cineangiograms and rapid sequence roentgenograms were made utilizing pressure injections of contrast media (Hypaque-75 and Angio-Conray-80). Cardiac output was determined by the Fick method and was greatly increased with marked diminution of the arteriovenous oxygen difference. Chamber pressures of the right side were moderately elevated with elevation of the end-diastolic pressure. An indicator dilution study was technically unsatisfactory. Blood volume was estimated at 10 L. with radioiodinated albumin.

The angiograms revealed the presence of early filling of the inferior vena cava at the level of the right renal arterial stump; this dilated vessel was noted to terminate in a bulbous tip. The renal vein was not identified (Fig. 1).

These data confirmed the presence of a left-to-right shunt at the level of the right renal pedicle. It was felt that, despite the patient's obvious complicating illnesses, chronic and progressive high-output failure might be ameliorated by closure of the fistula. Therefore, exploratory laparotomy was performed in August, 1968.

A midline incision from xiphoid to symphysis pubis was made. Extensive adhesions were encountered from previous ovarian surgery, and optimum exposure was not possible. The vena cava was enlarged to one and one-half times normal size, and a palpable thrill was present at the level of the right renal artery. The left renal vein was engorged and encountered traversing the aorta anteriorly. The right renal artery was mobilized for

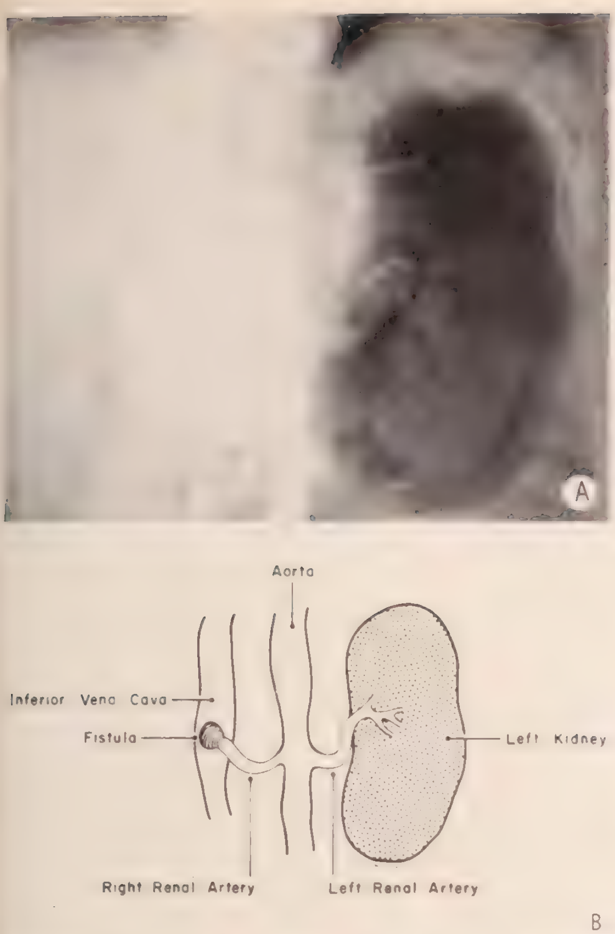

FIGURE 1. (A) Early injection phase of aortogram demonstrating right renal stump, bulbous area of the fistula, and early filling of inferior vena cava. Contrast impaired due to obesity. (B) Line drawing of components of fistula derived from aortogram.

2 cm. and a clamp applied, which caused an immediate cessation of the thrill in the inferior vena cava. This arterial segment was then ligated with two separate silk sutures. A more proximal ligature was placed, and the artery was divided. The proximal transected end was then oversewn distal to the ligature. The thrill was terminated. Further dissection of the structures was deemed inadvisable, and the right renal vein was therefore not identified.

The blood pressure reverted from 120/60 to 130/90 after the ligation, while the pulse rate was unchanged at 80 per minute. Postoperatively, the patient recuperated without difficulty. Pulmonary vascular congestion was considerably diminished and heart size slightly smaller (Fig. 2). However, severe osteoarthritis and obesity have since confined her to a wheelchair existence. Despite her infirmity, a subjective and objective improvement in orthopnea, wheezing, and dyspnea was apparent, and she was able to participate in a program of rehabilitative exercise.

Thirteen months later a second catheterization of the right side of the heart was performed (Tables I and II). Systolic pressures of the right side were elevated but somewhat less than in the initial study, while the end-diastolic pressures again reflected hemodynamic failure. The significant changes were a reduction in cardiac output and index to approximately one half the previous values; the widened arteriovenous oxygen difference had returned to normal.

Comment

The hemodynamic alterations accompanying sizeable arteriovenous fistulas have been thor-

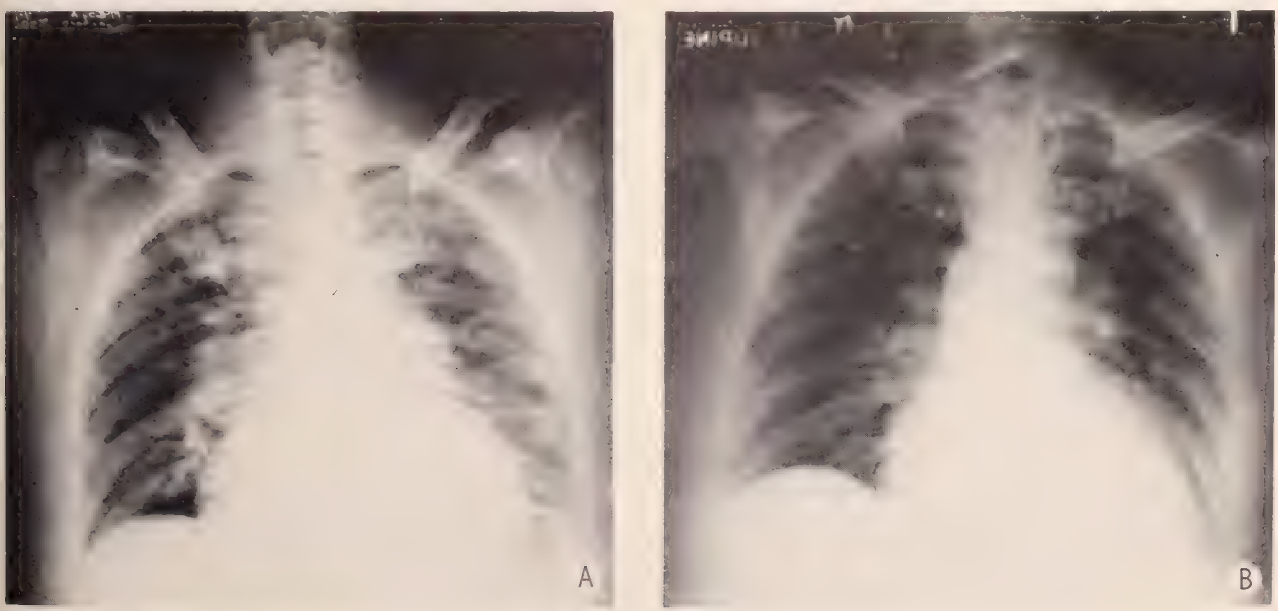

FIGURE 2. (A) Preoperative posteroanterior view of chest showing cardiomegaly and pulmonary vascular congestion. (B) Anteroposterior view postoperatively showing diminution of vascular congestion.

oughly reviewed.[23,26,27] It is reasoned that the short-circuiting of blood through the fistula circumnavigates the relatively higher systemic vascular resistance to flow and establishes a means of capillary bypass. Consequently, increments of blood volume are sequestered in the "parasitic" high-capacitance venous conduit. This, in turn, produces an everexpanding venous return to the heart. A sequence of events is brought into play whereby slowly increasing venous return results in increased cardiac output, stroke volume, and pulmonary arterial pressure in the nonfailing heart. Concurrently, the systemic circulation suffers decreased mean arterial pressure and reduced effective systemic blood flow while a compensatory increase in blood volume occurs. Early in the process, myocardial contractility may be well maintained. Short-term studies in dogs with experimental aortocaval fistulas have shown that normal left ventricular function is preserved even in the presence of a large-volume load, elevated left ventricular end-diastolic pressure, and circulatory congestion.[28] Eventually, cardiac hypertrophy and dilatation in response to increased work load will ensue.

The volume of blood sequestered in the fistula circuit increases by both enlargement of the ostium itself and expansion of the total blood volume.[26] Structural changes in the blood vessels have been described, including "arterialization" of veins and "venization" of arteries.[29] The entire vascular system proximal to the fistula, the proximal vein, vena cava, and even the distal arterial tree may dilate.

When the fistula occurs proximal to an intact kidney, diastolic hypertension with renal ischemia may occur (Goldblatt kidney).[23] The relative contribution of the shunt to lowering the diastolic pressure vis-a-vis coexistent distal renal ischemia determines the levels of systolic and diastolic pressure in these patients.

The interval between formation of a fistula and development of high output failure has varied considerably. The duration and size of the shunt are the primary determining factors. The late findings of diminution of cardiac output with exercise, higher levels of systemic vascular resistance, and myocardial decompensation in patients with arteriovenous fistula and congestive heart failure have been emphasized.[27]

Previous reports have depicted the interval between nephrectomy and discovery of the fistula ranging from five months to thirty-five years with a mean of fifteen years. Ages at operation have varied from twenty-seven to sixty-eight years with the majority in the forty to sixty age group. The most common indications for the original nephrectomy were calculi (6), hydronephrosis (5), and tuberculosis (5). Others included pyelonephritis (2), pyonephrosis, ureteral obstruction, and carcinoma (1 each). The cause was unstated in 3 cases. Our case represents the only recorded instance of nephrectomy performed for trauma resulting in this complication.

It has been stated that en masse ligation of renal vessels may cause a predisposition to fistula formation, but postoperative infection, proximally placed transfixion sutures, or retraction of adjacent margins of vessels inside a mass ligature were often implicated.[16] The latter may explain why the right side was involved in 75 per cent of cases, since the right renal pedicle is shorter and presumably more vulnerable to technical difficulties of ligation.[16] The fistula has been located at the renal stump in all but 1 case, where direct communication with the vena cava was demonstrated.[15]

In view of the frequency of pedicle ligation in the past and the relative rarity of fistula formation some doubt is cast on the former hypothesis. Nevertheless, it is generally desirable for the surgeon to avoid en masse ligation whenever possible. The etiology in our case is indefinite, but postoperative infection may have been present and predisposing.

The symptoms of high output failure—orthopnea, exertional dyspnea, and palpitations—are not distinctive. Frank congestive heart failure was present in 11 cases, cardiomegaly in 14. Occasional patients have suffered syncopal episodes, flank pain, or rarely, bacteremia secondary to endarteritis of the fistula.[11,15,19] The diagnosis may be suspected in any nephrectomized patient who later develops heart failure. The auscultatory finding of a continuous bruit over the flank with or without a palpable thrill led to confirmation of a fistula at surgery in all but 1 case where the diagnosis was suspected but surgery refused.[1] It should be stressed that routine postoperative auscultation of the abdomen at intervals would undoubtedly detect a developing fistula earlier in its course and obviate the cardiovascular consequences.

Angiographic studies were undertaken in all but 5 cases by translumbar or transfemoral approach. Hemodynamic studies were performed in 3 cases.[20,21] Cardiac outputs and pressures from the right side of the heart were elevated in all 3 preoperatively and returned to normal after surgery. Angiography has been advantageous to the surgeon in delineating the anatomy of the structures, especially if more than one artery is involved.[3,8,15,16] The magnitude of the shunt can be determined accurately by direct measurement at surgery, or relatively by assessment of cardiac output.

Surgical correction of the lesion has included individual ligation of the renal artery (5), double artery and vein (4), or single renal artery and vein, with or without excision of the aneurysmal sac when present (10 and 2 cases, respectively). All reports indicate obliteration of the shunt with each procedure, and no recurrences have been noted.[2,22] However, the procedure of arterial ligation alone theoretically may not be adequate should distal collaterals be present.[18] The results of surgery in the majority were favorable, with only 1 case succumbing sixty hours postoperatively.[4] Eleven were considered cured, 6 improved, and 1 remained unchanged. Two became hypertensive postoperatively.[7,13] Correction of the fistula has been followed by narrowing of the pulse pressure, decrease in heart size, disappearance of the bruit, immediate slowing of the heart rate (Branham's sign), and disappearance or amelioration of heart failure. Mild orthostatic hypotension after surgery has been noted, perhaps due to prolonged increased peripheral vessel capacitance.[21]

The patient described here is somewhat atypical in that complicating factors including previous myocardial infarction, diabetes, and obesity have modified the expected response to surgical correction of the fistula. However, the cardiac catheterization data clearly documents the marked reduction in cardiac output postoperatively, in spite of continued evidence of hemodynamic failure. A significant degree of permanent myocardial dysfunction is implied by these data.

The relative contribution toward this impairment by coexistent arteriosclerotic heart disease and prolonged dilatation and hypertrophy consequent to the high output state remains a matter of speculation.

Summary

A patient who had been nephrectomized for trauma twenty-one years previously underwent cardiac catheterization for an abdominal bruit and congestive heart failure. A renal arteriovenous fistula was demonstrated characterized by high cardiac output, widened arteriovenous oxygen difference, and elevated pressures of the right side of the heart.

Ligation of the renal arterial stump resulted in disappearance of the bruit and improvement in symptoms. One year later cardiac output was normal, but hemodynamic failure persisted.

In 24 previous reports fistulas were diagnosed five months to thirty-five years postnephrectomy. Slow evolution of cardiac decompensation was noted in over 50 per cent; a bruit was heard in all. Possible causes proposed are en masse pedicle ligation, infection, and trauma. Surgical corrective approaches vary; results indicate cure or improvement in most.

Although rare, this lesion may be suspected in nephrectomized patients with congestive heart failure. Postoperative auscultation of the abdomen at intervals should be routinely encouraged.

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ANNUAL CONVENTION

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FEBRUARY 11 through 15, 1973

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Medical Society of the State of New York
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Establishment and Operation of Combined Intensive Care Unit*

For patients with cardiac and cerebrovascular disease

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On September 1, 1969, the Benedictine Hospital in Kingston, New York, admitted the first patient to its combined heart-stroke unit. This unit was developed as a combined effort between the Benedictine Hospital and the Albany Regional Medical Program. The first year's experience is reported here.

Background

In February, 1967, the Benedictine Hospital developed a 4-bed coronary care unit. In caring for an average of 100 patients per year with proved myocardial infarction, the mortality rate for this illness was reduced from 37.5 per cent to 14 per cent and the average hospital stay was reduced from twenty-eight to twenty-three days. One nurse had been trained at the Albany Medical Center Hospital by the Albany Medical College faculty, arranged by the Albany Regional Medical Program. Two others have since participated in this training program. The major portion of the nurse cadre had been trained locally.

In 1968, the medical director of the Benedictine Hospital conceived the idea of expanding the services of this unit to include patients with acute cerebrovascular disease. The idea was based on the following premises: (1) maximum utilization of the cadre of intensively trained nurses was not being achieved; (2) the Benedictine Hospital, with 246 beds, was too large to have one intensive care unit that would include all types of medical and surgical admissions and still give the maximum in quality care available; and (3) many of the skills of the coronary care unit nurses are applicable to the care of acute cerebrovascular problems, for example recognition of arrhythmias, early congestive failure, electrolyte problems, and shock. The Albany Regional Medical Program was therefore approached for assistance, and a project was developed jointly. The Benedictine Hospital provided physical facilities and staff. The Albany Regional Medical Program provided funds for administrative and professional educational expenses. It also worked cooperatively with the staff in developing the project protocol, in arranging the education programs, and in evaluation.

Objectives

The objectives of the project were:

1. To decrease the early mortality rate of patients suffering from acute cardiovascular or cerebrovascular disease.
2. To decrease the early complications of these diseases.
3. To demonstrate the feasibility of a combined unit to care for these diseases in a medium-sized community hospital.
4. To evaluate the effectiveness of the procedures used in the early stages of management of these diseases.

To accomplish these objectives the following were done:

Unit construction. A new unit was constructed by renovating an area formerly used as newborn and premature nurseries. A 6-bed intensive care unit and a 4-bed heart-stroke unit across the hall were thereby provided. Two beds in the intensive care unit are monitored by bed oscilloscopes and also from the slave scope in the heart-stroke unit. It will be noted that myocardial infarction patients in the combined heart-stroke unit can be separated from the stroke patients, therefore assuming no disturbance of the myocardial infarction patients. If the total number of

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*This project was financed in part by the Albany Regional Medical Program with funds from the Public Health Service. The views expressed do not necessarily represent the views of the Service.

combined stroke and heart patients exceeds 4, 2 additional patients may be monitored from the intensive care unit.

Physician education. A physician-education program was developed with several special features.

A "Coronary Teaching Day" was held in October, 1969. This teaching day consisted of approximately six hours of professional instruction and discussion relative to the philosophy of a coronary care unit and specific aspects of the management of certain complications of myocardial infarction. The faculty for this teaching day was obtained locally and from the Albany Medical College.

A "Stroke Teaching Day" was held in April, 1970. This teaching day consisted of approximately six hours of professional instruction relative to the management of the patient with stroke. Although the emphasis was on the management of the acute aspects of the problem, discussion also concerned the stroke-prone individual and stroke rehabilitation. The faculty for the day was obtained from Albany Medical College, The Framingham Heart Study of the U.S. Public Health Service, and locally.

A series of medical staff instructional sessions with local and guest faculty were conducted.

Regular indoctrination of the staff in the requirements of the unit relative to patient care was accomplished as individual patients were admitted. These requirements were also sent to each individual physician on the staff. Specific measures are in the general areas of routine diagnostic and therapeutic procedures, care of all patients with an endotracheal tube, care of patients in coma, and neurologic evaluation.

A procedure was instituted whereby the chairman of the intensive care unit committee ascertained the quality of the record and the management of each patient. This is used as an educational experience as well as a method of assuring quality patient care.

Nurse-education program. A nurse-education program was developed consisting of the following: (1) attendance at the two special physician-teaching days; (2) thirty hours of instruction to each of 15 nurses by members of the Benedictine Hospital staff on aspects of acute cerebrovascular disease; (3) subsequent seminars in special areas, for example, an anesthesiologist's discussion of endotracheal tubes, acid-base balance, and special nursing procedures for stroke patients; (4) regular consultation between the nurses and the project director; and (5) intensive training of nurses relative to arrhythmias by the project director with the assistance of the multimedia instructional system.*

Others. Other procedures instigated to achieve the objectives of the project were the development of routine procedures for patient examination and management in the unit, the establishment of admission policy to the effect that admission of a patient to the heart-stroke unit is at the discretion of the attending physician, and the development of evaluative mechanisms. The latter will be discussed in detail later.

Progress has been made toward each of the objectives although the statistical data accumulated in the one year of experience is not conclusive. The data reveal that: (1) the mortality rate for patients with a diagnosis of acute stroke decreased 9 per cent; (2) the number of complications occurring in acute stroke patients decreased 8 per cent; (3) the program proved to be feasible in its acceptance by the medical community and the hospital, in its educational aspects, and its data collection; and (4) evidence exists that certain procedures such as an increased number of lumbar punctures and angiograms have provided more accurate diagnoses and improved patient care.

Evaluation†

For purposes of evaluation a control population consisting of all patients admitted to the Benedictine Hospital with a diagnosis of acute cerebrovascular disease from September 1, 1968, to September 1, 1969, was selected.** The chart of each of these patients was carefully reviewed to establish date of admission, age, sex, diagnosis, diagnostic procedures performed, and clinical course. Only those cases in which a review of the record substantiated the diagnosis of acute cerebrovascular disease were accepted for analysis.

During the period of study, approximately 50 per cent of all "acute stroke" patients were admitted to the heart-stroke unit. Although undocumented, it is our impression that physicians tended to admit the more serious cases to the unit. Therefore, the results reported might have appeared more favorable to the unit if it had been possible to care for all stroke patients in the unit. Conversely stated, data relating to the heart-stroke unit are weighted to the disadvantage of the value of the unit.

An objective evaluation of the effectiveness of the heart-stroke unit is difficult also because of the limited number of patients involved and the limited duration of the study. During the course of the year, however, there has been no change in the physician personnel with the same attending staff treating patients before and after the activa-

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*As a direct outgrowth of this nurse-education program, 15 seminars were scheduled for nurses in stroke and coronary intensive care for the period September to December, 1970.

†Evaluation in this report is limited to the impact of the unit on stroke care. The effectiveness of the unit as a coronary care unit alone has been documented and the results summarily stated under "Background."

**In planning the evaluation of the project, cognizance was taken of the fact that admission to the unit would be selective rather than random. The decision was therefore made to compare the experience of patients admitted to the heart-stroke unit to the experience of all patients with stroke admitted to the hospital the year before the opening of the heart-stroke unit.

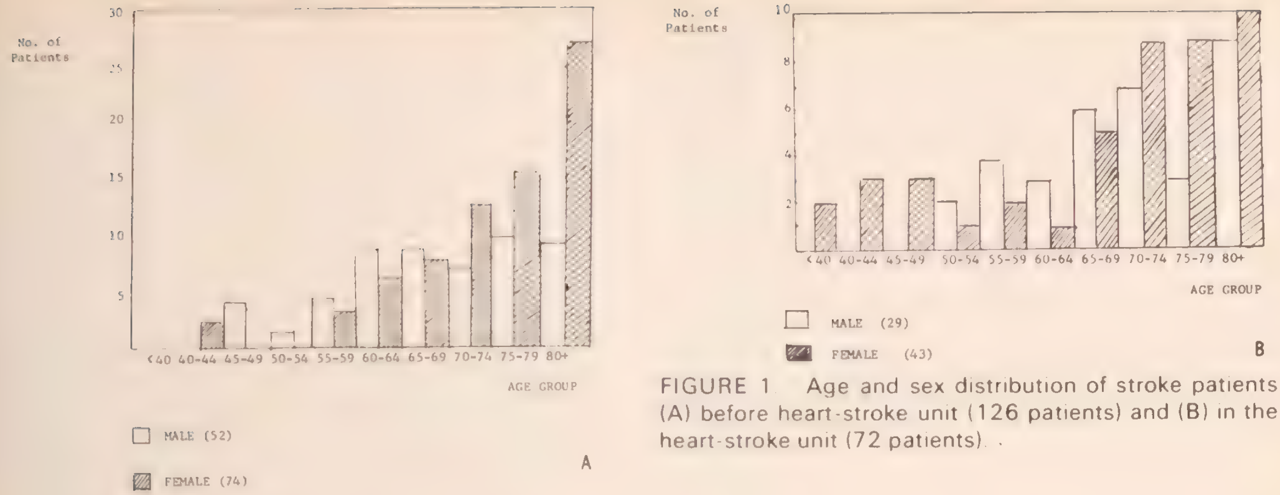

FIGURE 1 Age and sex distribution of stroke patients (A) before heart-stroke unit (126 patients) and (B) in the heart-stroke unit (72 patients).

tion of the unit. There have been no new methods of treatment instituted at the Benedictine Hospital during this time, and no recognized variables other than those related to the project itself have been introduced.

Results

There were 126 patients with stroke in the comparison group and 79 patients with stroke in the heart-stroke unit group.* The results of analysis follow.

The distribution of patients by age, and sex, before and after the development of the heart-stroke unit is shown in Figure 1. The age and sex distribution are as expected, with the elderly age group preponderant and a greater incidence among women. Somewhat surprising is the fact that 8 women under age fifty were admitted to the heart-stroke unit. The diagnoses of those 8 patients were: transient ischemic attack 3; thrombosis 1, hemorrhage 2, embolism 1, and subarachnoid hemorrhage 1. Future reference will be made to these patients in the discussion of mortality rates.

The diagnoses of stroke patients in the heart-stroke unit and control groups are shown in Table I and Figure 2. Several comments are appropriate. First, the increased number and per cent of patients admitted to the heart-stroke unit with a diagnosis of transient ischemic attack may well be a reflection of the increased awareness of this problem as a result of the project's educational program. Second, these shifts in diagnosis percentages must be considered in evaluation of the overall effectiveness of the unit.

The overall mortality rate of all patients with acute cerebrovascular disease admitted to the heart-stroke unit was 39 per cent. The mortality rate of the control population was 48 per cent (Fig. 3). Further analysis of this 9 per cent reduction in death rate revealed several things.

The most significant reduction in number of deaths occurred in the age groups under fifty (Table II). Relatively little change in mortality rate was effected in the age groups over fifty. As mentioned earlier, the 8 patients with acute cerebrovascular disease admitted to the heart-stroke unit did not necessarily have less severe cerebral disease by diagnosis but may well have had a lower frequency of other diseases such as coronary heart disease, hypertension, and diabetes mellitus.

The per cent reductions in mortality rates are not significantly different between male and female. There was, however, a slightly greater percentage reduction among females than among males (Table III).

Analysis of mortality rates by disease indicates that significant saving of life probably occurred in the heart-stroke unit among those patients with cerebral thrombosis (Table IV). Cerebral embolism deaths also were reduced in the unit, but the number of patients treated was small. Of interest is the fact that deaths from acute subarachnoid hemorrhage were markedly reduced in the unit, whereas deaths from cerebral hemorrhage were more frequent on a percentage basis. If possible uncertainty of diagnosis between these two types of hemorrhage is taken into consideration and the two categories are grouped, the deaths from both types of hemorrhage in the control population were 64 per cent and in the heart-stroke unit population 65 per cent.

The moribund death rate, defined as deaths occurring within forty-eight hours of admission, decreased by approximately 15 per cent. The moribund deaths in the control population were 38 per cent whereas the moribund deaths in the heart-stroke unit were 23 per cent. This is consistent with the conclusion that better care is being rendered the acutely ill patient in the heart-stroke unit. The overall mortality rate excluding moribund deaths was unchanged: 29.4 per cent in the control group and 30.4 per cent in the heart-stroke unit group.

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*Two patients still hospitalized on August 31, 1970, are not included in the data.

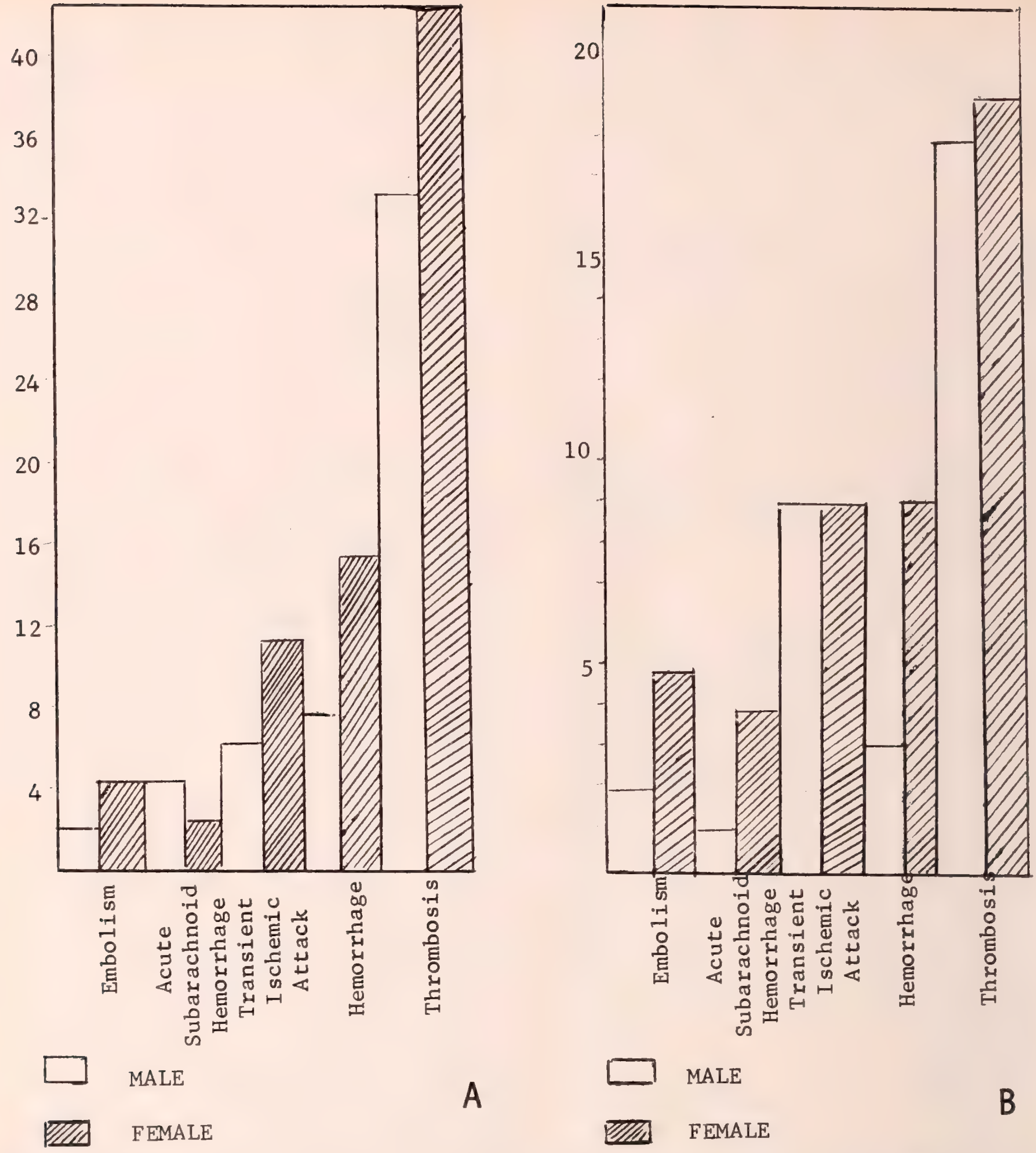
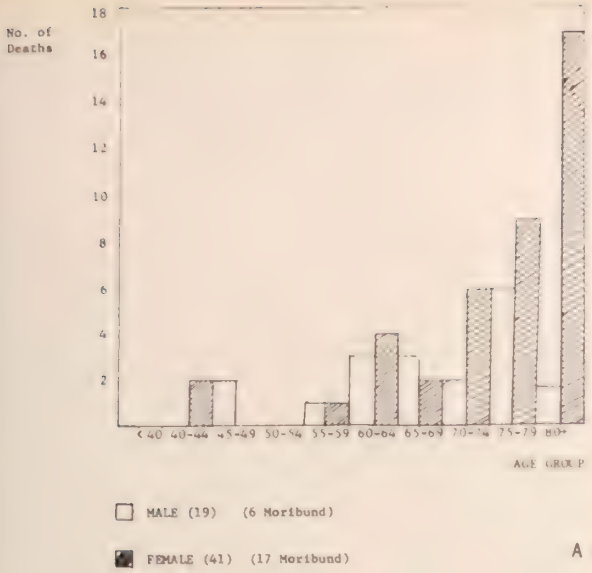


FIGURE 2. Disease distribution of stroke patients (A) before heart-stroke unit (126 patients) and (B) in heart-stroke unit (79 patients).

The mean hospital stay for all patients increased approximately four days. The mean hospital stay for nonmoribund deaths increased from 16.5 days to 25.6 days, and that for survivors decreased from 26.5 days to 22.8 days. This indicates that those nonmoribund patients who eventually died in the hospital lived longer by approximately ten days from time of admission to time of death. This suggests the possibility of better acute care, thus allowing the patient a greater chance for ultimate survival. There was no significant change in the mean hospital stay for those patients who survived their strokes. The somewhat shortened hospital stay for survivors in the heart-stroke unit may suggest that physicians are mobilizing stroke patients sooner as a result of the educational program. However, a firm conclusion is not justified until further data are accumulated.

Certain complications developing in the control group and in the patients in the heart-stroke unit are shown in Table V. Complications of the skin



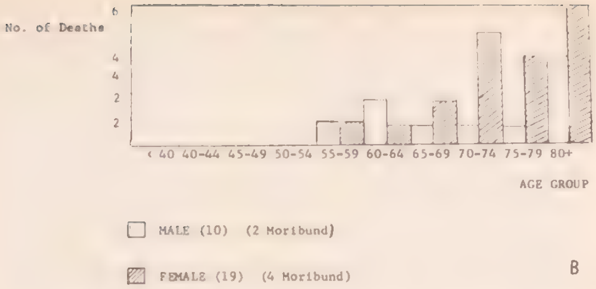


FIGURE 3 Age and sex distribution of deaths of stroke patients (A) before heart-stroke unit (60 patients) and (B) in heart-stroke unit (29 patients). Moribund deaths are defined as deaths occurring within forty-eight hours after admission.

TABLE I. Disease distribution of stroke patients

Diagnosis	Controls Number of Patients	Per Cent	Heart-Stroke Unit Number of Patients	Per Cent
Cerebral thrombosis	75	59	37	47
Hemorrhage	22	17	12	15
Transient ischemic attack	17	14	18	23
Subarachnoid hemorrhage	6	5	5	6
Embolism	6	5	7	9

TABLE II. Mortality rate by age group

Age Group	Mortality Rate Before Heart-Stroke Unit (N = 126)	Mortality Rate in Heart-Stroke Unit (N = 79)
50	66.7 (N = 6)	0.0 N = 8)
50–69	35.0	33.3
70	52.5	48.9

and urinary tract were significantly less in patients in the heart-stroke unit than in those patients in the control group. Pulmonary complications, however, were slightly greater in patients in the heart-stroke unit—a fact that warrents further investigation.

Table VI compares the angiographic studies, spinal fluid studies, and physical therapy referrals in the control population and in the patients in the heart-stroke unit. These three comparisons are assumed to reflect partially the effectiveness of the educational aspects of the program. Most impressive is the marked increase in number of spinal fluid studies performed from 15 per cent before the heart-stroke unit to 38 per cent in the heart-stroke unit. Angiographic studies, available to both populations, also increased almost threefold, on a percentage basis, in the heart-stroke unit. Of interest, however, is the fact that physical therapy referrals did not increase in the heart-stroke unit and in fact decreased somewhat. The reason for this decrease is not apparent, although the specially trained nurses quite definitely became more aware of the need to turn and move the patient with acute cerebrovascular disease.

TABLE III. Mortality rate by sex

Sex	Before Heart-Stroke Unit Number Patients	Deaths Number	Per Cent	In Heart-Stroke Unit Number Patients	Deaths Number	Per Cent
Male	52	19	36.5	34	11	32.4
Female	74	41	55.4	45	20	44.4

TABLE IV. Mortality rate by disease

Disease	Before Heart-Stroke Unit Number of Patients	Per Cent	In Heart-Stroke Unit Number of Patients	Per Cent
Embolism	6	83.3	7	57.1
Subarachnoid hemorrhage	6	100.0	5	40.0
Transient ischemic attack	17	0.0	18	0.0
Hemorrhage	22	54.5	12	83.3
Thrombosis	75	49.3	37	40.5
Subarachnoid hemorrhage and hemorrhage		64.0		65.0

During the study, 2 stroke patients survived probably because of electrocardiographic monitoring. Both these patients developed ventricular fibrillation; in both circumstances the arrhythmia was promptly recognized and treated. Both patients ultimately survived. Many other patients with acute cerebrovascular disease had complicating cardiovascular problems which were recognized and managed in the usual coronary core unit fashion.

TABLE V. Incidence of complications

	Before Heart-Stroke Unit						Heart-Stroke Unit					
Complication	Male (52)	Per Cent	Female (74)	Per Cent	Total (126)	Per Cent	Male (34)	Per Cent	Female (45)	Per Cent	Total (79)	Per Cent
Pulmonary	7	13.5	8	10.8	15	11.9	5	14.7	6	13.3	11	13.9
Skin	4	7.7	9	12.2	13	10.3	1	2.9	2	4.4	3	3.8
Urinary	3	5.8	5	6.8	8	6.3	0	0.0	2	4.4	2	2.5
TOTAL	14	27.0	22	29.8	36	28.5	6	17.6	10	22.1	16	20.2

TABLE VI. Number of laboratory studies performed and physical therapy referrals made

	Before Heart-Stroke Unit (126)		Heart-Stroke Unit (79)	
Procedure	Number	Per Cent	Number	Per Cent
Angiographic study	5	4.0	9	11.4
Spinal fluid study	19	15.1	30	38.0
Physical therapy referral	25	37.9	16*	33.3

* Of 48 patients.

Other observations

Combining the management of acutely ill stroke patients with acutely ill cardiac patients has had no observed deleterious effect on the latter group. Initial reservations concerning the wisdom of this combination of services have now been dispelled. The heart-stroke unit of the Benedictine Hospital provides, in the same unit, sufficient separation of patients to preserve a restful environment for both groups of patients.

As the combined heart-stroke unit began operation, it soon became evident that the coronary care nurses, initially guarded in their acceptance of the concept of the combined heart-stroke unit, were becoming more enthusiastic. Two factors contributed to this change of attitude. They are (1) the utilization rate of the unit increased and thereby afforded greater opportunity for the nurses to use their special skills, and (2) the educational program provided intellectual stimulation for the nurses and further enhanced their professional stature as specialists in the nursing care of both coronary and stroke patients.

The efficiency of patient care was improved in several ways. Prior to the use of the pre-existing coronary care unit as a combined heart-stroke unit, it was not unusual to have a highly trained staff of 5 or 6 nurses doing "special duty" on 1 coronary patient. This, of course, contributed to the continued spiraling cost of hospital care. The inclusion of patients with another category of illness in the unit has lessened the problem. In addition, 2 electrocardiographic telemetry units have now been placed in the nearby intensive care unit with monitoring being done in the heart-stroke unit. This further enhances the flexibility of the heart-stroke unit-intensive care unit relationship and assists in providing better medical care more efficiently.

There appears to be no doubt that the heart-stroke unit has awakened the interest of the medical, nursing, and paramedical professions to the problem of acute stroke. It has done much to dispel the fatalistic approach formerly prevalent—admitting a stroke patient to an acute hospital bed, giving the supportive treatment deemed advisable for the short term, and perhaps too passively accepting that survival or death of the patient was preordained with little to be effected by treatment. Any improvement in the care of stroke patients that has resulted has been related to improved nursing care and improved medical management, probably as a result of continuing medical education.

Summary

The development of a combined unit to render high-quality care to patients with acute cerebrovascular and cardiac disease is described. Professional education directed toward improved diagnosis and management was an integral part of the total program. The data, so far based on one year's experience, indicate improved patient care. Although more data are needed from this unit, this combination of services may deserve further consideration in other hospitals.

Scalp Lesions in Early American Art

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American primitive art is popular today. This is the art of the early days of the American colonies, a blend of English traditionalism with the spirit of the new frontier. Stark realism was not a feature of this period in colonial history. Therefore, it should be strange to find disease portrayed at that time.

The state of dermatology in colonial America is of interest because of Capt. John Smith's descriptions of poison ivy, Daniel Drake's concepts of various dermatoses,[1] and the definite existence of venereal diseases. One evidence of syphilis is the *Virginia Gazette* description of pills for syphilis. This is found in an abstract from the *Williamsburg Gazette*: "Years 1772-74 were Dr. Keyser's celebrated anti-venereal pills." These were backed by testimonies of 2 English and 3 French Dukes. Gall published lengthy accounts of owning that: "The patient is most effectively cured without any inconvenience to himself or being exposed to the shame or confusion of his disaster being known to the nicest Observer."

> "These wonderful pills were said by Dr. Gall to not only cure syphilis but also be available for asthma, suppression of urine, palsy, apoplexy, sciatics, and the green sickness and more especially in the awes."[2]

One of the joys of Williamsburg is the Abby Aldrich Rockefeller Folk Art Collection. Curiously, dermatology has been found in this excellent collection. This is a portrait of Amos Morrow, by Thomas Peale Polk (1767-1822). In this carefully prepared, stylized, almost photograph-like portrait, the sparse whitened hair is combed very precisely over 2 large spots (Fig. 1). Little is known about the history of this gentleman farmer or his prominent scalp disorder.

It is curious that these striking lesions have not been discussed before by the many physicians who have enjoyed their visit to Williamsburg. Jean C. Hildreth, registrar of the Abby Aldrich Rockefeller Folk Art Collection, has always believed the lesions were wens. The portrait illustrates some of the dangers of inspection diagnosis of medicine in art, often colored by the prejudices of the observer, especially when the critical curator is not around.

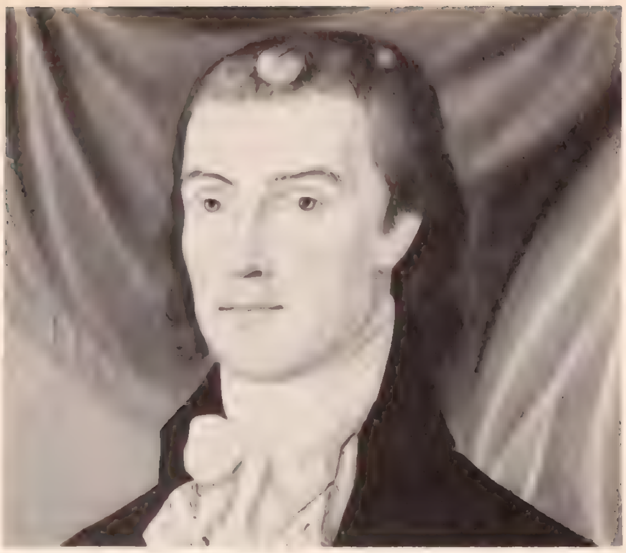

FIGURE 1 Scalp lesions—Cysts? Amos Morrow, by Thomas Peale Polk (1767-1822). (Abby Aldrich Rockefeller Folk Art Collection, Williamsburg, Virginia.)

Because of the apparent white color of the sparse hair, uncommon over epidermal cysts, the portrait of Amos Morrow was graciously presented for inspection diagnosis to a number of dermatologists and also to the October, 1970, meeting of the Cincinnati Dermatological Society. The majority favored a diagnosis of cysts of the scalp, admitting the white hair was confusing. The next most popular diagnosis was alopecia areata. Following these were diagnoses of turban tumors and exostoses of the scalp. Stimulated by the confusion of the dermatologists, Hildreth examined the painting in detail through magnifiers and found that the hair, painted delicately with a fine brush, was brown not white. These scalp lesions, then, add charm to, as well as additional information about, dermatology in colonial America.

One cannot expect the early American painters to have been influenced by portraits of disease as shown in the ancient pottery of the pre-Columbian and Columbian Indians of North America. The portrayal of pathologic conditions in ceramics was rare in the North American Indian cultures as compared with the wealth of such material in the ancient and vigorous Andean civilizations.

Polk's portrait of Amos Morrow demonstrates that family portraits may supply medical pictures for exercises in differential diagnosis. In American art, this remained so until the time of Eakins[3] and his vigorous paintings of the state of medicine in Philadelphia.

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Henri Mondor, M.D. [1885–1962]

Surgery and French letters

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Medical eponymy preserves the name of Henri Mondor in the term Mondor's disease, thrombophlebitis of the thoracoepigastric vein. He first described the entity with its cord-like veins in the anterior chest wall in 1939[1] and reviewed it in 1951[2]; but to attach his name to this uncommon lesion is but scant tribute to a man who achieved eminence in two fields, clinical surgery and literature. Most physicians with literary interests have had to subordinate them to the exigencies of medical practice. A few who have embarked on successful careers as writers, for example, Smollett and Chekov, finally discontinued medical practice; rarely do we find a physician, such as William Carlos Williams, who continues in a large active practice and contributes regularly and in full measure to the literary scene of his day. Special qualities of mind and circumstance combined in the case of Henri Mondor to permit him to lead a double life with equal success in both roles. During his lifetime he was one of the most distinguished surgeons in France as well as a highly valued biographer, literary historian, editor, and critic. Yet, despite the eponym, despite being professor of surgery at La Salpetrière, and despite his election to the Académie Française, his name is little known outside France except by an occasional surgeon interested in either vascular or mammary surgery, by a student of modern French poetry, or vaguely by a medical historian. Surely Mondor's achievements were no less impressive than those whose names may be more familiar, and one might profitably speculate on what decides whether a man's name and work shall be commonly remembered, found only in a footnote or in a bibliographic entry, or "writ in water."

The student

Born at Saint-Cernin in 1885, Mondor grew up under the brooding, volcanic landscape of the Auvergne, a region whose name serves to remind us that decensus is facile, but to rise to any achievement is difficult and requires effort. Mondor's father, an administrative official in the local school system, recognized his son's intelligence and saw to it that at the age of nine he took the first examination which would qualify him for later entry into the University of Paris, but it was his mother who directed his steps into the merciful calling of medicine. His secondary education was at the lycée in Aurillac, a nearby small city, and in 1903 he went to Paris, matriculating as a student under the Faculty of Medicine. It was not long after the fin de siècle, a period of peace when Paris was the most important and vital center of learning and culture in western Europe. The fauvists and later the cubists were replacing the impressionists as the avant-garde in the world of art. Debussy's music was no longer being considered strange and idiosyncratic. The three major poets of the latter half of the nineteenth century, Mallarmé, Rimbaud, and Verlaine, were dead, but Jarry's *Ubu-Roi* and Valéry's *Une Soirée avec M. Teste* had both appeared in 1896, the former marking an antirational and the latter a hyperrational tendency in French letters. The intellectual life of Paris to which Mondor was exposed was an active ferment of ideas and technics. Although his predilections were by no means formed at the age of eighteen, he brought with him from the Auvergne a penetrating intelligence, a sense of order, a systematic approach to all forms of intellectual endeavor, and an inquisitive mind. By a stroke of good fortune, one of Mondor's classmates in the Faculty of Medicine was Georges Duhamel, who, like Mondor, received his M.D. degree in 1909, practiced medicine, served as a military surgeon during World War I, but later abandoned medicine for a career as a novelist: *Chroniques de Pasquier*, 1933 to 1944, and other works. Mondor and Duhamel became close friends, a relationship which lasted for over half a century. To what extent Duhamel who, at the time they met, was more widely read and had more sophisticated literary judgment, influenced Mondor's literary tastes and responses remains unassessable; but in any case it was a happy chance that brought together in the same medical class two young men of such compatible interests.

Surgeon and medical writer

However profound was his interest in literature, Mondor's first task was to secure his medical education, his graduate training, and to establish his professional reputation. This requirement became more important following the death of his father in 1907, at which time he invited his mother to make her home with him in Paris. Although the son became Parisian to his fingertips, his mother with her provincial outlook and failing eyesight did not adapt well to the capital. Nonetheless she made her home with her elder son for over two decades until her sudden death in 1928. After completing his basic medical studies in 1909, Mondor elected to become a surgeon. He entered the training program of Paul Lecène and went progressively through the various stages of acquiring surgical technic and surgical judgment. Mondor never ceased to admire and honor his first chief of service. In *Anatomistes et Chirurgiens* (1949) one may find an eloquent tribute from the student, now a full professor in his own right, to the master who taught him three and four decades previously. Mondor's cursus honorabilis in surgery was interrupted by World War I. Operating under pressure and the heat of battle, his nimble mind soon learned to discriminate among the various degrees of surgical emergency, an experience he later turned to practical use in an important textbook. Returning to Paris and his hospital appointments after the war, Mondor continued to apply himself to both clinical problems and a program of publication designed to win favorable academic attention.

First, he revised his thesis of 1914 for publication as a monograph. It appeared in 1923 as *Cancers du rectum*, and later that year he published *Ulcères perforés de l'éstomac et du duodenum*, a clinical study supported by some of the early x-ray studies of that surgical emergency; Mondor was among the earliest of surgeons to emphasize that the mortality rate is reduced as the interval between onset of symptoms and surgical closure of the perforation is shortened. The sporting life of Paris being what it was, Mondor had no trouble finding material for his next monograph *Arthrites gonococciques* (1928), but his most successful book was *Diagnostics urgents*, a lucid primer on emergency diagnosis which appeared first in 1930. It went through five editions, sold over 35,000 copies, and was still in print at the time of Mondor's death in 1962. Ever since his military experiences in World War I, when he had to decide whether to operate and what operation to perform on the basis of a brief history and immediate physical findings, Mondor, who was quick-thinking in addition to being profound, had been fascinated by the decision-making process. We must remember that in World War I there were no mobile x-ray units and no emergency laboratory facilities in military aid stations near the front lines. Even the methods and equipment available in base hospitals were primitive judged by today's standards. Mondor's surgical experience in the 1920s was based on similar circumstances; he had to rely more on the evidence of his senses than on radiologic and laboratory data. The same conditions applied to every other major surgical clinic; to choose an obvious example, the emergency hematocrit procedure had not yet been developed. *Diagnostics urgents* filled a real need in the French medical literature and was deservedly popular. It was translated into Russian and Dutch. No English translation was necessary, for it covered much the same ground as Cope's *Early Diagnosis of the Acute Abdomen.*

While preparing these monographs, Mondor also published a considerable number of clinical studies in medical journals. His first articles dealt with lessons learned from his military surgical experience, questions of wound healing, various types of trauma, and so on, but during the 1920s and 1930s he wrote more than 50 articles, many of them dealing with specific aspects of rectal cancer, perforation of viscera, late effects of gonorrhea, surgical emergencies, that is, subjects related to his monographs in which he dealt with them at greater length. However, he touched on other topics, often in collaboration with his juniors, using the occasion to teach them how to prepare material for publication. After *Diagnostics urgents* had established his reputation, Mondor prepared only two other monographs for the medical press, *Les avortements mortels* (1936) and *Radio-diagnostics urgents* (1943). The former was based on his extensive experience in gynecologic surgery which was then practiced in Paris by general surgeons; the latter demonstrated the increasing value of roentgenography in emergency situations. Most of his journal articles were "bread and butter" pieces, well written to be sure, but clearly the work of a young man intent on rising up the academic ladder in clinical surgery. After 1940 his medical journalism decreased; he reserved such occasions to describe unusual clinical entities which caught his fancy, such as thrombophlebitis of the thoracoepigastric vein. But his ability to write simply and clearly and his facility with words were uncommon among physicians, and he became coeditor of the *Journal de Chirurgie* and *Presse Médicale* as well as a member of the editorial board of the *Revue de Chirurgie* and of *Gynécologie et Obstétrique.*

Mondor's initial appointment in 1920 was that of hospital surgeon; after his thesis on rectal cancer was published in 1923, he became agrégé to the Faculty of Medicine and served successively at such famous hospitals as the Broussais, the Bichat, L'Hôtel-Dieu, and the Salpetrière. He was assigned to teach anatomy and symptomatology to the medical students, and he continued at this plateau for fifteen years until he was appointed professor of surgical pathology in 1938. The only distinction he won during these years was election to the Académie de Chirurgie in 1926. His appointment in surgical pathology led him to make useful revisions in the curriculum, and he was appointed clinical professor of surgery in 1941, a role he filled with distinction until his retirement in 1955.

Biographer, historian, and critic

Were the aforementioned the sum total of Mondor's achievement, he would be no different from hundreds of other competent clinical surgeons who were effective teachers and writers. It is the other half of Mondor's double life which claims our attention, his work as literary biographer, historian, and critic. Significantly, he did not make his debut in letters until after his mother's death in 1928 and after Lecène's in 1930. Mondor's younger brother had been killed in 1918, and Mondor, who lived with his mother into his forty-fourth year, never married. Being a bachelor with no close family obligations gave him the necessary time free from interruption or intrusion to pursue his literary interests while still practicing surgery. Not long after his mother's death he moved into the well-furnished, gracious apartment in the Rue de Jouffroy near L'Étoile where he lived for the rest of his life. It was there that he set up his library with its collection of finely bound books, manuscripts, and literary memorabilia, and in that well-stocked library was his writing desk (Fig. 1). He set a pattern of life for himself which was regular, predictable, and efficient, but one which does not lend itself to amusing biographic anecdotes. Mornings he would make rounds at the hospital, conduct teaching sessions, and perform whatever surgical procedures were necessary; he also spent some afternoons at the hospital continuing these duties. A few afternoons in the week were devoted to administrative meetings, editorial conferences, or to meetings of one or another of the professional or literary societies to which he belonged. His evenings were devoted to reading and writing. The combination of a reflective and critical mind coupled with long years of apprenticeship at writing made it easy for him to be productive. As one reads both his medical papers and literary essays, the prose moves fluently, and one senses that his paragraphs were fully considered before he wrote them down, that he found extensive rewriting unnecessary, and that only a few minor changes were made between his first draft and his final one. It was a triumph for logic, order, and a refined sensibility.

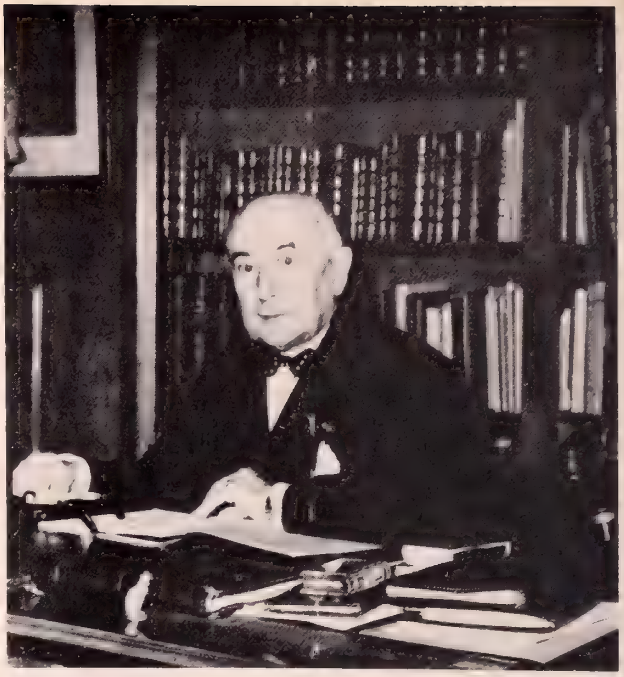
FIGURE 1. Photograph of Henri Mondor at his desk in his library at 92 Rue de Jouffroy.

Not even the occupation of Paris in World War II distracted him from his self-imposed round; in fact, the years 1941 to 1945 saw the publication of some of his most important books. His only major recreation appears to have been visiting museums and art galleries, especially when visiting foreign cities to attend meetings of surgical societies. Although he was on good terms with the leading writers and publishers of his day, he recognized that he had only a limited number of evenings to dispose of, and he avoided minor social engagements, preferring to spend his time in his library or at his desk. But he was not shy and retiring; he was much in demand as a platform speaker on public occasions, and the few of his formal addresses which have been preserved show how carefully they were planned and how precisely he gauged their effect on the specific audience.

Characteristically, his first nonclinical publication was a long essay, a formal éloge on Paul Lecène (1932) in which he paid warm tribute to his master's skills and ideals as a teacher and surgeon. His next major work was titled *Lettres et Images pour Georges Duhamel* (1937). Using the rhetorical device of the open letter, he took the occasion for an appreciative exposition of his friend's philosophy as expounded in his novels, an attitude based on such human values as tolerance and compassion for misfortune coupled with misgivings about the future of a mankind which placed its faith in mechanical and material progress. The "images" in this book were over a dozen drawings by Mondor himself. Always a skilled anatomic draughtsman, Mondor developed this talent into a knack for book illustration, and over the years executed drawings for some 16 books, the best known being for Paul Valéry's

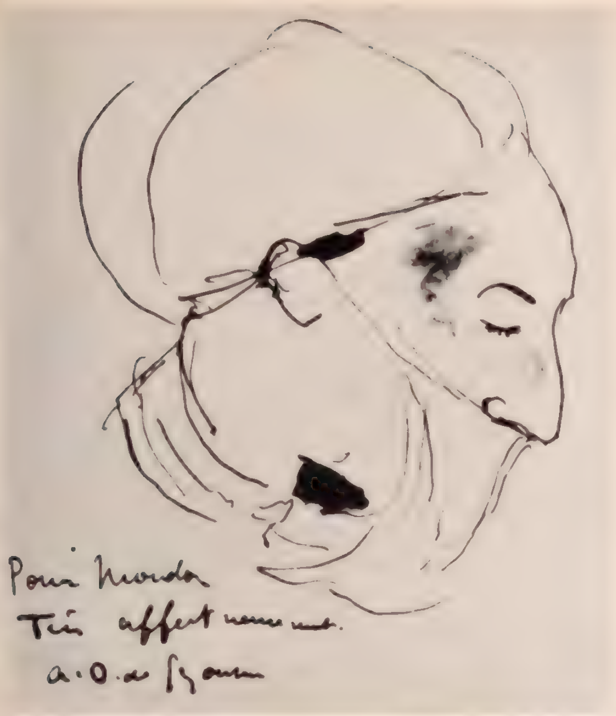

FIGURE 2. Pen and ink drawing of Henri Mondor by André Dunoyer de Segonzac

L'Homme et la Coquille and for Mazade's *La Rose.* These books were published in small editions and are not generally available, but Mondor's precise representational drawings reflect the accuracy of his vision and his emphasis on verifiable experience. In the course of such work he made the acquaintance of several well-known artists, some of whom sketched his alert, mobile, fine-featured face (Fig. 2).

Continuing his early experiments in medical biography, Mondor wrote a number of such studies, some short and collected as essays, namely, *Grands Médecins presque tous* (1943) and *Anatomistes et Chirurgiens* (1949), the latter notable for its fine essay on Guy de Chauliac, others full length such as *Pasteur* (1945), *Dupuytren* (1945), and a formal éloge on his contemporary *René Leriche* (1946). But medical biography was not his best métier, and he soon left that field to others.

Mondor's contribution to French letters far surpassed his medical biographies both in quantity and quality. Ever since his youth he had fallen under the spell of Mallarmé's poems. For many years he had collected whatever he could in the way of manuscripts, unpublished poems, letters, allied contemporary source material, and literary "ana" concerning him. Long before he actually published anything about Mallarmé, he was recognized as an authority and was an active member of L'Académie Mallarmé. His first publication dealing with Mallarmé was the modest essay *L'Amitié de Verlaine et Mallarmé* (1940) in which he published their correspondence, annotating it to demonstrate the cross-fertilization between these two dissimilar personalities whose poetic ideas intersected rather than coincided. This was followed by the long, carefully documented, now "official" biography, *Vie de Mallarmé,* in 1940 to 1942, a perdurable work of scholarship, almost stereotypically Germanic in its thoroughness yet Gallic in its felicitous sensitivity. One measure of its success is that it was in its thirty-seventh edition at the time of Mondor's death some twenty years later. Because of this monumental biography and his access to primary sources, Mondor was chosen with Aubry to edit the Pléiade edition of Mallarmé's *Oeuvres Complètes,* one of the monuments of French letters, and Mondor supervised the revised and enlarged edition which appeared in 1951.

But Mondor had by no means exhausted the material he had so carefully accumulated about the poet he admired so deeply. Along with selected collaborators he edited the several volumes of Mallarmé's personal and literary correspondence, invaluable source material for future generations of scholars. He also wrote several shorter books on special aspects of Mallarmé's life and work: *Mallarmé plus intime* (1944), *Mallarmé sur la Poésie* (1946), *L'Histoire d'un Faune* (1948) in which he presented an unknown preliminary version of *L'Après-midi d'un Faune,* and *Mallarmé lycéen* (1954), including more than 40 poems written in the poet's youth which Mondor had retrieved from manuscript sources. Two of Mondor's last books deal with further aspects of Mallarmé, appearing in the last years of his life; *Autres Précisions sur Mallarmé* (1961) brought forward preliminary drafts of many of his poems, indispensable for tracing his creative process, and *Les "gossips" de Mallarmé* (1962) presented the original texts of essays which the poet had contributed to *The Atheneum* in London in the winter of 1875 to 1876.

One might think that such a full measure of devotion to a single literary figure by a busy surgeon would suffice, but Mondor's interest in literature and the creative process was broadly based. His perceptive mind and busy pen produced such penetrating studies as *Rimbaud, la Génie Impatient* (1955), a study of that poet maudit, *Claudel plus Intime* (1960), dealing with the diplomat-poet whose writings were a religious affirmation, "une obligation du conscience," and *Alain* (1953), a study of that contemporary philosopher who influenced so many writers during the first half of the twentieth century by trying to provoke thought by stimulating men's minds rather than by imposing a predigested system of thought, who, like Descartes, wanted man to be capable of both doubt and decision, who regarded happiness not as the result of virtue but as virtue itself, a philosophy to which Mondor was in large measure sympathetic and with which he could identify.

But these books, regardless of how brilliant was Mondor's exposition and analysis, did not form a corpus of work comparable to his studies on Mallarmé. That honor was reserved for his close friend Paul Valéry. Starting with *Les Premiers Temps d'une Amitié: Valéry et Gide* (1947), a study in some ways comparable to his earlier analysis of the relationship between Mallarmé and Verlaine, he continued with *L'Heureuse Rencontre: Mallarmé et Valéry* (1948) in which he memorialized the meeting between the most important poet of the latter part of the nineteenth century with the young man destined to become the most distinguished poet of the first half of the twentieth century. Later that year he published *Trois Discours pour Paul Valéry* (1948), a collection of three public addresses in which he had honored his friend. Mondor's analysis of that seminal poem *Le Cimetière Marin* appeared in 1954, and his last two books on Valéry appeared in 1957, *Précocité de Valéry* and *Propos Familiers de Paul Valéry*. All of Mondor's studies on Valéry appeared after the poet's death in 1945, as if he could not bring himself to expose to public view his sentiments about a poet so sympathetic to his own ideals while that poet was still alive. Mondor was a cautious man who recognized that many a literary friendship has broken over an essay by a well-disposed critic which the poet has misconstrued, claiming that his erstwhile friend had misunderstood him. But after Valéry's death it was Mondor who was elected to fill his fauteuil at the Académie Francaise, the highest honor which could be paid him. Unlike many academicians who prove antipathetic to their immediate predecessor (Valéry contra Anatole France in 1924), Mondor's generous spirit seized every opportunity to praise Valéry and win the sympathies of the reading public for him. Mondor's speech of acceptance on his reception in the Académie, titled "Entretien au Bord du Fleuve" (1947), was a memorable analysis of Valéry's literary strengths, and by an unusual coincidence the response was by his old fellow medical student, Georges Duhamel, who was equally laudatory about Valéry and the new member.

For a medical readership one of the most revealing passages in his many essays is from his introduction to a book reprinting many of Daumier's lithographs on physicians and diverse aspects of medicine. Mondor's perspective on the distinguished French graphic satirist's view of the medical profession is as follows[3]:

> First of all, it is in accordance with the oldest literary traditions that doctors should be involved in the endless charges brought by malcontents against established institutions by the frivolous-minded against everything serious, by writers against science, by the ignorant against any subjects they find hard to understand, and finally by the sick or born grumblers against the men who heal them slowly or incompletely, or who appear to treat them roughly and automatically rather than with sympathy. These have been subjects of discord since time immemorial.
>
> If the medical profession were able to attain to all its own goals, or simply to keep all its promises; if doctors were all infallible and personally irreproachable, their methods perfect and their disinterestedness obvious—then medical science would be a sacred, almost holy, thing, and writers and artists would be deprived of a fine target at which to aim their talents. But medical science, thank goodness, is still human and temporal. Those who practise it have always considered satires on their profession relevant, and indeed useful, but have put up with them less for such considerations than for their own pleasure. There is nothing masochistic in their applause of Molière . . . . Daumier's caricatures, whether they are subtle, cruel, or fantastic, invariably move or amuse them.
>
> Was the medical profession as depicted by this great visionary larger than life or colored by his own romanticism? No doubt it is simply an effect of art that makes it appear so. Ever since Balzac, there have been Balzacian lawyers and clients; since Zola and de Maupassant there have been peasants such as they imagined, and it has been said that shadows have been blue since the time of the impressionist painters. It is true that our modern doctors can hardly recognize themselves in these stylized and caricatured ancestors. Nor, doubtless, did the doctors of a century ago consider these portraits lifelike—as we shall see, they cut better figures than this. Perhaps Daumier helped them to correct certain failings. The motto castigat ridendo mores can be applied to all professions and all social classes. Mankind feels the need of a deforming mirror so that it may laugh at its own image encountered at some street corner, in a magazine, or at the circus . . . . To many men, everything connected with illness and inevitably with death, seems apocalyptically hilarious, terrifying, or heart-breaking. Perhaps this is one of the ways in which the mind defends itself against painful truths. Macabre humor has long been one of the mainstays of our theatre and of satirical poetry . . . since fear can be exercised by making suffering appear ridiculous. There is a tendency to exaggerate the tyranny imposed on us by our mortal coil. Chamber pots and clysters have been a joke ever since these humble objects came into existence. Medicine in both its active and passive aspects—that is, doctors and their patients—is a favorite subject for caricaturists. Because Daumier was a moralist as well as a humorist, he treated them with the severity of a judge and with profound sadness. The doctors in his lithographs are invariably vain, pedantic, greedy, egotistic, or hard and indifferent. They personify the inevitable imperfections of a science in constant evolution and which, it must be admitted, was far from adult in Daumier's day . . . . Thus, it was an easy matter to caricature the magicians in their black robes and square caps or their frock coats and white cravats. Their costume lent them the authority that science still lacked.

This approach to a set of objects in the field of visual art was no different from Mondor's method of analyzing literary works. It was based on a broad view of human behavior, seen, as the surgeon often can, under a variety of emotionally charged situations. To this view of human nature he added a wide background in the humanities, fusing art and science into a single culture, thereby achieving a unity of vision which illuminated his entire life work.

One of Mondor's biographers has tried to make much of the apparent paradoxes in his life, contrasting his asceticism with his love for fine things, his role as moralist as being in opposition to his demand for objective thinking and scientific proof, his artistic and literary enthusiasm as a contrariety to his distrust of intuition. These paradoxes vanish when we consider that his intellectual austerity was the mode of conduct he adopted for the sake of control. He deliberately created a life style which permitted him to make the most of his talents, but it was a life in which few events were left to chance. Although Mondor was sensible of the magnitude of his achievement and never assumed the cloak of false modesty, he never lost his sense of measured proportion. Even in casual, relaxed moments he ran true to form. In 1959 he wrote in an admirer's autograph album not the expected witty quatrain but the meaningful alexandrine couplet which might well serve as his epitaph:

Et peut-être, espérant rencontrer Dieu plus près,
Ai-je surtout aimé le plaisir d'admirer.

What a volume of detachment is to be found in that "peut-être!" Mondor, always reserved, kept his reservations to the end.

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Necrology

Orrin Emanuel Anderson, M.D., of New York City, died on July 23 at the age of sixty-nine. Dr. Anderson graduated in 1932 from Cornell University Medical College. He was a consulting otolaryngologist at St. Luke's Hospital Center. Dr. Anderson was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the American Broncho-Esophagological Association, the American Laryngological, Rhinological and Otological Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard M. Arkwright, M.D., of Huntington, died on August 2 at the age of seventy. Dr. Arkwright graduated in 1928 from the University of Nebraska College of Medicine. He was an attending surgeon and general practitioner at Huntington Hospital. Dr. Arkwright was a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Estin, M.D., of New York City and Ocean Beach, died on July 12 at the age of sixty. Dr. Estin received his medical degree from the University of Genova in 1936. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ira Fink, M.D., of New York City, died on July 28 at the age of seventy-five. Dr. Fink graduated in 1921 from Long Island College Hospital. He was a consulting thoracic surgeon at Sea View Hospital and Home and an associate thoracic surgeon (off service) at Polyclinic Hospital. Dr. Fink was a Fellow of the American College of Surgeons, a Fellow of the American College of Chest Physicians, a Fellow of the International College of Surgeons, and a member of the Industrial Medical Association, the New York Academy of Medicine, the New York Society for Thoracic Surgery, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Herbert Hall, Jr., M.D., of Jamestown, died on June 10 in an automobile accident at the age of fifty-three. Dr. Hall graduated in 1943 from the University of Buffalo School of Medicine. He was an attending surgeon at Woman's Christian Association and Jamestown General Hospitals. Dr. Hall was a member of the James Ewing Society, the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hillel Leib Horn, M.D., of Rochester, died on July 11 at the age of forty-five. Dr. Horn graduated in 1953 from the University of Pennsylvania School of Medicine. He was an attending physician at Rochester General Hospital. Dr. Horn was a Diplomate of the American Board of Internal Medicine and a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Otto Isakower, M.D., of New York City, died on May 10 at the age of seventy-two. Dr. Isakower received his medical degree from the University of Vienna in 1923. He was a member of the American Psychoanalytic Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alice Joseph, M.D., of New York City, died on August 1 at the age of sixty-seven. Dr. Joseph received her medical degree from the University of Berlin in 1931. She was a member of the American Psychiatric Association.

Alfred Daniel Leone, M.D., of New Hyde Park, died on July 17 at the age of sixty-two. Dr. Leone graduated in 1934 from Georgetown University School of Medicine. He was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph B. Moszczynski, M.D., of New York City, died on July 7 at the age of eighty-seven. Dr. Moszczynski received his medical degree from the University of Prague in 1922. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Januarius Aloysius Perillo, M.D., of Newark, died in August, 1971, at the age of sixty-two. Dr. Perillo graduated in 1935 from St. Louis University School of Medicine. He had been an attending radiologist and chief radiologist at Newark-Wayne Community Hospital. Dr. Perillo was a Diplomate of the American Board of Radiology (Roentgenology) and a member of the Radiological Society of North America, Inc., the Society of Nuclear Medicine, the Radiological Society of New York State, the Wayne County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Meyer Alfred Rabinowitz, M.D., of New York City, retired, died on July 24 at the age of eighty-five. Dr. Rabinowitz graduated in 1907 from Cornell University Medical College. He was a consulting physician at Jewish Hospital of Brooklyn. Dr. Rabinowitz was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

David Rennert, M.D., of Miami Beach, Florida, formerly of New York City, died on July 10 at the age of seventy-two. Dr. Rennert received his medical degree from the University of Heidelberg in 1925. He was a Fellow of the American College of Cardiology and a member of the American Geriatrics Society, the New York Cardiological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Howard Salzer, M.D., of Bellmore and Merrick, died on August 5 at the age of fifty-eight. Dr. Salzer received his medical degree from the University of Vienna in 1938. He was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Seegal, M.D., of New York City, died on July 24 at the age of seventy-three. Dr. Seegal graduated in 1928 from Harvard University Medical School. He was a consulting physician at The Presbyterian Hospital and professor emeritus of medicine at Columbia University College of Physicians and Surgeons. From 1947 to 1951 he was director of medical services at Maimonides Hospital of Brooklyn. Dr. Seegal was a member of the American Society for Clinical Investigation, the American Association of Immunologists, the Society for Experimental Biology and Medicine, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Milton Singer, M.D., of New York City, died on July 24 at the age of sixty-one. Dr. Singer graduated in 1937 from Columbia University College of Physicians and Surgeons. He was an assistant attending pediatrician at The Presbyterian Hospital. Dr. Singer was a Diplomate of the American Board of Pediatrics and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Wilson Clayton Starr, M.D., of New York City, died on July 27 at the age of forty. Dr. Starr graduated in 1959 from Duke University School of Medicine. He was an associate attending ophthalmologist at The Presbyterian Hospital and St. Luke's Hospital Center. Dr. Starr was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Henry Travis, M.D., of New York City, died on April 17 at the age of eighty-three. Dr. Travis graduated in 1911 from the University of Toronto Faculty of Medicine. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Girard Wall, M.D., of New York City, died on August 4 at the age of forty-seven. Dr. Wall graduated in 1949 from St. Louis University School of Medicine. He was a medical director for general departments of the American Telephone and Telegraph Company and an assistant attending physician at Beekman-Downtown Hospital. Dr. Wall was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Books Received

*The following books were received during the month of July, 1972.**

Fundamental Physics of Radiology. Second edition. By W. J. Meredith, O.B.E., D.Sc., and J. B. Massey, B.Sc. Quarto of 666 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $28.75.

Pediatrics. Fifteenth edition. Edited by Henry L. Barnett, M.D., and Arnold H. Einhorn, M.D. Quarto of 2,070 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Cloth, $26.50.

Textbook of Electrocardiography. By David Littmann, M.D. Quarto of 533 pages, illustrated. Hagerstown, Maryland, Harper & Row, Publishers, 1972. Cloth, $22.50.

Instructional Course Lectures. American Academy of Orthopaedic Surgeons. Volume XX, 1971. Quarto of 244 pages, illustrated. St. Louis, Missouri, C. V. Mosby Company, 1971. Cloth, $21.50.

Air Pollution and Respiratory Disease. Edited by W. W. Holland, M.D. Quarto of 163 pages, illustrated. Westport, Connecticut, Technomic Publishing Co., Inc., 1972. Paper, $20.

Clinical Concepts of Infectious Diseases. Authored and Edited by Leighton E. Cluff, M.D., and Joseph E. Johnson, III, M.D. Octavo of 421 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $16.50.

Pathology Annual. Volume 7, 1972. Edited by Sheldon C. Sommers, M.D. Quarto of 426 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Cloth, $16.50.

Transport Across the Intestine. A Glaxo Symposium. Edited by W. L. Burland, M.B, Ch.B, and Pamela D. Samuel, B.Sc. Octavo of 292 pages, illustrated. London, England, Churchill Livingstone, 1972. Cloth, approx. $15.

Transplantation Reviews. Volume 8, 1972. Immunological Tolerance. Effect of Antigen on Different Cell Populations. Edited by Göran Möller, M.D. Quarto of 136 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $14.

The Preterm Baby and other Babies with Low Birth Weight. Seventh edition. By V. Mary Crosse, O.B.E., M.D. Octavo of 290 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $13.25.

Birth Defects: Original Article Series. Vol. VIII, No. 1, February, 1972. Congenital Cardiac Defects —Recent Advances. Edited by Daniel Bergsma, M.D. Quarto of 106 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $12.

Series Haematologica. Volume IV, No. 4, 1971. The Differentiation of Haemopoietic Stem Cells. By C. D. R. Dunn, M.D. Quarto of 71 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $11.25.

Transplantation Reviews. Volume 9, 1972. Lymphoid Cell Replacement Therapy. Edited by Göran Möller, M.D. Quarto of 72 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $11.25.

Core Text of Neuroanatomy. By Malcolm B. Carpenter, A.B., M.D. Quarto of 269 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $9.75.

Jamieson's Illustrations of Regional Anatomy. Section 1 Central Nervous System. Ninth edition. Revised by Robert Walmsley, M.D., and T. R. Murphy, M.Sc. Octavo of 56 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Spiral, $6.50.

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*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

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ful. The duodenostomy tube was removed three weeks after the operation, and the biliary fistula was healed completely in approximately four postoperative weeks. Meanwhile, the patient was being fed via the jejunostomy tube. An upper gastrointestinal (G.I.) series revealed no obstruction to the upper gastrointestinal tract and no evidence of fistulization. A tube cholangiography via the cholecystostomy tube, prior to its removal, revealed a dilated common duct with free communication of the biliary tree with the evacuated cyst cavity in the left hepatic lobe. By the time the patient was discharged on December 24, 1969, all tubes had been removed. The patient was eating a normal diet and had gained 20 pounds (weight preoperative, 113 pounds; immediately postoperative, 90 pounds; on discharge, 110 pounds). Liver-function test findings had improved. Total bilirubin was 0.60 mg. per 100 ml., total proteins 7.4 Gm. per 100 ml., serum albumin 4.4 Gm. per 100 ml., alkaline phosphatase 125 units, LDH 110 units, SGOT 88 units, 5′ nucleotidase 23.7 units, and prothrombin time 15.4 seconds. A repeat liver scan just prior to discharge showed marked reduction in the size of the cold area in the left hepatic lobe (Fig. 1B).

This patient has remained well. His weight is now stable at 155 pounds, and liver scans on January 6, 1971, and February 21, 1973, showed no residual mass effect.

Case 2. A fourteen-year-old Italian boy was admitted to Memorial Hospital for the first time on March 14, 1971. He was born in the vicinity of Rome, Italy, and lived in that region for approximately five years before being brought to the United States where he has lived since. In 1966 he had developed obstructive jaundice with right upper-quadrant pain. At that time, an eosinophil count of 60 per cent was noted, and the possibility of hydatid disease of the liver was entertained. A Casoni skin test was positive. He had been treated conservatively and discharged. Since then, he had repeated episodes of right upper-quadrant discomfort but no jaundice. In 1968 he had recurrent severe upper-quadrant pain. A liver scan showed a mass in the right hepatic lobe, consistent with a hydatid cyst. Again, no surgical therapy was advised and the patient was sent home. Persistence of upper-quadrant discomfort prompted him to seek further advice.

Physical examination on admission revealed an alert, asthenic, healthy looking adolescent in no acute distress. Blood pressure was 120/70 mm. Hg, temperature 98.2°F., respirations 18 per minute, and pulse 64 per minute. Head and neck examination was unremarkable. There was no palpable lymphadenopathy. Both lungs were clear and resonant. Heart sounds were regular and rhythmic. The abdomen was soft with no palpable organs or masses, and no tenderness. External genitalia were normal. Rectal examination was unremarkable. The lower extremities had good pulses, and there was no ankle edema.

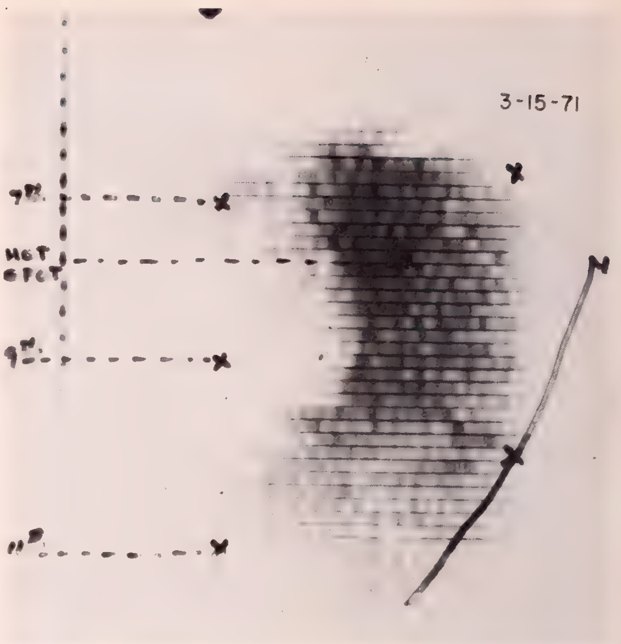

FIGURE 3. Right lateral view of liver photoscan preoperatively in Case 2. Large cold space-occupying lesion seen in posterior aspect of right hepatic lobe.

Blood hemoglobin was 15.2 Gm. per 100 ml., hematocrit 44.5, white blood cell count 7,400 with 50 per cent polymorphonuclear leukocytes, 15 per cent eosinophils, 7 per cent monocytes, and 23 per cent lymphocytes. The platelet count was 306,000. Urinalysis was negative. Blood urea nitrogen was 10 mg., uric acid 4.8 mg., serum calcium 10.8 mg., with an inorganic phosphorus of 4 mg. per 100 ml. Total proteins were 7.6 Gm. per 100 ml. with a serum albumin of 4.3. Total bilirubin was 0.48 mg. per 100 ml., alkaline phosphatase 190 units, LDH 125 units, SGOT 33 units, prothrombin time 13.9 seconds, and 5′ nucleotidase 8 units. Fasting blood sugar was 87 mg. per 100 ml. Serum electrolytes were normal. Blood serology finding was negative. The electrocardiogram and chest x-ray film findings were normal. A liver scan showed a large defect in the posterolateral portion of the right lobe, hepatosplenomegaly, and increased uptake in the spleen (Fig. 3). Percutaneous transfemoral selective celiac and superior mesenteric arteriograms, and an inferior vena cavagram, showed one large cystic lesion in the right lobe of the liver compatible with the diagnosis of hydatid disease (Fig. 4A). The intravenous cholangiogram showed a small calcified calculus in the gallbladder. The common hepatic duct was significantly dilated and measured 17 mm. in diameter at its widest point (Fig. 4B). The cystic duct was normal. The upper gastrointestinal series were normal.

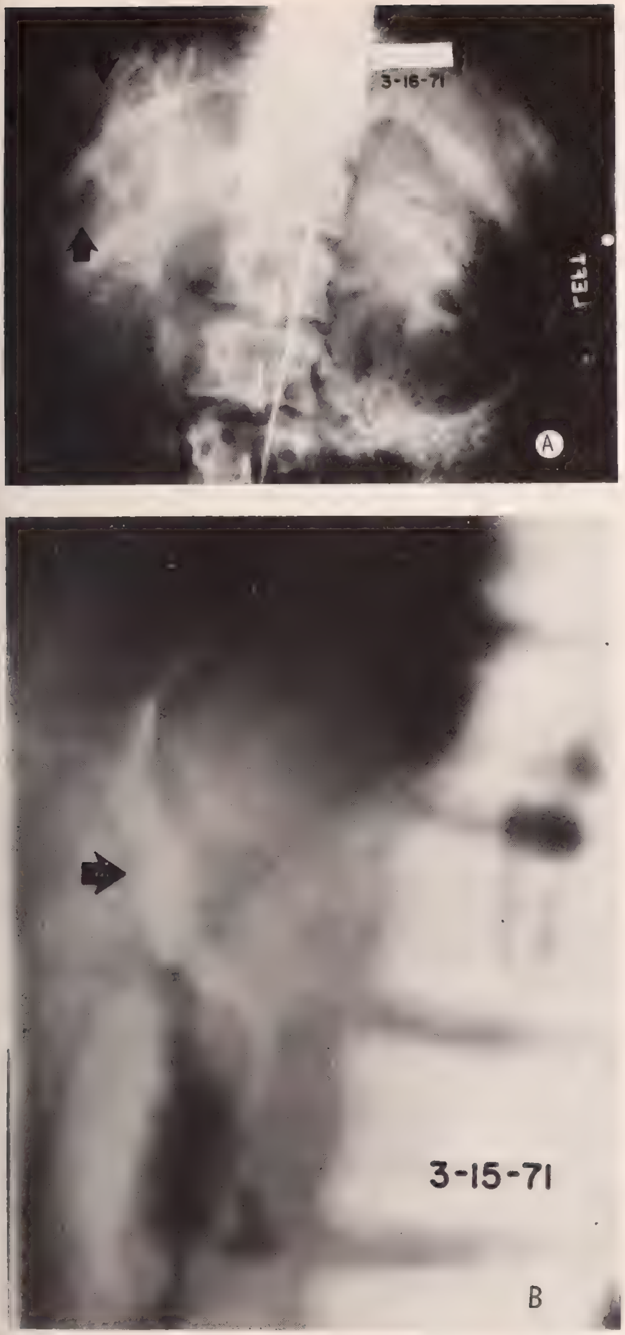

FIGURE 4. Case 2. (A) In hepatogram phase of selective celiac arteriogram there is sharply demarcated lucent defect in right hepatic lobe. Surrounding hepatic parenchyma compressed but no tumor staining or abnormal vasculature is apparent. (B) Intravenous cholangiogram. No clearly demarcated area of obstruction is present.

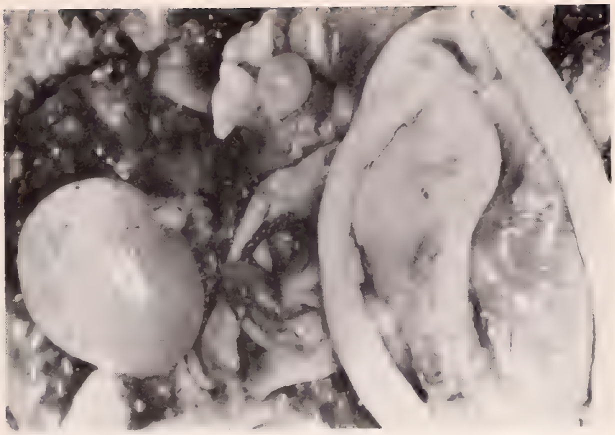

FIGURE 5. Multiple daughter cysts and cyst membranes removed from Case 2.

The patient was operated on March 18, 1971. Through a subcostal incision, the right upper quadrant of the abdomen was explored. A large hydatid cyst was found in the posterolateral portion of the right hepatic lobe. This portion of the lobe was adherent to the lateral abdominal wall. The right lobe of the liver was mobilized and, through the under surface of the liver, an incision was made into the cyst cavity following the instillation of 30 cc. of formalin into the cyst. A large number of daughter cysts, as well as retained membranes of the primary cyst, were extracted (Fig. 5). The cyst cavity was thoroughly irrigated, cleansed of all debris, and closed per primum. No other cysts were palpable in the abdomen or elsewhere in the liver. The common hepatic duct was markedly dilated. A choledochotomy was carried out and cyst membranes were extracted from the common hepatic duct (Fig. 6A). An intraoperative cholangiogram showed no residual cyst membranes in the biliary system (Fig. 6B). A T-tube was placed in the common hepatic duct. Cholecystectomy was done because of the small calculus in the gallbladder. The postoperative course was uneventful. Repeat T-tube cholangiogram prior to discharge from the hospital showed marked reduction in the size of the cyst cavity with a residual small communication with the biliary system.

Approximately two months postoperatively, the patient developed obstructive jaundice with a total serum bilirubin of 6.4 Gm. per 100 ml. and an elevated alkaline phosphatase to 56 Bodansky units. He was hospitalized elsewhere and re-explored. The common duct was found to be completely scarred. There were no residual hydatid cysts. A Roux-en-Y hepatojejunostomy reconstruction of the biliary collecting system was performed. He has done well since then, and remains free of disease two years later.

Comment

The liver is the organ most commonly infected with echinococcal disease.[1] A hydatid cyst may be located in any part of the liver and tends to grow peripherally in the path of least resistence.[2,3] As it develops into a space-occupying mass, the cyst compresses the structures in its vicinity, and may erode capillaries or biliary ducts.[4] It may rupture into the biliary system and, as a rule, although the

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WHAT GOES ON in medicine

NEW YORK STATE **September 15–30, 1972**

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Meeting Dates	*Deadline Dates*
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September 1–15	June 25
September 16–30	July 25
October 1–15	August 10
October 16–30	August 25
November 1–15	September 10
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

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NEW YORK CITY AREA

September 12 / 14, 1972

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Brooklyn

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To register, contact: WILLIAM G. MULLIN, M.D. Dir., Continuing Medical Education, The Long Island College Hospital, at the above address. Tel. (212) 780-1717.

WEDNESDAY, SEPTEMBER 20

4:00–5:30 p.m.

Westchester Square Hospital in collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

DIAGNOSIS OF INTRACRANIAL MASS LESIONS

DAVID FINE, M.D.
Misericordia Hospital

NO FEE CREDIT: 1½ hours AAFP

September 23 / December 2, 1972

10:00 a.m.–12:00 noon, Saturdays

Downstate Medical Center

Second Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

HOSPITAL ADMITTING OFFICE MANAGEMENT II

MR. MURRAY RIMMER, B.A., with MR. DWIGHT D. DIXON, B.B.A. and invited lecturers

FEE: $35

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September 25 / 28, 1972

7:00 a.m.–5:00 p.m., Monday–Thursday

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$25 Non Members
$15 per Seminar

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September 25 / December 29, 1972

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CLINICAL MEDICINE REVIEW CURRICULUM

This course is primarily intended for candidates for State Board, Flex and ECFMG examinations. The course content is based on the subject outline suggested by the National Board of Medical Examiners for the Part II Board examination, and by the Educational Council for Foreign Medical Graduates.

September 25, 1972 / May 7, 1973

3:00-5:00 p.m., Mondays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

The Sergei Feitelberg Course in

NUCLEAR MEDICINE

JAY H. KATZ, M.D., and Staff
Mount Sinai School of Medicine

FEE: $300

MONDAY, SEPTEMBER 25

3:30 p.m.

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
Auditorium
79-01 Broadway
Elmhurst

THE DIAGNOSIS AND MANAGEMENT OF CORONARY ARTERY DISEASE OF THE YOUNG

SIMON DACK, M.D.
Mount Sinai School of Medicine

TUESDAY, SEPTEMBER 26

9:00 a.m.

New York Infirmary

Toscanini Room
Stuyvesant Square East and 15th Street

CARCINOID TUMOR OF THE BOWEL

RICHARD R. PICHEL WARNER, M.D.
The Mount Sinai Hospital

8:30 p.m.

Federation of American-European Medical Societies

Academy of Science
2 East 63rd Street

1. **A Hopeful Approach to the Treatment of Diffuse Obstructive Emphysema (For the Semmelweis Scientific Association)**

E. E. ROCKEY, M.D.
Metropolitan Hospital

2. **Some Unusual Cases of Radiographic Diagnosis. Demonstration and Discussion (For the Janusz Korczak Medical Society)**

J. J. SMULEWICZ, M.D.
Queens Hospital Center

3. **Parasitic Infections in New York City (For the Yugoslav Medical Society)**

SVETOZAR TEODOROVICH, M.D.
Mount Sinai School of Medicine

September 27 / 29, 1972

8:30 a.m., Wednesday Registration

N.Y.U. Post-Graduate Medical School

Alumni Hall
550 First Avenue (at 31st Street)

A SYMPOSIUM ON DIABETES MELLITUS (On the Occasion of the 50th Anniversary of the Discovery of Insulin)

FEE: $150

Write: Office of the Recorder, Room 156 MSB, at the above address.

September 30 / November 18, 1972

10:00 a.m.-5:00 p.m., seven Saturdays

Columbia University P & S

Department of Psychiatry
630 West 168th Street

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For information, please write to:
MELVIN D YAHR, M.D., Associate Dean, above address

FUTURE EVENTS

October 4, 1972 / May 30, 1973

4:00-5:00 p.m., Wednesdays

Flushing Hospital and Medical Center

First Floor Conference Room
Parsons Blvd. and 45th Avenue
Flushing

Pediatric Guest Lectures Series

October 4

Serous Otitis and Otitis Media

MICHAEL D. KATZ, M.D
Manhattan Eye and Ear Hospital

October 25

Drug Addiction—A Dilemma

MELVIN EISENBERG, M.D.
N.Y. State Narcotics Control Commission Methadone Division

NOTE: WHAT GOES ON will publish titles and speakers each month.

October 5 / for 25 Sessions

8:00-10:00 p.m., Thursdays

Department of Psychiatry

New York Medical College
Metropolitan Hospital Center
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1st Annual Postgraduate Course

COMPREHENSIVE GROUP PSYCHOTHERAPY

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MONDAY, OCTOBER 9

8:30 p.m.

Beth Israel Medical Center

Dazian Pavilion, 12th Floor Conference Room
10 Nathan D. Perlman Place

Medical-Surgical Thoracic Conference

THE EXTRAVASCULAR WATER COMPARTMENT OF THE LUNG

GERARD M. TURINO, M.D.
Columbia University P & S

October 12 / 14, 1972

9:00 a.m.–5:00 p.m., Thursday & Friday
9:00 a.m.–12:00 noon, Saturday

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All Day

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HEART DISEASE IN COMMUNITY MEDICINE

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Write or call for program: New York Heart Association, Two East 64th Street, New York, N.Y. 10021. (212) 838-8800.

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October 3 & 4

GYNECOLOGY/OBSTETRICS FOR THE FAMILY PHYSICIAN

November 4 & 5

EXERCISE TESTING AND TRAINING FOR THE PREVENTION AND TREATMENT OF CORONARY HEART DISEASE (With the New York State Heart Assembly)

November 9

COMMUNITY MEDICINE—WHAT IS IT?

November 10

WORKSHOP IN RESPIRATORY MANAGEMENT

NASSAU COUNTY

MONDAY, SEPTEMBER 25

8:15 p.m.

The Long Island Psychoanalytic Society

Nassau Academy of Medicine
1200 Stewart Avenue
Garden City

INTEGRATIVE ASPECTS OF MASTURBATION

ISADORE BERNSTEIN, M.D.

Discussant:

JACOB A. ARLOW, M.D.

SUFFOLK COUNTY

September 16 and 17, 1972

9:00 a.m.-4:00 p.m., Saturday
9:00 a.m.-12:00 noon, Sunday

Nassau and Suffolk County Societies of Pathologists

Colonie Hill
Hauppauge

3rd Annual Seminar

Saturday

DISEASES OF GASTRO-INTESTINAL TRACT

SHELDON C. SOMMERS, M.D.
Columbia University P & S
RICHARD H. MARSHAK, M.D.
Mount Sinai School of Medicine

Saturday, 7:30 p.m.

AWARD DINNER

Guest of Honor

ROBERT E. SCULLY, M.D.
Massachusetts General Hospital
Harvard Medical School

Sunday

DISEASES OF GASTRO-INTESTINAL TRACT

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Please contact H. McCauley, M.D., South Nassau Communities Hospital, Oceanside, N.Y. 11572

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Central New York Association of Obstetrics and Gynecology

PROGRAM AND SPEAKER TO BE ANNOUNCED

WESTCHESTER COUNTY

TUESDAY, SEPTEMBER 19

3:00 p.m.

Grasslands Hospital

Eastview Hall—Conference Room C
Valhalla

9th ANNUAL SCIENTIFIC SESSION OF THE RENAL CENTER OF GRASSLANDS HOSPITAL

3:00–5:00 p.m.

ADVANCES IN HUMAN ORGAN HOMOTRANSPLANTATION

Moderator

ALVIN I. GOODMAN, M.D., Dir. Renal Center of G.H.
New York Medical College

Discussants

JEAN HAMBURGER, M.D.
Universite Rene Descartes Faculty of Medicine
Dir. Clinique Nephrologique, Hospital Necker
Paris, France
MARVIN GLIEDMAN, M.D., Dir. Surgery, Montefiore Hospital
Albert Einstein College of Medicine

8:30 p.m. at Pforzheimer Memorial Building, Purchase

SELECTED TOPICS IN NEPHROLOGY

JEAN HAMBURGER, M.D.

WEDNESDAY, SEPTEMBER 20

8:30 a.m.-4:00 p.m.

Grasslands Hospital

The Hilton Inn
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Tarrytown

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IAN H. PORTER, M.D.
New York State Department of Health
LAWRENCE R. SHAPIRO, M.D.
Letchworth Village, Thiells

ROBERT J. GORLIN, M.D.
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September 5 / October 3, 1972

8:00–9:00 a.m., Tuesdays

American Academy of Family Physicians, Richmond Chapter

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Orthopedic Postgraduate Lectures

September 19

Symposium—Arthritis

A. ACCETOLA, M.D., S. POLLACK, M.D. and S. LANG, M.D.

September 26

AAFP 1972 Convention, New York City

Radiographic Interpretation of Chest X-Ray

W. NEWEY, M.D.

October 3

Surgical—Abdomen

J. D'ANNA, M.D.

WEDNESDAY, SEPTEMBER 27

8:30 p.m.

The New York Academy of Medicine

Section on Historical Medicine
2 East 103rd Street

STONEWALL JACKSON AND HIS SURGEON, HUNTER McGUIRE

ALAN DeFOREST SMITH, M.D.
Columbia University P & S

8:30 p.m.

The Bronx-Lebanon Hospital Center

The Murray Cohen Auditorium
Grand Concourse and Mount Eden Parkway
Bronx

WHY AND HOW I TREAT THE MENOPAUSAL PATIENT

NATHAN KASE, M.D.
Yale University Medical School

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SATURDAY, SEPTEMBER 23

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NASSAU COUNTY

WEDNESDAY, SEPTEMBER 13

8:00 a.m.

Mercy Hospital

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Rockville Centre

Surgical Conference

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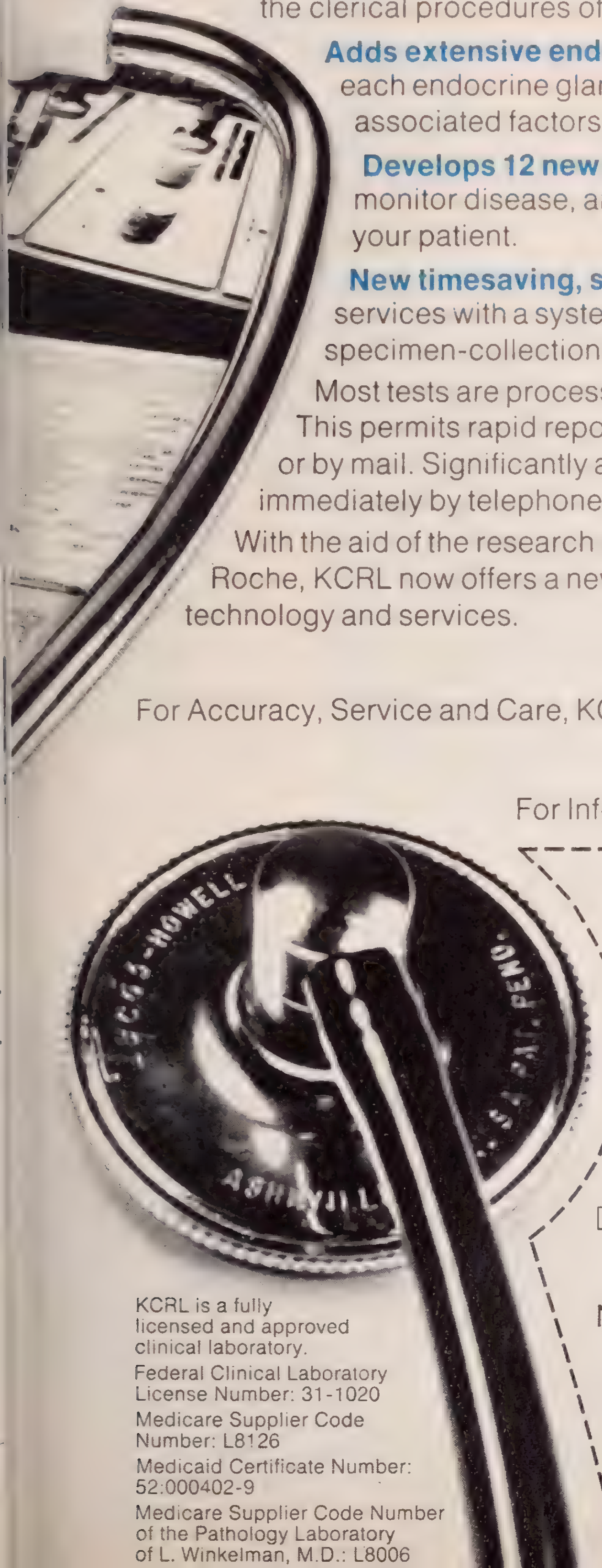
A. W. MARTIN MARINO, M.D., Guest Speaker



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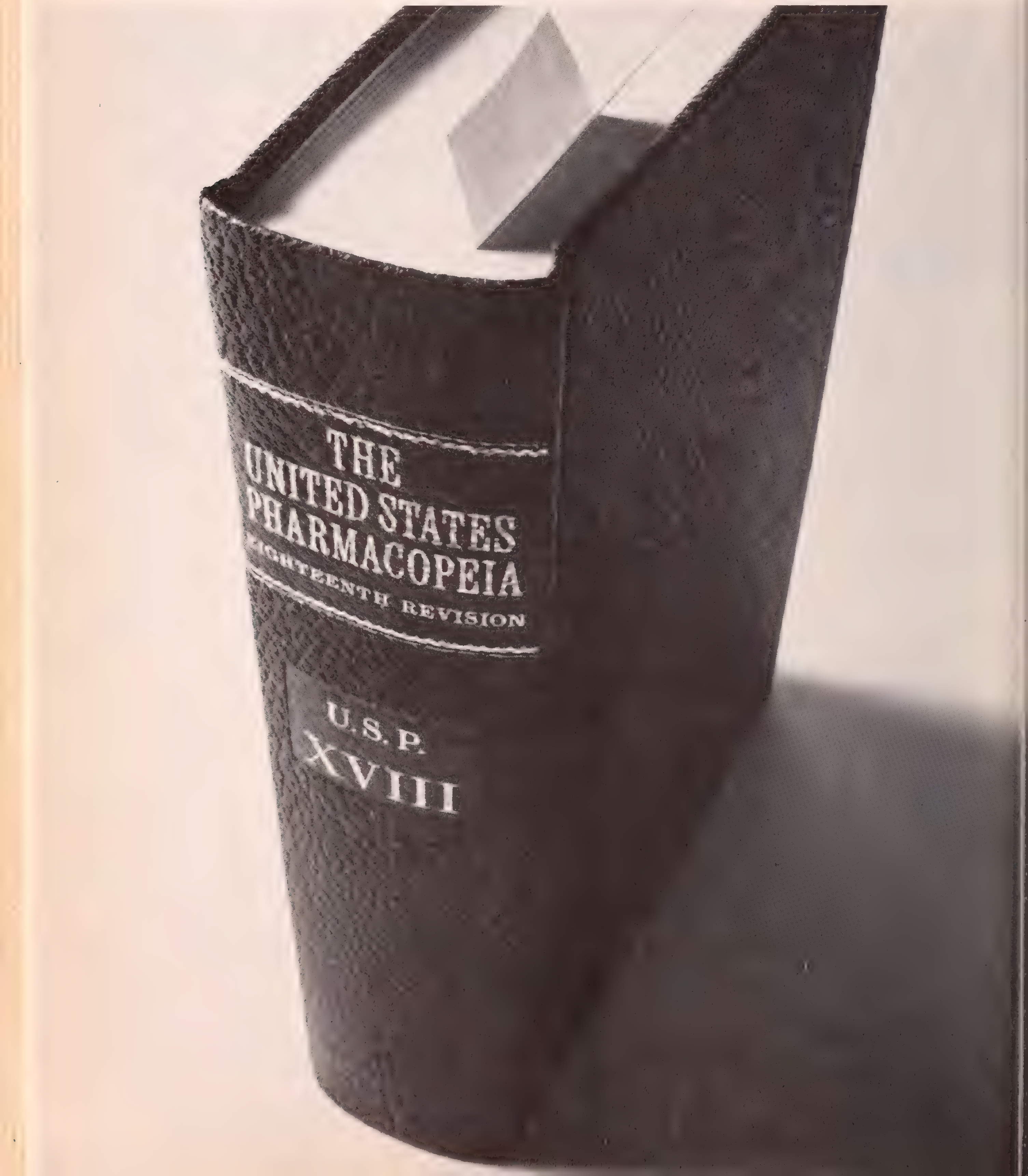
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New York State Journal of Medicine

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Month in Washington

The Democratic National Convention shouted approval of "a system of universal national health insurance" financed by Federal funds and administered by the Federal Government.

The platform plank adopted by the convention at Miami Beach declares that a national health plan should cover all Americans "with a comprehensive set of benefits including preventive medicine, mental and emotional disorders, and complete protection against catastrophic costs, and in which the rule of free choice for both provider and consumer is protected. The program should be federally-financed and federally-administered."

There was little debate on the plank and little attention paid to it at the hectic convention where most interest was focused on the abortive stop-McGovern fight and on foreign affairs, taxes, welfare, and other domestic concerns of the party platform that split the delegates.

Conspicuously missing from the health plank were any detailed recommendations on how the national health insurance program should be funded, how the government would operate it, or the cost, leaving Democratic presidential candidate George McGovern free to come up with his own program if he desires.

The platform on health declares that "good health is the least this society should promise its citizens. The state of health services in this country indicates the failure of government to respond to this fundamental need. Costs skyrocket while the availability of services for all but the rich steadily decline."

The plank states that the "next democratic administration" should:

—Incorporate in the national health insurance system incentives and controls to curb inflation in health care costs and to assure efficient delivery of all services;

—Continue to evaluate health maintenance organizations;

—Set up incentives to bring health service personnel back to inner cities and rural areas;

—Continue to expand community health centers and availability of early screening diagnosis and treatment;

—Provide Federal funds to train added health manpower including doctors, nurses, technicians, and paramedical workers;

—Secure greater consumer participation and control over health care institutions;

—Expand Federal support for medical research including research in heart disease, hypertension, stroke, cancer, sickle cell anemia, occupational and childhood diseases which threaten millions;

—Eventual replacement of all Federal programs of health care by a comprehensive national health insurance system;

—Take legal and other action "to curb soaring prices for vital drugs using antitrust laws as applicable and amending patent laws to end price-raising abuses and require generic-name labeling of equal-effective drugs;

—Expand Federal research and support for drug abuse treatment and education, especially development of nonaddictive treatment methods."

Senator George McGovern's stand on health is not clear at this time. The candidate did not stress health or any specific health legislation in his preconvention bids for popular votes. However, he is expected shortly to set down his ideas on a national health program, a plan that likely will incorporate much of the Kennedy-Griffiths philosophy.

In this unusual election year which has turned the democrats inside out, the McGovern brain trust might decide to promote health once the campaign gets going. It could be one of the battleground issues. Right now, though the Nixon administration appears to have "defused" health by forcing the debate on the question of degree, not on whether there should be a national health program. Furthermore, administration spokesmen can point to the fact that the democratically-controlled congress did not act on the administration's health program or any other for two years.

* * *

The HEW Department has said hospitals funded under the Hill-Burton Act will be reviewed on a case-to-case basis to determine whether a "reasonable volume" of free care is furnished to persons unable to pay.

This interim regulation will enable hospitals already providing a large amount of free care to submit a financial report to that effect and be automatically in compliance. It also provides "presumptive compliance" levels of free care, lower than first recommended in April, which can be met in any one of three ways an institution chooses. In addition it sets guidelines for individualized determination for hospitals which are unable to meet the "presumptive compliance" levels.

In general, the new policy met objections of the American Hospital Association that the original proposals could put many hospitals out of business.

HEW Secretary Elliot Richardson said the regulation, modified as recommended to him by the Federal Hospital Council, is being issued now in interim form so that some regulation be immediately in effect in view of pending court cases seeking to compel him to act promptly.

Vernon E. Wilson, M.D., administrator of the Health Services and Mental Health Administration, which directs the Hill-Burton program, said:

"Much misunderstanding arose over the earlier version of this interim regulation published for comment back in April. Many people felt that the 'presumptive compliance' guidelines constituted standards to which

continued on page 2272

Prepared by the Washington, D.C., Office of the American Medical Association.

Bio-Science Reports

Serum Gastrin by Radioimmunoassay

Recent advances in immunochemical technics have shed light on a number of areas, but few with more effect than the measurement of serum gastrin on the field of gastroenterology.

McGuigan and Trudeau (N. Engl. J. Med. *278*:1308, 1968) have described radioimmunoassay of gastrin as "a direct and accurate method for diagnosis of gastrin-secreting Zollinger-Ellison tumors." The measurement of serum gastrin now allows the clear-cut distinction between Z-E and unassociated peptic ulceration. While both disease types manifest high acid secretion, the level of serum gastrin is exceedingly elevated in Z-E but close to or within the normal range in peptic ulcers.

High levels of gastrin, sometimes approaching levels in Z-E, are also associated with pernicious anemia, a disease at the opposite end of the spectrum in that hydrochloric acid secretion is abnormally low. However, a distinction can be made between Z-E and pernicious anemia by the measurement of gastrin after intragastric administration of a 0.1N solution of hydrochloric acid. In pernicious anemia, this causes a dramatic decrease in gastrin levels within minutes, whereas no change is noted in Z-E.

The method is essentially that of Yalow and Berson (Gastroenterol. *58*:1, 1970) and Hansky and Cain (Lancet 2:1388, 1969). We require a 2 ml fasting specimen of serum, which has been centrifuged in the cold without delay and then shipped with dry ice. The normal range is "nondetectable to 300 pg gastrin/ml serum." Levels are considered to be elevated when clearly over 500 pg/ml.

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to move,
and the Latin **sedatus**,
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Chuckwalla (*Sauromalus obesus*):
This southwestern desert lizard seeks
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When attempts are made to probe him
from his niche, he gulps air
until his torso is distended up to
sixty per cent over its normal size…
thus wedging himself tightly
in place and preventing capture.

continued from page 2268

hospitals would be held. It is important to understand that any institution which falls below the 'presumptive compliance' guidelines will have an individualized determination of what consitutes a reasonable volume of free care."

* * *

The National Institutes of Health has announced it will conduct a major study of acupuncture, the ancient Chinese medical practice of curing illness and relieving pain by piercing the skin with needles.

Howard P. Jenerick, special assistant to the director of the National Institute of General Medical Sciences, said the study would involve use of acupuncture as an anesthetic and alleviation of pain from neuralgia, nerve injuries, and cancer.

He predicted the study, to cost "hundreds of thousands" of dollars, would lead to acupuncture treatment of American patients within a year.

"Acupuncture is an important thing that has to be looked into," Jenerick said. "We are now committed to starting a significant investigation of it. The question is whether you want to shoot for the moon or send somebody to the corner book store for a book about it. This will be somewhere in between those extremes."

The announcement was made in a statement by Dr. Robert Q. Marston, NIH director, who said the investigation was recommended by a committee of experts in anesthesiology, neurology, neurophysiology, and psychology who met July 17 to 18 at NIH. Committee chairman was Dr. John J. Donican, a pain authority at the University of Washington's School of Medicine in Seattle.

"After considering the many suggested uses of acupuncture, the Committee recommended that the most valuable first approach in the United States would be studies on the method's use for surgical anesthesia and for the alleviation of certain chronic pain syndromes," Marston said.

Among uses considered by the Committee but rejected for immediate exploration were acupuncture treatment for arthritis, toothache, low back pain, rheumatism and insomnia, Jenerick said.

An election year battle between a democratic congress and President Nixon is in prospect over bill appropriating funds for Federal health programs. Nixon feels budget busting HEW money bill which soared $2 billion above what he recommended and other pending appropriations measures will send the Federal budget for this fiscal year out of sight. White House aides say congress already has topped the budget by more than $6 billion.

Nixon is considering either a special message to congress, or a national television address, or both, outlining the perils of higher Federal outlays. The maneuvering for political advantage that will mark the remainder of this session of congress promises the fascination and intricacies of a championship chess match. Nixon is prepared to pound home the theme that fat Federal budgets lead to inflation and higher Federal taxes. Democrats are geared to holler that the administration wants to chop vital and popular Federal programs.

"There seems to be a cynical strategy on the part of some democratic leaders to deliberately send to the President proposals with good objectives but proposals that substantially exceed his budget requests," declared William Timmons, White House assistant for congressional relations. President Nixon was quoted by Secretary of the Treasury George Shultz as saying that "the ball game on the control of inflation is fought out fundamentally in terms of monetary and fiscal policy . . . We feel that we are at the point where any time you have a vote for extra spending going beyond the President's budget, you have a vote for higher prices or higher taxes."

* * *

The fate of the physicians' draft next year rests with congress and the extra pay bill for military physicians . . . a measure now before the House Armed Services Committee.

Assistant Secretary of Defense for Health and Environment, Richard Wilbur, M.D., who helped fashion the new program, is keeping his fingers crossed that the lawmakers will okay the bill this session. Without it he says, the draft undoubtedly will have to be extended for young physicians.

Little controversy has cropped up over the legislation and barring some unexpected obstacle, it stands an excellent chance of whisking through congress before adjournment this year.

Designed to "facilitate the establishment of an all voluntary army and to maintain sufficient numbers of career officers in critical areas," the pay bill authorizes yearly bonuses of up to $17,000 for qualified physicians "in addition to any other pay or allowances to which he was entitled."

This would be in addition to the $100 a month extra pay for the first two years of service and $350 a month thereafter.

* * *

The persistent spillover of legal drugs to the black market has spurred the Federal Government to inaugurate a program of training state and local police and prosecutors in the intricacies of running down the malefactors.

A pilot program is being started for Texas, Michigan, and Mississippi, which will receive $333,000 to finance the training which will be conducted in Washington, D.C.

An official of the Bureau of Narcotics and Dangerous Drugs has said that despite the existence of Federal legislation in the field and the enactment by 35 states of model state controlled substances acts, the illegal diversion of drugs remain a major problem.

The BNDD exercises its supervision at the level of the manufacturer and distributor, the states are responsible for policing at the retail level—retail and hospital pharmacies, and physicians' offices.

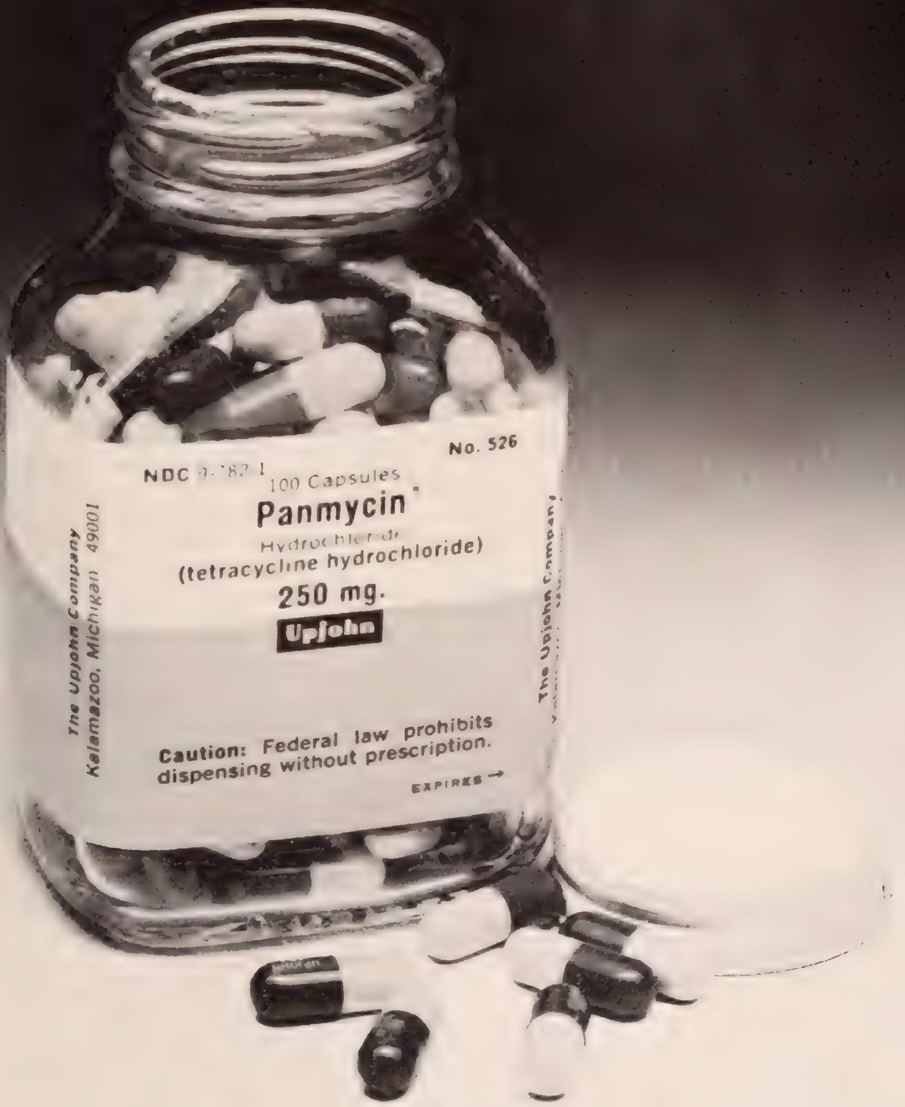
According to a BNDD official, many local police are not equipped or trained to carry out the type of detective work required to ferret out people selling legitimate drugs on the black market. In addition, he noted, prosecutors are not familiar with this area and are unsure of how to handle the cases that are brought.

Specialized training in such fields as bookkeeping is needed because often the evidence, as in tax cases, depends on careful checking of the mandatory records that must be kept by all who dispense drugs that are subject to abuse, the BNDD aide said.

He added that even when police are alerted to the

continued on page 2274

Upjohn's low-priced tetracycline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continued from page 2272

apparent criminal dealings of a local pharmacy, for example, they often find themselves in a position where they do not know how to accumulate the required evidence of wrongdoing.

* * *

Federal funds have been withheld from 579 nursing homes for failure to meet minimum standards of health and safety as ordered by President Nixon last August.

HEW Secretary John Veneman said 327 nursing homes—222 of them in New York State—lost their certification and another 252 homes withdrew from the program because they were unable or unwilling to meet the standards.

Of the approximately 7,000 homes receiving Federal nursing home aid, 1,469 received full certification and 4,766 were certified for six months to give them time to correct deficiencies not affecting health and safety. An additional 244 are still in the certification process.

Veneman's report covered only nursing homes which received Federal aid under the medicaid program. It did not affect the approximately 16,000 homes for the elderly not receiving such assistance.

Veneman said the year-long recertification process indicated "the majority of nursing homes are providing quality care in safe and helpful surroundings."

* * *

Some relaxation of tight fee hike controls on physicians may be in the offing. Health Services Industry Committee is considering changes in basic regulations covering institutional and noninstitutional providers. There is a possibility that present 2.5 per cent limit may be upped to some degree on allowable fee increases for physicians and dentists, lowest rate permitted for any profession except those with more than 60 employes. Committee members believe controls have worked well to date in the health field, pointing to a sharp slash in cost rise since control imposition.

* * *

The Administration soon will recommend legislation to halt illegal traffic in methadone as a substitute for heroin.

John Ingersoll, director of the Bureau of Narcotics and Dangerous Drugs, told the National Commission on Marijuana and Drug Abuse: "The increase in the last several years is so dramatic as to indicate that our present legal controls are inadequate."

Ingersoll said that in New York City 92 per cent of a group of heroin addicts reported they had been offered illegal methadone by pushers and 13 per cent said they had sold it themselves.

He said a similar study in Miami showed that 40 per cent of the applicants to a legitimate methadone maintenance center already were using the drug illegally.

In advising the panel that the Administration soon would send congress legislation, Ingersoll commented:

"In some programs patients are actually permitted to handle and administer narcotic medication with the result that much of the drug has been pilfered for sale in the illicit traffic."

* * *

Two manufacturers have stopped producing nine bacterial vaccines, rather than attempt to meet the Food and Drug Administration's new requirements for "substantial evidence" of effectiveness.

The nine include several vaccines for upper respiratory infections, a staphylococcus vaccine, and a diagnostic agent for detecting brucellosis infection.

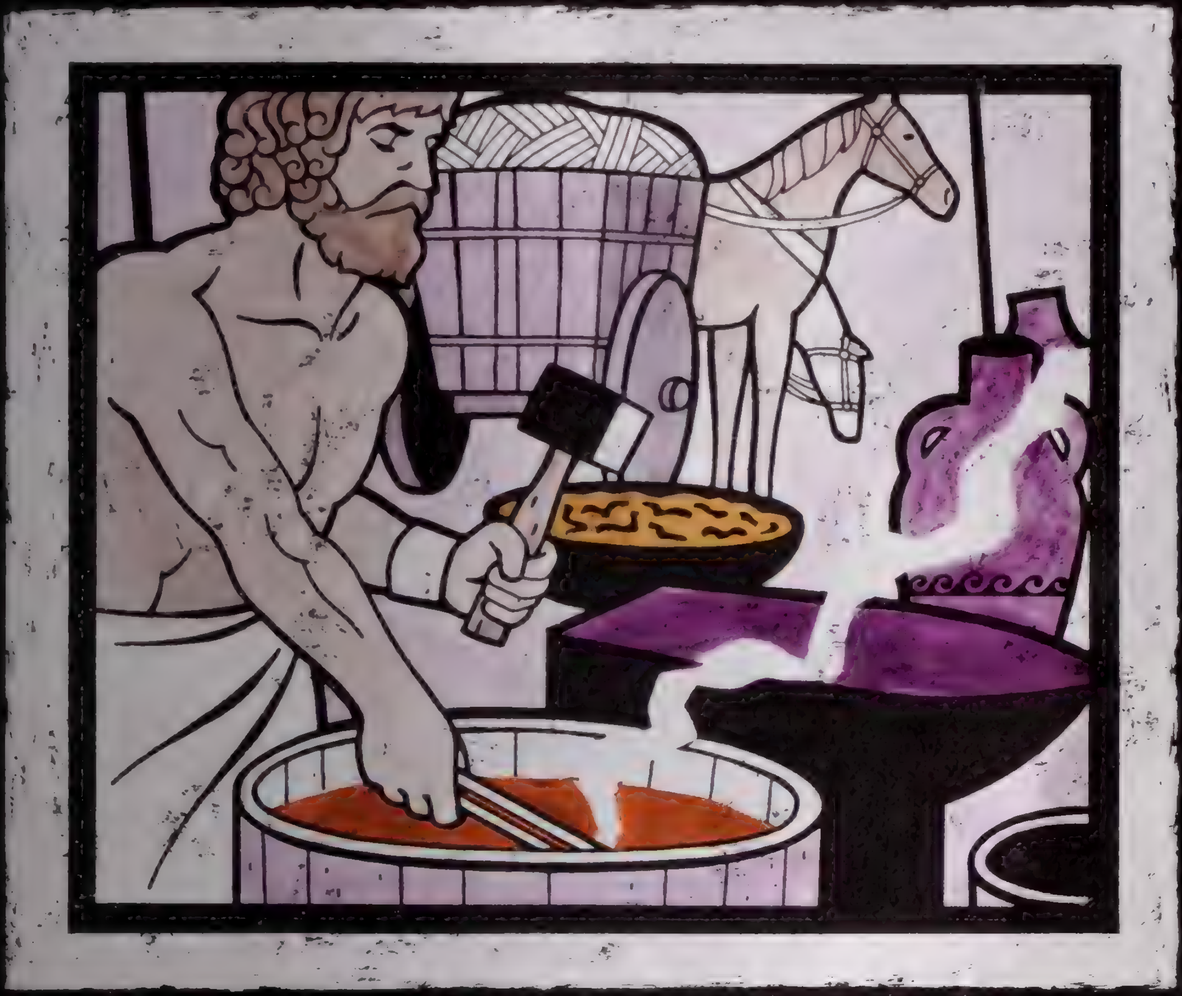
Five of the vaccines were produced by Merck Sharp & Dohme, a division of Merck & Co., Inc.; four were made by Merrell-National Laboratories, a division of Richardson-Merrell, Inc. The firms voluntarily turned in their product licenses, which were then cancelled by FDA.

Both companies said the vaccines were old, low-volume products, and sales would not justify the testing required by the new efficacy regulations.

All nine products are among 32 licensed bacterial vaccines for which no standards of potency were ever established.

The Merck products include vacagen tablets, brucellen antigen, staphylo-strepto-serobacterin vaccine, catarrhalis serobactin vaccine, and sensitized bacterial vaccine-H influenzae. Merrell's products include catarrhalis serobacterin vaccine, strepto-staphylovatox, respiratory vatox, and staphylococcus toxoid-vaccine vatox.

Iron therapy for anemia is almost as old as history itself



Celsus's empirical use of iron

Aulus Cornelius Celsus recommended an unusual form of iron therapy for the treatment of enlarged spleens—the oral administration of water that blacksmiths had used for dousing white-hot iron.

For more modern anemia therapy

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Hematinic Concentrate
with Intrinsic Factor

(See reverse side for prescribing information.)

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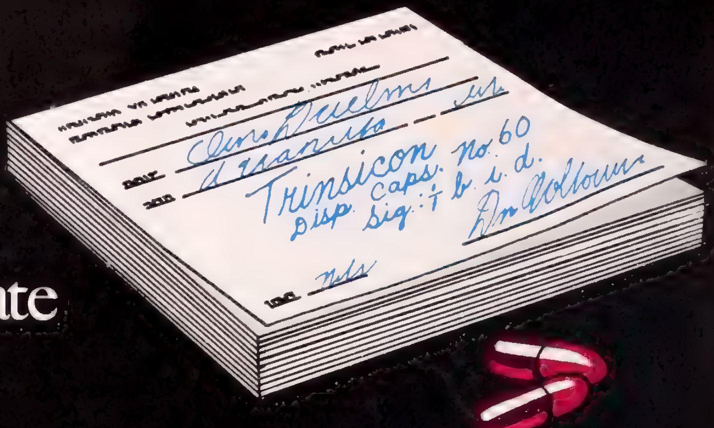

Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	240 mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin	7.5 mcg.
Iron, Elemental (as Ferrous Fumarate)	110 mg.
Ascorbic Acid (Vitamin C)	75 mg.
Folic Acid	0.5 mg.

(The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)

Indications: Trinsicon is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia. Therapeutic quantities of hematopoietic factors that are known to be important are present in the recommended daily dose.

Vitamin B_{12} with Intrinsic Factor—When secretion of intrinsic factor in gastric juice is inadequate or absent (e.g., in Addisonian pernicious anemia or after gastrectomy), vitamin B_{12} in physiological doses is absorbed poorly, if at all. The resulting deficiency of vitamin B_{12} leads to the clinical manifestations of pernicious anemia. Similar megaloblastic anemias may develop in fish tapeworm (*Diphyllobothrium latum*) infection or after a surgically created small-bowel blind loop; in these situations, treatment requires freeing the host of the parasites or bacteria which appear to compete for the available vitamin B_{12}. Strict vegetarianism and malabsorption syndromes may also lead to vitamin B_{12} deficiency. In the latter case, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient.

Potency of intrinsic factor concentrates is determined physiologically, i.e., by their use in patients with pernicious anemia. The liver-stomach concentrate with intrinsic factor and the vitamin B_{12} contained in two Pulvules Trinsicon provide 1½ times the minimum amount of therapeutic agent which, when given daily in an uncomplicated case of pernicious anemia, will produce a satisfactory reticulocyte response and relief of anemia and symptoms.

Concentrates of intrinsic factor derived from hog gastric, pyloric, and duodenal mucosa have been used successfully in patients who lack intrinsic factor. For example, Fouts *et al.* maintained patients with pernicious anemia in clinical remission with oral therapy (liver extracts or intrinsic factor concentrate with vitamin B_{12}) for as long as twenty-nine years.

After total gastrectomy, Ficarra found multifactor preparations taken orally to be "just as effective in maintaining blood levels as any medication that has to be administered parenterally." His study was based on twenty-four patients who had survived for five years after total gastrectomy for cancer and who had been taking two Pulvules Trinsicon daily.

Folic Acid—Folic acid deficiency is the immediate cause of most, if not all, cases of nutritional megaloblastic anemia and of the megaloblastic anemias of pregnancy and infancy; usually, it is also at least partially responsible for the megaloblastic anemias of malabsorption syndromes, e.g., tropical and nontropical sprue.

It is apparent that in vitamin B_{12} deficiency (e.g., pernicious anemia), lack of this vitamin results in impaired utilization of folic acid. There are other evidences of the close folic acid-vitamin B_{12} interrelationship: (1) B_{12} influences the storage, absorption, and utilization of folic acid, and (2), as a deficiency of B_{12} progresses, the requirement for folic acid increases. However, folic acid does not change the requirement for vitamin B_{12}.

Iron—A very common anemia is that due to iron deficiency. In most cases, the response to iron salts is prompt, safe, and predictable. Within limits, the response is quicker and more certain to large doses of iron than to small doses.

Each Pulvule Trinsicon furnishes 110 mg. of elemental iron (as ferrous fumarate) to provide a maximum response.

Ascorbic Acid—Vitamin C plays a role in anemia therapy. It augments the conversion of folic acid to its active form, folinic acid. In addition, ascorbic acid promotes the reduction of ferric iron in food to the more readily absorbed ferrous form. Severe and prolonged vitamin C deficiency is associated with an anemia which is usually hypochromic but occasionally megaloblastic in type.

Contraindications and Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

Folic acid *alone* is unwarranted in the treatment of pure vitamin-B_{12}-deficiency states, such as pernicious anemia. Indeed, the use of folic acid in large doses in pernicious anemia without adequate vitamin B_{12} may result in hematologic remission but neurological progression.

As with all preparations containing intrinsic factor, resistance may develop in some cases of pernicious anemia to the potentiation of absorption of physiological doses of vitamin B_{12}. If resistance occurs, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient. No single regimen fits all cases, and the status of the patient observed in follow-up is the final criterion for adequacy of therapy. Periodic clinical and laboratory studies are considered essential and are recommended.

In extremely rare instances, skin rash suggesting allergy has been noted following the oral administration of liver-stomach material. Allergic sensitization has been reported following both oral and parenteral administration of folic acid.

Hemochromatosis and hemosiderosis are contraindications to iron therapy.

Adverse Reactions: In rare instances, iron in therapeutic doses produces gastrointestinal reactions, such as diarrhea or constipation. Reducing the dose and administering it with meals will minimize these effects in the iron-sensitive patient.

Dosage: One Pulvule twice a day. (Two Pulvules daily produce a standard response in the average uncomplicated case of pernicious anemia.)

How Supplied: Pulvules Trinsicon® (hematinic concentrate with intrinsic factor, Lilly), in bottles of 60 and 500 and in Identi-Dose® (unit dose medication, Lilly) in boxes of 100.

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Books Reviewed

Comprehensive Group Psychotherapy. Edited by Harold I. Kaplan, M.D., and Benjamin J. Sadock, M.D. Quarto of 911 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $27.50.

In addition to editing the book, Harold I. Kaplan, M.D., and Benjamin J. Sadock, M.D., have also written a chapter on their particular approach to group psychotherapy. The chapter, "Freud: The First Psychoanalytic Group Leader," has been contributed by Mark Kanzer, M.D. This is a description of the early days of the Vienna Psychoanalytic Society and "the first recorded instance of analytic group therapy with Sigmund Freud as the group psychotherapist." The sections on "The History of Group Psychotherapy" and "Comparison Between Individual and Group Psychotherapy" are presented by E. James Anthony, M.D.

This book contains articles by many luminaries in the field of group psychotherapy. Their contributions generally make agreeable reading. More extensive editing could have improved coherency which would have made this big book more immediately useful to a professional person interested in group psychotherapy. **Edward L. Pinney, Jr., M.D.**

An Aid to Clinical Surgery. By Peter R. Scott, M.B.B.S. Quarto of 324 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $14.50.

The book is indeed a concise review of clinical surgery in the fields it endeavors to cover. It is lucid and well written.

On the American scene it leaves something to be desired. The outlines in each field are definitive, decisive, and complete. However, this completeness is for the most part in one specific vein.

The reviewer does not feel that the practicing surgeon would refer to Dr. Scott's volume as a routine matter in preparation for caring for a given patient. It appears more like a review in preparation for examination. In this regard one might find himself in disagreement with an examiner if he used only the data in this volume. The new SESAP program of the College of Surgeons is experiencing some difficulty because it is seeking single answers while many of the questions are on controversial subjects. **Phillip E. Lear, M.D.**

Symposium on the Functional Physiopathology of the Fetus and Neonate. Clinical correlations. Edited by Harold Abramson, M.D. Quarto of 182 pages, illustrated. St. Louis, Missouri, The C. V. Mosby Company, 1971. Cloth, $15.

In this symposium, as explained by the author, the need for a clinically-oriented, comprehensive, functional physiopathology of the biologic unit is stressed.

It begins with a discussion of the population of future decades in relation to adverse influences on the basic processes of reproduction and then goes on to explain some of these influences on fertilization, early embryogenesis, and implantation. There is a description of the hormonal control of nidation and some of the adverse hormonal effects on implantation.

A large part of the book is devoted to approaches to the study of problems in the fetus, both ante partum and extrauterine. Effects of labor on the fetus are also discussed.

Then there are mentioned the newer pathology—detection of genetic disorders in the fetus and neonate and appraisal and prenatal assessment of the fetus in regard to nutrition and disease.

The increasing need for a more thorough evaluation of pathology in the abortus and stillbirth with especial emphasis on the placenta follows.

Hope for the future rests on the multidiscipline efforts of the geneticist, the pediatrician, the neonatologist, and the obstetrician.

The diminishing role of obstetrics in medical school curricula is decried. And for those whose interest is aroused and whose appetite is whetted, there are 556 references to other works on the subject. **Sanford Kaminester, M.D.**

Introduction to Neuroradiology. By Harold O. Peterson, M.D., and Stephen A. Kieffer, M.D. Quarto of 276 pages, Illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1972. Cloth, $15.

As indicated in their preface, the authors have attempted to write a brief textbook on the rapidly growing and complex field of neuroradiology. They envision the book as an introduction to the field for the student, intern, resident, or practitioner. In this respect they have succeeded in providing a fairly complete review of the essentials of neuroradiology. Most important areas are covered and an excellent list of references is appended, which can be used by those requiring additional information on any specific subject.

The quality of the illustrations is excellent and the accompanying legends are clearly written. In the section on angiography, more arrows or other lettering, on the figures would have made them more understandable to the beginner. A serious problem in reading the book is that the illustrations are frequently separated by many pages from the textual material, as many as 14 pages in certain parts of the book. This is a rather serious annoyance in correlating the illustrations with the textual material.

Short chapters on the new technics of neuroradiology, such as echoencephalography, radioisotopic studies, and thermography are included. The isotopic material is somewhat understressed, in comparison with its present diagnostic utility.

One major criticism of the book is that the presentation of the material follows a rather standard order and format, as is done in the larger textbooks on neuroradiology. Possibly, a different method of presentation stressing concepts, signs, and technics would have been truer to the title of the book, an *Introduction to Neuroradiology*. Such a format frequently makes a poor reference source, but surely a book of this size cannot be so considered. Despite these shortcomings, the book is highly recommended as a concise and well-written presentation of the field of neuroradiology. **David Bryk, M.D.**

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Some people develop excessive psychic tension and need your counseling

and a few may need counseling
and the psychotropic action of Valium® (diazepam).

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While Valium can be a most helpful adjunct to your counseling, it should be prescribed only as long as excessive psychic tension persists and should be discontinued when you decide it has accomplished its therapeutic task. In general, when dosage guidelines are followed, Valium is well tolerated (see Dosage). For convenience it is available in 2-mg, 5-mg and 10-mg tablets.

Drowsiness, fatigue and ataxia have been the most commonly reported side effects.

Until response is determined, patients receiving Valium should be cautioned against engaging in hazardous occupations requiring complete mental alertness, such as driving or operating machinery.

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Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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To help you manage excessive psychic tension

Abstracts

Bertrand, C. A., Godbold, E. O., Schussler, T., Pomper, I. H., and Duffy, J. C.: Heart rate and the PR interval, ***New York State J. Med.*** **72:** 2295 (Sept. 15) 1972.

Electrocardiograms were recorded on 25,831 IBM employes, ages forty-one through sixty-five years, during the first year (1968 to 1969) of a voluntary multiphasic health-testing program. The electrocardiograms were recorded by the Frank (vector) leads for computer analysis by the IBM-Mayo program and by the 12 standard (scarlar) leads for interpretation by cardiologist. The subjects' electrocardiograms were divided into two groups: 12,049 electrocardiograms interpreted by computer as normal and 13,782 interpreted by cardiologist, of which 75 per cent were normal. Heart rate and PR interval were studied in both groups. The computer group had a mean heart rate of 65 and a median of 64, while in the cardiologist group both the mean and the median were 68. For this population, 50 or below appears to be a useful criterion for sinus bradycardia and 90 or above for sinus tachycardia. Women averaged 2 to 3 beats per minute faster than men. The mean of the PR interval was 157 msec. and the median 156 msec. in the computer group; both were a little higher in the cardiologist group. A small difference was observed in the PR interval between men and women, averaging 4 msec. less for women. Simple correlation coefficients failed to show any positive relationship of PR interval to age, height, or weight in either men or women. Under resting conditions the PR interval was largely independent of heart rate, but in a subgroup of 25 subjects who were exercised, 21 showed some shortening of the PR interval with rapid heart rates.

Blomgren, S. E.: Conditions associated with erythema nodosum, ***New York State J. Med.*** **72:** 2302 (Sept. 15) 1972.

Records of all patients admitted to Strong Memorial Hospital with a confirmed diagnosis of erythema nodosum over an eleven-year period were reviewed. It was found that sarcoidosis was present in 14 of the 57 cases. Polyarthritis and hilar adenopathy were regular features of the cases of sarcoidosis. Eight cases of erythema nodosum were associated with streptococcal infection, usually in the form of pharyngitis. Of 9 patients with associated inflammatory bowel disease, 4 were preceded by the erythema nodosum by months to years. Ten cases were associated with miscellaneous conditions, and a primary diagnosis was not made in 16 cases.

Buchner, L. H., Cimino, J. A., Raybin, H. W., and Stewart, B.: Naloxone reversal of methadone poisoning, ***New York State J. Med.*** **72:** 2305 (Sept. 15) 1972.

Clinical data are presented indicating that naloxone is the antidote of choice for methadone and suspected other narcotic poisoning. It will reverse the respiratory depression of methadone poisoning but will not precipitate respiratory failure as other narcotic antagonists (nalorphine and levallorphan) may, if the poisoning drug proves to be a nonnarcotic respiratory depressant. When used in the emergency treatment of methadone poisoning, 0.01 mg. per kilogram of naloxone is administered intravenously. A maximum response is observed in two to three minutes: pupils dilate, subnormal blood pressure rises, respiratory rate increases, and the level of consciousness improves. If the respiratory depression persists, the 0.01 mg. per kilogram dose is repeated in five minutes. Patients should be observed in the hospital for at least forty-eight hours and additional doses given, if necessary, to prevent relapse. Naloxone provides safe, effective, and rapid reversal of methadone poisoning.

Herrmann, J. B.: Chronicity of mammary carcinoma, ***New York State J. Med.*** **72:** 2310 (Sept. 15) 1972.

While mammary carcinoma, in general, runs usually a progressive course, it may lie dormant and occult for many years, and reactivation may be long delayed. This present study explores the possible explanations for delayed reactivation and the factors favoring longevity. Three cases of occult and 4 of overt metastases are fully described. It is suggested that bodily defenses can probably inactivate or destroy cancer cells at a certain rate; if this exceeds the defense mechanism capabilities, metastasis results. A plea is made to keep patients with mammary carcinoma under continuous observation, despite apparent arrest of disease, and to combat recurrence or metastasis with the surgical, radiologic, hormonal, and chemotherapeutic agents available.

Johnston, B.: Relief of mixed anxiety-depression in terminal cancer patients; effect of thioridazine, ***New York State J. Med.*** **72:** 2315 (Sept. 15) 1972.

Forty-seven terminal cancer patients with symptoms of mixed anxiety-depression received thioridazine or a placebo three times daily in a randomized, double-blind fashion. Evaluation of treatment effect was determined from weekly ratings of the individual symptoms of anxiety-tension, depressive mood, restlessness, insomnia, crying spells, fears, and anorexia as well as an overall rating of emotional complaints and a rating of pain intensity. Thioridazine established its superior efficacy within a week and continued to produce substantially greater relief of symptoms than did the placebo throughout the study.

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Abstracts in Interlingua

Bertrand, C. A., Godbold, E. O., Schussler, T., Pomper, I. H., e Duffy, J. C.: Rata cardiac e intervallo PR, *New York State J. Med.* 72: 2295 (15 de Septembre) 1972.

Electrocardiogrammas (EKGs) esseva prendite a 25,831 empleatos de "IBM" (etate 41–65) durante le prime anno (1968 a 1969) del Programma IBM-Mayo sanitari, multiphasic e voluntari. Le EKGs esseva registrate mediante le derivation (vector) de Frank per le analysis via computator, e mediante le 12 derivationes standard ("Scarlar") per le interpretation del cardiologista. Omne EKGs esseva dividite in duo gruppos: 12,049 esseva interpretate como normal per via del computator, e 13,782 esseva interpretate per le cardilogista e de iste numero, le 75 pro cento esseva normal. La rata cardiac e le intervallo PR esseva studiate in ambe gruppos. Le gruppo de EKGs legite per le computator habeva un rata cardiac media de 64 e un promedio de 65; iste valores esseva 68 in le gruppo de EKGs legite per le cardiologista. Para iste gruppo de personas, le rata de 50 pulsationes o minus per minute pareva esser un criterio utile pro le bradycardia sinusal, e le de 90 o plus, pro le tachycardia sinusal. Le rata cardiac del feminas esseva 2 a 3 pulsationes per minute plus rapide que ille del homines. Le media del intervallo PR esseva 157 msec. e le promedio de 156 msec. pro le gruppo del computator; iste valores esseva pauc elevate pro le gruppo del cardiologista. Esseva trovate un parve differentia inter le intervallo PR del homines e del feminas; le differentia promedio esseva 4 msec. minus per le feminas. Le coefficientes simples de correlation non demonstrate un relation positive inter le intervallo PR e le etate, le talia o le peso del homines o feminas. In conditiones de reposo, le intervallo PR esseva grandemente independente del rata cardiac, mais in un subgruppo de 25 subjectos que facite exercitios, 21 presentava certe acurtamento del intervallo PR e un rata cardiac rapide.

Blomgren, S. E.: Morbos associate con le erythema nodosum, ***New York State J. Med.*** 72: 2302 (15 de Septembre) 1972.

Le registros de omne patientes admitite in le Hospital Strong Memorial con le diagnose confirmate de erythema nodosum durante un periodo de 11 annos, es rividite. Esseva trovate que le sarcoidosis esseva presente in 14 de 57 casos. Polyarthritis e adenopathia hilar esseva un characteristica regular in le casos de sarcoidosis. Octo (8) casos de erythema nodosum esseva associate con infection streptococcic, generalmente in le forma de pharyngitis. In 4 de 9 patientes, le erythema nodosum precedeva de menses a annos al morbo intestinal inflammatori associate. In 10 casos, le erythema nodosum esseva associate a diverse morbos. In 16 patientes, le diagnose primari del erythema nodosum no esseva facite.

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Buchner, L. H., Cimino, J. A., Raybin, H. W., e Stewart, B.: Revertion, con naloxona, del intoxication con methadona, ***New York State J. Med.*** **72:** 2305 (15 de Septembre) 1972.

Es presentate un information clinic indicante que le naloxona es le antidote de election del intoxication con methadona o altere narcotico. Le naloxona reverte le depression respiratori del intoxication con methadona, mais ille non precipitate le insufficientia respiratori que pote occurrer con altere antagonistas del narcoticos (nalorphina e levallorphano) quando le droga intoxicante es un depressor non narcotic del respiration. In caso de tractamento de emergentia del intoxication con methadona, le dose de 0.01 mg./Kg. de naloxona es administrate intravenosemente. Le responsa maxima es observate in 2 a 3 minutes; le pupillas dilata se, le pression arterial subnormal leva se, le numero del respirationes augmenta, e le nivello del conscientia meliora. Si le depression respiratori persiste, le dose de 0.01 mg./Kg. pote esser repetite in 5 minutes. Le patiente debe esser observate in le hospital al minus per 48 horas, e doses additional de naloxona pote esser administrate, si es necessari, pro prevenir un recadita. Le naloxona provide un secur, effective e rapide revertion del intoxication con methadona.

Herrmann, J. B.: Chronicitate del carcinoma mammari, ***New York State J. Med.*** **72:** 2310 (15 de Septembre) 1972.

Durante que le carcinoma mammari, in general, ha un curso progressive, ille pote remaner addormite e occulte per multe annos, e su reactivation pote esser retardate longemente. In iste studio es explorate le explicationes possibile del reactivation retardate, e le factores que favora le superviventia. Tres casos de metastases occulte e 4 de metastases evidente es describite plenmente. Es suggerite que le defensas del corpore pote, probabilemente, inactivar o destruer le cellulas cancerose in un certe proportion; si iste non occurre, metastases e le resultato. Es recommendate que le patientes con carcinoma mammari sia infra observation continua, nonobstante un apparente arresto del morbo, e debe se combatir le recurrentia o le metastases con le agentes chirurgic, radiologic, hormonal e chimiotherapeutic que sia disponibile.

Johnston, B.: Melioration del combination anxietate-depression in patientes terminal per cancer; effecto de thioridazina, ***New York State J. Med.*** **72:** 2315 (15 de Septembre) 1972.

A 47 patientes terminal per cancer, con symptomas de un combination de anxietate e depression, administrava se thioridazina o un placebo, tres vices al die, in forma duplemente cec e al hasardo. Le evalutation del effecto therapeutic esseva determinate septimanalmente in termino del symptomas individual de anxietate-tension, depression del character, agitation, insomnia, attacos de lacrimento, pavores e anorexia, e etiam per le evalutation integral del querelas emotional e del intensitate del dolor. Esseva trovate le superior efficatia del thioridazina intra le prime septimana e que iste composto continuava producente un melioramento plus substantial que le placebo, in toto le studio.

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Editorials

THE QUESTION ...... *In Which Direction Does Medical Progress Lie?*

As the Long Island Expressway plowed through the heartland of Long Island during the decade of the sixties it brought in its wake profound changes affecting every aspect of life in that region. In Western Suffolk County, as in Nassau County, rural America became urban America with all the attendant conflicts, crosscurrents, and complexities.

Its effect on the private practice of medicine was no exception. At the dawn of the decade of the sixties the general practitioner was acknowledged in the community as a "generalist." His privileges and prerogatives in the medical community were broadly defined. He did "a little of everything" and his activities touched many specialities. By and large he acquitted himself well. Untoward developments during treatment of his patients were accepted by his peers for what they were—complications—with a sense of compassion based on the knowledge that since medicine is not an exact science "it could happen to anyone."

The urban sprawl brought with it the medical specialist. The general surgeons arrived on the first high tide. Fortified, in part, by rules laid down by the American College of Surgeons, they soon undertook to oust the general practitioner from the operating room. The anguished howls of protest emanating from that encounter were soon stilled with victory by general surgeons.

A flood tide of New Yorkers seeking a better life inundated Nassau and Suffolk Counties. This massive influx inevitably brought with it specialists in many other disciplines. Along with pediatricians and internists came radiologists, obstetricians and gynecologists, urologists, allergists, dermatologists, orthopedic surgeons, ear, nose, and throat men, neurosurgeons, neurologists, psychiatrists. With the close of the decade, came further examples of fragmentation—pediatric surgeons, pediatric cardiologists, pediatric allergists, rheumatologists, nephrologists, proctologists, vascular surgeons, hand surgeons, and others ad infinitum. One is reminded of the dilemma of today's nuclear physicists who nostalgically recall the era when the atom was the building block of matter, and who now marvel aloud how simple it all was in terms of today's bewildering profusion of subatomic particles. They ask, with reason, "What does it all mean?"

By the dawn of the decade of the seventies the situation within the medical community had come full circle. In one of the ironic resonances of history, the general surgeons now face the possibility of being themselves ultimately ousted from much of the activity in the operating room. The demand for a larger slice of the economic pie produced internecine warfare within the surgical community.

The thoracic surgeon says "Stay out of the chest." The plastic surgeon says "Skin grafts are my domain." The orthopedic surgeons say that fractures can be handled competently only by orthopedists. Tonsils and adenoids are jealously guarded by the ear, nose, and throat men. The uterus, adnexae, and vagina have become the vested interest of the obstetrician/gynecologist. Radical neck dissections and thyroid surgery are being claimed as the exclusive preserve of the head and neck surgeon, with the otolaryngologist chiming in "Me, too" for laryngectomies. And the "colorectal" specialist blandly avers that everything involving the large intestine belongs to him—including the appendix.

As if to compound this melange of claim and counterclaim for "a greater piece of the action" the pediatric surgeons and the urologists are now politely fencing with each other as to who is better qualified to do pediatric urology. In the end the survivor will be neither, for there will be a new superspecialty and a new Board of Pediatric Urology!

A similar but not quite as fiercely competitive situation is developing within the ranks of the internists. General practitioners, by and large, are now banned from the coronary care unit. Diplomates of the American Board of Internal Medicine are adopting ever more critical views about the management of serious medical illness by those who are not Board certified. Young and aggressive directors of pediatrics are curtailing the privileges of general practitioners in certain areas of infant and childhood diseases. Small wonder that the general practitioners are defecting to the specialties in droves. Said one general practitioner who left for specialty training after nineteen years of successful practice, "No one wants to be treated as a second class citizen."

To stake out their claims, especially in the more competitive field of surgery, groups of subspecialists in the same field have banded together to give greater impetus to their demands. Peer review groups in the subspecialties have burgeoned, ostensibly to monitor the level of performance in their respective fields. But venom, bitterness, and jealousy have taken the place of honesty and objectivity in the work of some peer review groups. When someone outside their little group secures less than a perfect result, his record is assailed, with a clucking of the tongue and sly muttered innuendoes. His less than optimum result is bandied about disparagingly with an "I told you so" leer and is labeled a gross error in judgment and management. But when the same result is obtained by the subspecialist, his peers tend to view it not as an "error," but as an unavoidable "complication."

There are several hospitals on Long Island where a veritable mutiny by subspecialists has already taken place. Attempting to emulate the successful tactics of a similar group in Nassau County, a Suffolk group tried to bring pressure to bear on hospital authorities by serving written ultimatums stating that unless their specific demands were met, they would not only refuse to serve on emergency room rosters, but they would also refuse to answer requests for consultation on emergency room admissions involving their subspecialty. The hospital authorities, refusing to yield to these threats, have countered this rebellion by arranging to send such patients, where indicated, to other hospitals for treatment.

In 1960 the new member of the medical community, more often than not insecure and debt ridden, was welcomed by his colleagues with the cheerful and truthful reassurance that "Nobody starves in Suffolk County. There is enough here for everyone." In 1972 this is still true, but the fight for a greater slice of the pie grows sharper, more vicious, and less honorable as medical practice becomes more fragmented and superspecialized.

Viewed against the backdrop of public benefit and interest which is paramount, the explanation for this state of affairs is not difficult to perceive. The profusion of medical specialists and subspecialists with their claims to "eminent domain" must be balanced against the flight of the harrassed and humbled general practitioner, relegated to inferiority, from his role as the family physician. By the early seventies this exodus had reached epidemic proportions. In an effort to prevent the total disappearance of the general practitioner as a vital community health resource, the medical schools at Stony Brook, Long Island, at Downstate, and other medical schools across the country have established Departments of Family Medicine to bolster the sagging morale and the professional reputation of the men who choose to continue in their role as primary physicians. This effort is strongly applauded by the Association of American Medical Colleges, enthusiastically endorsed by the American Medical Association, and shored up with financial muscle by the Federal Government. Yet these same medical schools and their teaching hospitals continue to grind out superstars, the American Medical Association and its advisory groups on the specialties legitimatize this train of events by continually expanding the number of "American Boards" and last, the Federal Government, by its funding policy, says, "This, too, is the way to go."

Here is a paradox of significant proportions.

In which direction does progress in medicine lie?

George M. Rosen, M.D.
Commack, New York

AN ANSWER . . . . Progress Leads to Change, and Change Demands Adjustment

We respond to Dr. Rosen's question, though it is obviously a rhetorical one, because so many are repeating it in one form or another with the sly implication that all medicine and medical care are in a pretty bad way, if not hopeless! Specialization is a natural outgrowth of the expansion in medical knowledge; it is a necessity if the new knowledge is to be applied. There is no inherent evil in specialization, and all our difficulties are not attributable to it.

Dr. Rosen notes the nostalgic yearning of the physicist for the ease and comfort of the old, simple atom of Democritus (500 B.C.), and of Lucretius (70 B.C.), and of the later John Dalton (early 1800), but no amount of yearning will abolish the many new subatomic particles, already proved, whose profusion have increased the complexity of the atom. Like our specialites in medicine, they are here to stay! And when and if the true understanding of the structure of matter obtains, all those many new subatomic particles will be there, most assuredly they all will be part of that final picture of the structure of matter; that is inevitable; that is certain. In a similar manner we can be sure that when the final organization of medical care also obtains, then too all our specialties and subspecialties will be utilized.

It is a gross exaggeration and crass error to infer that all new specialties are established by the "selfish demand for a larger slice of the economic pie." Specialties evolved naturally to encompass expanding special spheres of knowledge and skill. This inevitably does mean learning more and more about less and less. There is no alternative, however, if the desired knowledge and unique skill of a particular specialty are to be encompassed and fully understood. This is a corollary to the obvious fact that medicine today cannot be mastered in toto by any one physician. If that is so then the pie must be cut into slices to be digestible; that is, medicine then must be subdivided.

The crux of the problem is how to subdivide without destroying, how to add the proved good in the new and yet preserve the established good in the old and how to keep the slices, such as the separate parts of medicine vital, so that we can obtain finally a unified whole again, which is the total care of the whole patient. American genius at organization is our hope here. After the expected initial difficulties, the complex medicine of today will be organized to achieve better care with greater benefit to the patient. In the final analysis, it is the patient-consumer who will determine the ultimate nature and pattern of medical care.

One cannot stop progress once it is set in motion, let alone reverse it with its established ongoing momentum. Our world is no longer the simple idyllic one depicted by the romantic poets. The whole world and every part thereof is now very complex; this makes the world less comprehensible and this leads to tension and conflict. We are more dependent on each other and an expanding technology and on specialized skills. What is lacking is any overall direction in general and any machinery for coordination of all the jigsaw subdivisions or specialties in the case of medicine. Our best efforts by our most qualified specialists are all separate contributions without any relationship of one to another or to the whole; that is our main problem. It is the correction of that situation which is our most pressing need. The jigsaw puzzle is incomplete.

Progress initiates change. Change demands adjustment. Without change in this evolving world we perish. Without change the organization of medicine as we know it will disappear too, like the dinosaur and the saber toothed tiger. That medicine must adjust to the new era of rapid progress is all too self-evident.

The question now becomes how to achieve the desirable and necessary changes, that is, how to fit medicine into the changing scene with the least disruption and no destruction of the good in existing medical values and no harm to the patient or the physician. Imperfect as medical care may be it can still deteriorate. We must adhere to the Hippocratic aphorism "Above all, do no harm."

How can the physician adjust? Already he is no longer a truly independent wholly autonomous practitioner, by himself able to meet all his patients' medical needs. If the patient cannot be cared for by *any one* physician, and the patient needs complex care, then several *doctors* must *join together* in a combined effort to serve him and meet that need. Furthermore, such a *group* of physicians requires an ever increasing superstructure of professional, paraprofessional, technical, clerical people, all properly organized as a center or a hospital or other administrative unit plus someone or some administrative machinery to coordinate and integrate the efforts of all.

Group practice is not a panacea; group practice alone will not solve the problem. It is only one step in our needed adjustment, though an important one. Group practice tends to foster rather than correct the loss of personal touch, the prevailing gap in communication between patient and physician. Group practice loses the *care for* the patient, that is, the individual, the whole patient, in its care of the illness despite all appropriate scientific study of his particular disease with the correct and very exact diagnosis and the right treatment in the *care of* the patient. We must recapture that precious genuine concern for the human being. We must utilize that aspect of the art of medicine to obtain *effective* as well as *efficient* care.

A properly organized group need not replace the family practitioner. The group can complement the family doctor; he can be a most important component of the group effort. The group effort can take one of several forms: from the use of mutual referrals between collaborating individual general physicians and specialist to several in partnership or incorporated, for both inhospital as well as outpatient care, to Health Maintenance Organizations (HMOs), and other formats to be tried experimentally and yet to be developed. The objective of the combined group effort is to have available and utilize the particular skills of the individual physician and other professional and nonprofessional personnel when it is needed, as it is needed. The care should be the combined effort instead of the isolated separate contributions of each member of the group.

The mechanism of payment can vary too: from fee-for-service to prepayment to insurance coverage, to open panel, or even closed panel properly regulated, HMOs with institutes all coupled with relative value scales for services rendered as evaluated by peers. What we need most right now is trained and qualified individuals preferably medical administrators to dovetail and unite all the talents of every member of the group, professional and nonprofessional. It is this very unifying and integrating talent which is so sorely lacking; it is this very need that can be filled appropriately by the family physician. Yet we do not give any consideration to the training of such supervisory or administrative personnel, nor do we, for that matter, include any specific training or experience in group practice as such for our students or practitioners or specialists in nearly all our medical colleges.

In all this the family practitioner can recapture his former importance; he can be the all important *integrator* for the patient, the collator of all effort overall; he can and should be the patient's *ombudsman.* In this way he can return that personal interest to existing scientific specialized care and correct the prevailing lack of communication now all too evident. He can be the keystone in the arch of medical service.

Editor's note: This is one response to the question presented by Dr. Rosen; it is not the whole answer. We do hope that others will express their ideas and formulate other answers in the form of guest editorials or Letters to the Editor. All will receive careful and deliberate consideration.

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Scientific Articles

Heart Rate and the PR Interval

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Electrocardiograms were recorded on 25,831 IBM employes, ages forty-one through sixty-five years, during the first year (1968 to 1969) of a voluntary multiphasic health-testing program. The electrocardiograms were recorded by the Frank (vector) leads for computer analysis by the IBM-Mayo program and by the 12 standard (scarlar) leads for interpretation by cardiologist. The subjects' electrocardiograms were divided into two groups: 12,049 electrocardiograms interpreted by computer as normal and 13,782 interpreted by cardiologist, of which 75 per cent were normal. Heart rate and PR interval were studied in both groups. The computer group had a mean heart rate of 65 and a median of 64, while in the cardiologist group both the mean and the median were 68. For this population, 50 or below appears to be a useful criterion for sinus bradycardia and 90 or above for sinus tachycardia. Women averaged 2 to 3 beats per minute faster than men. The mean of the PR interval was 157 msec. and the median 156 msec. in the computer group; both were a little higher in the cardiologist group. A small difference was observed in the PR interval between men and women, averaging 4 msec. less for women. Simple correlation coefficients failed to show any positive relationship of PR interval to age, height, or weight in either men or women. Under resting conditions the PR interval was largely independent of heart rate, but in a subgroup of 25 subjects who were exercised, 21 showed some shortening of the PR interval with rapid heart rates.

The PR interval is the time measured from the onset of atrial excitation to the onset of ventricular excitation; it includes depolarization of both atria and passage of the electrical impulse through the atrioventricular node and the bundle of His. The PR interval is usually measured visually from an electrocardiogram and recorded in hundredths of a second. Various authors give a normal range from as low as 0.08 seconds to as high as 0.28 seconds, but the majority of authors consider 0.12 to 0.20 seconds to be the normal range. In a recent editorial it is stated "... this review opens to serious question a variety of assumptions upon which normal values have been predicted. Excluding children, it would appear that values obtained from young, frequently vigorous male subjects have been extrapolated to include subjects of all ages and both sexes."[1] We have reviewed the literature and have reached a similar conclusion. In 1946 Schlamowitz,[2] after reviewing the literature regarding heart rate and PR interval, stated that "... one is left undecided as to whether or not there is any constant relationship between the PR interval and the cycle length, for the different authors contradict each other." Considerable difference of opinion exists as to the relationship between PR interval and heart rate, varying from no constant relationship[2–4] to a questionable relationship,[5] to a constant relationship.[6–15]

While it is assumed that the PR interval increases with age, at least during the first decade, there has been no extensive study of the PR interval in people above the age of forty.[1] Similarly, there has been no extensive study of PR interval relative to sex, age, height, or weight, although the PR interval has been stated by some to be related to body size as well as heart rate,[6,8] and a difference by sex has been noted by some authors.[4,6]

In this report findings are presented for heart rate and atrioventricular conduction in a group of

25,831 employes between the ages of forty-one and sixty-five. The problem of normal values for heart rate and PR interval is explored. The relationship of the PR interval to sex, age, height, and weight is examined. In addition, the relationship between the PR interval and heart rate is studied.

Materials and methods

The study group consists of 25,831 persons who participated in the first year (1968 to 1969) of a voluntary multiphasic health-testing program offered by the IBM Corporation to its employes in the United States and Canada. The ages ranged from forty-one to sixty-five years, 88 per cent of the subjects being male and 12 per cent female. An electrocardiogram was included in each examination. Participants were at least five hours postprandial, were not permitted to smoke for thirty minutes, and were required to rest for fifteen minutes in a quiet room prior to the electrocardiogram recording. In addition to the 12 standard (classic or scalar) leads, a ten-second paper recording of the three Frank (vector) leads was obtained, these vector leads also being recorded simultaneously on magnetic tape for subsequent analysis by computer. This was done at 24 major locations. At 13 smaller locations, a standard electrocardiographic machine with strip chart output alone was used for recording the 12 classic, or standard, leads. At the 24 major locations, a movable cart of equipment[*] was used for recording electrocardiograms. This consisted of a C-205 Patient transmitter (automatic three-channel electrocardiographic data acquisition unit), a C-240 direct writing recorder (three-channel, hot stylus), and a C-602 magnetic tape recorder[†] (with reference oscillator).

Recording was done on Scotch brand 202 Dynarange magnetic tape,[**] one-quarter inch width, 1.5 mil thickness.

Computer analysis[††] was performed at the IBM Medical Data Center in White Plains, New York, on an IBM 1800 Data Acquisition and Control System with an IBM 1851 Multiplexer/S terminal for analog to digital conversion. The following equipment[*] for tape playback was rack mounted at the 1800: a C-711 three-channel electrocardiographic data receiver, a C-801 computer interface, a C-601 magnetic tape recorder[***] (with flutter correction, discriminators, and delay line kit), a C-240 direct writing recorder, and a pulse generator[†††] to synchronize the analog to digital conversion.

The results of computer analysis of vector leads were printed immediately for review and were also stored on a magnetic disk pack. Unless replaced by cardiologist's findings, these results were subsequently used in preparation of a printed examination report for each participant and were also retained on disk as part of a permanent history file of examination data. The cardiologist read from the 12 standard lead recordings. He read all electrocardiograms from locations that did not have electrocardiographic tape recording equipment, those where equipment or operator failure precluded the making of a usable tape, and those which the computer had interpreted as "abnormal" or "borderline." These findings were keypunched into cards and then stored in the appropriate positions on the disk pack, overlaying any computer findings for the same persons. In addition, the cardiologist read about one quarter of the computer "normals." Our experience is that the cardiologist agrees with the computer interpretation of normal in about 97 per cent of the cases, the disagreements involving mainly the QRS complexes and T waves.

Data in the history file on disk were retrieved by computer for this study. The computer normal group consisted of 12,049 electrocardiographic records based on a normal interpretation of the vector leads by computer. Of the 13,782 in the cardiologist group, 75 per cent had been interpreted as normal, 11 per cent as borderline, and 14 per cent as abnormal. Means and medians were calculated for heart rate and PR interval in the two groups. Ranges were obtained by both the standard deviation method and by the percentile method, using the central 95 per cent of a group. The groups were divided by sex to examine the differences between men and women. For each sex simple correlation coefficients were calculated for PR interval versus age, height, weight, and heart rate.

Histograms and probit graphs of the frequency distributions of certain measurements were prepared using the IBM 1800 computer and a Cal-Comp 565[****] plotter.

A subgroup of 25 males was exercised via five minutes of running in place. Only those individuals with normal resting electrocardiograms and no questionable finding in health history were included. Ages varied from forty-one to fifty-six years. Strip charts of lead II were made at 50 mm. per second, double the standard speed. Heart rate and PR interval were measured before exercise, immediately following exercise, and further at one-minute intervals until the rate stabilized.

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[*] Marquette Electronics, Inc., Milwaukee, Wisconsin.

[†] Model AG-500; Ampex Corporation.

[**] Minnesota Mining and Manufacturing Company, St. Paul, Minnesota.

[††] Using the Electrocardiographic Analysis Program for the IBM 1800 Data Acquisition and Control System, July, 1968, version. This program was developed in a joint effort of the Advanced Systems Development Division of IBM and Ralph E. Smith, M.D., of the Mayo Clinic, Rochester, Minnesota.

[***] Minnesota Mining and Manufacturing Company, St. Paul, Minnesota.

[†††] Model 101; Datapulse, Inc., Culver City, California.

[****] California Computer Products, Inc., Anaheim, California.

TABLE I. Summary data for heart rate in both computer and cardiologist groups

Data	Computer	Cardiologist
Number	12,049	13,782
Mean	65	68
Median	64	68
Range (mean ±2 S.D.)	45 to 85	46 to 90
Range (central 95 per cent)	48 to 87	50 to 95

TABLE II. Heart rate in the computer group September, 1968, to August, 1969 (12,049 persons)*

Heart Rate	Number of Occurrences	Cumulative Number	Cumulative Per Cent
0 to 35	0	0	0
36 to 40	20	20	0.17
41 to 45	117	137	1.14
46 to 50	553	690	5.73
51 to 55	1,456	2,146	17.81
56 to 60	2,294	4,440	36.85
61 to 65	2,369	6,809	56.51
66 to 70	2,112	8,921	74.01
71 to 75	1,425	10,346	85.87
76 to 80	843	11,189	92.86
81 to 85	498	11,687	97.00
86 to 90	222	11,909	98.84
91 to 95	76	11,985	99.47
96 to 100	32	12,017	99.73
101 to 105	19	12,036	99.89
106 to 110	6	12,042	99.94
111 to 115	4	12,046	99.98
116 to 120	3	12,049	100.00

* Mean: 64.72; standard deviation: 10.00.

Results

Table I gives summary data on heart rates in both computer and cardiologist groups. The mean rate is slightly lower in the computer group than in the cardiologist group, 65 versus 68, as is the median rate of 64 versus 68. The ranges are similar for both groups with slightly higher rates being found in the cardiologist group. For the 75 per cent in the cardiologist group with normal electrocardiograms, we find the mean heart rate to be 68 and the median 66 with the ranges of 47 to 88 (2 standard deviation) and 50 to 90 (central 95 per cent).

Table II shows the heart rate distribution in the computer group. Note that 36.9 per cent had heart rates of 60 or less, 17.8 per cent had rates of 55 or less, 5.7 per cent had rates of 50 or less, and 1.2 per cent had rates above 90. Similar results were found in the cardiologist group: 32.6 per cent had heart rates of 60 or less, 11.7 per cent had rates of 55 or less, 4.5 per cent had rates of 50 or less, and 2.8 per cent had rates above 90. Figure 1 is a computer generated frequency histogram illustrating the data of Table II. The height of each bar is based on the number of occurrences of heart rate within a five-beat interval shown in the table. The vertical dashed lines designate the mean ±2 S.D. (standard deviation) limits. The X and the lower triangle represent the 2.5th and

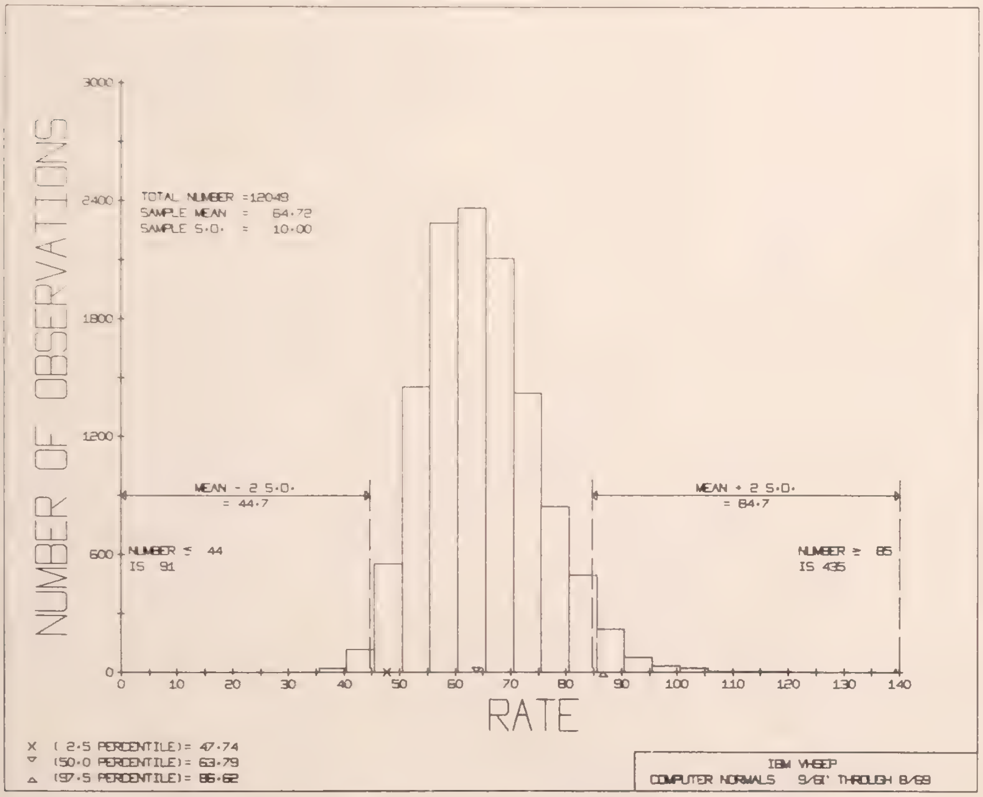

FIGURE 1. Histogram showing distribution of heart rate in computer group.

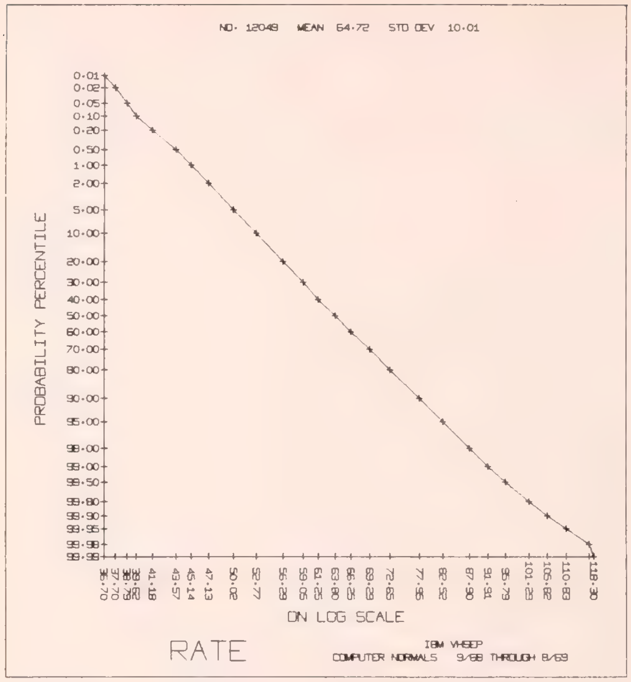

FIGURE 2. Probit graph of heart rate in computer group.

TABLE III. Summary data for PR interval in both computer and cardiologist groups

Data	Computer	Cardiologist
Number	12,049	13,737*
Mean	157	170
Median	156	164
Range (mean ±2 S.D.)	118 to 195	123 to 216
Range (central 95 per cent)	121 to 197	119 to 205

* Forty-five subjects with abnormal atrial rhythms have been excluded.

TABLE IV. PR interval in the computer group, September, 1968, to August, 1969 (12,049 records)*

PR Interval (milliseconds)	Number of Occurrences	Cumulative Number	Cumulative Per Cent
0 to 100	0	0	0
101 to 105	10	10	0.08
106 to 110	45	55	0.46
111 to 115	77	132	1.10
116 to 120	155	287	2.38
121 to 125	276	563	4.67
126 to 130	456	1,019	8.46
131 to 135	627	1,646	13.66
136 to 140	780	2,426	20.13
141 to 145	1,036	3,462	28.73
146 to 150	1,203	4,665	38.72
151 to 155	1,293	5,958	49.45
156 to 160	1,301	7,259	60.25
161 to 165	1,095	8,354	69.33
166 to 170	959	9,313	77.29
171 to 175	782	10,095	83.78
176 to 180	623	10,718	88.95
181 to 185	431	11,149	92.53
186 to 190	305	11,454	95.06
191 to 195	236	11,690	97.02
196 to 200	144	11,834	98.22
201 to 205	97	11,931	99.02
206 to 210	61	11,992	99.53
211 to 215	34	12,026	99.81
216 to 220	18	12,044	99.96
221 to 225	4	12,048	99.99
226 to 230	1	12,049	100.00

* Mean: 156.55; standard deviation: 19.29.

the 97.5th percentiles, while the median, or 50th percentile, is indicated by the upper triangle. An examination of this histogram reveals that the frequency distribution of resting heart rate is skewed to the right, that is, toward higher values; there are almost five times as many values above the +2 S.D. limit as there are below the −2 S.D. limit. This suggests that a nonsymmetric distribution be used in constructing the probit graph in Figure 2. Percentiles have been spaced on the vertical axis in such a way that a gaussian cumulative distribution will appear as a straight line if the horizontal axis is a linear scale. However, a log gaussian or "log normal" distribution will give a straight line if the horizontal axis is spaced on a logarithmic scale, as has been done in Figure 2. The plotted line is quite straight out to the 99.5th percentile. This log gaussian distribution implies that the median and the percentile range of Table I will be more useful than a mean ±2 S.D. range. The latter works best on a gaussian distribution without skewness, whereas a percentile range is reliable for any reasonable distribution as long as it is based on a fairly large number of observations.

Table III gives summary data on PR intervals in both computer and cardiologist groups. The mean and median are higher in the cardiologist group by 13 and 8 msec., respectively. For the 75 per cent in the cardiologist group with normal electrocardiograms we found the mean PR interval to be 168 msec. and the median 164 msec. The lower end of the range for both groups is similar by both statistical methods and is about 120 msec. The upper end varies to a greater extent.

Table IV and Figure 3 show the PR distribution in the computer group. In this group 57 subjects (0.5 per cent) had PR intervals above 210 msec., whereas 192 subjects (1.4 per cent) had PR intervals above 210 msec. in the cardiologist group. There were none above 230 msec. in the computer group, and there were 81 in the cardiologist group. The PR histogram in Figure 3 is skewed a little to the right but not nearly so much as rate is in Figure 1. A probit graph does not give a straight line for either a gaussian or a log gaussian distribution. The difference from gaussian is not large, and, therefore, the range calculated by the S.D. method is not far from that calculated by the percentile method.

Women, representing 12 per cent of the 25,831 subjects, have heart rates 2 to 3 beats per minute higher than men in mean, median, and range.

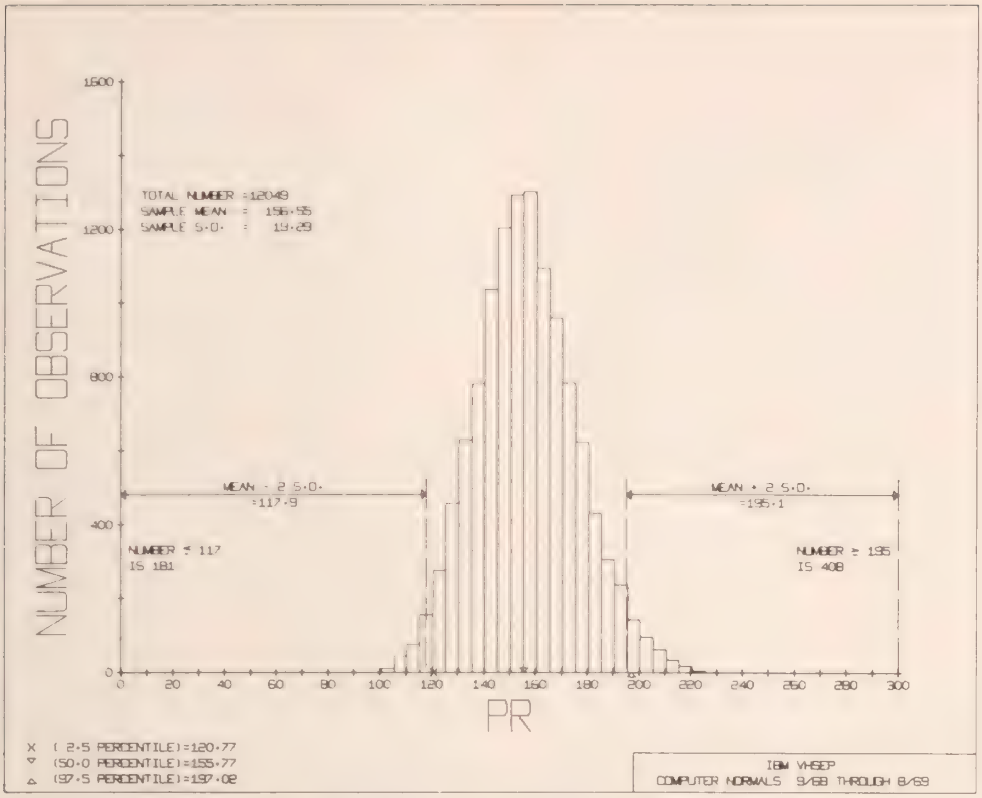

FIGURE 3. Histogram showing distribution of PR interval in computer group.

The PR interval in women is about 4 msec. less than in men in mean, median, and range.

Simple correlation coefficients in both groups, in both men and women, for the PR interval with age, height, and weight, are all of small magnitude, between −0.10 and +0.10. The correlation coefficient of PR with heart rate is −0.08 for the computer group and −0.16 for the cardiologist group.

In 21 of 25 subjects who participated in the exercise study, the PR interval measured immediately after exercise was shorter than that before exercise, in 3 it was unchanged, and in 1 it was slightly longer.

Comment

For the most part, previous studies in electrocardiography have been done on medical students, members of hospital and university staffs, hospitalized patients, and members of the armed services. The number of our subjects studied is probably larger than all other recorded series, with the exception of those involving members of the armed forces. In such studies, however, the subjects were almost exclusively male and under the age of forty years.

Our study is the largest performed on people in the coronary-prone age range of forty-one to sixty-five years. Our subjects are middle-aged employes, in a state of health sufficient to work for a large corporation, and who volunteered to participate in a multiphasic health-testing program. They are not "normals" but have the disease processes found in people of this age distribution. As of December, 1971, more than 300 of the subjects have died, and 53 per cent of these have been cardiovascular deaths, corresponding to the national average. In our study group 3,057 subjects (12 per cent) are female, probably exceeding in number the total of all previous studies in the English literature of women in the age bracket forty-one to sixty-five years.

Conditions under which the electrocardiograms were recorded undoubtedly influence our results to some extent. The subjects were at least five hours postprandial, had not smoked for thirty minutes, and had rested for fifteen minutes on a table prior to the recording of the electrocardiogram. We might consider these subjects as being semibasal. The resting heart rates might be expected to be lower than those recorded in the electrocardiographic department of a hospital or in a doctor's office. The computer and cardiologist groups are not entirely comparable; the cardiologist visually measures the heart rate in lead II during the first two and one-half seconds of the recording, whereas the computer measures the rate electronically during the vector recording period which begins ten seconds later. Other factors that may contribute to small differences in heart rate are limitations in magnetic tape recording, drift in pulse generator, and slight inaccuracies in paper speed of strip charts. In addition, the cardiologist group contains borderline and abnormal records as well as normal electrocardiograms, whereas the computer group contains electrocardiograms with interpretation of normal only by computer. However, the resting heart rate for both computer and cardiologist groups is slower than the 60 to 100 range usually accepted.[16] If sinus bradycardia is defined as a heart rate of 60 or less, about one third of the subjects had bradycardia.[1,9,16] Five and seven-tenths per cent of the computer group had heart rates of 50 or below, and perhaps this represents a more reasonable criterion for sinus bradycardia for this population. Similarly, sinus tachycardia might be viewed as 90 or above, since only 1.2 per cent of the computer group had rates above 90. In a separate analysis of "normals" in the cardiologist group, we have found 50 to 90 to be a suitable range, using the percentile method.

Table III gives summary data of PR interval in both computer and cardiologist groups; while the results are similar, the mean and median in the cardiologist group are 13 and 8 msec. longer, respectively. One factor in this difference is the inclusion of subjects with first degree heart block and other abnormalities; correction for this narrows the gap between groups by no more than 2 msec. Other factors may account for the remaining difference such as small inaccuracies in each recording system as mentioned previously. In addition, the cardiologist tends to round off the PR interval in terms of even numbers, for example, 0.16 and 0.18 seconds. Our mean for the computer group is 157 msec., consistent with figures for mean value from the literature which vary from 135 to 162 msec; these values are for people generally under the age of forty and male.[1] Median figures for the most part are not given in the literature. Our mean figure is not far from the results of Hiss, Lamb, and Allen[17] who reported a mean value of 162 msec. in a study group of 6,014 subjects, of whom 22 per cent were above the age of forty, and 29 per cent were age thirty-one to forty. In the 75 per cent with normal electrocardiograms in the cardiologist group we found the mean PR to be 168 msec. which is almost identical to Bruce and Yarnall's[18] finding of 167 msec. for cardiologist normal. Also, their finding of 156 msec. for computer normals almost coincides with our finding of 157.

A reasonable lower limit of normal for PR interval is 120 msec. In both groups, using both mathematical methods, we obtained values from 118 to 123 msec. The upper limit of normal is difficult to define. For the computer normal group 195 to 197 msec. is a possible figure, although we have no way of estimating the number of subjects included in this group who have asymptomatic heart disease (Table IV, Figure 3). But by the computer program itself, certain subjects with prolonged PR intervals are transferred to the cardiologist group, the decision point for first degree heart block being about 210 msec. with a correction for rate having been included in the program. Herbert and Sobol[1] suggest that 0.18 sec. be the upper limit of normal. On that basis 11 per cent of the computer group and 23 per cent of the cardiologist group, or about 17 per cent of our entire population, would have PR intervals greater than the 180 msec. limit.

Is an apparently healthy person with a PR interval of 190 to 230 msec. normal or not? How does one define normality? One approach is to analyze large groups of subjects without evident heart disease; and if they remain free of heart disease for ten, twenty, or thirty years, to analyze their original electrocardiograms. This might enable us to define properly the upper limit of the normal range.

The 3,057 women (12 per cent of the population) had heart rates of about 3 beats per minute higher than men in mean, median, and range for both computer and cardiologist groups. Similarly, the women had PR intervals of about 4 msec. less than men in mean, median, and range. Ashman and Hull[6] reported a PR interval of 0.15 sec. in 100 adults and found the mean PR (derived by simple arithmetic) to be 6 msec. lower in women. These differences did not appear large enough to warrant separate limits of normal for men and women. Thus we have presented data in our tables and figures for men and women together.

The very low correlation coefficients of PR with height and weight for each sex indicate that there is no significant linear relationship of PR to overall body size. The low correlation with age means that age in this population (forty-one to sixty-five) has no great effect on the observed PR. This was confirmed by an analysis of five-year age groupings of each sex in the computer normal group. In women the mean PR did not change by more than 2 msec., being between 152 and 154 msec. in all the age groups. In men the mean PR increased slightly from 157 msec. in the three lower age groups to 160 msec. (age fifty-six to sixty, 826 subjects) and to 163 msec. (age sixty-one to sixty-five, 338 subjects).

The relationship between PR and heart rate has been studied with some divergence of opinion.[2] We believe that the PR interval is largely independent of heart rate under the resting conditions of our multiphasic health-testing program (correlation coefficient of −0.08 to −0.16; a small decrease in mean PR of 11 msec. observed between subjects with rate 54 and subjects with rate 85). Since the mean P wave duration at different heart rates is rather constant at 103 to 104 msec., the small average decrease in PR interval that does occur at higher rates is due to shortening of the PR segment. Similarly, there is usually some shortening of the PR interval along with a rapid heart rate associated with exercise. Of the 25 subjects in the subgroup who ran in place for five minutes to heart rates of 120 to 170, we did observe shortening of the PR interval in 21 subjects.

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Conditions Associated with Erythema Nodosum*

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Erythema nodosum is recognized as an inflammatory cutaneous manifestation of certain systemic or local inflammatory diseases. Most of the series of cases reported in this century have emphasized that the most common diseases associated with erythema nodosum have been tuberculosis and streptococcal infections.[1-11] Since World War II, tuberculosis has been brought under better control in the United States and other developed countries, and antibiotics have become available for the early treatment of acute bacterial infections, such as pharyngitis. It might be expected that these developments would have altered the relative incidence of conditions associated with erythema nodosum. However, there have been no general series of cases reported in recent years which might reflect these changes. The purpose of this study was to review the conditions associated with erythema nodosum in the decade 1959 to 1969, as encountered in a general community and referral hospital in Rochester, New York.

Methods

A review was made of the records of all inpatients admitted to the Strong Memorial Hospital between 1959 and 1969 in whom the diagnosis of erythema nodosum had been established. All clinical and laboratory data were tabulated and evaluated in terms of established criteria for the diagnosis of associated conditions. These criteria are defined in each disease category as given in a later section.

Patients

Of the 57 cases, 48 were female and 9 were male, giving a sex ratio of 5 to 1. Forty-six were Caucasian, 11 were Negro. The ages of the patients ranged from three to sixty-six years (Fig. 1). Most (45) were between the ages of fifteen and forty-five.

Seventy per cent of the patients appeared in the six months of winter and spring. In most cases, erythema nodosum lasted from one to two months. Recurrent episodes of erythema nodosum occurred mainly in cases of inflammatory bowel disease. Regardless of duration or tendency to recur, the eruption was typically located on the legs from the knees to the ankles; occasionally the elbows, forearms, wrists or anterior thighs were also involved.

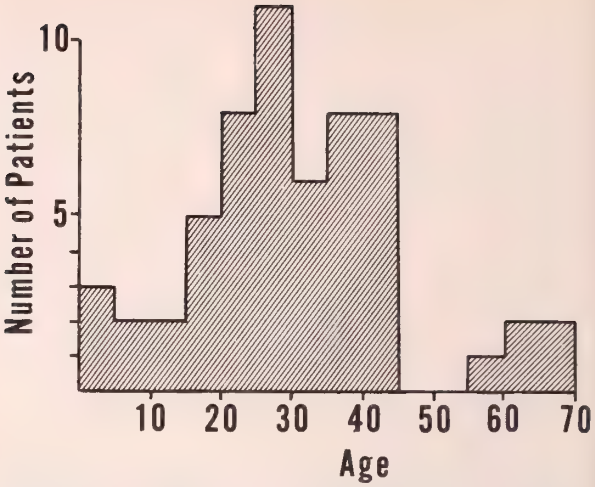

FIGURE 1. Ages of patients with confirmed diagnosis of erythema nodosum from 1959 to 1969.

Associated conditions

Sarcoidosis. Fourteen cases of erythema nodosum were associated with sarcoidosis (Table I). Of these, 7 were diagnosed by biopsy (5 by scalene node, 2 by percutaneous liver biopsy). One of the 5 diagnosed by scalene node biopsy had had previously negative scalene node and liver biopsy results. Of the 7 cases proved by biopsy, all had hilar adenopathy at the time of presentation or within several weeks thereafter. One patient had left phrenic nerve paralysis for two months; this condition resolved after corticosteroid therapy. Five of the 7 had polyarthritis or polyarthralgia, which often preceded the erythema nodosum by weeks. Characteristically, the joint involvement was most prominent in the knees, ankles, wrists, and elbows. None of these 7 had Kveim tests performed.

Two patients with erythema nodosum had positive Kveim test results. These 2 had polyarthritis involving the elbows, knees, and ankles, and both had hilar adenopathy. In each, the arthritis preceded the development of erythema nodosum by two weeks. One of these also had a biopsy of scalene nodes which showed noncaseating granulomas and therefore could have been included in the group diagnosed by biopsy.

Five patients had primary pulmonary sarcoidosis (bilateral hilar lymphoma syndrome) as described by Löfgren.[12] This category is used because none of the 5 had a biopsy or Kveim test.

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Records of all patients admitted to Strong Memorial Hospital with a confirmed diagnosis of erythema nodosum over an eleven-year period were reviewed. It was found that sarcoidosis was present in 14 of the 57 cases. Polyarthritis and hilar adenopathy were regular features of the cases of sarcoidosis. Eight cases of erythema nodosum were associated with streptococcal infection, usually in the form of pharyngitis. Of 9 patients with associated inflammatory bowel disease, 4 were preceded by the erythema nodosum by months to years. Ten cases were associated with miscellaneous conditions, and a primary diagnosis was not made in 16 cases.

TABLE I. Frequency of conditions found associated with erythema nodosum

Condition		Cases
Sarcoidosis		14
Biopsy	7	
Kveim	2	
Löfgren's syndrome	5	
Streptococcal infections		8
Ulcerative colitis		7
Regional ileitis		2
Systemic lupus erythematosus variant		2
Tuberculosis		1
Leprosy		1
Monilial mycetoma		1
Pneumococcal pneumonia		1
Gonorrhea		1
Influenza		1
Pancreatitis		1
Glomerulonephritis		1
Not diagnosed		16

All 5 had hilar adenopathy; 4 had arthritis or arthralgias in the wrists, knees, and ankles. In 2, the hilar adenopathy did not appear until one or two months after the arthritis and erythema nodosum.

Streptococcal infection. Eight patients had erythema nodosum associated with documented streptococcal infection. Documentation was considered sufficient if a beta-hemolytic streptococcus was cultured or the antistreptolysin O titer rose to 1 to 1,000 or greater. One of the 8 had cellulitis. The other 7 had pharyngitis, which was associated with polyarthritis in 2. In addition to pharyngitis, 1 patient had mild hilar adenopathy, and another had patchy pulmonary infiltrates.

Inflammatory bowel disease. *Ulcerative colitis.* Seven patients had erythema nodosum associated with ulcerative colitis. The diagnosis of ulcerative colitis was established by barium enema, sigmoidoscopy, or both. In 2 patients, recurrent erythema nodosum preceded the diagnosis of ulcerative colitis by two and three years, respectively. Three patients had polyarthritis or arthralgias concurrent with erythema nodosum. In 1 of these, the polyarthritis was atypical for ulcerative colitis because of its multiplicity and symmetry. In 4 patients, recurrent erythema nodosum was associated with exacerbations of ulcerative colitis.

Regional ileitis. Two patients had erythema nodosum associated with regional ileitis. The diagnosis was established roentgenographically in both cases. In one, the skin eruption preceded the diagnosis of regional ileitis by seven months. In the other, erythema nodosum and arthritis of the ankles preceded the diagnosis by one month.

Other associated conditions. Two patients had prolonged (eleven months) or recurrent erythema nodosum associated with serologic aberrations including autoantibodies, as well as biopsy evidence of inflammatory tissue reactions such as rheumatoid nodules and chronic active hepatitis. These 2 cases were considered variants of systemic lupus erythematosus.

Only 1 patient had active tuberculosis. This was a child with scrofuloderma. One patient with leprosy had an erythema nodosum leprosum reaction seemingly precipitated by a tuberculin (purified protein derivative) skin test. There were single instances of erythema nodosum associated with monilial mycetoma of mesenteric lymph nodes; pneumococcal pneumonia; gonorrhea with cervicitis and episcleritis; an influenza-like illness, with leukopenia, transient proteinuria, and a cold agglutinin titer of 1:32; pancreatitis; and chronic membranous glomerulonephritis during an acute exacerbation. There was no evidence of streptococcal infection in this last case.

Cases with no associated diagnosis

There were 16 persons with erythema nodosum in whom either the associated disease was not diagnosed, or there was no other detected disease. Most of these 16 had other perplexing signs and symptoms which did not fit into known disease categories. Eight of the 16 had associated polyarthritis or polyarthralgias. One of these also had pericarditis; all signs and symptoms responded to colchicine treatment. In another patient with Raynaud's syndrome, recurrent erythema nodosum of seven years' duration also responded to colchicine. One patient, who had had erythema nodosum with acute rheumatic fever in 1963, appeared in 1969 with a history of recurrent erythema nodosum approximately every two weeks for the preceding two years. No other active disease was detected. Six patients were taking, or had recently received drugs. These included oral contraceptives (3), erythromycin (2), and chiorpromazine (1). The 3 women taking oral contraceptives also had arthritis or arthralgias associated with erythema nodosum. The patient who had been taking chlorpromazine was admitted with hepatitis, mild polyarthritis, and erythema nodosum.

Comment

Previous reviews emphasized tuberculosis and streptococcal infections as the conditions most frequently associated with erythema nodosum.[1-11] Most of these surveys preceded the control of tuberculosis and the widespread use of antibiotics that have occurred since the 1940s. Reports since that time have generally called attention to erythema nodosum occurring in association with epidemics of infections such as histoplasmosis,[13] coccidioidomycosis,[14] psittacosis,[15] and in association with ulcerative colitis.[16,17]

The present report notes the frequency of sarcoidosis as an underlying condition associated with erythema nodosum. James[18] has also emphasized sarcoidosis as a cause of erythema nodosum. However, he points out that his report of 125 cases of sarcoidosis in 170 cases of erythema nodosum reflected a personal interest in sarcoidosis.[18] Of the 114 patients in that series on whom Kveim tests were performed, 107 test results were positive. Although Israel and Goldstein[19] have recently questioned the specificity of the Kveim test, the inclusion of the 2 patients originally diagnosed by this method in the sarcoidosis category in the present report is reasonable. Both had polyarthritis and typical hilar adenopathy; 1 had hyperglobulinemia and hypercalcemia, and the other ultimately had noncaseating granulomas in a scalene node biopsy. Patients with Löfgren's syndrome are included in the sarcoidosis category because histologic evidence of sarcoidosis can be demonstrated in at least one half of such cases.[18,20] Although it was not employed in these 5 cases, the value of gastrocnemius muscle biopsy in cases of sarcoidosis with hilar adenopathy, polyarthralgia, and erythema nodosum has been demonstrated.[21,22]

It is clear from the cases of sarcoidosis reported here that joint symptoms can precede the appearance of erythema nodosum by weeks. James[18] reported that polyarthralgia preceded or accompanied erythema nodosum in 70 per cent of the cases he studied. Likewise, it is evident from the present series that erythema nodosum can precede hilar adenopathy by weeks. Löfgren[12] also reported that erythema nodosum preceded hilar adenopathy in 109 of 113 cases, although the interval between these manifestations was not stated. Of the 16 cases in the present series in whom no diagnosis was reached, 8 had associated polyarthritis or polyarthralgias. It is likely that if these 8 were to have had chest films taken a month or two later, hilar adenopathy may have been shown to have developed.

The tendency for erythema nodosum to antedate other manifestations of ulcerative colitis and regional ileitis was also evident in 4 patients in this series. It is not possible to state whether or not roentgenographic bowel examination at the time of the initial episode of erythema nodosum would have yielded a diagnosis.

This study was limited to hospitalized patients. Probably many patients with mild erythema nodosum never arrive at a hospital. In many the clear association of the eruption with a documented mild streptococcal infection or the use of a drug would lead to corrective measures on an outpatient basis. The patients included in this report, therefore, represent more severe cases or cases in which the underlying diagnosis was not evident at the time the patient was first seen.

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Naloxone Reversal of Methadone Poisoning

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Clinical data are presented indicating that naloxone is the antidote of choice for methadone and suspected other narcotic poisoning. It will reverse the respiratory depression of methadone poisoning but will not precipitate respiratory failure as other narcotic antagonists (nalorphine and levallorphan) may, if the poisoning drug proves to be a non-narcotic respiratory depressant. When used in the emergency treatment of methadone poisoning, 0.01 mg. per kilogram of naloxone is administered intravenously. A maximum response is observed in two to three minutes: pupils dilate, subnormal blood pressure rises, respiratory rate increases, and the level of consciousness improves. If the respiratory depression persists, the 0.01 mg. per kilogram dose is repeated in five minutes. Patients should be observed in the hospital for at least forty-eight hours and additional doses given, if necessary, to prevent relapse. Naloxone provides safe, effective, and rapid reversal of methadone poisoning.

Accidental methadone poisoning, an acute emergency particularly in children, is becoming more common.[1-4] With the greater availability of the drug from street sources and with the expansion of methadone maintenance programs, children and young adults are increasingly exposed.[1] Methadone is dispensed in several forms: as tablets, effervescent tablets, large diskets, or dissolved in a palatable orange-flavored liquid attractive to children who mistake it for orange juice.

This pressing problem can be reduced by apprehending street pushers, by further educating patients on methadone maintenance programs to the importance of keeping their drug out of the reach of children, and by perfecting child-proof medicine containers.[5,6]

Children poisoned despite efforts at prevention may be saved by prompt treatment with available narcotic antagonists: nalorphine (Nalline), levallorphan (Lorfan), and naloxone (Narcan), the antidote of choice and the subject of this report.

Analysis of cases

Data from 10 cases of methadone poisoning in which the patients were treated with naloxone are summarized in Table I. The youngest patient

TABLE I. Naloxone reversal of methadone poisoning

Cases	Age (Years)	Drug Ingested	Signs and Symptoms	Drug Removal	Laboratory Diagnosis	Narcotic Antagonist (Mg. per Kg.)	Outcome
1	1.25	Methadone, 20 mg.	Coma, miosis, vomiting, cyanosis, apnea	. . .	Urine: methadone	Naloxone 0.005 (× 3); 0.01	Recovered
2	22	Methadone, unknown quantity	Stupor, cyanosis, respiratory depression	. . .	. . .	Naloxone 0.005; Nalorphine 1 dose	Recovered
3	3	Methadone, 10 mg.	Ataxia, stupor, miosis, respiratory depression	Gastric lavage	. . .	Naloxone 0.01	Recovered
4	3	Methadone, unknown quantity	Stupor, miosis	Gastric lavage	Gastric: methadone	Naloxone 0.015	Recovered
5	25	Methadone, alcohol, unknown quantities	Coma, miosis, respiratory depression	Gastric lavage	. . .	Naloxone 0.01	. . .
6	19	Methadone, alcohol, unknown quantities	Stupor, miosis, respiratory depression	. . .	. . .	Naloxone 0.005	Recovered
7	2	Methadone, unknown quantity	Ataxia, stupor	Ipecac	. . .	Levallorphan 1 dose; Naloxone 0.01 (× 3)	Recovered
8	22	Methadone, barbiturate, unknown quantities	Ataxia, miosis, respiratory depression	Gastric lavage	Gastric: barbiturate	Naloxone 0.005	Recovered
9	22	Methadone, 100 mg., barbiturate (× 3)	Coma, miosis, respiratory depression	Gastric lavage	. . .	Naloxone 0.005	. . .
10	25	Methadone, unknown quantity	Stupor, miosis, vomiting, cyanosis, respiratory depression	Gastric lavage	. . .	Naloxone 0.005	Recovered

was fifteen months of age and the oldest twenty-five years old. Four were children under five years of age.

A history of methadone ingestion was obtained in all cases, and signs compatible with narcotic overdosage developed in each instance, frequently as a clinical triad of miosis, stupor, and respiratory depression. In 3 cases stupor progressed to coma, and in 1 case respiratory depression proceeded to apnea.

The history of methadone ingestion was confirmed in 2 cases by laboratory methods and supported in all cases by the observed reversal of narcotic effects by narcotic antagonists.

Methadone removal was attempted in 7 cases, 6 by gastric lavage and 1 by administering syrup of ipecac. These modalities are not necessary when a patient responds to naloxone. Cases 5 and 6 were patients who took methadone with alcohol. In general, the respiratory depressant effects of narcotics are greater under the influence of alcohol or barbiturates.[7] Cases 8 and 9 were patients with combined methadone and barbiturate poisoning. Naloxone reversed the depressant effects in both types of combined poisoning, methadone-alcohol and methadone-barbiturate, indicating that in these cases of mixed poisoning the methadone component was the major component.

In 8 of the 10 cases naloxone was the only antagonist used. Naloxone was given as a single injection or as a series of intravenous injections. Doses ranged from 0.005 to 0.015 mg. per kilogram. No untoward reactions were observed.

Eight patients are known to have recovered; the remaining 2 responded to initial treatment but were lost to follow-up. These patients, cases 5 and 9, were seen in two different hospital emergency rooms, and each was given one dose of naloxone intravenously. Both experienced prompt reversal of their methadone poisoning, and both were sent home, the former three hours and the latter five and one-half hours after admission to the emergency room. This was hazardous. At home the patients could have slipped back into coma and respiratory depression when the short-acting naloxone blockade wore off, and the long-acting methadone depression continued.[1,4,8,9]

A case in point has come to our attention. A nineteen-year-old man brought unconscious to an emergency room in the morning was given a short-acting narcotic antagonist, nalorphine, for the methadone poisoning.

He was awake when discharged but was again unconscious when brought back to the emergency room that afternoon.

The amount of methadone ingested in most cases cannot be ascertained, and therefore the number of doses of narcotic antagonist needed to reverse the depression and maintain the blockade cannot be predetermined at the time the patient is first seen. We strongly recommend that all such cases be observed in the hospital for at least forty-eight hours.

The first patient listed in Table I, the fifteen-month-old child, is described in the following case history with emphasis on the chronologic events after methadone ingestion and response to naloxone treatment.

Case report

On May 1, 1971, a fifteen-month-old child, emitting gurgling sounds in her sleep, was given mouth-to-mouth resuscitation by her father who feared she was choking. On arrival in the emergency room she was comatose, responding slightly to painful stimuli. Pupils were contracted to pinpoint size (1 mm.). During physical examination respirations decreased, cyanosis appeared, vomiting followed, and the child became apneic and limp. Tracheal intubation was carried out at once. Drug ingestion was consistently denied by the child's parents, and the admitting diagnosis was therefore respiratory arrest, possibly due to airway obstruction by huge tonsils and adenoids. Intravenous sodium bicarbonate infusion was started in the emergency room.

On the ward breathing was erratic, and respirator assistance was required. Blood pressure was 200/110 mm. Hg, pulse 144 beats per minute, and temperature 98.4°F. Many ronchi were audible on auscultation of the chest; a roentgenogram of the chest revealed no infiltration, but milk and gastric contents were removed by tracheal suction. Bilateral Babinski signs were elicited. Laboratory data revealed the following: hemoglobin 9.7 Gm. per 100 ml., white blood cell count 11,000 with 77 per cent polymorphonuclear leukocytes and 23 per cent lymphocytes, and urea nitrogen 14 mg. and glucose 88 mg. per 100 ml. While on the respirator carbon dioxide tension was 49.2 mm. Hg, oxygen saturation 98.7 per cent, and pH 7.27.

Penicillin, kanamycin, and hydrocortisone were started to combat the aspiration; reserpine and hydralazine were added to the therapeutic effort to control the hypertension. Seventeen hours after admission spontaneous respiration returned, but the child remained restless, and oxygen by face mask was required to eliminate persistent cyanosis. Nevertheless, two episodes of apnea were recorded by continuous monitoring; respiration was restored by stimuli.

Semicoma, pinpoint pupils, and episodes of apnea again suggested narcotic poisoning. Twenty hours after admission the child's mother informed the house staff that two quarter pieces of a methodone tablet (40 mg. tablet) were missing from her purse. The child's urine was also reported positive for methadone but negative for morphine, quinine, and barbiturates.

A narcotic antagonist, naloxone, not generally available at that time, was obtained from the Poison Control Center of the New York City Health Department.

Twenty-two hours after admission the child was given 0.06 mg. of naloxone intravenously (0.005 mg. per kilogram). The child promptly awakened and began calling for her father. The pupils dilated. A second dose of naloxone 0.12 mg. intravenously (0.01 mg. per kilogram) was given an hour later, twenty-three hours after admission. The child sat up, opened her eyes, and began crying.

Although anticipated by the pediatric intern who recorded in her progress note, "she must be watched carefully because the effect of naloxone may only be a few hours and that of methadone can last 48 to 72 hours," an episode of apnea occurred early next morning, thirty-two hours after admission. The third dose of naloxone, 0.06 mg. intravenously, was given in response to this episode of apnea. The child again awakened and began crying and kicking. The fourth dose of intravenous naloxone, 0.06 mg., was given two hours later, thirty-four hours after admission. Breathing became deeper, and the pupils reacted equally measuring 1.5 mm. The child remained drowsy but was easily roused. Blood pressure was 150 systolic. Forty hours after admission the child was fully conscious with pupils measuring 3 mm.

On the fourth hospital day the blood pressure had returned to normal. On the fifth hospital day the child was discharged in good condition.

Comment

Three aspects of this case of methadone poisoning merit emphasis. First, *naloxone does not depress respiration* and could have been safely administered to the child in the emergency room in the absence of any history of narcotic overdose.[4,8,10-13] In contrast the antagonists, nalorphine and levallorphan, could not have been safely given in the absence of a narcotic-ingestion history without fear of converting respiratory insufficiency into respiratory failure.

Second, the depressant effects of methadone poisoning, as noted by the alert intern, may be long-lasting, far exceeding the duration of action of naloxone.[1,4,8,9] The appearance of apnea early in the morning following the absence of naloxone at night could have been prevented by giving additional overnight doses of naloxone, preferably at the higher dose level (0.01 mg. per kilogram). The frequency of naloxone administration should be adjusted to the patient's response, continuously observing dilation of the pupils, rate and depth of respiration, and state of consciousness.

Third, the elevated blood pressures found in this child and in another child with methadone poisoning reported in the literature[2] are exceptions to the rule that subnormal blood pressure usually accompanies severe narcotic poisoning.[14] In this child antihypertensive agents were used with naloxone, but in the other child the blood pressure returned to normal under the influence of a narcotic antagonist alone.[2] Naloxone, in adequate doses, restores subnormal blood pressure to normal in the usual case of methadone poisoning.

Applied pharmacology

Methadone. Many of the pharmacologic effects of methadone are similar to those of morphine—nausea, vomiting, sweating, miosis, analgesia, and notably respiratory depression.[9,14] Methadone differs from morphine by retaining considerable effectiveness when taken orally.[14] Given to nontolerant adults, a 10 mg. analgesic dose has a duration of action of three to five hours.[14] Given to regular users of heroin starting on a methadone maintenance program, 20 mg. is effective for about twelve hours and is administered twice daily. Thereafter the dose is increased gradually over several weeks to the level of 80 to 120 mg. per day necessary to cover a twenty-four hour period.[15] Of greatest importance in accidental poisoning of nontolerant children, the effects are prolonged, namely, twenty-four to seventy-two hours.[1-4,8,9] As little as 10 mg. may be fatal in a young child.[1]

Narcotic antagonists. The commonly used narcotic antagonists, nalorphine, levallorphan, and naloxone are N-allyl derivatives of the corresponding narcotic analgesics, morphine, levorphan, and oxymorphone.[16] As expected, nalorphine and levallorphan when used alone have morphine-like effects, namely, analgesia, miosis, sedation, and respiratory depression.[14,17-20] It is only in the presence of other narcotics that they act as antagonists by competitive inhibition.[12,14,21] In contrast, naloxone has virtually none of the narcotic effects noted and acts essentially as a pure antagonist.[16,22-24]

Clinical application

In the treatment of narcotic intoxication, including methadone, the first and most essential step is to ventilate the patient without delay by the most effective means available. Depending on the circumstances, this may be by mouth-to-mouth breathing, or by administering oxygen through an endotracheal tube using an ambu or similar device. If available, an anesthesiologist should be called immediately to intubate the patient with a cuffed endotracheal tube to prevent gastric aspiration.

Patients with suspected narcotic poisoning, with coma and respiratory depression, should be treated with naloxone in preference to nalorphine or levallorphan. The rationale set forth by Martin[12] is clear: "One of the potential hazards of using the narcotic antagonists nalorphine and levallorphan is that they have respiratory depressant activities in their own right which may summate with existing respiratory depression. One of the newer antagonists, naloxone, has no discernible respiratory depressant action in its own right in man and may prove particularly useful in combating respiratory depression that is presumed to be due to narcotic analgesics."

Nalorphine and levallorphan significantly reduce the respiratory rate and pulmonary minute volume leading to alveolar hypoventilation by lowering the sensivitity of the respiratory center to carbon dioxide.[17-20,25]

In the event that the coma and respiratory depression are due to ingestion of a barbiturate, alcohol, cocaine, or other non-narcotic drugs, the therapeutic trial with naloxone will do no harm, and the lack of response will prove helpful in ruling out a narcotic as the offending drug.[8]

Naloxone antidote to methadone

When used in the emergency treatment of methadone poisoning, naloxone is administered intravenously. The initial 0.01 mg. per kilogram intravenous dose of naloxone[4,8,26] will elicit a response in one-half minute with a maximum response in two to three minutes.[8] Naloxone is available as naloxone hydrochloride (Narcan) 0.4 mg in 1-ml. ampuls. The contents of 2 ampuls provide the 0.01 mg. per kilogram dose for an 80-Kg. adult. If the response is equivocal or inadequate, the 0.01 mg. per kilogram intravenous dose of naloxone should be repeated at five-minute intervals until the desired effect is achieved.[8] The usual responses to naloxone are as follows: pupils dilate, subnormal blood pressure rises, respiratory rate increases, and the level of consciousness improves.

Maintenance dosage is also 0.01 mg. per kilogram, given either intravenously, subcutaneously, or intramuscularly. After subcutaneous or intramuscular injection of naloxone, the maximum response is seen in about fifteen minutes. To prevent relapse, maintenance doses are administered at intervals that permit naloxone to exert a sustained blocking action against the depressant effects of methadone. The duration of action of a therapeutic dose of naloxone is two to four hours; by comparison, the duration of action of methadone is greatly prolonged by the overdosage seen in cases of poisoning.[9]

The need for continuously observing these patients in the hospital to prevent relapse has been emphasized throughout our report.[1,4,8,9]

Failure to observe a response to sequential doses of naloxone suggests the following differential possibilities: The respiratory depression may be due to an overdose of one or more depressant drugs in addition to methadone; it may be due to a non-narcotic agent; or it may not be due to a drug at all. Other factors, such as anoxia, brain injury, or increased intracranial pressure may contribute or be wholly responsible for the respiratory depression.[11,27]

Overzealous administration of naloxone should be avoided in narcotic-dependent adults. Excessive dosage in these patients causes complete reversal of narcotic effects and precipitates an acute abstinence syndrome with its train of distressing and dangerous withdrawal symptoms.[8,24] Methadone abstinence syndrome is particularly severe when withdrawal is induced by a narcotic antagonist.[28] The other side-effect of naloxone is mild sedation described by volunteer subjects as a "sleepy" feeling.[24]

After long-term evaluation of naloxone Foldes, Duncalf, and Kuwabara[11] concluded, "Naloxone which provided significantly better protection against narcotic-induced respiratory depression than the conventional doses of nalorphine and levallorphan, cause(d) no respiratory depression . . ., it should be considered the narcotic antagonist of choice for clinical use."

Addendum

Since this manuscript was completed 4 additional cases have come to our attention, 2 adults and 2 children, bringing the total in this series to 14. These episodes of poisoning and reversal by naloxone were similar to the first 10 cases reported.

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Chronicity of Mammary Carcinoma

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The vagaries in growth rate of mammary carcinoma and the variations in time interval between the occurrence of the primary neoplasm and the subsequent appearance of recurrent and metastatic disease are well known. Mammary carcinoma in general runs a relatively acute course. The average length of life of the untreated patient has been reported as two and one-half years, and about 50 per cent of the treated patients fail to survive five years.[1,12] Inflammatory breast cancer usually pursues an acute course. In many instances, however, the disease apparently is chronic. On occasion it may lie dormant and occult for many years, and reactivation may be long delayed. Sometimes the disease is overtly present and active; despite this the patient lives with it and remains active for many years.

Recurrent or metastatic manifestations in patients apparently free of the disease for ten years are not unusual; after twenty years they become increasingly infrequent. Extensive longevity with active, overt disease is unusual. The writer reviewed 27 case reports of occult breast carcinoma reactivating twenty or more years after treatment of the initial cancer,* adds to this number 3 of his own cases, and reports 4 patients, long surviving and active with overt cancer. A study was made of the entire group of 34 patients and possible explanations explored for delayed reactivation and for longevity with active disease.

Case reports

Occult metastasis

Case 1. At the age of forty-one the patient had a left radical mastectomy for carcinoma and a cycle of postoperative x-ray therapy. She was in good health for twenty years. At the age of sixty-one she had an episode of headaches and clonic convulsions on the left side followed by aphasia and hemiplegia. There was no roentgenologic evidence of pulmonary or osseous metastasis. A diagnosis of cerebral thrombosis was made.

The patient improved, signs of cerebral injury regressed, and she remained in good health for three years. Then increasing dyspnea and left thoracentesis disclosed fluid containing cancer cells. Local recurrence of the cancer was absent, and there was no roentgenologic evidence of osseous metastasis. The patient died three months later of pulmonary metastasis.

Remarks. This patient, free of evidence of mammary carcinoma for twenty years, had a cerebral episode interpreted as a thrombosis. The symptoms and signs regressed, an asymptomatic period of three years ensued, and then pulmonary metastasis appeared. The cerebral manifestations may have been the result of cerebral metastasis, but the subsequent symptomatic regression and three-year asymptomatic period make this unlikely. At no time was there evidence of recurrent or metastatic disease except for the terminal episode of pulmonary metastasis. Had she died of cerebral thrombosis, she would have been considered a cured case of breast cancer.

Case 2. This patient's menopausal period began at the age of forty-five. At the age of forty-six she underwent a left radical mastectomy for carcinoma. She was in good health for twenty-three years, and then dyspnea occurred due to left pulmonary effusion that on thoracentesis contained cancer cells. There was no other clinical or roentgenologic evidence of recurrent or metastatic disease. She died shortly thereafter of pulmonary metastasis.

Remarks. This case is similar to Case 1. After twenty-three years of good health subsequent to mastectomy for carcinoma, the patient experienced pleural effusion containing cancer cells unassociated with any other evidence of metastasis or recurrence. The disease had remained dormant for twenty-three years.

Case 3. The patient, with normal menstrual cycles, underwent a right radical mastectomy for carcinoma at the age of forty-four. One axillary node was involved. At the age of sixty she was hospitalized for a cardiac condition but subsequently recovered and was in good health until the age of seventy. She then incurred pulmonary effusion containing cancer cells, presumably of mammary origin, and died shortly thereafter. There were no other evidences of metastatic disease.

Remarks. As with the preceding patients, this 1 died apparently of recurrent breast carcinoma. It had been lying dormant for twenty-six years; a cardiac condition presumably had lowered the bodily defenses against cancer.

*Most of these cases are included in the bibliography of the paper by Morton and Morton.[2]

Overt metastasis

Case 4. In 1925 at the age of thirty-eight, the patient underwent a left radical mastectomy for cancer; the axillary lymph nodes were uninvolved. The menopausal period occurred at the age of fifty-four.

Ten years subsequent to mastectomy recurrent nodules appeared in the skin of the chest wall, on the left side adjacent to the scar. Biopsy was reported as breast cancer metastasis, and the nodules were excised en bloc. Radiologic examination of lungs, dorsolumbar spine, and pelvis revealed no abnormalities.

Recurrent skin nodules appeared in crops at the same site at intervals of thirteen, four, three, three, and one-half years subsequent to the first episode. Each time the recurrences completely regressed with low-voltage irradiation. Repeated x-ray studies of the lungs and the skeletal system during the recurrent episodes failed to reveal evidence of metastasis.

In 1963, at the age of seventy-six, she had a gastric hemorrhage and died six months later. Autopsy revealed metastatic breast cancer in the lungs, pleura, pericardium, small bowel, stomach, paragastric lymph nodes, and bones. The skin nodules at the site of the mastectomy scar had recurred and persisted for a couple of years until her death.

Remarks. This patient had six episodes of skin recurrences adjacent to the mastectomy scar over a period of twenty-eight years but no evidence of distant metastasis. The skin nodules never became generalized but always occurred in crops restricted to the same locality. The intervals between successive recurrences became shorter; terminally, the nodules occurred almost continuously. Possibly the disease became more aggressive or the defense mechanisms less effective until widespread fatal metastasis resulted.

Case 5. In 1938, at the age of twenty-one, this patient had a carcinoma removed from the left breast but refused mastectomy. The left breast and axilla were irradiated. During the ensuing years recurrent cancer nodules in the skin of the left breast were excised. She continued to menstruate regularly.

In 1952, at the age of thirty-five, a left simple mastectomy was performed, and two years later she underwent a supracervical hysterectomy for fibroid tumors and partial ovariectomy.

In 1969, at the age of fifty-two, recurrent cancer nodules in the left mastectomy scar completely regressed with low-voltage x-ray therapy. A year later a right simple mastectomy was done for anaplastic carcinoma, and cobalt therapy was given postoperatively to the regional lymph node areas. X-ray studies failed to disclose evidence of visceral or osseous metastasis.

At present the patient, fifty-five years old, is engaged in school teaching and has no evidence of recurrent or metastatic disease.

Remarks. This case is similar to Case 4 with recurrent crops of skin cancer nodules occurring over a period of years and successfully controlled with surgery and irradiation. The final episode to date was a cancer in the opposite breast that may have been metastatic or a second primary malignant condition. The disease is apparently arrested, and the patient is in good health thirty-four years after the initial manifestation of cancer and after several episodes of skin recurrences.

While mammary carcinoma, in general, runs usually a progressive course, it may lie dormant and occult for many years, and reactivation may be long delayed. This present study explores the possible explanations for delayed reactivation and the factors favoring longevity. Three cases of occult and 4 of overt metastases are fully described. It is suggested that bodily defenses can probably inactivate or destroy cancer cells at a certain rate; if this exceeds the defense mechanism capabilities, metastasis results. A plea is made to keep patients with mammary carcinoma under continuous observation, despite apparent arrest of disease, and to combat recurrence or metastasis with the surgical, radiologic, hormonal, and chemotherapeutic agents available.

Case 6. In 1948, at the age of fifty-one, the patient underwent a left radical mastectomy for carcinoma; no lymph nodes were involved, and she remained in apparent good health for twelve years. Eight years prior to mastectomy she had had an abdominoperineal resection for cancer of the rectosigmoid and a concurrent abdominal hysterectomy.

In 1960, at the age of sixty-three, fluid containing cancer cells was aspirated from the right pleural cavity, and biopsy of a mass in the right breast revealed scirrhous carcinoma. Roentgenographic examination disclosed pulmonary lymphangitic spread but no osseous metastasis.

The patient was given diethylstilbestrol orally, 15 mg. daily, for eleven years. During that period the pulmonary disease subsided, and the mass in the right breast continued to regress but never completely disappeared. Repeated roentgenograms at no time revealed evidence of recurrent pulmonary metastasis or bone involvement.

In 1971, at the age of seventy-four, eleven years after the appearance of carcinoma in the remaining breast and pulmonary metastasis, the patient died of a cerebral hemorrhage.

Remarks. This patient's cancer was never eradicated but was kept inactive for eleven years. Whether the second breast cancer was another primary neoplasm or metastatic from the first breast cancer is impossible to determine. The pulmonary metastasis may have been from either breast cancer. The long interval between the cancers makes it probable that both were primary neoplasms.[3]

The patient was able to tolerate relatively large doses of estrogen continuously over a long period.

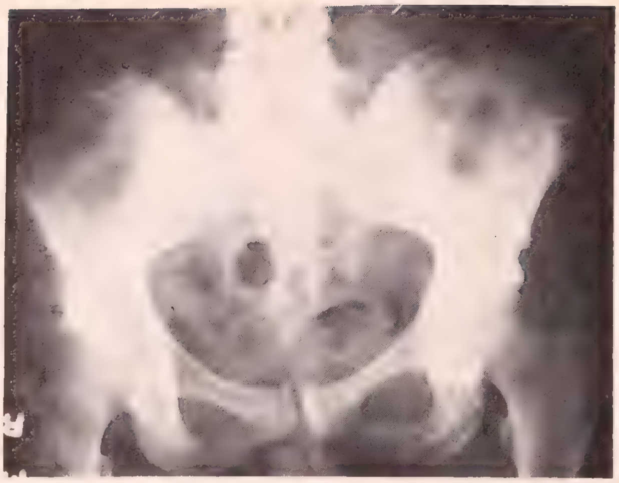

FIGURE 1. Radiograph of pelvis taken about thirteen years ago, two years after castration. There are extensive osteoblastic and scattered osteolytic lesions in left ilium, acetabulum, and pubis.

This has also been observed and reported by Gray and Barnes.[4]

Case 7. In 1957, at the age of forty-seven, this patient noticed a lump in the right breast but did not consult a physician for fear of amputation. Two years previously a right pneumonectomy for pulmonary tuberculosis with cavitation was performed, and subsequently a duodenal ulcer was controlled by diet.

Examination by the author in 1958 because of pain in the right hip and difficulty in walking disclosed lytic and blastic metastases of the left ilium and acetabulum (Fig. 1). The right breast, smaller than the left, on aspiration biopsy disclosed a large cancer, movable on the chest wall, but attached to the overlying skin. There was no palpable regional adenopathy. Menstruation was regular.

Surgical castration resulted in some regression of the breast mass, amelioration of pain in the left hip, calcification of some of the pelvic osteolytic metastases, and return of normal ambulation.

In 1965 the right breast mass began to ulcerate, was irradiated, and subsequently healed. In 1969 carcinomatous nodules in the skin of the shrunken right breast completely regressed with roentgenotherapy.

For a year the disease remained quiescent. Then pain in the left hip recurred but yielded well to cobalt therapy. Later the same year right exophthalmos associated with loss of the senses of taste and smell appeared. Roentgenograms disclosed destruction of bone in the right orbit. Cobalt therapy was administered through a right temporal port, and by early 1971 there was regression of the exophthalmos and return of the senses of smell and taste. Subsequently skin nodules on the back and the abdomen, clinically metastatic, completely regressed on a regimen of 15 mg. of fluoxymestrone (Halotestin) daily.

During the years subsequent to irradiation of the right breast, it continued to sclerose and diminish in size until at present, January, 1972, it has almost entirely disappeared as if surgically amputated (Fig. 2). The osteolytic and blastic metastases originally confined to the pelvis have now involved the skull. Hemograms have never shown any significant abnormalities.

Recently, dyspnea, the result of mediastinal node compression, has yielded to cobalt therapy. Roentgenograms of the skull disclose generalized osteolytic and blastic metastases.

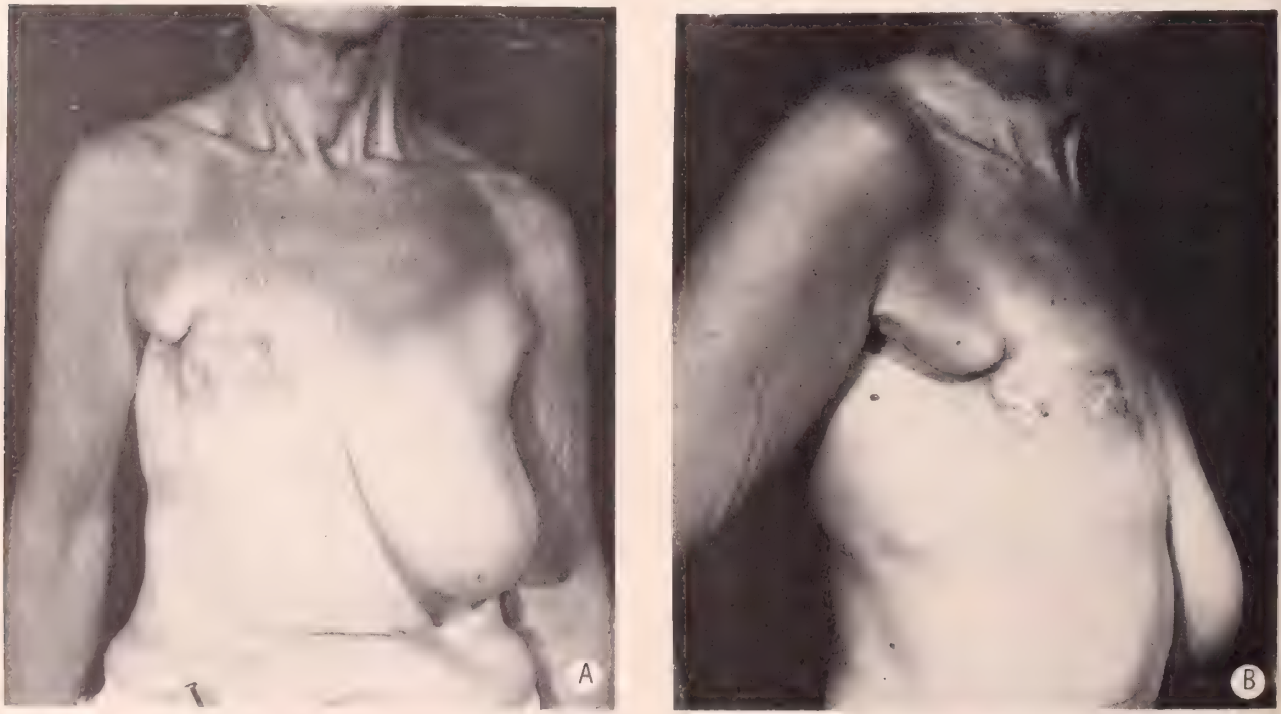

FIGURE 2. (A and B) Anterior and lateral views taken recently. Right breast, completely destroyed by cancer over years, appears as if surgically amputated.

Remarks. This patient with active metastatic breast cancer has had useful prolongation of life for about fifteen years by the use of various therapeutic modalities. All these years she has been and is at present actively engaged as a laboratory technician. The cancer effected a pathologic amputation of the right breast. In recent years the disease has been reactivating more frequently in diverse locations.

Comment

Mammary carcinoma falls into two categories; acute and chronic. The chronic may be either occult or overt. The apparently cured cancer patient may harbor occult metastatic carcinoma; and if she survives intercurrent diseases, the carcinoma ultimately reactivates and results fatally. Occult, apparently dormant, primary malignant neoplasia, a fortuitous autopsy finding, has been observed by the writer and has been reported by others.[5] Increasing the life expectancy of breast cancer patients by decreasing the incidence of death from other causes may result in an increased incidence of late reactivation of the cancer. Reactivation after long periods of apparent freedom from cancer raises the question as to whether or not breast cancer patients are ever cured of the disease.

The variation in intervals preceding reactivation of the disease may be dependent on host resistance, immunologic factors,[6,7] aggressiveness of the cancer, or metabolic reactions.[8] Anticancer or immune agents comparable to antibacterial substances may be produced in the body, otherwise cancer might be more prevalent. There may be "an immunological surveillance mechanism that can eliminate incipient neoplastic cells and that may continue to function in restraining even clinically evident cancer."[9] Instances of spontaneous regression of metastasis have been reported.[10] When there is disturbance of cancer growth inhibiting or restraining factors, metastasis or recurrences appear. Possibly the production of metastatic foci is dependent on the rate and volume of cancer-cell dissemination. The bodily defenses probably can inactivate or destroy cancer cells at a certain rate; if this exceeds the defense mechanism capabilities, metastasis results. Individual cells may be more readily destroyed than tumor emboli. Tumor cells or emboli may escape destruction, form a metastatic nidus, and remain quiescent for long periods of time.

The factors responsible for reactivation of occult cancer are unknown. Recurrence in Gordon-Taylor's[11] cases occurred after infection and unrelated surgical procedures. In Case 1 of the present series it occurred three years after cerebral thrombosis and in Case 3 many years after cardiac disease. These cases suggest a lowering of resistance to the cancer caused by surgical trauma or by illness. However, other investigators have not reported antecedent factors of a similar nature.

The initial sign of disease reactivation in the occult cases was frequently in the lungs; osseous metastasis was infrequent. In the overt cases the disease appeared in the skin at the site of the mastectomy scar in crops with varying intervals of time between the successive crops. The cancer cells lay dormant either in the skin or subcutaneous tissues or were released into the circulation at intervals from some occult cancer nidus. However, it is obscure why release or reactivation occur at varying times. Possibly the aggressiveness of the cancer or the strength of the defense mechanism fluctuates. Pulmonary metastasis was the most frequent cause of death.

Patients with late disease reactivation had, in most instances, left breast carcinoma initially. This occurred in 9 of 12 reported cases and in 2 of the writer's patients. However, this is a relatively small group of cases, and further observation may not substantiate the apparent predominance of left laterality.

The average age at which the primary carcinoma was removed in 17 patients, who later manifested occult cancer, was 43.1 which is earlier than for breast carcinoma in general (about 53),[12] and the average age at which occult recurrence first manifested itself was 70. The increased incidence of death from unrelated causes in older women decreases the possibility of late recurrence in this group.

The prognosis after reactivation of occult metastasis is usually worse than for some patients with overt recurrences, possibly because occult reactivation usually involves the lungs initially; overt metastasis usually involves the skin or skeleton initially.

The average survival time of patients with mammary carcinoma has been fairly well established. The survival time for the individual patient, however, varies widely. A long period of freedom from evidence of cancer does not necessarily constitute a cure. Contrariwise, recurrence, occult or overt, is not necessarily incompatible with longevity. Although the prognosis after the appearance of disease reactivation is usually unfavorable, a defeatist attitude is not warranted. Some of these patients will do surprisingly well, and all should be treated aggressively. Daland's[13] patient, over a period of thirty-one years, had 11 operations in addition to irradiation for recurrent and metastatic disease. Mastectomy was performed at the age of forty-one for the primary carcinoma, and the patient was living with disease at the age of seventy-two. A similar experience was reported by Mayo and Fergeson.[14] Their patient had numerous operations for recurrent and metastatic disease over a twenty-four-year period and was living with disease thirty-two years after the initial mastectomy. The writer's patient, Case 4, had excision or irradiation of local recurrence six times over a period of twenty-eight years; two others are living and active fifteen years with overt cancer. A third died of a cerebral hemorrhage ten years after metastatic disease.

It would appear that vigorous treatment of recurrent or metastatic overt breast cancer manifestations can ameliorate the symptoms and prolong the useful life of some patients. Because of this it is essential to keep breast cancer patients under continuous observation, despite apparent cure or arrest of their disease, and to combat recurrence or metastasis with the various surgical, radiologic, hormonal, and chemotherapeutic modalities available. The salvage rate may be small, but the satisfaction from the successes is great.

Summary

Mammary cancer may run an acute or chronic course. The average length of life of the untreated patient is under three years, and only about 50 per cent of those treated survive free of disease for five years. There are chronic forms of the disease in which the cancer may remain dormant and occult for many years before reactivating or in which the disease after its inception is overt and active for many years. Various explanations for this chronicity and reactivation are explored. Some of these patients can be given a prolonged, useful life by the persistent use of the various therapeutic modalities available, and every effort should be made to salvage them.

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Acknowledgment: The radiation therapy in Cases 5 and 7 was administered by Henry Goldberg, M.D.

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Relief of Mixed Anxiety-Depression in Terminal Cancer Patients

Effect of thioridazine

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Forty-seven terminal cancer patients with symptoms of mixed anxiety-depression received thioridazine or a placebo three times daily in a randomized, double-blind fashion. Evaluation of treatment effect was determined from weekly ratings of the individual symptoms of anxiety-tension, depressive mood, restlessness, insomnia, crying spells, fears, and anorexia as well as an overall rating of emotional complaints and a rating of pain intensity. Thioridazine established its superior efficacy within a week and continued to produce substantially greater relief of symptoms than did the placebo throughout the study.

The threat of suffering and loss of life associated with a terminal disease such as advanced cancer often causes the patient's normal concern about his physical condition to become an unrelenting preoccupation. In turn, the patient's compulsive attention to his illness may impair his powers of analysis and integration to such an extent that his emotional responses become exaggerated, inappropriate, and prolonged.[1,2] Most frequently, this disturbed emotional balance appears as mixed anxiety-depression, which may be accompanied by such symptoms as fears, crying spells, or insomnia. Some alleviation of these manifestations may be achieved through the comfort and reassurance provided by the physician as well as the patient's family and friends.[3,4] This "psychotherapy," however, frequently does not provide relief sufficient to offset the patient's distorted emotional responses.

When psychotherapy alone fails to alleviate the symptoms of mixed anxiety-depression sufficiently, the use of a psychoactive medication may provide the additional symptomatic relief to restore the patient's emotional equilibrium.[1,5] Thioridazine (Mellaril), a psychoactive agent, has been used effectively in the therapy of patients exhibiting symptoms of mixed anxiety-depression.[6,7] Since we were confronted with the need to treat symptoms of mixed anxiety-depression in patients with terminal cancer, we evaluated the therapeutic effects of thioridazine in this patient population.

Materials and method

Fifty advanced cancer patients with mixed anxiety-depressive psychoneurotic states participated in this double-blind study. This group was comprised of 32 outpatients and 18 inpatients, 6 men and 44 women, aged thirty-one to seventy-three years old (mean age, fifty-six years). All patients had a diagnosis of terminal cancer involving either the reproductive system, digestive system, respiratory system, bone, or skin. The protocol stipulated that every patient be considered in sufficiently good condition to survive for the duration of treatment, which ranged from three to six weeks. However, due to the need for rapid symptomatic relief of mixed anxiety-depression in these patients, emphasis was placed on the first- and third-week evaluations of treatment effect.

Treatments were assigned to the patients according to a randomized design. Twenty-five patients were administered thioridazine in 25-mg. capsules, and 25 others received matching placebo capsules. Both treatments were administered under double-blind conditions, one capsule three times a day (patients assigned thioridazine received 75 mg. daily). The dosage schedule was fixed.

Concomitant radiotherapy or chemotherapy was used as indicated. Other medications, predominantly analgesics, were also employed when required; since patients from both treatment groups received them, possible biasing effects on statistical validity of the results were ruled out.

The evaluation of treatment effect was determined from the physician's weekly ratings of the following symptoms: anxiety-tension, depressive mood, restlessness, insomnia, crying spells, fears, anorexia, and withdrawal. In addition, the physician recorded an overall rating of emotional complaints pertaining to these symptoms and a rating

TABLE I. Results of treatment with thioridazine or placebo after one week

	Thioridazine			Placebo			
Symptom	Number of Patients	Mean Pretrial	Mean Improvement*	Number of Patients	Mean Pretrial	Mean Improvement*	Mean Improvement Favors Thioridazine
Anxiety-tension	22	3.864	1.280	25	3.880	0.634	0.646 ($p < 0.05$)
Depressive mood	21	3.571	1.271	20	3.700	0.616	0.655 ($p < 0.05$)
Restlessness	20	3.450	1.220	24	3.542	0.691	0.529 ($p < 0.05$)
Insomnia	20	3.350	1.200	22	3.636	0.454	0.746 ($p < 0.01$)
Crying spells†	20	3.550	1.500	19	3.421	0.632	0.868 ($p < 0.01$)
Fears	15	3.533	1.498	17	3.647	0.619	0.879 ($p < 0.05$)
Anorexia	17	3.294	0.789	21	3.429	0.504	0.285 (NS)
Overall rating of emotional complaints†	22	3.818	1.273	25	3.760	0.600	0.673 ($p < 0.05$)
Pain†	14	3.571	0.571	20	3.500	0.250	0.321 ($p < 0.10$)

* Student t test $p < 0.05$.

† Unadjusted scores; data did not meet the assumptions of the analysis of covariance.

of pain intensity at each weekly rating period. These evaluations were scored as severe (4), moderate (3), mild (2), or absent (1). For each item, the criterion of treatment effect was the difference between treatment groups at each weekly rating period.

The significance of the difference between the pretrial and weekly ratings (mean improvement score) for each item was determined by the Student t test.[8] The significance of the differences between the treatment groups at each rating period was then determined by an analysis of covariance.[9] When the assumptions of the analysis of covariance were met, the mean improvement scores were adjusted to reflect the assumption that both treatment groups had the same pretrial severity of symptoms. If the assumptions of the analysis of covariance were not met, the unadjusted mean improvement scores were used in the analysis of variance.[8] Those patients who did not exhibit a particular symptom before the study were excluded from the analyses of data obtained for that symptom. Also, 3 female patients were excluded from all statistical analyses because they died before sufficient data were collected.

Results

While it was not possible to identify the treatments during the trial, it was apparent early in the course of study that a number of patients were benefiting from therapy considerably more than were others. Such a dichotomy of response was repeatedly demonstrated throughout the course of study. When the data were analyzed at the end of the study, it was discovered that thioridazine produced considerably greater symptomatic relief of mixed anxiety-depression than did placebo.

Ratings made after the first week of treatment revealed that both treatment groups showed improvement compared with the base line for all symptoms (Table I). The mean differences between groups, however, significantly favored thioridazine for eight of the nine symptoms: anxiety-tension, depressive mood, restlessness, insomnia, crying spells, fears, pain, and the overall rating of emotional complaints. For the ninth symptom, anorexia, the mean difference between the treatment groups was not significant. Withdrawal was manifested by too few patients to warrant statistical analysis.

Ratings made at the end of three weeks of treatment indicated that patients in both groups continued to show improvement of all items (Table II). The differences between treatment groups at this time significantly favored thioridazine for the majority of the symptoms: anxiety-tension, depressive mood, insomnia, crying spells, fears, pain, and the overall rating of emotional complaints. There were no significant differences between treatment groups for restlessness and anorexia at the end of three weeks.

For those patients who participated in the trial for six weeks, all items again showed improvement with both treatments (Table III). The mean between-group differences also favored thioridazine significantly for most symptoms: anxiety-tension, insomnia, crying spells, fears, and the overall rating of emotional complaints. There were no significant differences between the treatment groups for pain, depressive mood, restlessness, and anorexia at the end of six weeks.

No untoward effects were observed or reported at any time during the study.

Comment

Comprehensive treatment of terminal cancer involves consideration of the patient's emotional as well as his physical condition.[10,11] In this study, thioridazine consistently improved the patients' overall emotional states and symptoms of mixed anxiety-depression in particular. Importantly, this effectiveness appeared early in the course of therapy. By the end of the first week of treatment, patients were considerably less anxious and tense. They were less restless and had fewer fears about their "incurable" state. As a result, they

TABLE II. Results of treatment with thioridazine or placebo after three weeks

	Thioridazine			Placebo			
Symptom	Number of Patients	Mean Pretrial	Mean Improvement*	Number of Patients	Mean Pretrial	Mean Improvement*	Mean Improvement Favors Thioridazine
Anxiety-tension†	22	3.864	1.591	25	3.880	0.920	0.671 ($p < 0.05$)
Depressive mood	21	3.571	1.413	20	3.700	0.867	0.546 ($p < 0.10$)
Restlessness	20	3.450	1.373	24	3.542	1.023	0.350 (NS)
Insomnia	20	3.350	1.410	22	3.636	0.809	0.601 ($p < 0.05$)
Crying spells†	20	3.550	1.750	19	3.421	0.632	1.118 ($p < 0.01$)
Fears	15	3.533	1.700	17	3.647	0.853	0.847 ($p < 0.05$)
Anorexia	17	3.294	1.093	21	3.429	0.877	0.216 (NS)
Overall rating of emotional complaints†	22	3.818	1.500	25	3.760	0.840	0.660 ($p < 0.05$)
Pain†	14	3.571	0.929	20	3.500	0.400	0.529 ($p < 0.10$)

* Student t test $p < 0.05$.

† Unadjusted scores; data did not meet the assumptions of the analysis of covariance.

TABLE III. Results of treatment with thioridazine or placebo after six weeks

	Thioridazine			Placebo			
Item	Number of Patients	Mean Pretrial	Mean Improvement*	Number of Patients	Mean Pretrial	Mean Improvement*	Mean Improvement Favors Thioridazine
Anxiety-tension†	14	3.786	1.929	15	3.800	1.200	0.729 ($p < 0.05$)
Depressive mood†	14	3.500	1.714	11	3.636	1.273	0.441 (NS)
Restlessness	13	3.462	1.669	15	3.400	1.353	0.316 (NS)
Insomnia	13	3.231	1.693	12	3.500	0.916	0.777 ($p < 0.05$)
Crying spells	12	3.500	1.930	13	3.154	1.295	0.635 ($p < 0.05$)
Fears	9	3.222	1.840	11	3.636	1.131	0.709 ($p < 0.10$)
Anorexia	11	3.364	1.305	11	3.182	1.149	0.156 (NS)
Overall rating of emotional complaints†	14	3.786	1.929	15	3.667	1.400	0.529 ($p < 0.10$)
Pain	8	3.250	1.000	11	3.273	0.727	0.273 (NS)

* Student t test $p < 0.05$.

† Unadjusted scores; data did not meet the assumptions of the analysis of covariance.

were also less depressed and had fewer crying spells. These benefits all continued to be evident at the end of three weeks of treatment; many continued to be observed in those patients treated for six weeks.

The use of thioridazine was found to be a valuable therapy for mixed anxiety-depressive psychoneurotic states in patients with advanced cancer. In alleviating symptoms of mixed anxiety-depression, thioridazine contributed to the general comfort and manageability of the patients. Moreover, the increased comfort eased the patients' fears and generally lifted their spirits.

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Clinicopathologic Conference

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New York City

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Conducted by ROSCOE G. GUY, M.D. and
VICTOR TCHERTKOFF, M.D.

Repeated Febrile Illness and Specific Granulomas

Case history

Stephen A. Berger, M.D.*: *First admission, May 23, 1967.* A twenty-one year old Puerto Rican male, was well until one week prior to admission at which time asthenia, chills, conjunctivitis, a sore throat, and hacking cough productive of yellow sputum developed. Also noted at this time was a daily fever of 105°F. occurring at night. He had had outpatient treatment for otitis media in 1966 and psychiatric hospitalization in 1959 for unknown reason.

The patient had emigrated to the United States eleven years previously and was working as a psychiatric aide at Bellevue Hospital until the onset of illness.

The temperature was 104.8°F. (rectal), pulse 78 per minute, and blood pressure 120/60 mm. Hg. The pharynx was not inflamed but was coated by a whitish exudate. Anterior cervical, posterior cervical, and inguinal adenopathy were noted, as was a 2- to 3-fingerbreadth, firm, nontender spleen. The liver was not enlarged, and the remainder of the physical examination was unrevealing.

The hemoglobin was 14.2 Gm. per 100 ml., white blood cell count 5,600 with normal differential, erythrocyte sedimentation rate 3 mm. per hour, result of urinalysis normal, fasting blood sugar 110 mg. and blood urea nitrogen 15 mg. per 100 ml., serum glutamic oxaloacetic transaminase 52 Karmen units, serum glutamic pyruvic transaminase 15 Karmen units, heterophil and febrile agglutinins normal, result of VDRL test negative, antistreptolysin O 12 units, serum albumin 3.4 Gm. and serum globulin 2.0 Gm. per 100 ml., and total bilirubin 1.4 mg. and direct bilirubin 1.2 mg. per 100 ml. Electrocardiogram disclosed a sinus bradycardia, and roentgenogram of the chest revealed no abnormality.

The patient improved without therapy and was discharged on the seventh hospital day with a diagnosis of infectious mononucleosis.

Second admission, July, 1967. The patient remained well until four weeks following discharge, at which time acute malaise, anorexia, fever, pleuritic chest pain on the right side, and a burning sensation in the eyes developed. Physical examination at this time revealed temperature of 105°F. (rectal) and pulse rate 100 per minute. Slight inflammation of the throat and white patches on buccal mucosa were noted. The right hemithorax revealed splinting, basal dullness, and a friction rub. The spleen was questionably palpable.

The hematocrit was 45, white blood cell count 14,000 with 81 per cent polymorphonuclear leukocytes, 15 per cent lymphocytes, and 1 per cent monocytes. The erythrocyte sedimentation rate was 11 mm. per hour. Findings on chest x-ray films were described as normal. Cold agglutinins were normal.

In view of a history of penicillin allergy given at this time, the patient was treated with cephalothin sodium and propoxyphene. Rapid improvement ensued, and the patient was discharged six days later with a diagnosis of viral pneumonitis.

Third admission. Four and a half years later the patient was treated with aspirin and tetracycline in the clinic for fever and cough. He was then well for six months at which time he was admitted for weakness of three weeks' duration and fever with chills of three days' duration. Associated with the latter was the passage of a few watery, nonfoul-smelling stools daily, generalized myalgia, nonproductive cough, and photophobia.

Physical examination revealed a temperature of 105°F. (rectal), pulse 104, blood pressure 120/60 mm. Hg, and respiratory rate 20 per minute. He was a thin, well-developed male in no apparent distress. Examination of head, eyes, ears, nose, and throat revealed no abnormality. The neck was supple and the chest clear to percussion and auscultation. The heart was normal, save for a Grade III to VI ejection murmur. The abdomen was soft, and a hepatic edge was palpable 2 fingerbreadths below the right costal margin. A firm, nontender spleen was palpated 1 fingerbreadth below the left costal margin. There was no lymphadenopathy. Two to three pustular skin lesions were noted at the left inguinal region and on the left buttock. The remainder of the physical examination was unrevealing.

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Urinalysis revealed no abnormalities. The hemoglobin was 13.8 Gm. per 100 ml., hematocrit 40, white blood cell count 2,200 with no polymorphonuclear leukocytes, 94 per cent lymphocytes, 6 per cent monocytes, platelet count 82,000, reticulocytes 0.9 per cent, erythrocyte sedimentation rate 34 mm. per hour, mean corpuscular volume 78 /u 3 cubic microns, and mean corpuscular hemoglobin 27.2 micromicrograms. The direct bilirubin was 0.7 mg. and total bilirubin was 2.5 mg. per 100 ml., serum albumin 4.6 Gm. and serum globulin 1.5 Gm. per 100 ml., serum glutamic oxaloacetic transaminase 44 Karmen units, serum glutamic pyruvic transaminase 27 Karmen units, lactic dehydrogenase 37 international units, alkaline phosphatase 3.7 King-Armstrong units, creatine phosphokinase 130 international units, calcium 10 mg. and phosphorus 1.3 mg. per 100 ml.

A serum protein electrophoresis revealed total protein 5.5 Gm. per 100 ml. with albumin 65 per cent, alpha 1 globulin 5 per cent, alpha 2 10 per cent, beta 15 per cent, and gamma 5 per cent. Radial diffusion revealed immunoglobulin G 250 mg. (normal 900 to 1,500 mg.), immunoglobulin A 22 mg. (normal 167 to 409 mg.), and immunoglobulin M 39 mg. per 100 ml. (normal 61 to 109 mg.).

Results of the following tests were normal: serum electrolytes, fasting blood sugar, blood urea nitrogen, Coombs', febrile agglutinins, antinuclear antibodies, monotest, cold agglutinins, sputum, stool, urine, and blood cultures, sulfobromophthalein retention, urine for Bence-Jones protein, and serum B_{12}.

Skin testing with purified protein derivative, streptokinase, and streptodornase elicited no reaction. Results of skin testing for coccidioidomycosis, histoplasmosis, blastomycosis, and atypical mycobacterial were also negative at this time. The serum complement was 1.12 and 1.9 ten days later. Cultures of pus obtained from skin lesions revealed Staphylococcus aureus, coagulase positive. Stool examination demonstrated cysts of Giardia lamblia. D-xylose excretion was 1.1 Gm. in five hours and the ninety-six-hour fecal fat 7.2 Gm. per twenty-four hours.

A chest x-ray film revealed peribronchial changes at the upper lung roots bilaterally. An upper gastrointestinal series confirmed the presence of splenomegaly. Results of an oral cholecystogram, liver scan, and barium enema were normal. An intravenous pyelogram revealed lateral deviation of the left ureter, and evidence of right maxillary sinusitis was noted on skull films.

Bone marrow aspiration was hypercellular but otherwise without abnormality.

About twenty-four hours following admission the patient was treated by a regimen of gentamycin, ampicillin, and acetaminophen. Marked clinical improvement ensued, and the patient became afebrile on the fourth hospital day. Four days after admission the white blood cell count was 5,100 with 52 per cent polymorphonuclear leukocytes, 43 per cent lymphocytes, 5 per cent eosinophils, and platelets 166,000. Nine days later the white blood cell count was 7,400 with 86 per cent polymorphonuclear leukocytes, 26 lymphocytes, and 320,000 platelets.

Sigmoidoscopy performed one week after entry revealed no abnormality. A rectal biopsy was obtained and revealed a noncaseating granuloma. An operation was performed one month after admission.

Fourth admission. The patient was well for a month until a fever of 104°F., chills, frontal headache, and recurrence of diarrhea developed. He was readmitted four days after these symptoms began.

Physical examination was unremarkable, save for the finding of pharyngeal infection without exudate. An eruption compatible with oral herpes was noted on the second hospital day.

Laboratory studies revealed hematocrit 40.9, white blood cell count 16,200 with 67 per cent polymorphonuclear leukocytes, 25 per cent bands, 7 per cent lymphocytes, and 1 per cent eosinophils, and platelet count 235,000 per cubic millimeter. Urinalysis was unremarkable as was throat culture. Serum albumin was 4.3 Gm., and globulin 2.2 Gm. per 100 ml. The patient was treated with intramuscular penicillin and discharged on the fourth day.

Radiologic discussion

B. K. Venkatesh, M.D.*: Initially, we have a film of the paranasal sinuses from the third admission. On this film we see some opacification of the maxillary antra due to overlying soft tissue. However, the right antrum is somewhat more opaque than the left indicating the possibility of sinusitis. The frontal and ethnoid sinuses are clear.

During this hospital stay a gastrointestinal series was done, and the esophagus, stomach, duodenal bulb, and small bowel appear to be intrinsically normal. There is some extrinsic pressure on the fundus and proximal portion of the body of the stomach by a presumably large spleen. There is also some evidence of hepatomegaly. A barium enema showed no intrinsic abnormalities.

An excretory urogram was essentially normal except for a band-like lucent defect across the infundibulum of the superior major calyx on the left which is probably due to a vessel crossing over it. The left ureter appears to be normal. However, the proximal portion of the right ureter shows outward deviation, and this would be compatible with a retroperitoneal mass such as an enlarged node.

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Chest films during this admission show some increase in the markings in the right upper lobe. The remaining lung fields are clear. The heart is within normal limits, and there is no evidence of any hilar or mediastinal adenopathy. Chest films taken during the fourth admission show clear lung fields and a normal cardiac silhouette.

Comment

Mardoqueo I. Salomon, M.D.*: In view of the multiple morbid episodes and multifaceted aspects of this case, I think the best way would be to discuss the diagnostic problem in a chronologic fashion, thus imitating the psychologic impact of each episode on the examining physician. We shall begin with the first episode, when a hitherto healthy appearing youth was seen with fever, lymphadenopathy, splenomegaly, sore throat, and apparently conjunctivitis. Add to this the hematologic picture and obviously the suspicion of infectious mononucleosis is almost inescapable; almost, but not quite. Result of the heterophil agglutination test was negative, but Gardner and Paul[1] did not consider a positive test result as either universally present or a "conditio sine qua non." However, in the absence of serologic confirmation two more entities have to be seriously considered, cytomegalic virus infection and toxoplasmosis. Actually, in the absence of additional tests, viral studies for the former, and the so-called indirect fluorescent antibody test for the latter, the clinical distinction between these two nosographic entities is difficult. Furthermore, I always doubt the presence of any of these diseases in the presence of a sore throat. Yet exceptions to this rule may occur, and so the differential diagnosis among the three diseases in this case remains sub judice.

Be that as it may, the patient recovered from his first encounter with what appears to be, in retrospect, an implacable enemy. Whatever the nature of the first febrile malady in this patient, he got rid of it pretty soon. Nonetheless, the cure was only ephemeral, since shortly thereafter a second episode appeared, thus adding a new dimension to our diagnostic problem. At this point, and given the conglomeration of a murmur, fever, and splenomegaly, one has to consider the possibility of subacute bacterial endocarditis in this youth. I am sure you all recall the masterful description of this malady by Clerc and Deschamps[2] in the preantibiotic era. One can admire but hardly imitate their superb style in depicting the evolution of this dreadful disease which kept the physician helpless in the management of the hapless patient. Yet, the absence of hematuria, the presence of lymphadenopathy, and the general evolution of the illness in this youth make the diagnosis either untenable or have to induce us, paradoxically, to consider endocarditis, even if he had it, as an epiphenomenon in the entire pathologic spectrum of that patient. Perhaps the examination of a drop of blood from an earlobe could have been helpful; the presence of phagocytic histiocytes would lend support to the diagnosis of subacute bacterial endocardititis. But blood cultures are strangely absent from the protocol.

In a Puerto Rican youth who has fever, diarrhea, splenomegaly, and so on, the suspicion of schistosomiasis has to be high on the priority list. I did not overlook the noncaseating granuloma. But this, I think, is a Trojan horse. While it adds strength to the suspicion of bilharziasis, it is probably a red herring, for this diagnosis would mean that the patient had that parasitic infestation, but again only as an epiphenomenon in his entire spectrum of disease or diseases. The lymphadenopathy, the failure to recover eggs, and the information that the liver was normal exclude this diagnosis as the main problem in our patient. While on the subject of parasites, I can hardly attribute to the Giardia more than an insignificant role.

Tuberculosis, especially miliary tuberculosis, can masquerade under many clinical pictures. Indeed, bizarre and even leukemoid hematologic findings have been repeatedly observed in that disease. But after so long an observation period, the failure to uncover that potential culprit exonerates the mycobacterium in this case.

Conjunctivitis, arthritis, and mucocutaneous lesions led me to suspect Reiter's syndrome when I first read the patient's record. Whether this disease is due to Chlamydia, as presently believed, I do not know; I recall the Mycoplasma, Shigella, and a host of other "culprits" accused at one time or another.

Nonetheless, and even though urethritis may be missing for some time, it almost always appears sooner or later. At this point I wish to mention the importance of the arthritic involvement in this disease, recently again stressed by Sholkoff, Glickman, and Steinbach[3] and mentioned in the interesting pathologic findings in the case described by Mori and Zak.[4] Parenthetically, I wish to stress the importance of the fluffy aspect of the calcaneum on x-ray films. However, it would hardly be possible to ascribe this patient's diseases to Reiter's syndrome, although he may have had it as part of his morbid spectrum.

That Behçet's syndrome is multisystemic and has the most protean manifestations has been known for some time, and has been reaffirmed in a recent review by Kalbian and Challis.[5] Furthermore, its periodicity would fit into our patient's pattern. Eye involvement, oral lesions, herpes-like lesions, (our patient had some juxtagenital skin lesions), and arthritis can occur in that syndrome. I am not aware of a severe agranulocytosis caused by that disease. Yet, in view of the almost endless array of causes of that hematologic debacle, no infectious process appears to be exempt from suspicion. Nevertheless I could hardly conceive of the lymphadenopathy or any other lesion in the retroperitoneal space accounting for the displacement of the kidney as observed on the intravenous pyelogram. Furthermore, the entire clinical picture presented by this patient led me to discard that diagnosis. Parenthetically, Behçet's disease is observed mainly in people of middle eastern origin.

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In the presence of fever and diarrhea, and later on malabsorption, the suspicion of Crohn's disease has to be entertained. We are all aware of the fact that many cases of this malady can go on for months without even diarrhea. Yet roentgenologic changes should appear, and in this case no light was shed on our problem by the x-ray films of the gastrointestinal tract. Incidentally, in granulomatous colitis noncaseating granulomas in the large intestine have been encountered.

Perhaps at this point we should mention the possibility of an angiitis of some sort to account for this patient's multifaceted troubles. Actually, the realm of vasculitis is the internist's bane, at least my bane. To begin with, the very classification of these maladies is complex with multiple overlaps. What is more, as Winkelman and Dittow[6] have rightly pointed out and my experience has reinforced, there is no strict parallel between the clinical manifestations and the nosographic delineations within angiitis. Polyarteritis nodosa should be mentioned in this patient, albeit as a remote possibility. We all know that this disease can masquerade as almost anything; parenthetically, the absence of asthma at the beginning of polyarteritis means that asthma will not appear in the evolution of the disease in a particular patient. On the other hand, I recall a patient followed for years with a large array of manifestations and diagnoses who by chance had to undergo cholecystectomy, and to everyone's surprise the excised gallbladder revealed polyarteritis nodosa. Nonetheless, the lymphadenopathy, the shifting of the kidney laterally, and the ulterior manifestations of this patient's illness compel me to rule out polyarteritis.

In the clinical setting of sinusitis and some form of pulmonary involvement Wegener's granulomatosis should be mentioned. Splenohepatomegaly and lymphadenopathy would not fit Wegener's granulomatosis, and we can exclude it.

As you can see, no matter what diagnoses I envisage, on further analysis some unsurmountable difficulties arise. Thus I had to turn to the possibility that the patient suffered not from a disease but from recurrent infections. In other words, and in this clinical context, some form of immunologic deficit would have to be envisaged. Obviously, and given his age, such possibilities as Bruton's disease, Swiss gammaglobulinemia, DiGeorge's syndrome, Nezelof's syndrome, can all be readily eliminated. But his hypogammaglobulinemia was striking and his propensity to infections indubitable.

At this point I hope you will bear with me if I indulge in a short digression. Several years ago, Sir MacFarlane Burnet created his very interesting concept of forbidden clones and their role in autoimmunity. At that time I happened to be in Australia, and I was deeply impressed by the structural ingenuity of that theory. More recently, however, I shifted my loyalty to Fudenberg's[7] concept, recently surveyed by him in an editorial. Briefly, and according to this hypothesis, autoantibody-forming cells would always be present and continually produce autoantibodies able to remove aged or damaged tissues. Now, even though these cells are B-cells (meaning stemming from bone marrow, also hinting at their relation to or homology with the bursa of Fabricius cell found in birds), they are under the control of the T-cells (thymus-dependent cells); the latter would appear to exert a negative feedback-like influence on the B-cells. On the other hand, should this T-mechanism become deranged, the B-cells would continue unhampered to produce autoantibodies, and some clones of these cells would even engender not only tissue damaging humoral products but even lead to aberrant mitosis, mutants, and even to malignant conditions, including, of course, lymphomas.

It is hard at this point not to mention Osserman's concept of chronic infections leading, after a prolonged period of time, to the emergence of dysproteinemias and paraproteinemias. Parenthetically, I may add that the aforementioned explanations are probably oversimplifications of more complex relations which prevail in reality.

I inserted this digression to bring out the final diagnosis I considered in this complex case, namely, that of a lymphoma. Whether the repeated infection induced the formation of a lymphoma, as envisaged in Fudenberg's concept, or whether the lymphoma was there to begin with and formed the pathophysiologic substratum, I cannot tell. That lymphomas can remain dormant or semidormant for years is a well-known fact, recently again substantiated by Dacie *et al.*[8] At any rate, a diagnosis of lymphoma could explain all of the multiple disturbances in this patient: the splenomegaly and hepatomegaly, the lymphadenopathy and fever, and the hematologic disturbances and diarrhea, by a process of lymphomatous infiltration of the intestine. Needless to say, I shall not try to guess what kind of a lym-

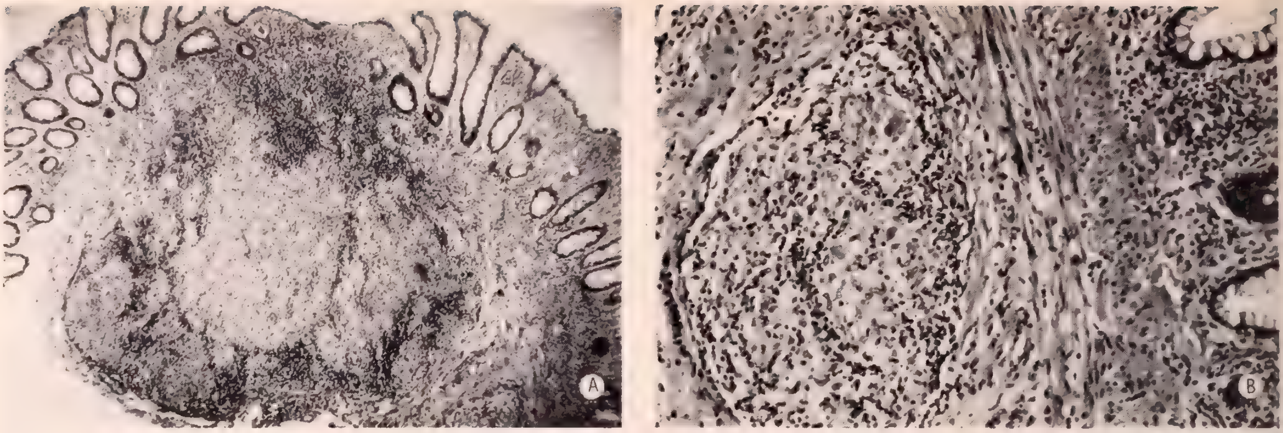

FIGURE 1. (A) Low-power photomicrogram of rectal biopsy showing submucosal noncaseating granuloma. (B) Medium power of rectal biopsy showing epithelioid cells, Langhans giant cell, and sprinkling of lymphocytes.

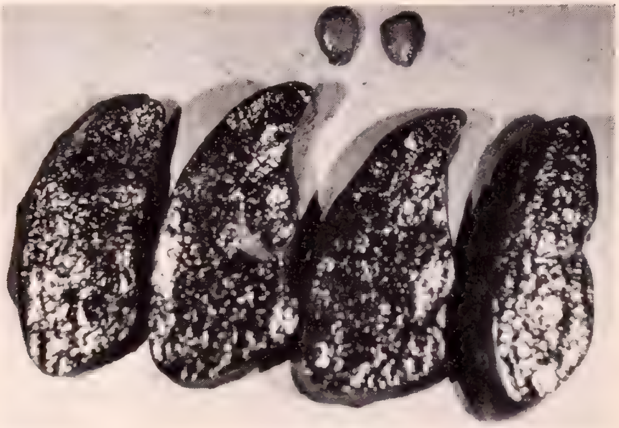

FIGURE 2. Cross section of spleen studded with protruding grey-white nodules. Accompanying nodule thought to be accessory spleen is above it.

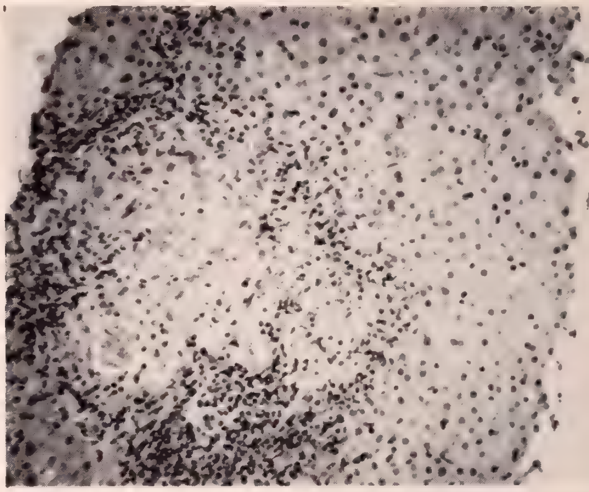

FIGURE 3. Liver biopsy showing discrete noncaseating granuloma.

phoma this patient had. I do not know of any clinical clue good enough to distinguish between a lymphosarcoma and a reticulum-cell sarcoma with any degree of certainty. Incidentally, we recently heard very cogent reasons for removal of Hodgkin's disease from the lymphoma group. Now, while from a nosographic viewpoint this is very valid, for our purposes in this discussion it is not too important.

We may safely assume that the cutaneous lesion in this youth was a herpes zoster, not an uncommon occurrence in a patient with a lymphoma or Hodgkin's disease. The anergy of this patient would favor a diagnosis of Hodgkin's disease.

Obviously, the presence or absence of Sternberg-Reed cells would make a great diagnostic difference to us. Last, but not least, the deviation of the ureter as shown on the intravenous urogram would also lend great support to the lymphoma diagnosis.

Allow me one concluding remark. A great French poet said, "he who wins without peril triumphs without glory." I do not know whether I triumphed in this diagnostic challenge, but at least I think that my journey was perilous.

Pathologic discussion

Victor Tchertkoff, M.D.*: The rectal biopsy of July 21, 1971, showed a submucosal conglomerate noncaseating granuloma with compactly arranged whorled epithelial cells, pale eosinophilic cytoplasm, and ovoid to elongated vesicular nuclei (Fig. 1). The lack of eosinophilia, lack of caseation, paucity of eosinophils, and subsequent negative findings on acid-fast stains led to the anatomic diagnosis of Boeck's sarcoid. In deference to my associate who, based on the patient's Puerto Rican background, believed that the granuloma might be due to schistosomiasis, we serially sectioned the specimen and performed paraaminosalicylate stains, all negative for eggs or shell. Results of acid-fast stains and silver stain for fungi were likewise negative.

The clinicians believed that the patient had hy-

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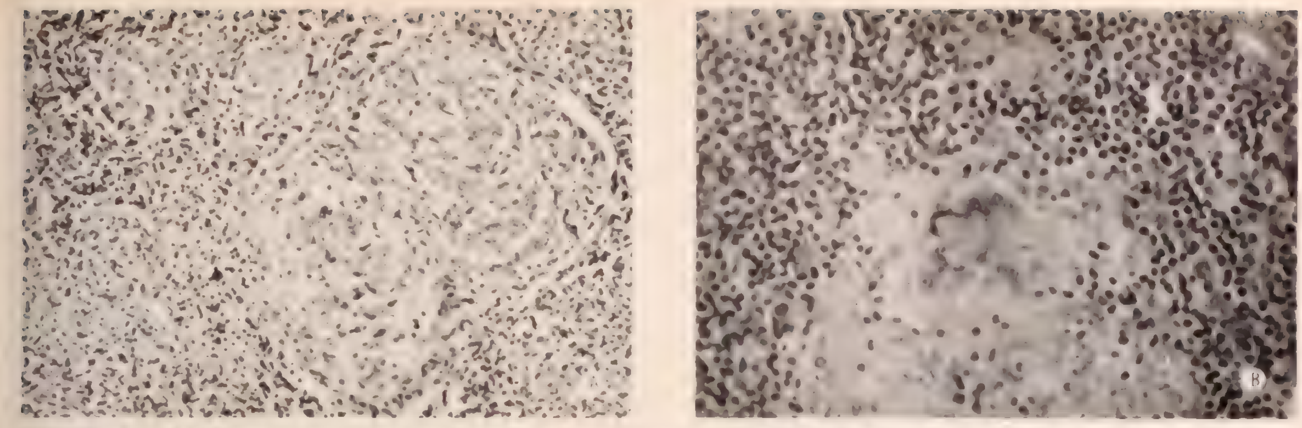

FIGURE 4 (A) Spleen: multiple noncaseating granulomas (×120) (B). High power of crystal in granuloma of spleen

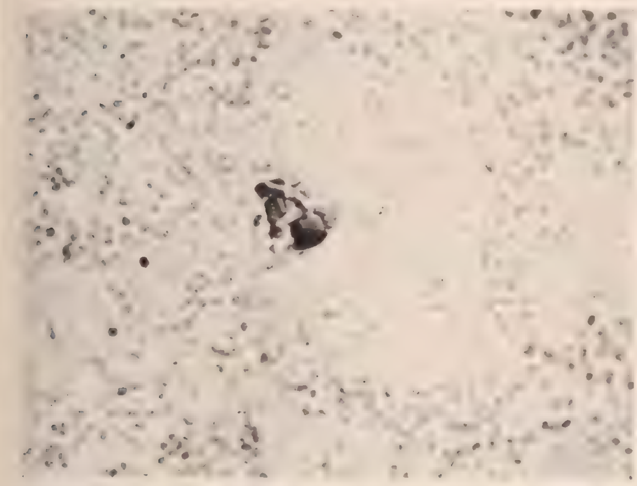

FIGURE 5. Crystalline material positive to von Kossa's stain for calcium.

persplenism due to Hodgkin's disease, and a splenectomy was performed. The spleen weighed 370 Gm.; its capsule was tense, and on section small grey white nodules protruded above the parenchyma (Fig. 2). Accompanying the specimen was a small accessory spleen 1.7 by 0.8 by 0.4 cm., which microscopically proved to be a lymph node, and a wedge liver biopsy.

There was a small discrete noncaseating epithelioid granuloma in the liver (Fig. 3). The splenic pulp was largely replaced by numerous conglomerate noncaseating granulomas as was the lymph node parenchyma. In the latter there were several large Langhans' type giant cells. There were no asteroid bodies, but a few giant cells were found by J. H. Jun, M.D.,* containing fragmented crystals resembling Schaumann bodies (Fig. 4). These crystals were positive on Perl's stain, indicating iron content, and positive to von Kossa's stain, indicating calcium content fitting Engle's[9] criteria for Schaumann bodies (Fig. 5).

From anatomic criteria we concluded that the patient had Boeck's sarcoid. However, the usual laboratory finding of hypergammaglobulinemia, hypercalcemia, elevated serum immunoglobulin A, G, and M are reversed or absent. I point out to you that in 1970, case 37 of the Case Records of the Massachusetts General Hospital was a case of Boeck's sarcoid with hypogammaglobulinemia, lymphadenopathy, and reticonodular pulmonary infiltrate[10]; case 6, 1963, from the same hospital had hypogammaglobulinemia, granulomatous lymphadenitis, and malabsorption.[11] Bromsky and Dunn[12] reported a case of sarcoidosis with hypogammaglobulinemia and a positive result on the Kveim test.

There is no really definite diagnostic test for sarcoidosis, but it is the fine diffuse involvement that convinces us.

We must also consider the entity of hypogammaglobulinemia with granulomas. Fitzpatrick[13] described such lesions with malabsorption, but all had ulcerating skin granulomas, prominent in our case by its absence.

The pathogenesis of sarcoidosis is not known. The tubercle bacillus and its atypical form, once considered the culprit, has fallen by the wayside, particularly since World War II when tuberculosis decreased and sarcoidosis increased. Pine pollen has had its advocates based on statistical and epidemiologic data, supported by the observation that its extract when injected subcutaneously leads to noncaseating granulomas. But so do many other things such as beryllium.

This particular patient would represent the 50 per cent of patients with chronic sarcoidosis with a poor prognosis.

Final diagnosis

Boeck's sarcoid

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Subphrenic Hematoma

Late complication of traumatic rupture of spleen

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The symptoms of traumatic rupture of the spleen may develop immediately or days to weeks after the injury. Complications after splenectomy for traumatic rupture may appear in the immediate postoperative period or may be inapparent clinically for many weeks or months.

For three months after splenectomy for traumatic rupture, the patient reported herein was well. Sudden onset of abdominal distress led to the discovery of an unusual late complication.

Case report

A forty-one-year-old waiter developed pain in the left side of the chest and periumbilical region after making a twisting motion of the body to avoid a swinging door. When seen three weeks later, he was in mild distress with pressure tenderness in the left upper quadrant and periumbilical region. Peritoneal aspiration from the left upper quadrant revealed bloody fluid; at laparotomy a subcapsular hematoma of the spleen was found together with 2,000 ml. of fresh and clotted blood in the peritoneal cavity. Following splenectomy, Penrose drains were inserted in the left flank. Convalescence was uneventful during the remaining two weeks of hospitalization.

Three months later the patient was found to be in good condition, without evidence of an abdominal mass, on a visit to the surgical outpatient department. Almost immediately thereafter he experienced sudden onset of severe pain, worse on respiration, in the left side of the chest, the left upper quadrant, the left shoulder region, and the left ear. Examination on admission to the hospital revealed generalized abdominal tenseness with tenderness in the left upper quadrant. The hemoglobin was 14.3 Gm. per 100 ml.; the white cell count was 12,750 per cubic millimeter, with 66 per cent segmented forms; and the platelet count was 369,000 per cubic millimeter. The chest roentgenogram revealed slight elevation of the left diaphragm; abdominal films and gastrointestinal series indicated the presence of a left upper quadrant mass with extrinsic pressure on the anterior surface of the stomach (Fig. 1). The 50 ml. of dark brown liquid aspirated from the mass contained 3,000 red blood cells and 950 white blood cells per milliliter. Smears and cultures were

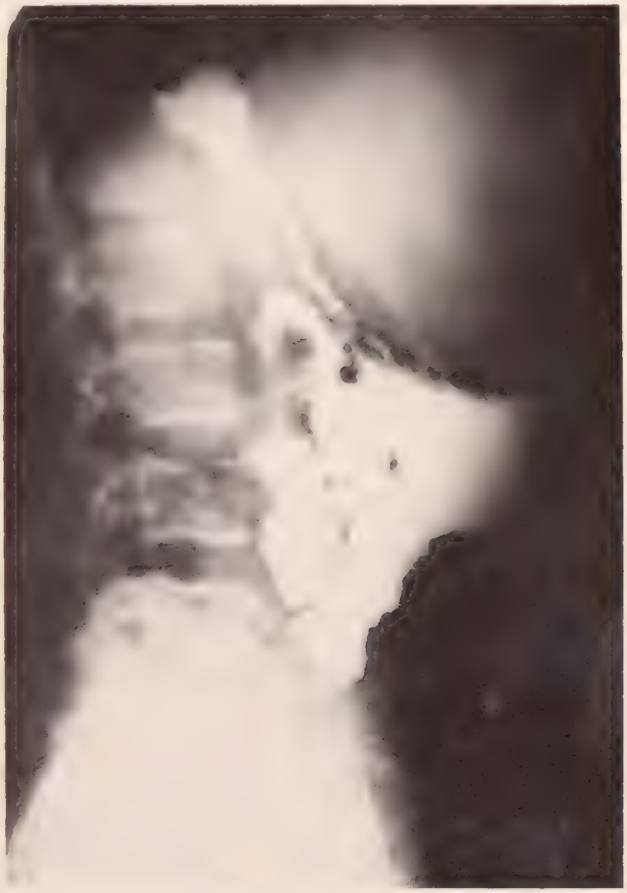

FIGURE 1. Compression and retrodisplacement of barium meal by a mass superior and anterior to stomach.

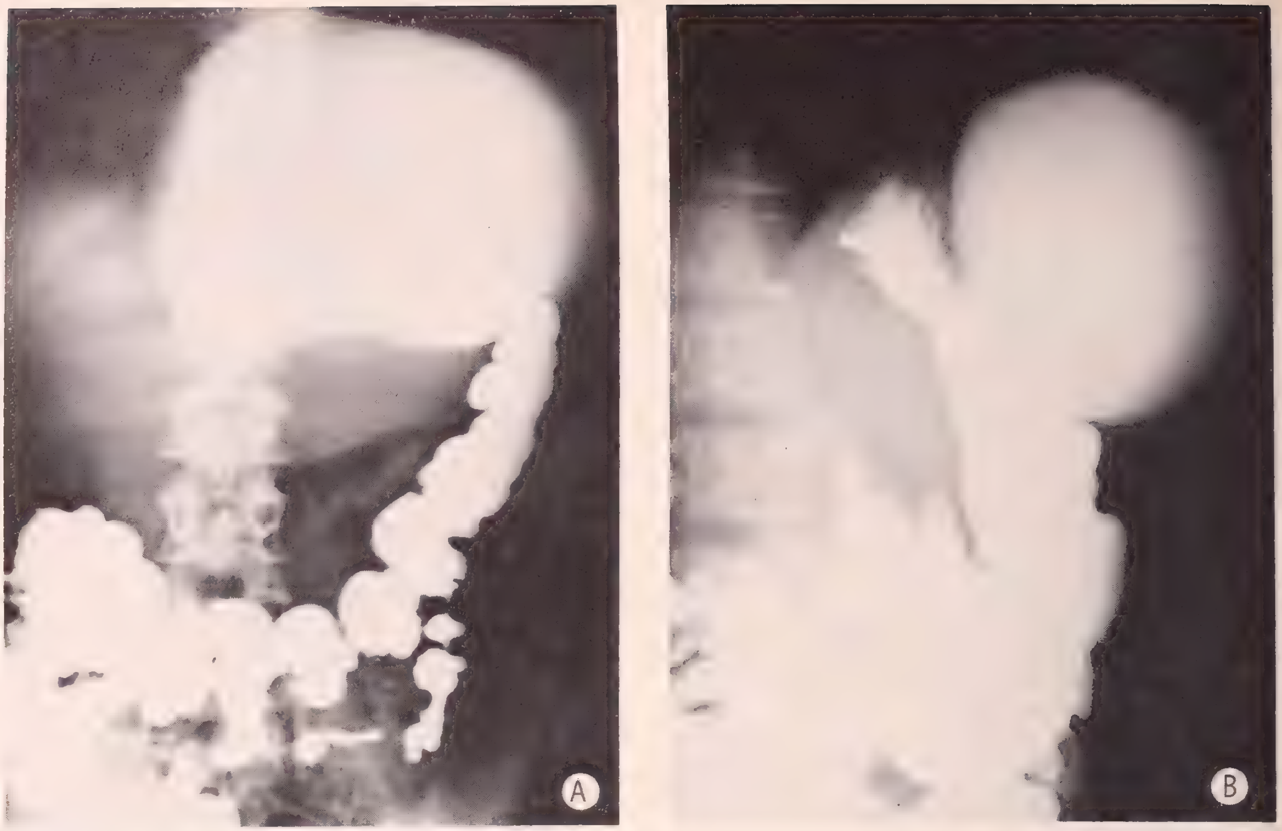

FIGURE 2. Large smooth-margined cyst outlined by sodium diatrizoate in (A) left upper quadrant and (B) anterior to stomach.

negative for bacteria. Three days later a bulge was noted in the epigastrium; 300 ml. of similar brownish fluid were aspirated, and after 100 ml. of sodium diatrizoate (Hypaque) were instilled into the area, abdominal roentgenograms demonstrated a smooth-margined cyst 14 by 20 cm., in the area anterior to the fundus and upper portion of the body of the stomach (Fig. 2).

Laparotomy three days later revealed a thin-walled smooth cyst containing 1,800 ml. of brownish fluid in the area bounded by the superior surface of the left hepatic lobe, the anterior abdominal wall, the left hemidiaphragm, and the suspensory ligament of the liver. Two Penrose drains were inserted into the cavity and a sump drain was introduced. Convalescence was uneventful; subsequent installation of sodium diatrizoate revealed progressive decrease in the size of the subphrenic cyst. The patient was discharged one month after operation.

Comment

Approximately 30 per cent of patients with traumatic rupture of the spleen develop complications following splenectomy, including atelectasis, pneumonia, pleural effusion, hemothorax, wound dehiscence, intra-abdominal hemorrhage, gastrointestinal hemorrhage, pancreatitis, gastrointestinal and pancreatic fistulas, pyelonephritis, renal failure, fever of undetermined origin, and subphrenic abscess.[1] Intra-abdominal hemorrhage occurs after approximately 6 per cent of splenectomies for trauma; an additional 6 per cent of patients develop subphrenic hematoma usually in the immediate postoperative period.[2,3] In approximately 1 per cent of cases of serious splenic trauma, symptoms do not occur at all, are mild, or are masked by the severity of other injuries; the condition may be identified, sometimes many years later, only after abdominal pain develops or after a left upper quadrant mass is identified. In such cases there may be radiologic evidence of medial displacement and compression of the stomach, elevation and limitation of motion of the diaphragm, arteriographic evidence of a filling defect surrounding the spleen, medial displacement of that organ, kinking of the splenic artery, and intrasplenic arteriovenous fistulas.[4] At operation, subcapsular encysted hematomas of the spleen are usually found in addition to evidence of the earlier rupture. Most often, an extensively organized hematoma may be discovered, with dense fibrous attachments to most surrounding organs, including the spleen itself, the liver, the diaphragm, the abdominal wall, the omentum, the kidneys, the pancreas, the stomach, the small intestine, and the colon. This type of chronic organized hematoma may easily be confused at operation with a leiomyosarcoma of the stomach or a retroperitoneal sarcoma.[5]

The very late occurrence of an encysted subphrenic hematoma is even more unusual. Since such a lesion may be difficult to distinguish clinically from an abscess, some surgeons hesitate to use aspiration technics diagnostically for fear of spreading infection, in spite of the availability of antibiotic therapy.[6] In addition, many abscesses in this area are multiloculated. Hence, they might not yield sufficient purulent fluid on aspiration nor permit the entry of sufficient contrast material to outline the extent of the entire lesion. Also, such efforts at needle aspiration run the risk of trauma to the pleura, the lung, the liver, and the spleen itself if the latter is still in situ. The patient under consideration, however, presented a radiographic density anterior to the stomach with protrusion into the epigastric area; the spleen had already been removed. The lesion proved to be unilocular under the left hemidiaphragm, was easily outlined, and subsequently was easily evacuated.

The sequence of pathologic events in this patient is not entirely clear. The use of Penrose drains in the immediate postsplenectomy convalescence period has been both blamed and exonerated for the occurrence of infection and fluid collections beneath the left hemidiaphragm.[7] However, the finding of recognizable intact red blood cells in the aspirate from the hematoma in this patient suggests that at least some of the bleeding into the cystic cavity occurred within the few days preceding its surgical evacuation. A reasonable explanation of the pathologic events in this case would include the persistence of a relatively small subdiaphragmatic, suprahepatic, fluid-filled space which became encysted and remained asymptomatic until three months after splenectomy, when minor trauma to the abdomen led to the tearing of vascularized adhesions or bands within the cyst. This in turn led to subsequent intracystic hemorrhage, distention, and the sudden onset of upper abdominal distress. The relatively long period of three months without symptoms after splenectomy in this case suggests that other patients who have undergone splenectomy may harbor similar clinically silent lesions which may become symptomatic many months after the splenectomy or may be discovered incidentally at subsequent laparotomy.

Summary

A patient with delayed symptoms of splenic rupture was found to have the unusual late complication of a large subphrenic hematoma three months after splenectomy. Radiologic study revealed the nature and extent of the lesion; laparotomy and drainage were followed by complete recovery.

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Recurrent Dissecting Aneurysm of Aorta

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Survival from corrective surgery for acute dissecting aneurysm of the aorta has heretofore been presumed to be associated with eradication of the lesion. Three patients, originally operated on in the acute phase of the disease, were found to have either recurrence or persistence of dissecting aneurysms one, two, and four and one-half years later. Two of these dissections arose in the ascending aorta, and 1 originated distal to the subclavian artery.

At the original operations, aortic resection and prosthetic replacement had been performed in 2 instances, while one recurrence occurred after aneurysmorrhaphy. Review of the literature reveals only two citations of the entity of recurrent or persistent dissecting aneurysm after presumed corrective surgery, and in neither instance was the diagnosis made during life, nor was reoperation performed.[1,2] Our experiences with 3 such cases was, therefore, deemed worthy of a separate report.

Case reports

Case 1. A forty-seven-year-old hypertensive male was admitted to another hospital for treatment of a urethral calculus. He experienced a sudden onset of pain in the neck and chest, followed by marked hypotension and the appearance of an aortic diastolic murmur. Aortography confirmed the presence of a dissecting aneurysm of the ascending aorta (Fig. 1), and the patient was transferred for emergency operation.

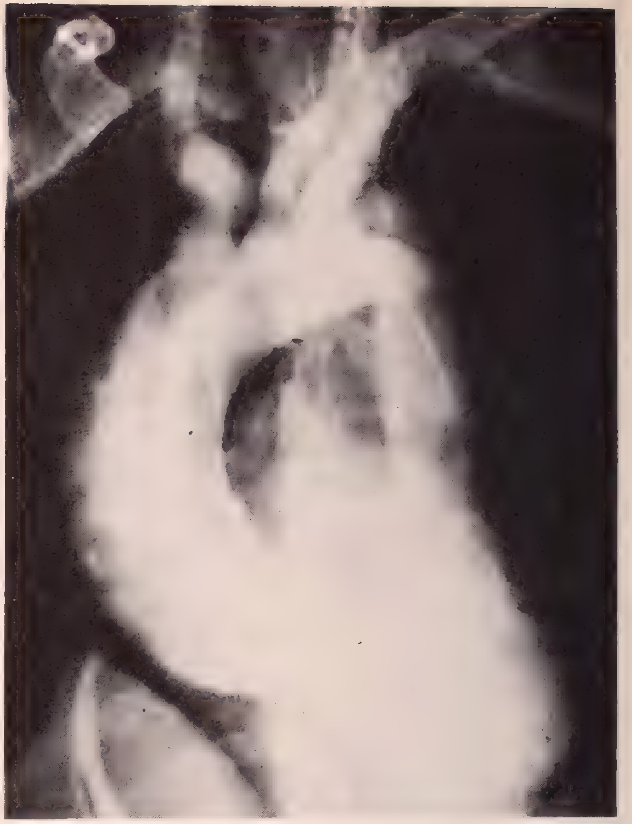
FIGURE 1. Case 1. Aortogram showing double lumen ascending aorta with both lumens opacified.

On June 30, 1963, surgery was performed through a median sternotomy incision. The ascending aorta was found to be extensively involved in a dissecting aneurysm that arose in an intimal tear adjacent to the orifice of the left coronary artery. The intimal defect extended distally for 4 cm.

Under cardiopulmonary bypass with ice cardioplegia, the intimal tear was locally repaired by multiple sutures, many of which were buttressed with Teflon felt. The postoperative course was uneventful, and the patient was discharged from the hospital on July 24, 1963. A faint aortic diastolic murmur was noted at the time of discharge.

After two years of good health, symptoms of dyspnea, palpitations, and paroxysmal nocturnal dyspnea became severe. Findings consistent with severe aortic insufficiency were noted. Roentgenograms revealed enlargement of the ascending aorta and increase in heart size, with mild pulmonary congestion (Fig. 2). Cardiac catheterization and aortography showed aneurysmal dilatation of the ascending aorta and significant aortic insufficiency.

Because of progressive cardiac insufficiency, reoperation was performed on May 25, 1965, under cardiopulmonary bypass. The ascending aorta was the site of a large aneurysm. The aortic valve cusps were deformed by mural dissecting hematoma, with consequent prolapse of portions of the left and noncoronary cusps during diastole. Intimal defects located at the previously repaired tear were found and closed. The aortic valve was replaced with a Starr-Edwards prosthesis. Both coronary arteries were perfused during the repair.

This report was presented at the spring session of the New York Society for Thoracic Surgery, May 15, 1969. The abstract appeared in the December 1, 1969, issue of the *Journal*.

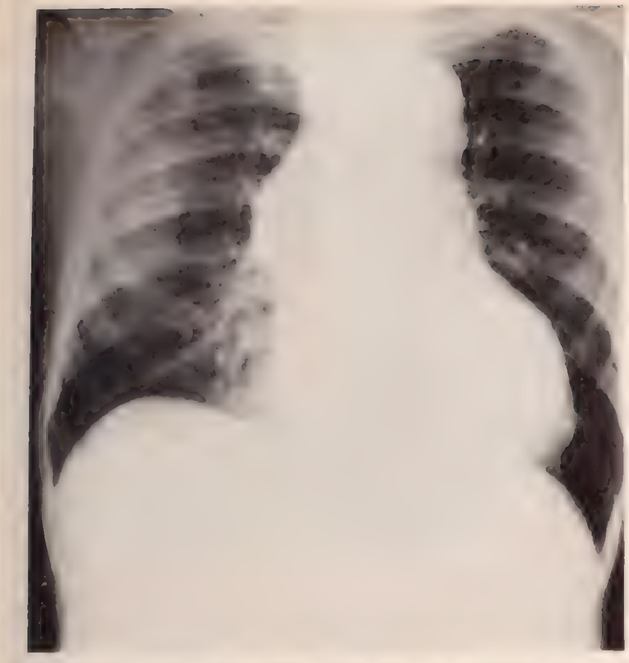

FIGURE 2. Case 1. Chest roentgenogram two years after initial operation showing cardiomegaly and enlargement of ascending aorta.

Resection of the ascending aorta was considered desirable, but appeared fraught with technical difficulty; consequently, the ascending aorta was wrapped externally with knitted Dacron fabric. The patient was discharged from the hospital two weeks after surgery in good condition. Four and one-half years after the second operation, the patient died from a cerebral hemorrhage. Autopsy revealed a well-healed aortic valve prosthesis, dilatation of the ascending aorta, and healing of the aortic dissection.

Case 2. A forty-seven-year-old white male was transferred from another hospital on June 30, 1965, because of chest pain, hemoptysis, and the appearance of an aortic diastolic murmur. Pulmonary edema rapidly became severe (Fig. 3). Chest roentgenograms showed cardiomegaly and marked enlargement of the ascending aorta. Aortography was not performed because of poor general condition.

At operation performed under bypass, the pericardial sac contained a bloody effusion, with hemorrhage extended along the course of the right coronary artery. Within the extensively dissected ascending aorta, the intimal tear was found to arise proximal to the left coronary ostium and extend distally for 2.5 cm. Both coronary arteries were perfused during bypass. The ascending aorta was resected and replaced with a Teflon graft, leaving a small rim of aortic wall distal to the coronary ostia. The distal anastomosis was proximal to the origin of the innominate artery. Persistent bleeding through the posterior distal suture line was controllable only by packing with gauze which was removed without incident by reoperation four days later. Thereafter, the postoperative course was uneventful.

One year after operation, the patient was readmitted because of severe congestive heart failure, atrial fibrillation, and progressive dilatation of the aorta. A transient murmur of mitral insufficiency was heard, but the aortic valve was competent.

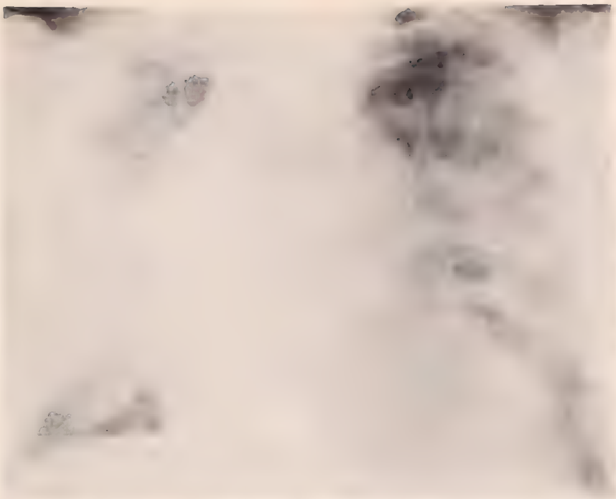

FIGURE 3. Case 2. Preoperative chest roentgenogram showing marked widening of mediastinum, cardiomegaly, and pulmonary congestion.

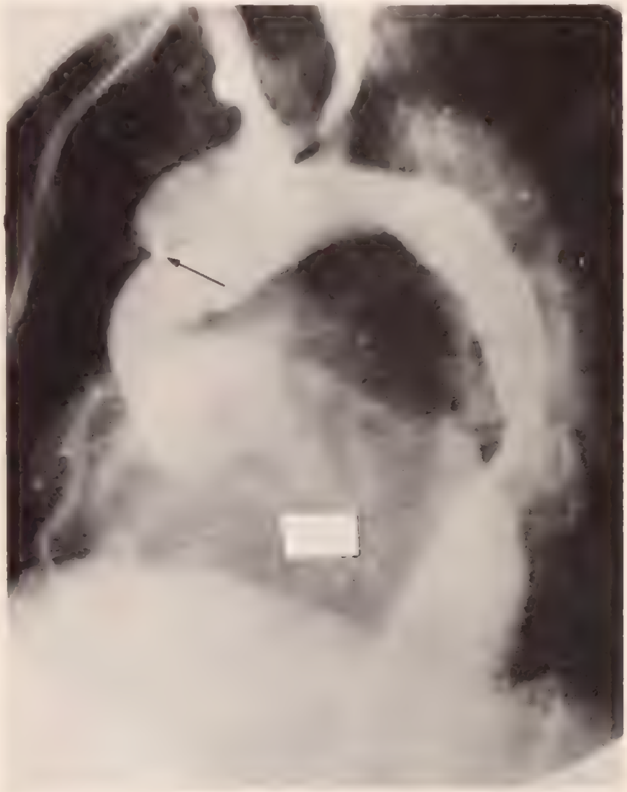

FIGURE 4. Case 2. Aortogram one year after operation showing recurrence or persistence of dissecting aneurysm. Filling of false lumen demonstrated at site of distal graft suture line shown by arrow.

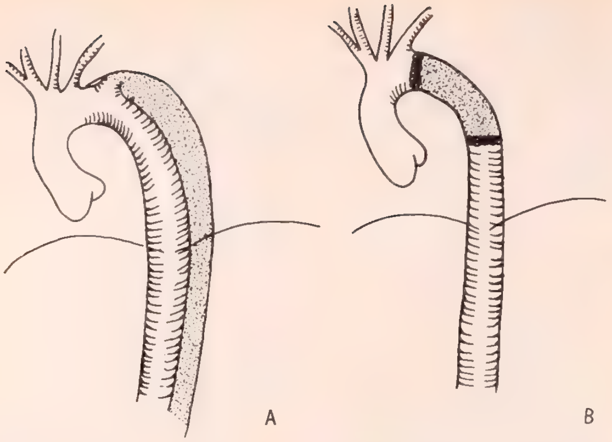

FIGURE 5. Case 3. Schematic diagrams (A) Site and extent of dissecting aneurysm. (B) Resection of aorta and graft replacement.

Heart failure responded rapidly to treatment. Aortography revealed a double lumen in the thoracic and abdominal aorta communicating with the true aortic lumen at the distal suture line of the previously implanted Teflon graft (Fig. 4).

Reoperation under bypass was performed on June 19, 1966. The ascending aorta at the site of the communication was isolated between clamps. The false lumen was opened, and three 2 by 2-mm. intimal defects were found and repaired. Recovery was uneventful.

A diagnosis of arachnodactyly heart disease was made prior to death from arrhythmia, which occurred eighteen months after the second operation. Autopsy was not performed.

Case 3. A forty-eight-year-old hypertensive male was admitted to the hospital on November 14, 1963, with a two-day-old dissecting aneurysm originating just distal to the left subclavian artery and extending into the abdominal aorta. Surgery was performed on the second hospital day under conditions of peripheral arteriovenous cannulation and partial bypass. The intimal tear was identified, and the aorta distal to the left subclavian artery was resected and replaced with a woven Dacron prosthesis (Fig. 5). Recovery was complicated by a left thoracic empyema that required drainage.

In March, 1968, chest and back pain became severe. Roentgenograms of the chest showed a large false aneurysm extending to the left lateral chest wall, and a widely dilated thoracic aorta. Aortography confirmed these findings and also revealed a dissecting aneurysm extending to involve the abdominal aorta (Fig. 6).

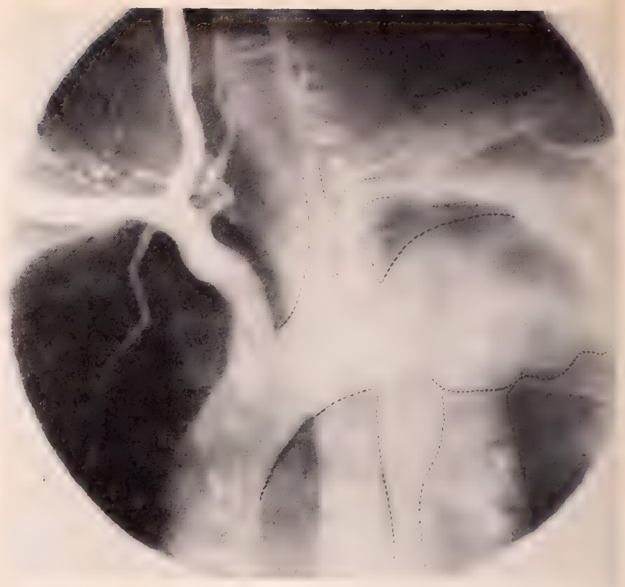

FIGURE 6. Case 3. Aortogram five years after operation showing false aneurysm extending to chest wall and large dissecting aneurysm.

Reoperation was performed on March 13, 1968, without cardiopulmonary bypass. Through median sternotomy and left flank incisions, a 14-mm. Dacron graft was placed from the ascending aorta, through the anterior part of the diaphragm, extraperitoneally to the abdominal aorta near its bifurcation. Proximal control of the aorta was established, and, through a left thoracotomy, the aorta above the diaphragm was controlled. The false aneurysm was entered, and the previously placed Dacron graft was found floating freely within. The walls of the aneurysm were composed of lung, spine, and chest wall. The aorta distal to the left subclavian artery was sutured closed. The mid-descending thoracic aorta, found to be severely involved by chronic dissecting hematoma, was also closed. The circulation to the lower half of the body was thus carried by the bypass graft (Fig. 7). Recovery from surgery was prompt.

Angiographic study one year after surgery showed the graft to be functioning well, with no evidence of dissecting aneurysm. There was a 25-mm. systolic gradient between the ascending aorta and the midgraft, but there was no diastolic gradient between these points.

Comment

The essential surgical problem in the management of acute dissecting aneurysm relates to the friability of the aortic wall and the attendant difficulty of effecting any local repair or achieving hemostasis at any suture line. Systemic hypertension and anticoagulation incident to bypass intensify the problems relating to fragility of the aortic wall. In all 3 patients there were various degrees of this difficulty, and in Case 2, gauze packing of the suture line was required to achieve hemostasis.

While concern for external bleeding receives attention at the time of surgery, the integrity of the intima and the security of its isolation from the false lumen remain unknown. Thus, a suture

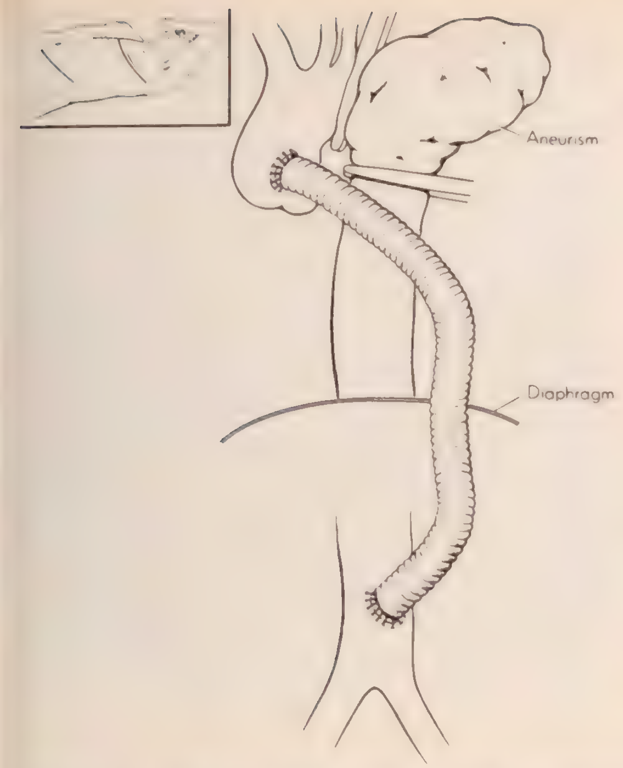

FIGURE 7. Case 3. Inset shows incisions. Technic of resection of aneurysm, using long bypass graft from ascending aorta to abdominal aorta without use of cardiopulmonary bypass

line, perfectly hemostatic externally, may have intimal defects communicating with the false lumen that perpetuate the existence of the dissecting aneurysm.

Perhaps the extensive destruction of the ascending aorta by hematoma in Case 1 should best be managed by replacement with a vascular graft. The experience with Cases 2 and 3 indicates that replacement therapy does not offer freedom from recurrent dissecting aneurysm.

The empyema in Case 3 is presumed to be causal in the subsequent formation of a false aneurysm. However, it is difficult to determine how the false aneurysm relates to the associated recurrent dissecting aneurysm.

Persistent dissecting aneurysm may also be due to a persistent point of reentry in the distal aorta, undetected by the diagnostic aortograms, and, of course, beyond the field of the operating surgeon. Similarly, a dissecting aneurysm arising in the distal aorta, subjected to surgery in the more proximal aortic segments, cannot be eradicated. There is no evidence that these factors applied in the cases reported.

The choice of suture and graft materials may relate to recurrent dissecting aneurysms, but are considered unimportant factors. While silk sutures or Teflon grafts may be less desirable than other materials, we believe that these are less related to recurrent dissecting aneurysms than to the problem of false aneurysms at suture lines.

Indications for reoperation in these cases were as follows:

Case 1: Aortic valvular insufficiency due to redissection of the aortic root.

Case 2: Progressive enlargement of the dissecting aneurysm (in a normotensive patient).

Case 3: False aneurysm of the thoracic aorta associated with recurrent dissecting aneurysm.

The technic for management of Case 3 at reoperation avoided the use of cardiopulmonary bypass. The suture lines required to insert the graft were easier to execute than comparable efforts in the diseased thoracic aorta would have been.

Perhaps our experience was unique, but, based on our observations and experience, we suggest that aortography be added to the routine roentgen examinations in the late follow-up of patients who have had surgery for acute dissecting aneurysms.

Summary

Survival from corrective surgery for acute dissecting aneurysm of the aorta has heretofore been presumed to be associated with eradication of the lesion. Three cases operated on for acute dissecting aneurysms were found to have either recurrence or persistence of the dissecting aneurysms at intervals one, two, and five years postoperatively. Two cases involved the ascending aorta, and 1 patient had sustained a thoracoabdominal dissection. The original surgery of the ascending aorta utilized resection and prosthetic graft in 1 case, and in 1 a local repair had been performed. The previous surgery of the descending aortic arch required resection and graft. Reoperation in each instance resulted in survival from surgery although 1 patient subsequently expired from arachnodactyly heart disease.

The frequency of this complication is unknown, and our search of the literature reveals no reference to this problem. Factors relating to recurrent dissecting aneurysm are discussed. The technic of repair involved total cardiopulmonary bypass in 2 cases. The thoracoabdominal recurrence was managed utilizing a permanent bypass graft from the ascending aorta to the lower abdominal aorta. The unique bypass employed may have additional application in the management of difficult thoracic aneurysms.

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Partial Intestinal Obstruction due to Peritoneal Mesothelioma in Chronic Asbestos Exposure

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Peritoneal mesothelioma is a relatively uncommon disease. Both pleural mesothelioma and peritoneal mesothelioma are well described in the literature.[1-5] It is the purpose of this report, however, to describe a case of peritoneal mesothelioma in a patient with long-standing asbestosis, emphasizing certain aspects which will alert the physician to the possibility of such a clinical diagnosis.

A review of 12 cases reported from the Armed Forces Institute of Pathology, as well as their collection of 13 other cases previously described by various authors from 1908 to 1957, indicates that peritoneal mesothelioma offers a severe challenge in regard to its recognition prior to the presentation of tissue to the pathologist.[6] In none of the cases was a diagnosis of malignant peritoneal mesothelioma made prior to laparotomy. The common clinical features were abdominal pain, swelling, vomiting, and ascites. The tumors involved visceral and parietal peritoneum, the mesentery, mesenteric lymph nodes, and the omentum. The following case is not at all atypical.

Case report

A fifty-year-old white male had had epigastric pain and abdominal cramps at night for two months. About one month prior to admission this increased in severity and frequency. He had been an insulation worker for about thirty years, and had been exposed to asbestos-containing material. In the past ten years, however, there had been no industrial exposure. On the day of admission, severe abdominal pain and vomiting developed.

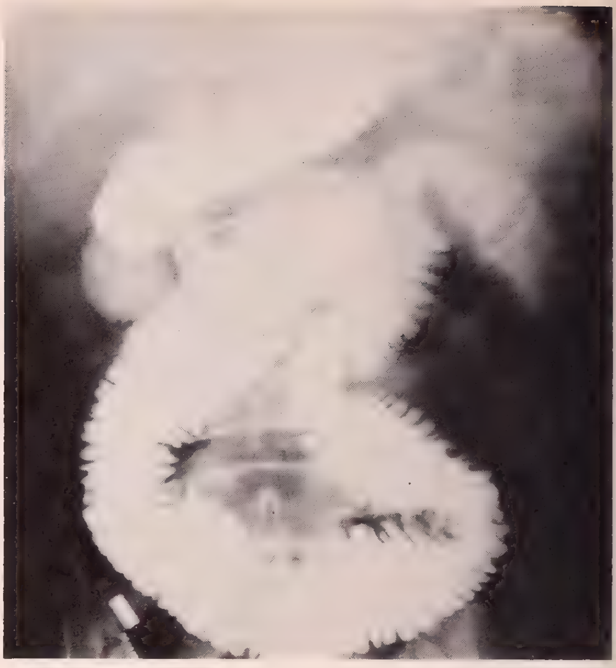

FIGURE 1. One hour following ingestion of barium sulfate suspension. Note dilatation of jejunum and delayed transit.

Physical examination revealed normal vital signs, diminished breath sounds and rales in the lower lungs, and a distended abdomen with rebound tenderness. Complete blood count and determinations of urinary and serum amylase and lipase showed normal results.

Hospital course. Twenty-four hours after admission, the patient's temperature became elevated and abdominal tenderness increased. On the following day an exploratory laparotomy was performed because of a deteriorating clinical picture and because of the radiologic findings.

Roentgen findings. The upper gastrointestinal series demonstrated early jejunal dilatation (Fig. 1). No barium had progressed beyond the ileum at four hours. The proximal small bowel was dilated and there was barium dilution (Fig. 2). Twenty-four hours later, the barium was seen in the colon, but there were some small bowel loops retaining barium in the right lower quadrant and air-fluid levels (seen on the original radiograph) in the upper midabdomen (Fig. 3). A subsequent barium enema was negative. The gastrointestinal findings were interpreted as consistent with a partial small-bowel obstruction.

The chest radiographs demonstrated interstitial fibronodular changes throughout the mid and

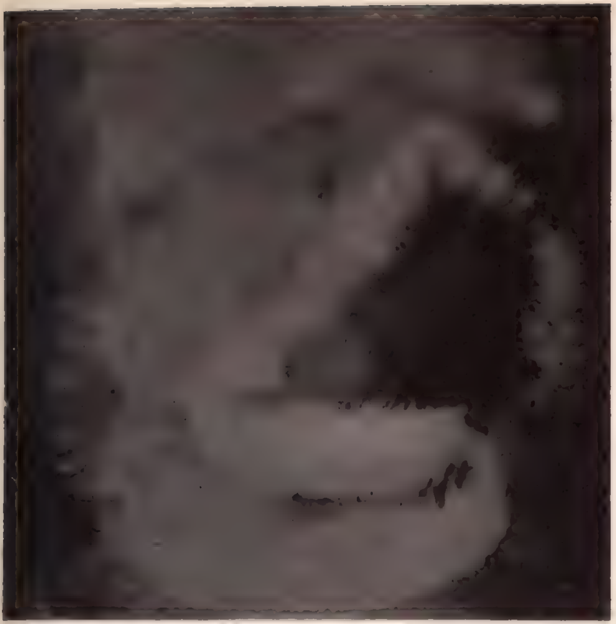

FIGURE 2. At four hours there is dilatation of small bowel loops with dilution of barium. There is no passage beyond ileum.

lower lungs and extensive pleural thickening and calcification (Fig. 4). This was believed to be consistent with asbestosis in view of the known occupational exposure.

Surgical findings. The peritoneal cavity contained a large volume of straw-colored fluid. The gross appearance of the omentum suggested acute and chronic inflammatory change. The mesentery had a granular feel. The liver capsule was thickened, and scattered nodules were felt on the liver surface.

Pathologic report. The specimen consisted of two yellow pieces of biopsied omentum, one measuring 4 by 2 by 1 cm. and the other 4 by 3 by 1 cm. Microscopically, the surfaces of the omentum were covered by sheets of mesothelial cells, occasionally forming papillae with fibrous tissue stalks. The mesothelial cells varied from oval to cuboidal to columnar in shape; a rare nucleus was in mitosis. These cells extended into the adipose tissue, accompanied by fibrous tissue, lymphocytes, plasma cells, and replaced fat cells.

The pathologic diagnosis was mesothelioma, diffuse and papillary type, of the omentum.[7]

Comment

Our case conforms well with the pattern of previously reported cases. In a patient with known exposure to asbestos one should be on the alert for the following triad of findings: (1) bilateral pleural thickening and calcification, (2) basal pulmonary parenchymal changes, and (3) abdominal pain, vomiting, and distention with roentgen evidence of intra-abdominal tumefaction and/or obstruction of varying degrees. With these in mind, a preoperative diagnosis of peritoneal mesothelioma becomes feasible.

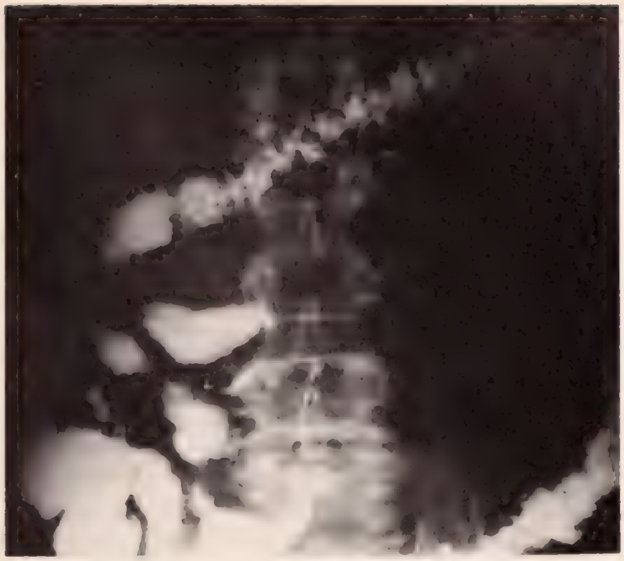

FIGURE 3. Erect film at twenty-four hours reveals barium in colon, indicating partial obstruction. There are some barium-filled loops of small bowel in right lower quadrant. A few air-fluid levels were seen in upper midabdomen on original radiograph.

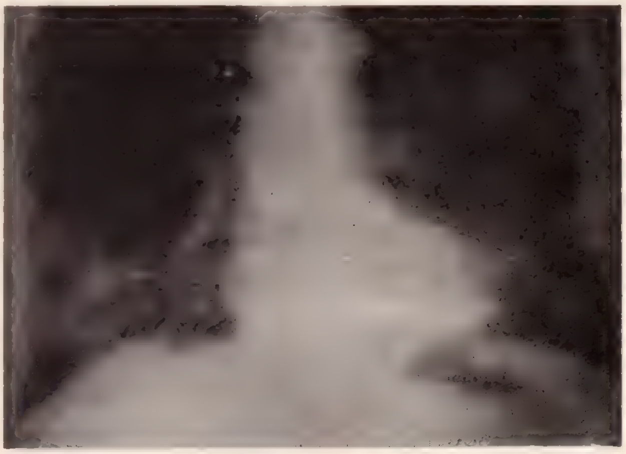

FIGURE 4. Posteroanterior chest film reveals bilateral fibronodular interstitial change and basal pleural thickening.

Pathogenesis and epidemiology

The relationship of pleural or peritoneal mesothelioma to asbestosis is attended by some degree of controversy. But it is difficult to dissociate this relationship. This problem is treated at great length in the world medical literature, particularly in journals of industrial medicine.[3,5,8–10] Some authors contend that the epidemiologic evidence for a connection between asbestosis and mesothelioma is too sparse to be convincing. Enticknap and Smither,[11] however, describe 9 primary peritoneal tumors in 52 cases of asbestosis at necropsy. They suggest the presence of asbestos in some of their specimens because birefringent particles were demonstrated under polarized light. However, they refrain from diagnosing their specimens as "peritoneal tumor." They allow the possibility that these growths are mesotheliomas but are unwilling to classify them definitively. They suggest that perhaps the masses represent "wild fibrous reaction" to the presence of foreign material in the serosal cells rather than examples of true neoplasia. This point of view is interesting in the light of the fact that some early investigators questioned the existence of primary malignant tumors of mesothelium, considering them to be secondary in origin.[12–14] Sluis-Cremer and Webster[15] cast further doubt on this relationship. They believe that there is no evidence that small doses of asbestos are potentially harmful. They say that proof is lacking that the "asbestos-like bodies" found in lung smears are supposed to contain asbestos. Therefore, they are not prepared to accept a causal relationship between exposure to asbestos and mesothelioma.

On the other hand, some epidemiologic studies and histologic evidence reported in the literature relating mesothelioma to the inhalation or ingestion of asbestos is quite convincing. Important information has been collected in Great Britain, South Africa, and the United States, because asbestos workers are kept under medical control.[3,8] Not only are records kept on their clinical course, but their deaths are reportable, and efforts are made to obtain a postmortem examination. In 1947, it was already appreciated that an unusually high incidence of death due to lung cancer was found in asbestos workers.[8] Later it became apparent that when a history of exposure to asbestos is looked for in cases of mesothelioma it can usually be found. Furthermore, when in a significant number of an affected population no history of industrial exposure can be obtained, environmental or domestic exposure of which the patient was unaware could be invoked.[8] Demy and Adler[16] offer an explanation as to why asbestos fibers and bodies may appear to be absent in some cases. The fibers tend to divide and subdivide endlessly over the years, and unless the electron microscope or incineration technic is used, the asbestos will not be discovered. They add that spectrographic studies are specifically diagnostic.

It becomes apparent that still more extensive epidemiologic studies are required in view of our present knowledge and conflicting opinion. However, one cannot ignore the reports of Churg and Selikoff.[9] They state that the incidence of mesothelioma of the pleura and peritoneum to be 5 per cent in a series of 325 consecutive deaths among asbestos insulation workers between 1943 and 1966, while the prevalence of mesothelioma in the general population is about 1 in 10,000 deaths. The implications of the relationship of asbestos and mesothelioma are further underscored when we are reminded that the neoplasms now encountered are related to industrial or environmental exposure to the relatively small amounts of asbestos produced and in use thirty years ago. The neoplasms resulting from the presently increasing production and use of asbestos will be evident toward the end of the century. We can project a marked increase in the incidence of mesothelioma at that time, in view of the increasing variety of products which make use of asbestos, both in industry and in the home.[4,9]

Summary

A case of peritoneal mesothelioma with secondary small bowel obstruction in a patient with long-standing industrial exposure to asbestos and chronic pulmonary disease is presented. The physician is alerted to the implications of abdominal findings both clinically and radiographically in such a patient. With awareness, it may be possible to suggest a preoperative diagnosis of peritoneal mesothelioma in such cases. The epidemiology is reviewed, and the public health implications for the future are underscored.

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Bilateral Adrenal Carcinoma Treated Surgically

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Carcinoma of the adrenal cortex is often not resectable when the diagnosis is established.[1-3] This is a highly malignant neoplasm with a mortality rate approaching 75 per cent.[1,3] It is obviously important to secure an early diagnosis and surgical extirpation. These tumors occur in males slightly less frequently than in females, but there is no difference in the prognosis as regards sex of the patient. Nor is there an explanation for the 2:1 incidence of lesions on the left side in the so-called nonfunctioning tumors.[1,4] Hormone active adrenocortical tumors are more often found in the female with symptoms of Cushing's syndrome and/or virilization in the ratio of 5:1.[1] This apparent higher incidence in the female is explainable by the ease with which Cushing's syndrome is diagnosed in women. In the male, for obvious reasons, tumors do not appear early with virilizing symptoms except in prepuberty, but the patient may appear with obscure symptoms of feminization later, such as gynecomastia and/or a possible loss of libido.[5,6] Signs of Cushing's syndrome, organ displacement, or pressure on contiguous structures may dominate. Weight loss and obscure fever are other manifestations of a usually later stage of any malignant neoplasm.[7,8] Some of these tumors grow to a large size and thus may be readily palpable. Giant bilateral adrenal cysts are more frequently noted.[9,10] Bilateral adrenocortical tumors are indeed a rarity. This case, representing the first such clinical presentation we have been able to trace in a limited review of the literature, documents the first known metachronous occurrence of resectable bilateral adrenocortical carcinoma. Because of the rarity of such a finding, this addition to the literature appears worthwhile. Payan and Lancaster,[11] however, observed a patient harboring bilateral adrenal carcinoma found at autopsy. Their patient had bilateral nonfunctioning lesions 8 by 10 cm. in size, replacing the adrenal glands, and presenting an Addisonian complex. Another rare finding was that of brain metastases in their patient.

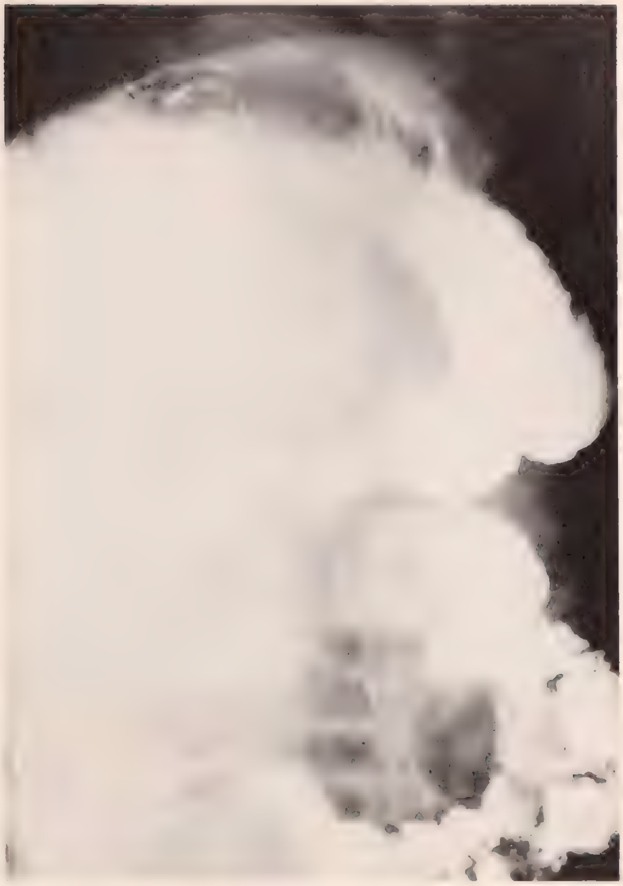

FIGURE 1. Lateral radiograph showing anterior displacement of stomach by retrogastric mass.

Guttman's[12] review of 566 cases discloses but 2 other patients who demonstrated the extremely rare adrenocortical insufficiency due to the primary neoplasm. For destruction of the adrenals by neoplasm the lesion outgrows its blood supply resulting in a necrotic hemorrhagic lesion. Huvos *et al.*[1] report contralateral adrenal metastases in 12 per cent of their 25 cases.

Case report

A fifty-six-year-old white male was admitted on January 13, 1967, for evaluation of a palpable left upper abdominal mass, loss of weight, and fever of unknown origin. In addition, chills, night sweats, weakness, anorexia, and abdominal discomfort, dating back five months, were recorded. Roentgenograms of the chest revealed normal findings. A gastrointestinal radiographic series showed anterior displacement of the stomach (Fig. 1). Retrograde arteriography showed elevation of the splenic artery by a tumor mass, fed by branches of the superior mesenteric and left renal arteries (Fig. 2). The thyroid gland and testicles were clinically normal. The fasting

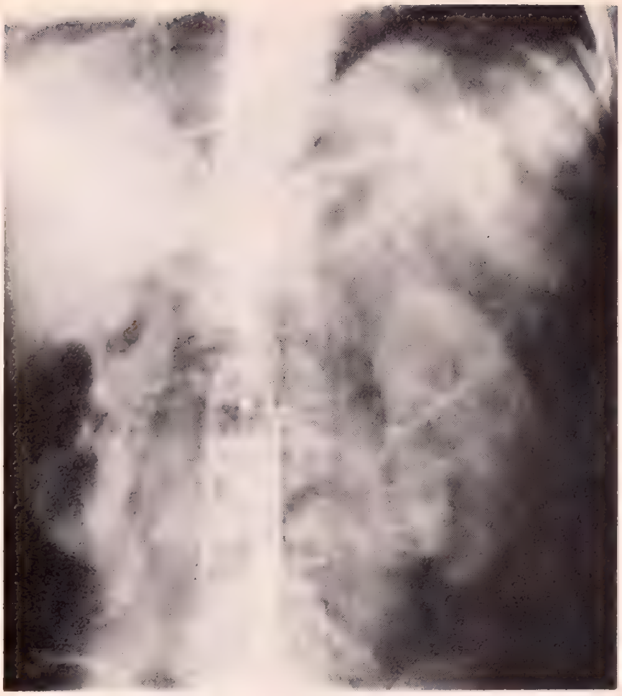

FIGURE 2. Aortogram showing elevation of splenic artery.

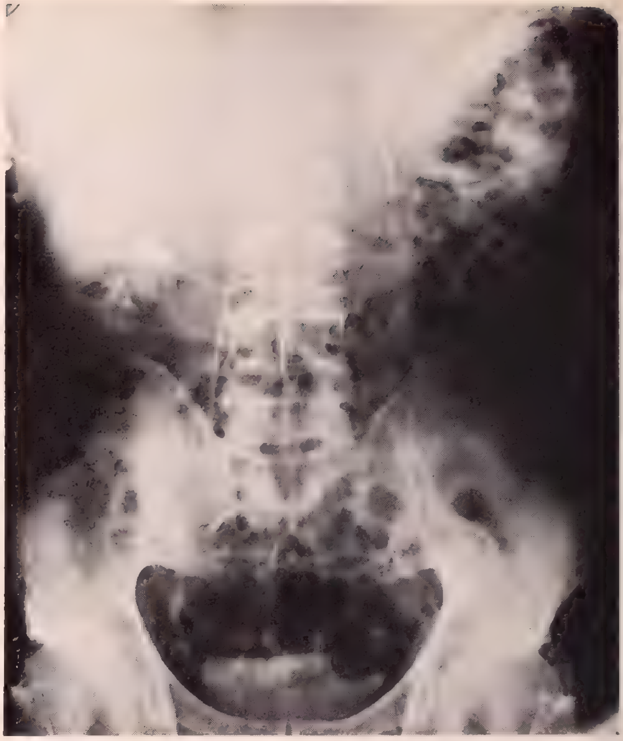

FIGURE 3. Intravenous pyelogram showing inferior displacement of right kidney by mass.

blood sugar was 108 mg. per 100 ml. There were no findings denoting other endocrinopathies. On January 26, 1967, a thoracolaparotomy was performed on the left side, and a tumor mass considered mesodermal in origin was removed en bloc with the spleen, omentum, and tail of the pancreas. Palpation of the abdominal viscera disclosed no other mass lesions at this time, although the right upper abdominal quadrant could not be examined adequately due to dense adhesions in the area of the gallbladder and the duodenum.

The specimen consisted of a large ovoid tumor mass measuring 27 by 15 by 10 cm. surrounded by a thin membranous capsule. The spleen and a segment of pancreas 10.5 cm. in length were attached. The sectioned neoplasm was multilobulated, formed by numerous lobules of brownish tissue separated by bands of soft friable yellow tissue. There were also large areas of red friable tumor.

Microscopically, there was a cellular neoplasm composed of numerous clusters and interlacing cords of cells which were large, finely vacuolated, and contained large ovoid nuclei. Giant nuclei were present. Mitoses were frequently noted. Extensive areas of necrosis were present. Cords of cells were present invading the capsule. No metastases were detected in the separately submitted lymph node nor in the pancreas or spleen. The diagnosis was adrenocortical carcinoma.

The postoperative course was complicated by drainage from a pancreatic fistula which closed spontaneously. He was discharged from hospital care on March 24, 1967.

Urine studies on February 22, 1967, postoperatively demonstrated normal levels of 16-ketogenic steroids, 17-ketosteroids, and 17-hydroxysteroids. The patient required replacement insulin therapy after discharge.

Early in 1969, he began to complain of an aching discomfort in the right flank area. He was hospitalized after an intravenous pyelogram showed a right suprarenal mass (Fig. 3). A selective right renal arteriogram demonstrated an adrenal tumor (Fig. 4). Urine assays of March 27, 1969, were reported as follows: 17-ketogenic steroids, 27.8 mg.; 17-ketosteroids, 61.2 mg.; and 17-hydroxycorticosteroids, 15.4 mg. per twenty-four hours, all elevated values. On April 1, 1969, through a right flank and laparotomy incision with removal of the twelfth rib, an 8 by 12 cm. adrenal mass was excised. No other intra-abdominal lesions or metastases from this tumor or the previously resected left adrenal neoplasm were noted at operation.

The pathologic report was as follows: The specimen consisted of an encapsulated mass, weighing 214 Gm., and measuring 11.5 by 7 by 5 cm. At one end of the specimen a portion of the adrenal gland, stretched out thinly over a part of the tumor mass, was noted. On section the mass was trabeculated with areas of yellowish-orange to dark brown colored tissue.

Microscopically, the tumor showed an irregular cord-like arrangement of fasciculate adrenocortical cells, which vary widely in cell size, nuclear

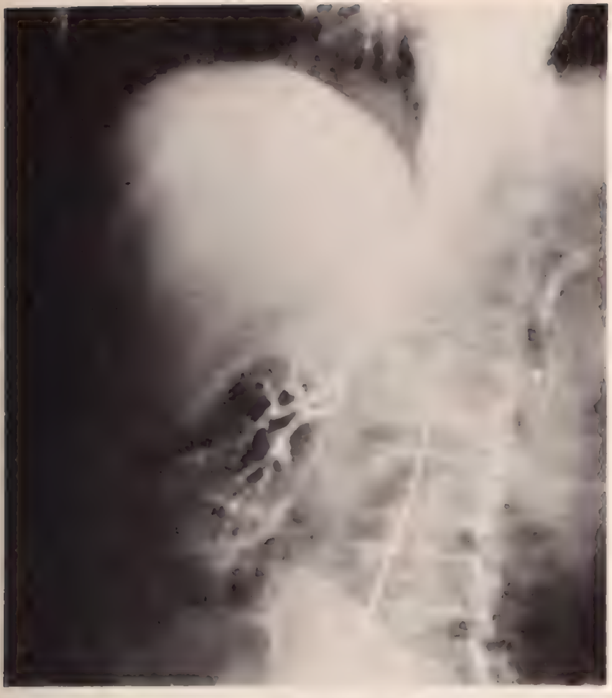

FIGURE 4. Selective right renal arteriogram showing tumor vessels arising from proximal renal artery.

size, and staining. The outer fibrous capsule was invaded by similar cells. The adjoining uninvolved adrenal gland was normal. No vascular invasion was found. The diagnosis was adrenocortical carcinoma with capsular invasion.

The postoperative course was uncomplicated, and the patient was discharged on insulin and maintenance steroid therapy. Radiographs of the chest and sella turcica were taken recently and were normal. He remains clinically well and with no evidence of recurrence more than three years after the second surgical procedure. Both tumors were recently restudied and again reported as adrenocortical carcinoma similar in type grossly and histologically. The left one is considered to be nonfunctional and the right one to be functional chemically.

Comment

A prior publication presented a dissertation regarding the patient being reported herein who had had a neoplasm on the left side removed in 1967 by one of us (J.O.V.).[8] More than two years later the second primary tumor, that of the right adrenal gland, was discovered and resected (J.O.V.). In the first instance, arteriography was helpful in that it established the diagnosis of a retroperitoneal tumor, mainly by exclusion from other intraperitoneal organ-displacing lesions. The clinicopathologic conference discussed the symptomatology and findings resulting from nonfunctioning tumors of the adrenal gland and their differential diagnoses.[8] The correct diagnosis is often obtained only by laparotomy, as was the case herein, with the first tumor derived from the left adrenal gland. The value of exploratory laparotomy in the diagnosis of obscure causes of fever, with or without abdominal findings, is not well appreciated.[13] In the lesion on the right side the correct diagnosis was established by arteriography since we were alerted to this possibility by the prior experience. Simultaneous tomography and intravenous pyelography may be of similar value in the diagnosis of adrenal neoplasm and are probably safer technics to employ.[14,15] If the patient exhibits a febrile phase, etiocholanolone and dehydroisoandrosterone may be tested for, since these hormones may be excreted to excess in the urine.[16] Bondy *et al.*[17,18] have presented evidence for a relationship between unconjugated etiocholanolone in plasma and the occurrence of fever in certain clinical entities, including 2 patients with the adrenogenital syndrome and 1 with adrenocortical carcinoma. In our patient these agents were not tested for before the first tumor was removed, nor were they determined as an aliquot of the elevated steroid values found prior to resection of the second tumor. However, the patient had no elevated temperature prior to diagnosis of the second tumor. The recent review by Emerson[15] outlines a protocol that succinctly correlates the hormone assays determinable in the various clinical entities as regards adrenal and ovarian components of the virilizing syndromes. Gabrilove *et al.*[5] have made interesting observations on the biologic manifestations and biochemical findings in those patients with feminization due to adrenocortical carcinoma. Adrenal carcinoma may be classified as functioning or nonfunctioning.. This classification may be a clinical one, with respect to symptoms alone, or a chemical one based on urinary steroid analysis. The case herein presented is clinically nonfunctioning, but the second tumor at least was chemically functioning, without ever showing clinical evidence of gynecomastia, changes in libido, fever, or other evidence of endocrine dysfunction. The series of Knight, Trichel, and Mathews[2] and Rapaport, Goldberg, and Gordan[4] comprise a total of 39 cases of nonfunctioning adrenal carcinomas. These cases were not subjected to steroid studies. Such lesions should probably not be referred to as nonfunctioning in the absence of urinary steroid determinations or tissue analysis. Fukushima and Gallagher[19] state that adrenocortical cancer is characterized by such wide variations in steroid hormone synthesis that even the term "non-functional" should be used with reservation. Even in nonfunctioning cancers, there may be limited ability to produce certain precursors of hormones. As might be expected, these are on a primitive level. To document the chemically active lesions, urinary hormonal assays should be performed in patients harboring retroperitoneal masses that could conceivably be of adrenal origin.[5,6] Reappearance or recurrence of a functioning tumor is usually accompanied by the appearance of a high titer of biochemical activity.

Summary

A case of bilateral carcinoma of the adrenal glands, both lesions being removed surgically within a two-year interval, is reported. A distinction is made between nonfunctioning, chemically functioning, and symptomatic adrenal lesions, and pertinent literature is reviewed.

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Hepatotoxicity due to Methylphenidate Hydrochloride

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The purpose of this report is to bring to the attention of the practicing physician an instance of hepatotoxicity associated with the administration of methylphenidate hydrochloride (Ritalin). This medication has not been previously reported to have caused any hepatotoxicity, nor has there been any mention of complications affecting the liver or biliary systems in previous literature on this drug.

Case report

A sixty-seven-year-old white woman was admitted to the hospital following the acute onset of a cerebrovascular accident causing a transient right hemiplegia. At the time of admission, she was recovering from the cerebrovascular accident and in a reactive depression which was felt to be a direct result of the paralysis. Two weeks after admission she was placed on methylphenidate tablets, 10 mg. three times a day. The same day dizzy spells associated with nausea and vomiting developed. On several occasions she was returned to her bed and a cardiac evaluation was performed, including an electrocardiogram which revealed a right bundle branch block pattern with evidence of a possible previous myocardial infarction. Because of the suspicion of myocardial ischemia, serial SGOT (serum glutamic oxaloacetic transaminase) determinations were performed. Prior to this time, SGOT concentrations had been within normal limits (Fig. 1).

On October 7, 1970, one week later, the SGOT level had increased to 51 units. Two days later, it increased to 59 units. On October 16, it had increased to 72 units. A complete liver profile was performed and the results revealed an SGPT (serum glutamic pyruvic transaminase) level increased to 56 units and an alkaline phosphatase level of 19 units. Bilirubin concentrations at all times remained within normal limits. As a result of these abnormal blood enzyme concentrations, the methylphenidate was discontinued on October 19, 1970. Repeat blood determinations were performed and found to have returned to within normal limits (Fig. 1).

Date	Ritalin	SGOT	SGPT	LDH	CPK	Alk. Phos.	Bili-rubin	BUN	CF	TT
9/15/70		25*						4*		
9/16/70								22*		
9/21/70		40*				12*	.8*	31		
9/29/70	begun									
9/30/70		28*				16*	.9*	42		
10/7/70		51								
10/9/70		59			4*					
10/10/70				410*						1.7*
10/16/70		72	56			19	1*		2	
10/19/70	d/c									
10/22/70			17*			19	1*		1*	2.2*
10/23/70				360*						2.0*
10/29/70		38*								1.0*
11/11/70	begun									
11/13/70				890		26			1*	1.8*
11/14/70		535								
11/16/70	d/c		145							
11/17/70		48	38			18			0*	2.1*
11/18/70		35*	42	230*	3*	18	.6*			
11/19/70		22*		265*		18	.7*	20	0*	3.1*
11/23/70			15*	255*		9*			1*	2.4
12/10/70		25*			0*					0*

* Normal Value

FIGURE 1. Results in units per milliliter of chemical studies on patient. Key (not given in text): CPK = creatinine phosphokinase, Alk. Phos. = alkaline phosphatase, BUN = blood urea nitrogen, CF = cephalin flocculation, TT = thymol turbidity, d/c = discontinued.

A test dose of methylphenidate, 2.5 mg. once a day was begun on November 11, 1970. Two days later a marked rise in the SGOT concentration, to 535 units, was noted with a concomitant rise of the SGPT concentration to 145 units, alkaline phosphatase to 26 units, and lactic dehydrogenase to 890 units. On November 16, 1970, five days later, the test dose of methylphenidate was discontinued. Blood determinations revealed an SGOT concentration of 48 units and an SGPT concentration of 38 units. Subsequent liver enzyme determination results were within normal limits.

Comments

Little is known about the metabolism and breakdown products of methylphenidate. The means of detoxification of this drug in the body are not known. Its excretion is thought to be through the urine. Researchers using C-14 labeled methylphenidate have demonstrated 70 per cent recovery in the urine following intraperitoneal injection in guinea pigs.[1]

There have been no published reports of toxicity of this medication affecting the liver and biliary systems.[2] This case report demonstrates such a toxicity, and, although mild, it certainly suggests that physicians should perform serial liver enzyme determinations on all patients receiving this medication. This patient was so sensitive to methylphenidate that 2.5 mg. was sufficient to create a significant rise in liver enzymes. It is interesting that on administration of the test dose of methylphenidate, symptoms of dizziness, vomiting, and nausea again developed. Strict controls were kept on the patient's diet and other medication, so that the methylphenidate was the only variable.

Summary

A case of hepatotoxicity presumably secondary to administration of methylphenidate has been presented. The resulting increases in liver enzymes are reported, and a cause-effect relationship is proposed.

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Childhood Hypophosphatasia

Clinical and cytogenetic studies

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Hypophosphatasia is an inborn error of metabolism, characterized by three salient features: (1) abnormal mineralization of bone, (2) diminished alkaline phosphatase activity, and (3) increased urinary excretion of PEA (phosphoethanolamine). Based on the estimated time of development of demonstrable bone lesions, three clinical types are recognized.[1] In group 1, infantile type, the lesions are present at birth or appear within the first six months of life; in group II, childhood type, the lesions usually become apparent between six to twenty-four months of age. Group III is designated adult type. A fourth type, or atypical hypophosphatasia, was first reported by Klein *et al.*[2] in a male infant with hypoglycemia, renal glycosuria, and marked skin pigmentation, but without detectable bone lesion.

This report details the clinical course of 2 siblings with childhood-type hypophosphatasia. In addition, a chromosomal study was performed to determine whether or not a possible relationship exists between low alkaline phosphatase and chromosome 21.[3]

Case reports

Case 1. A thirty-four-month-old white female was admitted on September 16, 1969, for inability to walk and pain in her lower extremities. The child was born to a Cuban father and a Spanish mother after a full-term normal pregnancy. Birth weight was 7 pounds, 6 ounces, and the neonatal period was uneventful. The milestones for the first six months of life were within the normal range. She smiled at six weeks, sat up at five to six months, and erupted her first deciduous teeth at five months. She stood with support at seven to eight months but had not been able to stand or walk independently since that time.

TABLE I. PEA excretion rates and serum and leukocyte alkaline phosphatase concentrations in patients, relatives, and controls

Individual	PEA Excretion (Milligrams Per Twenty-four Hours)	Leukocyte Alkaline Phosphatase[4] (Per 200 Granulocytes)	Serum Alkaline Phosphatase (International Units)
Case 1	106.2	10	27 to 30
Case 2	60.25	21	23.5 to 30
Mother	12.2	11	14
Grandmother	14.8	42	50
Grandfather	522.9	0	17
Control	Trace	40 to 100	80 to 200 (children) 30 to 80 (adult)

On admission, the patient appeared to be alert and bright. She weighed 25 pounds, and her height was 33 inches, both within the 10th percentile. The head was normocephalic and the anterior fontanel was slightly open. Examination of ears, nose, and throat showed nothing unusual. The child had lost all four lower and one upper incisor, but the rest of her teeth appeared normal. Other findings included a widening of both wrists and a 20-degree valgus deformity of both knees. She could walk with support. Range of motion was beyond normal; there was definite hyperlaxity both in the knees and in the hips. Leg lengths were equal with no gross deformity of the midshafts.

Family history. The father was apparently well, 5 feet 8 inches tall, and had no personal or family history of muscular or skeletal disorder. He is separated from his family and was not available for study. The mother was healthy, with a height of 5 feet 4 inches and no bone or muscular deformity. She had had two uneventful pregnancies with normal spontaneous deliveries. Her parents are both alive and well. They do not recall anyone in the family with bone disease, except for a second cousin in Spain who is a cripple. No further information was available on him. Pertinent laboratory findings on the family are given in Table I.

Laboratory data. Complete blood count, urinalysis, blood urea nitrogen, uric acid, creatinine, total protein, albumin-globulin ratio, and glucose determinations all showed normal results. Creatine phosphokinase, serum glutamic oxaloacetic and pyruvic transaminases, lactic dehydrogenase, and total acid phosphatase concentrations were

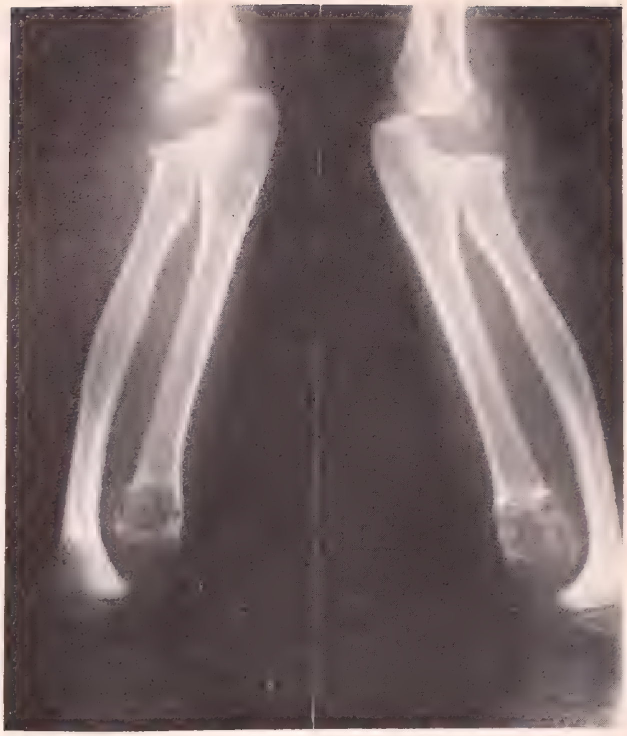

FIGURE 1. Radiograph of knee and ankle in Case 1. Note irregularity, defective bone calcification, and osteoporosis.

also within normal limits. Serum alkaline phosphatase on four different occasions ranged between 27 and 30 international units (normal is 80 to 200 for that age). Leukocyte alkaline phosphatase showed a score of 16.[4] Calcium concentration initially was 12.5 mg. per 100 ml., but later dropped to the level of 9.3 to 10.3 mg. per 100 ml. The phosphorous ranged from 5 mg. to 6.9 mg. per 100 ml. Twenty-four hour urinary excretion of calcium (9 mg.) was low, and phosphorous (505 mg.) was normal. Column chromatography of the urine showed a trace of hydroxyproline and increased PEA excretion.[5] Chromosome studies on the patient and her brother showed that each had a normal karyotype with no deletion of chromosome 21.

Radiographic examination. Bone survey showed normal metaphysis with extensive rarefaction of the distal ends of the fibulas and radiolucency of both fibular heads. There was osteoporosis and irregularity of the metaphyses of both tibia (Fig. 1). The femora showed bilateral concentric central atrophy. The radii and ulnas showed evidence of rarefied circular areas, mostly situated within the metaphyses (Fig. 2). Radiographic studies of the jaw showed severe hypoplasia of the mandibular dentition. The maxillary teeth were hypoplastic with resolution of the middle third roots of central incisors. There was general radiolucency of the teeth indicating hypoplastic dentine formation. Chest, skull, intravenous pyelogram, and cystogram findings were normal. Roentgenographic studies on her mother, brother, and both grandparents showed no bone defects.

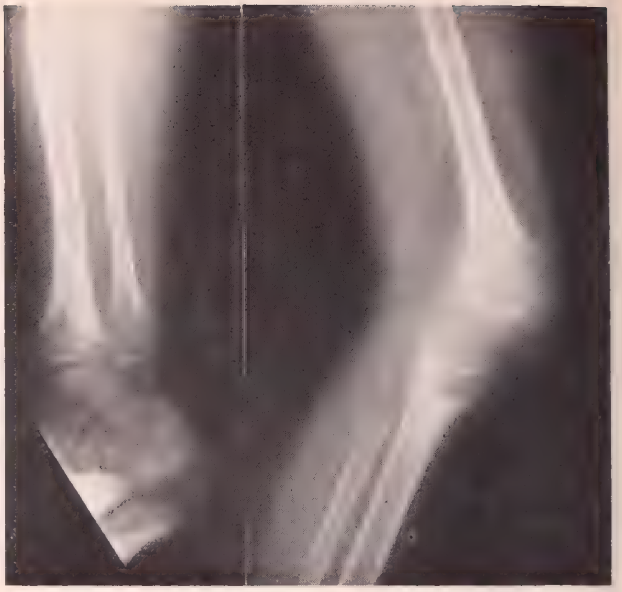

FIGURE 2. Radiograph of elbow and distal end of radii and ulnas in Case 1. Note marked radiolucency and defective calcification.

Follow-up. After two months of hydrotherapy and rehabilitation the patient was able to walk by herself; however she retained a marked genu valgus. She was able to climb the stairs one at a time by holding on to the banisters but needed two-handed support to descend. Chemically, her serum alkaline phosphatase rose to 60 international units. Calcium and phosphorous concentrations were normal. However, recent roentgenograms, taken a year after the initial bone survey, showed no significant change.

Case 2. The younger sibling was admitted to the hospital on April 7, 1970. He was an alert, bright, fourteen-month-old boy, weighing 23 pounds, and measuring 31 inches tall (both within the 75th percentile). He was the product of a full-term normal pregnancy and delivery. Thus far, the patient's growth and development have been normal. He sat, crawled, stood, and walked at the proper ages. His primary teeth erupted at six months of age, but he lost 2 lower central incisors at the age of one year and 2 lateral incisors by fourteen months of age. The remaining teeth are grossly normal. The rest of the physical examination revealed otherwise normal findings. There was no obvious deformity of either the upper or lower extremities. He has been followed in our clinic since eleven months of age; at the time of this writing he was 17 months.

Laboratory data. Complete blood count, urinalysis, and electrolyte, blood urea nitrogen, uric acid, creatinine, serum glutamic oxaloacetic and pyruvic transaminase, glucose, total protein, and albumin-globulin ratio determinations all showed normal results. Calcium concentration was 10.5 mg. and, phosphorous was 5.8 mg. per 100 ml.; alkaline phosphatase ranged between 23.5 and 30 international units. Twenty-four-hour urinary calcium and phosphorous excretion rates were normal. Urinary hydroxyproline was 9.5 mg., and PEA excretion was increased (Table I). Leukocyte alkaline phosphatase showed a score of 21. Long bone survey results were normal; a roentgenogram of the jaw revealed areas of constriction of the teeth at the level of the gum with apparent deformities consistent with the diagnosis of hypophosphatasia.

Comment

The 2 siblings reported here fall in group II, or the childhood type of hypophosphatasia. The clinical manifestations of hypophosphatasia started in both patients after six months of age. The disease was more pronounced in the older patient, who showed signs of severe rickets and displayed an inability to walk and a premature loss of her primary teeth. Chemically she had low serum and leukocyte alkaline phosphatase levels, increased excretion of PEA in the urine, and a high serum calcium concentration when initially diagnosed. Her brother, on the other hand, had no clinical or radiographic evidence of rickets. Early loss of teeth was the only manifestation of the disease. Chemically, however, he showed the same metabolic aberration. This variation in clinical manifestation has been noted in other pedigrees and is consistent with the modern concept of genetically determined biochemical disorders.[6]

Genetically, the disease is thought to be transmitted by an autosomal recessive gene, although some pedigrees strongly suggest a dominant mode of inheritence.[7] In the recessive types, the heterozygous carriers have no clinical or radiographic manifestation of hypophosphatasia, but they do have low to borderline serum and tissue alkaline phosphatase with excessive urinary PEA excretion. The clinical and laboratory evidence from this family suggests a recessive mode of inheritance, but since no biochemical studies could be done on the father, the possibility of a dominant trait cannot be ruled out. As shown in the present family, there are no direct relationships among the level of serum alkaline phosphatase, the urinary excretion of PEA, and the severity of the disease. It is interesting to note that the grandfather, an apparent carrier, shows the most severe biochemical aberration (Table I).

Examination of urine, saliva, and feces has failed to demonstrate excessive loss of enzyme, and there is no evidence for the presence of a phosphatase inhibitor.[8] The decrease or absence of serum and tissue alkaline phosphatase seems to be due to the absence of, or the presence of an abnormal, "basic" gene for production of alkaline phosphatase polypeptide. Since this enzyme is needed to hydrolyze the ester-phosphate linkage, lack of tissue enzyme causes accumulation of PEA, a naturally occurring substrate for alkaline phosphatase, in the tissues and its leakage into the plasma and urine.[9]

Alter *et al.*,[3] studying children with Down's syndrome, suggested the possible location of a genetic determinant for leukocyte alkaline phosphatase on chromosome 21. The hypothesis was based on strikingly deficient leukocyte alkaline phosphatase in chronic granulocytic leukemia with deletion of a portion of the long arm of one member of the chromosome 21 pair and increased leukocyte alkaline phosphatase in Down's syndrome (trisomy 21).[10,11] However, later studies of other enzymes with defined genetic determinants, such as glucose 6-phosphate dehydrogenase, a sex-linked enzyme, showed increased activity in patients with Down's syndrome.[12] Furthermore, the normal karyotype in our patients lends no support to the hypothesis of a possible localization of the gene for alkaline phosphatase on chromosome 21.

The children in group II, although suffering from the same fundamental disorder as those of the infantile group, have a clinical picture considerably different from and much less severe than that of the latter group, as evidenced by our patients. Our older patient is already showing clinical improvement, her enzyme activity is increasing, and the bone survey shows no further progression of the disease. The only clinical finding in her brother was premature loss of teeth, which is due to the structural defect in alveolar bone.

Case 1 was initially diagnosed in another institution as having refractory rickets, and she was placed on 50,000 units of vitamin D daily for two months. In spite of this therapy her serum calcium dropped to normal levels. This confirms the observation that in hypophosphatasia the serum calcium shows spontaneous fluctuation.[1] Since there is no generally accepted treatment for hypophosphatasia, no further drug therapy was used.

Prognosis and life expectancy for both cases—in the presence of normal renal function, and clinical improvement in Case 1—is favorable. However, Case 1 may have increased bone fragility in adult life.[9] She may also require orthopedic surgery to correct her genu valgus.

Summary

Two patients with clinical and chemical evidence of Group II hypophosphatasia are reported. The older sibling was more severely affected, with clinical signs of marked rickets and inability to walk, while the younger one had only premature

loss of decidous teeth. Both siblings had decreased serum and leukocyte alkaline phosphatase with increased urinary excretion of phosphoethanolamine. Chromosomal analysis revealed normal karyotypes in both patients.

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Let George Do It

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Over the course of ten years and 20,000 pre-employment examinations we have gone from the traditional physician-oriented examination to a multiphasic screening by paramedical personnel. The move was the result of "advancement" in medical technology and economic factors. Evaluation is difficult because of the many factors involved. However, the results appear to indicate that the move has resulted in more knowledge of the applicant, better job placement, greater economic security for the nurse, and an economic saving to the company.

Old method of examination

The advancement in medical technology and the changes in medical technic were brought about by all of those involved. The applicant himself has become more aware of his health and the advisability of early treatment. The gross pathologic picture that was shown on the records in the 1950s is just not seen on pre-employment examinations now. The supervisors in the company have become aware that certain physical and emotional factors in the employe play an important part in the department's effectiveness and efficiency. Most supervisors are no longer looking for the perfect physical specimen. They will accept almost any disability so long as the assets needed for that department are met. In an inspection department a better than average visual depth perception may be about the only requirement.

These changes have meant that the traditional physical examination done by a physician who looked for gross disorders became unproductive since it ignored the complexities of good job placement. The advances in the technic of pre-employment examinations gradually increased the number or the complexity of the screening tests, and these tests were given by those specifically trained in such procedures. The new technics and tests increased the extent and value of the contribution by the nurse or technician.

Somewhat before my time the physician gave over to the nurse the responsibility for taking the height, weight, and temperature. The physician with the Snellen chart gave way to Ortho-Rater visual screening by a technician decades ago. In 1960 in our area 25 per cent of otologists were still doing their own audiograms, and one otologist was testing hearing with only a watch. In this area industrial medicine was ahead of its time. For many years the American Association of Industrial Nurses has sponsored courses for training industrial nurses in audiometric testing. The practicing physician does not yet use these methods. We found that the physician coming to industry part time does not know what an acuity of 8 on the Ortho-Rater is, or what phorias are significant in fine work, nor does he appreciate the difference between the decibel loss of 30 at 125 cycles per second against a loss of 30 at 4,000 cycles per second.

As the emphasis shifted from looking only for disease to evaluating the needs for the job, the position of the nurse or technician became more important.

Into this process was introduced a catalyst, economics. In the late 1950s we had a waiting list of physicians looking for work in industry at $7.50 to $10.00 per hour. The physician was doing 8 or 10 pre-employment line-up examinations in this hour. This meant an examination by a physician was costing $1.00 or $2.00. In the 1960s it became increasingly difficult to find a physician for $25 per hour, and the physicians were averaging four to six examinations per hour at a cost of $4 to $8 per examination. So to do 2,000 per year we are no longer talking of $2,000 plus but up to $16, 000. At the same time the nurse was suffering economically, since she was employed in industry spending most of her time for menial chores requiring no skill or intelligence, such as making beds, cleaning equipment, and sterilizing. To improve her financial state the nurse needed more sophisticated duties. She had to be willing to give to others the menial tasks and equally willing to take on more responsible work. The nurse or technician whose work has taken on a lot of the

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testing and examining has had her salary more than doubled in this decade, and I believe a part of this is due to her new responsibilities.

We can establish some criteria for a good pre-employment test. It should take no physician's time, little of the nurse's time, cost little, have patient acceptance, the result should be immediate, the condition looked for should affect both job placement and absenteeism, and, if age specific, should be confined to those years.

New method of examination

Let us take a look at what we are doing now. It is not a final stage, merely an intermediate stage, continually being modified, and we have a long way to go.

First the applicant arrives at the medical department with a completed 4-page questionnaire of basic data. We try to establish a personal relationship with the applicant. This is the same department we hope the applicants will want to come to with their injuries or to consult on other health-related problems. We avoid a too-long, involved, or fully automated questionnaire. The nurse interviews the applicant using the already completed questionnaire as basis. The questionnaire has some items that almost always need elaboration but also has standard data. We want to save time but not eliminate the interview.

To establish a personal relationship further the same nurse will take the applicant through most of the testing. The applicant sees someone quite competent in many facets of the health examination. Since by state law the nurses may not take roentgenograms, we do not, for this and other reasons, emphasize roentgenography on pre-employment.

After the interview the nurse does an audiometric screening; Ortho-Rater visual performance timed vital capacity tests; scleral tonometry; 12-lead electrocardiogram; skinfold test; height, weight, pulse, and blood pressure; and physical examination, urinalysis, and blood tests including the serum chemistry. Indicated x-ray films are done by an x-ray technician. The extent of this testing is individually selected by the nurse for the applicant based on history, age, sex, and job. The technics, standards, and procedures are available to the nurse in the health services department procedure book. She can make the correct interpretation and decision on most results and conditions. Visual failure for the specific job is referred to the optometrist in the department. She screens the electrocardiograms and refers those that are abnormal to the physician for interpretation. We expect to have computer reading of electrocardiograms within a year. Special information is required for diabetic and epileptic persons from their physicians, and the nurse explains this to the applicant who is not rejected from employment because of these conditions. The physical examination procedure is outlined in detail for the nurse in the procedure book. It does not include examination for hernia. The Papanicolaou smear program has been discontinued.

One result of this change is that more people are routed to jobs they are better prepared to do. For example, with better visual screening the job efficiency and output go up, and accidents go down. By letting George do it, no detectable effect on insurance cost or absenteeism has been discovered in any direction. Insurance cases of employes in their first year of employment have not revealed any increase. Since the nurses have taken over the physical examination and no test has been made for hernia, there has been a decrease in the number of hernia operations, and a decrease in the number of Workman's Compensation cases for hernia. The explanation for this escapes me.

The conditions that cause an applicant to be rejected have shifted. Hernia was the number 1 cause in the 1950s. Now people are rejected or have job adjustment for hearing, obesity, smoking, emotional problems, and rashes which were rare causes a decade ago.

Where do we go from here? I would hope that ultimately, when the government no longer shirks its responsibility in health for the people, the regional medical program will be offering multiphasic health screening to all, and we in industry will wind up with just the interview.

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“Let No Man Put Asunder”

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Divorce may be conceived of as a mental health crisis in the life of a family. Often in the past, the counselor-at-law was the key or only professional to see the troubled husband or wife. In his accustomed role as an advocate, the lawyer quickly would take the stance of defending the rights of his client. Divorce legislation, lagging behind social attitude, has not until recently emphasized that a lawyer should urge his client to consider strongly the value of reconciliation. To include the alternative of reconciliation and to take steps to begin such a negotiation is a task for which many attorneys are ill prepared.

At a time when divorce is the outcome for approximately 25 per cent of marriages in the United States* and where divorce often leads to a high incidence of mental breakdown, new approaches by lawyers are needed. Legislation adopted in New York State in 1966 makes provision for a comprehensive conciliation service.[1] However, a study of New York lawyers reveals that whereas lawyers recognize the desirability of a possible reconciliation between the estranged husband and wife, they do not believe themselves professionally equipped to bring this about.[2]

It would appear to the authors that the mental health movement has neglected an important area by not actively including lawyers as agents for crises intervention. Counselors-at-law should also be able to function as counselors for mental health.

Divorce may be conceived of as a barometer of the structure of our society reflecting the stability of the family unit. From the epidemiologic standpoint, technics of primary prevention are to reduce the incidence of a given disorder in a community or, more specifically, the rate of occurrence of new cases. Enlightened attorneys can make a valuable contribution in this area.

With the use of case materials we will attempt to illustrate how an attorney-at-law and a psychiatrist working as a team can bring new principles of crises intervention to bear to aid the family on the brink of dissolution. It is our belief that our experience can be extrapolated to each of our professions. Furthermore, we shall present recommendations for increasing the mental health awareness of practitioners of matrimonial law.

Four of ten consecutive cases seen by an attorney specializing in matrimonial law will be presented. We grant that the sample is selective and not meant to be statistically representative. In each instance the husband or wife came for legal help “to get a divorce.” They were all self-referred or referred by acquaintances. Omitted from the series were any clients who came to the attorney either on referral from another counselor or from someone who knew of her interest and experience in reconciliation (perhaps a former client). Nor were any cases included in which the husband or wife wanted advice about the advantage of getting a divorce. Each of the cases presented here appeared at the outset firmly resolved that a divorce was what they required.

Method

The usual procedure consisted of the lawyer evaluating the client’s request for legal assistance along the following lines: (1) Why now? Are problems recent or chronic? (2) Why this alternative to marriage as contrasted, for example, with therapeutic separation? (3) In what way do you think this step will solve your problems? (4) Is there evidence of ambivalence? (5) Will the other spouse negotiate? (6) The dimensions of the problem: children, finances, and so on. (7) Where are you now in your marriage; where had you hoped to go? What is keeping you from getting there?

Each of the cases was then discussed anonymously with the second author, a psychiatrist with special interest in family therapy. Where appropriate, and the marital pair would agree, the psychiatrist would see them in consultation. At the conclusion of the evaluation, recommendations for further action were made, namely, legal steps toward divorce, family counseling, and so on. In several instances rapport having already been established with the lawyer, the couple in trouble continued to see their counselor with a view now toward reconciliation. The counselor in turn received supervision from the psychiatrist.

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*Young couples living together in nonlegal arrangements explain that one of the purposes of such an arrangement is to avoid the disaster of divorce should the “marriage” not work out.

Case reports

Case 1. A female client, twenty years of age, came seeking a divorce after eighteen months of marriage. She and her twenty-three-year-old husband came from wealthy homes. During the previous two months she had begun to dwell on her husband's inability to provide for her. She complained about his small income and inattentiveness. Actually he was a young executive earning $10,000 per year and potentially very successful. She was convinced the marriage would never work.

In evaluating the problem it was learned that the client's mother had herself been divorced twice. Ever since she was a child, the client had had the latent belief that a similar fate would befall her. She suffered low self-esteem, had few interests, and occupied her time as a dilettante. By contrast, her husband was energetic and two months earlier had been promoted. The expectation of marital failure appeared to be triggered by this event. She feared he would come to consider her unworthy of him and so wanted out. The request for divorce then was in anticipation of rejection. This was compounded by what some have called a family fate neurosis, the expectation that in some way members of a family are doomed to some dire outcome. The client came to understand that divorce was not the remedy for her problems. Instead she was referred for individual psychotherapy and accepted.

Case 2. After six years of marriage and two children, a male client had discovered his wife was unfaithful, and he wanted a divorce. During the first interview he reluctantly admitted that for some time he had known that his wife was dissatisfied with him. Nevertheless he considered her complaints irrational and ignored them. A certified public accountant, he knew it was uneconomical to move into a more expensive apartment. He shrugged off as unrealistic his wife's comment that she was sexually attracted to the bachelor next door. The wife's extramarital interest was a symptomatic expression of her discontent.

The husband was very self-righteous in his position that his wife was an ungrateful adultress. While he was methodically striving to build financial security for the family she, he said, was out destroying their marriage. Well if that were the case, he said, so be it. He would not waste further time on it.

The lawyer skillfully approached the discussions from a view that the angry accountant-husband would appreciate, namely, economics. Not only would divorce be expensive in terms of dollars and cents, it would be emotionally costly to him as well as to his wife and children. Perhaps, it was suggested, he ought to consider working out their differences with a family counselor. The sexual liaison had occurred only once, and his wife had confessed she probably wanted to resolve their differences, too. The plan was accepted by both partners. Now two years later they are still happily together but have moved to a new neighborhood.

Case 3. A black, thirty-one-year-old insurance executive trainee was distraught. His wife was threatening him with divorce. She had taken their one-year-old son and had moved in with her parents four months before. The separation had come when the wife had discovered that her husband had been embezzling from his firm. She was a preacher's daughter and could not tolerate the idea of being married to a thief. She could also not report him to his employers. After all they were giving this special opportunity to a black man. She believed the whole race would suffer if his shame were to become public.

It was readily apparent that he wanted counsel but not necessarily toward divorce. He eagerly accepted the idea that he and his wife be seen jointly. The wife, an intelligent highly moral young woman, acknowledged that she herself often felt weighed down by a sense of overwhelming responsibility. Since the birth of their child, the husband had been responding to his wife's highly critical manner as though she sought more material satisfaction from him. He could not do enough for his family. In an aberrant way to salvage his family but resenting his wife's demands, he began to steal. This obviously was an unsatisfactory resolution to his dilemma. He accused her of being responsible for his having turned to crime. She accused him of being inadequate. Guilt invocation was the medium of their relationship.

After several joint sessions they agreed that they both wanted to continue their marriage. On-going family therapy was the recommendation.

Case 4. A wife, who wanted to be released from her marriage of three and one-half years' duration, was furious. She was alternately tearful, contrite, or hostile. Her husband was a pathologic liar, and she finally could take no more of it. Indeed, the effect on the marriage was disastrous and to her intolerable. At the same time she felt extreme guilt at the idea of abandoning a "sick" man. What is more, she had begun to be interested in a co-worker. The counseling with her took the direction of being supportive, giving her some insight, quelling some of her emotional distress, and permitting her to take a more rational course albeit to divorce but not steeped in feelings of hate or guilt.

In each of the 4 cases presented a literal acceptance of the request for divorce might have produced the asked-for broken marriage. Certainly not all who come to an attorney want a psychologic approach. However, there is little doubt that some attorneys treat an inquiry for divorce without sufficient attention to the possibility of reconciliation. The lawyer specializing in domestic relations law can intervene at a point of crisis in the mental health of the family.

Comment

A considerable body of evidence links divorce with psychiatric disturbance.[3] Families in which a higher percentage of marital partners show signs of emotional disturbance or immaturity are highly vulnerable to divorce. There is an association between divorce and mental illness in a nonpatient group. In this group 65 per cent of reasons cited for separation were suggestive of psychiatric disturbance. These data are impressive and support the idea that with intelligent counseling, guidance, and direction, the marriage may have a chance of surviving.[3]

Attorneys rarely make referrals to other resources. In a nationwide survey (Joint Commission on Mental Illness and Health) none of the persons seeking help for a personal or marriage problem said they had been referred by an attorney.[4] It appears in many cases that the attorney may be the sole judge concerning the viability of a particular marriage.

It is significant, too, that lawyers are similar to psychiatrists in temperament.[5] Their common approach is problem solving. Perhaps it is this basic similarity which explains the paradox of the enmity of lawyers for psychiatrists. An attorney will readily request a consultant engineer, for example, but may decline to enlist the assistance of a consultant psychiatrist.

Despite ever-increasing efforts to educate lay and nonprofessionals in the field of crisis intervention, too little attention is given to increasing the awareness of lawyers in this area. For a long time law schools have recognized the value of teaching psychiatry.[6] Unfortunately in many instances the emphasis is on diagnostic categories and the more severe forms of psychopathologic behavior. In an informal survey of six local law schools, only one offered a course in matrimonial law which stressed counseling, that is, reconciliation. Some of the replies inferred that the domestic relations material included reference to ways of arbitrating requests for divorce.

The concept of the lawyer as a behavioral scientist may appear like an impossible allegory. Indeed psychiatrists and other persons involved in human behavior prefer a nonjudgmental stance. By contrast lawyers grow up to become judges. Until only recently divorce law was predicated on a fault-finding system, "X versus Y." Whoever was at fault was punished. To accentuate the guilt and hence the responsibility, strongly worded accusations were prepared. It is no wonder that the marital partner so accused reacted with extreme emotionalism to phrases such as "cruel and inhuman treatment." The California Courts, sensitive to the secondary effects of such a legal system, now view divorces as legal differences "in the interests of the John Doe family," that is to say in behalf of both parties.[7] The lawyer is not simply an advocate of one party but is theoretically working for the good of the family unit and hence of society.

Kohut[8] has suggested that if attorneys as members of the helping profession were better prepared, one might seldom need reconciliation departments in the divorce courts. If couples received counseling before court, they would not need it later.

Programs of varying levels of sophistication might be required. For the general attorney who encounters divorce situations occasionally, the focus would be on (1) the call for divorce as a symptom of family dissolution, (2) the viability of the marriage, (3) the need for consultation with a mental health specialist, and (4) a knowledge of facilities for mental health care in his community. Perhaps the most appealing format for such a course would be a practical informal use of typical cases to demonstrate alternate ways of handling a family in the stress of divorce. This may either be presented for lawyers in training or attorneys in practice on the postgraduate level. All disciplines—psychiatric, psychologic, social work, and pastoral as well, of course, as attorneys trained in this field—should be represented on the faculty. In the manner of the community psychiatric model seminars should be encouraged. On another level a curriculum should be established probably on the postgraduate level for attorneys desiring to become reconciliation counselors. A master's program in reconciliation law might ultimately be developed.

Summary

The premise of this paper is that divorce must be viewed not only as the breaking of a legal contract but also as a psychologic breakdown in the family unit. It would seem prudent therefore for government and organizations of behavioral scientists to make concerted efforts to educate matrimonial lawyers in psychologic principles and technics. We have presented our experience in which an attorney with psychologic awareness working in conjunction with a psychiatrist was able to help provide reconciliation as an alternative to divorce.

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Search for Drugs from the Sea

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From Lederle Laboratories Division, American Cyanamid Company

Man has sought drugs to treat his ills from his earliest days. Once this was a simple process involving man himself trying to achieve a therapeutic effect by taking various crude powders, juices, or extracts from plant, animal, or mineral sources. With the development of organic chemistry in the early nineteenth century, new physical and analytic technics and equipment, pharmacology, toxicology, and other laboratory sciences, the approach to the search for new drugs has gradually changed to become a complicated, multidisciplined, scientific effort.

New drugs can originate in two ways: discovery from natural sources and synthesis. A combination of both is generally used by modern scientific drug-research teams.

Drugs from terrestrial natural sources are well known and established in commerce. To name a few, there are atropine, quinine, morphine, steroids, and many others from plants; antibiotics from microorganism culture; and insulin from animal sources. By comparison, marine organisms have been studied relatively little as sources for new drugs. For this reason we have undertaken a search for drugs from the sea.

Search methods

In the laboratory the steps in the actual search procedure for drugs from marine sources are essentially the same as those used in the search for those from terrestrial sources, but collecting methods are different. An experienced marine biologist is most valuable for selecting specimens to be collected.

After shipment to the laboratory the specimens, usually preserved in alcohol, are extracted and tested immediately in vitro for antibacterial and antifungal activity. After separation, isolation, and at least partial purification, substances extracted are then put into a variety of biologic screening programs. Compounds with interesting activity are then obtained in sufficient quantity for thorough evaluation testing in animals.

Continued interest in the active compound at this point leads to the determination of its actual chemical structure. All physical and analytic technics are applied in accomplishing this structure determination: microanalysis, infra-red and ultraviolet spectroscopy, nuclear magnetic resonance spectroscopy, mass spectroscopy, and single-crystal x-ray crystallography.

As knowledge of the chemical structure of the active compound develops, we can proceed to the synthesis and chemical modification of this active substance.

At this stage an extensive action-dialogue, if such a term may be used, starts between the organic chemists involved in synthesizing compounds and biologists involved in testing and evaluating these compounds. The object of this action-dialogue is to select the best possible compound with the desired biologic activity.

After selection of the best compound, toxicologic, metabolic, and pharmacokinetic studies must be carried out to complete the preclinical laboratory work.

Finally the compound—assuming nothing adverse dictates otherwise and after appropriate governmental agency approval—is ready for its most critical stage, administration to man. It is only at this stage that we find whether or not we have been truly successful in our search for a new drug.

Current progress

In our two years of work on this search for new drugs from the sea we have collected marine specimens from the Caribbean, Bermuda, the Philippines, and the Great Barrier Reef of Australia. Most phyla of marine organisms are represented: algae, plankton, and sea weeds; sponges, jellyfish, and corals; starfish, sea urchins, and sea cucumbers; sea hare; and tunicates and sea squirts. We have found substances with broad in vitro antibacterial, antifungal, analgesic, hypolipemic, and diuretic activity from these marine specimens. These are in the various stages of laboratory study which were previously outlined. None have advanced sufficiently for clinical trial in man, but enthusiasm for this search for new drugs from marine sources is running high.

Conclusion

In ancient as well as in modern times the sea has served as a major means of transportation for man. Through the ages the sea has been a major source of food for man as well. Now we turn to this important source once again, asking the sea to give us new drugs for the ills of mankind. We can only hope that it will be as generous of its gifts as in the past.

Lederle Laboratories
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Presented at the 165th Annual Convention of the Medical Society of the State of New York, New York City, Section on Space Medicine, February 14, 1971.

Salute to The New York Hospital

1927 to 1971

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On June 14, 1927, an agreement was signed by representatives of The New York Hospital and Cornell University uniting the two institutions on a formal basis. The hospital would become the main teaching unit of the clinical subjects of the medical school, and the head of each service was to be the professor in charge of each clinical discipline. Due to the munificence of Payne Whitney (Fig. 1), the General Education Board of the Rockefeller Foundation, J. Pierpont Morgan, Jr., the Laura Spelman Rockefeller Foundation, and George F. Baker Senior and Junior, the potential resources of the proposed center amounted to more than $60,000,000. It was estimated that the cost of the buildings, land, and equipment for the new institution would amount to approximately $30 million.

This union might be considered the "marriage" of the two institutions. An "engagement" had existed since 1913 which provided that the medical college could nominate one half of the hospital staff and permitted the college to use one half of the beds for teaching purposes.

Organization

The future of the hospital was bright indeed. A joint administrative board was appointed consisting of 3 members of the hospital Board of Governors—Mr. Edward W. Sheldon, president of the Board, Frank L. Polk, and William Woodward—and 3 members from the medical school—Livingston Farrand, president of the University, Du Pratt White, and Walter L. Niles, the dean. J. Pierpont Morgan was elected as a seventh member. Sheldon was chairman of this administrative board.

G. Canby Robinson, M.D. (Fig. 2), who had a brilliant record as an administrator at Washington University of St. Louis and at Vanderbilt University, was appointed to organize the new institution, and he assumed his duties in September, 1928 (Fig. 2). The architectural firm of Coolidge, Shepley, Bullfinch, and Abbott was engaged to erect the new building. Under the guidance of Mr. Shepley and the construction firm of Marc Eidlitz

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FIGURE 1. Payne Whitney

FIGURE 2. G. Canby Robinson, M.D.

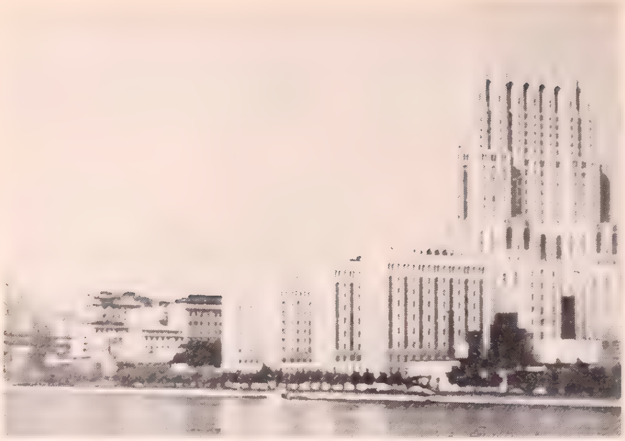

FIGURE 3. View of The New York Hospital-Cornell Medical College from the East River.

and Son, one of the most beautiful structures in New York City was erected between 68th and 71st Streets, from York Avenue to the East River (Fig. 3). This group of buildings won the Architectural Leagues' Gold Medal for Mr. Shepley.

The new director's plan was to assemble a professional staff second to none and to organize the hospital and school according to the best methods of medical care, research, and education accepted by outstanding authorities of the time.

In addition to the two main institutions, the Lying-In Hospital and the Nursery and Child's Hospital were also incorporated into the Center as the Obstetrical-Gynecological Service and the Pediatric Division, respectively. The Payne Whitney Clinic was built for the Psychiatric Service as a specially-endowed unit. The hospital was opened for service on September 5, 1932.

As one looks back on this euphoric period certain apparent problems were connected with the new organization. But at that time nothing seemed to stand in the way of success.

Three groups had to be amalgamated with the new staff which was to be assembled: the old New York Hospital, the second (Cornell) division of Bellevue Hospital, and the Cornell Clinic physicians. Each of these was told that in the new hospital they would have about anything they wanted. The new appointees were told that they had carte blanche to organize their departments as they desired. This situation obviously had many possibilities for disagreement.

The new plan called for a residency system in which each clinical service was run by a resident. This was a rather shocking innovation for the professional staff accustomed to the old tradition of organization.

Many of the new group were from or had had their training at Johns Hopkins. This did not sit well with the old New York physicians who saw their favorite chiefs replaced. A radio comedian at that time remarked, "I hear Baltimore is moving up to New York."

FIGURE 4. Stanhope Bayne-Jones, M.D.

Hard times

A great blow fell with the stock market crash in 1929 and the ensuing depression. The estimated loss to the Center was around $15 million, and the expected bed capacity of 987 was cut by 300. The equipment for several floors was omitted, and when some of the staff requested necessary furniture they were told to go over to the garage and salvage the material brought from the old hospital.

The hospital had difficulty in meeting its commitments, but Dr. Robinson was able to obtain a grant of $100,000 from the Rockefeller Foundation so that the school could take over some of the emergency budgets.

As might have been expected when such a financial catastrophe occurred, the differences between the members of the institution were accentuated. Mr. Sheldon, the president of the board of governors of the hospital, died, and the new president began to cut budgets, usually without consultation of the director. In 1934 Dr. Robinson retired.

One of the guest speakers invited to the center during this unhappy period was Anton Carlson, M.D., the blunt-spoken professor of physiology at the University of Chicago Medical School. He said our magnificent building reminded him of the wonderful architecture still existing in Egypt and warned us that the people responsible for such monuments were not capable of measuring up to

FIGURE 5 Joseph C Hinsey, M D

the standards of their original hopes and ambitions.

But time and deaths gradually permitted new men to direct the institution. Although until the 1940s the hospital was not a center of optimism, and annual deficits plagued the administration, the advent of Edmund Ezra Day as President of Cornell University in 1937, and the appointment of Joseph C. Hinsey, M.D., as dean of the Medical College in 1941 gave a new impetus to the hospital's junior partner. A healthy spirit of cooperation with the hospital and confidence in the future began.

In 1947 Stanhope Bayne-Jones, M.D., was appointed president of the joint board of the two institutions, now called the Medical Center. He held this office until his retirement in 1953 (Fig. 4). He was succeeded by Dr. Hinsey, who was given the title of director of the Center (Fig. 5).

Following World War II, the financial conditions of the country improved, and, as usual, the lessons from a war stimulated great interest in research and potential medical accomplishments. Funds became available from private sources, and the government began to provide increasing amounts of money for investigation and education.

Recent history

Several events are noteworthy in the recent history of The New York Hospital.

1. The Nursing School became one of the colleges of Cornell University offering a B.S. degree in 1942.

2. The Vincent Astor Consultation Clinic was established in 1949.

3. The Sloan-Kettering Institute was affiliated with the Center in the year 1951–1952. The Memorial Hospital had had an association with the Medical School since 1912.

4. A Graduate School of Medical Sciences was organized in the year 1951–1952.

5. The Hospital for Special Surgery was erected across 70th Street in 1954. It had become an affiliate of The New York Hospital and Cornell in 1949.

FIGURE 6 E Hugh Luckey, M D

6. The most recent union with the Manhattan Eye, Ear and Throat Hospital and the North Shore Hospital at Manhasset, Long Island, took place in 1969.

7. Olin Hall, a residence for the students, was erected in 1954. This building was made possible by a gift from the Olin Foundation in honor of Franklin W. Olin, a graduate and liberal friend of the University.

8. The hospital organized a program in 1952 for comprehensive and home care. However, as far back as 1945, John Pastore, M.D., presented a detailed report dealing with many aspects of such a program.

9. In 1961, a campaign to raise money for the center was organized as the Fund for Medical Progress, and almost $61 million was contributed in two years for special and general purposes.

10. Friends of Connie M. Guion, M.D., contributed a generous fund for the erection of the Connie M. Guion Clinic, housing the Out-Patient Department, in 1962.

11. Also in 1962, the Samuel J. and Evelyn L. Wood Foundation made it possible to build the Samuel J. Wood Library and Research Building.

12. The William Hale Harkness Building costing almost $10 million was completed in 1968. This was made possible by gifts from Mrs. Rebekah Harkness and grants from the United States Public Health Service, the Commonwealth Foundation, and several other foundations.

13. The Center has received almost $7 million from Israel Rogosin, including more than $6 million to the Fund for Medical Progress.

14. In 1970 the Hematology Laboratory was equipped by a grant from the Arnold R. Krakower Hematology Foundation.

In 1966, Dr. Hinsey retired and E. Hugh Luckey, M.D., formerly dean and subsequently chairman of the Department of Medicine of the medical school and physician-in-chief of the hospital succeeded him as president of The New York Hospital-Cornell Medical Center, vice president for Medical Affairs of Cornell University, and vice president of Medical Affairs of the Society of The New York Hospital (Fig. 6).

At this two hundredth celebration of the founding of The New York Hospital, the oldest hospital in New York City and the second oldest in the country, we approach the next hundred years with confidence, but with humility, in our future, remembering always our motto, that of the Good Samaritan: "to go and do thou likewise."

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"Polar" Hayes

Arctic journeys of Isaac Israel Hayes, M.D. (1832-1881)

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Over a century ago, not far from the site of the U.S. Air Force Base at Thule, Greenland, a young American physician with a few companions huddled together in a rude stone hut for more than two months, struggling for survival against bitter cold, hunger, and sometimes hostile Eskimos. Isaac Israel Hayes, M.D., was surgeon on the Second Grinnell Expedition under Elisha Kent Kane, M.D., when he found himself stranded far from the ship while attempting to get help for the beleaguered expedition far to the north. A few years later this same man was in command of his own expedition to northern Greenland, during which he was the first to chart the eastern coast of Ellesmere Island and the first to explore the interior of the Greenland ice cap. In recognition of his many achievements, the huge northwestern projection of the Greenland land mass is now known as the Hayes Peninsula.

Hayes was born March 5, 1832, in Chester County, Pennsylvania, not far from Philadelphia. After early schooling at Westtown Academy, he attended the University of Pennsylvania School of Medicine, where he graduated in May, 1853. While still a student he had come under the spell of Dr. Kane, himself a physician, who was then organizing an Arctic expedition in search of the British explorer Sir John Franklin, who had disappeared with all his men nearly eight years before while in search of the Northwest Passage. Hayes applied for the post of surgeon to the expedition and was accepted on May 29, 1853, a scant twenty-four hours before the brig *Advance*, with Kane commanding, left New York City.

Kane expedition

Kane took his vessel along the Greenland coast northward through Baffin Bay and into the pack ice of Smith Sound. After a hard struggle with the ice and foul weather, he was compelled to find shelter for the winter in a little cove located at 78° N latitude on the western coast of Greenland.

Hayes found himself far more than a medical officer as the expedition made ready for the long, cold winter. He led several short exploring parties, collected and prepared natural history specimens, kept the ship's records, and learned the art of celestial navigation.

His skills as a physician, however, did not go untested. In the darkness of midwinter ominous signs of scurvy appeared, a disease which plagued the entire expedition and several times threatened its very survival. In March a scouting party far from the ship was overcome by the bitter cold, necessitating a daring rescue by Kane and a group of volunteers. All the men, rescued and rescuers, finally returned safely despite days of exposure at temperatures close to 50° F. below zero and with only minimal shelter, little food, and almost no sleep. The frosty elements took their toll, however. Hayes tended the exhausted men constantly, almost all of whom, including Kane, were raving with delirium. Many had frostbite, and in the manner of the day the physician performed several minor amputations. One of the party finally died, despite all efforts to save him, with symptoms that suggested tetanus.

The greatest tax on his medical ability, however, was Dr. Kane himself, on whom the safety and success of the whole expedition depended. Kane had suffered from severe rheumatic heart disease for years, and now he was frequently afflicted with palpitations, breathlessness, edema, and fainting spells. On a sledge journey later in the winter, Kane very nearly died from a combination of cardiac failure, scurvy, exhaustion, and exposure.

As one of the few officers still well enough to travel, Hayes was chosen in May to lead a sledge party across Smith Sound westward to "Grinnell Land," now known to be the northern half of Ellesmere Island. On this trip, despite a severe attack of snow blindness, he and a companion were able to plant the American flag at 79° 42′ N latitude before illness and lack of provisions forced their return.

Contrary to the hopes and efforts of Kane and the entire party, the brig did not break out of the ice in the summer of 1854, leaving the men to contemplate the grim prospect of another winter of hunger, disease, and bitter cold in the Arctic darkness. In desperation Hayes and eight other men, led by a Danish sailor named Petersen, decided to leave the *Advance* and try to make their way south by boat to the Danish settlement at Upernavik. Kane gave his permission but scant encouragement to the party, since it seemed to offer a slim hope of rescue for everyone. The group left August 28 with provisions to last four to five weeks. After a month filled with hardship and adventure the party reached Booth Bay, where ice conditions to the south precluded further progress. There the men built a rude, stone hut and passed a miserable existence for two long months, kept from freezing only by trading with some Eskimos who visited from time to time.

With no hope of escape to the southward, the boat party was at last compelled to attempt a return to the brig, if possible, by obtaining dogs, supplies, and a sledge from the Eskimos. The latter, however, were unwilling to part with these valuable determinants of their own survival. At last Petersen managed to bargain for a couple of dogs and set off northward with a single companion to seek assistance. On their arrival at the nearby native settlement, however, the Eskimos, apparently under the baneful influence of one of the hunters, plotted against the two, and they barely escaped with their lives, returning to the hut badly shaken by the experience. Some anxious days followed, during which the party was forced to post a sentry and build a protecting wall of snow around their camp. Finally, however, the party was able to effect a reconciliation with the Eskimos. Petersen and a companion thereupon set off a second time for the ship, leaving the others to their tenuous fate.

Hayes and the rest, nearly desperate now, at length made a break for the ship themselves. The physician emptied a vial of laudanum into a stew prepared for three visiting Eskimo hunters. When the latter nodded off to sleep, he took their fur clothing and quietly slipped out with his companions, sealing up the entrance to the hut with snow blocks to prevent pursuit. Now equipped with dogs and a sledge, the group set off northward and ultimately reached the ship on December 12, despite the bitter Arctic storms. Hayes came through with severe frostbite of one foot, as a result of falling through the ice near Cape Alexander. This mishap caused him the loss of several toes and confined him to his bunk until April.

The remainder of the long winter was a sad chronicle of scurvy, hunger, and despair. Kane, the cardiac invalid, was virtually the only force that kept the group from disaster. But at last the warming sun returned, and as the days lengthened and fresh meat became available again, bodies took on new life and spirits new hope for rescue.

In a final gamble to save his party, Kane abandoned the *Advance* on June 19 and led the group southward by sledge and small boat. Nearly six weeks later they reached Upernavik, having lost one man en route. A rescue expedition from the United States finally caught up with them at Godhavn, and on October 12, 1855, Kane and his men reached New York City, where they were given a heroes' welcome. Kane's subsequent lecture tours and his official narrative of the voyage, *Arctic Explorations*, were hugely successful and made his name known throughout America. His precarious health, however, finally gave way completely, and he died only sixteen months after the expedition's return.

Hayes expedition

With Kane gone, Hayes recognized that he was the logical man to continue the American explorations in Smith Sound. The idea of an open polar sea north of the ice pack, a suggestion advanced by Kane and seemingly confirmed by one of the latter's sledge parties, obsessed the young physician. His previous suffering and even his crippled foot only seemed to harden his determination to challenge the Arctic again.

Beginning in December, 1857, Hayes appeared before several learned societies and corresponded with many more, explaining the work of Kane and others that had gone before, then outlining his own plan for scientific observation and exploration, particularly in Grinnell Land, where he had been the first white man to set foot. He even proposed a try for the North Pole itself, if conditions proved favorable in the anticipated open polar sea. Although Hayes was indefatigable in his efforts to raise funds for the expedition, the results were disappointing. Many encouraged him but few gave money to support him. In early 1860 he published his own narrative of the Kane expedition under the title *An Arctic Boat Journey, in the Autumn of 1854.* Although hardly as successful as Kane's best seller, the book helped replenish the physician's dwindling resources. Finally, by the spring of 1860, he had enough funds to purchase a 133-ton vessel which could be refitted for Arctic service. Fourteen persons responded to his call for recruits, including one of his companions of the boat journey, the astronomer August Sonntag.

The schooner, renamed the *United States,* departed from Boston on July 7, 1860, and reached the Greenland coast on August 1. Hayes stopped briefly at several settlements, where he recruited Eskimo hunters and purchased dogs for the proposed sledge journeys. Proceeding north he found ice conditions generally favorable until he reached the northern edge of the pack ice in Smith Sound. Hayes had hoped to cross over to Ellesmere Island (Grinnell Land) for wintering, but several attempts to enter the pack only resulted in severe structural damage to his vessel. Finally he was forced to go into winter quarters on the Greenland side at a cove he named Port Foulke, at latitude 78° 18′ N.

Game was plentiful, and preparations for the winter were completed well before the sun set for the season on October 15. During that month Hayes led a trip to "My Brother John's Glacier" nearby, a huge ice sheet which had been whimsically named by Kane in honor of his physician brother. After scaling its face, the party penetrated nearly 70 miles inland before being forced to turn back by their lack of shelter against the searing gales and bitter cold. This trip was one of many examples of Hayes's interest in the formation and characteristics of Arctic glaciers.

In early December an epidemic, probably distemper, caused the loss of 21 of the 30 available sledge dogs. Since the success of the exploratory spring journeys depended on the use of dogs, Hayes sent Sonntag and the Eskimo Hans southward to try to purchase some from the Eskimos around Whale Sound. During this journey Sonntag's sledge broke through the ice and he died the following day as a result of exposure. Hans went on southward and ultimately returned to the ship with fewer dogs than he had set out with.

Except for these misfortunes the winter passed without serious incident. Hayes's previous experience had impressed on him the critical importance of keeping his men from boredom and providing them with fresh food. As a result not a single case of scurvy or mental disorder marred the danger season, although a few of the men suffered frostbite.

As soon as the sun returned, Hayes made preparations for his spring journeys to the north. During several preliminary scouting trips, he sighted Humboldt Glacier (discovered by Kane) and visited Rensselaer Harbor, where he found a fragment of the deck plank from the *Advance*. The weather was exceptionally cold, reaching a low of 68° F. below zero.

At last, on April 3, Hayes and 12 men set off for Grinnell Land with three sledges and 14 dogs they had been able to accumulate by purchase from the Eskimos who visited the ship. After a two-week delay at Cairn Point due to bad weather, the group attempted to cross the sound, but found the ice to be a frightful jumble of hummocks, cracks, and pressure ridges. It was only with backbreaking effort that the party made even a couple of miles a day. They suffered from sprains, frostbite, snow blindness, and utter discouragement. After a hard mental struggle, Hayes saw the futility of the effort and sent all but three of his men back to the schooner. With a lightened load he and his party at last reached the coast of Ellesmere Island, after some thirty-one days of exhausting battle with the ice, a journey which would have taken a dog team perhaps two days with favorable trail conditions.

The four men sledged northward and eastward along the coast, passing Hayes's previous northern record of 1854 on the second day. Finally on May 18, 1861, he and a single companion reached a new northern limit, their progress stopped by rotten ice. From his vantage point on shore he could see no land to the eastward. The ice in the bay was rapidly breaking up in every direction. Spreading out before him, he was sure, was the open polar sea. He named the promontory of land Cape Lieber and placed it at 81° 35′ N, although subsequent expeditions found his observations to be in error. Hayes, although no one ever questioned his integrity in this regard, consistently overestimated his latitude, probably because of a technical error in his use of the sextant. It would appear, on the basis of present evidence, that he probably reached a point approximately latitude 80° 15′, at the southern end of Kennedy Channel.

The return to the schooner was a race with the rapidly advancing summer season, but except for a few close calls on the shifting ice, they reached their destination safely on June 3, having covered an estimated 1,300 miles during their two-month journey.

Hayes now had the ship thoroughly inspected to see whether or not it would be feasible to remain another season in the north. The report was distressing: the schooner was badly damaged and hardly in condition to sail them homeward, much less battle the crushing pack ice again. Regretfully, therefore, Hayes decided to return to the United States and try to raise funds for another try the following summer. On July 12 the ship was afloat for the first time in ten months, and two days later it was moving out into open water under full sail.

At Upernavik Hayes received the grim news that his country was torn by a civil war. It was only in October, however, when the schooner docked at her home port of Boston once more that he recognized fully the seriousness of this bloody national struggle. Immediately he put aside all thought of a new expedition, and in a letter to the President offered himself as a military surgeon and his vessel as a gunboat in the Union cause. Hayes was commissioned a "surgeon of volunteers" several months later and put in charge of the Satterlee Hospital in West Philadelphia. He served out the remainder of the war there with distinction and was discharged a brevet lieutenant colonel on July 3, 1865.

Later life

During the war most of the botanical, zoologic, and paleontologic results of his last expedition had been published by various scientists with access to his notes and specimens. Now he set about writing his personal account, which appeared in 1867 under the title *The Open Polar Sea: A Narrative of a Voyage of Discovery Towards the North Pole, in the Schooner, "United States."* About the same time, C. A. Schott of the Smithsonian Institution reduced and published the expedition's tidal, weather, magnetic, and celestial observations. In 1867 Hayes was awarded the Victoria Medal of the Royal Geographical Society of London. Over the next few years similar honors came from Paris, Berlin, and Rome. Despite this recognition by the scientific world, he could not generate enough public support or interest to undertake a new expedition in a country in the throes of reconstruction.

During the summer of 1869 Hayes seized the opportunity to go north again, this time as a guest of the artist William Bradford, who had chartered the steam yacht *Panther* for the summer. Although the main purpose of the cruise was to provide wild scenery fit for Mr. Bradford's cameras and easel, Hayes nurtured the hope that he could make preliminary preparations for a new voyage of exploration. The ship stopped at several settlements on the west Greenland coast, in some of which Hayes was able to renew old acquaintances. The expedition was finally stopped by the pack ice near the Sabine Islands, at 75° N latitude. All in all it was a tame voyage, although the travelers had a few anxious moments to remember. Hayes published an account of this trip called *The Land of Desolation* a few years later.

He settled in New York City on a permanent basis in 1872 and became involved in business interests there. In 1874 he visited Iceland as the representative of the American Geographical Society at the celebration of that country's national independence and millenary. The following year, at the urging of his many friends, he ran on the Republican ticket for the New York State Assembly from the Seventh District. He was reelected each year until 1881, when he declined to run because of a political split within his party. During his years in the Assembly he took particular interest in legislative reform, city sanitation, and the commercial potential of the Erie Canal. He worked hard in the legislature. His speeches were said to be eloquent, forceful, and carefully prepared.

Hayes died suddenly on December 17, 1881, in New York City, at the comparatively early age of forty-nine. He had been troubled with heart symptoms for nearly a year and had cut down considerably on his demanding schedule. Mourned by a few friends and his parents, he was buried at West Chester, Pennsylvania. He never married.

Comment

Isaac Israel Hayes, M.D., was one of several notable physician-explorers who did much to open up the North American Arctic in the nineteenth century. Men such as John Richardson, John Rae, Elisha Kent Kane, and Hayes himself distinguished themselves not only by their geographic discoveries but also by their qualities of leadership, endurance, and spirit of scientific inquiry. Hayes, although perhaps least known of the four, made solid contributions, particularly in his surveys of Ellesmere Island and by his study of the formation and movement of glaciers. He was a vigorous man, inclined to be stubborn to the point of foolhardiness. His life work was strongly influenced by a single idea: that the polar basin was ice-free most of the year. This mistaken notion led him to believe to the end that under favorable conditions he could reach the North Pole by water.

Despite his training as a physician, Hayes apparently never engaged in private practice, although of course he had medical responsibilities on the two main Arctic expeditions in which he participated. As director of the military hospital in Philadelphia his duties were primarily administrative, whereas he devoted his later years primarily to business, politics, and writing. His contributions to natural history were largely those of a collector rather than of a scientist.

His books were widely read and went through several editions both in America and in Great Britain during his lifetime. His first two, *An Arctic Boat Journey* and *The Open Polar Sea*, especially, are vivid narratives of almost incredible adventure and hardship in the boreal regions. He was in great demand as a lecturer, both on Arctic and political topics. In later years he was widely known as "Polar" Hayes in recognition of his work in the north.

Although relatively unknown today, Hayes was an important American in a half century of Arctic exploration dominated by the British Navy. On the death of Kane in 1857 he willingly assumed the mantle of responsibility to carry forth the important work of exploration in the Smith Sound-Ellesmere Island region. His journeys carried him to the then northernmost known land, preparing the way for Hall, Cook, Peary, and MacMillan, his illustrious countrymen who followed in his path toward the Pole.

1615 Stanton Avenue
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Necrology

Dezso Annau, M.D., of Smithtown, died on November 17, 1971. Dr. Annau received his medical degree from the University of Budapest in 1923. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association.

Douglas Perkins Arnold, M.D., of Buffalo, died on July 26 at the age of eighty-seven. Dr. Arnold graduated in 1908 from the University of Buffalo School of Medicine. He was a consulting pediatrician at Children's and Millard Fillmore Hospitals. Dr. Arnold was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lawrence Joseph Caruso, M.D., of New York City and Scarsdale, died on August 13 at the age of fifty-five. Dr. Caruso graduated in 1940 from Long Island College of Medicine. He was director of obstetrics and gynecology at New York Polyclinic Hospital, a consulting obstetrician and gynecologist at Morrisania City Hospital, and an attending obstetrician and gynecologist at Doctors Hospital. Dr. Caruso was a Diplomate of the American College of Obstetricians and Gynecolo- Fellow of the American College of Surgeons, a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the International College of Surgeons, and a member of the Industrial Medical Association, the New York Academy of Medicine, the Westchester Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

A. J. Derkowski, M.D., of Albany, died on December 22, 1971. Dr. Derkowski graduated in 1926 from Boston University School of Medicine.

Leslie A. Dickinson, M.D., of Rochester, died on August 8 at the age of eighty-four. Dr. Dickinson graduated in 1912 from New York Medical College. He was a consulting surgeon at Genesee Hospital. Dr. Dickinson was a Fellow of the American College of Surgeons and a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Vincent Dollard, M.D., of Rocky Point, died on February 8 at the age of seventy. Dr. Dollard graduated in 1926 from George Washington University School of Medicine. He was an honorary general practitioner at the John T. Mather Memorial Hospital and an emeritus member of the general practice staff at St. Charles Hospital. Dr. Dollard was a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Allan Andrew Fisher, M.D., of Rochester, died on July 31 at the age of sixty-three. Dr. Fisher graduated in 1934 from the University of Rochester School of Medicine. He was an attending surgeon at Genesee Hospital and an assistant attending surgeon at Strong Memorial Hospital. Dr. Fisher was a Diplomate of the American Board of Surgery and a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard Glauber, M.D., of Forest Hills, died on August 2 at the age of seventy-two. Dr. Glauber received his medical degree from the University of Prague in 1925. He was a member of the general practice staff at Parkway Hospital. Dr. Glauber was a member of the American Academy of General Practice, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Henry Silver Huber, M.D., of New York City, died on August 13 at the age of sixty-five. Dr. Huber graduated in 1930 from Columbia University College of Physicians and Surgeons. He was an attending surgeon at French and Polyclinic Medical School and Health Center. Dr. Huber was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Harold Hunt, M.D., of Elmira, died on January 16 at the age of seventy-four. Dr. Hunt graduated in 1923 from the University of Buffalo School of Medicine. He was a consulting dermatologist at Arnot-Ogden Memorial and St. Joseph's Hospitals. Dr. Hunt was a member of the American Academy of Dermatology, the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max Kavaler, M.D., of The Bronx, died on August 5 at the age of eighty-nine. Dr. Kavaler graduated in 1914 from Long Island College Hospital. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Paul Mehlman, M.D., of Yonkers, died on July 15 at the age of sixty-six. Dr. Mehlman graduated in 1929 from Long Island College Hospital. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Messina, M.D., of Brooklyn, died on March 19. Dr. Messina received his medical degree from the University of Naples in 1934. He was an associate attending obstetrician and gynecologist at Lutheran Medical Center.

Robert Phillip Reagan, M.D., retired, of Buffalo, died on February 7 at the age of eighty-five. Dr. Reagan graduated in 1908 from Baltimore Medical College. He was an honorary surgeon at DeGraff Memorial Hospital (North Tonawanda) and an honorary member of the medical staff at Kenmore Mercy Hospital. Dr. Reagan was a Fellow of the International College of Surgeons and a member of the Buffalo Academy of Medicine, the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin Arzel Robinson, M.D., of Rochester, died on July 29 at the age of fifty-four. Dr. Robinson graduated in 1943 from the University of Rochester School of Medicine. He was an attending surgeon at Highland Hospital of Rochester and an associate attending surgeon at Strong Memorial Hospital. Dr. Robinson was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Hirsch Rothenberg, M.D., of Brooklyn, died on December 6, 1971 at the age of one hundred and four. Dr. Rothenberg graduated in 1909 from Long Island College Hospital.

Abraham Abe Sherman, M.D., of the Bronx, died on August 13 at the age of sixty-five. Dr. Sherman graduated in 1930 from University and Bellevue Hospital Medical College. He was director of the Radioisotope and Thyroid Clinic at Morrisania City Hospital. Dr. Sherman was a member of the Society of Nuclear Medicine, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles William Stark, M.D., of Flushing, died on August 7 at the age of sixty-five. Dr. Stark graduated in 1937 from New York Medical College. He was chief of gynecology at Whitestone General Hospital. Dr. Stark was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the American College of Surgeons, and a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Maximin de Mouy Touart, M.D., of Bronxville, retired, died on August 14 at the age of eighty-eight. Dr. Touart graduated in 1908 from Columbia University College of Physicians and Surgeons. He was a consulting physician at Lawrence Hospital (Bronxville) and an honorary member of the medical staff at Grasslands Hospital (Valhalla). Dr. Touart was a Diplomate of the American Board of Internal Medicine (Allergy) and a member of the American Rheumatism Association, the American Academy of Allergy, the Westchester Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Annual county president's forum

Edward Siegel, M.D., President of the Medical Society of the State of New York, has invited the presidents of the county medical societies to attend a forum to discuss current issues of medicine on September 26, 1972, at the headquarters building in Lake Success. Private transportation between the airports and the building will be provided, and hotel reservations are available for those requiring them. Registration will begin at 9:30 A.M., and the conference will commence at 11:00 and adjourn by 3:00 P.M. A luncheon will be served, and expenses will be paid by the State Society. A tour of the headquarters building will be available before and after the conference for those desiring one. It is hoped that all the county presidents will be able to attend.

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passage from any area to any area without crossing tennis courts. Self
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. Call (516) 731-7070.

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Whatever the medical specialty, the best way to locate a physician is through a classified advertisement in the *New York State Journal of Medicine*. For only $10.00 for fifty words or less, you can reach the 27,000 physicians, residents and interns who read the Journal. Confidential reply department numbers are fifty cents additional. Deadline—25 days before issue date.

New York State
Journal of Medicine

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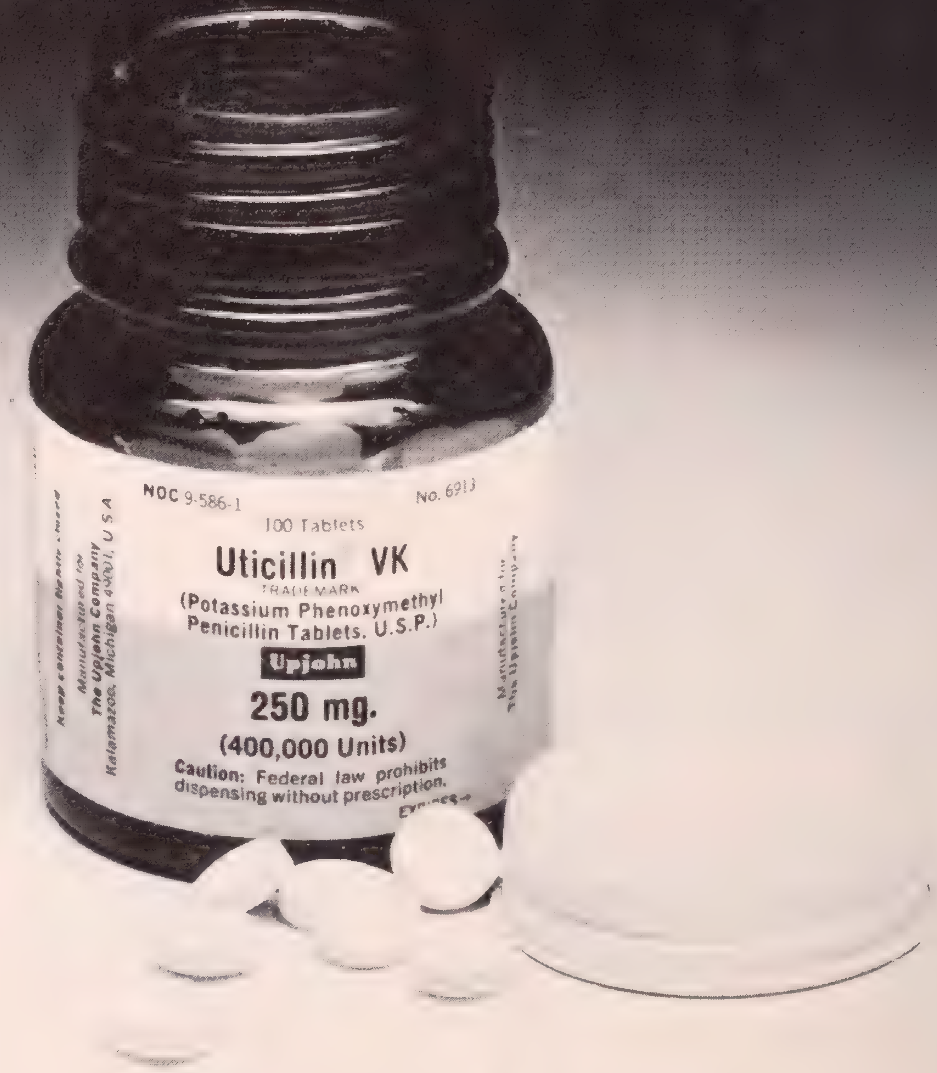
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Kalamazoo, Michigan 49001

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WHAT GOES ON in medicine

NEW YORK STATE

October 1–31, 1972

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

NEW YORK CITY AREA

October 1972 / for eight weeks

Twice weekly—1½ hour sessions

French and Polyclinic Medical School

345 West 50th Street

CONGENITAL HEART DISEASES (For General Practitioners and Pediatricians)

Every aspect of congenital cardiac anomalies will be discussed, including the anatomy, hemodynamics, natural history, clinical diagnosis with emphasis on EKG, chest x-ray and cardiac catheterization, medical management and surgical procedures.

For information, contact the Dean, at the above address

October 1972 / June 1973

(Time and dates to be announced)

Downstate Medical Center

State University Hospital
Psychiatry Seminar Room, 5th Floor
445 Lenox Road
Brooklyn

PSYCHIATRY (Workshops and Seminars co-sponsored by the Brooklyn Psychiatric Society)

NOTE: In an effort to make it possible for every psychiatrist to participate in at least one course, scheduling of time and place will be postponed until after applications have been received. It is expected that there will be at least 8 monthly meetings in each course. . . . .A nominal fee of $20 to $80 may be charged depending upon cost and attendance. Applicants may participate in more than one course, and a maximum fee for attending any combination of courses is $120. Applications must be returned by September 11, 1972. A certificate for participation in this postgraduate education program will be issued by the Brooklyn Psychiatric Society.

To register, contact: RENZO S. BASILI, M.D., Chm., Continuing Education Committee, Brooklyn Psychiatric Society, 130 Eighth Avenue, Brooklyn, N.Y. 11215.

Tel. (212) ST9-7595

October 2 / November 20, 1972

4:00–5:00 p.m., Mondays

Downstate Medical Center

Department of Physiology
450 Clarkson Avenue
Brooklyn

RECENT ADVANCES IN CARDIOVASCULAR AND NEUROPHYSIOLOGY

CHANDLER McC. BROOKS, Ph.D. with
MARIO VASSALLE, M.D.

Review of certain recent advances in knowledge of cardiovascular and nervous system function. The advances chosen will be those considered significant in the sense that they modify thought concerning normality and abnormality in body function and behavior. Emphasis on autonomic system, hypothalamus and cardiac pacemaker action control.

FEE: $20

To register, contact: DR. BROOKS, above address.
Tel. (212) 270-1153.

MONDAY, OCTOBER 2

8:00 p.m.

Staten Island Family Service

25 Victory Boulevard
Staten Island

NEW TECHNIQUES AND METHODS IN PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
Long Island Jewish-Hillside Medical Center

For information, contact: Sid Herling, MSW, Dir above address.

8:30 p.m.

Rudolf Virchow Medical Society

2 East 103rd Street

Annual Rudolf Virchow Lecture

CHANGING PATTERN OF OFFICIALLY INVESTIGATED DEATHS

MILTON HELPERN, M.D.
Chief Medical Examiner, City of New York

Presentation of the Rudolf Virchow Medal and Scroll to D Helpern.

October 3 and 10, 1972

9:00 a.m., Tuesdays

Queens Hospital Center Affiliation

Long Island Jewish-Hillside Medical Center
Triboro Hospital
Parsons Blvd. and 82nd Drive
Queens

Division of Pulmonary Medicine

October 3

Xenon Inhalation and Perfusion Lung Scanning

N. S. SERIFF, M.D.

October 10

Fatal Type III Trilobar Pneumococcal Pneumonia

A. ROBINS, M.D.

October 3 and 10, 1972

9:00 a.m., Tuesdays

New York Infirmary

Toscanini Room
Stuyvesant Square East and 15th Street

October 3

Treatment of Malaria

HARRY MOST, M.D.
N.Y.U. Medical Center

October 10

Australian Positive Viral Hepatitis

ILENE RAISFELD, M.D.
N.Y.U. Medical Center

October 3 / 24, 1972

3:00–5:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

ORTHOPAEDICS IN INFANCY AND CHILDHOOD

ROBERT S. SIFFERT, M.D., and Staff
Mount Sinai School of Medicine

FEE: $15

October 3 / 31, 1972

8:00–10:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

CLINICAL NUTRITION

GEORGE CHRISTAKIS, M.D., and Staff
Mount Sinai School of Medicine

FEE: $35

October 3, 1972 / for 5 Sessions

8:30 p.m., Tuesdays

American Institute for Psychoanalysis

329 East 62nd Street

ORIENTATION COURSE IN KAREN HORNEY'S HOLISTIC APPROACH TO THE THEORY AND PRACTICE OF PSYCHOANALYSIS

MARIE R. BADARACCO-APOLITO, M.D.
MORTON S. RUCKER, M.D.

Apply: HARRY GERSHMAN, M.D., Dean, above address. Tel. (212) 838-8044.

WEDNESDAY, OCTOBER 4

4:00–5:30 p.m.

Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

ADVANCES IN THE CLINICAL USE OF DIGITALIS

MARTIN N. COHEN, M.D.
Albert Einstein College of Medicine

NO FEE CREDIT: 1½ AAGP

October 4, 1972 / May 30, 1973

4:00–5:00 p.m., Wednesdays

Flushing Hospital and Medical Center

First Floor Conference Room
Parsons Blvd. and 45th Avenue
Flushing

Pediatric Guest Lectures Series

October 4

Serous Otitis and Otitis Media

MICHAEL D. KATZ, M.D.
Manhattan Eye and Ear Hospital

October 25

Drug Addiction—A Dilemma

MELVIN EISENBERG, M.D.
N.Y. State Narcotics Control Commission Methadone Division

NOTE: WHAT GOES ON will publish titles and speakers each month.

October 4, 1972 / May 16, 1973

7:00–9:00 p.m., every other Wednesday

Downstate Medical Center

First Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

INTERDISCIPLINARY SEMINARS

ELI A. FRIEDMAN, M.D., with the Staff of DMC and invited lecturers

NO FEE CREDIT: 2 Prescribed hours each session AAGP

To register, contact: CHARLES M. PLOTZ, M.D., Dir. Continuing Education, above address. Tel. (212) 270-2421.

October 5 / 7, 1972

Pre-Registration 7:00–9:00 p.m., Wed., Oct. 4 or 7:30 a.m., Thurs., Oct. 5

American Academy of Orthopaedic Surgeons

The Americana Hotel
Seventh Avenue and 52nd Street

Postgraduate Course on

BONE AND SOFT TISSUE TUMORS

(Designed for orthopaedic surgeons, pathologists, radiologists, and all interested physicians)

FEE: $150 (Residents $50)

CREDIT: 17½ Elective Hours AAGP

Contact: KENNETH C. FRANCIS, M.D., 215 East 68th Street, New York, N.Y. 10021. Tel. (212) UN1-2100.

October 5 / December 14, 1972

4:30–6:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

HYPNOSIS AND CONDITIONING THERAPIES FOR PSYCHIATRISTS: A CRITICAL EVALUATION

ELLIOT N. WINEBURG, M.D.
Mount Sinai School of Medicine

FEE: $75

October 5 / for 25 Sessions

8:00–10:00 p.m., Thursdays

Department of Psychiatry
New York Medical College

Metropolitan Hospital Center
1901 First Avenue

1st Annual Postgraduate Course

COMPREHENSIVE GROUP PSYCHOTHERAPY

FEE: $200

For information, write or call: BENJAMIN J. SADOCK, M.D., Chief of Continuing Education in Psychiatry and Director, Division of Group Process, above address. Tel. (212) 360-6089

MONDAY, OCTOBER 9

8:30 p.m.

Beth Israel Medical Center

Dazian Pavilion, 12th Floor Conference Room
10 Nathan D. Perlman Place

Medical-Surgical Thoracic Conference

THE EXTRAVASCULAR WATER COMPARTMENT OF THE LUNG

GERARD M. TURINO, M.D.
Columbia University P & S

October 10 / 24, 1972

8:00–9:00 a.m., Tuesdays

American Academy of Family Physicians

Richmond Chapter
Staten Island Hospital
101 Castleton Avenue
Staten Island

Postgraduate Lectures in Cardiology

October 10
Valvular Disease
T. CONSTANTINO, M.D.

October 17
Cardiac Arrhythmia
M. ROSATI, M.D.

October 24
Symposium—Myocardial Disease
M. ROSATI and T. CONSTANTINO, M.D.'s

October 10 and 11, 1972

9:00 a.m.–5:00 p.m., Tuesday and Wednesday

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

TREATMENT IN NEUROLOGY

MORRIS BENDER, M.D., and Staff
Mount Sinai School of Medicine

FEE: $100

October 10, 1972 / *May 8, 1973

10:00–11:30 a.m., Tuesdays

Downstate Medical Center

Maimonides Medical Center
Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

TUESDAY LECTURES IN PEDIATRICS

WALTER SILVER, M.D., Chairman

October 10
What Every Child Would Like His Parent to Know
LEE SALK, Ph.D.
Cornell Medical Center

October 17
Uremia in Children
MELINDA McVICAR, M.D.
Downstate Medical Center

October 24
Clinical Approach to the Bleeding Infant and Child
FRED ROSNER, M.D.
SUNY College of Medicine at Stony Brook

October 31
Clinical Pathological Conference Saltzman Auditorium at 10:00 a.m.
STANLEY MINKOWITZ, M.D.
Downstate Medical Center

NO FEE CREDIT: 25 Elective Hours AAGP

* Correction in Dates

To register, please contact Mrs. Shirley Lasky, Registr Department of Pediatric Services, Maimonides Medic Center, above address. Tel. (212) UL3-1200, Ext. 2991.

TUESDAY, OCTOBER 10

8:00 p.m.

The New York Academy of Medicine

Section on Medicine
2 East 103rd Street

HUMAN GENETICS

VICTOR McCUSICK, Professor of Medicine
Johns Hopkins University, Baltimore, Md.

Discussant

HARTWIG CLEVE, M.D.
Cornell University Medical College

9:00 p.m.

Queens Pediatric Society

Sheraton Tenney Inn
LaGuardia Airport
90-19 Grant Central Parkway
East Elmhurst

25th Anniversary

WALTER C. STEFFEN MEMORIAL LECTURE

HARRY BAKWIN, M.D.

October 11, 1972 / April 4, 1973

8:00-10:00 a.m., Wednesdays

Downstate Medical Center

Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

MEDICINE (Case Presentations for Community Physicians)

DAVID MUMFORD, M.D., with the Staff of Coney Island Hospital and invited lecturers

A weekly series of case presentations illustrating a variety of topics presenting diagnostic and management problems in the daily office practice of the community physician.

FEE: $50 CREDIT: 50 Prescribed hours AAGP

To register, contact: DR. MUMFORD, Dir., Medical Education, Coney Island Hospital, above address.
Tel. (212) 743-4100.

October 11 and 18, 1972

2:00-5:00 p.m., Wednesdays

Downstate Medical Center

First Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

DERMATOLIC WORKSHOP

LAWRENCE FRANK, M.D., with Drs. EUGENIO BABAN, BENJAMIN BENDER, LASZLO BIRO, PHILIP FELDMAN, YEHUDI FELMAN, FRANKLIN S. GLICKMAN, ELY PRICE, YEHOSHUA RAPP AND SIDNEY I. ROGERS

Open panel discussion of practical dermatology.

NO FEE CREDIT: 6 Prescribed hours AAGP

To register, contact: CHARLES M. PLOTZ, M.D., above address. Tel. (212) 270-2421

October 11, 1972 / January 31, 1973

3:30-5:00 p.m., Wednesdays

Downstate Medical Center

Continuing Education Conference Center

RECENT ADVANCES IN INTERNAL MEDICINE

CHARLES M. PLOTZ, M.D., with the Staff of DMC

A Lecture series in internal medicine designed especially for family practitioners. Topics include: acid-base balance; clinical renal disease; variants of rheumatoid arthritis; anemias; bleeding disorders; coronary artery disease; congestive heart failure; respiratory; gastrointestinal; oncologic; immunologic; endocrine and neurologic diseases.

FEE: $75 CREDIT: 20 Prescribed hours AAGP

To register, contact DR. PLOTZ, (see above)

WEDNESDAY, OCTOBER 11

4:30 p.m.

Columbia University P & S and Harlem Hospital Center Departments of Surgery

Auditorium, Martin Luther King Pavilion
135th Street and Lenox Avenue

5th Godfrey Nurse Lecture

SURGERY OF THE ANEURYSMS OF THE AORTA

CHARLES DUBOST, M.D.
University of Paris, France

Dedication of the Cardiac Operating Suite in honor of Dr. AUBRE de L. MAYNARD. Dir. of Surgery Emeritus.

October 12 and 13, 1972

8:30 a.m., Thursday—Registration

N.Y.U. Post-Graduate Medical School

Auditorium—Alumni Hall
550 First Avenue

SYMPOSIUM ON HEMISPHERECTOMY

FEE: $100

Write for Program and application: Office of the Recorder —Room 156 MSB, above address

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October 12 / 14, 1972

9:00 a.m.-5:00 p.m., Thursday & Friday
9:00 a.m.-12:00 noon, Saturday

The Page and William Black Post-Graduate

School of Medicine

The Mount Sinai Medical Center
Fifth Avenue and 100th Street

CURRENT CONCEPTS IN OBSTETRICS AND GYNECOLOGY

SAUL B. GUSBERG, KARLIS ADAMSONS, Jr.,
J. J. ROVINSKY, M.D.'s and Faculty
Mount Sinai School of Medicine

FEE: $100 ($25 House Staff)

THURSDAY, OCTOBER 12

9:00–11:00 p.m.

Albert Einstein College of Medicine

First Floor Lecture Hall
The Forchheimer Building
1300 Morris Park Avenue
Bronx

*OTOLARYNGOLOGY

ROBERT RUBIN, M.D.

NO FEE CREDIT: 16 hours Category I AAGP

*One of the eight lectures in the annual postgraduate course in family practice, which started March 23 and continues through December 7, 1972.

Please contact MRS. FRIEDA FAGIN, Office of Continuing Education, above address. Tel. (212) 430-2822.

October 13, 1972 / April 20, 1973

8:00–9:30 a.m., Fridays

Downstate Medical Center

Maimonides Medical Center
Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

PEDIATRICS, GYNECOLOGY, MEDICINE AND SURGERY FOR THE FAMILY PHYSICIAN

GEORGE A. DEGENSHEIN, DAVID GROB,
HOWARD A. JOOS, WILLIAM POMERANCE
and OSCAR SCHWARTZ, M.D.'s with
invited lecturers

The theme of this course is therapy with special emphasis on emergency therapy in situations met by the family physician.

FEE: $20

To register, contact: MRS. SHIRLEY LASKY, Registrar, Department of Pediatric Services, Maimonides Medical Center, above address. Tel. (212) UL3-1200, Ext. 2991.

FRIDAY, OCTOBER 13

8:30 p.m.

American Hungarian Medical Association

New York Academy of Medicine
2 East 103rd Street

1. **On Immunization**

   TIBOR FEDER, M.D.
   Former Chief Epidemiologist of the Dept. of Health of New York City

2. **The Clinical Laboratory of the Future: A Tool for Preventive and Predictive Medicine**

   FERENC HUTTERER, Professor and Director of Chemistry at The Mount Sinai Medical Center

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SATURDAY, OCTOBER 14

9:00 a.m.–4:30 p.m.

The Clinical Society of the New York Diabetes Association

Barbizon-Plaza Hotel Theatre
106 Central Park South

20th Annual Symposium

Morning Program

1. **The Capillary Basement Membrane in Diabetes Mellitus**

   JOSEPH R. WILLIAMSON, M.D.
   Washington University School of Medicine, St. Louis

2. **The Renal Glomerular Basement Membrane in Diabetes**

   ROBERT G. SPIRO, M.D.
   Harvard Medical School

3. **Deterioration of Tolerance to Glucose and Progression of the Microangiopathy**

   R. A. CAMERINI-DAVALOS, M.D.
   New York Medical College

4. **The Herman O. Mosenthal Memorial Lecture**

   ARNOLD LAZAROW, M.D.
   University of Minnesota, Minneapolis

Afternoon Program

1. **Transplantation of Islets of Langerhans: A Progress Report**

   WALTER F. BALLINGER, M.D.
   Washington University School of Medicine, St. Louis

2. **Experience in Pancreatic Transplants ir Patients with Diabetes**

   FREDERICK C. GOETZ, M.D.
   University of Minnesota, Minneapolis

3. **In Vitro and In Vivo Experience with Glucose Electrode**

   J. STUART SOELDNER, M.D.
   Peter Bent Brigham Hospital, Boston

FEE: $15 Registration Fee for non-members.

Please contact: New York Diabetes Association, 10 East 40th Street, New York, N.Y. 10016. Tel. (212 OXford 7-7760.

October 15, 1972 / April 1, 1973

9:00 a.m.–12:00 noon, Sundays

Downstate Medical Center

Boulevard Hospital
46-04 31 st Avenue
Long Island City

INTENSIVE REVIEW FOR COMMUNITY PHYSICIANS

CHARLES M. PLOTZ, M.D., with the Staff of DMC

A lecture series in family medicine for community physicians sponsored by the Academy of Medicine of the Queens County Medical Society. Topics include: diabetes mellitus; acid-base balance and electrolytes; endocrine, renal, pulmonary, gastroenterologic, cardiac, hematologic and neurologic disease; obstetrics and gynecology; genetic counseling and family planning. The last session will be a review session for those preparing for the Board examination in Family Practice.

FEE: $100 CREDIT: 57 Prescribed hours AAGP

To register, contact: MRS. KATHERINE FRIES, Boulevard Hospital, above address. Tel. (212) RA 1-7000

October 15, 1972 / May 20, 1973

5:00–8:00 p.m., Sundays

Downstate Medical Center

Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

SECOND ANNUAL REVIEW OF INTERNAL MEDICINE

DAVID MUMFORD, M.D., with the Staff of the Coney Island Hospital and invited lecturers

This course will consist of a series of weekly 3-hour teaching sessions designed for practicing internists and medical resident physicians preparing for the American Board of Internal Medicine examination. Physicians who are not candidates for this examination, but who wish to bring their knowledge and skill in the rapidly changing field of internal medicine up to date, will find this review invaluable. The format will include the distribution of study guides, and the illustration and clarification of difficult concepts. Self-assessment with prepared questions will be included in each presentation. Audience participation and discussion will be encouraged.

FEE: $200 ($100 for residents or fellows-in-training)
CREDIT: 90 Prescribed hours AAGP

To register, Contact: DAVID MUMFORD, M.D., Dir., Medical Education, Coney Island Hospital, above address. Tel. (212) SH-3-4100.

FUTURE EVENTS

October 18 / November 15, 1972

8:30–10:00 p.m., Wednesdays

Long Island Consultation Center

97-29 64th Road
Forest Hills

4th Annual Physicians Workshop on

PSYCHOTROPIC MEDICATION

GIDEON SEAMAN, M.D.
Supervising Psychiatrist, LICC

CREDIT: 7½ Elective Hours AAGP
Apply above address

October 26 / 28, 1972

Lenox Hill Hospital

Department of Otolaryngology
100 East 77th Street

THREE DAY COURSE IN CLINICAL NEUROTOLOGY FOR THE PHYSICIAN and a simultaneous CLINICAL ELECTRONYSTAGMOGRAPHY COURSE FOR THE ENG TECHNICIAN

Under the direction of:

KENNETH H. BROOKLER, M.D. and
J. L. PULEC, M.D.

October 27 and 28, 1972

The Obstetrical and Gynecological Society and New York Medical College

Department of Obstetrics and Gynecology
1249 Fifth Avenue

SYMPOSIUM ON PERINATAL ASPECTS OF GENETICS AND BIRTH DEFECTS

LOUIS J. SALERNO, M.D., Program Chairman

October 18 / 20, 1972

N.Y.U. Post-Graduate Medical School

550 First Avenue

Three-Day Symposium on

RADIOLOGY OF THE KIDNEY

FEE: $150

Write: Office of the Recorder—Room 158 MSB above address.

October 30 / November 3, 1972

Full time, Monday–Friday

Lenox Hill Hospital

100 East 77th Street

Postgraduate Program

HUMAN ENDOCRINOLOGY WITH EMPHASIS ON GYNECOLOGICAL AND MEDICAL ASPECTS

Under the direction of:
HERBERT S. KUPPERMAN, M.D.

FEE: $150

For further information contact: WILLIAM D. SICHER, (212) 879-8000.

ALBANY AREA FUTURE EVENT

October 30 and 31, 1972

The New York State Department of Health

Birth Defects Institute

HUMAN TERATOGENESIS

DWIGHT T. JANERICH, Director
Epidemiology and Population Genetics
Chairman
Birth Defects Institute
Symposium III

BINGHAMTON

October 30 / November 6, 1972

New York State Academy of Family Physicians

84 Main Street
Binghamton

MEDICAL SEMINAR TO CARACAS, VENEZUELA

FEE: $380 M.D. (Includes Seminar Registration)
330 M.D.'s Wife
25 Supplement for single accommodation

Contact above.

BUFFALO AREA

October 3 and 4, 1972

State University of New York at Buffalo School of Medicine

Department of Gynecology/Obstetrics with the Deaconess Hospital
Auditorium
1001 Humboldt Parkway

Gynecology and Obstetrics for the Family Physician

CONTINUING HEALTH CARE FOR WOMEN

NORMAN G. COUREY, M.D., Program Chairman

FEE: $25 CREDIT: 14 hours AAGP

Apply: Continuing Medical Education, Main Street Division, SUNYAB School of Medicine, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

State University of New York at Buffalo

Continuing Medical Education
2211 Main Street
Buffalo, New York 14214
Tel. (716) 831-5526

FALL PROGRAMS

October 3 & 4
GYNECOLOGY/OBSTETRICS FOR THE FAMILY PHYSICIAN

November 4 & 5
EXERCISE TESTING AND TRAINING FOR THE PREVENTION AND TREATMENT OF CORONARY HEART DISEASE (With the New York State Heart Assembly)

November 9
COMMUNITY MEDICINE—WHAT IS IT?

November 10
WORKSHOP IN RESPIRATORY MANAGEMENT

DUTCHESS COUNTY FUTURE EVENT

October 22 / 25, 1972

The New York Trudeau Society

Camelot Motel
Poughkeepsie

CLINICAL PULMONARY PHYSIOLOGY

FEE: $150

Write for Program: WALTER A. GUDZ, Exec. Secty New York Trudeau Society, 105 East 22nd Street, Ne York, N.Y. 10010.

NASSAU COUNTY

MONDAY, OCTOBER 16

5:00–9:30 p.m.

Joint Meeting of the Nassau and Suffolk Counties Obstetrical Societies

Colonie Inn Motor Parkway
Pauppauge

THE PRE AND POST MENOPAUSAL USE OF HORMONE THERAPY (Panel Discussion)

OWEGO

SUNDAY, OCTOBER 8

9:00 a.m.–5:00 p.m.

American Association of Medical Assistants

New York State Chapter
Treadway Inn
Owego, N.Y.

EDUCATIONAL SEMINAR

1. **The Troubled Child**

2. **Champus Workshop**
3. **Medicare Workshop**
4. **Ethics and the Medical Assistant**
5. **Body Effects on Smoking**
   Film: Breath of Air
6. **CMA Mini Test**
7. **Film Festival—Courtesy American Cancer Society**
8. **Breast Self-Examination**
9. **The Other City**

FEE: $10 (Non-Member: $12—Student: $6)
$ 3 Mini Test

Registration Chairman: RUTH MAHONEY, 1301 Trumansburg Road, Ithaca, New York 14850.

ROCHESTER AREA

October 5 / 7, 1972

American Society for Colposcopy and Colpomicroscopy with the Highland Hospital and University of Rochester Medical School

University of Rochester Medical School
South Avenue at Bellevue Drive

BASIC COLPOSCOPY COURSE

Please contact GEORGE C. TROMBETTA, Highland Hospital South Avenue at Bellevue Drive, Rochester, N.Y. 14620.

ROCHESTER AREA FUTURE EVENT

October 22, 1972 / October 25, 1972

Department of Radiology
The University of Rochester
School of Medicine and Dentistry

Flagship Rochester Hotel
Rochester

Symposium

DIAGNOSTIC RADIOLOGIC FACILITIES AND OPERATIONS (A Meeting on Planning, Organization, and Efficient Operation)

Chairman: HARRY W. FISCHER, M.D.

Write: Dante DiLella, Executive Secretary, Symposium, The University of Rochester School of Medicine and Dentistry, Rochester, N.Y. 14642: Telephone: 716-275-2611.

WESTCHESTER COUNTY

October 10, 1972 / January 9, 1973

The Westchester Chapter of the American Association of Medical Assistants

Lawrence Hospital
Bronxville

Lecture Series on Pharmacology

October 10—Metric Conversions
November 14—Latin Abbreviations
December 12—Pharmacology
January 9—Drug Interaction

FEES: $2.50 Members
$6.00 Non-Members

Write: MRS. MARY KRIEGER, 74 Smith Avenue, White Plains, N.Y.

OTHER PLACES

NEW JERSEY

October 29 / November 1, 1972

Society for Advanced Medical Systems

Marriott Hotel
Saddle Brook, New Jersey

4th Annual Meeting

PROBLEM-DIRECTED AND MEDICAL INFORMATION SYSTEMS

Conference Chairman
CHARLES WELLER, M.D.

Program Chairman
WILLIAM C. FELCH, M.D.

Write for Program: Society for Advanced Medical Systems, Suite N-300, 3900 Wisconsin Avenue, N.W., Washington, D.C. 20016. Tel. (202) 244-3863.

PHILADELPHIA

SATURDAY, OCTOBER 28

The Philadelphia Hand Group and The Naval Hospital

Philadelphia, Pennsylvania

EIGHTH ANNUAL HAND SYMPOSIUM

Write for Program: R. L. WILSON, LCDR, MC, USNR, Chief, Hand Surgery Division, Naval Hospital, Philadelphia, Pennsylvania 19145.

PHYSICIANS' PLACEMENT

HILTON, N.Y., Monroe County, needs a Family Physician.

CONTACT: MAYOR DOUGLAS HURLBUTT,
Village of Hilton, N.Y. 14468. Tel. (716) 392-4144.

MARGARETVILLE, N.Y., Delaware County.
G.P. and Surgeon/Urologist.

CONTACT: MR. KOIT LILLEP, Adm.,
Margaretville Hospital, Margaretville, N.Y. 12455.

MEDINA, N.Y., Orleans County. Medical Director, Internists, Pediatricians, Family Medicine Specialists, and G.P. needed for developing group practice at community hospital site. Newly expanded 116 bed hospital servicing 37,000. N.Y. State license required.

CONTACT: MR. JOHN HAMILTON, Medina Memorial Hospital, 500 Ohio Street, Medina, N.Y. 14103. Tel. (716) 798-2000.

PORT JERVIS, N.Y., Orange County. G.P.'s to be associated with hospital.

CONTACT: DANIEL P. SCHULTZ, M.D., Doctors Sunnyside Hospital, 140-160 Hammond Street, Port Jervis, N.Y. 12771. Tel. (914) 856-5121.

POTSDAM, N.Y., St. Lawrence County. ENT and G.P.'s needed.

CONTACT: HENRY VINICOR, M.D., Chief of Staff, Potsdam Hospital, Potsdam, N.Y. 13676. Tel. (315) 353-2341.

WAVERLY, N.Y., Tioga County. G.P., Internist and Urologist.

CONTACT: Administrator, Tioga General Hospital, Waverly, N.Y. 14892. Tel. (607) 565-2861.

EVENTS RECEIVED AFTER DEADLINE

September 22 and 29, 1972

Institute of Cancer Research
Columbia University P & S
Francis Delafield Hospital
99 Fort Washington Avenue

September 22

The Role of Immunology in Carcinogenesis

RICHARD T. PREHN, M.D.
The Institute for Cancer Research
Philadelphia, Pa.

September 29

Translation and Purification of Mammalian Messenger RNAs

PHILIP LEDER, M.D.
National Institutes of Health

Supported by the American Cancer Society, NYC Division

October 13 / 15, 1972

The New York State Heart Assembly

The Department of Health, State of New York
The New Jersey Heart Assembly
The New Jersey Regional Medical Program
Sterling Forest Conference Center
Tuxedo

Postgraduate Course

EXERCISE TESTING AND TRAINING FOR THE PREVENTION AND TREATMENT OF CORONARY HEART DISEASE

FEE: $50

Write: LENORE R. ZOHMAN, M.D., Montefiore Hospital, 111 E. 210th Street, Bronx, N.Y. 10467.

French and Polyclinic Medical School and Health Center
345 West 50th Street

Fall Programs

November 13 / 17, 1972

9:00 a.m.–5:00 p.m., Monday–Friday

STAPES SURGERY

ALAN A. SCHEER, M.D.

November 18

1:00–6:00 p.m., Saturday

COURSE IN MEDICAL GENETICS

ERNEST LEIBER, M.D.

December 7 and 8, 1972

8:00 a.m.–3:00 p.m., Thursday and Friday

ENDOSCOPY IN GYNECOLOGY AND INFERTILITY

MAXWELL ROLAND, M.D.

December 10

9:00 a.m.–4:00 p.m., Sunday

MANAGEMENT OF TERMINAL CANCER

ALVIN M. GELB, M.D.
and Invited Lecturers

For further information on these courses, address The Dean, French and Polyclinic Medical School and Health Center, 345 West 50th Street, New York, N.Y. 10019.

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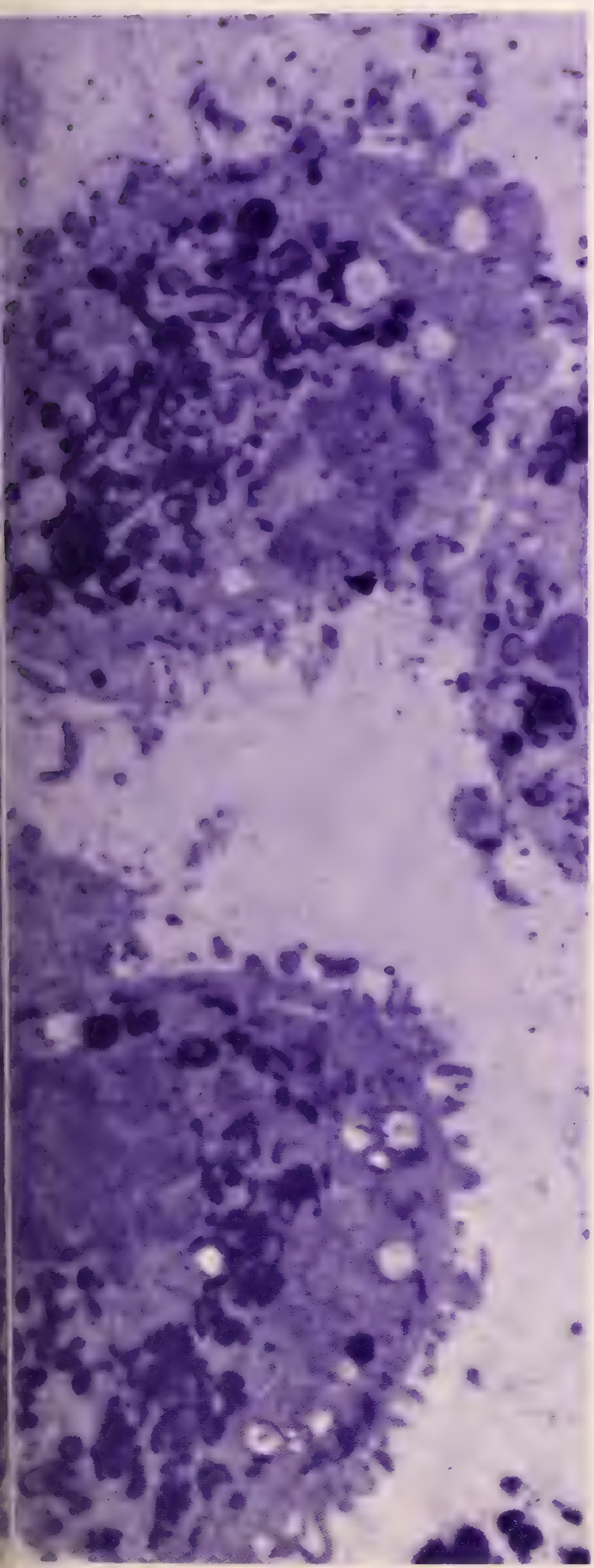

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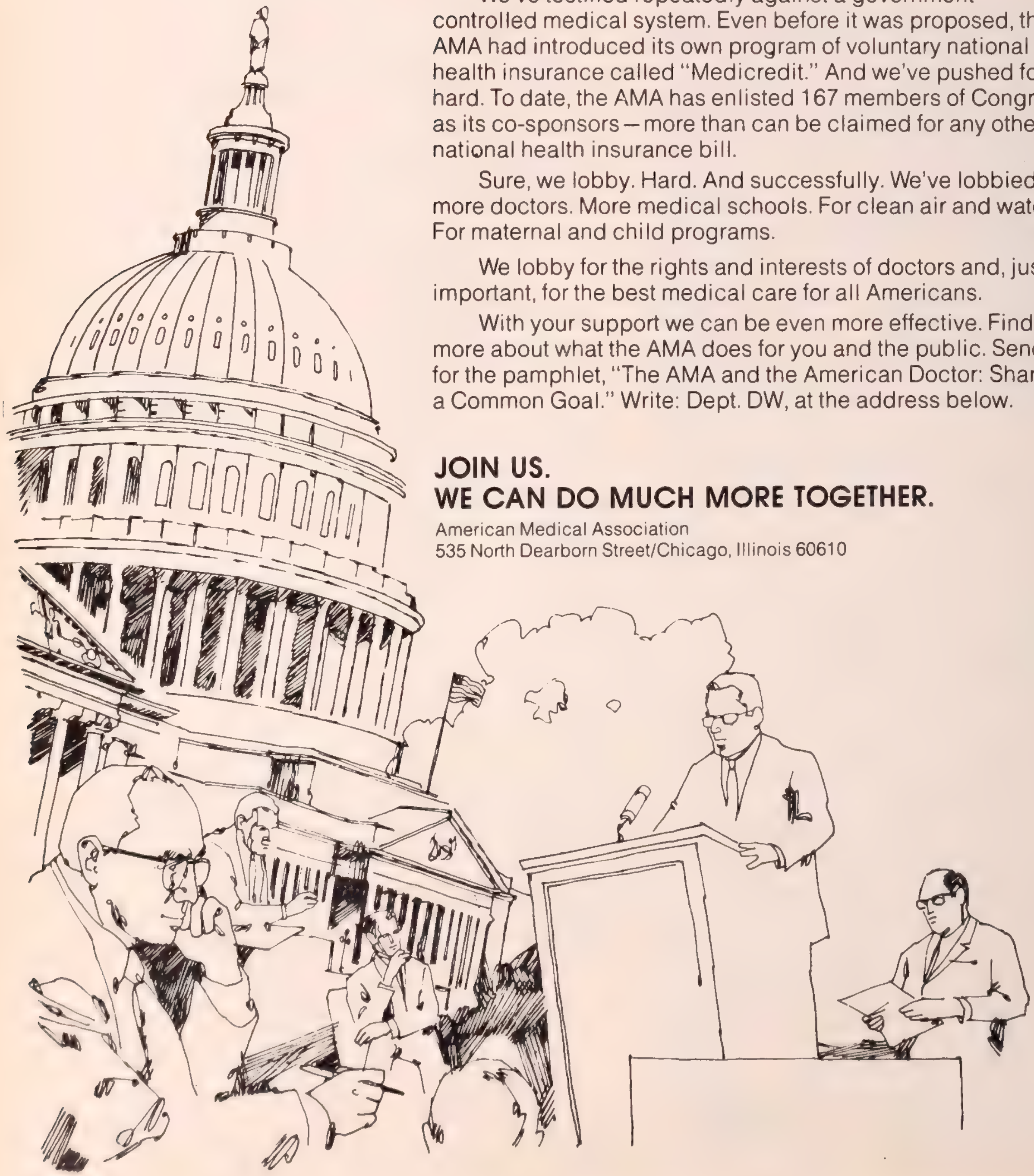
535 North Dearborn Street/Chicago, Illinois 60610



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New York State Journal of Medicine

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Drug Dependence: Tolerance and extreme psychological dependence have occurred. Patients have been known to increase the dosage of drugs of this type to many times the recommended dosage. Abrupt cessation following prolonged high dosage results in extreme fatigue, mental depression, and reversible changes in the sleep EEG. Manifestations of this chronic intoxication include severe dermatoses, marked insomnia, irritability, hyperactivity and personality changes. The most severe manifestation is psychosis, often clinically indistinguishable from schizophrenia.

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Medical Meetings

Nonmedical use of drugs

The American College of Physicians will sponsor a five-day postgraduate course on "The Non-Medical Use of Drugs: Challenge to the Physician," on October 2 through 6, 1972, at the Gateway Downtowner Hotel in Newark, New Jersey. The course will be conducted in conjunction with the College of Medicine and Dentistry of New Jersey. For information and registration, write to Edward C. Rosenow, Jr., M.D., Executive Vice President, American College of Physicians, 4200 Pine Street, Philadelphia, Pennsylvania 19104.

Emergency care

The American Academy of Orthopaedic Surgeons will sponsor a course on emergency care and transportation of the sick and injured on October 12 through 14, 1972, at Columbia-Presbyterian Medical Center, New York City. Ambulance attendants, volunteer rescue squad members, firemen, policemen, nurses, public health, civil defense, and other officials dealing with members of the public that are ill or hurt in accidents are invited to attend. Information and registration forms may be procured from Ann Thorsten, 161 Fort Washington Avenue, New York, New York 10032.

Pediatrics

The American Academy of Pediatrics will hold its forty-first annual meeting at the New York Hilton Hotel, New York City, on October 14 through 19. Papers to be presented include progress and problems of immunizations, school problems, atherosclerosis and its prevention, the drop-out, and new developments in pediatrics.

Heart disease

The New York Heart Association's seventh annual community health conference, entitled "Heart Disease in Community Health," will be held on October 25, 1972, in the Grand Ballroom of the Waldorf-Astoria Hotel in New York City. Admission will be free for members of the heart association and $5.00 for nonmembers. Additional information or a copy of the program may be obtained by calling the New York Heart Association, 212-838-8800.

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

Hormone disorders

The Wilson Research Foundation and the New York County Academy of Family Physicians are sponsoring a postgraduate course on "Diagnosis and Management of Male and Female Sex Hormone Disorders." The course will be held at the Holiday Inn, 440 West 57th Street, New York City, on October 8. The course is acceptable for eight hours of prescribed credit by the American Academy of Family Physicians, and the fee is $40. Information may be obtained from Mrs. C. Cynthia Soika, M.A., Projects Director, the Wilson Research Foundation, 777 Third Avenue, New York, New York, 10017.

Knee

A postgraduate medical course dealing with disorders of the knee will be offered by the division of orthopedic surgery at the College of Medicine and Dentistry of New Jersey—New Jersey Medical School, on November 17 and 18, at the Downtowner Hotel in Newark. The $100 fee will cover tuition, luncheons, coffee breaks, and a dinner on the evening of November 17.

Emergency care

The Third Annual Symposium for emergency department personnel will be held November 29 and 30, 1972, at the Cherry Hill Inn, Cherry Hill, New Jersey. The symposium is sponsored by the New Jersey chapter of the American College of Emergency Physicians and the New Jersey Trauma Committee of the American College of Surgeons. The registration fee is $40. Application blanks may be procured from Herbert H. Butler, M.D., Program Chairman, Underwood-Memorial Hospital, Woodbury, New Jersey 08096.

Forensic symposium

The Tenth Annual Symposium on Forensic Sciences, 1973, will be held on April 13 and 14, 1973. Information may be obtained from the Office of the Chief Medical Examiner, 520 First Avenue, New York, New York, 10016

Tuesday lectures

Maimonides Medical Center and the American Academy of General Practice announce the 1972–1973 Pediatric Postgraduate Program of Tuesday Lectures, at 10:00 A.M., at Maimonides Medical Center, 4802 Tenth Avenue, Brooklyn, New York 11219. The program runs from October 10, 1972, through May 8, 1973, and is approved for accreditation by the American Academy of General Practice for 25 elective hours.

> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
>
> *—George Sarton, from "The History of Medicine Versus the History of Art"*

Are combination drug products useful in treatment involving concomitant use of two or more drugs?

Opinion

Results of a questionnaire to 7,000 physicians:

62.9%
Believe combination drug products are useful.

13.8%
Do not believe combination drug products are useful.

useful in treatment involvin
concomitant use of two or more drugs

Opinion & Dialogue Dialogu

Doctor of Medicine

Louis Lasagna, M.D.
Professor and Chairman
Department of
Pharmacology & Toxicology
University of Rochester
School of Medicine
and Dentistry

Obviously, many drugs are given concomitantly. Whether it makes sense to combine medications in one preparation, be it capsule, tablet, or liquid, is a question that can be answered only by examining the advantages and disadvantages in the individual case.

Among the advantages is, first of all, convenience. The more medications that are taken concurrently and the more complicated the directions, the less likely the patient is to take medications accurately. From the standpoint of convenience and accuracy, and economy as well, you can make an important case for putting medications together in one preparation, as long as they are compatible.

By the same token, when you prescribe a properly tested and rational combination, you should have less worry about pharmaceutical or pharmacological compatibility – and about reasonable dosage ratios as well. Compatibility of the formulation should be demonstrated in the laboratory and clinic before the product is available for prescription—which is more than can usually be said for the physician's own spontaneous creations. And, the dosage ratios employed in rational precompounded combinations are designed to meet the needs of substantial numbers of "typical" patients.

There is no doubt that many "atypical" patients are to be found, and for them the prefabricated combination must be rejected. But that hardly argues for eliminating rational combinations from the market. Think, for example, of the problems that would arise if the components of widely accepted combinations, like the oral contraceptives and the diuretic-antihypertensives, always had to be prescribed, purchased and ingested separately.

One disadvantage that comes to mind is some doctors' unawareness of the ingredients a given combination contains. For example, a doctor might know that a patient is allergic to aspirin but forget that a certain analgesic mixture, which he knows only by its trade name, contains aspirin. His prescription, then, causes considerable discomfort, to say the least. This problem is a function of physician education, rather than of combination therapy as such. Improving doctors' knowledge about all medicaments they prescribe is a problem that deserves tackling on its own.

Another accusation leveled at combination drugs is that they encourage sloppiness of diagnosis and treatment. In many cases, however, a combination may prove to be the most effective choice. A good example of the usefulness of combinations appears in a recent article in the *Journal of Chronic Diseases* on the efficacy and side effects of an antihypertensive containing three ingredients, in which the track records of the combination drug and the individual ingredients were compared. Interestingly enough, whether the drugs were given individually or together, incidence and severity of side effects were the same. But blood pressure control was invariably better when the drugs were taken in one combination tablet than when they were taken separately (in "titratable" dosage) or in two or three different tablets.

Deciding which combinations constitute rational therapy obviously leads to a discussion of who is to determine which should be used and which should not. Realistically, I think combinations should be evaluated somewhat differently if they are old and established or new and untried.

In today's regulatory atmosphere, there is no possibility of a new combination being put on the market without a substantial amount of acceptable evidence in the form of controlled trials that show it to be safe and efficacious. On the other hand, I believe a different set of standards should apply to combination preparations that have been around for a long time. In other words, physician acceptance over a long period should be given some weight as evidence of the efficacy and safety of these drugs.

The FDA, however, does not seem to share this attitude. It often requires, for these older products, controlled trials that will monopolize the time of already overtired investigators and cost a greal d of money. I wish we co agree on a "grandfat clause" approach to pre rations that have been in for a number of years that have an apparer satisfactory track recor

For example, I th some of the antibiotic c binations that were ta off the market by the F performed quite well. I thinking particularly penicillin - streptomy combinations that pati —especially surgical tients—were given in injection. This made less discomfort for the tient, less demand nurses' time, and fe opportunities for dos errors. To take su preparation off the ma doesn't seem to be medicine, unless actual age showed a great de harm from the inject (rather than the pr use) of the combinatio

The point that shoul emphasized is that t are both rational and tional combinations. real question is, who sh determine which is wh Obviously, the FDA play a major role in ing this determinatio fact, I don't think it avoid taking the ulti responsibility, but it sh enlist the help of ou physicians and exper assessing the evidence in making the ultimat cision.

Maker of Medicine

V. Clarke Wescoe, M.D.
President
Winthrop Laboratories

f two medications are
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ake antibiotic mixtures,
source of much of the
cism generated against combinations generally. Obviously, no one should be exposed willy-nilly to the potential side effects of two or three antibiotics when only one is needed. At the same time there are cases where it is prudent to prescribe more than one. The clinician is the judge in these circumstances, as he should be.

There is no clear definition of the word rational. Most persons, I suppose, would find it synonymous with reasonable, but in many circumstances it may best be defined as the opinion of those in power at the moment.

Other factors govern combination therapy, not the least of which has been its broad use by practicing physicians anxious to achieve convenience in prescribing, to reduce medication error, and to save money for their patients. Combinations clearly have met the test on all three counts.

I have been impressed by studies showing that the rate of error climbs markedly with the number of medications to be taken, even with sophisticated patients. When medically justified, therefore, this factor alone supports the logic of combination therapy.

The cost argument for combinations appears to be irrefutable. In 1971, R. A. Gosselin studied the 71 combination products (excluding oral contraceptives) among the 200 most prescribed drugs. The study found that if all 71 products were discontinued, and if each ingredient in these combinations were prescribed separately, the price of medicines to patients would jump by $443.2 million on a national basis! At a time when the cost of medical care is under so much fire, it would be nonsensical to boost costs without clearly irrefutable medical reasons.

The part played by government on this question, of course, is fundamental. The FDA should play a role in determining which combinations are reasonable. That role, as defined by law and regulation, is to ensure that any medication on the market is safe and effective in line with its label claims. Certainly combinations are entitled to as much consideration as single entities—neither more nor less. So long as the addition of one drug to another does not make either less safe, or less effective, so long as they are compatible in a formulation, we have a reasonable product. It makes no sense to recommend the use of two products for certain conditions and to deny their being combined in a single form. An unhappy side effect of the problem concerns the efficacy panel discussions of many products submitted for review. The term "effective, but" has been freely interpreted to mean "ineffective" in toto, regardless of the merit of the individual drugs. This interpretation has placed numerous useful combination products in needless jeopardy.

In reading the actual reports of the review panels, it seems clear that some of the ratings were based less on scientific research and clinical observation than on the "informed" opinions of the panelists. These "informed" opinions were accepted at face value, while the "informed" opinions of others who had used the products were rejected. All of this put combination products into a sort of scientific never-never land.

It should be kept in mind by all, government as well as others involved in our health care system, that advances in therapy are seldom made in leaps and bounds but rather by small painstaking steps—and that some of these steps have resulted from research in combination drugs as well as with single entities. Given the near-infinite biologic variation in patient response, this is hardly surprising to clinicians. It should not be to regulatory agencies either.

In the end, the practicing physician is in the best position to decide if a particular combination makes sense. Such a decision should not be made exclusively by those whose responsibility for continuing clinical care is limited. Clinicians are the best judges of efficacy because the ultimate proof of any product's effectiveness is acceptance by physicians who have observed its actions in patients over time. The corollary statement may be made about over-the-counter medicines, which would not long survive if they failed to afford the relief the user anticipates. That the antihistamine in a "cold" remedy may not *always* be necessary is no reason to proscribe the combination generally.

Opinion & Dialogue

What is your opinion, doctor?
We would welcome your comments.

PMA

The Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W., Washington, D.C. 20005

Abstracts

Ger, R.: Hyperbilirubinemia due to intraperitoneal sepsis, ***New York State J. Med.*** **72:** 2407 (Oct. 1) 1972.

Jaundice can be misleading since it may be misinterpreted as a sign of hepatic or biliary tract disease and divert attention from underlying infection. Sepsis can cause hyperbilirubinemia. Hence, the relationship of intra-abdominal sepsis and jaundice was investigated in 117 patients. An explanation is offered as to the mechanism of the production of jaundice, and the cause of jaundice is thought to be due to bacteria with Escherichia coli as the predominant organism. In the event of high bilirubin levels postoperatively, especially when colon surgery is involved, the possibility of an anastomotic leak is suggested, and a timely diversion of a potentially diastrous leak may be lifesaving.

Linke, C. A., Frank, I. N., Young, L. W., and Cockett, A. T. K.: Renal trauma in children; diagnostic work-up and management, ***New York State J. Med.*** **72:** 2414 (Oct. 1) 1972.

The case histories of 37 cases of kidney trauma in children under sixteen are reviewed. Renal injury must be suspected in a child sustaining blunt trauma to the abdomen. The child should be examined by intravenous pyelography and by infusion pyelography if necessary. Nephrotomography, renal scan, renal arteriography, and retrograde pyelography may also be used to accurately evaluate the kidneys. Unless massive bleeding occurs, initial treatment should be conservative. If the urinary system is intact, retroperitoneal exploration can often be avoided even when retroperitoneal hematoma is noted. Clinical and laboratory studies should be repeated as indicated to observe further course of the injury. Some patients may require delayed surgical intervention and/or hemodialysis to deal with changes in their clinical course and to maintain maximal renal function.

Sharma, K. C., Gaeta, J. F., Bross, I. J., Moore, R. H., and Murphy, G. P.: Testicular tumors; histologic and epidemiologic assessment, ***New York State J. Med.*** **72:** 2421 (Oct. 1) 1972.

This study was undertaken to evaluate survival relations between patients with seminoma and nonseminoma tumors and is based on a review of 194 histologically proved cases of testicular tumors during a ten-year period. Eighty of the 194 tumors were seminoma and 114 were nonseminoma. The five-year survival rate for patients with seminoma was 80 per cent compared with 35 per cent for nonseminoma cases. A lower incidence of metastases was found in the seminoma cases, and the incidence of seminoma was significantly higher in rural than urban areas. It is suggested that there could be a carcinogenic factor in rural environment which merits further investigation.

Britell, J. C., Olson, K. B., Horton, J., and Baxter, D.: Wilms' tumor; effect of chemotherapy on survival, ***New York State J. Med.*** **72:** 2426 (Oct. 1) 1972.

Twenty-five patients with a diagnosis of Wilms' tumor were seen at the Albany Medical Center Hospital between August, 1954, and January, 1970. They were studied with regard to their symptoms, age, sex, type of treatment, and survival rate. The patient population was similar with respect to sex incidence but was older and had more extensive disease than other reported populations. A significant improvement in the two-year survival rate of patients treated in 1963 and thereafter was noted (46 per cent) when compared with patients treated prior to 1963 (8.5 per cent). This difference probably is due to an improved chemotherapy regimen.

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Abstracts in Interlingua

Ger, R.: Hyperbilirubinemia debite a sepsis intraperitoneal, ***New York State J. Med.*** 72: 2407 (1 de Octobre) 1972.

Le icteritia pote guider erroneamente al diagnose proque pote esser interpretate mal como un signo de morbo hepatic o del vias biliari, e asi separar le attention pro le diagnose de un infection subjacente. Como le sepsis pote causar hyperbilirubinemia, le relation inter le sepsis intraabdominal e le icteritia esseva investigate in 117 patientes. Es offerite un explication del mechanismo de production del icteritia cuja causa pote esser bacterial, con le Escherichia coli como le microorganismo predominante. In casos de hyperbilirubinemia postoperatori, specialmente in le chirurgia del colon, debe pensar se in un escurrimento anastomotic, e un desviation a tempore de un escurrimento potentialmente desastrose pote salvar le vita.

Linke, C. A., Frank, I. N., Young, L. W., e Cockett, A. T. K.: Trauma renal in pueros; diagnose e tractamento, ***New York State J. Med.*** 72: 2414 (1 de Octobre) 1972.

Trenta-septe (37) casos de trauma renal in pueros infra 16 annos de etate esseva revidite. Un lesion renal debe esser suspectate in le pueros con contusion del abdomen. Le puero debe esser examinate con pyelographia intravenose. Le nephrotomographia, le examination radioactive ("scan") del renes, le arteriographia renal e le pyelographia retrograde etiam pote esser usate pro un evalutation precise del renes. A minus que occurra un hemorrhagia massive, le tractamento initial debe esser conservative. Si le systema urinari es intacto, le exploration retroperitoneal pote, frequentemente, esser evitate mesmo in caso de haber un hematoma retroperitoneal. Le examinationes clinic e de laboratorio es indicate pro observar le evolution del lesion. Alicun patientes pote requirer un operation chirurgic tardive e/o hemodialysis in caso de cambios del curso clinic pro mantener un function renal maxima.

Sharma, K. C., Gaeta, J. F., Bross, I. J., Moore, R. H., e Murphy, G. P.: Tumores testicular; evalutation histologic e epidemiologic, ***New York State J. Med.*** 72: 2421 (1 de Octobre) 1972.

Iste studio esseva facite pro evalutar le relation de superviventia inter le patientes con seminoma e altere con tumores mais non seminoma. Le studio esseva basate in un revista de 194 casos de tumores testicular confirmate histologicmente durante un periodo de 10 annos. Octanta (80) del 194 tumores esseva seminomas, le altere 114 non esseva seminomas. Le superviventia de 5 annos in le patientes con seminoma esseva de 80 pro cento, comparate con 35 pro cento in le patientes sin seminomas. Un frequentia plus basse de metastases esseva trovate in le casos de seminomas; le frequentia del seminoma esseva significativemente plus elevate in le areas rural que in le urbanas. Es suggerite que existe un factor carcinogenetic in le ambiente rural que require plus investigation.

Brittell, J. C., Olson, K. B., Horton, J., e Baxter, D.: Tumor de Wilms; effecto del chimiotherapia supra le superviventia, ***New York State J. Med.*** 72: 2426 (1 de Octobre) 1972.

Vinte-cinque (25) patientes con tumor de Wilms esseva observate in le Hospital del Centro Medic Albany inter Augusto de 1954 e Januario de 1970. Le symptomas, etate, sexo, typo de tractamento e superviventia esseva studiate. Le proportion del sexo esseva similar, mais le etate esseva major e le morbo plus extense in iste que in altere patientes. Esseva observate un melioramentó significative del superviventia de duo annos in le patientes tractate in 1963 e le annos sequente (46 pro cento), comparate con le tractate ante de 1963 (8.5 por cento). Iste differentia es probabilemente debite a un melior chimiotherapia.

To tell you the truth, I've lost the urge.

Lack of exercise, insufficient fluid intake, diet deficient in bulk, and certain medications can all contribute to constipation in the aging. Gradually the normal defecation "urge" is lost. And help is needed to restore the normal bowel function.

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Warning: Frequent or prolonged use of enemas may result in dependence. Take only when needed or when prescribed by a physician. Do not use when nausea, vomiting, or abdominal pain is present. **Caution:** Do not administer to children under two years of age unless directed by a physician.

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Medical News

Seizure control

Epileptic seizures can be controlled as well when patients receive a single, daily dose of diphenylhydantoin as when they receive the same amount of medicine divided into three or more separate doses, T. C. Smith, M.D., Director of Clinical Pharmacology of Parke, Davis & Company announced at the recent Fifth International Congress on Pharmacology in San Francisco. There are apparently no unwanted side effects from the single dose.

Tax reminder

Persons who suffered damage to either business or personal property as a result of the recent floods are reminded that they may deduct losses according to established rules. Further information is available from presidents, secretaries, and executive secretaries of the county medical societies.

Support for education

The Pharmaceutical Manufacturers Association Foundation has shifted its emphasis to support of education rather than research projects. This is exemplified by the foundation's new goal of moving toward an 80 per cent education–20 per cent research ratio of support.

Hepatitis serum

Two recent actions by the Food and Drug Administration's Bureau of Biologics are expected to result in a significant decrease in the incidence of post-transfusion hepatitis, a disease that causes 1,500 to 3,000 deaths annually in this country. The first action is a requirement that all federally licensed blood banks must test each donor for the presence in his blood of the hepatitis antigen; the second is FDA licensure of a new hepatitis test procedure far more effective than the tests now available.

Cassette program on pediatric practice efficiency

The American Academy of Pediatrics and Health Learning Systems of West Orange, New Jersey, will develop an audio cassette educational program on pediatric practice efficiency. The series will be developed in two parts, each containing six segments. Each series will be available complete with learning text enabling the individual physician to analyze his specific practice problems. The program will be developed under the supervision of an Academy advisory panel consisting of six AAP fellows.

Material for inclusion in the Medical News section must be received six weeks prior to publication date.

Alcoholism

The National Council of Alcoholism, Inc., held a news conference to announce medical criteria for the diagnosis of alcoholism on August 1, 1972. The criteria, the first ever to be formulated, were published jointly by the *American Journal of Psychiatry* and the *Annals of Internal Medicine* on August 1, 1972. The National Council on Alcoholism, Inc., is the only national voluntary health agency founded to combat the disease of alcoholism. The council's four major areas of activity are its medical, labor-management, public information, and community service programs.

Health services research training program

The Institution for Social and Policy Studies of Yale University, in cooperation with the departments of administrative sciences, sociology, and epidemiology and public health, recently began a training program in health services research. The program includes doctoral, postdoctoral, and special programs. Further information and application forms are available from Prof. Donald C. Riedel, Director, Health Services Research Program, Institution for Social and Policy Studies, Yale University, 77 Prospect Street, New Haven, Connecticut 06520.

NASA technology and respiratory medicine

Diagnosis and therapy in the field of respiratory medicine has received a major assist with the marketing of a compact, fully automatic, mobile, medical gas analyzer. The analyzer measures the composition of air breathed in and out from the lungs as an aid in monitoring pulmonary and cardiovascular activity in patients. Oxygen, carbon dioxide, nitrogen, and additional selected gases are measured by the device simultaneously and on a breath-to-breath basis. The gas analyzer was developed using technology first developed under contract to the National Aeronautics and Space Administration.

Vasectomy

Vasectomies for men who choose to end their childsiring ability are now being performed at two Planned Parenthood of New York City centers. The centers are at 380 Second Avenue, New York, New York, and at the Boro Hall Center, 44 Court Street, Brooklyn. The fee for the entire procedure is based on ability to pay and ranges up to a maximum of $150. Some private health insurance plans partially cover the cost.

Doctors´ fees and the price guidelines

Physicians' fees increased 1.37 per cent during the first nine months of the economic stabilization program, while the overall consumer price index rose 2.05 per cent during the same period, as disclosed by a recent AMA study. The physician's fee index is a component of the all-services index of the consumers' price index. The all-services index rose 2.16 per cent from September, 1971 through May, 1972, compared with 3.03 per cent for the previous nine months. During the same period, the semiprivate hospital room index increased by 3.84 per cent, compared with 6.62 for the previous eight months.

continued on page 2396

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continued from page 2395

Aspirin packaging

Under the Poison Prevention Packaging Act of 1970, the Food and Drug Administration requires that aspirin or aspirin-containing products packaged after August 15 must be sold to the consumer in a container with a safety closure. Beginning October 24, this requirement will be extended to include the packaging of products subject to control under the Controlled Substances Act; at a later date it also will include all oral prescription products and certain over-the-counter products. Elderly or handicapped adults may have difficulty in opening a container with a safety closure. In such cases, physicians or purchasers may request that the product be dispensed in a container without a child-resistant closure.

Upstate addition

Plans for a ten-story addition to the basic Science Building of the State University of New York Upstate Medical Center, designed to accommodate an increase in enrollment at the Medical College were announced recently by Lewis W. Bluemle, Jr., M.D., president of the Medical Center. The entering class at the medical school will be increased by 10 this fall, making the total freshman enrollment 120.

Passivity and intelligence

Contrary to what proud parents have long believed, the most responsive, vigorous newborns are not necessarily the ones who develop into the most intelligent and active children. The National Institute of Mental Health has recently announced that babies who are more passive during the first few days of life are the ones who are more apt to mature into intelligent, responsive youngsters.

Dangers of cooking fires

Hollis S. Ingraham, M.D., State health commissioner, warned recently that careless fueling of cooking fires can result in painful and sometimes fatal injuries. When using an electrical starting device, unplug it as soon as the charcoal has kindled and place it on a nonflammable surface, out of reach of children. Once charcoal has been lighted, don't squirt more starting fluid on it. Gray ash on charcoal may hide a glowing coal which could ignite the compound as it is applied. Flame may travel up the stream of fluid into the container, causing it to explode.

Statement on acupuncture

The New York State Board for Medicine has adopted the following position on acupuncture:

> Acupuncture is not an accepted medical procedure in the State of New York at the present time. The New York State Board for Medicine regards acupuncture involving the human body as an experimental procedure which falls within the practice of medicine, and hence, can be performed lawfully in New York State only by or under the direct supervision of a physician licensed in this state, and in an institution appropriate for human research.
>
> The Board recognizes the need for, and desires to encourage, further research in the techniques, mechanisms of action, and uses of acupuncture. However, because acupuncture is considered at this time strictly as an investigational procedure, it should be performed only in medical centers and teaching hospitals having committees on human research, which will provide the necessary peer review of protocols and appropriate monitoring of such studies.

In commenting on the Board's statement, its chairman, John H. Morton, M.D., a Rochester surgeon, added, "The State Board believes that research investigation of acupuncture is most important, and the Board is confident that scientific studies will be pursued promptly in the State of New York and elsewhere in the nation."

Orchestras

Physicians, dentists, and members of allied professions, families, and friends are invited to join two orchestras. The Brooklyn Doctors Symphony rehearses Wednesday evenings in the Nurse's Auditorium, Clarkson and New York Avenues, Kings County Hospital Center, Brooklyn, New York. The Doctors' Orchestral Society of New York meets Thursday evenings in the Auditorium of Stuyvesant High School, East 15th Street between First and Second Avenues, New York. Rehearsals are held 8:15 to 10:15 P.M. during October through May. Please contact Benjamin A. Rosenberg, M.D., 909 President Street, Brooklyn, New York. Telephone: 212-NE8-2370.

Cold remedies

The Food and Drug Administration recently published results of effectiveness studies of 27 cold remedies sold without prescription for self treatment. The drug studies by the National Academy of Sciences-National Research Council were licensed originally on the basis of safety alone, and are part of the over-the-counter drug review program. The entire program is expected to take approximately three years to complete, but the standard for each class of drugs will be implemented as it is established. Evaluations on the various over-the-counter products are available from the Food and Drug Administration press office, 200 C Street, S.W., Washington, D.C.

Personalities

Elected. John Romano, M.D., distinguished university professor and former chairman of the Department of Psychiatry at the University of Rochester Medical Center, has been elected an honorary fellow of the Royal College of Psychiatrists.

Awards. Vincent J. Capraro, clinical professor of gynecology-obstetrics at the State University at Buffalo's School of Medicine, has been awarded the Diploma of Honor by the International Federation of Infantile and Juvenile Gynecology. A. W. Martin Marino, Sr., was given the Frank L. Babbott Award, presented to an outstanding alumni by the Alumni Association, State University of New York, Downstate Medical Center, and also received the President's Plaque of the New York Society of Colon and Rectal Surgeons recently. Richard E. Rosenfield, of New York City, an authority on rare blood types, will receive the 1972 Karl Landsteiner Memorial Award of the American Association of Blood Banks.

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***Indications:** Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. Also, mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently** — both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

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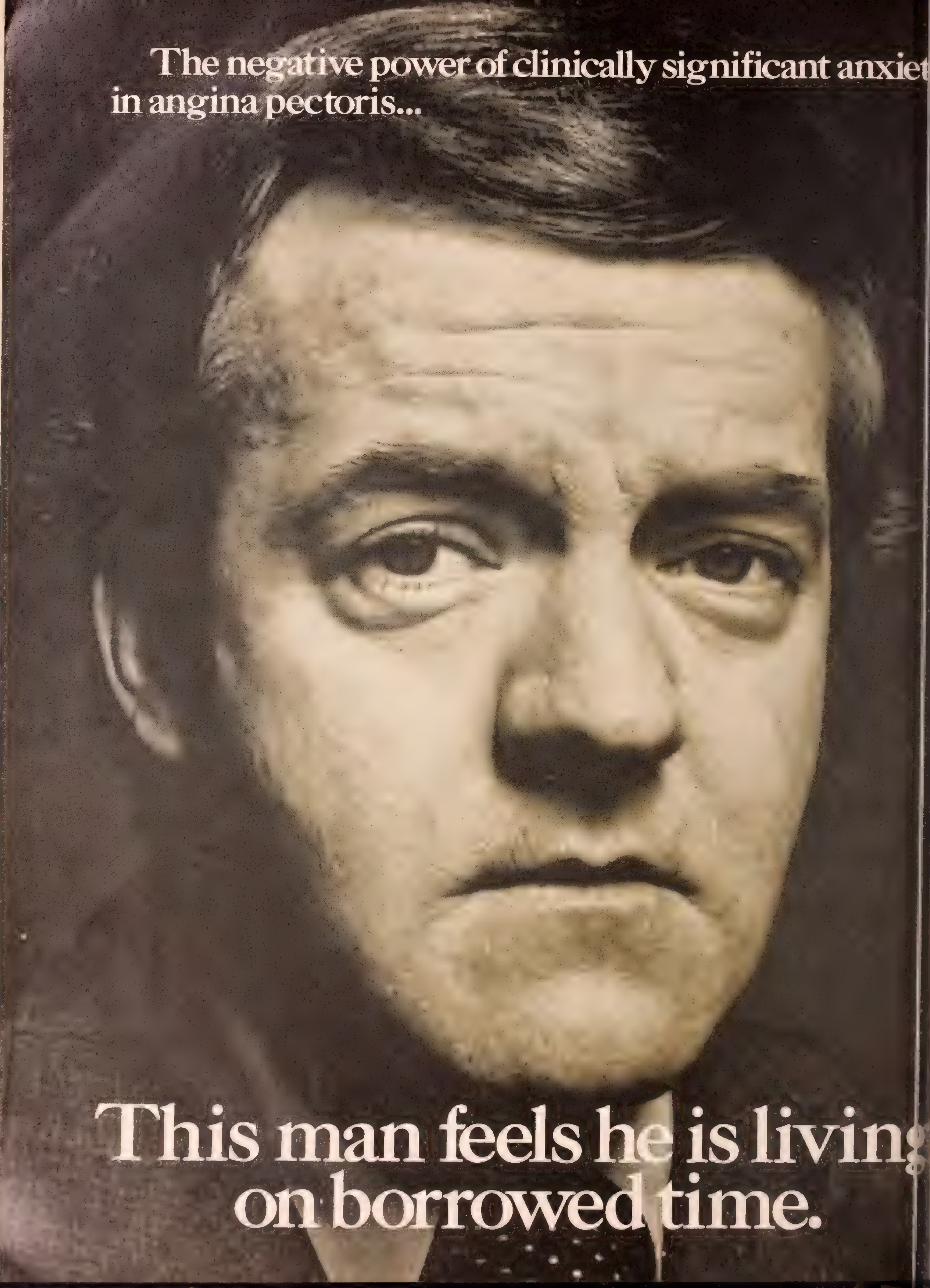
The negative power of clinically significant anxiet
in angina pectoris...
This man feels he is livin
on borrowed time.

During anginal attacks, patients may suffer intense apprehension. More frequently, however, they experience a continuing sense of less severe but nonetheless disproportionate anxiety.

Reduction of such clinically significant anxiety is important, since undue emotional stress may precipitate further anginal episodes.

Adjunctive Librium (chlordiazepoxide HCl) may be
especially suitable for relief of clinically significant
anxiety and emotional tension in anginal patients
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nginal patients seen in office practice over a 20-week
eriod. Symptoms of emotional distress related to
nxiety were rated at base-line, one week, two weeks
nd monthly thereafter. Relief was obtained notably
arly in therapy. The clinical results demonstrated that
ibrium offers the coronary patient an antianxiety drug
hat, in the author's opinion, is both effective and safe.
n general use, the most common side effects reported
ave been drowsiness, ataxia and confusion,
articularly in the elderly and debilitated. (See
mmary of prescribing information.)
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*Levine, S.: "Angina Pectoris and Emotional Overlay," Scientific Exhibit presented at the Annual Meeting of the Maine Medical Association, Kennebunkport, Me., June 13-15, 1971.

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Editorials

Continuing education

Knowledge is a physician's stock-in-trade; it is imperative for that knowledge to be up-to-date. With the rapid progress occurring in medicine, and the changes in the conduct of medical practice, keeping up-to-date can be difficult indeed. This is particularly true for the physician whose practice steadily demands so much of his time that he is left with precious little leisure to keep abreast. It takes a concerted effort just to stand still; it is too easy to fall behind. To avoid that frustration and the uneasy pressures that follow therefrom, every physician must stop, take stock, and make provisions for active programming of his efforts to keep pace with the kaleidoscopic progress being made in every field.

In this issue we have selected, from a compiled listing in the August 14, 1972, issue of *J.A.M.A.*, continuing education courses for physicians available throughout the next full year, arranged by specialties, topics, and geographic location in New York State. It is hoped that this itemized listing of appropriate material for the readers of the ***New York State Journal of Medicine*** will permit them to program far enough in advance so that they can arrange for appropriate coverage and then enjoy the change of pace, the new atmosphere, and the stimulation of learning, free of concern for patients during that interval.

Needless to say, such formal course work fulfills set demands for continuing education and also offers great advantages for the physician both physically and psychologically. The average physician has responsibilities and tensions which require relief and that can come with satisfying learning experiences. There is a practical aspect too: avoiding malpractice suits, justified and unjustified, can depend on the physician's keeping up-to-date, so that his patients can obtain the full benefits of all progress in medicine. Evidence of having kept up-to-date, too, is the best defense.

In the section "What Goes On" reference is made to such course opportunities approximately a month before the starting dates.

May we remind the Deans of Medical Schools and the Hospital Administrators of the desirability for having all material on continuing education forwarded as early as possible to be included in "What Goes On."

What type of being should the physician be?

First, the patient wants a physician who will be there when he wants him. What good is the best of physicians if he is not there when panic strikes? "I need a doctor; he need not be the most outstanding physician. If only he will do no harm, then maybe 'nature' will take care of me and get me well on my own." This really implies that the doctor will be on call day and night, seven days a week throughout the year. "Why should the doctor take a vacation while I am sick? If he is my caretaker then let him take care of me!"

Above all, the patient wants the physician who has *time* to listen and to answer questions as well; he wants him to look and diagnose pronto and to cure forthwith! At least he should give comfort when the cure is not at hand. Of course all want their physicians always to make the exact diagnoses. On this score it is only fair to note that many patients are quite impatient with the numerous tests required, for "always there are more tests and more consultations." With the "instant diagnosis," the patient would like to have "instant cure."

It must be stated specifically that the sick want the physician who never errs at all—for if he makes an error, or an unforeseen complication ensues which follows naturally from the disease itself, or from the therapy which is necessary—then soon enough the law takes over! There are plenty of lawyers all too ready and willing to sue, and who often prompt the patient to initiate an action. Now of course all patients want their physicians to be the best trained, the most experienced, and the best qualified! When health is concerned and life is at stake, the best is none too good!

The good physician, too, sets forth certain minimum prerequisites that he would desire in the patient. It would be nice to have the patient give a concise and intelligent history, not embellished with narratives and extraneous matter. The doctor yearns for the patient who will follow instructions accurately and carefully and avoid his own personal variations or the suggested alterations, additions, subtractions, as suggested by friends or relatives. That would help all concerned. It would be helpful to have a patient with that much faith in his physician, so that he did not go shopping around for other opinions without the full knowledge, if not the specific consent, of his doctor. It would be appropriate if the patient would pay his bills without undue delay, or at least would acknowledge this obligation by some kind of arrangement satisfactory to both him and the physician.

Now, too, the students in medical schools want to become "instant" physicians. The student now demands, that the medical school quickly transform him into a good physician, who will be an excellent general practitioner, and simultaneously a capable specialist, qualified in all specialties. Of course many students and some faculty members want an "open admission" policy so that anybody who applies will be admitted, without all this troublesome interview system and all those preparatory evaluating examinations. In fact the majority of students prefer that there be no examinations ever, of any kind for admission, nor any examinations after admission. The metamorphosis of the student to doctor must take place rapidly, like the tadpole to the frog. If only the transformation could take place instantaneously on admission into medical school and at that moment the student be fully ordained a physician!

The modern era also demands that the student judge the teachers and that the teacher not sit in judgment of the student. There must be no failures nor dropouts from medical college. At worst the student may be permitted to take longer to graduate, in fact as long as he needs! For those with all expenses paid, this is no great hardship. Invariably he should obtain his degree and be certified as a qualified physician.

Above all we want our teachers and our medical schools to worship Relevance, and give us no information that is not pragmatic, completely applicable; that is, relevant. Thus therapy is most relevant and thus supercedes diagnosis. Obviously therapy helps the patient and thus becomes all important. Why can't we omit this whole business of diagnosis and just give therapy as indicated? Thus, why can't we give penicillin or some other broad spectrum antibiotic for the symptoms such as the fever, the chill, etc? The teacher who tries to and successfully transmits irrelevant information deserves proper punishment. Finally, the students stance is specific. The student wants the teacher to "learn him" with little or no effort on his own part; as he puts it, he wants to be taught properly! Using every gimmick to make the learning process self-absorbing, students want their teaching to be like infant feeding, "on demand." The teacher must be subject to the students directions! As one student put it, "Teach me, I dare you."

Parse these sentences and match the corresponding phrases, as above presented by the patients, the physician, the medical student, and some faculty members, and add to that the government and social agencies and you come up with a unique physician. Of course, the physician must be kind, considerate, compassionate, and generous. He must be earnest to a fault, and honest in word and deed, indeed a Saint.

He must have great patience and understanding and always allow for the many human foibles and frailties.

With no specific training in the direction of human behavior he must be a qualified psychiatrist intuitively. Pragmatic and practical psychiatry will constitute at least 80 per cent of his practice. It is the equivalent of the old fashioned doctor's maturity and wholesome effective bedside manner. Really more than that is required now. His bedside psychiatry must be both basic and scientific, in addition to being rapid and wise, again "instant" psychiatry, even though he is not a fully qualified psychiatrist.

The sad part of all this is that the conscientious doctor may well find that after all the years of careful training in metabolic diseases and learning his general internal medicine he is called on to give specific advice to the young married woman with several children of the following nature: "When you get up in the morning, the first thing you do is make your beds; that gives you a sense of order, and gives the household an orderly pattern right off. That done you can now attack the next task in your chores of the day, with some sense of security. Having achieved something, a sense of satisfaction replaces that depressing sense of overwhelming hopeless frustration when the whole series of tasks confront one simultaneously. Then you are ready for the next chore."

The patient wants his doctor to be pediatrician, surgeon, gynecologist, and all other specialists rolled into one, as well as the family practitioner and family physician ready to give advice on all subjects, mental, social, and moral too, including such questions as medical school admissions, and also how to prevent experimentation with drugs.

The patient wants his doctor to take care of him till old age, and then soften the blow of death, even though he smokes, drinks, and eats all he wants all day long. "If I abuse my body, it is the duty of the doctor to undo the harm and make me sound and healthy. He is my doctor and that is his duty, no matter what crimes I personally commit against my body." This kind of patient always resents the expense as well as the loss of time inherent in getting necessary multiple opinions.

From the above it can be seen that the desired physician is an impossible human being. Perfection incarnate is quite unreal and impossible in this sad very imperfect world. The trouble is that such a doctor exists only in Heaven! But in heaven there is no illness; so there is no place for him there either. In expecting and asking for the impossible, we often get less than we are due, as well as much less than we expect.

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The Medical Society of the State of New York announces the opening of competition for the 1973 ALBION O. BERNSTEIN, M.D. AWARD.

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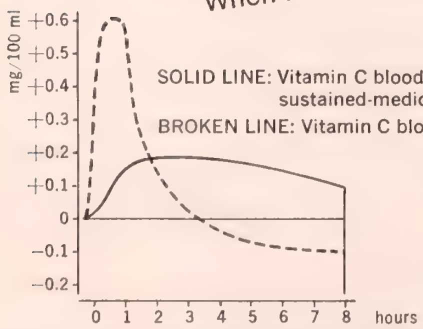

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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Hyperbilirubinemia Due to Intraperitoneal Sepsis

Jaundice can be misleading since it may be misinterpreted as a sign of hepatic or biliary tract disease and divert attention from underlying infection. Sepsis can cause hyperbilirubinemia. Hence, the relationship of intra-abdominal sepsis and jaundice was investigated in 117 patients. An explanation is offered as to the mechanism of the production of jaundice, and the cause of jaundice is thought to be due to bacteria with Escherichia coli as the predominant organism. In the event of high bilirubin levels postoperatively, especially when colon surgery is involved, the possibility of an anastomatic leak is suggested, and a timely diversion of a potentially diastrous leak may be lifesaving.

RALPH GER, M.D.
The Bronx, New York

From the Department of Surgery, Albert Einstein College of Medicine

"**Many systemic infections** produce structural and functional changes in the liver, which occasionally are accompanied by jaundice. Fortunately, these are seldom of sufficient severity to alter the course of the underlying disease or to require special treatment. It is important to note, however, that, unless their relationship to infection is recognized, they lead to serious diagnostic errors. Jaundice is particularly likely to be misleading, since it may be misinterpreted as a sign of primary hepatic or biliary tract disease, and thus divert attention from the underlying infection and lead to inappropriate treatment."[1] It is well recognized that sepsis can cause hyperbilirubinemia, and that intra-abdominal sepsis is no exception.[2-4] Yet there are several enigmas with regard to intraperitoneal septic processes. Many of these processes are not associated with jaundice, and jaundice occurs more commonly in certain types of infections than in others. The mechanism of the jaundice appears not to be well understood. Material and discussion are presented in the hope of illuminating some of these aspects.

Material

The charts of 117 patients have been reviewed and they consisted of the following groups: (1) patients undergoing intra-abdominal operations associated with postoperative hyperbilirubinemia (31 cases); (2) patients with known intra-abdominal sepsis without hyperbilirubinemia (33 cases); (3) patients undergoing gastric, small or large bowel surgery, without jaundice (32 patients); and (4) patients undergoing intra-abdominal operations associated with extensive bleeding (21 patients with ectopic pregnancies).

Group 1. This group of patients is presented in Table I. Of the 31 patients, 29 showed positive evidence of intraperitoneal infection. This evidence was either present at operation, detected postoperatively by clinical, bacteriologic or radiologic means, or demonstrated at autopsy. In 2 patients, each of whom had the rectosigmoid divided and opened, there was no evidence of intraperitoneal infection. In those patients in whom organisms were isolated, the predominant infecting agent was Escherichia coli, with other gram-negative organisms as the next most common. The case records of 5 patients are presented in graphic form (Figs. 1 to 5, Cases 1, 2, 27, 7, and 8).

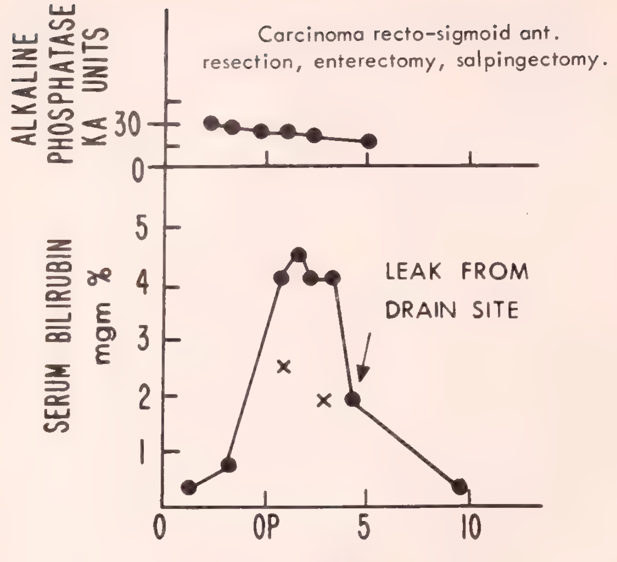
Group 2. In this group of cases, the evidence of intra-abdominal sepsis was established at surgery or clinically. This group consisted of the following cases: pelvic abscess (4), subphrenic abscess (3), intraperitoneal abscess (1), intra- and retroperitoneal abscess (1), perforated appendix (5), tubo-ovarian abscess (5), perforated duodenal ulcer (5), and appendix abscess (9).

Group 3. Thirty-two patients are reviewed to ascertain the incidence of jaundice in patients in whom similar types of operations were carried out and in whom there was no evidence of intra-abdominal sepsis. These consisted of 15 gastric operations, of which 13 were gastric resections, 9

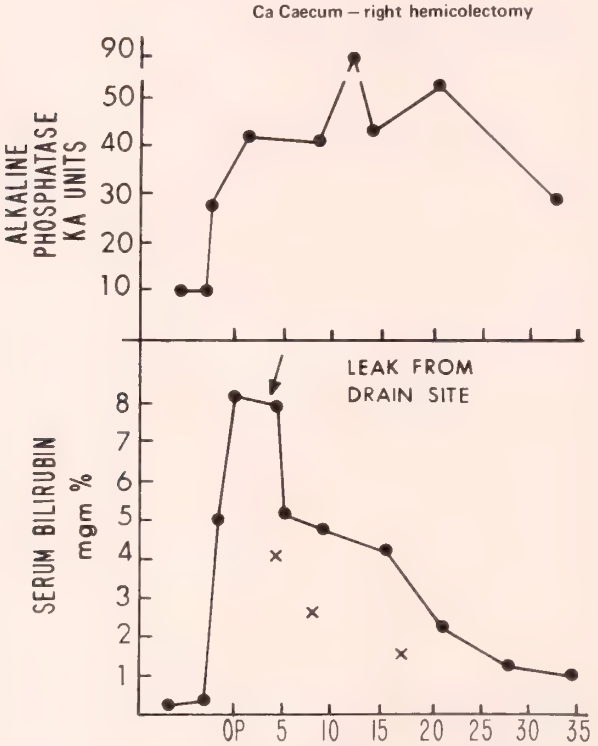
TABLE I. Indicates operation, date and extent of rise of bilirubin, and enzyme level, if any, and evidence of any visceral leak with responsible organism, if identified

			Bilirubin (mg. per 100 ml.)				S.G.O.T. Units			Alkaline Phosphatase (King-Armstrong Units)					
Case Number	Age	Disorder and Operation	Pre-operative	Day of Rise	Highest Level	Conjugated Level	Pre-operative	Day of Rise	Highest Level	Pre-operative	Day of Rise	Highest Level	Visceral Leak	Halothane	Organisms Identified
1	46	Small bowel resection with peritonitis	0.6	1	5.4	2.9	53	1	70	10	2	49	Peritonitis	+	Gram-negative
2	85	Cancer of cecum; right hemicolectomy	1.5	2	7.4	4.4	18	2	98	10	2	70	Fecal fistula	–	E. coli, Klebsiella
3	37	Subtotal colectomy for granulomatous colitis	0.7	19	3.5	. . .	34	14	560	7	14	35	Autopsy showed anastomotic leak	–	E. coli
4	53	Regional enteritis; perforated ileum with peritonitis	0.7	7	2.4	. . .	17	8	53	8	5	33	Pyrexia, ileus, and abdominal tenderness on sixth day	+	E. coli (wound)
5	54	Excision of recurrent cancer; ileo-ascending colostomy; local abscess with involved bowel	0.5	2	2.1	. . .	25	2	53	7	No rise		Operation	+	E. coli, Proteus, Staphylococcus coagulase negative
6	63	Rectosigmoid cancer; Hartman procedure and colostomy	0.4	6	2.3	. . .	15	No rise		6	8	20	Nil	+	Nil
7	61	Colectomy for cancer of colon	0.2	4	3.6	1.87	26	4	175	8	9	29	Leak at autopsy	+	E. coli and Streptococcus faecalis from drain site
8	68	Anterior resection for rectosigmoid cancer	1.1	2	2.4	. . .	10	2	25	10	No rise		Perforation seen on barium study from diverticulum above anastomosis	–	E. coli (pelvic abscess)
9	77	Anterior resection and small bowel resection for rectosigmoid cancer	0.9	6	1.8	. . .	47	20	62	23	8	42	Fecal leak at drain site	–	E. coli, Streptococcus faecalis
10	77	Cancer of rectosigmoid; anterior resection, small bowel resection, appendectomy, salpingo-oophrectomy, gastrostomy and colostomy	0.5	1	4.3	2.8	28	15	55	17	No rise		Fecal leak at drain site	+	E. coli, Klebsiella
11	75	Perforated cancer of cecum	3.8	1	3.88	. . .	Not performed			1.8	1	7	Perforated cecum	+	E. coli
12	52	Perforated gastric ulcer with 2,000 cc. exudate	1.0	3	1.9	. . .	24	3	162	8	8	108	Peritoneal fluid	+	Gram-negative, bacilli
13	74	Perforated duodenal ulcer at autopsy; postresection of meningioma	0.4	10	4.7	2.4	24	2	60	15	10	26	Autopsy	–	. . .
14	45	Partial gastrectomy	1.2	2	2.4	. . .	46	. . .	46	6	No rise		Lesser sac abscess	+	. . .

Case Number	Age	Disorder and Operation	Bilirubin (mg. per 100 ml.)				S.G.O.T. Units			Alkaline Phosphatase (King-Armstrong Units)			Visceral Leak	Halothane	Organisms Identified
			Pre-operative	Day of Rise	Highest Level	Conjugated Level	Pre-operative	Day of Rise	Highest Level	Pre-operative	Day of Rise	Highest Level			
15	45	Vagotomy and gastrectomy	1.2	3	3	. . .	32	3	68	6	No rise		Perforation into lesser sac	+	. . .
16	61	Gastrectomy	0.7	3	5.7	2.16	45	7	85	14	3	28	Pelvic collection and abdominal wall fistulas	–	. . .
17	65	Small bowel resection and peritonitis	0.5	1	2.2	.52	35	1	55	5	No rise		Peritonitis	+	Staphylococcus coagulase positive
18	66	Small bowel resection	0.9	2	2.8	1.54	39	1	53	8	No rise		Wound infection	+	. . .
19	37	Resection of ileum and hemicolectomy with peritonitis	2.1	4	21.25	13.15	29	10	500	. . .	. . .	. . .	Peritoneal fluid	+	E. coli, Klebsiella, and gram-positive cocci
20	28	Granulomatous colitis; right hemicolectomy and anterior resection	1.2	1	7.0	4.2	175	Reduced		20	6	25	Large bowel fistula developed	. .	E. coli
21	51	Small bowel fistula, subphrenic abscess; perforated gastric ulcer; sigmoid cancer	2.5	1	19	12.7	79	Reduced		11	No rise		Recurrence of fistulization	–	E. coli, Proteus
22	59	Ileocolectomy for intussusception from lipoma	0.7	4	2.2	2.0	35	4	88	7	No rise		Postoperative fever, rigors, and positive blood culture	. . .	Aerobacter
23	70	Perforated appendix	1.7	Reduced		. . .	26	1	44	4	No rise		Perforated appendix with diffuse pus	+	E. coli, Proteus
24	45	Perforated appendix	1.3	1	2.5	1.3	Normal			Normal			Perforated appendix with diffuse pus	+	E. coli, alpha Streptococcus
25	67	Sigmoid resection, cecostomy (pericolic abscess with perforated diverticulum)	0.4	16	1.9	. . .	43	12	215	11	17	18	Pelvic abscess; focal peritonitis	–	E. coli
26	75	Partial gastrectomy, colectomy	0.7	2	5.5	. . .	36	2	40	15	No rise		Colon fistula developed	. .	Proteus, Streptococcus faecalis, Klebsiella
27	50	Ovarian cancer with metastases	2.4	. . .	24.3	17.7	36	3	126	14	14	38	Autopsy evidence of pelvic sepsis associated with tumor	–	Micro aerophilic Streptococcus and E. coli
28	49	Diverticulitis with pelvic abscess, anterior resection	0.5	2	3.3	. . .	47	3	56	11	3	31	Leak at anastomotic site seen on x-ray film	+	Nonhemolytic Streptococcus
29	51	Subtotal colectomy with ileostomy	0.4	20	1.9	. . .	23	2	46	6	No rise		No evidence	–	. . .
30	82	Colotomy for polyps	1.1	5	2.3	. . .	15	No rise		. . .	. . .	. . .	Subsequent laparotomy showed leak at suture line	+	E. coli and Proteus
31	64	Cancer of colon; left hemicolectomy	1.0	4	2.1	. . .	32	4	56	10	13	18	Small leak on barium enema seen on x-ray film	+	. . .



Case 1



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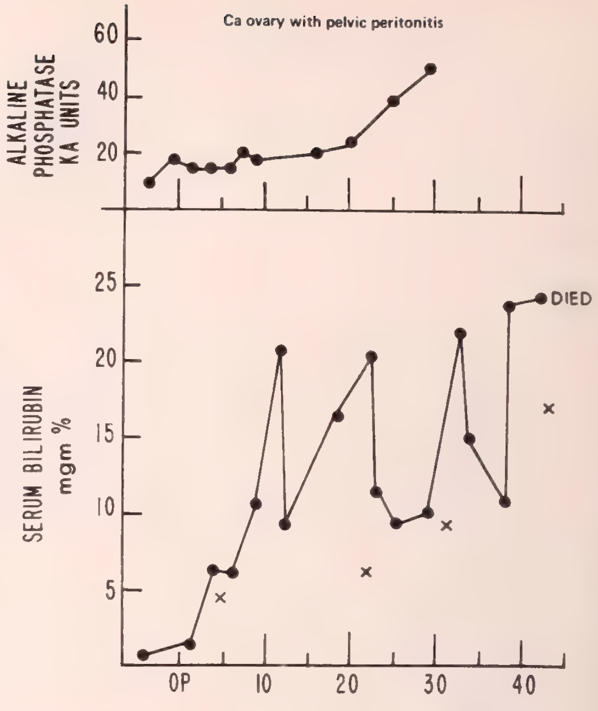

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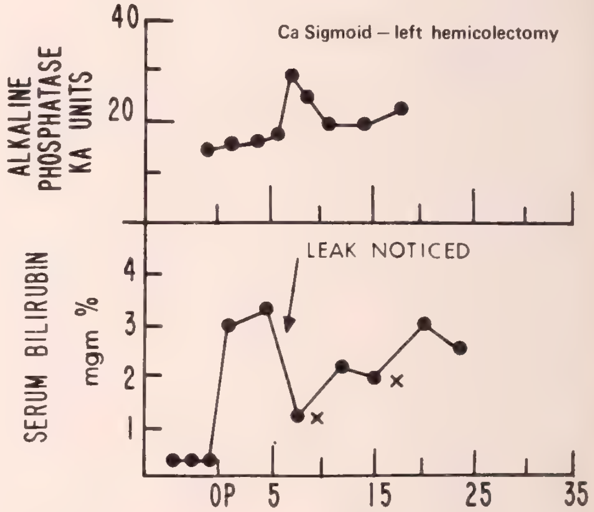


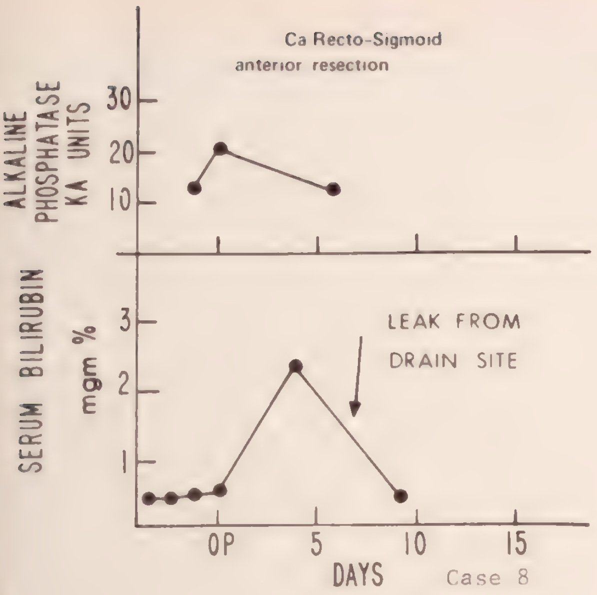
Case 7

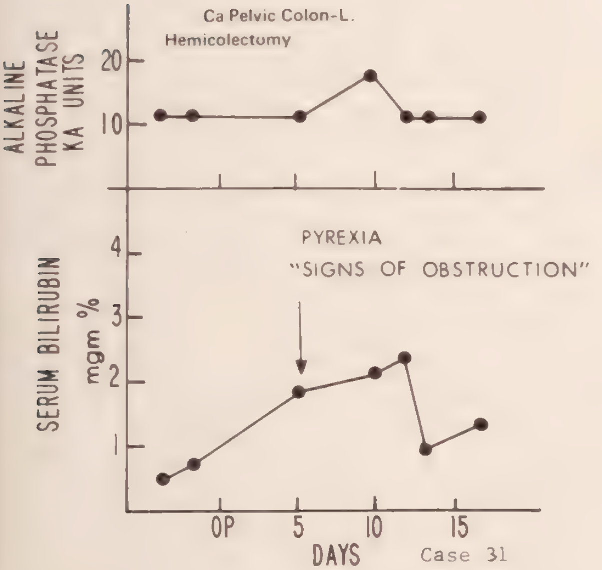
small-bowel resections, and 11 large-bowel resections. Three patients of this group had both small- and large-bowel resections. In none of these patients was there a rise in the bilirubin level or alkaline phosphatase. The S.G.O.T. (serum glutamic oxaloacetic transaminase) level did show raised levels in some of these cases.

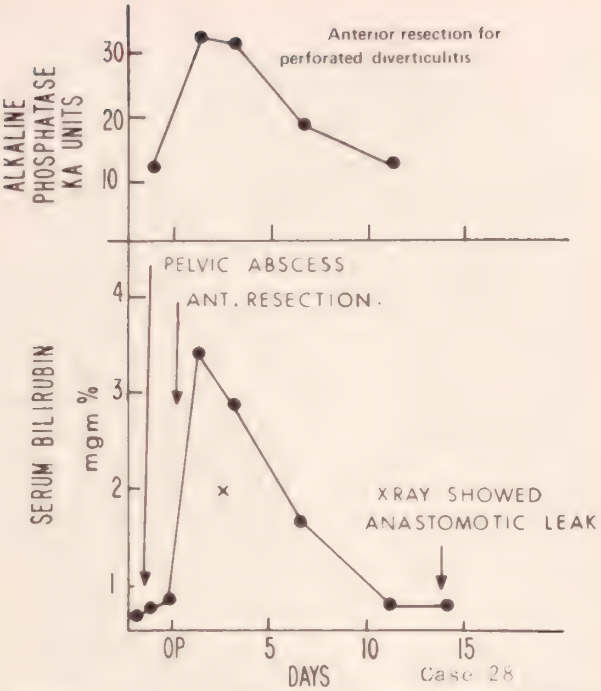
Group 4. To exclude the absorbed breakdown products of blood as a cause of raised levels of bilirubin, the charts of 21 patients who underwent operations for ectopic pregnancies were reviewed. The contents of the peritoneal cavity varied. The amount of blood was from 60 to 2,500 cc., at times fresh and at times old, with varying degrees of clot formation. In none of these patients was the bilirubin raised. Pritchard and Adams[5] reported this previously, but it does not appear to have been widely appreciated, and absorption of extravasated blood is still quoted as a cause of jaundice.

Autopsy findings

Autopsies were obtained in 4 patients in the group with jaundice. All showed necrosis of liver cells, varying from extensive and widespread involvement to numerous scattered focal areas. Fatty infiltration occurred in 3 of the 4 cases.







FIGURES 1 to 7 Case records of 7 patients, indicating levels of serum bilirubin (milligrams per cent) and alkaline phosphatase (King-Armstrong units). Pathologic condition and type of operation noted and evidence for sepsis indicated. X indicates conjugated fraction of bilirubin

Anemia and recticulocytosis

In some patients who became anemic and jaundiced there was no recticulocytosis. Unfortunately, this was looked for in only 6 cases.

Biochemical findings. The serum levels of bilirubin, S.G.O.T, and alkaline phosphate are reflected in Table I.

Bilirubin. In the vast majority of cases the rise in bilirubin occurred in the first five days. In 4 patients there was a raised level present on admission. The proportion of conjugated to unconjugated bilirubin suggested some degree of cholestasis.

Alkaline phosphatase. In 14 patients there was no rise in the alkaline phosphatase. Mostly these were cases in which the bilirubin level was modestly raised, that is, below 3 mg. per 100 ml. However, there were 4 cases in which the bilirubin level was higher, namely, 19, 5.5, 4.3, and 3.88 mg. per 100 ml., without any corresponding rise in alkaline phosphatase levels. In only 3 patients was the preoperative level raised.

S.G.O.T. In 5 patients there was no increase in the level of this enzyme. There appeared to be no close correlation between the degree of jaundice and the enzyme level, although in most cases both levels rose at the same approximate time.

Comment

The occurrence of jaundice following operations has many possible causes. Among those most often mentioned are anesthetic agents, blood transfusions, absorbed blood from peritoneal cavity, sepsis, and preexisting liver disease.

Anesthetic agents. The role of halothane in the production of jaundice has been the subject of much debate.[3,6] Present opinion suggests that halothane is not a hepatic poison but, like numerous drugs, can on occasion cause jaundice. There appeared to be no pattern in the cases under discussion, which suggested that the use of this agent was an etiologic factor.

Blood transfusions. A considerable number of patients received blood transfusions, both in the group with jaundice and the larger group without jaundice. Those receiving most transfusions, however, were to be found among those patients who were treated for ectopic pregnancies, and jaundice did not develop in any of these. In those patients who were jaundiced there was no evidence of mismatched transfusions, and the jaundice occurred too early to incriminate serum hepatitis as a clinical possibility.

Absorbed blood from peritoneal cavity. The popular conception of absorbed blood is not valid as evidenced by the lack of jaundice in the patients with ectopic pregnancies.[5] These patients provide further evidence that a combination of blood absorption, anemia, blood transfusions, and anesthetic agents is associated with a normal postoperative bilirubin level.

Preexisting liver disease. Preexisting liver disease is excluded by normal preoperative bilirubin levels. In 5 patients in whom the serum bilirubin was raised preoperatively, peritonitis was demonstrably active and undoubtedly responsible for the rise. The S.G.O.T. may be raised, but other causes, including the disease process itself, may be responsible for this rise.

Sepsis. The factor that appears responsible for the raised bilirubin in these patients is intraperitoneal sepsis. Further, the infection is of the nature of a peritonitis, local or general. The commonest infecting agent was E. coli, undoubtedly due to the fact that large-bowel surgical cases accounted for the bulk of cases with jaundice. This may also reflect the high incidence of colorectal anastomotic leaks. The absence of jaundice in patients with intra-abdominal abscesses, whether they be pelvic, subphrenic, tubo-ovarian, appendicular, or paracolic, deserves discussion. The absence of jaundice with a localized abscess and the presence of jaundice with recent peritoneal soiling, local or general, strongly suggest that the liver damage is related to the absorption of bacteria and/or their toxins by peritoneal surfaces. Clearly, absorption via the portal circulation would deliver a heavier dose of toxic material to the liver than were it to reach the organ via the systemic circulation. Abscesses tend to be walled off from the portal circulation and have a close relationship to the extraperitoneal structures with their systemic circulation. Pelvic abscesses are related to pelvic structures; tubo-ovarian collections are related to ovarian and uterine vessels; appendicular abscesses may be retrocecal, paracolic, or pelvic; and subphrenic abscesses lie in relation to the diaphragm. The latter two, namely, appendicular and subphrenic abscesses particularly, may give rise to physical signs because of their involvement of skeletal muscle and, in common with some pelvic abscesses, are often drained extraperitoneally.

Mechanism of jaundice. Classically, the three mechanisms responsible for the production of jaundice are hemolysis of red cells, hepatocellular injury, including preceding liver disease, anoxia, infection, and extrahepatic obstruction.[7] Extrahepatic obstruction is ruled out in all cases either by the progress of the disease or by autopsy findings. Previous reports of jaundice associated with sepsis favor a hepatic cause for the rise in bilirubin.[2,8,9] Others believe that the hemolytic effect of the sepsis is the main mechanism.[10,11] Against the latter is the absence of reticulocytosis in all series of cases in which this was specifically looked for. The only occasion that reticulocytosis was found in an E. coli infective outbreak occurred in New Orleans in 1959.[11] It has not been described before or since this report. Seeler[10] explains the absence of reticulocytosis by marrow suppression from the sepsis which accounts for the anemia. The majority of authors, influenced by the morbid changes in the liver cells, favor a hepatic cause, and more specifically believe it is of a cholestatic nature. As far as the infection is concerned, it is quite clear that in the great majority of cases, the organism is E. coli. In the association of urinary tract infection with jaundice, E. coli is again the predominant organism.[12] Except for Thurman's[11] work, there is no evidence to suggest hemolysis as a cause of the jaundice. Also it is difficult to see how hemolysis can cause a raised alkaline phosphatase. On the other hand, there is substantial support for invoking a hepatic cause for the jaundice. Histologic evidence of damage of liver cells has been shown at autopsy, and in 1 case, in which a liver biopsy was performed at the time of exploration for a jaundiced patient with tubo-ovarian infection, definite cholestasis has been shown.[2]

The biochemical findings, conjugated/unconjugated ratio of bilirubin and alkaline phosphate levels, tend to support cholestasis as a likely mechanism for the cause of the jaundice. However, several jaundiced patients exhibited no rise in alkaline phosphate, suggesting that cholestasis cannot account for all cases.

In view of the previous comments, it would be reasonable to assume that following surgery, especially that involving a large bowel anastomosis, after the usual causes of jaundice have been excluded, a rise of bilirubin level should suggest the possibility of a leak at the anastomotic site. The presence or absence of such a leak is difficult to establish clinically, and radiologic examinations may either be noninformative or fraught with danger. For example, few surgeons would allow a barium enema examination following an anterior resection of the rectum. The clinical condition following an anastomotic leak may masquerade as one of intestinal obstruction, often labeled partial or incomplete. Intestinal obstruction may occur following any abdominal operation, and it is important to differentiate this from ileus secondary to an anastomotic leak, commoner in colorectal surgery than elsewhere in abdominal surgery. This differentiation may influence the type of therapy. A timely diversion of a potentially disastrous anastomotic leak may be lifesaving, whereas treating the patient conservatively with a diagnosis of intestinal obstruction may temporize at great cost to the patient. It is believed, therefore, that any additional aid is of value, and the material presented here suggests that the bilirubin level may be helpful in indicating peritoneal soiling of some substantial degree. It is possible to have a minor inconsequential leak without a rise in bilirubin, and 2 patients without hyperbilirubinemia showed minor leaks at radiologic examination prior to closure of their colostomy. The case records of 2 patients serve to show that it may be possible to explain a postoperative "obstruction" or "ileus" on the basis of the clinical picture plus hyperbilirubinemia, pointing to an anastomotic leak as the real disorder.

Case reports

Case 31. A sixty-nine-year-old male underwent a left hemicolectomy for a carcinoma of the pelvic colon (Table I). He did well until the sixth postoperative day when pyrexia (38° C.) and signs and symptoms of "obstruction" developed. Roentgenogram of the abdomen revealed a dilated loop of small intestine adjacent to the colonic anastomotic site. A diagnosis of adherence of intestine to the operative site is possible, but the raised bilirubin suggests that the real diagnosis was a leak at the anastomotic site with a localized ileus (Fig. 6). This was proved radiologically at a later date.

Finally, a case record is presented to show that a raised bilirubin level may be the only evidence of an anastomotic leak.

Case 28. A forty-three-year-old male sustained a perforated diverticulitis with a pelvic abscess. After a period of conservative therapy, an anterior resection, drainage of the abscess, and a proximal colostomy was carried out. His postoperative course was completely uneventful. The colostomy acted on the third day, and he was discharged on the fourteenth postoperative day. A barium enema on the day of discharge showed a small leak at the anastomotic site (Fig. 7). It is relevant that the only postoperative abnormality was a raised serum bilirubin level.

Summary

The relationship of intra-abdominal sepsis and jaundice has been investigated by reviewing 117 patients. These consist of four groups: 31 with intra-abdominal sepsis and jaundice, 33 with intra-abdominal sepsis and no jaundice, 32 in whom gastric surgery, large bowel or small bowel, was performed without the development of sepsis or jaundice, and 21 patients with ectopic pregnancies who underwent operations for extensive bleeding, and who did not develop sepsis or jaundice. The biochemical findings are detailed and autopsy findings in 4 patients are presented. The cause of the jaundice is thought to be due to the bacteria and/or their toxins with E. coli as the predominant organism. An explanation is offered as to the mechanism of the production of the jaundice. It is suggested that in a patient undergoing surgery, especially involving the colon, a rise of bilirubin during the postoperative period, should, after the exclusion of the usual causes, suggest the possibility of an anastomotic leak. Timely action may then be considered. The case records of 7 patients are presented in graphic form.

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Renal Trauma in Children

Diagnostic work-up and management

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Children subjected to nonpenetrating blunt trauma to the abdomen may sustain significant renal injuries. The most common predisposing factors are vigorous, sometimes reckless, play and vehicular accidents. The seemingly minor nature of the accident and the minimal signs of external trauma to the child may occasionally give a false impression of the severity of the internal injuries. The utilization of several diagnostic radiologic procedures—intravenous pyelography and infusion pyelography when indicated, nephrotomography, renal angiography, and renal radioisotopic scans—has made it possible to improve evaluation and to individualize therapeutic management.

Careful initial evaluation and close follow-up studies of the injured child are imperative to maintain maximum renal function and to circumvent complications. In an effort to evaluate the experience at the University of Rochester Medical Center, consecutive cases of renal trauma in children have been reviewed, and specific details relating to etiology, diagnosis, and management are discussed.

Material

Thirty-seven patients less than sixteen years of age were found to have kidney injury in the eleven-year period from January, 1961, to December, 1971 (Table I).

Findings. The renal injury was related to traffic accidents in 17 patients and was considered nonvehicular in the remaining 20.

Gross or microscopic hematuria was found in 36 patients. Only 1 patient (Case 1, Table I) had no hematuria.

Significant urologic anomalies were noted in 4 children: 2 with solitary kidneys, 1 with a cystic kidney, and 1 with bilateral hydronephrosis from ureteropelvic junction obstruction.

Type of injury. In the 21 children below ten years of age, 12 had evidence of extravasation and/or major bleeding, while 9 of the renal injuries in this younger-age group were classified as contusions. In the 16 children above ten years of age, all of the renal injuries were classified as contusions.

Associated injuries. Associated injuries were found in 17 patients, including 3 with cerebral concussion, 3 with lacerations of the spleen, and 2 with lacerations of the liver. Four patients had rib fractures, 2 had pelvic fractures, and 3 had fractures of the extremities.

Surgical procedures. General surgical abdominal procedures were done on 5 patients, including 2 splenectomies, 1 hepatic lobectomy, and 2 abdominal explorations. Urologic surgical procedures were done on 8 patients, including 3 nephrectomies, 3 partial nephrectomies, 1 pyeloplasty, 2 evacuations of hematomas, and drainage.

Case reports

Case 26. An eleven-year-old boy jumped from a 12-foot roof during play, and a few hours later he noted gross hematuria. There were no other symptoms, and physical examination results were negative. An intravenous pyelogram the following day showed poor filling of the calyces of the right kidney (Fig. 1A). Hematuria spontaneously disappeared, and a subsequent intravenous pyelogram two months later showed normal findings (Fig. 1B).

Case 31. This fourteen-year-old boy had pain of the right flank and tenderness with gross hematuria following an accident in which he fell from his minibike. Intravenous pyelogram done on the day of injury demonstrated poor opacification of the collecting system of the right kidney and normal opacification of the collecting system of the left kidney (Fig. 2A). There was a normal-appearing renal outline and no evidence of extravasation. Contrast material in good concentration was noted in the right ureter on the radiograph four minutes after injection. Renal radioisotopic scan two days following the accident demonstrated a diagonal area of poor uptake extending from the upper lateral border obliquely downward toward the lower medial border of the kidney (Fig. 2B). An intravenous pyelogram eight days following injury showed marked improvement in the appearance of the right kidney, and one done two months following injury demonstrated a normal appearance of the right kidney (Fig. 2C).

However, a renal scan showed persistence of an area of decreased uptake in the lower pole of the right kidney (Fig. 2D).

Case 5. A five-year-old boy was struck by a car and suffered a head injury with unconsciousness. The diagnosis of cerebral concussion was made. He was noted to have gross hematuria with right-flank pain and tenderness. An intravenous pyelogram demonstrated extravasation of the opacified urine from the right kidney (Fig. 3). Exploratory surgery twenty hours after injury revealed a localized laceration of the right kidney with no evidence of fresh bleeding. Evacuation of a hematoma and urine followed by drainage of the retroperitoneal area resulted in urinary drainage from the flank for about one week. Following this, the drainage spontaneously stopped and an intravenous pyelogram six months later showed normal findings.

Case 15. This eight-year-old boy fell from a tree, incurring injuries to the right flank as he fell on a protuberant root of a tree. He was seen at another hospital, where extensive retroperitoneal bleeding occurred, requiring 5 units of blood transfusion during the next 2.5 days. He was admitted to Strong Memorial Hospital one month after injury because of a mass in the right flank noted by the parents. An intravenous pyelogram at the time of admission was suggestive of the presence of a large right perirenal pseudocyst resulting from extravasation of urine. Renal arteriogram demonstrated that the remaining kidney substance was markedly displaced cephalad and mediad (Fig. 4). Exploratory surgery one month following the injury demonstrated a large mass which was opened, and an old blood clot and urine were evacuated. The lower third of the kidney was fragmented and adherent to the wall of the pseudocyst. Evacuation of this blood and urine and removal of the devitalized renal tissue were followed by rapid healing. A follow-up intravenous pyelogram demonstrated a normal appearance of the remaining portion of the right kidney.

Case 11. A seven-year-old boy was hit by an automobile. When brought to the emergency room, he was pale but alert and had lacerations of the face and abrasions of the right side of the chest and of the buttocks. Right costovertebral angle tenderness and crepitation were noted, and examination of the anterior abdomen revealed guarding and tenderness. Urine was grossly bloody. Radiographs disclosed fractures of the right tenth, eleventh, and twelfth ribs and a large fracture of the right ileum. Intravenous pyelogram disclosed no opacification of either kidney; however, some contrast material was noted in the bladder. Retrograde aortogram demonstrated absence of the left kidney and evidence of a laceration of the right kidney with separation of the upper and lower portions (Fig. 5A).

On the day following injury, increasing abdominal distention and increasing pain with drop of hematocrit and rising pulse rate led to abdominal exploration. A 3-cm. laceration of the lobe of the liver was found. Blood in the peritoneal cavity was removed but no active bleeding from the liver was found. A large right retroperitoneal hematoma was noted but was not opened. Four days following the injury, an infusion pyelogram showed only a nephrogram of the upper pole of the right kidney. Renal function decreased, with blood urea nitrogen and creatinine rising and urinary output diminishing. The creatinine rose to 6.6 and the blood urea nitrogen to 140 mg. per 100 ml. Hemodialysis was done on the sixth day for 4.5 hours and on the eighth day for five hours. This was followed by gradual improvement in kidney function. On the seventeenth day following injury, a renal scan demonstrated separation of the midportion of the right kidney with greater uptake in the upper half of the kidney. An intravenous pyelogram on the twenty-third day showed extravasation with appearance of contrast material mainly in the upper segment of the collecting system (Fig. 5B and C). The patient was discharged and over the next three months had pyuria, but urine cultures were negative. When checked ten months later by intravenous pyelogram, the upper pole of the right kidney was noted to be hypertrophied and the lower pole was markedly contracted. The urine was completely clear. Blood urea nitrogen, creatinine, and blood pressure were normal, and the child was clinically well.

The case histories of 37 cases of kidney trauma in children under sixteen are reviewed. Renal injury must be suspected in a child sustaining blunt trauma to the abdomen. The child should be examined by intravenous pyelography and by infusion pyelography if necessary. Nephrotomography, renal scan, renal arteriography, and retrograde pyelography may also be used to evaluate accurately the kidneys. Unless massive bleeding occurs, initial treatment should be conservative. If the urinary system is intact, retroperitoneal exploration can often be avoided even when retroperitoneal hematoma is noted. Clinical and laboratory studies should be repeated as indicated to observe further course of the injury. Some patients may require delayed surgical intervention and/hemodialysis to deal with changes in their clinical course and to maintain maximal renal function.

Comments

Although gross or microscopic hematuria usually alerts the physician to the possibility of injury to the genitourinary system, the absence of hematuria does not rule out significant urologic injury.[1] In the present series, although hematuria was found in 36 of the 37 patients, the 1 child with no hematuria had a very serious renal injury requiring nephrectomy (Case 1, Table I).

It is of interest to note that the preponderance of the more serious lesions in this series occurred in the younger children. This may reflect the softer surrounding structures which offer less protection to the kidneys in young children. As the

TABLE I. Summary of cases of children with renal trauma treated at Strong Memorial Hospital from January, 1961, to December, 1971

Case	Age (Years)	Cause		Observations			Comments
		Nonvehicular	Vehicular	Contusion	Extravasation	Massive Bleeding	
1	At birth	Birth trauma	...	−	−	+	Cyst of kidney, nephrectomy, transection of kidney through congenital cyst
2	$^5/_{12}$	Thrown from sixth floor window	...	+	−	−	Landed in snowbank
3	2	Battered child	...	−	+	+	Died during hepatic lobectomy
4	4	...	Passenger	+	−	−	Splenectomy
5	5	...	Pedestrian		+		See case report
6	5	...	Pedestrian	+	−	−	...
7	6	...	Pedestrian	−	+	+	Nephrectomy, ureter torn from pelvis, tear renal vein
8	6	Sliding down banister	...	−	+	+	Nephrectomy, transection of kidney above hilum
9	6	Fall down stairs	...	+	−	−	...
10	6	Fall down stairs	...	+	−	−	...
11	7	...	Pedestrian	−	+	−	Solitary kidney—see case report
12	7	...	Bicycle	+	−	−	...
13	7	...	Pedestrian	−	+	−	Partial nephrectomy, transection of kidney above hilum
14	8	...	Pedestrian	−	+	−	Splenectomy, repair of laceration of kidney
15	8	...	Pedestrian	−	+	−	...
16	8	Fall from tree	...	−	+	+	See case report
17	9	...	Bicycle	−	+	−	Bilateral hydronephrosis, partial nephrectomy, and pyeloureteroplasty
18	9	Fell against rock	...	−	+	−	Drainage, good result
19	9	...	Pedestrian	+	−	−	...
20	9	...	Pedestrian	+	−	−	...
21	9	...	Pedestrian	+	−	−	...
22	10	Sledding	...	+	−	−	...
23	10	...	Pedestrian	+	−	−	...
24	10	Sledding	...	+	−	−	...
25	10	Fall from horse	...	+	−	−	...
26	11	Jumped from roof	...	+	−	−	See case report
27	11	...	Passenger	+	−	−	...
28	13	Struck by baseball	...	+	−	−	...
29	13	Fall from rope	...	+	−	−	...
30	14	Fall playing baseball	...	+	−	−	...
31	14	...	Minibike	+	−	−	See case report
32	15	Fall from horse	...	+	−	−	...
33	15	Ran into parked car	...	+	−	−	...
34	15	Football	...	+	−	−	Solitary kidney
35	15	Soccer	...	+	−	−	Abdominal exploration
36	15	Fall on ice	...	+	−	−	...
37	15	...	Bicycle	+	−	−	...

FIGURE 2. Case 31. (A) Selected from intravenous pyelogram on day of injury, demonstrating normal appearance of left kidney with poor visualization of right kidney. However, renal outline on right is normal showing no evidence of massive bleeding, and contrast material appears in good concentration in ureter on four-minute film. No evidence of extravasation seen. (B) Renal scan forty-eight hours following injury, demonstrating normal uptake by left kidney and decreased uptake by right kidney in diagonal area across right kidney extending from upper lateral aspect to lower medial portion. (C) Selected from intravenous pyelogram done two months later, showing essentially normal pyelogram bilaterally with slight decrease in concentration of opacification in right collecting system. (D) Renal scan done two months following injury, demonstrating persistence of area of poor uptake in lower pole of right kidney. (Figure 2 right →)

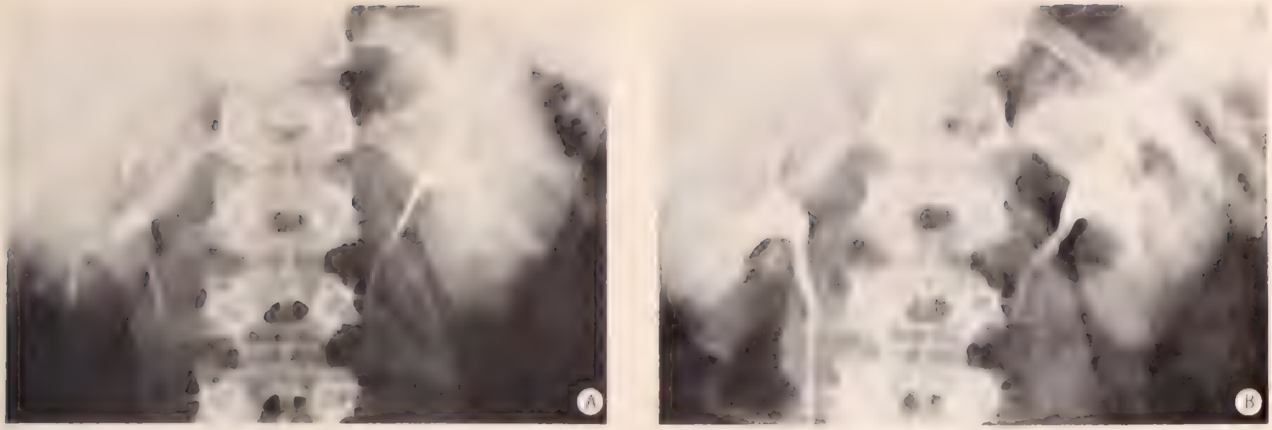
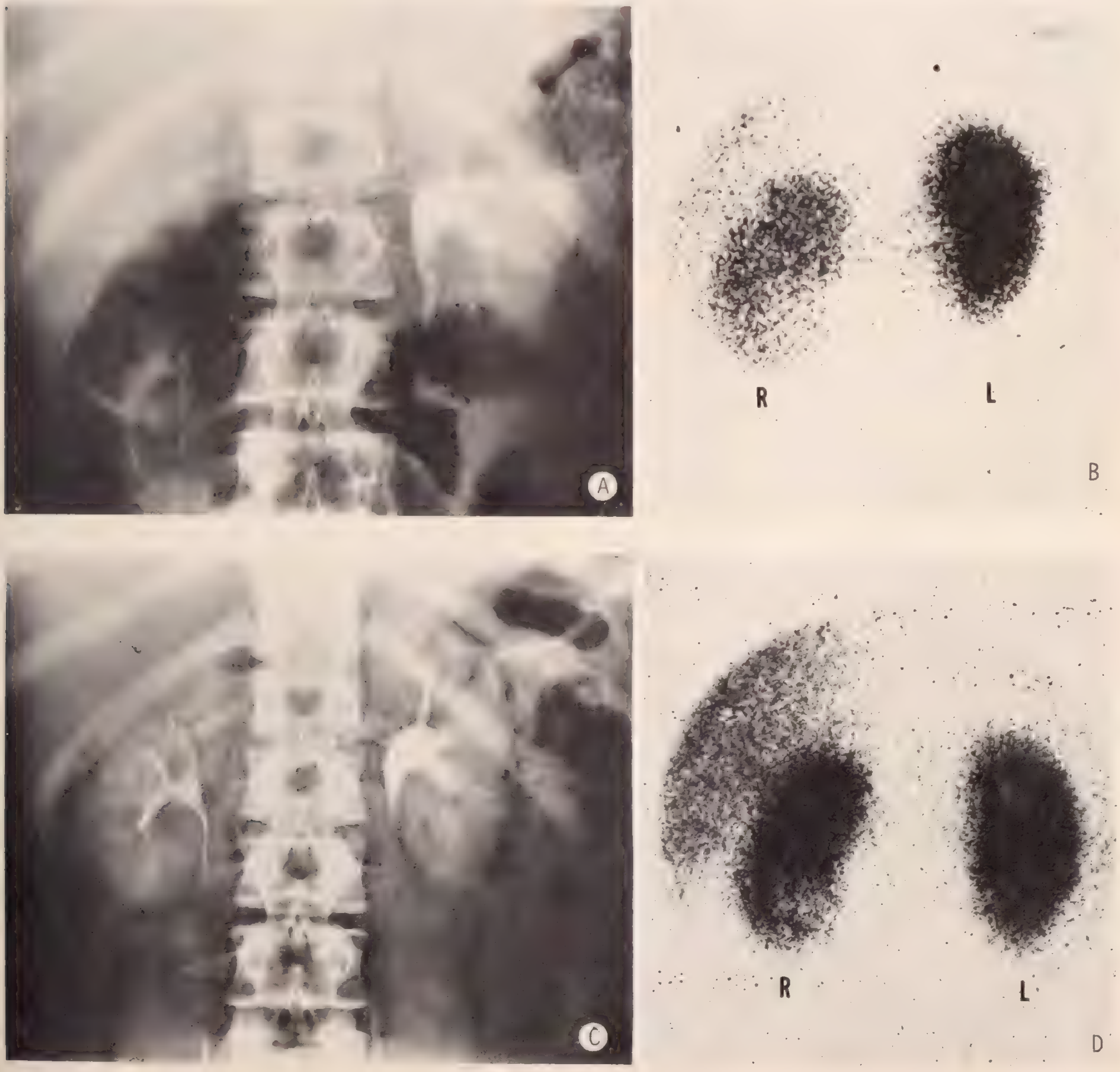


FIGURE 1. Case 26. Intravenous pyelograms. (A) Normal appearance of left kidney one day following injury, with poor filling of collecting system of right kidney. (B) Normal appearance of left kidney two months later with now normal appearance and normal filling of collecting system of right kidney.



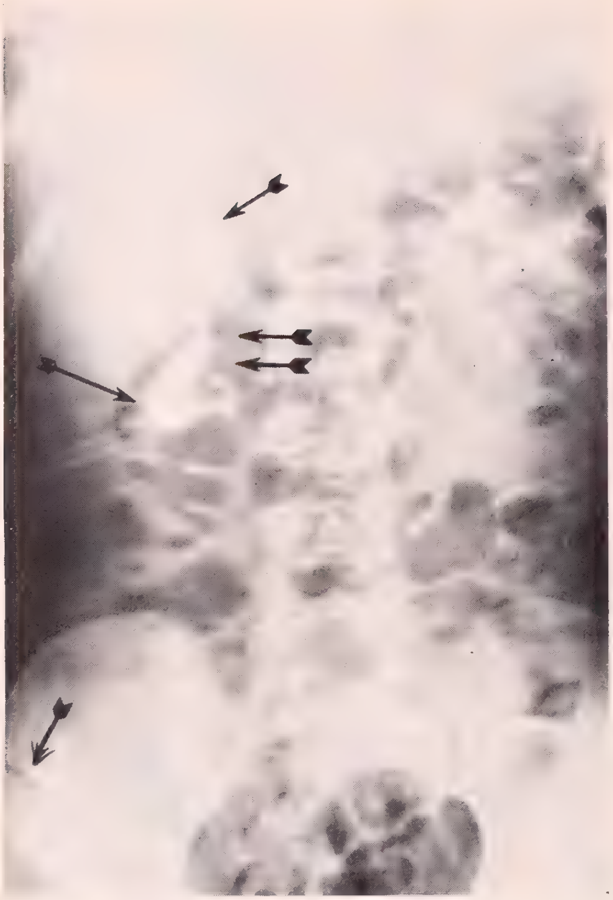


FIGURE 3. Case 5. Selected from intravenous pyelogram demonstrating gross extravasation of urine from right kidney; single arrow indicates extravasation, double arrow demonstrates contrast material in right ureter, double-headed arrow shows fracture of right ileum.

child gets older, the kidney is more deeply situated in a more protective musculoskeletal and connective- and fatty-tissue enclosure.

Case 26 demonstrates a patient with a contusion of the right kidney. Conservative management consisting merely of limitation of activity and careful observation is accepted with little controversy as proper management in this form of injury. A review by Sargent and Marquardt[2] of a large series of similar cases discloses no evidence of residual renal damage following this type of injury.

The injury illustrated by Case 31 is obviously much more severe than the injury in Case 26 and can be classified as severe contusion of the kidney without extravasation. The studies on this patient illustrate, as previously reported by Kazmin, Swanson, and Cockett,[3] the sensitivity of the renal scan in demonstrating injury to renal substance early in the course of the disease. In Case 31 ^{197}Hg chlormerodrin was the radionuclide used. This radionuclide has a half-life of 2.7 days, and it is estimated that a total body irradiation of 0.01 rad is given, while the kidney receives about 1 to 2 rads absorbed dose per 100 microcuries of ^{197}Hg chlormerodrin.[4] This amount of radiation is quite comparable to that received by the kidney during the course of a usual intravenous pyelogram.

The injury illustrated by Case 5 involves extrarenal extravasation of urine, which indicates a laceration extending into the kidney pelvis or calyceal system.[5] A tear in the parenchyma alone does not result in urinary extravasation. The kidney that shows extravasation on intravenous pyelogram may require operative intervention to insure maximal healing. There is some controversy regarding the optimum time for exploration of the kidney following this type of injury. Morse *et al.*[5] advocate exploration two to seven days following injury, the objectives of the operation being to control hemorrhage, remove divitalized tissue, remove obstructing clots, close urinary leaks, and drain extravasated urine.

Immediate operation may be necessary in some patients with renal trauma particularly when penetrating injury or other intra-abdominal injury is present. The exposure and temporary occlusion of the renal pedicle vessels, as advocated by Scott, Carlton, and Goldman[6] allows control of hemorrhage before opening the retroperitoneal area. With adequate control of the pedicle vessels, early operative intervention can take place with greater safety.

Most patients with blunt renal trauma can be kept stable for several days with minimal blood transfusions because the tamponade within Gerota's fascia prevents precipitous shock. This allows time for deliberate study of most patients

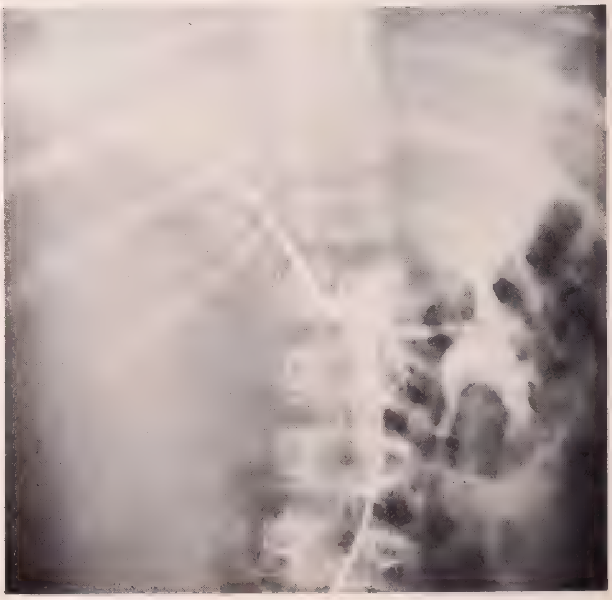


FIGURE 4. Case 15. Aortogram demonstrating marked distortion of right renal vessels due to formation of very large urinoma in right kidney area. Normal-appearing pyelogram on left side is result of previous test injection of contrast material in aorta.

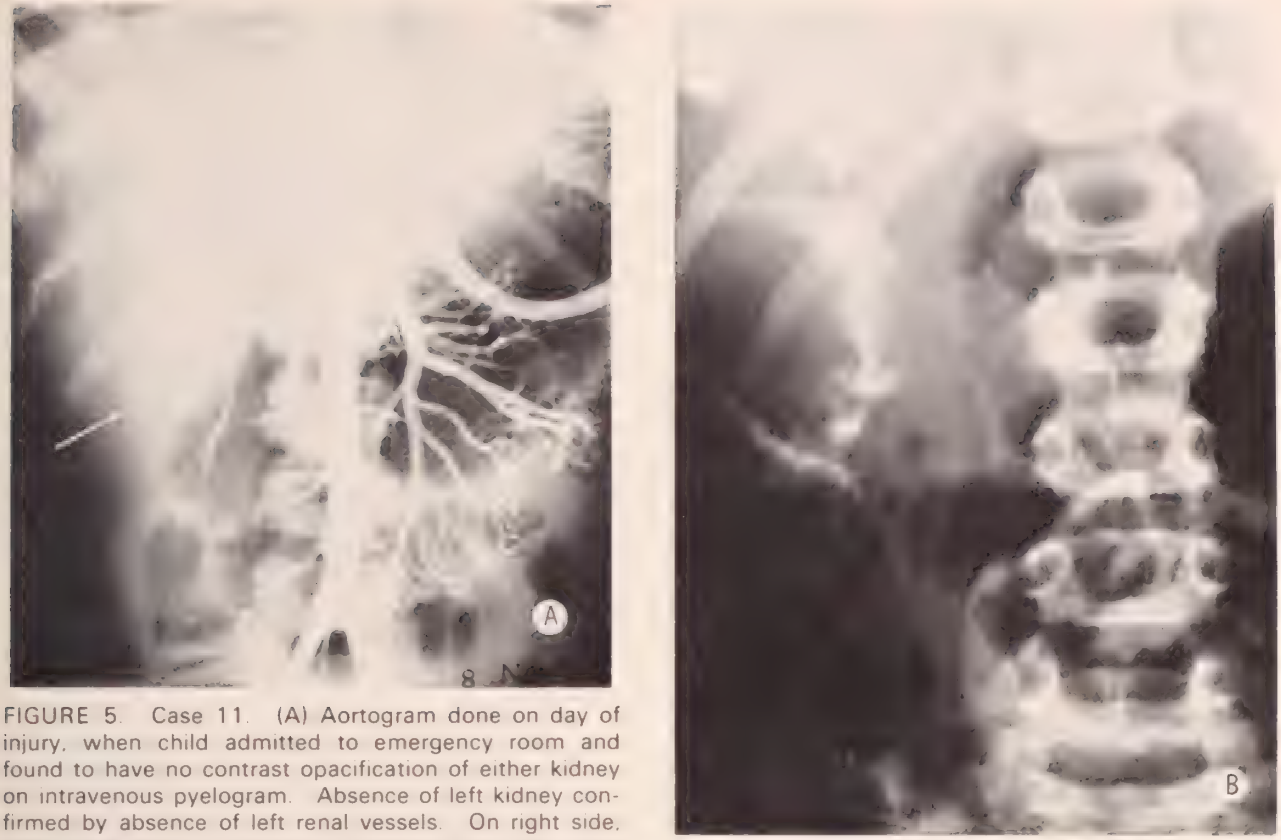
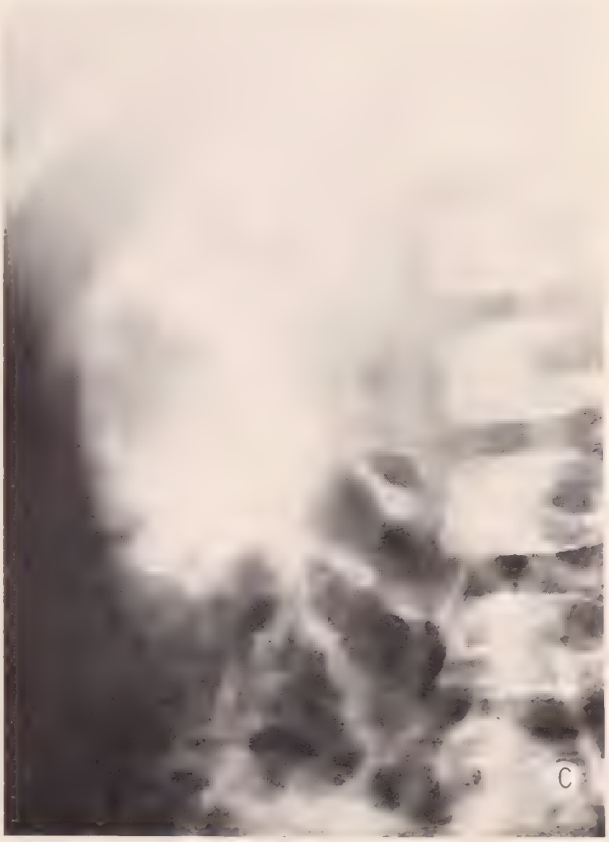


FIGURE 5. Case 11. (A) Aortogram done on day of injury, when child admitted to emergency room and found to have no contrast opacification of either kidney on intravenous pyelogram. Absence of left kidney confirmed by absence of left renal vessels. On right side, main renal artery is noted to divide into its two main branches which are widely and abnormally separated, indicating area of laceration with separation of upper two-thirds from lower one-third of right kidney. Arrow indicates area of laceration of right kidney. (B) Selected from intravenous pyelogram twenty-three days following injury indicating essentially normal collecting system of upper pole with gross distortion of middle and lower portion of kidney. Contrast material present in ureter. (C) Selected from later film of same intravenous pyelogram (B) showing evidence of extravasation of contrast material.



with renal injury, elimination of surgery in many cases, and elective rather than emergency surgical conditions for most patients who require operation. Delay in operation appears to result in a lower rate of nephrectomy.[5,7-9]

The course of the patient reported as Case 15 illustrates a possible result of renal injury with extravasation that is not drained or otherwise corrected surgically. This complication is the development of a pseudocyst or urinoma. Early operation might have prevented this complication and avoided the necessity for multiple blood transfusions. However, as has been noted, the incidence of nephrectomy appears to be significantly higher when early surgery is performed on such a severely traumatized kidney. Although surgery was ultimately necessary on this patient, the procedure was partial nephrectomy and drainage of a pseudocyst. Thus, the delay may have resulted in conservation of renal tissue at the expense of prolonged hospitalization, repeated diagnostic tests, and multiple blood transfusions.

Case 11 illustrates the severity of injury which a kidney can sometimes sustain and still maintain adequate function to sustain life. This case also illustrates the importance of adequate evaluation of the injured child. Since the kidneys could not be visualized by intravenous pyelography, a renal arteriogram was immediately performed. This demonstrated that the renal injury had occurred in a solitary kidney. Surgical exploration without adequate preoperative studies may well have led to removal of this severely lacerated kidney leaving the child anephric. The utilization of the infusion pyelogram and renal radioisotopic scan in the follow-up were valuable in deciding that a conservative plan of therapy could be pursued. Hemodialysis may make a conservative program feasible in such a situation by allowing time for a severely injured kidney to return to a life-sustaining level of function.

Summary

Thirty-seven cases of kidney trauma seen in children under the age of sixteen years at Strong Memorial Hospital during the eleven-year period 1961 to 1971 were reviewed. Illustrative cases are discussed, and as a result of this study, the following suggestions are offered.

The possibility of a renal injury must be suspected in the child who sustains blunt trauma to the abdomen. Hematuria is usually present, but the absence of hematuria does not rule out renal injury.

Such patients should be evaluated by conventional intravenous pyelogram or by infusion pyelography if visualization is inadequate. Nephrotomography or a renal scan may be of further help at this early stage of evaluation.

Renal arteriography and retrograde pyelography may be indicated if an accurate evaluation of the kidneys is not possible by the diagnostic tests described.

A conservative initial program of management seems to be indicated in most cases of renal trauma unless massive bleeding occurs.

When adequate urologic investigation has demonstrated an intact urinary system, retroperitoneal exploration can often be confidently avoided during abdominal surgery for associated injuries even when retroperitoneal hematoma is noted.

Conservative management must include careful repeated clinical and laboratory observations including diagnostic radiologic studies and renal radioisotopic scans as indicated to observe the further course of the injury.

Certain patients may require delayed surgical intervention and possibly hemodialysis to deal with changes in their clinical course and as a means of maintaining maximal renal function.

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Testicular Tumors

Histologic and epidemiologic assessment

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This study was undertaken to evaluate survival relations between patients with seminoma and nonseminoma tumors and is based on a review of 194 histologically proved cases of testicular tumors during a ten-year period. Eighty of the 194 tumors were seminoma and 114 were nonseminoma. The five-year survival rate for patients with seminoma was 80 per cent compared with 35 per cent for nonseminoma cases. A lower incidence of metastases was found in the seminoma cases, and the incidence of seminoma was significantly higher in rural than urban areas. It is suggested that there could be a carcinogenic factor in rural environment which merits further investigation.

A review of 194 cases of all testicular tumors admitted to Roswell Park Memorial Institute between 1959 to 1969 shows a much more favorable survival pattern for the 80 seminoma cases as compared with 114 patients with nonseminoma tumors. A significantly higher proportion of the seminoma patients did not have metastases and were classified in tumor Stage I. Examination of 53 seminoma cases indicates that there may be some relationship between lymphocyte scoring and patient survival but that this impression is not entirely clear.

Testicular seminoma has significantly ($p < 0.005$) higher rural preponderance as compared with other testicular tumors. The significance of these findings in the pathogenesis of seminoma is, as yet, unclear. However, this epidemiologic factor merits further investigation in a similar fashion from cases studied in different geographic areas.

Primary malignant tumors of testes are interesting pathologically in their clinical behavior and response to treatment. The relative incidence of malignant tumors of testes as compared with all malignant tumors affecting males is small (1 to 2 per cent).[1,2] Pathologically, malignant testicular tumors are classified simply into three main categories: germinal, nongerminal, and metastatic.[3-7] The commonest germinal tumor is seminoma, having the least lethal prognosis.[8]

Epidemiologic studies recently reported from England suggested an increased incidence of seminoma as compared with other testicular tumors among the rural population.[1]

The present study was undertaken to learn the relative proportions of seminoma and nonseminoma testicular tumors in the patient population at Roswell Park Memorial Institute and to study their clinical course, survival, and correlate it with the amount of lymphoid astroma seen histologically in seminoma cases. Lymphoid stroma may be absent or present in varying amounts within this tumor. It is generally believed that increased lymphoid stroma is a good prognostic sign, and it is considered to be somewhat suggestive that the host is immunologically reacting to the tumor.[1,8-10]

Materials and methods

This report is based on the review of 194 histologically proved cases of testicular tumors admitted and treated at Roswell Park Memorial Institute, Buffalo, New York, during a ten-year period from January, 1959, to December, 1969. All cases have been regularly followed at Roswell Park Memorial Institute for periods ranging from two to ten years.

Of 194 testicular tumors, 80 were seminoma cases and 114 were nonseminoma cases. From 80 cases of seminoma, original tumor slides of 53 cases were available for histologic grading and evaluation of lymphoid stroma by a double-blind technic. A relative scale of 0 to 4 plus was employed (Fig. 1). Survival period was measured from the date of diagnosis until the last follow-up date. Complete up-to-date clinical records and follow-up were available for all cases studied. The most recent place of residence of the patient at the time of diagnosis was available from the records, and the population figures were noted

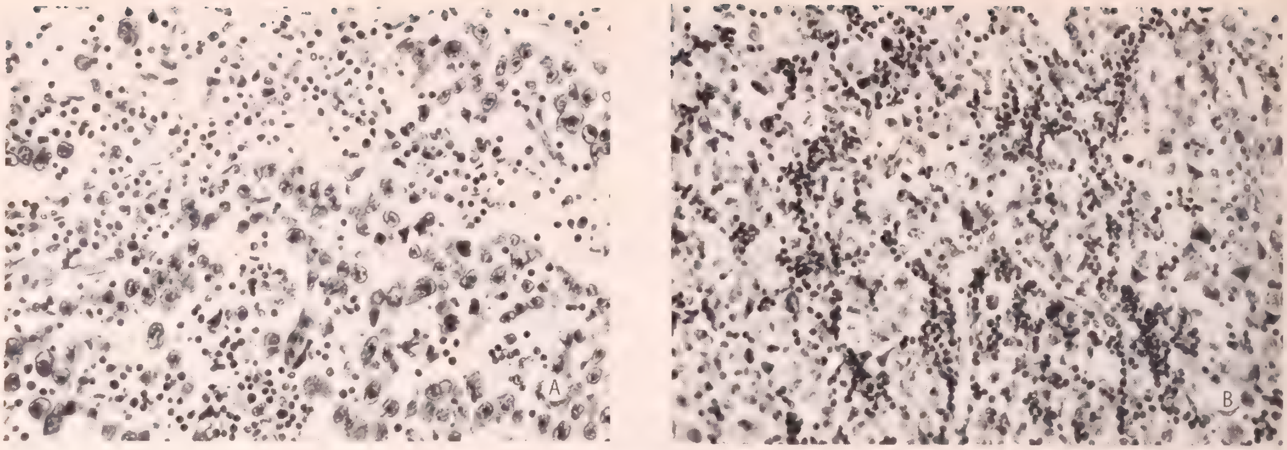

FIGURE 1. (A) Example of slight lymphocytic infiltration (1+) in seminoma. (B) Maximal lymphoid infiltration (4+) with histiocytic and granulomatous changes in seminoma. (Hematoxylin and Eosin Stain × 200)

from the latest census figures of New York State. There was no significant change from the initial home address and the most recent recorded address in our files. Places having a population of less than 10,000 were arbitrarily considered rural and above 10,000 as urban.[11] Occupational profiles were obtained.

Results

General. Table I summarizes the clinical distribution of the 194 cases of germinal or nongerminal tumors observed at Roswell Park over the ten-year period, 1959 to 1969. Over 40 per cent (44.2 per cent) of the germinal tumors were classified as seminoma, and over 20 per cent (28.7 per cent) of the germinal tumors were judged to be embryonal carcinoma. The youngest patient in the seminoma series was twenty-six years of age, and the oldest was eighty-one years old, with a mean age of 48.4 ± 1.37 (S.E.) years. The youngest patient in the nonseminoma cases was two years, and the oldest case was eighty-two years, with a mean age of 35.5 ± 1.53 (S.E.) years. Of all 194 cases, only one of the classified tumors was found in a Negro, all others being classified as Caucasian.

Survival. The relationship to the type of tumor, presence or absence of metastases, stage of tumor, tumor status, and lymphocyte scoring were evaluated. All results were obtained after coding and processing of all cases by electronic tabulating and computing equipment.

A five-year survival rate of 54 per cent was found in 192 cases (Fig. 2). The mortality status was unknown in the other 2 patients. The 80 seminoma cases showed a five-year survival rate of 80 per cent as compared with 35 per cent for the 112 nonseminoma cases (Fig. 2). Only 7 seminoma cases were found to have tumor present at autopsy. These cases survived an average of 15.1 ±

TABLE I. Incidence of various types of tumor in the material studied

Type	Number of Patients	Per Cent
Germinal tumors		
Seminomas	80	44.2
Embryonal carcinoma	52	28.7
Teratoma	2	1.1
Teratocarcinoma	21	11.6
Choriocarcinoma	3	1.7
Mixed embryonal carcinoma	14	7.7
Mixed teratocarcinoma	6	3.3
Mixed choriocarcinoma	3	1.7
TOTALS	181	100
Nongerminal tumors		
Interstitial cell carcinoma	2	15.4
Sertoli cell	0	0.0
Sarcoma	8	61.5
Fibroma	0	0.0
Blastoma	1	7.7
Other	1	7.7
Unknown	1	7.7
TOTALS	13	100

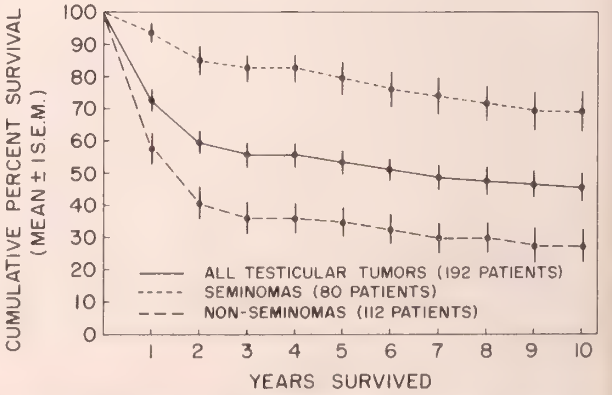

FIGURE 2. Survival comparison for seminomas and other testicular tumors in 192 patients.

TABLE II. Relationship between testicular tumor type and presence of metastases*

Tumor Type	Metastases Yes	Indicated No	Total
Seminomas	27	53	80
Nonseminomas	93	21	114
Totals	120	74	194

* Yates corrected chi-square = 43.57; $p < 0.0001$.

3.24 (1 S.E.) months after tumor diagnosis. The shortest survival time for these 7 patients was eight months and the longest, thirty months. A significantly lower incidence of metastases was found in the seminoma cases (Table II). All patients with known metastases showed a five-year survival rate of 29 per cent in contrast with 93 per cent for those without metastases (Fig. 3). Similar survivals were noted in tumor stage. Seventy-three Stage I patients indicate a five-year survival rate of 97 per cent, 3 Stage II patients 67 per cent, and 116 Stage III patients, a five-year survival rate of 26 per cent (Fig. 4). This excludes 2 patients in whom the tumor stage was uncertain. Two of the 3 Stage II patients had seminomas. All 3 of these Stage II patients had metastases. Table III shows a significantly high degree of association of seminoma tumors in Stages I and II in contrast with the nonseminomas ($p < 0.0001$).

Lymphocyte scoring and epidemiology. In 53 seminoma cases sufficient histologic material was available for two investigators to review independently the original seminoma slides. These slides (one per patient) were classified into five categories depending on the amount of lymphocyte stroma present after studying different fields of tissue section: 0, no lymphoid stroma; 1, minimal lymphoid stroma (Fig. 1A); 2, moderate degree of lymphoid stroma; 3, high degree of lymphoid stroma; 4, very high degree of lymphoid stroma with histocytic and granulomatous changes (Fig. 1B). As indicated previously, none of the patients who died with seminoma tumor present at autopsy had survived for more than thirty months. Table IV summarizes the lymphocytic scoring as broken down in patients who survived three years or less as compared with those patients who remained in the study over three years. To eliminate any statistical bias, 2 patients still alive but followed for less than three years were excluded from the analysis. A mild relationship between lymphocyte score and survival is seen (Wilcoxon Rank t = 1.90 − 1 df, $0.05 < p < 0.10$), but the overall result is clouded because of the small number of seminoma patients with relatively short survival periods.

Table V failed to reveal any significant relationship between patient occupation and type of

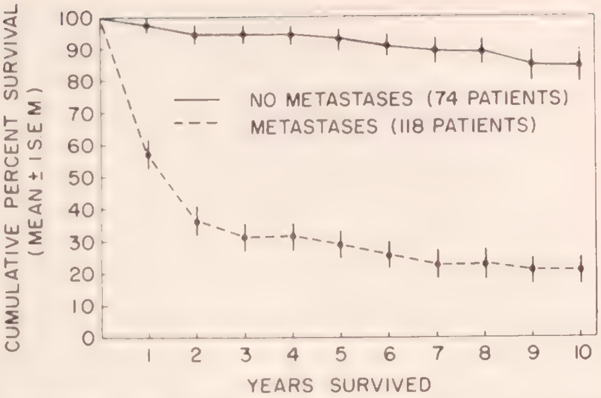

FIGURE 3 Survival rates for testicular tumor patients, comparing those with and without known metastases.

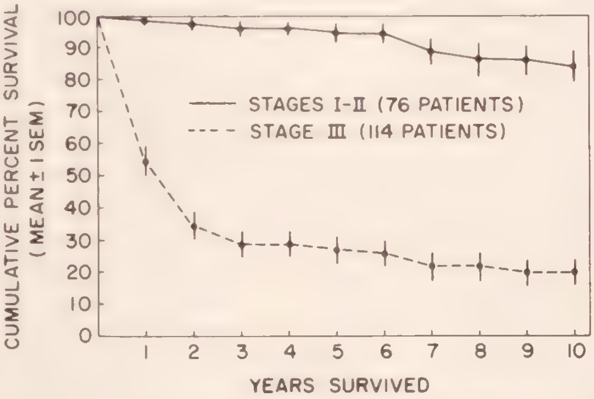

FIGURE 4. Testicular tumor survival rate compared by clinical stage.

TABLE III. Relationship between testicular tumor type and tumor stage*

Tumor Type	Tumor I + II	Stage III	Total
Seminomas	57	22	79
Nonseminomas	19	94	113
Totals	76	116	192

* Three State II patients, 2 of whom had seminomas, are combined with Stage I. Tumor stage was unknown in 2 patients. Yates corrected chi-square = 57.24; $p < 0.0001$.

TABLE IV. Relationship between lymphocyte score and time on testicular tumor study for seminoma patients*

Time on Study	Lymphocyte Score 0	1+	2+	3+	4+	Total
Patients surviving <3 years*	2	3	1	1	0	7
Patients remaining >3 years	4	9	18	10	3	44
Totals	6	12	19	11	3	51

* Wilcoxon Rank t = 1.90 (1 D.F.); $0.05 < p < 0.10$.

TABLE V. Incidence of type of tumor and occupation correlation

Tumor Type	Professional	Clerical	Laborer	Farmer	Unknown	Total
Seminoma	19	18	26	7	10	80
Nonseminoma	21	17	34	2	27	101
Nongerminal	0	2	1	2	8	13
TOTALS	40	37	61	11	45	194

tumor in terms of nongerminal, nonseminoma, and seminoma cases. In contrast, as shown in Table VI there was a significant relationship ($p < 0.005$) between the presence of seminoma and residence in a rural area as defined by a population unit of less than 10,000 people during the period of tumor observation. This relationship was not noted in all nonseminoma germinal tumors or in the nongerminal tumor cases.

Comment

The present study involving the review of the charts of 194 patients with testicular tumors admitted to Roswell Park Memorial Institute during 1959 to 1969 was undertaken to evaluate survival relations between patients with seminoma and nonseminoma tumors.

The isolation of lymphoid stroma to survival is difficult to assess accurately in the absence of any measurable quantitative figures. Impressions of one observer may vary from others. Moreover, lymphoid stroma is not uniformly distributed in the whole tumor. One has to see several sections taken from tumor and study them extensively to come to an arbitrary impression to grade tumor on lymphocytic scoring. With these limitations, however, when evaluation of lymphoid stroma was done in seminoma slides with the help of an experienced pathologist and compared with survival figures, our results indicated some relationship between lymphocytic scoring and survival. This finding is similar to the observations of others in the literature, although not as clear cut.[8] The present series represents a smaller number of cases studied from a different time period.

A rural preponderance of seminoma of testes was reported by Lipworth and Dayan[1] in their studies of 280 cases of seminoma in England and Wales covering a period from 1961 to 1963. Contrary results were reported in Denmark by Clemmesen in 1968.[2] In this study, over the period between 1943 to 1962, the urban incidence of all testicular tumors was found to be higher as compared with rural areas.[2]

In our present study when seminoma cases were compared with nonseminoma tumors of testes, the incidence of seminoma was significantly higher ($p < 0.005$) in areas having a population of fewer than 10,000 (rural) as compared with areas having a population of over 10,000 (urban). The etiologic significance of rural preponderance seen in our studies and those of Lipworth and Dayan[1] in England is not certain. Possibly there could be a carcinogenic factor in the rural environment to which the testis is sensitive. It is possible that the difference is also due to random factors and institutional factors which draw cases from all over the state in a more advanced degree as compared with a general hospital. The observation is, however, noteworthy and deserves similar comparison with data obtained from other geographic areas. No known prognostic value is as yet apparent. The role of viral factors remains an intriguing possibility that merits prospective study.

Summary

Testicular cases at Roswell Park Memorial Institute for the years 1959 to 1969 were reviewed. Of the 194 cases studied, a significantly higher proportion of the seminoma patients were in tumor Stage I. The relationship between lymphocyte scoring, the primary tumor, and patient survival was not entirely clear. There was, however, a significantly higher rural preponderance in seminoma patients as compared with other testicular tumors. This epidemiologic factor merits further investigation in a similar fashion from those cases studied in different geographic areas.

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TABLE VI. Relation between type of tumor and residence population: home status*

Type of Tumor	Population Over 10,000 (Urban)	Population Less Than 10,000 (Rural)	Total
Seminoma	23	57	80
All nonseminoma germinal tumors	53	48	101
All nongerminal tumors	10	3	13
TOTALS	86	108	194

* Comparisons: Germinal tumors: seminomas versus nonseminomas, Yates corrected chi-square = 9.36 (1 D.F.), $p < 0.005$; seminomas, nonseminoma germinals, and all nongerminal tumors, chi-square = 16.18 (2 D.F.), $p < 0.001$.

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Wilms' Tumor

Effect of chemotherapy on survival*

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The advent of chemotherapy has radically altered the prognosis of patients suffering with Wilms' tumor. Standard surgical and radiologic treatment augmented by the use of single- and multiple-course therapy with dactinomycin has given children with Wilms' tumor the prospect of a healthy future. This study of 25 cases was undertaken to evaluate the significance of this improvement based on the records of the Albany Medical Center Hospital.

Methods and materials

With information gathered from hospital charts, Albany County Tumor Registry Abstracts, and the outpatient records of the Department of Oncology, Albany Medical College, an analysis was made of the types of treatment regimens offered to two groups of patients. Group A was defined as those patients initially treated between 1954 and 1963. Group B included those patients treated between 1963 and 1970.

The patients were tentatively diagnosed by clinical findings and conventional laboratory and radiologic examination. Diagnoses were confirmed by histologic study of surgical and biopsy specimens. Staging was done according to the Children's Cancer Study Protocol which defines Stage I as being well-encapsulated tumor which was completely resected.[1] Stage II disease consists of gross residual intra-abdominal disease following surgery. Stage III disease represents distant metastasis to the lungs or other organs present at the time of diagnosis or noted on subsequent follow-up.

Analysis of treatment regimens was based on the type of surgery done, amount of radiation therapy given, and the type, dosage, and time course of chemotherapy. Effectiveness of therapy regimens was compared on the basis of survival and cure rates, which were calculated from the time of diagnosis to the time of death or last recorded visit. Periods at risk were calculated on the basis of age at time of diagnosis plus nine months.[2] Statistical analysis of differences between the groups was done by the chi-square method, and a life survival curve was made.

Patient population

Twenty-one of 25 patients were seen initially at the Albany Medical Center Hospital for diagnosis, treatment, and follow-up. The remaining 4 children, 1 in Group A and 3 in Group B, were diagnosed and received the first segment of their treatment at other institutions and were then referred for follow-up and continued treatment.

In Group A there were 7 females whose average age at the time of diagnosis was fifty-six months, and 5 males whose average age was sixty-seven months. The average age for Group A was sixty-one months, and the median age was 57.5 months. Two children were less than thirty-six months old at the time of diagnosis. Presenting symptoms in this group included: abdominal mass, 9; abdominal pain, 5; gross hematuria, 5; personality changes, 5; constipation, 1; nausea and vomiting, 1; and weight loss, 1. One patient was mentally retarded. Eight children had primary tumor involvement of the left kidney, 3 had tumors in the right kidney, and 1 had bilateral tumor involvement. Seven patients suffered with metastasis. Metastasis developed in 4 during the period of follow-up. Four patients were free of clinically definable metastasis throughout follow-up. By clinical stage, there were 8 patients with Stage III disease, 3 with Stage II disease, and 1 with Stage I disease.

In Group B, there were 8 males and 5 females. The average age of these children was sixty-one months, and median age was fifty-three months. The females were older than the males, averaging seventy-four months and fifty-two months of age, respectively. Three children were less than thirty-six months of age, and 2 were less than twenty-four months old. Presenting symptoms included abdominal mass, 10; abdominal pain, 5; personality changes, 3; gross hematuria, 2; fever, 2; weight loss, 2; diarrhea, 1; and constipation, 1. One child was mentally retarded and had congenital anomalies. Aniridia was not found.[3] Tumor involved the left kidney in 7 cases and the right kidney in 6 patients. Four patients showed evi-

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dence of metastatic disease. Metastasis developed in 9 children during the period of follow-up. Three children were free of clinically definable metastasis throughout their course. There were 10 patients with Stage III disease, 1 with Stage II disease, and 2 with Stage I disease. This is summarized in Table I. The difference in the median age of the two groups is not significant ($p < 0.7$).

Treatment

Twenty-two of the children had surgery. Transperitoneal nephrectomies were performed on 20 patients, and in 2 retroperitoneal approaches were made. Biopsies were performed on only 2 children in Group A and 1 child in Group B, all of whom were inoperable at the time of diagnosis. Radiation therapy was administered to 22 patients as a standard procedure for preoperative or postoperative therapy and for the treatment of metastatic disease. Two patients in Group A and 1 in Group B did not receive any radiation therapy. Patients in both groups treated with preoperative radiation therapy received a total dose of 1,200 rads over periods of two to three weeks. Doses varying between 2,000 and 4,000 rads were given over a two- to four-week period for postoperative treatment, on recurrence of tumor, or for the treatment of metastasis.

Little chemotherapy was prescribed for Group A. No antitumor drugs were given for Wilms' tumor at the Albany Medical Center Hospital until 1957. In that year one course of triethylenethiophosphoramide (Thio-Tepa) in a dose of 0.4 mg. per kilogram as an intravenous bolus was used to treat lung metastasis in 2 patients. Methotrexate (0.05 mg. per kilogram orally daily) and nitrogen mustard (0.2 mg. per kilogram intravenously daily for two doses) were prescribed in 1958 to treat metastatic disease. Dactinomycin (15 micrograms per kilogram daily for five doses as an intravenous bolus) was prescribed for 4 patients

Twenty-five patients with a diagnosis of Wilms' tumor were seen at the Albany Medical Center Hospital between August, 1954, and January, 1970. They were studied with regard to their symptoms, age, sex, type of treatment, and survival rate. The patient population was similar with respect to sex incidence but was older and had more extensive disease than other reported populations. A significant improvement in the two-year survival rate of patients treated in 1963 and thereafter was noted (46 per cent) when compared with patients treated prior to 1963 (8.5 per cent). This difference probably is due to an improved chemotherapy regimen.

TABLE I. Summary of general characteristics of patient population

Case Number	Sex	Year	Age at Diagnosis (Months)	Therapy*	Survival Time (Months)	Extent of Disease Stage	Metastasis**	Side††
Group A								
1	F	1954	85	S	Operative death	II	0	R
2	M	1956	56	SR	4	III	DR	L
3	M	1957	82	SRT	7	III	DR	L
4	M	1957	26	SRT	12	III	D	R
5	F	1958	57	BR, MNA	4	III	D	L
6	F	1959	35	SRA	11	III	R	L
7	F	1959	58	B	4	II	0	RL
8	F	1960	38	SR	132†	I	0	L
9	F	1961	37	SRVA	21	III	DR	L
10	F	1961	84	SRFA, N(2)	16	III	DR	L
11	M	1961	92	SRF(4)	9	II	0	L
12	M	1962	81	SRV	14	III	D	R
Group B								
13	M	1963	22	SRVA	84†	III	R	L
14	M	1963	41	SA	90†	III	R	R
15	F	1964	53	SRA(5)	90†	III	DR	L
16	M	1965	52	SR	79†	I	0	L
17	M	1965	115	SRVA	69†	II	0	R
18	F	1966	97	SRA(3)	11	I	0	R
19	M	1967	62	BRVA(3)	13	III	R	R
20	F	1967	102	SRVA(9)	12	III	R	R
21	F	1968	36	SRVA(2)	4	III	D	R
22	M	1969	4.5	SRVA(2)	7	III	R	L
23	M	1969	53	SRVA(5)	19	III	DR	L
24	M	1969	70	SRA(2)	8	III	R	L
25	F	1969	86	SRA(2)	26†	III	DR	L

* A = dactinomycin; B = biopsy; F = 5-fluorouracil; M = methotrexate; N = nitrogen mustard; R = radiation; S = surgery; T = triethyleneiophosphoramide (Thio-Tepa); V = vincristine sulfate.

† Alive at time of study.

** D = metastasis at time of diagnosis; 0 = no known metastasis; R = recurrence of disease or late-developing metastasis.

†† R = right; L = left.

with metastasis in 1958, 1959, and 1961. Two patients were treated with vincristine sulfate (50 micrograms per kilogram once a week as an intravenous bolus) as antimetastatic chemotherapy. Fluorouracil (15 mg. per kilogram as an intravenous bolus daily for five doses) was prescribed for 2 patients with Stage II and III disease during this period.

The chemotherapeutic regimen given Group B was more intensive and standardized. In addition to surgery and radiation, 12 patients received dactinomycin (15 micrograms per kilogram as an intravenous bolus daily for five doses). Nine of these 12 patients received repeated courses of this chemotherapy at six- to eight-week intervals. Four patients received two courses, 2 received three courses, 2 were given five courses, and 1 patient had nine courses of dactinomycin on this schedule. Patients were followed for tumor remission or resistance and for signs of toxicity such as alopecia, leukopenia, vomiting, stomatitis, and enteritis. Vincristine sulfate was substituted when there was evidence of tumor resistance to dactinomycin. Chemotherapy was discontinued if tumor growth continued or recurred after several courses of treatment.

Survival statistics

The overall survival rate for both groups treated from 1954 to 1970 is 7 of 25 patients (28 per cent). The survival rate for Group A treated from 1954 to 1963 is 8.5 per cent, since 1 patient (Case 8) has survived. That thirty-eight-month-old patient had Stage I disease and received surgery and radiation without chemotherapy. Of the 8 patients in Group A treated with chemotherapy, surgery, and radiation, none survived.

In Group B, treated from 1963 to 1970, 6 (46 per cent) of 13 patients survived. One surviving fifty-two-month-old patient (Case 16) had Stage I disease and was treated with surgery and radiation, similar to Case 8 in Group A. Aggressive treatment with dactinomycin and vincristine sulfate combined with surgery and radiation constituted the treatment regimens of the other 5 children who have survived in this group. Four of the survivors had Stage III disease, and 1 had Stage II disease. Two of these children received two to five courses of dactinomycin over a period of two to fifteen months. Table II lists the overall survival data for Groups A and B.

Five of the 7 surviving children (Cases 8, 13, 14, 15, and 16) were younger than the other members of their respective groups, having an average age of forty-one months at the time of diagnosis as compared with the group average of sixty-one months. These patients have all lived for a period longer than their defined periods at risk. The 2 remaining children (Cases 17 and 25) had an average age of 100.5 months at time of diagnosis. Both had Stage III disease and were treated with dactinomycin. Both have lived more than two years, but because of their advanced age at time of diagnosis, they are still at risk as defined by Collins, Loeffler, and Tivey.[2] Table III presents an analysis of mortality experience for both groups as a function of both the age of each patient compared with the median age for his group and all the therapeutic regimens offered compared with the combined use of surgery, radiation, and chemotherapy.

There was no significant difference (p <0.3) in short-term survival between those patients in Group A who received chemotherapy and those who did not. Comparison of the survival times of patients in both groups A and B as seen in Figure 1 demonstrates that Group B patients treated over prolonged periods with dactinomycin lived significantly longer than all Group A patients for the short-term period (p <0.01) and over the long-term period.

Comment

Single- and multiple-course dactinomycin and vincristine sulfate therapy has significantly improved the prognosis for children with Wilms' tumor when the drugs are used in adequate tumorcidal doses. Results have been published by several investigators with regard to prognosis with multiple-course dactinomycin therapy. Farber[4] found that dactinomycin raised the prognosis

TABLE II. Survival of all patients with Wilms' tumor by group

Survival Data	Group A	Group B	Totals
Survivals (>2 years)	1	6	7
Deaths (within 2 years of diagnosis)	11	7	18

TABLE III. Analysis of two-year survival as a function of age and treatment regimen

	Age			
	Younger than Median		Older than Median	
Survival data	Group A	Group B	Group A	Group B
All forms of treatment				
Alive	1	4	0	2
Deceased	5	3	6	4
TOTALS	6	7	6	6
Living (per cent)	16.6	57	0	33.3
With combined chemotherapy, surgery, and radiation (triple therapy)				
Living	0	3	0	2
Deceased	4	3	4	3
TOTALS	4	6	4	5
Living (per cent)	0	50	0	40

for two-year survival from 40 to 87.9 per cent. Fernbach and Martyn[5] reported that dactinomycin doubled the two-year survival time from 47 to 92 per cent and markedly reduced the incidence of metastasis. Wolff *et al.*[6] demonstrated the benefits of maintenance or multiple-course regimens in reducing the recurrence of disease from 61 to 16 per cent in children two years old and under. Burgert and Glidewell[7] reported an increase in two-year survival from 44 to 63 per cent.

The patient population in both groups was at an older average and median age than in other studies.[8-10] Burgert and Glidewell[7] have demonstrated that the age at operation is a significant factor in prognosis. The percentage of patients three years old and younger surviving twenty-four to forty-eight months postoperatively was double that of children three to five years old. Marsden and Steward,[9] Sutow *et al.*,[10] and Gross and Neuhauser[11] have confirmed this. Our patient population with its advanced age at time of diagnosis and operation falls into the category which would expect the least benefit from therapy as concluded in these studies.

Sutow *et al.*[10] and Maier and Harshaw[12] have shown the poorer prognosis for those patients with Wilms' tumor who have or develop metastasis, similar to our Stage II classification. Sixty-six per cent of the children in Group A and 61 per cent of the children in Group B fall into this poor-prognosis category. In their larger group, Sutow *et al.*[10] had only 20 per cent with Stage III disease. Our experience includes a larger proportion of patients with Stage III disease.

Two-year survival rates by age distribution within each group indicate that those patients younger than the median in each group had a better chance of surviving two years than the older members of their respective groups, 16.6 versus 0 per cent in Group A and 57 versus 33.3 per cent in Group B. Correlating this information with the difference in chemotherapeutic regimens given the two groups, it is reasonable to conclude that the improvement in long-term survival in Group B is related to the intensive use of dactinomycin and vincristine sulfate over periods ranging up to eighteen months. Elimination of the 1 survivor in each group who received only surgery and radiation accentuates the difference in survival between the two groups, a difference which is derived solely from the intensive use of chemotherapy in Group B.

Conclusion

A comparison of two groups of patients with Wilms' tumor treated before and after 1963 was made, and both groups fell into categories expected to have a poor prognosis because of their older age at time of operation and their advanced stage of disease. There was a marked improvement in survival in the group treated after 1963. Radiation and surgical approaches to both groups were similar. Since the groups were similar in all respects except for their chemotherapy, it is reasonable to conclude that the prolonged utilization of chemotherapy with dactinomycin supplemented with vincristine sulfate was responsible for the improved survival of patients with Wilms' tumor treated since 1963.

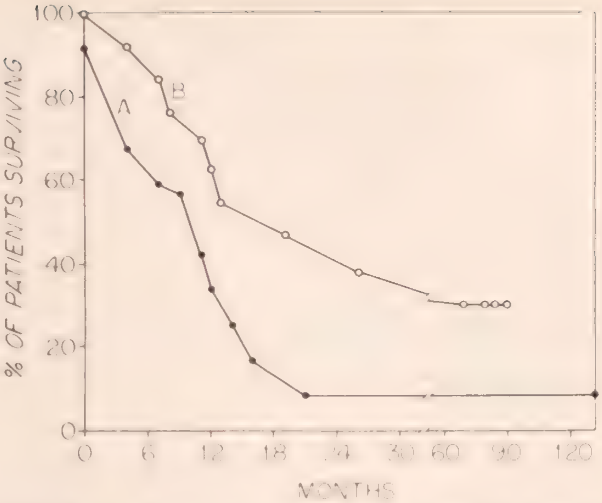

FIGURE 1. A represents life survival curve of Group A treated from 1954 to 1963. B represents life survival curve of Group B treated from 1963 to 1970. Note increase in survival both short term (first fourteen months postdiagnosis) and long term (greater than two years) for Group B, whose characteristics and treatment regimens were similar to those of Group A with addition of standard and prolonged prescription of dactinomycin and vincristine sulfate.

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Case Reports

Americium Contamination Incident

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Discovery of extensive alpha contamination in a New York State health department laboratory at Albany, New York, in February, 1970, proved to be the opening chapter in a radiologic story which was to reach, at one point, deep into Germany. The story, as it unfolded, was followed by newspaper, radio, and television audiences around the world. The final chapters, of course, are not yet written. This report is a summary of the events which transpired; which, in fact, are still in train.

History

The health department's Division of Laboratories and Research at New Scotland Avenue, Albany, under the direction of Dr. Donald J. Dean, maintains radiologic sciences laboratories in support of the department's radiologic health program, which is administered by the Bureau of Radiological Health.

In June, 1967, the division's laboratory was moved from Colvin Avenue to Russell Road. It has provided radiochemical analysis and low-level counting of samples of air, water, milk, and food.

In 1970 the discovery of contamination in the Russell Road laboratory and subsequent investigation brought the investigators back to the former Colvin Avenue premises.

Contamination was from such an unlikely and unsuspected source that only coincidence revealed its existence. Aside from routine uranium analysis, no work with alpha emitters had ever been done at Russell Road. From 1962 to 1965 some plutonium-239 work had been carried out at the New Scotland Avenue laboratory, and an electrodeposited disk was counted at the Colvin Avenue laboratory. Routine and regular monitoring of the division's laboratory had not revealed the contamination, chiefly because the emitter was an isotope not used in regular procedures and researches of the laboratory.

On February, 5, 1970, it was suspected that a small radium calibration standard, sealed in a tricarb unit at the Russell Road laboratory, had ruptured. An alpha survey disclosed no contamination associated with this source but did reveal extensive alpha contamination on chairs, desks, benches, file cabinets, and other appurtenances. This contamination was so gross that the investigators, headed by Dr. Joseph Sharp, director of the Russell Road laboratory, were reinforced in their belief that it could not have emanated from the calibration source.

Dr. Sharp and his team, during the weekend, identified, isolated, and packaged in a locked room at the laboratory all contaminated materials which they found.

The nature of the contamination found in certain books, particular areas of the laboratory, and in a sports jacket pointed suspicion at one laboratory researcher, Mr. X, although his assigned work in the laboratory only involved instrument repair, development, maintenance, and calibration. Mr. X had been a fulltime employe of the laboratory since 1965 and a consultant since 1963.

Localizing activity

Dr. Sharp visited Mr. X at his home on Sunday, February 8, and discussed the problem with him. Subsequent examination of Mr. X's home, with his consent, revealed contamination similar to that found in the laboratory. In the course of the investigation Mr. X removed from a bureau drawer a small cardboard box containing a metallic object and turned the packet over to Dr. Sharp as well as the contents of the bureau drawer. Both the box and metallic object were found to emit alpha activity which subsequent isotopic analysis established as being primarily americium-241 with a small fraction of plutonium-239 as a casual impurity.

Americium-241 is an artificially prepared silvery, radioactive metal with a physical half-life of four hundred and fifty-eight years and a biologic half-life of about one hundred and ninety-five

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years in bone. Maximum permissible body burden in bone for a radiation worker is 50 nanocuries compared with 100 nanocuries for radium-226 and 40 nanocuries for plutonium-239. Americium has a 60-kev gamma energy with an external gamma dose rate of 0.039 mr. per hour at 1 m. per millicurie. Americium-241 is a daughter of plutonium-241 and parent of neptunium-237. The nonoccupational MPC (maximum permissible concentration) in air is 2×10^{-13} microcurie per cubic centimeter and water, 9×10^{-5} microcurie per cubic centimeter. Inhalation represents the most likely source of exposure. The fraction of americium reaching the bone from ingestion is 2.5×10^{-5} and from inhalation 6.3×10^{-2}.

The metal slide in the box was contaminated with Am^{241} from a primary source which reportedly had been returned to the vendor. This source was located and forwarded by the vendor to the Atomic Energy Commission for analysis.

With the assistance of the U.S. Atomic Energy Commission, selected materials were sent to the Idaho Operations Office for analysis: a metal slide from a pillbox from Mr. X's residence, a handbook of chemistry and physics from the Radiological Sciences Laboratory, and the original source.

The metal slide was contaminated on both sides, the hottest side calculated to be about 49 microcuries of Am^{241}. The handbook was contaminated with Am^{241} estimated to be not in excess of 0.2 to 0.3 microcurie. The original source, a $\frac{1}{16}$-inch thick metal disk $1\frac{1}{4}$ inches in diameter, was calculated to have a source strength of 10 millicuries at the time of analysis. A circular shaded area was observed in the center of the disk similar to that produced by an electrodeposition cell. It is not known whether the source was prepared by electrodeposition, direct evaporation, or by other means.

Pu^{239} is a casual impurity remaining from the original preparation of Am^{241}, and Np^{237} is the daughter product of radioactive decay of the Am^{241} whose concentration relates directly to the age and concentration of Am^{241}. The ratios of Am^{241} to Pu^{239} and of Pu^{239} to Np^{237} indicate contamination originating from a single source.

It might be noted here that a laboratory in New Jersey had been licensed by the Atomic Energy Commission in 1963 to possess an Am^{241} plated foil source not to exceed 50 millicuries, with a total possession limit of 100 millicuries. Mr. X was an employe of that laboratory at that time, and the license provided that the source be used by him or under his supervision. This license expired in 1967.

Fixed and removable alpha activity of up to 100,000 CPM (cycles per minute) were found by scintillation and gas-flow alpha-field survey equipment. The results of Hi Vol samples showed three times MPC for a nonoccupational worker in the workshop and five times MPC in the bedroom (Tables I and II). Mr. X agreed that he and members of his family would undergo whole-body counts. In addition to the X family, a number of others who were friends or close working associates of Mr. X, and who might therefore have a possible body burden, were requested to assist in bioassay studies and full-body

TABLE I. Selected survey results using scintillation and gas-flow alpha survey equipment in X residence

Areas	Direct Reading in CPM*	Results of Swipe Analysis in CPM†
Bedroom		
Closet floor	300 to 5,000	. . .
Dresser drawer handle	2,000	150
Shoes (soles)	400	. . .
Dresser top	3,000	2,500
Man's coat	12,000	. . .
Suit	1,200	. . .
Bathroom scale	70,000	100,000 and 10,000 (two separate swipes)
Daughter's bedroom		
Chair	Background	. . .
Desk	Background	. . .
Bed	Background	. . .
Boy's bedroom, desk	1,400	200
Den, bookcase shelf	600	. . .
Family room, dark brown briefcase	100,000	8,000
Workshop		
Bench	10,000	4,000
Floor	2,000	2,500

* PAC-1SAG alpha scintillation equipment.
† PAC-3G gas-flow alpha survey meter.

TABLE II. Air sampling results

Area	Microcuries per cubic centimeter
Am^{241}, soluble, MPC in air	
Non-Occupational	2×10^{-13}
Occupational	6×10^{-12}
Sampling locations	
X Residence	
Prior to decontamination	
Workshop	6.3×10^{-13}
Bedroom	10.1×10^{-13}
During decontamination	
Family room	9.9×10^{-13}
Son's room	0.9×10^{-13}
Following decontamination	
Family room	$<0.2 \times 10^{-15}$
Upstairs hall	$<0.2 \times 10^{-15}$
Upstairs hall with air conditioning equipment on	1.8×10^{-13}
Family room with air conditioning equipment on	1.2×10^{-13}
Health department laboratory	
Russell Road chemistry laboratory during decontamination	2.77×10^{-14}
Colvin Avenue, during decontamination	2×10^{-14}

counting. The department summoned its radiologic specialists from regional offices at Buffalo and White Plains to assist in the Albany investigation. Assistance with the whole-body counting was accorded by New York University Medical Center staff.

The preliminary report on the results of whole-body counting showed the following body burden, in nanocuries: Mr. X, 87; son, age ten years, 93; wife, 13; son, age twenty years, 11; and daughter, 6.5.

Recounts at New York University reported a body burden of 89 nanocuries for Mr. X and 40 nanocuries for the ten-year-old son, with the skeleton containing a significant fraction of Am^{241}. Argonne National Laboratory reported body burden for Mr. X of 65 and of the ten-year-old son 42 nanocuries. The whole-body counting results for all others were negative.

Twenty-four-hour urine samples were collected from the X family and laboratory workers. One laboratory reported all urine results as negative, another laboratory showed elevated levels for Mr. X and his son of 4.92 and 2.93 dpm (disintegrations per minute) per sample respectively, and four laboratory persons showed moderately elevated levels of approximately 1 dpm per sample.

The human exposure of Mr. X and his son was evidently chronic, occurring since 1963 or 1964. Findings to date indicated extensive contamination in Mr. X's private residence, the Russell Road low level counting laboratory, and measurable body burdens of Am^{241} in Mr. X's family.

A parallel investigation conducted by the Bureau of Radiological Health unearthed alpha contamination at the former department laboratory site on Colvin Avenue. This was fixed to such an extent that decontamination efforts are still being pressed at that location (Table III).

Health department officials conferred with representatives of the Atomic Energy Commission and the Public Health Service to review the findings in the investigation and to arrange for additional assistance. The department, on February 17, requested the Atomic Energy Commission to provide assistance by a RADCON (radiation decontamination) team. A four-man team from Ballistic Research Laboratories, Aberdeen Proving Ground, Maryland, arrived in Albany that night.

The team met with health department investigators for briefing sessions the next morning. The team's instrumentation included a field instrument for the detection of low-energy radiation, known as a "fidler." This "fidler" proved extremely useful for measuring the 60-kev gamma energy of Am^{241}. It consists of a 5-inch diameter sodium iodide Harshaw crystal with an Eberline pulse rate meter. With this instrument it was possible to detect in rugs, mattresses, and tile, alpha contamination not found by conventional scintillation or gas-flow alpha survey instruments.

TABLE III. Selected survey results at Colvin Avenue laboratory

Location	Readings CPM*	Readings CPM†	Results of Swipe Analysis in CPM*†
Scintillation and gas-flow alpha survey equipment	Direct		
Floor Tile	700	750	. . .
Floor Tile	400	500	. . .
Floor Tile	200	250	. . .
Floor Tile under Drinking Fountain	700	. . .	Neg.
Light Switch	200	. . .	. . .
Electric Box	8,000	10,000	3,000
Outside Door	400	700	100
Fidler instrument	Gross (cpm)**		
A′	2,000		
B′	500		
C′	500		
D′	12,000		
E′	1,500		
F′	10,000		
G′	30,000		
H′	40,000		
I′	2,500		

* PAC-ISAG alpha scintillation equipment.

† PAC-3G gas-flow alpha survey meter.

** Readings at 1 inch from floor using HV-1 scale. Background 250 CPM. Fidler field calibration with Am^{241} source HV-1 scale reading at contact 8.6 CPM approximately equivalent to 100 dpm per 100 cm^2.

With the additional support provided by the RADCON team, investigative priorities were established, including a resurvey of the X home, the school attended by X's younger son, a recreation center attended by the family, and parts of the Russell Road laboratory and the former laboratory site on Colvin Avenue. This resurvey verified the preliminary findings of the health department staff and located fixed activity in rugs and under tiles not previously identified.

Publicity

By this time hints as to the nature of the contamination incident and the department's investigational activities had seeped through to some of the news media. One radio station revealed to the department all of the information it had—and much of it was totally accurate—and asked for confirmation.

In discussion with a department spokesman, the station's news executive volunteered to withhold use of the material for twenty-four hours to permit the department to call a press conference. The press conference was convened with ranking officials of the department and the investigative directors available for a full and frank discussion o the incident.

The department, in a lengthy prepared background information statement, which was printed and distributed to all the media, emphasized that full disclosure of the incident and events surrounding it was being made in an attempt to prevent the widespread dissemination of distorted or false information which might, in effect, push a panic button in the Albany region. As a result, the stories which appeared locally were well informed, factual, and calm.

The media outside the immediate Albany area, unfortunately, did not follow the same pattern.

One out-of-state reporter in a long-distance telephone call asked a department spokesman two questions: "Will (X) turn green?" and "Will (X) pop?" By "pop," he explained, he meant would Mr. X literally explode as he walked along a street! This was perhaps the most bizarre incident in the entire case.

Further procedures

To return to the investigation: The RADCON team proved of considerable assistance in defining the breadth of the problem. The Public Health Service obtained from NASA three additional "fidlers" for use in the survey. All suspected locations and areas where contamination might be thought to have occurred were monitored. In each such instance the department notified the property holder whether the findings were negative or positive. If positive, the notification included recommendations for corrective action.

Hollis S. Ingraham, M.D., the New York State health commissioner, issued an order on February 19, prohibiting access or entry to the X family home to any person, except with the specific authorization of the commissioner of health. This included Mr. X and members of his family who took up temporary residence in a motel.

The commissioner's action was designed to (1) prevent a spread of contamination, and (2) provide additional impetus for identifying and cleaning up contaminated areas in and on the X premises.

Another order by Commissioner Ingraham required that X submit to him an acceptable and detailed plan for accomplishment of the following:

1. Reduction of levels of alpha contamination in the house so as not to exceed the following limits in the interest of health and safety:
   Fixed contamination: Average 500 dpm per 100 cm.^{2}
   Maximum 2,500 dpm per 100 cm.^{2}
   Removable contamination: 100 dpm per 100 cm.^{2}
2. Protection of personnel carrying out decontamination procedures.
3. Technics to be employed in measuring levels of activity.
4. Packaging and disposal of contaminated, removable, disposable items.
5. Prevention of off-site contamination.
6. Identification of individuals and corporations proposed to be engaged pursuant to the plan, including training, experience, and licenses held.

In the case of close associates of the X family who ate and slept in the home with any frequency, investigation was pursued particularly if there was a strong likelihood that they might have inhaled or ingested radioactive dust. This was particularly true in the case of two maids who had lived in the X household during the period since 1963.

One who had lived in the X home while the family was in New Jersey was easily located in that state. The other, who had lived in the New Jersey home and Albany residence occupied by the X family, had since returned to her native Germany. Whole-body counting of the New Jersey maid showed a low (7 nanocuries) but measurable body burden. The Public Health Service has been advised concerning the maid now reported to be living in Germany.

A cat in the X household became sick and died during the course of investigation. During its sickness, the cat was revealed to have bitten Mr. X. As a result, our americium trail suddenly shot off along a strange byway, the possibility of rabies infection, a possibility which fortunately did not materialize. The preliminary report on the body burden of the cat shows approximately 2.5 nanocuries. Additional studies are planned.

Mr. X contracted with Applied Health Physics of Pittsburg, Pennsylvania, to decontaminate his residence. This was done under a license issued on April 10, 1970, by the Bureau of Radiological Health. Bureau staff closely observed decontamination. After a final survey the commissioner's order was lifted in May, 1970.

All premises or likely locations where contamination occurred were resurveyed with the fidler. Fixed activity in the floor at the Colvin Avenue location was verified. Hi Vol air sample results for Am^{241} were below permissible limits. The premises were decontaminated. Contamination was also found in two other private residences and on the floor of a moving van. Mr. X resided temporarily in one of the homes found contaminated. Contaminated personal belongings were transferred from this residence to another residence. The moving van transferred Mr. X's belongings from New Jersey to Albany, New York, sometime in 1965. Contaminated materials in the private residences have been removed and packaged for ground burial (Table IV).

Nine private residences, a recreation center, a public school, a college dormitory room, and an apartment were carefully surveyed and no contamination found.

TABLE IV. Locations, equipment, and premises surveyed for americium contamination and action initiated

Contamination Identified	Location	Action
Health Department low level counting laboratory	Russell Road laboratory	All contaminated equipment, supplies, and materials packaged and shipped for burial
X residence	Albany, New York	Premises decontaminated in accordance with order of Commissioner of Health
Laboratory space leased by Health Department 1963–1967	Colvin Avenue laboratory	Premises decontaminated
Temporary residence of X	Albany, New York	Contaminated carpet and tiles removed and packaged for ground burial
Household items transferred from X temporary residence to another location	Albany, New York	Contaminated rugs, mattress, lampshades, and cushions packaged for ground burial
Truck transferring household belongings of X in 1965 from New Jersey to Albany, New York	. . .	Radioactive contamination removed from "one spot" on floor of trailer

Records of the Division of Laboratories and Research showed that the only americium source was a sealed 0.023-microcurie calibration source. Other than this small source Mr. X was not engaged in the handling of Am^{241} as part of his regular employment, nor was he authorized to do so.

However, Mr. X acknowledged that he had possessed an Am^{241} source which was used in private experimentation. The quantity of this source is not specifically known, but in his discussion with department officials Mr. X mentioned a figure of 10 millicuries. Mr. X said this source had been returned to the vendor. He said he placed this source in a carrier and gave it to a former employe of the department of health, who reportedly returned it to the vendor. Mr. X said further check by him with the firm had verified the return of the source sometime in 1964.

So far as can be established, this was the only time that the source suspected of contamination was in the Colvin Avenue laboratory, and inasmuch as this was in a carrier the possibility of contamination at that time appears to be remote. Nor can it be established that it was ever in the Russell Road laboratory.

Department investigators have concluded that the contamination in furniture and equipment moved from Colvin Avenue to the Russell Road laboratory was transported by Mr. X to the laboratory on his person, his clothing, and other of his personal belongings and books.

Conclusion

The remainder of this story may be summarized briefly even though it is continuing.

The department engaged Neil Wald, M.D., of Pittsburgh, an internationally recognized expert on americium radiation, as a consultant to assist with the medical investigation indicated as a result of the whole-body counting.

Mr. X's home has been decontaminated and the family lives there. Mr. X himself has left the health department and is maintaining his own private work.

All identified sources of americium contamination revealed by this investigation have been decontaminated, with the exception of some fixed activity in the floor of a truck and the former laboratory site at Colvin Avenue. The fixed activity located yielded, but stubbornly, to continued decontamination efforts.

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Cardiac Neurilemoma

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We were recently confronted with an unexpected case of asymptomatic cardiac neurilemoma. Review of the literature revealed only two previous reports of similar cardiac neoplasms.[1,2] As the volume of cardiac surgery increases, the finding of this infrequent neoplasm may likewise rise.

This report describes our experience and reviews the pertinent literature.

Case report

This twenty-six-year-old Indian female was found to have a heart murmur at age five; the murmur persisted. She denied any cardiac symptoms even during a recent pregnancy. In August, 1969, she was evaluated at the U. S. Public Health Hospital in Seattle where a cardiac catheterization showed severe pulmonic stenosis, valvular type, and an atrial septal defect with a small left to right shunt. She was referred to the University of Washington Hospital for surgery.

On admission she was in no distress with a regular pulse rate of 80 and a blood pressure of 110/68 mm. Hg. A right ventricular heave was detected, and there was a thrill palpable over the pulmonic valve. The second heart sound was fixed and widely split, and a grade IV out of V_1 systolic ejection murmur was heard over the pulmonic valve area and transmitted into the back, neck, and cardiac apex. The electrocardiogram howed right axis deviation and right ventricular hypertrophy. Roentgenograms of the chest revealed right ventricular hypertrophy and pulmonary artery prominence.

Cardiac surgery was performed on October 29, 969. On entering the pericardium an ovoid umor, 2 cm. in greatest dimension, was palpable within the wall of the right atrium near its junction with the interatrial septum and 2 cm. below the inlet of the superior vena cava. The stenosed pulmonic valve and atrial septal defect were repaired, and the right atrial mass was removed.

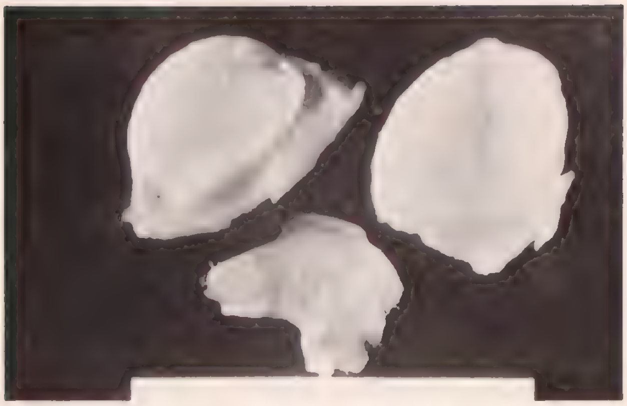

FIGURE 1. Gross photograph of the bisected tumor. The bulging cut surfaces emphasize the clear delineation of the nodule from the surrounding tissue. The smaller fragment was used for a frozen section.

Grossly the tumor was a firm, white to tan, nodular mass measuring 1.5 by 1.5 by 1 cm. (Fig. 1). It was encapsulated, partially covered by endocardium and epicardium, and appeared contained within the atrial wall. Microscopically, there was a delicate but distinct connective tissue capsule (Fig. 2A). The bulk of the lesion consisted of rather compactly arranged elongated cells organized in a whorled interlacing pattern and often aligned in a parallel, palisading manner. Admixed with the previously described Antoni A type tissue were more loosely applied cells with a vacuolated edematous aspect (Antoni B tissue) (Fig. 2B). Nuclear pleomorphism, mitotic figures, and other features suggestive of cancer were absent.

Comment

Primary cardiac tumors are uncommon; in several autopsy series their occurrence ranged from 0 to 0.25 per cent.[3-5] Approximately 80 per cent of these neoplasms are benign and the rest malignant; benign tumors arise supposedly more frequently from the left side, while the opposite is true of their malignant counterparts.[6] Benign tumors include myxomas, rhabdomyomas, angiomas, fibromas, lipomas, and various hamartomas; the first two comprise about 70 per cent of the total. Taken as a group, sarcomas appear difficult to classify; they are often descriptively designated as spindle, round, or pleomorphic cell types.[7]

Several cardiac tumors of neurogenic origin have been reported; these include benign ganglioneuromas[8,9] and neurogenic sarcomas.[10] At least one of these ganglioneuromas has some

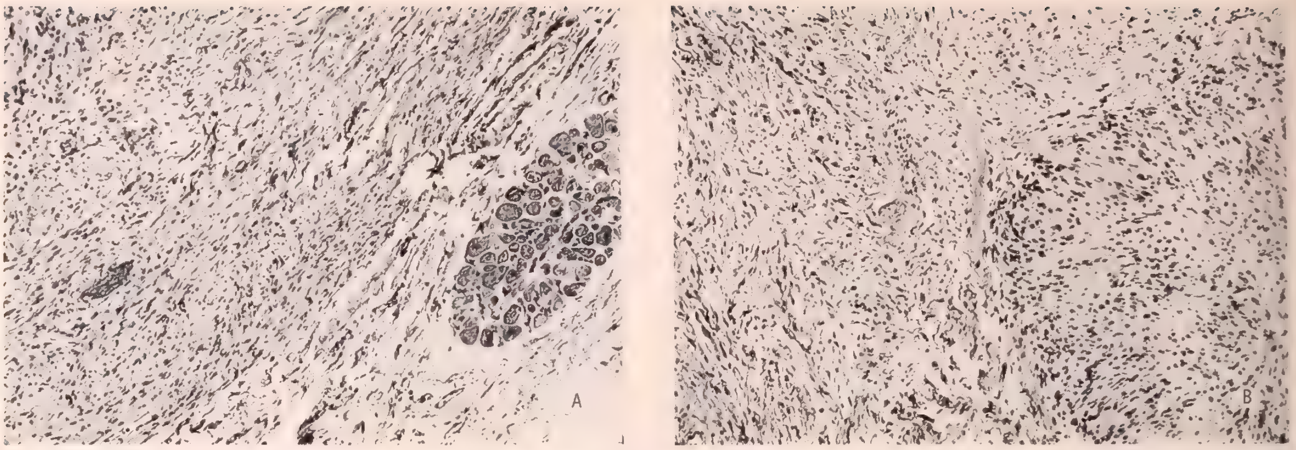

FIGURE 2. (A) Periphery of the tumor, a connective tissue layer separates tumor from myocardial fibers seen in right middle field. (B) Closely packed, palisading spindle cells evident in right aspect of photo. Remaining field consists of less cellular tissue and loose interstitium. (Hematoxylin and Eosin Stain)

similarities to neurilemomas in that it arose in the right ventricular wall rather than near to the epicardial surface.[8] Dammert, Elfving, and Halonen[10] suggest that neurogenic tumors may be more common than is generally appreciated, since many of the unclassified sarcomas arise in the right side of the heart near the cardiac plexus.

Neurilemomas are not uncommon tumors; and while they are most often seen in the head and neck, upper and lower extremities, and trunk,[11,12] their occurrence in the thorax, mediastinum, and pericardium is by no means rare.[13-15] However, despite the voluminous literature on primary cardiac tumors, few reports exist on cardiac neurilemomas.[1,2] The Armed Forces Institute of Pathology fascicle on tumors of the heart does not include them in its miscellaneous group.[16]

Both of the previously reported cases of cardiac neurilemoma were symptomatic, both arose from the right side of the heart; and while 1 was only diagnosed post mortem,[12] the other was successfully removed.[1] The extensive epicardial involvement of the first case may suggest mesothelial origin. However, the description and illustration support the diagnosis of neurilemoma. In our case, the tumor was small, completely confined to the myocardium, and asymptomatic. In none of these patients was there anything suggestive of von Recklinghausen's disease.

It has been stated that the attention given primary cardiac neoplasms is out of proportion to their clinical significance. We suggest, however, that with the advancement of surgical technics registered in recent years, it is becoming increasingly important to recognize these neoplasms and to attempt accurate preoperative diagnoses.

Summary

A case of cardiac neurilemoma is presented and the pertinent literature reviewed. The tumor was asymptomatic and was successfully removed in the course of an unrelated cardiac procedure. It is suggested that this neoplasm may be more frequent than is generally appreciated; also the increasing importance of preoperative recognition of cardiac tumors is emphasized.

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Electrocardiograms of the Month

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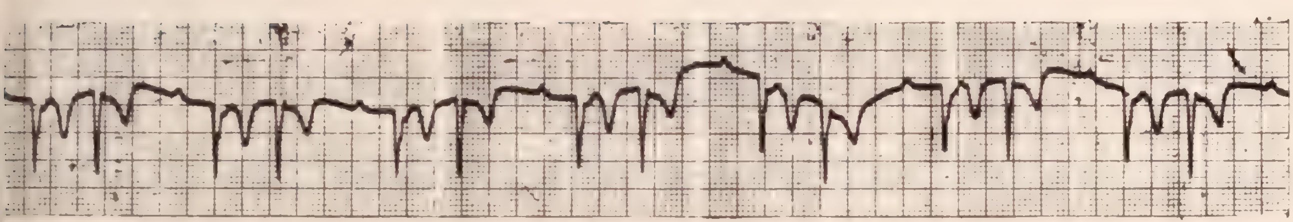
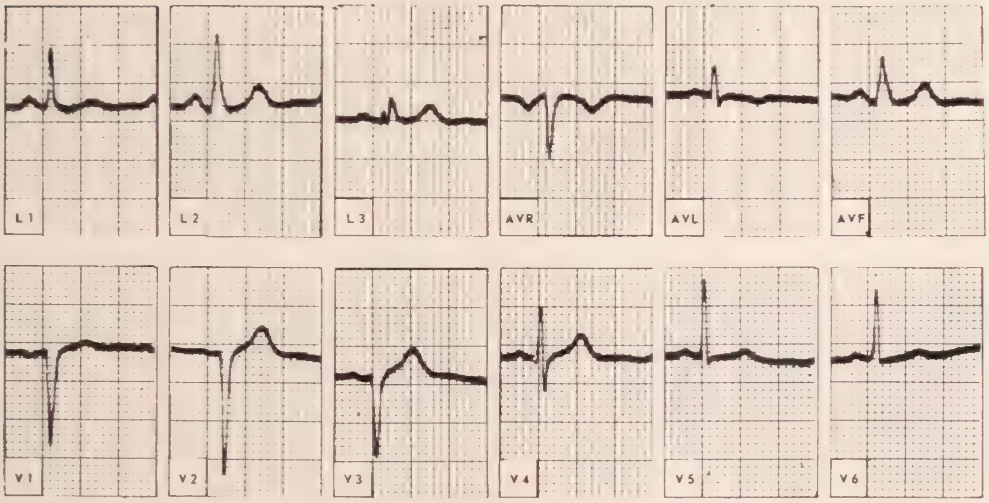


QUESTION 115. What is the rhythm?



QUESTION 116. This fifty-seven-year-old man was admitted for prostatic surgery. What is the diagnosis?

ELUCIDATION

Question 115. There is regular sinus rhythm with bigeminy due to atrial premature beats. The P-R interval of the sinus beat is 0.26 second; the P-R interval of the premature beat is 0.3 second. There is first-degree atrioventricular block with slight further prolongation of each P-R interval of the atrial premature beat.

Question 116. There is failure of R-wave progression in V_1 to V_3, with the T wave positive in these leads. This finding could represent an old anteroseptal infarction. However, many patients with similar electrocardiograms have been shown to be free of coronary artery disease and infarction. T-3 is taller than T-1, and the T in aVl is inverted. These are nonspecific abnormalities.

Medieval Medical Malpractice and Chaucer's Physician

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Probably the most frequently cited depiction of the medieval physician is Chaucer's "Doctour of Physik" who rides among the pilgrims in *The Canterbury Tales* (Fig. 1).[1] Thought to be an ironic, damning portrait by Chaucer's own intention, and later construed as a modern indictment of the malpractice of medieval medicine, the character has been maligned by critics for at least one major and three minor faults.[2-4] His avarice, because of his fine clothes and interest in gold, his religious scepticism (his "litel studie on the Bible"), and his liaisons with apothecaries,[5] each helping the other to profit, all represent pejorative qualities which have been ascribed to literary and theoretic physicians from antiquity to the present with formulaic regularity. Their position in Chaucer's portrait is neither surprising nor satiric. Yet those three minor foibles are assumed to corroborate the major flaw of this physician, his illogical unity between learning and superstition: his familiarity with the great medical treatises of classical, Arabic, and medieval tradition versus his indulgence in astrology and magic. Twentieth century commentators have attempted to gauge Chaucer's physician's character by the values of modern society; it appears more reasonable to appraise him by the intellectual values and mores of Chaucer's own age.

The evidence documenting contemporary medical practice and malpractice, however, suggests that rather than a figure of satire, condemnation, or amusement the physician is a splendid representative of both medieval physician and medieval surgeon. An exemplary figure to whom Chaucer applies the same adjectives as the equally exemplary Knight, he is "a verray, parfit pracktisour," a true and perfect practitioner.

Medieval medical practice

Historical evidence describing "perfect" medieval English medical practice is refractory. Theoretic treatises tend toward professional instruction and proselytization rather than a description of medical ideals.[6-9] Literary representations of medical life usually demonstrate the author's personal animus or artistic license. Physicians' account books,[10] herbals,[11] wills, and disquisitions[12,13] are superbly instructive; yet as sources for the portrait of medical practice each is incomplete.[14] To explore medieval medicine as it was, not as it might or ought to have been, requires indulgence in paradox. Since a reliable description of a positive is often its negative, so medical prac-

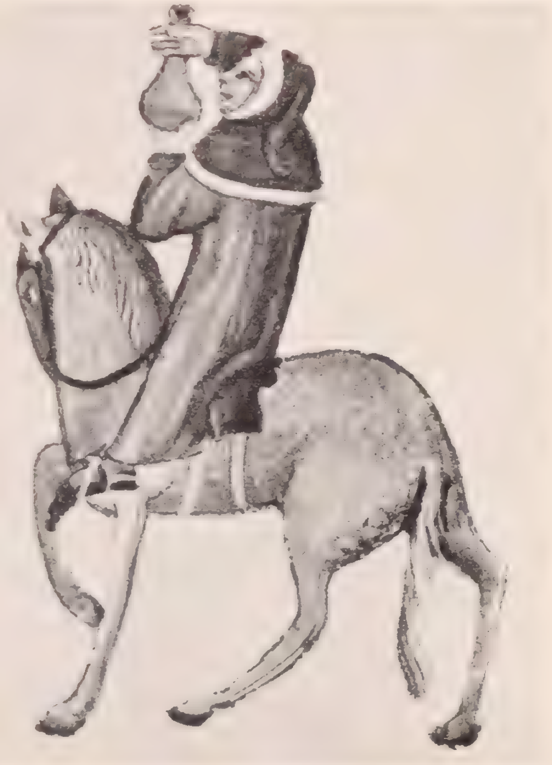

FIGURE 1. Chaucer's physician, holding urine flask. From Ellesmere Manuscript of *The Canterbury Tales*, (The Huntington Library, San Marino, California).

tice may be best apprehended by evidence of its malpractice. For, unlike most other documents, medical malpractice records preserve more than a single interpretation of medical circumstance by virtue of their triad of viewpoints, the patient's, the practitioner's, and his professional peers'.

Edicts to prevent malpractice

Therefore two medicosurgical edicts, promulgated and implemented to prevent malpractice, and their sequels in malpractice suits brought against practitioners may contribute to an understanding of late fourteenth century medical practice. One such pair of edict and case antedates Chaucer's physicians's portrait by about twenty years, and the other postdates it by the same interval. Each case includes a well-educated or university-trained practitioner, as Chaucer's physician doubtless is meant to be, and suggests a continuity between the official statements and pledges of physicians recorded in Guildhall archives and their later application of these principles.

A remarkable document accompanies the statement of induction of three practicing surgeons as masters of the City of London's Guild of Surgeons in 1369. In "full husting," sworn before the mayor and aldermen, the three surgeons committed themselves faithfully to undertake cures to save lives, to collect reasonable fees, and to "faithfully follow their calling." Further, they swore to present to the mayor and aldermen the defaults of other surgeons who treated patients, to be ready at all times to examine at the request of civil officials the claims of the maimed and wounded, and to report truthfully on their judgments of such examinations.[15]

The significance of these last three oaths is manifold. They represent the surgeons' guild's determination to examine, to judge, and to control the practice of surgery in London. They suggest a close and advantageous relationship between professional organization and civil authority, and they imply protection for the patient by consultation with the expert master surgeons. In later dicta protection for desperate cases, those subject to maiming or death, is made explicit, with a complex machinery of fines and "recognizances" to ensure compliance. Theoretically, then, these master surgeons were invested with power to criticize the surgery of their peers and subordinates, to examine these practitioners' patients, and to report their findings to an official civil tribunal for adjudication.

Malpractice suits

Precisely this occurred. A malpractice suit was filed in 1377 by a citizen against a surgeon. Two master surgeons along with another colleague examined the patient as well as his physician's ministrations and offered their expert testimony in court to the mayor and aldermen. Walter del Hull had engaged the services of Dr. Richard Cheyndut to cure a "problem" of his left leg. Such was the care he received that he was soon in danger of losing the limb. He sued the surgeon for endangering his leg by poor treatment. As is usually the case in records of this period, further medical details are not supplied in the manuscript; the mixed blessing of retrospective medical evaluation is precluded. But the testimony by the master surgeons cited the surgeon's lack of both care and knowledge, stating that only great experience, attention, and expense might prevent permanent injury. So scathing were their opinions that Surgeon Richard Cheyndut was fined 50 shillings and clapped into jail.[16]

This early document-pair of edict and case intimates the milieu of Chaucer's physician by demonstrating a fourteenth century medical professional sophistication generally overlooked or underestimated. The case was tried before a high civil tribunal on evidence offered by masters of the craft. These three expert witnesses not only testified against one of their own profession, but they also invoked triple criteria: suitability, accountability, and culpability. Assumed were experience, knowledge, and care proper for the wound and for the patient, proper for the practitioner, and proper for the profession. The physician was accountable for all three, and if, as in the case cited, he was deficient in any, he was deemed guilty and punished. Strong proposals by the profession for self-scrutiny were thus enforced by powerful city authority for the benefit of the patient, for the reputation of the craft, and, not least, for the honor of the city.

More dramatic is a later document-pair concerning more learned physicians in a complex medical judgment closely related to Chaucer's description. In 1415 in a ceremony similar to the Guildhall investiture of 1369, two London surgeons, Richard Wellys and Simon Rolf, swore before the mayor and aldermen to investigate and report any malpractice of the art of surgery. They pledged to oversee all surgeons living and practicing in London; to maintain all rules and ordinances of the craft; to show partiality to none; to report diligently all faults found with those investigated; to examine without payment all severe wounds, bruises, and hurts when so required; and to report faithfully the results of such examinations to civil officials.[17]

Emphasis in this Latin document is on consultation with the masters in serious cases which might result in maiming or death. Immediately following this edict, there appears in the same manuscript but in a different hand script and dated one year later, this interesting addendum

Since many practitioners pretend to be wiser than the masters and in their presumption refuse to consult them, and since many indiscreetly excuse themselves by insisting that their patients are not in danger, and since "in these times" more dread the loss of money than follow the dictates of honesty and conscience, a penalty of 6 shilling 8 pence would be paid by each practitioner who violated the dictum, 5 shillings dedicated to the Guildhall and 20 pence to the surgeons' Guild. The provisions created by the practitioners themselves and enforced by civic authorities are here augmented by monetary sanction.

Just nine years after his appointment as master surgeon, Simon Rolf appears in the plea documents of 1424 not as arbitrator but as accused. He was one of three surgeons, the others being John Dalton and John Harwe, master surgeon of the newly formed Joint College of Physicians and Surgeons, who had treated William Forest for a wound of the right thumb.[18] Such were the complications of the case that after recurrent severe hemorrhage, the surgeons elected to save the patient's life by cauterizing the wound. It is reasonable to infer that the wound was deep, probably involving the muscles, tendons, and major vessels of the digit, and that the wound did not heal by first intention, possibly because of local sepsis. Several months afterward the patient sued his surgeons for maiming his hand. A distinguished panel of eight experts led by the illustrious Dr. Gilbert Kymer, physician, churchman, chancellor of Oxford University, and rector of the Joint College of Physicians and Surgeons, absolved the accused surgeons of wrongdoing.[19] The detailed, reasoned, learned verdict, justified by astrological considerations, is here translated from Latin:

> William Forest, plaintiff, when the moon was dark and in a bloody sign, namely under the very malevolent constellation Aquarius, was seriously hurt in the said muscles on the last day of January and he lost blood enormously even to the ninth day of February last past, the moon remaining in the sign Gemini. The said Simon Rolf himself stanched the flow of blood successfully at the beginning and afterwards the said John Harwe helped by John Dalton . . . artificially arrested it when the bleeding had recurred six times with great vehemence from the aforesaid wound even to [syncope] and as if William Forest would die. On the seventh occasion William was thought to be in danger of death owing to the excessive loss and, quickly deciding that he would suffer mutilation of his hand rather than death, the said John Harwe with the express consent of the said William, who was thus bleeding when other remedies had failed, stopped the bleeding with the cautery, as beseemeth, and saved his life and freed him from the bonds of death. Wherefore we praise, we award, and we decide that the aforesaid John Harwe, John Dalton, and Simon Rolf individually by themselves and by any of them, especially John Harwe, acted well and surgically in what they did in the aforesaid treatment and that none of them made any mistake in any way in this matter. Wherefore we absolve them and each of them, especially John Harwe, from being impleaded by the same William Forest in the aforesaid matter by imposing perpetual silence on the same William in this affair. Moreover, we find that they themselves are so free from the fault attributed to them and to any of them, and especially to John Harwe, defamed maliciously and undeservedly, that as far as in us lies we restore to them unsullied their good name so far as their merit demands and deserves in this affair. We further declare that any defect of the aforesaid hand, or the mutilation or the ugly scar, so far as our industry avails to decide it, is due to the aforesaid constellation or to some peculiar defect or injury of the said William owing to the original wound.[20]

Disfigurement despite proper treatment resulted not only from the nature of the original wound and of the patient himself but from the influence of malevolent constellations.

Astrological influence

The case is in many ways fascinating. First, rather than a theoretic or literary depiction of the significance of astrological computations, the case of Forest's hand permits apprehension of the practical results of medieval medical beliefs. The patient had the misfortune to be injured at an "unpropitious" time; any appropriate methods of treating such an injury, such as stanching blood flow with herbal decoctions or by direct pressure, might work if benevolent constellations were synchronous, and if the patient's astrological insignia were in concert with the celestial; if not, the usual remedies would not, indeed, could not succeed. More drastic methods of cure such as the potentially disfiguring cauterization would be required. While empirically the nature of the wound was significant, as was the general demeanor of the patient, the zodiacal calculations explained the inexplicable, namely, the inefficacy of otherwise sufficient care.

The second noteworthy aspect of the case of Forest's hand is its impetus for suit. Unlike most medieval malpractice claims which were brought because of lack of success of promised cure, demand for excessive payment, aggravation of an original condition because of medical folly, or death due to medical neglect, this case is founded on "iatrogenic sequelae," a new injury caused not by the original complaint but by the cure and curer.[21] Finally, the case shows how coexisting ideas of astrology permeated the triple accountability of the medieval physician for behavior appropriate to the practitioner, suitable for the patient, and consistent with the standards of the profession.

It is possible to assert not only the significance of astrological considerations for the educated medical practitioner but also his actual method of calculating treatment and prognosticating result.[22] Numerous small detailed manuscripts survive in Latin and in Middle English which unquestionably demonstrate their function by their size, shape, and content.[10] Designed to be carried by the physician, they were kept either in a pocket or, more likely, suspended from his belt by a thong. In fact, some charming illuminated manuscripts retain vestiges of their leather belt loops.

These folding medical "calendars" and "almanacs" often contain descriptions of symptoms and their corresponding disease names and treatments.[23] Many have well-drawn mannikins with significant body signs emphasized; some such possess the astrological insignia which "govern" the various parts of the body, from Aries controlling the head down to Pisces guarding the feet (Fig. 2).[24,25] Still other manuscripts depict the location of important veins for phlebotomy and illustrate the zodiacal signs which "control" them (Figs. 3 and 4). Astrological charts and prognostication tables generally accompany such illustrations of Zodiac Man and Vein Man.[26]

Equally fascinating and functional are the circular treatises called volvelles or volvellae which are revolving concentric disks with constellation and zodiac calibrations as well as movable pointers, rather like clock hands, to allow quick plotting of desired calculations.[27,28] These volvellae are frequent in folding medical manuscripts and in the larger codices (Figs. 5 and 6).

Vellum and parchment are not the only materials for these transportable medicozodiacal instruments. A physician's bronze quadrant, bearing an "astrological man" on one round surface and a volvella on the other, testifies to the apparatus carried, doubtlessly, by the wealthier practitioner (Fig. 7). That social class affected both the design and quality of such medical devices is shown by the elegant Astrological Man, a major illumination in the *Très Riches Heures* manuscript, the prayer book made for Jean, Duke of Berry (Fig. 8).[26] Here the zodiac signs and an emended volvella are refined the better to serve art than medicine. Yet this sumptuous illustration retains its identity in type with the almanacs and calendars of the medieval physician.

The folding manuscripts, quadrants, and smaller astrological volumes were the medieval practitioner's *Vade Mecum.*[29] For the complex calculations necessary to diagnosis, prognosis, and treatment, the "Doctor of Physik" had his portable armamentarium to augment his oftentimes sophisticated medical and surgical technics, scrutinized, regulated, and judged by his professional guild, and enforced by the legislation of his city.

In this context of late fourteenth and early fifteenth century medical practice Chaucer's physician is best understood. The apparent dichotomy

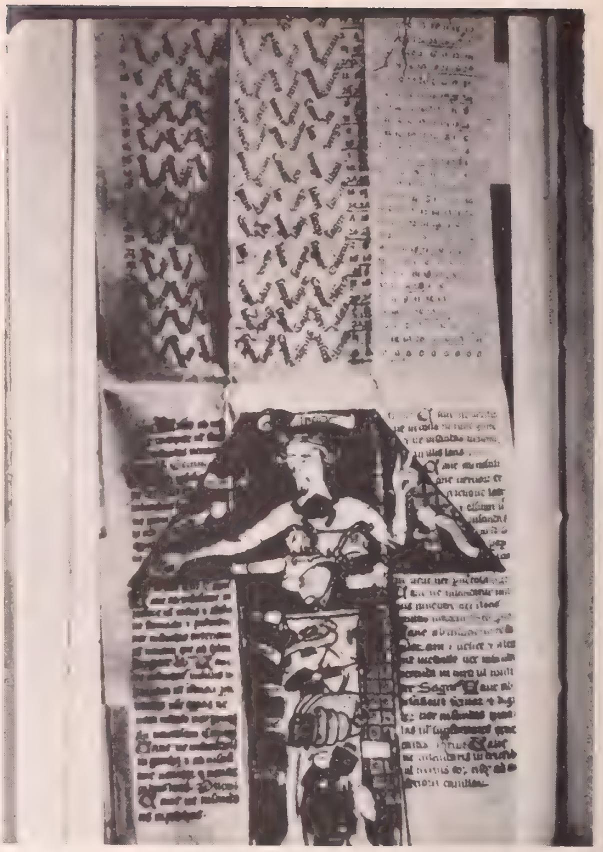

FIGURE 2. Zodiac Man, folded medical calendar, fifteenth century, (British Museum, MS. Sloane 2250).

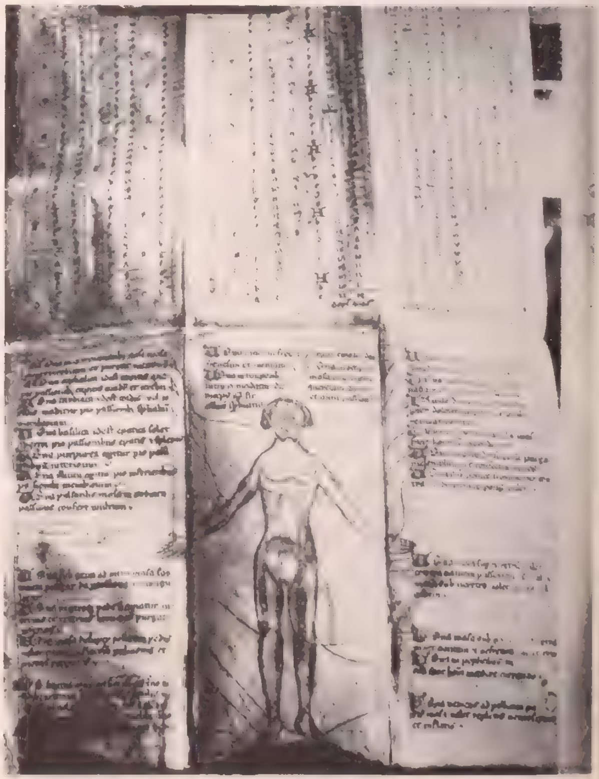

FIGURE 3. Vein Man, folded medical calendar, fif teenth century, (British Museum, MS. Harley 5311).

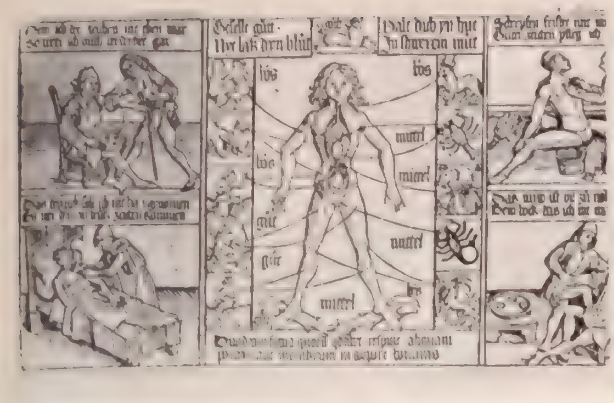

FIGURE 4. Vein Man, from *Anderlass Kalendar,* (printed by Johan Gruninger, 1493).

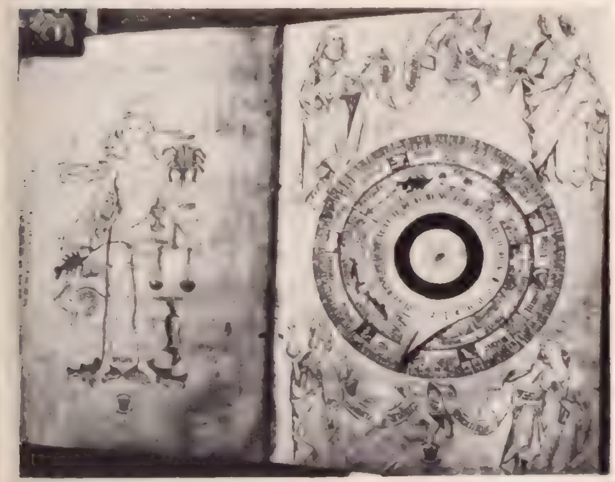

FIGURE 5. Zodiac Man on left, volvella on right, (from *Guild Book of Barbers and Surgeons of York,* British Museum, MS. Edgerton 2572).

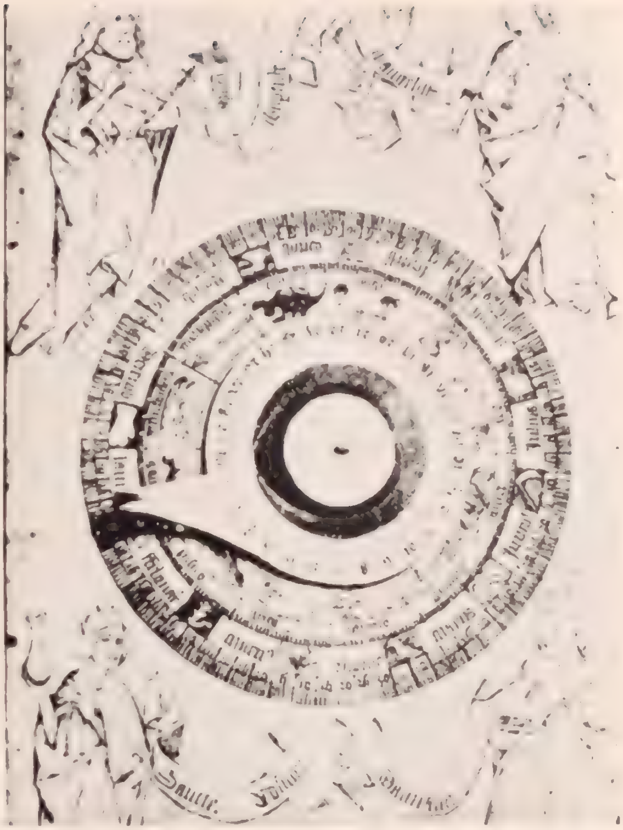

FIGURE 6. Close-up view of Figure 5, right side.

between this literary character's "learning" and his "astrology" was the habit of thought intrinsic to medicine of that period and its practitioners. Zodiacal concerns ought not be dismissed as "mere superstition" unworthy of association with science. For the medieval medical intention was to discover order amidst chaos, to emend the venerable pagan notions to new purpose, to explain the otherwise inexplicable, and to align man's mind and body with the great design of the universe. That certain modalities of treatment succeeded in particular instances and failed in others needed explication. To the credit of the medieval practitioner, such questions and contradictions were not blamed on "God's will" alone. Reason was thought capable to conquer confusion. Astrological considerations were thus the rational attempts at medieval medical and surgical order.

Documents which most faithfully describe this unity between both astrological and empirical impulses in medieval medicine are the records of malpractice cases. In them, the effects of medical theory as displayed in practice are analyzed from three separate, often antithetical, viewpoints: the patient's, the practitioner's, and the professional guild's. These malpractice cases and the legal edicts associated with them define the intellectual and pragmatic milieu of Chaucer's "Doctor of

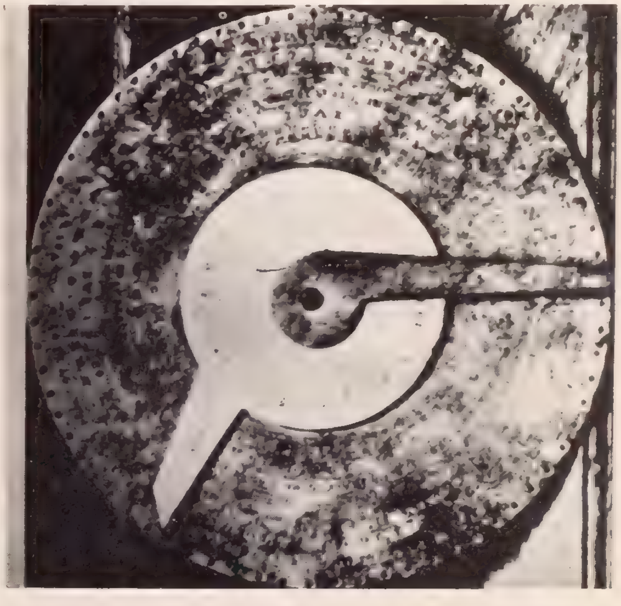

FIGURE 7. Bronze volvella, physician's quadrant, fifteenth century, (Merton College, Oxford, England).

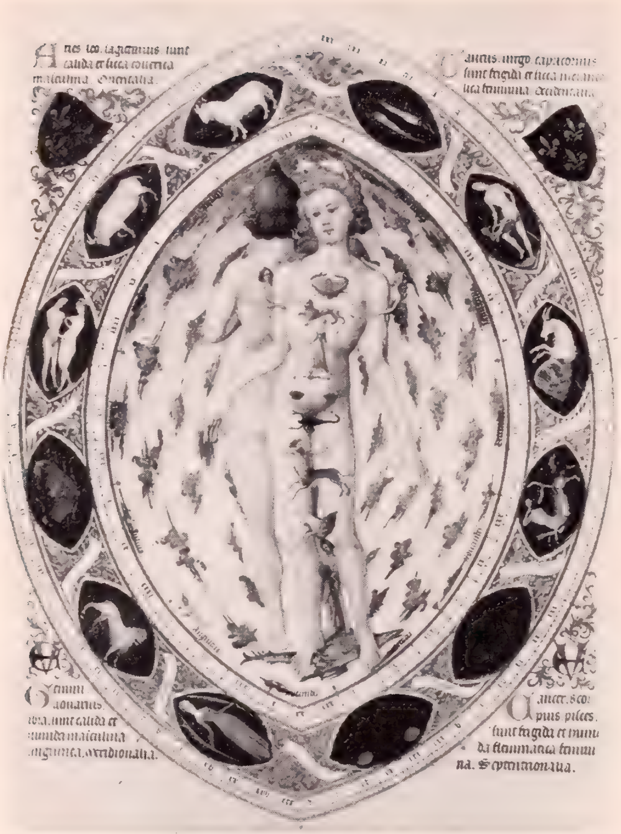

FIGURE 8. Astrological Man, from *Très Riches Heures* of Jean Duke of Berry, (Muśe de Condé, Chantilly, France).

Physik," portrayed indeed as a true and perfect medieval practitioner.

Institute for Medieval and Renaissance Studies
City College of City University of New York
New York, New York 10031

Acknowledgment: Figures 2 through 7 are reproduced with the gracious cooperation of Prof. Harry Bober, Institute for Fine Arts, New York University.

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Public Hearing on Hospital Staff Privileges*

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"Staff privileges" means the ability of a member of a hospital staff, usually a physician, less often a dentist or podiatrist, to admit his patients to the hospital for care. Hitherto this ability has been classified by the hospital as a privilege rather than as a right: a privilege to be granted by the hospital to deserving practitioners; a privilege to be denied for good cause to other practitioners, although deemed equally as deserving even by the hospital itself; and a privilege to be denied or taken from practitioners deemed unworthy in the opinion of the hospital.

In each of these cases the "hospital" rendering these opinions and derivative decisions is actually the hospital board of trustees sanctioning the opinions and decisions of representatives of the physicians who already possess their own staff privileges.

Without staff privileges the modern physician is professionally crippled, and his patients are endangered. More than 30 per cent of private physicians in New York City have no direct accessibility to voluntary or municipal hospitals, while almost 20 per cent have no affiliation at all.† When such a physician without staff privileges encounters a patient who needs hospitalization, the physician has one of three options: (1) He may refer the patient to a colleague who has staff privileges. Should he do so, however, the physician faces the embarrassing question from the patient why the physician is obliged to pass the patient on to another physician rather than see the case through himself in accordance with the much vaunted principle of continuity of care. Moreover, the patient may prefer subsequently to stick with his new physician and never return to the original referring physician. (2) The physician may send the patient directly to the municipal hospital. Here the problem of "losing" the patient also arises. Similarly the patient may resent being "dumped" in a municipal hospital rather than being referred to a voluntary or proprietary hospital. (3) The physician may temporize and continue to treat the patient on an ambulatory basis. In using this option the physician imperils the life of the patient.

Explanations for no staff privileges

Why do not all practicing physicians have staff privileges? The reasons offered vary:

1. There are not enough hospital beds to meet the demands of physicians wishing to join the staff. The number of bed-days in any hospital is finite. There must always be some point beyond which there are simply no more beds to distribute, no matter how qualified additional candidates for staff privileges are.

2. Some physicians cannot or will not meet the educational requirements of the hospital for staff privileges. In the view of the hospitals, and incidentally in the view of the City of New York Department of Health as well, medical licensure under the aegis of the State Department of Education has been inadequate either to protect the patient or to protect the reputation of the hospital. Supplementary educational requirements are and have been indispensable. Accordingly, hospitals have added qualifications of formal education, such as, Board specialty eligibility or certification, and compulsory continuing education, namely, mandatory attendance at weekly staff educational meetings.

3. Some physicians are reluctant to donate free time to the hospital. Until the advent of Medicaid and Medicare in the mid 1960s, physicians in hospitals gave enormous amounts of free service in return for staff privileges. Although most services for medically indigent patients are paid for today out of the public purse, there are still certain service obligations at some hospitals,

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*Testimony before New York State Senate Committee on Health, New York City, September 24, 1971.

†Piore, N., and Sokal, S.: Physicians in the Five Boros of NYC 1959–1966, Urban Medical Economics Research Project, Urban Research Center, Hunter College, New York City, March, 1967.

such as night duty, emergency room, teaching interns and residents, and so on.

4. Some physicians prefer to avoid constraints on their practice. Such physicians resent quality and cost-control programs of hospitals, such as tissue committees, chart reviews, utilization reviews, clinicopathologic conferences, and so on.

5. Some physicians reject staff privileges as insufficiently remunerative. This is particularly true of nonsurgeons. Without a minimum number of patients hospitalized simultaneously in one hospital, a physician sometimes considers the hospitalized patient as a "loss leader" in economic terms. The physician can earn more money in his own office during the time it takes him to travel to the hospital, find a place to park his car, visit the patient, write the orders, and return to the office. The hospital call is equivalent to the house visit under such circumstances.

6. Some physicians fail to meet ethnic qualifications. Jews, Catholics, and blacks have automatically been denied staff privileges at certain hospitals. Sometimes the pattern of discrimination has been more complex; within the same hospital one department will accept certain ethnic groups rejected as undesirable by other departments. If later the hospital should liberalize its ethnic policies with respect to staff privileges, the hitherto rejected ethnic groups are now frequently excluded on the basis of their inadequate educational qualifications. In fact, they are truly inadequately educated, because historically they were never accepted into high-quality internship and residencies before entering practice.

With few exceptions, the overwhelming percentage of practicing physicians want and need staff privileges to care for their patients and to maintain and advance their own professional qualifications. The physician lacking staff privileges in New York today is apt to be a general practitioner with limited formal training, who sees more patients per hour per day than his more fortunate, better trained, more impressively credentialed colleague.

Ironic, is it not? The physician most famished for professional support and backup from colleagues and hospitals and the physician most desperate for comprehensive continuing education to care for his patients properly are precisely the same physicians who are denied staff privileges. Such unfortunate physicians have encountered indifference to their plight and, more important, indifference to the potential plight of the patients in their care. In effect, such physicians have been told particularly during the past twenty years in New York: "Go. Depart. You are not one of us, and your patients are not our concern."

I now turn to the specific questions you have referred to each of the speakers.

Questions

What extent is discrimination or an attempt to preserve a monopoly of certain physicians in a particular hospital or geographic area used as a reason to deny staff privileges?

To begin to answer this question intelligently for a particular hospital we need data on the following: (1) the ethnic identity of physicians with staff privileges in the hospital; (2) the ethnic identity of physicians potentially on staff. We must first decide who these are, possibly by using geographic criteria; (3) the number of beds assigned to each department in the hospital; (4) the number of physicians on staff in each department; (5) the number of physicians potentially on staff in each department; and (6) the pattern of hospitalization by specific physicians on staff: Does the physician in question use the hospital exclusively, primarily, or as secondary backup to another hospital where he prefers to hospitalize his patients?

By correlating these data in any hospital and by comparing these data with analogous data in other hospitals, we can gain preliminary insight into the degree of discrimination and monopolistic practices that are operating.

In the absence of such readily available data, what do I believe has been going on?

I believe that ethnic discrimination has diminished in New York City during the past ten years particularly, although there are still atavistic holdouts in certain departments of certain hospitals.

I believe that monopolistic practices have diminished less rapidly. It has been said that people hold on to their money more tightly than to their racial and religious prejudices. The problem of monopolistic practices, incidentally, is not exclusively one between the "haves" and the "have-nots" of hospital staff privileges. Even among the "haves" there is often scrambling for beds in short supply. This latter phenomenon is not all to the bad. Pressure from one's colleagues often appears to constrain unnecessarily prolonged length of hospital stay, costly to patient and to government alike.

What are the necessary qualifications to be considered in granting hospital staff privileges?

I concur partially with the hospitals' educational qualifications so long as these do not support the perverted purpose of permanently preventing licensed and potentially qualifying physicians from achieving hospital staff privileges. Here I refer specifically to the general practitioner who is frequently denied access to the staff because he lacks his "Board eligibility," that is, the equivalent of at least three years of formal residency training after his internship. In my view, experience and continuing education should count for something. A system of probationary staff privileges could be developed whereby the general practitioner could admit and care for his patients in a consultative relationship with a staff member. During the probationary period the general practitioner could receive additional education and perfect his professional skills. Subsequently he could be admitted to the staff as a full and equal member. It is incongruous that with our general approbation and encouragement all types of paraprofessionals, namely, nurse clinicians, nurse midwives, physician-assistants, pediatric and orthopedic assistants, and so on, are entering the health care scene; yet, at the same time, the general practitioner, with more education, more training, and more experience than all of these, is not permitted to work in a reputable hospital.

I concur completely with the hospitals on obligatory continuing professional education for their staff physicians. Indeed, I would like this obligation extended to all licensed health professionals.

I concur completely with the hospitals that physicians on staff must maintain their service obligations, particularly in educating medical students, interns, and residents.

I condemn as a reprehensible irrelevancy ethnic prejudice of any kind in selecting or retaining professionals on the staff.

Is the establishment of "public objective standards based on professional competence" as a prerequisite for granting staff privileges a reasonable and workable solution?

It depends on whose "public objective standard" you mean. We already have a public objective standard. It is called a license to practice medicine. It is inadequate. The hospitals have been correct to insist on more. Do we want to return to the lowest common denominator of professional practice that is represented today by State medical licensure?

If medical licensure were to denote that a practitioner would be obliged to take a certain number of hours of certified courses of continuing education per year, I would have more confidence in licensure. Moreover, I would prefer that the awarding of medical licensure were transferred from the State Department of Education to the State Department of Health. If we are to have a "public objective standard," let us have one that is high enough to protect the patient and to protect the reputation of the hospital.

For the protection of physicians and the public and to insure scrupulous fairness, the administration of the enormous powers implicit in administering such a program and the promulgation, monitoring, and enforcement of objective standards must be assigned to a public agency.

The most "private" of voluntary hospitals can no longer claim that their policies are exclusively internal matters, and are of no legitimate concern to people outside the hospital's administrative and professional structure. Thirty to 50 per cent of inpatient hospital days and close to 50 per cent of outpatient visits at the voluntary hospitals of New York City are financed through the public agencies of Medicaid and Medicare.

Accordingly, I support the approach of the "public objective standard based on professional competence."

Are the provisions for applying for staff privileges as proposed in S—5610 feasible?

Once more I raise one major question that S—5610 does not address, namely, the issue of an adequate number of beds for practitioners already on staff. This is a legitimate issue. As I have already stated, there is a point beyond which there are simply not enough beds to go around for the physicians who want staff privileges.

I have covered the other ingredients of the bill in my response to the other questions.

Do teaching hospitals face unique staffing problems?

Teaching hospitals are obliged to reconcile three valid but often competing functions: (1) care of patients; (2) education of medical students, interns, and residents; and (3) research. Nonteaching hospitals concern themselves exclusively with care of patients. Under these circumstances teaching hospitals require staffing patterns that differ from nonteaching hospitals.

I would insist, however, that too often teaching hospitals have used their broader institutional goals as a device to freeze out general practitioners who could have provided certain invaluable educational insights that physicians in training could not necessarily have obtained from full-time staff superspecialists, for example.

Is legislation concerning hospital staff privileges necessary?

Yes. Hospitals will not move otherwise.

125 Worth Street
New York, New York 10013

Continuing Education Courses for Physicians in New York State

For November, 1972, through August, 1973

Continuing Education courses for physicians is the subject of the supplement of the *Journal of the American Medical Association* for August 14, 1972, volume 221, number 7. We herewith draw to your attention those portions of particular concern to physicians in the State of New York. The listings were compiled by the staff of the American Medical Association's Department of Continuing Medical Education, C. H. William Ruhe, M.D., Rutledge W. Howard, M.D., Clarke W. Mangun, Jr., M.D., and Charlotte Hartman, Chicago.

The list of courses is published as a service to all physicians who are interested in maintaining their competence and skill through the medium of formal courses and other organized activities in continuing medical education. It is recognized that there are many ways by which physicians may remain abreast of advances in medicine, and participation in formal courses is only one of them.

Listings include information in the following order: (1) category heading; (2) title of course (for-limit); (3) name and address of sponsor; (4) cosponsor(s); (5) city where course will be held; (6) type of course (see Table of abbreviations), fee in dollars; (7) dates when course will be given (month/day/year); and (8) instruction methods used (see Table of abbreviations).

ALLERGY

Postgrad Course in Allergy & Clin Immunology (B-75)
Roosevelt Hosp, 428 W 59th St, *New York* 10019. Co-sponsor: Columbia Univ Coll of Phys & Surgs
Type: C, 5 days **Fee:** $100
Dates: 5/14/73 to 5/18/73; 7 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, Sem

ANESTHESIOLOGY

Nerve Blocks, Cadaver & Clinic (S-4)
Jewish Hosp & Med Cntr of Brooklyn, Dept of Anesthesia, 555 Prospect Pl, *Brooklyn* 11238. Co-sponsor: SUNY Downstate Med Cntr, Office of Cont Educ
Type: C, 30 days **Fee:** $125
Dates: 4/2/73 to 4/30/73; 105 hrs instruction
Methods: OP, PP, Lab, Lec, LC, Pan, PI

Epidural Anesthesia for Labor & Delivery (B-3)
Jewish Hosp & Med Cntr of Brooklyn, Dept of Anesthesia, 55 Prospect Pl, *Brooklyn* 11238. Co-sponsor: SUNY Downstate Med Cntr, Office of Cont Educ
Type: C, 25 days **Fee:** $100
Dates: Arranged
Methods: BR, Clin C, PP, Lec, LC, Surg, PD, PI, Sem

Resuscitation of the Newborn (B-2)
Jewish Hosp & Med Cntr of Brooklyn, Dept of Anesthesia, 55 Prospect Pl, *Brooklyn* 11238. Co-sponsor: SUNY Downstate Med Cntr, Office of Cont Educ
Type: C, 20 days **Fee:** $85
Dates: 80 hrs instruction
Methods: BR, Clin C, OP, PP, Lec, LC, PD, PI, Sem

Anesthesiology (B)
State Univ of New York at Buffalo, 2211 Main St, Buffalo 14214. Co-sponsor: NY State Soc of Anesthesiologist
At: Parkway Inn, Buffalo Ave, *Niagara Falls*
Type: C, 2 days **Fee:** $60
Dates: 4/14/73 to 4/15/73; 14 hrs instruction
Methods: AV, Lec, O, Pan, Sem

ARTHRITIS AND RHEUMATISM

Rheumatology & Orthopedics (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 12/14/72; 5½ hrs instruction
Methods: AV, Lec, O, Pan

Rheumatic Problems in Children (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 4/11/73; 5½ hrs instruction
Methods: AV, Lec, O, Pan

Teaching Day in Rheumatic Disease—The Biology of Osteoarthritis (B-200)
State Univ of New York Downstate Med Cntr, Office of Cont Educ, 450 Clarkson Ave, *Brooklyn* 11203
Type: C, 1 day **Fee:** None
Dates: 11/15/72; 7 hrs instruction
Methods: AV, Lec, O, Pan

Rehabilitation in Arthritis (G)
Page & William Black Post-Grad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 1 day **Fee:** None
Dates: 5/16/73; 4 hrs instruction
Methods: AV, Lec, Pan

BASIC SCIENCES

Comprehensive Review Curriculum in the Basic Medical Sciences (B)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: C, 14 wks **Methods:** AV, Lec
Dates: 1/73; 400 hrs instruction

MICROBIOLOGY

Frontiers in Microbiology (Seminar) (B)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: I, 2 hrs/day, 1 day/wk, for 12 wks
Dates: Arranged; 24 hrs instruction
Methods: AV, Lec, Sem

CARDIOVASCULAR DISEASE

Cardiology Seminar (B-26)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $40
Dates: 3/1/73; 4 hrs instruction
Methods: AV, Lec, O, Sem

Modern Concepts of Coronary Care (B)
State Univ of New York at Buffalo, 2211 Main St, Buffalo 14214
At: Sisters of Charity Hosp, 2157 Main St, *Buffalo* 14214
Type: C, 1 day **Fee:** $30
Dates: Fall/72; 7 hrs instruction
Methods: AV, OP, Lec, O, Pan

Cardiac Clinics & Physical Examination of Cardiac Patient (S)
State Univ of New York at Buffalo, 2211 Main St, Buffalo 14214. Co-sponsor: Heart Assn of Western NY, Inc
At: Sisters of Charity Hosp, 2157 Main St, *Buffalo* 14214

TABLE I. Abbreviations for Continuing Education Courses' List

General Abbreviations:

Acad	Academy
Admin	Administration
Amer	American
Assn	Association
Ave(s)	Avenue(s)
Bd	Board
Blvd	Boulevard
Bldg	Building
Cntr	Center
Clin	Clinic, Clinical
Coll	College
Comm	Committee, Commission
Conf	Conference
Cont	Continuing
Dept	Department
Disp	Dispensary
Dist	District
Div	Division
Dr	Drive
E	East
Educ	Education
Ext	Extension
Found	Foundation
Gen	General
Grad	Graduate
Hosp	Hospital
hr(s)	hour(s)
Inst	Institute
Internatl	International
Lab(s)	Laboratory, Laboratories
Med	Medical, Medicine
Mem	Memorial
mo(s)	month(s)
Natl	National
N	North
NE	Northeast
NW	Northwest
Pkwy	Parkway
Phys	Physicians
Postgrad	Postgraduate
Box	Post Office Box
Prac	Practice
Prof	Professional
Prgm	Program
RMP	Regional Medical Program
Rehab	Rehabilitation
Rd	Road
Rm	Room
Sch	School
Serv	Service
Soc	Society
S	South
SE	Southeast
SW	Southwest
Surg(s)	Surgeon(s)
Univ	University
US	United States
USA	United States Army
USAF	United States Air Force
USN	United States Navy
USPHS	United States Public Health Service
VA	Veterans Administration
wk(s)	week(s)
W	West
yr(s)	year(s)
&	and

For:

G—General Practitioners
S—Specialists
B—Both

Type:

C—Continuous
I—Intermittent
CC—Circuit Course
PT—Postgraduate Traineeship*
HS—Home Study
TV-R—TV or Radio

Methods:

AV—Audiovisual aids (motion pictures, slides and/or models)
BR—Bedside rounds
Clin C—Clinical Conference
LC—Live Clinic
Lab—Laboratory work—(including cadaver dissection and dog surgery where such are applicable)
Lec—Lecture
O—Open question periods
OP—Enrollee observes procedure
PD—Patient demonstration
Pan—Panel discussion
PP—Enrollee performs procedure
Sem—Seminar
R—Radio or telephone
Surg—Operative human surgery
TV—Television
PI—Programmed instruction

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* A Postgraduate Traineeship for practicing physicians is an individually arranged residency-type educational experience in a hospital usually with residents in that field. It differs from a residency or fellowship in that it: (1) is not primarily intended to provide training for entering specialty practice, or, in itself, to qualify for residency-board certification; (2) is of shorter duration than a year; (3) usually does not provide a stipend or housing and may exact a fee from the physicians in such training; (4) may (or may not) involve direct patient responsibility.

Type: I, $1^{1}/_{2}$ hrs/day, 1 day/wk, for 24 wks
Fee: $25
Dates: 1/73 to 6/73; 36 hrs instruction
Methods: AV, Lec, LC, O, Pan, PD

Non-Invasive Methods in Cardiology, Apexcardiography, Phonocardiography, Pulse Tracings, Phonoarteriography & Systolic Time Intervals (B-100)
Amer Coll of Cardiology, 9560 Rockville Pike, Bethesda, Md 20014. Co-sponsors: Health Sciences Cntr, State Univ of NY at Stony Brook: Long Island Jewish Hillside Med Cntr
At: Queens Hosp Cntr, 82-68 164th St, *Jamaica*
Type: C, 3 days
Fee: $100 ACC mbrs; $150 nonmbrs
Dates: 3/16/73 to 3/18/73; 25 hrs instruction
Methods: AV, OP, PP, Lab, Lec, LC, O, Pan, PD, PI, Sem

5th Annual Symposium; Paths of Progress in Cardiovascular Disease (B-900)
Amer Coll of Cardiology, 9560 Rockville Pike, Bethesda, Md 20014. Co-sponsors: St. Barnabas Hosp, New York
At: Americana Hotel, *New York*
Type: C, 3 days
Fee: $100 ACC mbrs; $135 nonmbrs
Dates: 12/8/72 to 12/10/72; 21 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Consultants Course in Cardiology (B)
Amer Coll of Cardiology, 9560 Rockville Pike, Bethesda, Md 20014
At: Mt Sinai Sch of Med, *New York*
Type: C, 6 days
Fee: $200 mbrs ACC; $250 nonmbrs
Dates: 3/12/73 to 3/17/73; 42 hrs instruction
Methods: AV, Lec, O

Cardiology 1973—Topics of Current Interest (B-500)
Amer Coll of Phys, 4200 Pine St, Philadelphia 19104
At: Americana Hotel, *New York*
Type: C, 5 days
Fee: $80 ACP mbrs, FACP, residents, & resident fellows; $40 Assoc.; $125 nonmbrs
Dates: 3/26/73 to 3/30/73; 40 hrs instruction
Methods: AV, Clin C, Lec, Pan

Peripheral Vascular Disease (B-500)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: New York Hilton Hotel, 1335 Ave of the Americas, *New York* 10019
Type: C, $1^{1}/_{2}$ days **Fee:** $50
Dates: 4/3/73 to 4/4/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Present Status of Computer ECG & VCG Analysis (B)
Page & William Black Post-Grad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 1 day **Fee:** $35
Dates: 4/20/73; 7 hrs instruction
Methods: AV, OP, PP, Lec

CHEST DISEASE

Diagnosis & Management of Respiratory Infections in Children (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 12/13/72; $5^{1}/_{2}$ hrs instruction
Methods: AV, Lec, O, Pan

Principles of Respiratory Care (B)
State Univ of New York at Buffalo, 2211 Main St, *Buffalo* 14214
Type: I, 2 hrs/day, 4 days **Fee:** $30
Dates: Fall/72; Spring/73; 8 hrs instruction
Methods: AV, Clin C, OP, Lec, O, Pan, Sem

Principles of Respiratory Care (B)
State Univ of New York at Buffalo, 2211 Main St, *Buffalo* 14214
Type: I, 2 hrs/day, 2 days/wk, for 2 wks
Fee: $30
Dates: Winter/72, spring/73; 8 hrs instruction
Methods: AV, OP, Lec, O, Pan, Sem

A Postgrad Course in Pulmonary Disease (G-35)
Queens Hosp Cntr, Section on Cont Postgrad Educ, Div of Pulmonary Med (Affiliation of LI Jewish-Hillside Med Cntr, & SUNY Sch of Med, Stony Brook, 82-68 164 St, *New York* 11432. Co-sponsors: Amer Acad of Family Phys, Queens Chapter; Acad of Med of Queens County: Queens TB & Respiratory Disease Assn

Clinical Chest Diseases (G)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 5 days **Fee:** $75
Dates: 11/13/72 to 11/17/72; 15 hrs instruction
Methods: AV, Clin C, Lec, O, Surg

DERMATOLOGY

Dermatological Therapy (G)
Page & William Black Postgrad Sch of Med; 5th Ave & 100th St, *New York* 10029
Type: C, 6 weeks **Fee:** $50
Dates: 4/5/73 to 5/10/73; 6 hrs instruction
Methods: Clin C, Lec

ENDOCRINOLOGY

Maturity Onset Diabetes (B-150)
Albany Med Col, 47 New Scotland Ave, Albany 12208
At: Hyatt House Hotel, 1375 Washington Ave, *Albany*
Type: C, 1 day **Fee:** $30
Dates: 11/2/72; $5^1/_2$ hrs instruction
Methods: AV, Lec, O, Pan

Endocrine Disease (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 2 days **Fee:** $60
Dates: Winter/72; Spring/73; 14 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, Sem

Pediatric Endocrinology (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 3 days **Fee:** $90
Dates: 4/4/73 to 4/6/73; 21 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, Sem

GENERAL MEDICINE

Consultation Clinics for Family MD's (G-30)
State Univ of NY Downstate Med Cntr, Office of Cont Educ, 450 Clarkson Ave, Brooklyn 11203
At: State Univ Hosp, 470 Clarkson Ave, *Brooklyn* 11203
Type: I, 2 hrs/day, 1 day/wk, for 30 wks
Fee: None
Dates: Fall/72; 60 hrs instruction
Methods: Clin C, LC, O, PD, Sem

Treatment of Sexual Inadequacy (B)
Coney Island Hosp, Ocean & Shore Pkwy, *Brooklyn* 11235. Co-sponsor: SUNY Downstate Medical Cntr
Type: I **Date:** Fall/72 **Methods:** Sem

Basic Sciences For the Practicing Physician (B-200)
State Univ of NY Downstate Med Cntr, Office of Cont Educ, 450 Clarkson Ave, *Brooklyn* 11203
Type: I, 3 hrs/day, 1 day/wk, for 8 wks
Fee: $100
Dates: 1/7/73 to 3/11/73; 24 hrs instruction
Methods: AV, Lec, O

Spring Clinical Days (B)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214
At: Campus State Univ, 3435 Main, *Buffalo* 14214
Type: C, $1^1/_2$ days **Fee:** $20
Dates: Spring/73; 10 hrs instruction
Methods: AV, Lec, O, Pan

Clinical Nutrition (G)
Page & William Black Postgrad Sch of Med; Mt. Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029. Co-sponsor: NY Acad of Family Prac
Type: I, 2 hrs/day, 1 day/wk, for 5 wks
Fee: $35
Dates: 11/3/72 to 11/31/72; 10 hrs instruction
Methods: AV, Clin C, Lec, O, Pan

Human Genetics (B)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: C, 1 day
Dates: 11/18/72; 5 hrs instruction
Methods: AV, OP, Lec, O

Medical Review Course for General Practitioners (G)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: I, 2 hrs/day, 2 days/wk, for 13 wks
Dates: 2/1/73 to 4/26/73; 50 hrs instruction
Methods: AV, Lec, O

INTERNAL MEDICINE

Postgrad Seminars—"Diabetes Day" (B)
Coney Island Hosp, Ocean & Shore Pkwys, *Brooklyn* 11235. Co-sponsor: SUNY Downstate Med Cntr
Type: C, 1 day **Methods:** Lec, O, Sem
Dates: 11/5/72; 7 hrs instruction

International Conference on Acute Renal Failure (B-200)
Natl Institutes of Health, Bethesda, Md
At: SUNY, Downstate Med Cntr, 450 Clarkson Ave, *Brooklyn* 11203
Type: C, 2 days **Fee:** $100
Dates: 5/18/73 to 5/19/73; 14 hrs instruction
Methods: AV, Lec, O, Pan

Trends In Internal Medicine (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 3 days **Fee:** $90
Dates: Fall/72; 21 hrs instruction
Methods: AV, Clin C, OP, Lec, O, Pan, PD, Sem

Intensive Care Units (B-215)
Amer Coll of Phys, 4200 Pine St, Philadelphia 19104
At: St. Vincent's Hosp, *New York*
Type: C, 5 days
Fee: $80 ACP mbrs, FACP, residents & resident fellows; $40 Assoc.; $125 nonmbrs
Dates: 5/21/73 to 5/25/73; 40 hrs instruction
Methods: AV, Clin C, Lec, O, Pan

Practical Management of Diabetes & Its Complications (B)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 1 day **Fee:** $25
Dates: Spring/73; 7 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Oncology & Chemotherapy (B-200)
Amer Coll of Phys, 4200 Pine St, Philadelphia 19104
At: Univ of Rochester Sch of Med & Dent, *Rochester*
Type: C, 5 days
Fee: $80 ACP mbrs, FACP, residents & resident fellows; $40 Assoc.; $125 nonmbrs
Dates: 6/11/73 to 6/15/73; 40 hrs instruction
Methods: AV, Clin C, Lec, O, Pan

MALIGNANT DISEASE

Oncology (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 3/22/73; $5^1/_2$ hrs instruction
Methods: AV, Lec, O, Pan

Experimental & Immunochemotherapy of Cancer (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 2 days **Fee:** $50
Dates: 11/8/72 to 11/9/72; 14 hrs instruction
Methods: AV, Lec, O, Pan

Clinical Cancer Chemotherapy (G)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 2 days **Fee:** $100
Dates: 5/23/73 to 5/24/73; 14 hrs instruction
Methods: AV, Lec, O, Pan

MENTAL RETARDATION

Early Diagnosis & Management of Mental Retardation (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 11/8/72; $5^1/_2$ hrs instruction
Methods: AV, Lec, O, Pan

NEUROLOGY

Seminar Day (B)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214
At: E. J. Meyer Mem Hosp, 462 Grider St, *Buffalo* 14215
Type: C, 1 day **Fee:** $30
Dates: Winter/72; 7 hrs instruction
Methods: AV, BR, Lec, O, PD

Disorders of Language & Consciousness (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 2 days **Fee:** $100
Dates: 11/2/72 to 11/3/72; 12 hrs instruction
Methods: AV, Lec, O, Sem

Neuro-Ophthalmology (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 2 days **Fee:** $100
Dates: 11/6/72 to 11/7/72; 14 hrs instruction
Methods: AV, Clin C, Lec, O, Pan

Neurochemistry (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 3 days **Fee:** $150
Dates: 12/7/72 to 12/9/72; 21 hrs instruction
Methods: Lec, Sem

Neuropharmacology (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 3 days **Fee:** $150
Dates: 2/8/73 to 2/10/73; 21 hrs instruction
Methods: Lec, Sem

Clinical Neurology (B)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 5 days **Fee:** $200
Dates: 3/12/73 to 3/16/73; 35 hrs instruction
Methods: BR, Clin C, Lab, LC, PD, Sem

OBSTETRICS AND GYNECOLOGY

Obstetrics & Gynecology (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 4/12/73; 5½ hrs instruction
Methods: AV, Lec, O, Pan

Surgical Aspects in Obstetrics & Gynecology (B)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214
At: Hotel Statler Hilton, Del Ave, *Buffalo*
Type: C, 1 day **Fee:** $30
Dates: Fall/72; 7 hrs instruction
Methods: AV, Clin C, OP, Lec, O, Pan, Sem

Perinatology (B)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214
At: Hotel Statler Hilton, Del Ave, *Buffalo*
Type: C, 3 days **Fee:** $90
Dates: 5/16/73 to 5/18/73; 21 hrs instruction
Methods: AV, Lec, O, Pan

Laparoscopy & Culdoscopy (B-12)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: C, 2 days
Dates: 12/7/72 to 12/8/72; 12 hrs instruction
Methods: AV, OP, Lec, Surg, PD

OPHTHALMOLOGY

Ophthalmic Microsurgery (S-24)
State Univ of NY Downstate Med Cntr, Office of Cont Educ, 450 Clarkson Ave, *Brooklyn* 11203
Type: C, 3 days **Fee:** $500
Dates: 3/24/73 to 3/26/73; 21 hrs instruction
Methods: AV, OP, PP, Lec, O, Surg, TV

Surgery of the Aging Eyelids (S-35)
Page & Wm Black Postgrad Sch of Med, Dept of Ophthalmology, Mt Sinai Sch of Med, 19 E 98th St, *New York* 10029. Co-sponsor: Amer Acad of Facial Plastic & Reconstructive Surg
Type: C, 1½ days **Fee:** $200
Dates: 6/22/73 to 6/23/73; 12 hrs instruction
Methods: AV, Lab, Lec, O, Pan, PD, Sem

Microsurgery in Cataracts (S-8)
Postgrad Inst, New York Eye & Ear Infirmary, 310 E 14th St, *New York* 10003
Type: C, 1 day **Fee:** $75
Dates: 11/17/72; 8 hrs instruction
Methods: AV, OP, PP, Lab, Lec, O, Surg

Ophthalmic Examination of the Child (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: I, 2 hrs/day, 1 day/wk, for 2 wks
Fee: $50
Dates: 11/2/72 to 11/9/72; 4 hrs instruction
Methods: AV, OP, Lec, O, Pan

Microsurgery in Glaucoma (S-8)
Postgrad Inst, New York Eye & Ear Infirmary, 310 E 14th St, *New York* 10003
Type: C, 1 day **Fee:** $75
Dates: 11/15/72; 8 hrs instruction
Methods: AV, OP, PP, Lab, Lec, O, Surg

Microsurgery of the Cornea (S-8)
Postgrad Inst, New York Eye & Ear Infirmary, 310 E 14th St, *New York* 10003
Type: C, 1 day **Fee:** $75
Dates: 11/16/72; 8 hrs instruction
Methods: AV, OP, PP, Lab, Lec, O, Surg

Review in Basic Subjects in Ophthalmology (S)
Postgrad Inst, New York Eye & Ear Infirmary, 310 E 14th St, *New York* 10003
Type: C, 6 days **Fee:** $300
Dates: 12/4/72 to 12/9/72; 48 hrs instruction
Methods: AV, Lec, O

Introduction to Strabismus (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: I, 2 hrs/day, 1 day/wk, for 2 wks
Fee: $40
Dates: 1/11/73 to 1/18/73; 4 hrs instruction
Methods: AV, OP, Lec, O

Vertical Motility Problems (B)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: I, 2 hrs/day, 1 day/wk, for 3 wks
Fee: $60
Dates: 2/8/73 to 2/22/73; 6 hrs instruction
Methods: AV, OP, PP, LC, O, PD

Dyslexia—Current Developments (G)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 1 day **Fee:** $25
Dates: 2/12/73; 7 hrs instruction
Methods: AV, Lec, O, Sem

Retinal Detachment Surgery (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 2 days **Fee:** $50
Dates: 4/19/73 to 4/20/73; 12 hrs instruction
Methods: AV, Lec

12th Annual Advanced Contact Lens Seminar (S)
Postgrad Inst, New York Eye & Ear Infirmary, 310 E 14th St, *New York* 10003
Type: C, 1 day **Fee:** $50
Dates: Spring/73; 8 hrs instruction
Methods: AV, OP, Lec, O, Pan

The Vestibular System in Otologic Diagnosis (S-20)
Postgrad Inst, New York Eye & Ear Infirmary, 310 E 14th St, *New York* 10003
Type: C, 3 days **Fee:** $100
Dates: Spring/73; 24 hrs instruction
Methods: AV, OP, Lec, O

ORTHOPEDIC SURGERY

Management & Care of the Scoliosis Patient (B-250)
Amer Acad of Orthopaedic Surgs, 430 N Michigan Ave, Chicago 60611
At: NY Sheraton Hotel, 870 Seventh Ave, *New York* 10019
Type: C, 3 days **Fee:** $150
Dates: 11/12/72 to 11/14/72; 21 hrs instruction
Methods: AV, Lec, O, Pan

OTOLARYNGOLOGY

Otolaryngology (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 3/15/73; 5½ hrs instruction
Methods: AV, Lec, O, Pan

Temporal Bone Surg (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 10 days **Fee:** $600
Dates: 2/19/73 to 3/2/73; 80 hrs instruction
Methods: AV, Clin C, OP, PP, Lab, Lec, Surg, Pan, PD

Stapes Surgery (S-6)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: C, 5 days
Dates: 11/13/72 to 11/17/72; 35 hrs instruction
Methods: AV, OP, PP, Lab, Lec, LC, Surg, PD

Surg of the Paranasal Sinuses (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 5 days **Fee:** $400
Dates: 2/5/73 to 2/9/73; 40 hrs instruction
Methods: Lab, Lec, LC, Surg, PD

Communication Disorders (G)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 1 day **Fee:** $10
Dates: 3/23/73; 7 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Laryngeal & Hypopharyngeal Surgery (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 5 days **Fee:** $450
Dates: 4/73; 40 hrs instruction
Methods: AV, OP, PP, Lab, Lec

Rhinoplasty & Otoplasty (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029. Co-sponsor: Amer Acad Facial & Reconstructive Surg
Type: C, 5 days **Fee:** $500
Dates: 6/17/73 to 6/21/73; 40 hrs instruction
Methods: AV, BR, OP, PP, Lab, Lec, LC, O, Surg, Pan, PD

PATHOLOGY

Clinical Chemistry for Lab Directors (S-10)
Amer Soc of Clin Pathologists, 2100 W Harrison, Chicago 60612
At: Columbia-Presbyterian Hosp, 530 W 168th St, *New York* 10032
Type: C, 3 days **Fee:** $100
Dates: 11/72; 18 hrs instruction
Methods: AV, Lab, Lec, O, Sem

Lab Methods in Blood Banks (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 3 days **Fee:** $100
Dates: 3/12/73 to 3/14/73; 21 hrs instruction
Methods: AV, OP, PP, Lab, Lec, Sem

Cell Pathology & Systemic Nuclear Malignancy Associated Changes (MAC) in Tissues and Smears (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 5 days **Fee:** $200
Dates: 4/20/73 to 4/24/73; 35 hrs instruction
Methods: AV, Lab, Lec

PEDIATRICS

School Problems in Young Children (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 2/21/73; 5½ hrs instruction
Methods: AV, Lec, O, Pan

Intensive Seminar in Pediatrics (B-250)
Maimonides Med Cntr, 4802 10th Ave, Brooklyn 11219. Co-sponsors: SUNY, Downstate Med Cntr; Amer Acad of Gen Prac
At: Coney Island Hosp, Ocean & Shore Pkwys, *Brooklyn* 11235
Type: C, 2 days **Fee:** $60
Dates: 14 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Refresher Seminar in Pediatrics (B)
State Univ of New York at Buffalo, 2211 Main St, *Buffalo* 14124
Type: C, 5 days **Fee:** $150
Dates: 6/73; 30 hrs instruction
Methods: AV, OP, Lec, LC, O, Pan, Sem

Pediatrics '72—The Pediatrician in Crisis (B-200)
Long Island Jewish-Hillside Med Cntr, New Hyde Park, *New York* 11040. Co-sponsor: SUNY at Stony Brook Health Sciences Cntr
Type: C, 3 days **Fee:** $125
Dates: 11/15/72 to 11/17/72; 24 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Pediatric Surg (B-250)
Amer Coll of Surg, 55 E Erie St, Chicago 60611
At: New York Hilton Hotel, 1335 Ave of the Americas, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/1/73 to 4/2/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

PHYSICAL MEDICINE AND REHABILITATION

Rehabilitation Med (B-20)
State Univ of NY Downstate Med Cntr, Office of Cont Educ, 450 Clarkson Ave, *Brooklyn* 11203
Type: I, 1½ hrs/day, 1 day/wk, for 6 wks
Fee: $20
Dates: 5/2/73 to 6/6/73; 9 hrs instruction
Methods: AV, Lec, O

Physical Medicine & Rehabilitation (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 2 days **Fee:** $60
Dates: Spring/73; 14 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, PD

Electromyography (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 3 days **Fee:** $150
Dates: 4/10/73 to 4/12/73; 18 hrs instruction
Methods: AV, Clin C, OP, PP, Lec, PD

PSYCHIATRY

Psychiatry (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 3/29/73; 5½ hrs instruction
Methods: AV, Lec, O, Pan

1—Recent Advances in Psychiatry (S-15)
2—Psychiatry & the Arts (S-15)
3—Special Problems in Adult Psychotherapy (S-6)
4—Psychoanalytic Literature Workshop (S-6)
5—Workshop in Topics Selected by Group Members
6—Theory & Practice of Psychopharmacotherapy (S-15)
7—Neurology for Psychiatrists (S-15)
8—A History of the Development of Psychoanalytic Theory (S-15)
9—Survey of Statistical Methods & Research Design in Psychiatry (S)
10—Special Problems in Group Psychotherapy (S-6)
11—Special Problems in Adolescent Psychotherapy (S-6)
Brooklyn Psychiatric Soc, 130 8th Ave, Brooklyn 11215. Co-sponsor: SUNY Downstate Med Cntr
At: State Univ Hosp, 445 Lenox Rd, *Brooklyn* 11203
Type: I, 2 hrs/day, 1 day/mo, for 8 mos
Fee: $20-$80
Dates: 10/72 to 6/73; 16 hrs instruction
Methods: AV, Clin C, Lec, O, Sem

Psychiatry for Psychiatrists (S)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214
At: Hotel Statler Hilton, Del Ave, *Buffalo*
Type: C, 1 day **Fee:** $30
Dates: Fall/72; 7 hrs instruction
Methods: AV, Lec, O, Pan

Community Psychiatry (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 2 days **Fee:** $60
Dates: Winter/72; Spring/73; 14 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, Sem

Control of Behavior (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 1 day **Fee:** $30
Dates: Spring/73; 7 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, Sem

Clinical Seminar on Management of Shizophrenia in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 11/8/72 to 11/15/72; 3 hrs instruction
Methods: Clin C, Sem

Workshop on Dreams (S-20)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 10 wks
Fee: $75
Dates: 11/16/72 to 1/2/73; 15 hrs instruction
Methods: Lec, O

Clin Seminar on Management of Depression in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 11/29/72 to 12/6/72; 3 hrs instruction
Methods: Clin C, Sem

The Psychoanalytic Process (S-15)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 15 wks
Fee: $112.50
Dates: 12/11/72 to 4/9/73; 22½ hrs instruction
Methods: Clin C, Lec, O

Clin Seminar on Dynamics of Pharmacology in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 12/13/72 to 12/20/72; 3 hrs instruction
Methods: Clin C, Sem

Introduction to Psychoanalytic Technique (B-30)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 10 wks
Fee: $60
Dates: 1/4/73 to 3/8/73; 15 hrs instruction
Methods: Lec, O

Clin Seminar on Management of Sexual Problems in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None

Dates: 1/10/73 to 1/17/73; 3 hrs instruction
Methods: Clin C, Sem

Readings in Psychoanalytic Pioneers (B-30)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 15 wks
Fee: $90
Dates: 1/22/73 to 5/7/73; 22½ hrs instruction
Methods: Lec, O

Clin Seminar on Management of Marital Problems in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 1/24/73 to 1/31/73; 3 hrs instruction
Methods: Clin C, Sem

Contemporary Plays, Novels, Cinemas in Light of Modern Psychoanalysis (B)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, New York 10021
At: New Sch for Social Research, 66 W 12th St, *New York* 10011
Type: I, 1½ hrs/day, 1 day/wk, for 10 wks
Fee: $70
Dates: 1/30/73 to 4/3/73; 15 hrs instruction
Methods: Lec, O

Feminine Psychology Revisited (B)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, New York 10021
At: New Sch for Social Research, 66 W 12th St, *New York* 10011
Type: I, 1½ hrs/day, 1 day/wk, for 10 wks
Fee: $70
Dates: 1/30/73 to 4/3/73; 15 hrs instruction
Methods: Lec, O

Modern Man in Crisis (B)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, New York 10021
At: New Sch for Social Research, 66 W 12th St, *New York* 10011
Type: I, 1½ hrs/day, 1 day/wk, for 15 wks
Fee: $70
Dates: 2/1/73 to 5/10/73; 22½ hrs instruction
Methods: Lec, O

Clin Seminar on Management of Emotional Problems in Children (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 2/7/73 to 2/14/73; 3 hrs instruction
Methods: Clin C, Sem

Continuous Case Seminar (S-15)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 12 wks
Fee: $90
Dates: 2/8/73 to 4/26/73; 18 hrs instruction
Methods: Sem

Psychopharmacology for Psychiatrists (G)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: I, 1½ hrs/day, 1 day/wk, for 9 wks
Fee: $100
Dates: 2/20/73 to 4/17/73; 13½ hrs instruction
Methods: AV, Lec, Sem

Clin Seminar on Management of Emotional Problems of Adolescence (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 3 wks
Fee: None
Dates: 2/21/73 to 2/28/73; 3 hrs instruction
Methods: Clin C, Sem

Hypnosis for the Physician & Dentist (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: I, 1½ hrs/day, 1 day/wk, for 10 wks
Fee: $75
Dates: 3/1/73 to 5/3/73; 15 hrs instruction
Methods: AV, OP, Lec, PD

Orientation Course: Horney's Holistic Approach to Psychoanalysis (B-20)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 5 wks
Fee: None
Dates: 3/6/73 to 4/3/73; 7½ hrs instruction
Methods: Lec, O

Clin Sem on Management of Emotional Problems of Older Persons in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 3/7/73 to 3/14/73; 3 hrs instruction
Methods: Clin C, Sem

Clin Seminar on Management of the Adolescent & His Family in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 3/28/73 to 4/4/73; 3 hrs instruction
Methods: Clin C, Sem

Clin Seminar on the Process of Psychotherapy in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 4/11/73 to 4/18/73; 3 hrs instruction
Methods: Clin C, Sem

Diagnosis & Treatment in Elderly Patients (G)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: C, 1 day **Fee:** $25
Dates: Spring/1973; 7 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Clin Sem on Management of Drug Abuse & Alcoholism in Med Prac (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 5/2/73 to 5/9/73; 3 hrs instruction
Methods: Clin C, Sem

Introductory Continuous Case Seminar (B-20)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 12 wks
Fee: $72
Dates: 5/15/73 to 5/31/73; 18 hrs instruction
Methods: Clin C, Sem

Clin Sem on Psychiatric Hospitalization Procedures & Med Legal Problems (B-40)
Amer Inst for Psychoanalysis of the Karen Horney Psychoanalytic Inst & Cntr, 329 E 62nd St, *New York* 10021
Type: I, 1½ hrs/day, 1 day/wk, for 2 wks
Fee: None
Dates: 5/16/73 to 5/23/73; 3 hrs instruction
Methods: Clin C, Sem

Group Psychotherapy for Graduate Psychiatrists (Advanced) (S)
Page & William Black Postgrad Sch of Med; Mt Sinai Sch of Med, 5th Ave & 100th St, *New York* 10029
Type: I, 3 hrs/day, 2 days/wk, for 20 wks
Fee: $100
Dates: Arranged
Methods: Clin C, Lec, LC, Sem

PUBLIC HEALTH AND PREVENTIVE MEDICINE

Drugs the Mother & Child (B-150)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $30
Dates: 12/6/72; 5½ hrs instruction
Methods: AV, Lec, O, Pan

Community Health (B)
State Univ of NY at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 1 day **Fee:** $30
Dates: 11/9/72; 7 hrs instruction
Methods: AV, Clin C, Lec, O, Pan, Sem

Health Legislation (B)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214. Co-sponsor: United Health Found of Western NY
At: Hotel Statler Hilton, Del Ave, *Buffalo*
Type: C, 2 days **Fee:** $60
Dates: Fall/72; 14 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Administration of Nursing Homes & Extended Care Facilities (B-30)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 15 days
Dates: Fall/72; 105 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Drug Abuse & Dependence (B-35)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: Fall/72; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Radiation Protection: Training for Health Department Staff & Private Consultants (B)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 8 days
Dates: Fall/72; 56 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Developing Administrative Skills (The Nursing Home Administrator) (B-30)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days **Fee:** $200
Dates: 11/13/72 to 11/17/72; 40 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Alcohol Abuse & Alcoholism: What Is the Health Officer's Role? (B-70)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 1/22/73 to 1/26/73; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Principles of Nursing Home Admin (B-30)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days **Fee:** $200
Dates: 3/5/73 to 3/9/73; 40 hrs instruction
Methods: AV, Lec, O, Surg, Pan, Sem

Physicians in Industry (B-14)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 3/12/73 to 3/15/73; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Migrant Health (B-40)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 3 days
Dates: 3/26/73 to 3/28/73; 21 hrs instruction
Methods: AV, Lec, O, Pan, Sem

The Dying Patient: Staff & Family Relationship (B-30)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 3 days **Fee:** $120
Dates: 4/10/73 to 4/12/73; 24 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Communication Skills (B-35)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 4/23/73 to 4/27/73; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

New Trends in Community Health Care (B-45)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 5/7/73 to 5/11/73; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

The Ideal Nursing Home: Building a Better Facility (B-30)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 3 days **Fee:** $120
Dates: 5/8/73 to 5/10/73; 24 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Voluntary Health Agency in the Community (B-45)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 6/4/73 to 6/8/73; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Three-Week Course in Public Health (B-35)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 6/11/73 to 6/15/73; 35 hrs instruction
9/73
Methods: AV, Lec, O, Pan, Sem

Provider & Consumer in Comprehensive Health Planning: A Workable Relationship (B-30)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 3 days
Dates: 6/18/73 to 6/20/73; 21 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Executive Development (B-50)
Columbia Univ Sch of Pub Health, Prgm of Cont Educ, 21 Audubon Ave, Room 305, *New York* 10032
Type: C, 5 days
Dates: 7/16/73 to 7/20/73; 35 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Hosp Admin Program Leading to Degree of Master of Business Admin in Hosp Admin (B)
Wagner Coll, *Staten Island* 10301. Co-sponsor: French & Polyclinic Med Sch & Health Cntr 345 W 50th St, New York 10019
Type: I, 2 yrs or more

RADIOLOGY AND RADIOISOTOPES

Nuclear Medicine—Orientation for the Practitioners (G)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: I, 1 hr/day, 1 day/wk, for 8 wks
Dates: 1/11/73 to 3/1/73; 8 hrs instruction
Methods: AV, OP, Lec, O

Radiology of Inflammatory Lesions of the Gut (S)
State Univ of NY Downstate Med Cntr, Dept of Radiology, 450 Clarkson Ave, Brooklyn
At: Waldorf Astoria Hotel, *New York*
Type: C, 2 days **Fee:** $100
Dates: 6/25/73 to 6/26/73; 14 hrs instruction
Methods: AV, Lec, O

Radiology of Inflammatory Lesions of the Urinary Tract (S)
State Univ of NY Downstate Med Cntr, Dept of Radiology, 450 Clarkson Ave, Brooklyn 11203
At: Waldorf Astoria Hotel, *New York*
Type: C, 2 days **Fee:** $100
Dates: 6/28/73 to 6/29/73; 14 hrs instruction
Methods: AV, Lec, O

SURGERY

Management of Surgical Conditions in Children Seminar (B-26)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $40
Dates: 3/14/73; 4 hrs instruction
Methods: AV, Lec, O, Sem

Surgical Seminar (B-26)
Albany Med Coll, 47 New Scotland Ave, *Albany* 12208
Type: C, 1 day **Fee:** $40
Dates: 4/5/73; 4 hrs instruction
Methods: AV, Lec, O, Sem

Surgical Anatomy (S-20)
State Univ of NY Downstate Med Cntr, Office of Cont Educ, 450 Clarkson Ave, *Brooklyn* 11203
Type: I, 2 hrs/day, 1 day/wk, for 20 wks
Dates: 1/15/73 to 6/25/73; 40 hrs instruction
Methods: OP, Lab, Lec, O, PD

Trauma (B)
State Univ of New York at Buffalo, 2211 Main St, Buffalo 14214
At: Hotel Statler Hilton, Del Ave, *Buffalo*
Type: C, 2 days **Fee:** $60
Dates: Spring/73; 14 hrs instruction
Methods: AV, Lec, O, Pan

Management of Diseases in the Ear, Nose, Throat & Head and Neck (B)
State Univ of New York at Buffalo, 2211 Main St, *Buffalo* 14214
Type: C, 1 day **Fee:** $30
Dates: 7 hrs instruction
Methods: AV, Lec, O, Pan

Colorectal Surgery (B)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: C, 1 day
Dates: 3/23/73; 6 hrs instruction
Methods: AV, Lec, O, Pan

Cancer (B-500)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: Americana Hotel, 7th Ave at 52nd St, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/1/73 to 4/2/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Gastrointestinal Disease (B-500)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: New York Hilton Hotel, 1335 Ave of the Americas, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/1/73 to 4/2/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Shock (B-400)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: Americana Hotel, 7th Ave at 52nd St, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/1/73 to 4/2/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Endocrine Surg (B-250)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: New York Hilton Hotel, 1335 Ave of the Americas, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/3/73 to 4/4/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Fluids & Electrolytes (B-500)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: Americana Hotel, 7th Ave at 52nd St, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/3/73 to 4/4/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Trauma (B-400)
Amer Coll of Surgs, 55 E Erie St, Chicago 60611
At: Americana Hotel, 7th Ave at 52nd St, *New York* 10019
Type: C, 1½ days **Fee:** $50
Dates: 4/3/73 to 4/4/73; 9 hrs instruction
Methods: AV, O, Pan, Sem

Retrograde Aortography & Selective Angiography (G-10)
French & Polyclinic Med Sch & Health Cntr, 345 W 50th St, *New York* 10019
Type: C, 1 day
Dates: 4/73; 3 hrs instruction
Methods: AV, OP, Lec, O

UROLOGY

Urology (B)
State Univ of NY at Buffalo, 2211 Main St, Buffalo 14214
At: Hotel Statler Hilton, Del Ave, *Buffalo*
Type: C, 2 days **Fee:** $60
Dates: Spring/73; 14 hrs instruction
Methods: AV, Lec, O, Pan, Sem

Necrology

George Edward Anderson, M.D., of Brooklyn, died on August 26 at the age of seventy-four. Dr. Anderson graduated in 1922 from University and Bellevue Hospital Medical College. He was a senior physician at Brooklyn-Cumberland Medical Center and director of medicine at Brooklyn-Cumberland Medical Center Outpatient Department. Dr. Anderson was a Fellow of the American College of Physicians and a member of the American Rheumatism Association, the New York Academy of Medicine, the New York Society of Internal Medicine, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Bernard Charles Aronoff, M.D., of Carmel, died in July at the age of sixty-six. Dr. Aronoff graduated in 1930 from University and Bellevue Hospital Medical College. He was a member of the Putnam County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alejandro Becerra, M.D., of New York City, died on July 25 at the age of forty-three. Dr. Becerra received his medical degree from the University of Guadalajara in 1954. He was an assistant attending surgeon in thoracic and cardiovascular diseases at Flower and Fifth Avenue and Metropolitan Hospitals and Bird S. Coler Memorial Hospital. Dr. Becerra was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rose Rudolph Donk, M.D., of Newark, died on August 6 at the age of ninety. Dr. Donk graduated in 1911 from the University of Buffalo School of Medicine. She was a member of the Wayne County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Yun Fong, M.D., of New York City, died on July 30 at the age of fifty-seven. Dr. Fong graduated in 1940 from New York University College of Medicine. He was an attending physician in chest diseases at Bellevue Hospital and an associate attending physician at Beekman-Downtown Hospital and Beekman-Downtown Hospital Outpatient Department. Dr. Fong was a member of the American Thoracic Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Albert Robert Fritz, M.D., of Brooklyn, retired, died on August 23 at the age of eighty-three. Dr. Fritz graduated in 1910 from Long Island College Hospital. He was a consulting surgeon (inactive) at Community Hospital of Brooklyn (of which he was a cofounder, at that time it was known as the Madison Park Hospital). Dr. Fritz was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Charles Hugo Gelb, M.D., of New York City, died on June 10 at the age of seventy-three. Dr. Gelb received his medical degree from the University of Prague in 1925. He was a senior clinical assistant physician at The Mount Sinai Hospital. Dr. Gelb was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max Gruenbaum, M.D., of The Bronx, died on February 25. Dr. Gruenbaum received his medical degree from the University of Bucharest in 1914.

Edward Patrick Hanley, M.D., of Albany, died on August 24 at the age of sixty-four. Dr. Hanley graduated in 1936 from Albany Medical College. He was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Kendall Higgins, M.D., of New York City and Scarsdale, died on March 22 at the age of sixty-seven. Dr. Higgins graduated in 1928 from the University of Minnesota Medical School. He was an attending pathologist and director of laboratories at New York Eye and Ear Infirmary. Dr. Higgins was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the American Association of Pathologists and Bacteriologists, the American Society of Clinical Pathologists, the New York Academy of Medicine, the New York State Society of Pathologists, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Worden Kane, M.D., of Binghamton, died on August 13 at the age of sixty-eight. Dr. Kane graduated in 1930 from Harvard University Medical School. He was an attending neurosurgeon at Binghamton General and the Charles S. Wilson Memorial (Johnson City) Hospitals, a consulting neurosurgeon at Tompkins County Hospital (Ithaca), The Hospital (Sidney), and Sage, and a senior neurosurgeon at Our Lady of Lourdes Memorial Hospital. Dr. Kane was a Diplomate of the American Board of Neurological Surgery, a Fellow of the American College of Surgeons, and a member of the Binghamton Academy of Medicine, the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Roy Ludlum Lippincott, M.D., of Goshen, died on August 11 at the age of eighty-three. Dr. Lippincott graduated in 1913 from Albany Medical College. He was an honorary surgeon at Arden Hill Hospital. Dr. Lippincott was a member of the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ferdinand Lustig, M.D., of New York City, died on May 18 at the age of sixty-nine. Dr. Lustig received his medical degree from the University of Vienna in 1925. He was a member of the American Geriatrics Society, the New York Society for Physical Medicine and Rehabilitation, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Charles Mulligan, M.D., of New York City, died on October 20, 1971, at the age of thirty-five. Dr. Mulligan graduated in 1964 from Georgetown University School of Medicine. He was an associate attending ophthalmologic surgeon at New York Eye and Ear Infirmary. Dr. Mulligan was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

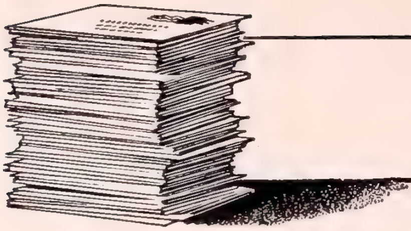
Edward Rolf Richter, M.D., of Woodmere, died on April 18 at the age of sixty-six. Dr. Richter graduated in 1931 from New York Homeopathic Medical College and Flower Hospital. He was an attending orthopedic surgeon at St. Joseph's Hospital (Far Rockaway). Dr. Richter was a member of the Aerospace Medical Association, the American Board of Legal Medicine, the American School Health Association, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Martin Wolf Siegel, M.D., of New York City, died on March 23 at the age of thirty-seven. Dr. Siegel graduated in 1959 from New York Medical College. He was an assistant attending orthopedic surgeon at Flower and Fifth Avenue Hospitals, an assistant chief of orthopedic surgery at Bird S. Coler Memorial Hospital, and an assistant orthopedic surgeon at Metropolitan Hospital. Dr. Siegel was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Dina S. Soble, M.D., of Orangeburg, died on July 7 at the age of seventy. Dr. Soble received her medical degree from the University of Kaunas in 1938. She was a supervising psychiatrist at Rockland State Hospital. Dr. Soble was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Correction

It was incorrectly stated in August 15, 1972, issue of the ***New York State Journal of Medicine*** on page 2113, that Isidore Ochs, M.D., was from The Bronx and that he died at the age of seventy-two. Dr. Ochs was a resident of Lakewood, New Jersey, formerly of The Bronx, and died at the age of sixty-eight. The ***Journal*** is sorry for these inaccuracies.



Letters to the Editor

The letter reproduced below expresses a viewpoint on abortion that is different from that in the letter by Natalie Shainess, M.D., that appeared in the ***New York State Journal of Medicine*** in the July 1, 1972, issue, page 1772.

The beginning: the end

To the Editor: In *Saturday Review,* September 4, 1971, in a somewhat simplistic paper entitled "Abortion and Morality," P. Ehrlich and J. Holdren state the question, "Has a potential human the right to live inside an actual human without her consent?" Their article concerns the reasons for survival or the lack of it—ab initio.

In the British published *Encounter,* September 10, 1971, Terrence Des Pres, a Junior Fellow at Harvard University, writes more sweepingly on "The Survivor: On the Ethos of Survival in Extremity." Mr. Des Pres never mentions abortion; his concern is not for lesser topics but for the panorama of human life force. The articles intermesh, Des Pres beginning where Ehrlich and Holdren permit survival.

Each of these authors describes our era: Ehrlich's and Holdren's world is "overpopulated" and "replete with inequity"; "dread and savagery" are the signs of Des Pres's times. Attention is called to the sense of gathering darkness prominent in modern classics: *To the Lighthouse, The Sound and Fury, The Magic Mountain,* and *Remembrance of Things Past.* Des Pres speaks of "the coming of a condition so extreme as to threaten if not the continuity of the race, then surely our claims to value as human beings." Omitting the category of the unwanted fetus, aborted, the Harvard Fellow pictures all men as victims "of time, the flesh, the father's sins; or caught up in those random days when atrocity becomes the norm."

The norms for induced abortion are delineated by Ehrlich and Holdren: Is it needed? Is it safe? Is it moral? Is it the business of government or, indeed, of anyone other than the pregnant woman? They arrive at their position of accepting and urging abortion with affirmative answers to the first three questions and a negative reply to the last.

T. S. Eliot believes that vulnerability is a condition of existence. This is particularly true of the aborted with their brief, allotted span of intrauterine time and their totally vulnerable posture.

Des Pres specifies that one of the functions of civilization has been to provide symbolic systems which displace awareness of what is terrible, in this case the shifting of victimhood to appointed groups and individuals, the scapegoats and sacrificial . . . who sanctify our illusions and grant to the community a liberating grace. In the queries: "needed," "safe," "moral," and "whose business" is a system and symbols. There is also a priority. There may be sanctification in the illusion that abortion is warranted to satisfy the caprice or whim or the dolorous and urgent circumstances of the woman seeking it. If not sanctification, then not perdition, for Ehrlich and Holdren regard the fetus as "certainly alive," but being "a potential rather than an actual human being." The community receives a liberating grace with abortion, one less in the surfeit of people.

Allowing abortion, Ehrlich and Holdren make a distinction, more pragmatic than philosophic, in attesting that life in the extrauterine has a different quality than life in the unborn. Not being human, and having only the potential for humanity, once the fetus attains humanity (extrauterine existence), the life force is somehow altered and made different in their opinion. In truth there is one single characterization of life; it is meant to be lived.

"Each thing," said Spinoza in the *Ethics,* "insofar as it is in itself, endeavours to persevere in its being." In the *Gates of Horn* (1963) Harry Levin writes, "Layer after layer of the human vestment has frayed, become a patchwork of rags, been cast off, until the human image emerges in entire nakedness, at the mercy of every ill and yet determined to survive." Des Pres states the imperative that, survival takes priority over everything else.

Until permissive abortion, there was a difference between intrauterine existence and the environment of the world; the fetus was not entirely but was largely secure in its sanctuary; the large scale and systematic victimization of innocent populations took place in Armenia, the Ukraine, Babi Yar and Biafra, Hiroshima, Nagasaki, Viet Nam, and Pakistan. The protagonist in Malmud's *The Fixer* describes this milieu: "Overnight a madman is born who thinks . . . blood is water. Overnight life becomes worthless. The human body is worth less than its substance. A person is shit."

Des Pres recounts the value of life and living. His example is from Ilona Karmel's novel, *An Estate of Memory.* Four women struggle against despair and death in a Polish concentration camp. Trapped by inhuman conditions, they keep up a minimum of business as usual, the human business of effective intercourse. They band together in a mutual defense, in mutual support, and slowly they grow into a kind of family. Surrounded by death and terror they weave this ragged fabric of love to wrap about their nakedness, and are sustained by it through the days of an amazing event, a child is born and smuggled out of the camp. The child is the inmates' earnest desire and the bane of the camp authorities who will promise it death. It is therefore like all children of our days . . . wanted and unwanted. Des Pres says, "The value here is the act itself, and becomes visible as soon as the struggle to survive is recognized as also the struggle to preserve the living seeds of existence as a human being."

Ehrlich and Holdren postulate a necessary consent for the fetus to live and survive, an existence of suffer-ence. Clandestinely, furtively, surreptitiously, this dangerous invader seeks a domicile and an environment to continue its life processes, and, in doing so, "subjects actual humans to the anguish of compulsory pregnancy" (Ehrlich and Holdren). A male and female compulsion initiates the life mechanism, and compulsion breeds compulsion. Once endowed, the fetal momentum is compelled in the direction for which it was intended—living. It is quite clear who are the prime movers in compulsory pregnancy.

Do these who are part of our body, politic, social, and economic also live by sufferance: the dangerous political agitator, our enemies, the poor, the thief, the insane, the drug addict? The list is endless of those who are part of us and cause us anguish. Are we the determinants of the continuity of their lives? Are they safe from us only because they exist in other than an intrauterine life? Des Pres speaks of "our claim to value as human beings." Does being only potentially human deny us any humanity? Or does not the value of humanity begin with conception, being reinforced as a birthright in those actually born?

That morality is suspect which requires, to buttress it, an antecedent "safety" and "need" and a subsequent "whose business." Ehrlich and Holdren are as casual with embryology, theology, and gynecology as they are with the fetus. In some odd, unitary fashion, they regard the ova in the female ovary and the sperm in the male gonads as "potential human beings." None of us is derived from the solitary ovum or the isolated spermatazoon. Our potential as human beings originates in the conjunction and merging of these two cells. One half of a sphere does not have the potential of a sphere, but therein sphericality is derived from the application of two halves of a sphere. "Each thing insofar as it is in itself, endeavours to persevere in its being."

The *Summa Theologica* is researched by Ehrlich and Holdren in support of their arguments. Thomas Aquinas, the "great Catholic theologian," "thought abortion permissible until the quickening (usually between the sixteenth and twentieth weeks of pregnancy." What is written in the *Summa* is capable of more than one interpretation, and one theologian does not make a spring, even a big, fat, "swallow" of a theologian. Neither does one theologian make a dogma. Ehrlich and Holdren do not specify the opinion of a multitude of other Catholic theologians on this subject or the unanimity of their conclusions.

"Not much thought," is given by Ehrlich and Holdren, "to the countless early spontaneous abortions that pass unnoticed in the menstrual discharge." If there are countless early spontaneous abortions that pass unnoticed, then the medical profession is not aware of this phenomenon. A woman aborting, early or late, is quite aware of this alteration in her physiology, and it is more the rule than the exception that she seeks medical assistance. Her condition is often such hat she requires treatment and at times minor surgery.

The bleeding that occurs in spontaneous abortion is not a menstrual period as alleged by Ehrlich and Holdren. Menstruation is a part of normal body changes; abortion is pathologic. The cellular picture in the linng of the womb in menstruation has characteristics ntirely different from the same areas studied in sponaneous abortion. No physician, in accuracy, ever told a woman bleeding from an abortion that she was menstruating.

You would surmise that once a topic was "established" as needed, safe, moral, and the business of nobody but the woman concerned, that there would be few if any reservations about this matter. But uncertain like all of us, Ehrlich and Holdren recommend that "abortion not be undertaken frivolously," that "one need not relish the idea of abortion," and that "the frequency of induced abortions should be minimized." These admonitions somehow make the concept of induced abortion suspect.

It is trivia like Ehrlich's and Holdren's and mine that obfuscate the abortion issue. What remains to be clarified as a basic fundamental and final issue is whether the property of life and living is a random accident, of no inherent worth, with no acquired value, hence meriting no safeguards or concern; or whether life is an inestimable gift that endows the possessor uniquely, and in so being possessed gives the recipient an unalienable right to the prospect of survival.

Des Pres concludes: "Whatever it is, the survivor is driven to embrace it, aware of its power and holiness. And whatever it is—to call it life will have to do—it is the fundament of the flesh, and the soul, the ground on which the survivor stands, upright in innocence and in the will to continue as a human being."

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Abortion misquote corrected by Cardinal Cushing

To the Editor: In her letter to the editor supporting liberal abortion in the July 1 ***Journal,*** Natalie Shainess, M.D., referred to the late Richard Cardinal Cushing of Boston. She said, "Cardinal Cushing, a great and just theologian said: 'Catholics do not need the support of civil law to be faithful to their own religious convictions, and they do not need to impose their moral views on other members of society.' "

The quote is taken out of context and was used in 1967 by the *Los Angeles Times* to support its own arguments for abortion law changes. Cardinal Cushing at that time sent a letter to the paper reiterating his opposition to relaxed abortion laws and charged he was misquoted. The paper acknowledged its error, saying a "secondary source book" had not made clear the context of the Cardinal's words.

In his letter, Cardinal Cushing said, "Let me make perfectly clear that I am not in favor of the so-called liberalization of the abortion laws."

"In the case of abortion . . . the public's interest in the health and welfare of the mother is matched by its interest in the health and welfare of the child and it is the responsibility of society to safeguard both interests."

"When I say Catholics do not seek to impose by law their moral views on other members of society, I do not mean to imply that American citizens, because they are Catholics, should stand idly by and permit the enactment of unmoral laws or the repeal of laws that have for their source and support generally accepted moral and ethical principles."*

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Voice views on abortion

To the Editor: The excellent letter to the Editor by Natalie Shainess, M.D., in the July 1 ***Journal,*** supporting our current abortion law was one of the best I have ever read. However, we are going to have this choice to perform abortions snatched away from us by a vocal minority if we do not act. In a recent Gallup organization survey, fielded in January, 1972, only 6 per cent of the respondents agreed that abortions should never be permitted. A majority of Americans, in fact, a majority of Catholics, felt that aborton decisions should rest solely with the patient and the physician.

I am sure that the great majority of physicians in New York State do not want to return to the dark ages of our previous abortion law, but only the stroke of Governor Rockefeller's pen saved us from that fate. It is incumbent on physicians, particularly, to voice their views to their legislators, frequently and loudly.

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The abortion issue

To the Editor: The July 1, 1972, issue of the ***New York State Journal of Medicine,*** pages 1772–1774, contains a thought-provoking discussion on "Abortion: Inalienable Right." Written by a highly experienced psychiatrist, the presentation reveals that much intellectual effort was utilized in its composition. However excellent this written discourse may be, there are certain statements made which should be clarified, elucidated on, or substantiated by scientific data or philosophic syllogisms. Specific reference is called to the following statements taken verbatim from the article in question:

> 1. Let me say at once that Catholics and Orthodox Jews are entitled to their theologic position but have no right, in my opinion, to legislate that view against the best interests of society.
>
> 2. I speak as a psychiatrist who has witnessed in my practice of almost thirty years centered on women and their psychology, the harm that refusal of abortion has done to women and society . . . . But I also speak as a woman proclaiming my indignation at the uncaring, casual, insensitive way that men have legislated women's reproductive lives, which has virtually been the sole content of their lives.
>
> 3. But it is murder of the woman I am talking about, psychologic and social murder, not murder of the fetus, or rather the embryo which is what usually gets aborted. This leads me to ask: Why has the fetus got friends, while the woman has not? Why does her suffering make so few claims on the conscience of men?
>
> 4. Why must the seed of rape, to take one example, be permitted to commit a "double jeopardy" the first, a brief punishment of unspeakable violence; the second, a nine-month involuntary servitude terminated by pain and suffering, and then a life sentence.
>
> 5. This leads to a second issue, about which the women's liberation groups have been most vocal. . . . For men have been deaf and perhaps also blind to the complex issues involved in unwelcome pregnancy for women . . . . For while denying abortions men have espoused the playboy philosophy. Sexual contact devoid of meaningful relationship has been in the past "fine" for men.
>
> 6. De Beauvoir had pointed out that in the sexual act at the very moment when man transcends himself in its climax, he is then restored to himself. Woman, on the other hand, first "violated," that is her body integrity is penetrated, then becomes "alienated": in pregnancy she is other than herself. This alteration in woman when unwelcome, in which new, difficult, and eventually painful bodily events await her, while her emotional, psychologic, and social life course is forever altered, denies her mastery over her own life.
>
> 7. Let me return to the issue of religion and moral codes: again a very difficult territory to survey and one fraught with hazards for the daring . . . . Let us look at the "but-it's-taking-a-life" view. Here I assert that a nonsentient, nonindependently viable, noncognitive cell mass is not a human life; it is a potential life and so are all the ova and spermatozoa which have never had occasion to meet. When they do meet, something is furthered, not started, which may be welcome or unwelcome, healthy or diseased, and is indeed not even a definitive potential human being until the genetic code is unalterable—an occurrence at about the eighth week of embryonic life, with the closing of the neural tube.
>
> 8. In relation to concern about life and reverence for life, it is the quality of the life that matters. Further, no one who puts the life and well-being of these cells over the life and well-being of an actual human being, the mother, has true reverence for life; no one who condones or in any way abets killing of the sentient living by any means, especially war, has a right to veto abortion.
>
> 9. It may surprise many Catholics to know that views on abortion within the church have varied and that St. Thomas Aquinas found abortion acceptable in the first few months until the time of "quickening," after which, in his times, attempts would have meant almost certain death for the woman.
>
> 10. Today, there is another issue. In our times of sophistication, if not cynicism, the Pope's decisions on abortion, contraception, and celibacy reflect the recognition that when the affectional tie forged by sexual privation is weakened, all hierarchic control is likely to go . . . . I am saying that the subterranean reasons for the Pope's decisions are based on power, while the overt reasons presented are inconsistent ideologic ones. If "taking a life" is a genuine issue, the Pope has an absolute obligation to command all Catholics to refuse to serve in war, making excommunication the consequence of failure to do so.
>
> 11. I turn at last to the area where my special interest and experience lead me to some definite conclusions. An unwanted child is a hated child—forever! It has been my experience that whatever the reason, and it is sufficient that there simply is one, unwelcome pregnancy runs a course in which there is agitation on discovery of the pregnancy, frantic efforts at psychologic denial in some instances, or obtaining abortion in most. There is virtually no

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*"Card Cushing Corrects Abortion Misquote," *The Tablet,* Thursday, June 8, 1967.

woman who does not undergo considerable humiliation at this point—an ego-damaging experience; the risks taken to obtain illegal abortion amount to what I have called a murder-suicide compact. If these life-risking efforts were included under the suicide rubric, one would discover notable change in the statistics of suicide.

12. Forced to continue with the pregnancy there is a marked affective disequilibrium . . . expressed in depression, neurotic symptomatilogy, psychotic reactions, and psychosomatic disorders.

Excerpt number one elicits objections because it deprives Catholics and Orthodox Jews of their constitutional rights of freedom of speech. How can any American deprive another American of his right to this basic American freedom to speak for or against any issue. Moreover, since the United States is a republic, under this form of government the majority has a right to rule if the majority legislates. Under a democracy the majority opinion prevails and the will of the majority becomes the law of the land. In New York State the Catholic and Jewish population, if not the majority of the people certainly their combined number, is a voice worthy of being heard. To write that this combined religious group speaks against the best interests of society is to propel a fiction.

Excerpt number two brings forth an objection in that men are blamed for "legislating women's reproductive lives." The question of abortion is not one of male versus female. To accentuate male chauvinism in this discussion is to accentuate a smidgen. No real man worthy of his gender seeks the enfetterment of women.

When the author refers to her thirty years' practice centered on women and their psychology, she has seen harm to society from the refusal of abortion. What does her experience teach concerning the harm to the individual who has had repeated abortions. Even at this early date the psychosomatic aspects of the post-abortion female have startling facets to be unravelled.

Excerpt number three speaks of psychologic murder of the woman and not murder of the fetus. As a member of the house staff of a large New York City hospital, many years before the legalization of abortion, I personally saw hundreds of women who had abortions and entered the hospital because of uterine bleeding necessitating a dilatation and curettage for retained secundines. These were women of all classes of society. Any woman who wanted an abortion prior to the legalization thereof was not deprived of one even if it was not under sterile technic. Many were self-induced or performed by other women. There were always professional or nonprofessional services available. The psychologic murder of women who have an unwanted pregnancy is open to dispute.

Morris Fishbein, M.D., in his editorial "Abortion Reform" (*Medical World News*, June 2, 1972) writes: "Medical indications have become, for the most part, psychiatric. These psychiatric indications have no scientific basis, no unequivocal criteria, and no prognosticative reliability. The real indications are social or humanitarian and pseudopsychiatric labels are often used to mask this fact."

As to why the fetus has friends is easy to explain. It s of itself inarticulate, defenseless, and a pawn in the game of life. The fetus could not and was not consult-d about its future but can be denied admission to the banquet feast of life by others.

Excerpt number four brings forth the old story of rape. In the first instance may it be asked: "Who cared for the minor children who were raped prior to the enactment of the abortion law?" The medical profession did and still does. The doctor of medicine is amply trained in cleansing out a uterus that has been raped. However, do not insult the medical profession by stating that a person in her third month of pregnancy was raped and now an abortion is indicated. Why the delay in seeking correction for this barbarity? Under these circumstances the question of rape is highly questioned and often is untrue.

This "life sentence" after a nine-month pregnancy is so fallacious that it should be ignored. Did not the writer ever hear of adoption? There are thousands of people who are ready, willing, and able to adopt children. There are waiting lists of young and old married couples anxious to assume this obligation of adopting a child.

Excerpts five and six presenting women as helpless minions at the mercy of conniving men may have been true thirty years ago, but certainly cannot be entertained today. A recent study on venereal disease clearly indicates that the so-called weaker sex is far from being weak.

> "The increasing rate of venereal disease is due in part to an outgrowth of the women's lib philosophy that contends women should be as aggressive sexually as men," according to the director of the venereal disease control program of the Nassau County Department of Health. "The woman today is the aggressor," said Dr. Rudolf H. Steinharter, director of the V.D. program. "She believes she is just as much entitled as the male. Years ago it was considered quite a feat to get a girl to submit. The male was happy as a peacock when he was able to accomplish that. But today it is the other way around in many, many cases. And this is what we call the sexual revolution. The girls don't want to be considered the sex object but the subject. They come in here and brag about breaking a man in. This new 'liberation' has compounded the problem of venereal disease because many women are carriers without even knowing it." (*Sunday News*, July 16, 1972, reported by Stewart Ain).

As for women's liberation, this is not a new concept. In Sweden during the fourteenth century there lived a remarkable woman called Birgitta (1303–1373). She was the mother of eight children and was not afraid to take a stand on the burning issues of the day. (In fact, one could call her a true women's liberationist.) She espoused woman's equality to man. She was adamant on her fight against abortion, a practice popular among certain of the Swedish nobility (*Twin Circle*, July 21, 1972). She also said that some women behave like harlots; when they feel the life of a child in their wombs, they induce herbs or other means to cause the miscarriage only to perpetuate their amusement and unchastity.

Excerpt number seven is abounding in statements that are unacceptable either on a scientific or philosophic basis and should be clarified by the author prior to their discussion by a reader. Mere statements by a writer do not make them authoritative or incontrovertible. For example, the following is the quintessence of nonsyllogistic reasoning: "it is a potential life and so are all the ova and spermatozoa which have never had the occasion to meet. When they do meet something is furthered not started."

May I write that an ovum alone will always be an ovum, and a spermatozoa alone will always be a spermatozoa. In each there is nothing resembling human life and alone each is ineffective without the other and soon dies. One cannot start life without the other. It is a philosophic principle that Nemo dat quod non habet. However, once the ovum is impregnated by the spermatozoa a new entity commences. The author calls it nonsentient, nonindependent, noncognitive, and so forth. Call it by any name, it is life however undifferentiated it may be. It has a qualitative existence. It is an entity which when allowed to pursue its destiny is de facto human life. If it was not human life from the beginning, it would not be human life nine months later. There cannot be an alteration of one species into another. A dog starts out as a dog and does not become a cat. So it is in all living things.

Excerpt number eight concerns itself with the quality of life and the reverence for life. The author states that the fertilized ovum cells should not take precedence over the life and well-being of the actual human being, the mother. The logic is not apparent. Most abortions performed today are because no children are wanted. Very few abortions today are peformed because of interference by pregnancy with the life and well-being of the mother. In New York State, 500,000 consecutive abortions were peformed on young adult women (many residing outside New York State) who did not want a child, and for no other reason. It is a dictum worthy of recalling to our fading memory that no one human life has a greater claim to life over another. All men are created equally to enjoy life.

To rekindle the fire of knowledge a survey of any textbook of embryology will unfold that at the end of four weeks the fetus is 3/16 inches high. The heart is pulsating and pumping blood; the backbone and spinal canal are forming; the digestive system begins to form; small buds which will evenually become arms and legs are present. How can one call this a "noncognitive cell mass?"

At this point mention is made of war and the veto of abortion. I fail to recognize the connection of one with the other, and there is no logical connection between them. A later reference to war will be answered in turn. Suffice it to say here that wars start in the home. If we can end violence there, we can perhaps yet bring peace to the world.

Excerpt number nine attempts to quote St. Thomas Aquinas as favoring abortions. This statement would be acceptable only by a direct quotation from his writings: *Compendium Summae Totius Theologiae,* published in Rome by the Sacred Congregation MDCCLXIII. I have checked the chapters in the above texts pertinent to the subject under discussion (vol. 6, Quaestio LIX to Quaestio LXIII concerning De Fecundis Nuptus) and I have not been able to verify the proffered statement attributed to St. Thomas Aquinas.

An enlightening statement under the editor's preface is found in the *Thomas Aquinas Dictionary* edited by Morris Stockhammer, published by the Philosophical Library 15 E. 40th Street, New York City, New York, 1965. "In the preparation of this volume, therefore, I was constantly reminded of Rickaby's admonition: St. Thomas is an author particularly liable to misrepresentation by taking his words in one place to the neglect of what he says on the same subject elsewhere. No one is safe in quoting him who has not read much of him" (Ethics I, page 131).

Excerpt number ten concerning the Pope is persiflage. It indicates that the person expressing opinions about the papacy has little understanding of it, and less knowledge of the present Pontiff Paul VI. Concerning the present discussion the opinions of the Pope are gleaned from his encyclical "Humanae Vitae."

In the generality of papal pronouncements there is one constant, the natural law is authentically existential as a constituent of evangelical morality. The evangelical morality presupposes and perfects the natural law even as it goes beyond it. Whenever the Roman Church, through the papacy, teaches natural law doctrine or a specific application of it to a concrete moral issue, it does so by virtue of the Petrine Commission and not as eminent philosophers or world-renowned metaphysicians. The Roman Church does give reasons for its condemnations of totalitarianism, abortion, artificial contraception, of economic exploitation, racial discrimination, etc.

The natural law is so-called not because it is discernible by a natural faculty, human reason, but because it is the law of the nature of man. Nor is it called natural law because it is the law of human reason, but because it is the will of the Divine legislator made mainfest in the exigencies of human nature as an obligatory norm of moral conduct.

As to papal excommunication and the war, I fail to see the connection it has with abortion. However to digress to this subject, who is the Pope to excommunicate? The poor draftee never had a choice, except to be a conscientious objector. Failure to respond to a draft notice is a Federal offense. To excommunicate the soldier is a useless motion. Should the general be excommunicated? Cui bono! Those who should be excommunicated are those who start wars and the leaders of world states who propel their nations to wars. Excommunication of these men in government would be a ridiculum. In the first place most leaders of nations are not Catholics, therefore, excommunication is nihil. Furthermore, the voice of the Pope falls on deaf ears in the world of politics. De facto, the Vatican is never invited to major world councils concerning war or peace. Hence papal excommunication is worthless in this hedonistic, pragmatic world of political chicanery.

Excerpt numbers 11 and 12 bring forth the author's thirty years' experience as a psychiatrist. When one writes of unwanted babies, let it be recorded that there are no unwanted babies. Perhaps the pregnant woman does not want the baby, but there is someone somewhere in this world who wants the baby. Adoption centers everywhere would take the "unwanted" baby. As to the traumatic experience of pregnancy, it is admitted, but to be driven to suicide by pregnancy is not a frequent occurrence. Moreover, a preexisting psychotic personality is the antecedent to those who succumb to the concatenation of psychic events as mentioned by the author. The undesirable pregnancy may be the trigger that sets off the emotional upheaval, but it is not the intrinsic cause.

Summation

To discuss the abortion controversy from every conceivable aspect demands a knowledge of embryology, an understanding of the law (unborn fetuses have rights under the law), a profound concept of philosophy and its subdivisions, a proper definition of the theological terms employed, precise quotations from scholastic philosopers, and a genuine search for the ultimate criterion of things in the light of pure reason. Failure to pursue this pathway to truth is to employ pedantic sophistry. Hence any philosophic dictum not founded on truth degenerates to a canard.

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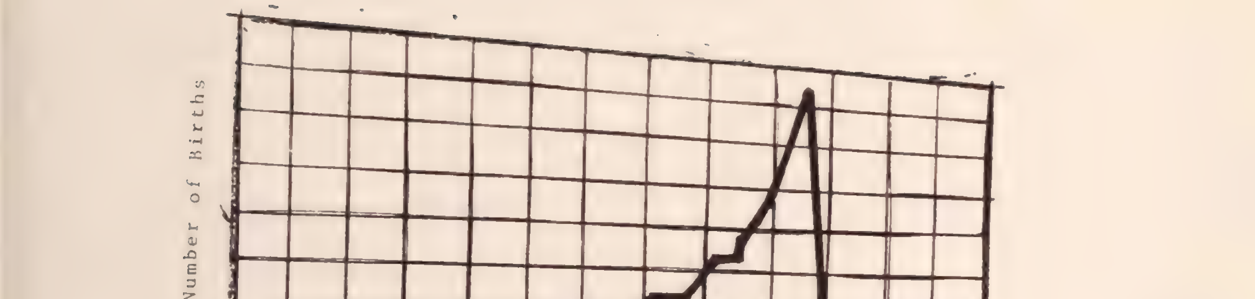

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ing in treatment of obesity. Office and equipment available. Desir
entele and location in New York City suburb. Immediate income.
doctor retiring. Will introduce. Dept. 249, c/o NYSJM.

UNIQUE OPPORTUNITY. PARTNERSHIP LEADING TO COM
solo practice within one year for conscientious family physician. Qual
tice in busy queens community 10 minutes from Manhattan. No.
Saturdays. Dept. 252, c/o NYSJM.

167TH
ANNUAL CONVENTION
OF THE
MEDICAL SOCIETY OF THE
STATE OF NEW YORK

February 11–15, 1973
at the
Americana Hotel
New York City

HIGHLIGHTS

General Sessions

Sunday, February 11th
Acupuncture

Monday, February 12th
Alcoholism

Tuesday, February 13th
Immunology

Wednesday, February 14th
Heart Day

cientific Sections; Symposia; Panel Dis-
ıssions; Annual Meeting of House of Dele-
ates; President's Reception and Dinner
ance; Scientific and Technical Exhibits;
cientific Motion Pictures.

POSITIONS WANTED

ANESTHESIOLOGIST, BOARD ELIGIBLE; LICENSED NEW YORK, NEW Jersey, wishes to relocate in New York Metropolitan area. Experienced; fee for service or group. Please send offers to Dept. 250, c/o NYSJM.

REAL ESTATE FOR SALE OR RENT

FOR SALE. FIVE FLOOR BROWNSTONE IN MURRAY HILL SECTION of Manhattan. Complete medical full floor; complete residential floor. Call Le. 2-2154.

SAGAPONACK, SOUTHAMPTON, L.I., 7.165 ACRES. SURROUNDED BY farms, oceans and dunes. Precious little left. Property borders Wainscott, few hundred yards from ocean. Area zoned for country residence, minimum of 60,000 sq. ft. per dwelling unit. 7 plus acres $132,000. Divided, 5 lots at $26,750; 4 lots at $33,450 each. J. R. del Galdo, 151 East 19th St., New York, N.Y. 10003. (212) YU 2-7249.

800 SQ. FT. OFFICE SPACE WITH SEPARATE ENTRANCE SUITABLE for doctor or related field. New building, excellent location, near all transportation, fully air-conditioned. 142-15 Franklin Ave., corner Union Street, Flushing, N.Y. (212) 275-8550.

MEDICAL BUILDING, WILLISTON PARK, NASSAU COUNTY: 8 ROOM suite, private bath, wood panelled, carpeted, air conditioned, ground floor, excellent for 2 physicians, $600 per month. Five room suite, $420 per month. Write or call David Lang, D.D.S., 101 Hillside Ave., Williston Park, N.Y. 11596. (516) 746-7739.

FOR SALE. HAUPPAUGE, LONG ISLAND. EXQUISITE HOME-OFFICE combination with $100,000 allergy practice, but also excellent for family medicine, pediatrics, etc. Tremendous growth potential; gracious living; beautiful 4-bedroom; a sight to behold. 1,300 square feet modern office, carpeted, central air-conditioning, etc. Will cooperate on financing and will introduce. Must be seen. Chance of a lifetime. Dept. 251, c/o NYSJM.

LIKE SEMI-RETIREMENT? WANT A GRACIOUS HOME? SEE THIS old 15 room colonial in a quiet country village 60 miles from N.Y.C. Population 5,000. 18 × 60 pool, 3 car garage, $5\frac{1}{2}$ acres. Close to golf and skiing. $125,000. L. E. Rack, Broker. Tel. 914-855-3184, Pawling, N.Y.

DOBBS FERRY, WESTCHESTER COUNTY. OFFICE TO SHARE IN NEW professional building. Newly furnished, central a/c, own consultation room. Share waiting room, 2 examining rooms, nurses station. Near parkways. Ample parking. Leon S. Loizeaux, Jr., M.D (914) 693-3066.

FOR SALE: LONG ISLAND HOME-OFFICE COMBINATION, SEPARATE entrances, air conditioned, suitable for G.P., spec., D.O., or other profession; $5\frac{1}{2}$ office rooms, completely equipped, incl. X-ray-Fluoroscopy 100 MA, ECG, diathermy, ultrasound, large darkroom, lav., furniture in waitingroom. Residence: Large livingroom, dinningroom, kitchen with all appliances, dinette, basement finished with bar, 4 bedrooms, 4 bathrooms. Near 4 hospitals. Retiring; sacrifice; price negotiable. Dept. 246, c/o NYSJM.

110 E. 70TH STREET. NEW YORK'S MOST BEAUTIFUL TREELINED block. Entire ground floor of elegant townhouse off Park Ave. 4 rooms, bath; 550 sq. ft.; A/C; very spacious entrance. Will alter to suit any specialty. Immediately available and very reasonable. Call weekdays (212) 628-9699.

The pen

...mightier than the scalpel?

The men and women who believe it is—members of a remarkable group called the American Medical Writers Association, or AMWA—are in a good position to know: many of them wield *both.*

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If you share this concern, AMWA wants you. You can get more information just by writing to: Executive Secretary, American Medical Writers Association, 6900 Grove Road, Thorofare, New Jersey 08086.

Remember...they also serve who sit and write.

AMERICAN
MEDICAL
WRITERS
ASSOCIATION

WHAT GOES ON in medicine

NEW YORK STATE **October 16–31, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

WGO-1

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NEW YORK CITY AREA

** October 13 / 27, 1972*

8:00–9:30 a.m., Fridays

Downstate Medical Center and Kings County Chapter AAFP

Fuhs Auditorium
Maimonides Hospital
4802 Tenth Avenue
Brooklyn

Pediatrics, Gynecology, Surgery and Medicine for the Family Physician

October 13
Office Care of the Diabetic
FELIX A. SILVERSTONE, M.D.

October 20
Current Concepts in Plastic Surgery Particularly as Applied to Office Procedures
CARL SCHILLER, M.D.

October 27
Diagnosis and Treatment in Gonorrhea of the Female
NORMAN POSNER, M.D.

* FEE: $20 for the entire course which runs until April 13, 1973. WHAT GOES ON will publish titles and lecturers in chronological order.

CREDIT: 30 Elective Hours AAFP for entire course

Apply: OSCAR SCHWARTZ, M.D., Chairman, Pediatric Education Committee, Maimonides Medical Center, above address.

October 16 / 30, 1972

3:30 p.m., Mondays

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
79-01 Broadway—Auditorium
Elmhurst

October 16
Autoimmune Hemolytic Anemias
HARRY RUBIN, M.D.
Metropolitan Hospital

October 23
No Conference (Veteran's Day)

October 30
Renin-Angiotension-Aldosterone Abnormalities in Hypertension
LAWRENCE KRAKOFF, M.D.
Mount Sinai School of Medicine

October 17 / 31, 1972

9:00 a.m., Tuesdays

Queens Hospital Center affiliation

Long Island Jewish-Hillside Medical Center

Triboro Hospital—9th Floor Auditorium
Parsons Boulevard and 82nd Drive
Queens

Division of Pulmonary Medicine

October 17
The Results of the Tuberculosis Early Ambulatory Discharge Program and Clinic in the Division of Pulmonary Medicine
W. STERN, M.D. and MRS. S. AXELROD, R.N.

October 24
Three Unusual Cases of Acute Extrinsic Tracheal Obstruction
R. CHITKARA, M.D.

October 31
Some Thoughts on Cellular Immunity
M. KUSCHNER, M.D., Dean and Chairman
Dept. of Pathology, SUNY at Stony Brook

October 17 / 31, 1972

10:00–11:30 a.m., Tuesdays

Downstate Medical Center
Maimonides Medical Center

Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

TUESDAY LECTURES IN PEDIATRICS

WALTER SILVER, M.D., Chairman

October 17
Uremia in Children
MELINDA McVICAR, M.D.
Downstate Medical Center

October 24
Clinical Approach to the Bleeding Infant and Child
FRED ROSNER, M.D.
SUNY College of Medicine at Stony Brook

October 31
Clinical Pathological Conference
STANLEY MINKOWITZ, M.D.
Downstate Medical Center

To register, please contact Mrs. Shirley Lasky, Registrar Department of Pediatric Services, Maimonides Medica Center, above address. Tel. (212) UL3-1200, Ext. 2991.

October 17 and 31, 1972

8:30 p.m., Tuesdays

The New York Psychoanalytic Society

247 East 82nd Street

October 17
The Relevance of Recent Psychoanalyti Child Development Research for the Prac

tice of Clinical Psychiatry

EDGAR L. LIPTON, M.D.

(Joint Meeting with N.Y. County District Branch of A.P.A.)

October 31

The Epigenesis of the Adult Neurosis

PETER BLOS, Sr., Ph.D.

October 18 / 20, 1972

N.Y.U. Post-Graduate Medical School

550 First Avenue

Three-Day Symposium on

RADIOLOGY OF THE KIDNEY

FEE: $150

Write: Office of the Recorder—Room 158 MSB above address.

WEDNESDAY, OCTOBER 18

4:00–5:30 p.m.

Westchester Square Hospital in collaboration with Albert Einstein College of Medicine

1625 St. Peters Avenue
Conference Room
Bronx

DIAGNOSIS AND TREATMENT OF BRADYARRHYTHMIAS

MARTIN N. COHEN, M.D.
Albert Einstein College of Medicine

NO FEE CREDIT: 1½ hours AAFP

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ctober 18, 1972 / May 16, 1973

8:30–10:00 p.m., Every Third Wednesday

he Page and William Black Post-Graduate chool of Medicine

he Mount Sinai Medical Center
ifth Avenue at 100th Street

SEMINAR ON LEGAL ASPECTS OF PSYCHIATRY

The Honorable SIDNEY H. ASCH, Ph.D.
ISRAEL KESSELBRENNER, M.D.
Mount Sinai School of Medicine

FEE: $25

---

ctober 18 / November 15, 1972

8:30–10:00 p.m., Wednesdays

ong Island Consultation Center

-29 64th Road
rest Hills

4th Annual Physicians Workshop on PSYCHOTROPIC MEDICATION

GIDEON SEAMAN, M.D.
Supervising Psychiatrist, LICC

CREDIT: 7½ Elective Hours AAGP
Apply above address

THURSDAY, OCTOBER 19

7:00–11:00 p.m.

American Physicians Fellowship for the Israel Medical Association, New York Chapter

Guggenheim Hall
Mount Sinai School of Nursing
5 East 98th Street

MEDICINE IN ISRAEL

FRIDAY, OCTOBER 20

9:00 p.m.

Staten Island Family Service

25 Victory Boulevard
Staten Island

RELIGION AND PSYCHOTHERAPY

I. EMERY BREITNER, M.D.
L.I. Jewish-Hillside Medical Center

For registration, please contact Sid Herling, MSW, at above address

---

October 23 / 27, 1972

The Memorial Hospital for Cancer and Allied Diseases and Sloan-Kettering Institute for Cancer Research

444 East 68th Street

One-Week Course

CANCER CHEMOTHERAPY

Enrollment is limited, and applications should be submitted as soon as possible to IRWIN H. KRAKOFF, M.D., at the above address.

FEE: $150

MONDAY, OCTOBER 23

8:00 p.m.

New York Heart Association

Heart House
Two East 64th Street

VASCULAR SEMINAR ON DEEP VEIN THROMBOSIS

1. **Pathogenesis**
   RALPH L. NACHMAN, M.D.
   Cornell University College of Medicine

ROGER Q. CRACCO, M.D.

January 31 & February 1, 1975

9:00 a.m.–4:00 p.m. Friday & Saturday

The Page and William Black Post-Graduate School of Medicine of the Mount Sinai School of Medicine (CUNY)

The Mount Sinai Medical Center

MODERN FIRST AID FOR THE PHYSICIAN

JOEL HARTLEY, M.D.
Mount Sinai School of Medicine

FEE: $100. CREDIT: AMA Cat. 1 Award

BUFFALO AREA

January 9 / 30, 1975

7:30–9:30 p.m. Thursdays

Continuing Medical Education
School of Medicine (SUNY)
with the Heart Association of Western New York, Inc.

SUNY Main Campus
Caspen Hall, Room G22

January 9, 7:00 p.m. Registration

Introduction:

JULES CONSTANT, M.D.

EXAMINATION OF THE PERIPHERAL PULSES

Korotkoff Sounds and Blood Pressure Criteria
Tricks in Taking Blood Pressure
Blood Pressure in Legs and Hill's Sign
The Pulse in Aortic Stenosis, Aortic Regurgitation, Coarctation and Mitral Regurgitation
Arrhythmias

January 16

AUSCULTATION

The Ideal Stethoscope, The Second Heart Sound and Normal Splitting
Grading of Heart Sounds and Murmurs
Reverse Splitting
Updating A_2 and P_2 Nomenclature
Arrhythmias

January 23

THE JUGULAR PULSE

Jugular Contours
Clinical Recognition of Normal A, C, V Waves and X, X^1 and Y Descents
A and V Wave Abnormalities
Arrhythmias

January 30

AUSCULTATION

The Second Heart Sound
The Wide Split, The Fixed Split and The Opening Snap
Differentiation from A_2 and P_2
Arrhythmias

ROCHESTER AREA

January 29 & 30, 1975
Wednesdays & Thursdays

March 19 & 20, 1975
May 28 & 29, 1975
September 24 & 25, 1975
November 19 & 20, 1975

University of Rochester School of Medicine & Highland Hospital

FAMILY MEDICINE SEMINAR

For further information contact: Jack Froom, M.D., Director of Research Family Medicine Training Program, Highland Hospital 335 Mt. Vernon Avenue, Rochester 14620. Tel: 716/442-7470.

SUFFOLK COUNTY

January 10 / 31, 1975

Brookhaven Memorial Hospital

101 Hospital Road, 2nd Floor Conference Room
Patchogue

January 10

DIAGNOSIS AND TREATMENT IN LIVER DISEASE

GINO GIORGINI, JR., M.D.

January 24

LYMPHOMA CHEMOTHERAPY

MOHAMMED HOSSAIN, M.D.

January 31

PHYSIOLOGY OF RESPIRATION

ARTHUR REICH, M.D.

NO FEE CREDIT: 23 Hours Class I Prescribed Credit AAFP.

For further information please contact Dorothy S. Lane, M.D. Director of Medical Education, Brookhaven Memorial Hospital, at above address 11772 Tel: 516/475-5000. Ext. 452.

PHYSICIANS' PLACEMENT OPPORTUNITIES

AFTON, N.Y., Chenango County. Family Physician.

CONTACT: Mr. James P. Ernstrom, Chm., Afton Medical Committee, 188 Main Street, Afton, N.Y. 13730

ALBANY, N.Y., Albany County. Emergency Room Physician for 800 bed teaching medical center.

CONTACT: Edward I. Lummus, Jr., Ass't. Dir., Albany Medical Center Hospital, Albany, N.Y. 12208. Tel. 518 445-4378

ALBION, N.Y., Orleans County. Three Family Physicians.

CONTACT: Edward A. Barrett, M.D., 28 Meadowbrook Drive, Albion, N.Y. 14411. Tel. 716/589-7117.

ALFRED, N.Y., Allegany County. Family Physician for community with two rapidly expanding colleges.

CONTACT: Mr. Alex Spyralatos, 16 N. Main Street, Alfred, N.Y. 14802. Tel. 607/587-8268.

AUBURN, N.Y., Cayuga County. Ob/Gyn needed.

CONTACT: James D. Rose, M.D. or Robert E. Lubanski, M.D., 88 Genesee Street, Auburn, N.Y. 13021. Tel. 315/252-7742.

AUBURN, N.Y., Cayuga County. Three Family Physicians, Ob/Gyn, Orthopedic Surgeon and Ophthalmologist wanted.

CONTACT: Mr. Charles D. Hicks, Director, Physicians' Procurement Committee, 157 Ross Street, Auburn, N.Y. 13021. Tel. 315/253-3388 (call collect).

BARKER, N.Y., Niagara County. Family Physician.

CONTACT: Mrs. Esther Hyde, Lower Lake Road, Barker, N.Y. 14012. Tel. 716/795-3892.

BATAVIA, N.Y., Genesee County. Family Physician, Orthopedic Surgeon and Neurologist/Neurosurgeon.

CONTACT: W. David MacCool, Ass't. Adm., Genesee Memorial Hospital, 127 North St., Batavia, N.Y. 14020. Tel. 716/343-6030, ext. 211 or 212.

BOONVILLE, N.Y., Oneida County. Family Physician. Guaranteed first year income.

CONTACT: Mrs. John Thoden, 402 Main Street, Boonville, N.Y. 13309. Tel. 315/942-2053.

BRASHER, HOPKINTON, LAWRENCE & STOCKHOLM, N.Y., St. Lawrence County. Family Physicians or G.P.'s needed.

CONTACT: Mrs. Arthur Cassada, Brasher Falls, N.Y. 13613. Tel. 315/389-2882.

BROADALBIN, N.Y., Fulton County. Family Physician.

CONTACT: Mr. Robert H. Leslie, Chm., Citizen's Committee to Obtain a Doctor, R.D. 1, Broadalbin, N.Y. 12025.

BROCKPORT, N.Y., Monroe County. Family Physician, Anesthesiologist, and Pediatrician.

CONTACT: Mrs. Hermance, Adm., Lakeside Memorial Hospital, West Avenue, Brockport, N.Y. 14420.

BROCTON, N.Y., Chautauqua County. Family Physician.

CONTACT: Mr. Alfred F. Sunday, 24 Park Street, Brocton, N.Y. 14716.

BRONX, N.Y. Full time Nephrologist. Opportunity for research. Hospital affiliated with New York Medical College.

CONTACT: Marion DiFiglis, M.D. or Robert F. Gombrecht, M.D., Misericordia-Fordham Hospitals, 600 East 233rd Street, Bronx, N.Y. 10466. Tel. 212/653-3000.

BROOKLYN, N.Y. Psychiatrist, half-time, in outpatient facility within general hospital setting. Experience with children. Opportunity for private referrals from Pediatric Staff.

CONTACT: Gerald M. Blum, M.D., Chief, Division of Pediatric Psychiatry, Jewish Hospital and Medical Center of Brooklyn, 555 Prospect Place, Brooklyn, N.Y. 11238. Tel. 212/240-1701.

BROOKLYN, N.Y. Full time (9–5, Monday–Friday). General Medical care plus physicals for employees of Brookdale Hospital.

CONTACT: Mr. L. Nirenberg, 525 Rockaway Parkway, Brooklyn, N.Y. 11212. Tel. 212/240-5331.

BROOKLYN, N.Y. Internist with Geriatric background wanted for four-hour day, Monday–Friday.

CONTACT: Leon Rothman, M.D., Med. Dir., Brookdale Hospital Center, Brooklyn, N.Y. 11212. Tel. 212/240-6126.

BUFFALO, N.Y., Erie County. Anesthesiologist to join six-man group including nurse anesthetists.

CONTACT: Niall P. MacAllister, M.D., Deaconess Hospital, Buffalo, N.Y. 14208. Tel. 716/886-4400.

CALLICOON, N.Y., Sullivan County. Family Physician, Internist and Pediatrician.

CONTACT: Mr. Howard Stewart, Grover M. Hermann Hospital, Callicoon, N.Y. 12723. Tel. 914/887-5490.

CATO, N.Y., Cauyga County. Family Physician.

CONTACT: Mrs. Florence Wilkes, Secty., Northern Cayuga Health Services, Cato, N.Y. 13033. Tel. 315/626-6401.

CHATEAUGAY, N.Y., Franklin County. Three or four physicians needed to give adequate care to this area.

CONTACT: Donald A. Richter, M.D., Medical Society of the County of Franklin, 59 Kiwassa Road, Saranac Lake, N.Y. 12983.

CHERRY VALLEY, N.Y., Otsego County. Family Physician.

CONTACT: Mr. Wilkie T. Maddox, P.O. 65, Cherry Valley, N.Y. 13320. Tel: 607/264-5511.

CHESTERTOWN, N.Y., Warren County. Family Physician.

CONTACT: Mr. Don Bozzi, John Hancock Ins. Co., P.O. Box 700, Latham, N.Y. 12110. Tel: 518/783-5571.

COLTON, N.Y., St. Lawrence County. Family Physician.

CONTACT: Mr. George Tiffany, P.O. Box 116, Colton, N.Y. 13625.

CORNING, N.Y., Steuben County. Orthopedic Surgeon.

CONTACT: Stephen E. Pieri, M.D., Corning Medical & Surgical Association, Corning, N.Y. 14830. Tel: 607/936-9971.

DANNEMORA, N.Y., Clinton County. Family Physicians needed for 13 square mile area covering population of approximately 17,500.

CONTACT: Mr. Donald Davies, Dannemora, N.Y. 12929. Tel: 518/492-7742.

DELHI, N.Y., Delaware County. Family Physician and Anesthesiologist.

CONTACT: Mr. Frank Lotz, Adm., O'Connor Hospital, Andes Road, Delhi, N.Y. 13753. Tel. 607/746-2371.

ELMIRA, N.Y., Chemung County. Three F.P.'s and Anesthesiologists.

CONTACT: William K. Nowill, M.D., Arnot-Ogden Memorial Hospital, Elmira, N.Y. 14901. Tel: 607/734-5117.

ELMIRA, N.Y., Chemung County. Internist wanted for group.

CONTACT: Alfred A. Mitchell, M.D., 406 West Church Street, Elmira, N.Y. 14901. Tel: 607/734-8624.

ELMIRA, N.Y., Chemung County. Pediatrician.

CONTACT: Mr. Norman A. Zober, Ass't. Adm., Arnot-Ogden Memorial Hospital, Elmira, N.Y. 14901. Tel: 607/737-4100.

FULTON, N.Y., Oswego County. Family Physician for group.

CONTACT: Mr. Paul A. Hoyt, Fulton, N.Y. 13069. Tel: 315/592-2224.

GREENE, N.Y., Chenango County. Family Physician for Clinic.

CONTACT: James Gilroy, M.D., North Chenango Street, Greene, N.Y. 13778. Tel: 607/656-4115.

HAMILTON, N.Y., Madison County. FPs or Internists needed for innovative rural health center adjacent to community hospital.

CONTACT: N. Cara Ackerman, Director, Community Memorial Hospital, Hamilton, N.Y. 13346. Tel: 315/824-1100.

HANCOCK, N.Y., Delaware County. Internist wanted for small, expanding, short-term hospital.

CONTACT: Mr. Stewart Redman, Adm., Read Memorial Hospital, 62 Leonard Street, Hancock, N.Y. 13783. Tel: 607/637-3381.

HERKIMER, N.Y., Herkimer County. Two F.P.'s and a specialist in Ob/Gyn.

CONTACT: Mr. John Symons, Adm., Herkimer Memorial Hospital, 690 West German Street, Herkimer, N.Y. 13350. Tel: 315/866-3330.

HILTON, N.Y., Monroe County. Family Physician.

CONTACT: Mayor Douglas Hurlbutt, Village of Hilton, N.Y. 14468. Tel: 716/392-4144.

HOLLAND PATENT, N.Y., Oneida County. Family Physician.

CONTACT: Mr. Reno Ventre, Chm., Holland Patent Physicians Committee, Holland Patent, N.Y. 13354. Tel: 315/865-4233.

ITHACA, N.Y., Tompkins County. Internist.

CONTACT: Charles L. Sprinkle, M.D., 304 N. Geneva Street, Ithaca, N.Y. 14850. Tel: 607/272-1360.

ITHACA, N.Y., Tompkins County. Family Physician.

CONTACT: Bonnie L. Howard, Ass't Adm., Tompkins County Hospital, 1285 Trumansburg Road, Ithaca, N.Y. 14850. Tel: 607/274-4444.

JAMESTOWN, N.Y., Chautauqua County. Internist and F.P./Psychiatrist for Ambulatory Primary Care Clinic.

CONTACT: John D. Voltmann, M.D., Director, Jamestown Medical Clinic, 103 Allen Street, Jamestown, N.Y. 14701.

JAMESTOWN, N.Y., Chautauqua County. G.P.'s and Family Physicians to practice in a group format.

CONTACT: Mr. Ronald J. Fryzel, Adm. Ass't., Jamestown General Hospital, 51 Glasgow Ave., Jamestown, N.Y. 14701. Tel: 716/484-1161.

LITTLE FALLS, N.Y., Herkimer County. Two Family Physicians.

CONTACT: Mr. Richard S. Quinlan, Little Falls, N.Y. 13365. Tel: 315/823-1000.

LONG LAKE, N.Y., Hamilton County. Family Physician urgently needed.

CONTACT: Edmund Clement, Councilman, Box 187, Long Lake, N.Y. 12847. Tel: 518/624-2111.

MAINE, N.Y., Broome County. Family Physician for a partnership.

CONTACT: Morris Eber, M.D., 2 Church Street, Maine, N.Y. 12802. Tel: 607/862-3251.

MASSENA, N.Y., St. Lawrence County. Family Physicians needed. Prosperous Northern New York Rural industrial community with good hospital.

CONTACT: John Clough, M.D., 176 Maple Street, Massena, N.Y. 13662. Tel: 315/769-6227.

MASSENA, N.Y., St. Lawrence County. E.N.T., Internist and F.P.'s.

CONTACT: Mr. George Skomsky, Adm., or Henry Dobies, M.D., Massena Memorial Hospital, Massena, N.Y. 13662. Tel: 716/798-2000.

MECHANICVILLE, N.Y., Saratoga County. Family Physicians.

CONTACT: Mr. Joseph E. Agustine, Pres., Chamber of Commerce, Inc., 116 Park Ave., Mechanicville, N.Y. 12118

MEDINA, N.Y., Orleans County. One General Practitioner and one specialist in Internal Medicine to join hospital based group practice.

CONTACT: James H. Morey, Administrator, Medina Memorial Hospital, Medina, N.Y. 14103. Tel: 716-798-2000.

NEW YORK CITY. General or Orthopedic Surgeon.

CONTACT: John Stump, M.D., Veterans Administration, O.P.D. 7th Avenue and 24th St., New York, N.Y. Call before 9 am 212/620-6588 or 6595.

NEW YORK CITY. Emergency Room Board Eligible/Certified (preferably Surgeon) for small hospital.

CONTACT: Stanley Reichman, M.D., Hospital for Joint Diseases, 1919 Madison Avenue, New York, N.Y. 10035 (send resume).

NEW YORK CITY. Board/Cert/Elig. Physician with cardiology background to work in occupational medicine. Modern facilities.

CONTACT: Mr. Henry Leonard, 20 E 49th Street, 10017.

NEW YORK CITY. Part time Board Elig/Cert. Internist who would be willing to work in comprehensive alcoholism treatment center, inpatient service and outpatient clinic and halfway house.

CONTACT: Sheldon Zimberg, M.D., Hospital for Joint Diseases, 1919 Madison Avenue, New York, N.Y. 10035. (by letter only)

NORFOLK, N.Y., St. Lawrence County. Family Physician.

CONTACT: Mr. B. J. Short, Norfolk, N.Y. 13667. Tel: 315/384-4531.

NORTHERN OSWEGO COUNTY wants a Family Physician, or Internist or Pediatrician willing to do Family Practice with a group.

CONTACT: Mr. James Abbott, Adm., St. Joseph's Hospital Health Center, 301 Prospect Avenue, Syracuse, N.Y. 13203. Tel: 315/474-6011.

OGDENSBURG, N.Y., St. Lawrence County. Specialists in Ophthalmology, Pediatrics, Internal Medicine and Family Medicine.

CONTACT: Administrator, A. Barton Hepburn Hospital, Ogdensburg, N.Y. 13369. Tel: 315/393-3600.

ONEONTA, N.Y., Otsego County. Hospital is recruiting physicians, especially for emergency room.

CONTACT: Mr. Frank M. Isbell, Adm., A.O. Fox Memorial Hospital, 1 Norton Avenue, Oneonta, N.Y. 13820. Tel: 607/432-2000.

PLATTSBURGH, N.Y., Clinton County. Board Certified physicians to cover emergency room.

CONTACT: Mr. Wayne E. Rowe, Administrator, Champlain Valley Physicians Hospital, Plattsburgh, N.Y. 12901.

PORT JEFFERSON, N.Y. (Long Island). Medical Education Coordinator wanted.

CONTACT: Mr. Leonard J. Tapler, Director of Personnel, St. Charles Hospital, 200 Belle Terre Road, Port Jefferson, N.Y. 11777. Tel: 516/473-2800.

PORT JERVIS, N.Y., Orange County. Family Physicians, Ophthalmologist, Pediatrician and Anesthesiologist.

CONTACT: Daniel Schultz, M.D., Doctors Sunnyside Hospital, 140-160 Hammond St., Port Jervis, N.Y. 12771. Tel: 914/856-5121.

PORT JERVIS, N.Y., Orange County. Board Certified Pediatrician and F.P.

CONTACT: Sister Mary Jeanne, R.S.M., Adm. St. Francis Hospital, 160 E. Main Street, Port Jervis, N.Y. 12771. Tel: 914/856-5351, ext. 229.

POTSDAM, N.Y., St. Lawrence County. E.N.T. and Family Physicians wanted.

CONTACT: Henry Vinicor, M.D., Chief of Staff, Potsdam Hospital, Potsdam, N.Y. 13676. Tel: 315/353-2341.

POUGHKEEPSIE, N.Y., Dutchess County. Emergency Room Physician. New York State license required.

CONTACT: Norman E. Watt, M.D., Vassar Brothers Hospital, Reade Place, Poughkeepsie, N.Y. 12601. Tel: 914/431-2305.

PULASKI, N.Y., Oswego County. Two Primary Physicians.

CONTACT: Mr. Theodore Prescott, President, Northern Oswego County Health Building, 7407 Park Street, Pulaski, N.Y. 13142.

RED CREEK, N.Y., Wayne County. Family Physician.

CONTACT: Mr. Ralph DeMas, Chm., The Red Creek Physician Committee, Red Creek, N.Y. 13143.

RIGA, N.Y., Monroe County (near Rochester), needs a Family Physician. Fast growing area.

CONTACT: Mr. Edgar E. Moore, Supervisor, Town of Riga, 39 Gilman Road, Churchville, N.Y. 14428. Tel: 716/293-3252.

ROCHESTER, N.Y., Monroe County. Hospital seeking Board qualified Orthopedic Surgeons. Also want a Director of Orthopedic Education for Part Time salaried position.

CONTACT: A. J. Graziani, M.D., Chm., Dept. of Surgery, St. Mary's Hospital, 89 Genesee Street, Rochester, N.Y. 14611. Tel: 716/328-3300.

ROCHESTER, N.Y., Monroe County. Family Physician or Internist for group.

CONTACT: Ralph C. Parker, Jr., M.D., University of Rochester Medical Center, 260 Crittenden Blvd., Rochester, N.Y. 14620. Tel: 716/275-4540.

ROCHESTER, N.Y., Monroe County. Qualified Internists, Pediatricians and Ob/Gyn's for Health Center (a comprehensive health care plan featuring prepayment and fee for services).

CONTACT: William J. Klein, Jr., M.D., Dir. Northeast Health Center, 1171 Culver Rd., Rochester, N.Y. 14609. Tel: 716/482-4300.

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CONTACT: Mrs. Frederic D. Morris, Supervisor, Town of Rushford, RFD 3, Cuba, N.Y. 14727. Tel: 716/437-2768.

SARANAC LAKE, N.Y. Franklin County. Internist needed for cosmopolitan small town surrounded by nature.

CONTACT: Mr. William Gartner, Will Rogers Hospital, Saranac Lake, 12986. Tel: 518/891-3131.

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CONTACT: Mr. Michael E. Catalinotto, Barclay Heights, Route 9W, Saugerties, N.Y. 12477. Tel: 914/246-4551.

SCOTIA-GLENVILLE, Schenectady County. Family Physician and Pediatrician.

CONTACT: Mr. Frank C. Berning, 208 Mohawk Avenue, Scotia, N.Y. 12302. Tel: 518/346-7748.

SIDNEY, N.Y., Delaware County. Family Physicians needed. Two Internists and a Pediatrician for Tri Town area.

CONTACT: Mr. E. B. Watson, Pres., Board of Managers; or Mr. J. W. Sands, Adm., The Hospital, Pearl Street, Sidney, N.Y. 13838. Tel: 607/563-9934.

SODUS, N.Y., Wayne County. Family Physician Internist.

CONTACT: Robert M. Ross, Jr., M.D., Dir., Wayne County Rural Comprehensive Health Program, Box 307, Sodus, N.Y. 14551. Tel: 315/483-9136.

SODUS, N.Y., Wayne County. Family Physician, Internist or Pediatrician. Guarantee available.

CONTACT: Arthur E. Fisher, D.D.S., Adm. Myers Community Hospital, Sodus, N.Y. 14551. Tel: 315/483-9161.

STAMFORD, N.Y., Delaware County. Associate G.P., F.P., or Internist.

CONTACT: Everett Forman, M.D., Stamford, N.Y. 12167. Tel: 607/652-7324.

STAMFORD, N.Y., Delaware County. Board Certified Internist and Bd. Cert. F.P.

CONTACT: Mr. Stewart Redman, Adm., Community Hospital, Stamford, N.Y. 12167. Tel: 607/652-7312.

STAR LAKE, N.Y., St. Lawrence County. Family Physician needed for open staff hospital.

CONTACT: Mr. Richard Murray, Pres., Board of Managers, Cranberry Lake, N.Y. 12927. TEL: 315/848-2428 or Mrs. Doris Hall, R.N., Adm., Clifton Fine Hospital, Star Lake, N.Y. 13690. Tel: 315/848-3551.

TICONDEROGA, N.Y., Essex County. Ob/Gyn, Internist and Radiologist.

CONTACT: Mr. John F. Lawson, President, Moses-Ludington Hospital, Ticonderoga, N.Y. 12883. Call Collect 518-585/2831, ext. 65.

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CONTACT: Reynold S. Golden, M.D., 2206 Genesee Street, Utica, N.Y. 13502. Tel: 315/735-5261.

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CONTACT: Bruno Riemer, M.D., Chm., Committee for Physician Recruitment, Taylor-Brown Memorial Hospital, East Main Street, Waterloo, New York 13165. Tel: 315/539-9204.

WAVERLY, N.Y., Tioga County. Orthopedic Surgeon.

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CONTACT: John D. Voltmann, M.D., Dir., Jamestown Medical Clinic, 103 Allen St., Jamestown, N.Y. 14701. Tel: 716/664-3706.

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CONTACT: Mr. Frank Martucci, Town Supervisor, 6 Mountain Street, Whitehall, N.Y. 12887. Tel: 518/499-0228.

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CONTACT: Stephen J. Walker, M.D., 7 Westmoreland Street, Whitesboro, N.Y. 13492. Tel: 315/736-1815.

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CONTACT: Mr. Bernard Lipsky, Chamber of Commerce, Woodbourne, N.Y. 12788. Tel: 914/434-7652.

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CONTACT: John J. McDonald, Administrator Schuyler Hospital, Montour Falls, 14865. Tel: 607/568-3121.

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CONTACT: Normal Schell, M.D., Nassau County Health Dept., 240 Old Country Road, Mineola 11501. Tel: 516/535-4922.

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CONTACT: Call collect: Donald R. Gibbs, M.D., Tel. 607/756-9941.

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CONTACT: Mr. G. J. Hucker, Geneva General Hospital, Geneva, N.Y. 14456.

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CONTACT: Mr. William K. Guglielmo, Rome Area Chamber of Commerce, 218 W. Dominick Street, Rome, N.Y. 13440.

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Physicians seeking placement opportunities outside New York State should contact AMA, Physicians' Placement Service, 535 N. Dearborn Street, Chicago, Ill. 60610. Tel: 312/751-6000 and also refer to the physicians' opportunities listed in the classified ad section of *JAMA,* The Journal of the AMA.

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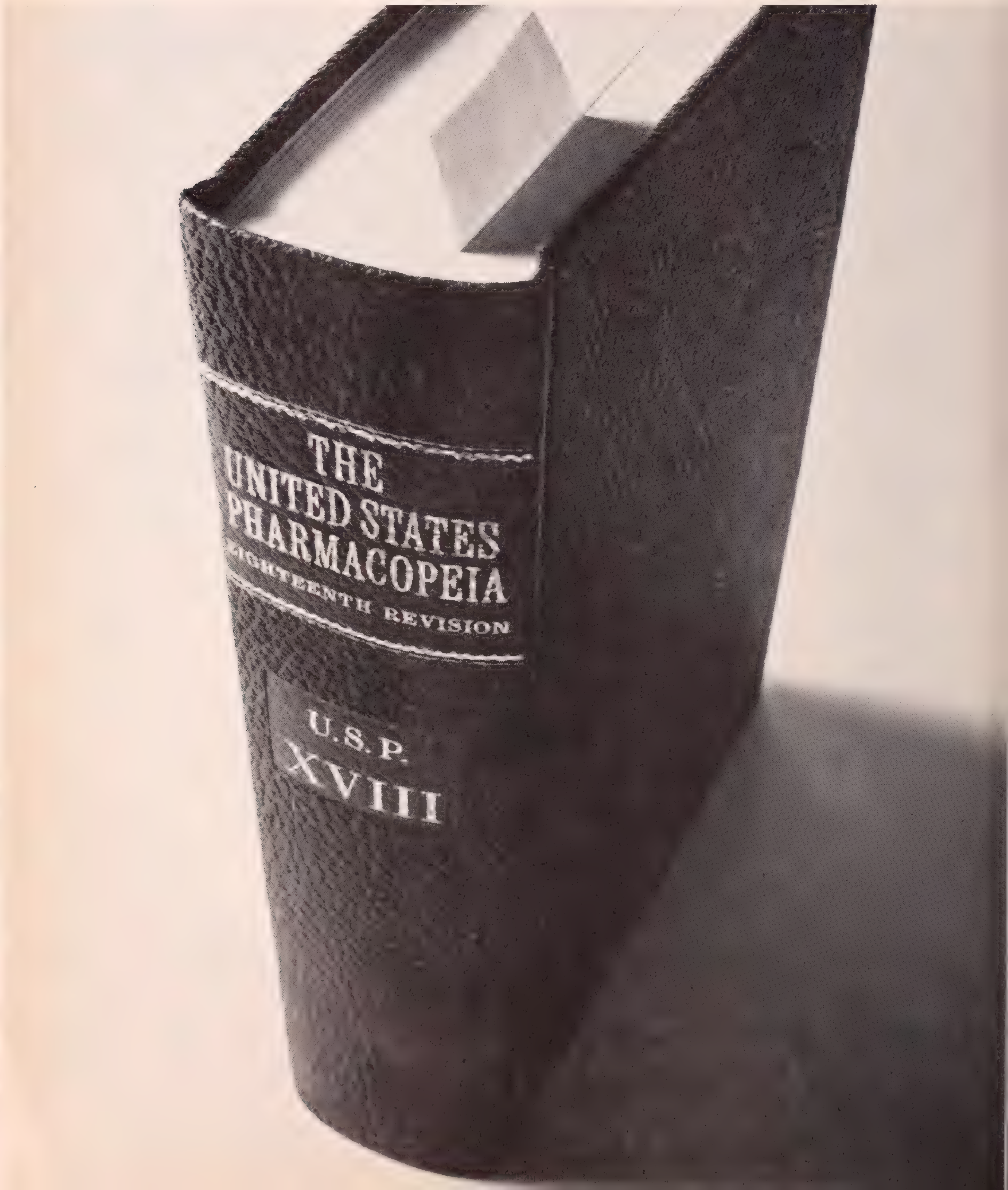
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If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

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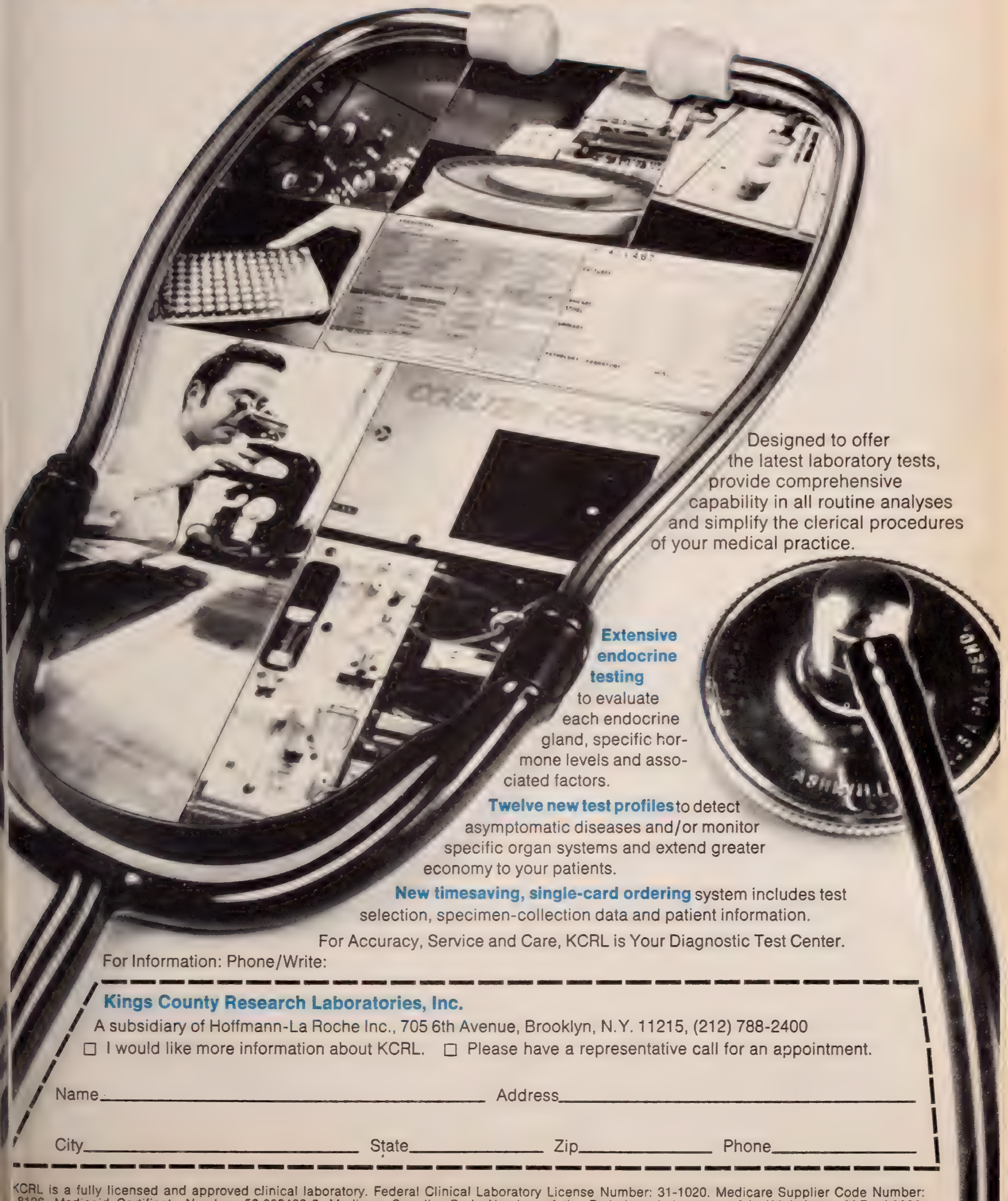

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Month in Washington

The Republican platform for the 1972 presidential campaign has planks opposing compulsory national health insurance and legalization of marihuana.

The Democratic platform advocates a national health insurance program for all Americans financed and administered by the Federal government. It does not mention the marihuana issue.

The American Medical Association's recommendations on the Republican health care plank were presented by Donald E. Wood, M.D., a member of the AMA Board of Trustees, at a convention subcommittee hearing before the platform was drafted.

Dr. Wood expanded on a "theme of priority setting and realistic acknowledgment of fiscal limitations."

"We believe that this is the only possible foundation for sound public policy in setting our health and other national goals," Dr. Wood said.

> In setting our health goals, it is not necessary to destroy a system that has given this nation its high level of health and scientific achievement. Our goals will be best attained by building on the strengths of this system. What is necessary is that all of us—government, public, and the professions—work together to find solutions that will not only meet the needs of today but will assure a system that even more successfully will meet the needs of tomorrow.

Following is the text of the Republican health care plank:

Our goal is to enable every American to secure quality health care at reasonable cost. We pledge a balanced approach, that takes into account the problems of providing sufficient medical personnel and facilities.

Last year President Nixon proposed one of the most all-inclusive health programs in our history. But the opposition Congress has dragged its feet, and most of this program has yet to be enacted into law.

To increase the supply of medical services, we will continue to support programs to help our schools graduate more physicians, dentists, nurses, and allied health personnel, with special emphasis on family practitioners and others who deliver primary medical care.

We will also encourage the use of such allied personnel as doctors' assistants, foster new area health education centers, channel more services into geographic areas which now are medically deprived, and improve the availability of emergency medical care.

We note with pride that the President has already signed the most comprehensive health-manpower legislation ever enacted.

To improve efficiency in providing health and medical care, we have developed and will continue to encourage a pluralistic approach to the delivery of quality health care including innovative experiments, such as

Prepared by the Washington, D.C., Office of the American Medical Association.

continued on page 2490

reliable pain relief without codeine.

Percodan® ⓒⅡ

Each yellow, scored tablet contains 4.50 mg. oxycodone HCl (Warning: May be habit-forming), 0.38 mg. oxycodone terephthalate (Warning: May be habit-forming), 224 mg. aspirin, 160 mg. phenacetin, and 32 mg. caffeine.

INDICATIONS: For the relief of moderate to moderately severe pain.
CONTRAINDICATIONS: Hypersensitivity to oxycodone, aspirin, phenacetin or caffeine.
WARNINGS: *Drug Dependence:* Oxycodone can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of Percodan, and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic-containing medications. Like other narcotic-containing medications, Percodan is subject to the Federal Controlled Substances Act.
Usage in ambulatory patients: Oxycodone may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using Percodan should be cautioned accordingly.
Interaction with other central nervous system depressants: Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with Percodan may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.
Usage in pregnancy: Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, Percodan should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.
Usage in children: Percodan should not be administered to children.
Salicylates should be used with caution in the presence of peptic ulcer or coagulation abnormalities.
PRECAUTIONS: *Head injury and increased intracranial pressure:* The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.
Acute abdominal conditions: The administration of Percodan or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.
Special risk patients: Percodan should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.
Phenacetin has been reported to damage the kidneys when taken in excessive amounts for a long time.
ADVERSE REACTIONS: The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. Some of these adverse reactions may be alleviated if the patient lies down.
Other adverse reactions include euphoria, dysphoria, constipation and pruritus.
DOSAGE AND ADMINISTRATION: Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. The usual adult dose is one tablet every six hours as needed for pain.
DRUG INTERACTIONS: The CNS depressant effects of Percodan may be additive with that of other CNS depressants. See WARNINGS.
Aspirin may enhance the effect of anticoagulants and inhibit the effect of uricosuric agents.
MANAGEMENT OF OVERDOSAGE: *Signs and Symptoms:* Serious overdose with Percodan is characterized by respiratory depression, extreme somnolence progressing to stupor or coma, skeletal muscle flaccidity, cold and clammy skin, and sometimes bradycardia and hypotension. In severe overdosage, apnea, circulatory collapse, cardiac arrest and death may occur. The ingestion of very large amounts of Percodan may, in addition, result in acute salicylate intoxication.
Treatment: Primary attention should be given to the re-establishment of adequate respiratory exchange through provision of a patent airway and the institution of assisted or controlled ventilation. The narcotic antagonists naloxone, nalorphine or levallorphan are specific antidotes against respiratory depression which may result from overdosage or unusual sensitivity to narcotics, including oxycodone. Therefore, an appropriate dose of one of these antagonists should be administered, preferably by the intravenous route, simultaneously with efforts at respiratory resuscitation. Since the duration of action of oxycodone may exceed that of the antagonist, the patient should be kept under continued surveillance and repeated doses of the antagonist should be administered as needed to maintain adequate respiration.
An antagonist should not be administered in the absence of clinically significant respiratory or cardiovascular depression.
Oxygen, intravenous fluids, vasopressors and other supportive measures should be employed as indicated.
Gastric emptying may be useful in removing unabsorbed drug.

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The chief analgesic agent in Percodan is oxycodone. A semisynthetic narcotic analgesic, oxycodone represents a therapeutic alternative to codeine. Percodan can produce drug dependence of the morphine type and has the potential of being abused. Percodan should be used with the same degree of caution appropriate to other oral narcotic-containing medications.

One tablet of Percodan every six hours is usually sufficient for adults. However, it occasionally may be necessary to exceed the usual dosage in cases of severe pain or in those patients who have built up a tolerance to the analgesic effect of narcotics. Percodan. The APC/narcotic that doesn't contain codeine.

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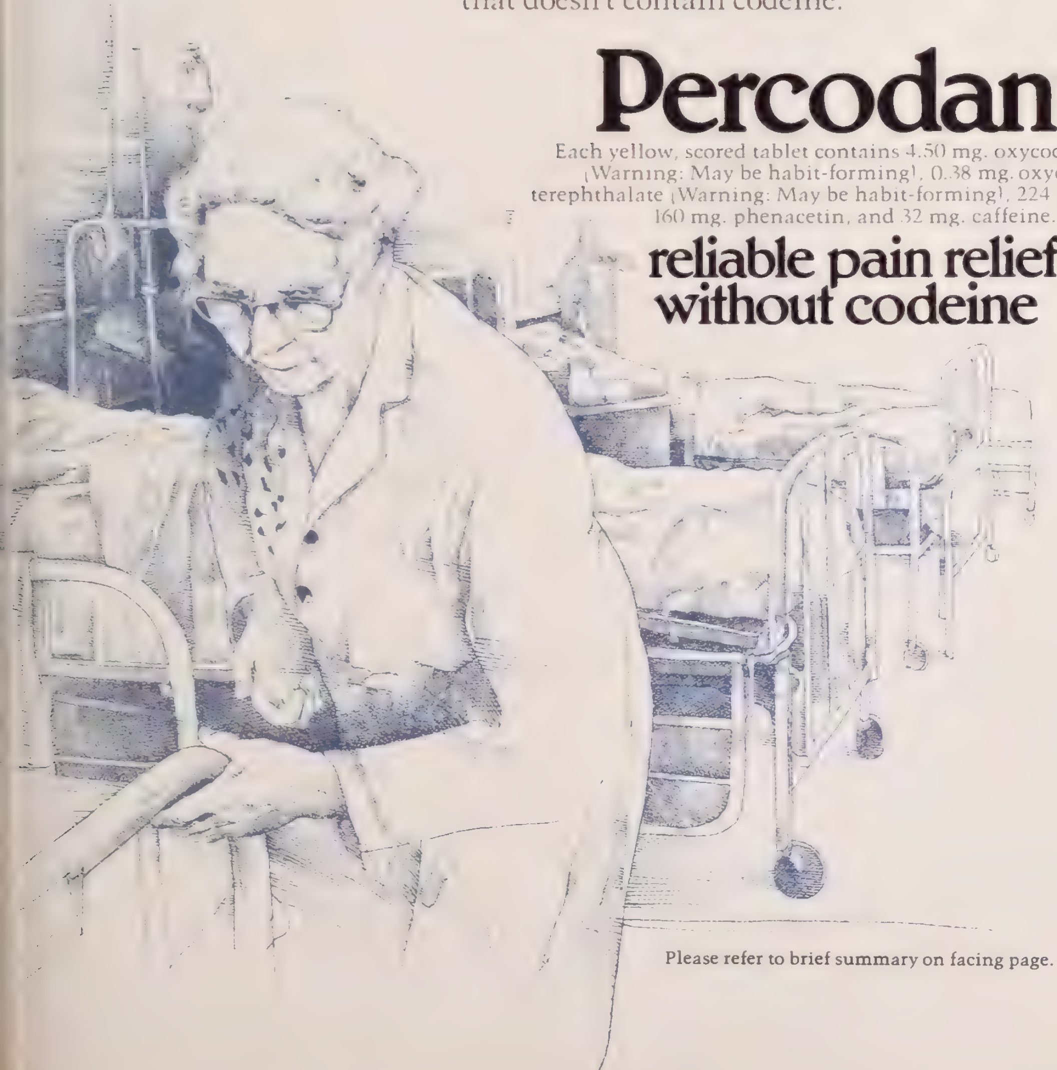
reliable pain relief without codeine



Please refer to brief summary on facing page.

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health maintenance organizations. We also support efforts to develop ambulatory medical care services to reduce hospitalization and keep costs down.

To reduce the cost of health care, we stress our efforts to curb inflation in the economy. We will also expand the supply of medical services and encourage greater cost consciousness in hospitalization and medical care. In doing this, we realize the importance of the doctor-patient relationship and the necessity of insuring that individuals have freedom of choice of health providers.

To assure access to basic medical care for all our people, we support a program financed by employers, employes, and the Federal government to provide comprehensive health insurance coverage, including insurance against the cost of long-term and catastrophic illness and accidents and renal failure which necessitates dialysis, at a cost which all Americans can afford. The National Health Insurance Partnership plan and the Family Health Insurance Plan proposed by the President meet these specifications. They would build on existing private health insurance systems, not destroy them.

We oppose nationalized compulsory health insurance. This approach would at least triple in taxes the amount the average citizen now pays for health and would deny families the right to choose the kind of care they prefer. Ultimately it would lower the overall quality of health care for all Americans.

We believe that the most effective way of improving health in the long run is by emphasis on preventive measures.

The serious physical fitness problem in our country requires urgent attention. The President recently reorganized the Council on Physical Fitness and Sports to increase the leadership of representatives of medicine, physical education, sports associations, and school administrations. The Republican Party urges intensification of these efforts, particularly in the Nation's school systems, to encourage widespread participation in effective physical fitness programs.

We have initiated this Nation's first all-out assault against cancer. Led by the new National Cancer Institute, the drive to eliminate this cruel killer will involve Federal spending of nearly $430 million in fiscal year 1973, almost twice the funding of just two years ago.

We have also launched a major new attack on sickle cell anemia, a serious blood disorder afflicting many black Americans. Also we have developed a comprehensive program to deal with the menace of lead-based paint poisoning, including the screening of approximately 1.5 million Americans.

We support expanded medical research to find cures for the major diseases of the heart, blood vessels, lungs, and kidneys—diseases which now account for over half the deaths in the United States.

We have significantly advanced efforts to combat mental retardation and established a national goal to cut its incidence in half by the year 2000.

We continue to support the concept of comprehensive community mental health centers. In this fiscal year $135 million—almost three times the 1970 level—will be devoted to the staffing of 422 community mental health centers serving a population of 56 million people. We have intensified research on methods of treating mental problems, increasing our outlays from $76 million in 1969 to approximately $96 million for 1973. We continue to urge extension of private health insurance to cover mental illness.

We have also improved consumer protection, health education, and accident prevention programs. In Moscow this year, President Nixon reached an agreement with the Soviet Union on health research which may yield substantial benefits in many fields in the years ahead.

Following are excerpts from the Republican drug-abuse plank:

The permissiveness of the 1960s left no legacy more insidious than drug abuse. In that decade narcotics became widely available, most tragically among our young people. The use of drugs became endowed with a sheen of false glamour identified with social protest.

By the time our Nation awoke to this cancerous social ill, it found no major combat weapons available.

Soon after we took office, our research disclosed that there were perhaps hundreds of thousands of heroin users in the United States. Their cravings multiplied violence and crime. We found many more were abusing other drugs, such an amphetamines and barbiturates. Marihuana had become commonplace. All this was spurred by criminals using modern methods of mass distribution against outnumbered authorities lacking adequate countermeasures.

We quickly launched a massive assault against drug abuse. We intercepted the supply of dangerous drugs at points of entry and impeded their internal distribution . . . .

To inhibit the distribution of heroin in our own country, we increased the law-enforcement budget for drug control more than 10 times—from $20 million to $244 million . . . .

We established the "Heroin Hot Line"—a nationwide toll-free phone number (800-368-5363)—to give the public a single number for reporting information on heroin pushers . . . .

To alert the public, particularly the youth, to the dangers of drugs, we established the National Clearinghouse for Drug Abuse Information in 1970 as well as a $3.5 million Drug Education and Training Program.

We realize that the problem of drug abuse cannot be quickly solved, but we have launched a massive effort where practically none existed before . . . .

We pledge to seek further international agreements to restrict the production and movement of dangerous drugs.

We pledge to expand our programs of education, rehabilitation, training, and treatment. We will do more than ever before to conduct research into the complex psychological regions of disappointment and alienation, which have led many young people to turn desperately toward drugs.

We firmly oppose efforts to make drugs easily available. We equally oppose the legalization of marihuana. We intend to solve problems, not create bigger ones by legalizing drugs of unknown physical impact.

We pledge the most intensive law-enforcement war ever waged. We are determined to drive the pushers of dangerous drugs from the streets, schools, and neighborhoods of America.

* * *

A new kind of 'flu vaccine has been developed by government scientists, containing live viruses, that they

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continued from page 2490

believe holds hope of greatly containing future influenza epidemics. The vaccine still must be put through extensive tests and trials before being licensed to be used for the public. But scientists who reported the development were hopeful that this could be done before the next major expected United States 'flu epidemic in the latter part of the decade.

In their research at the National Institute of Allergy and Infectious Diseases of the National Institutes of Health in Bethesda, Maryland, the scientists said they employed the live, though weakened, viruses in developing the vaccine.

The scientists performed a laboratory trick to produce an immunity to the 'flu with the live viruses without causing the disease itself. The trick involved creating a hybrid virus that cannot stand the heat of the lungs, where it could bring about the disease. This hybrid, however, thrives in the lower temperatures of the nose and throat, where it produces protection against the 'flu.

The new vaccine was given as a nasal spray instead of an injection. None of the 17 persons given the new type of vaccine in tests caught the influenza even when exposed to it. But 17 of 28 not given the vaccine caught the influenza.

None of the 17 given the new vaccine suffered any of the side effects associated with presently used killed virus vaccines—wooziness, headaches, a low fever, and slight nausea.

* * *

Top American and Soviet health officials announced they will expand a joint health research project to include viral diseases, provision of health services, and occupational health.

The action was taken under a May 25 agreement between the two countries to cooperate in studying cancer, heart disease, and environmental problems. Groundwork for the program was laid by President Nixon and Soviet leaders at the Moscow summit meeting.

The broadened agreement was described at a briefing by Soviet health minister Boris V. Petrovsky and Dr. Roger O. Egeberg, cochairman with Petrovsky of the United States-Soviet Joint Committee on Health Cooperation.

"All manner of obstacles are being removed and a very solid foundation built for cooperation between the two countries," said Petrovsky in summing up the joint program.

Petrovsky also said the group has under advisement a suggestion by President Nixon, with whom he met earlier, to add arthritis to the joint research program.

Department of Health, Education, and Welfare Secretary Elliot L. Richardson also said Bertram S. Brown, M.D., Director of the National Institute of Mental Health, will visit the Soviet Union in September to discuss schizophrenia research.

Three experimental cancer drugs developed in the Soviet Union will be given trials of effectiveness on American patients starting early next year.

Richardson, underscoring his attitude of caution about the prospective benefit of the drugs, said that they were new and had not been widely tested.

The drugs, which have not been used clinically in the United States, are:

Fluorodopan, which Soviet scientists have used for treating lymphomas, cancers of soft tissues.

Diiodobenzotepa, a drug the Russians have used for treating cancers of the thyroid and bladder.

Asaley, which Russian physicians have used in the treatment of over 200 cases of lymphoma, breast, and ovarian cancer.

The United States also is sending the Soviet Union three experimental drugs: Hexamethylmelamine, which has been tried against lung cancer; CCNU, an agent that has been used for a variety of types of cancer; and DTIE, which has been used against a type of skin cancer called melanoma.

The patents to all six drugs are owned by the respective governments.

* * *

Sterilization became the most popular form of birth control for couples over age thirty during the last half of the 1960s, but younger couples still preferred "the pill," as shown by a government-financed study.

The 1970 National Fertility Study, conducted under contract with the National Institutes of Health's Center for Population Research, also provided fresh evidence that increased use of contraceptive devices was "a major factor in the drop in the nations' birth rate," which now is at an all-time low.

Although nearly 6 million married women were using oral contraceptives in 1970, "one of the most dramatic findings," was that voluntary sterilization was preferred more often than "the pill" by both black and white couples in which the wife was aged thirty to forty-four.

The first published report from the study stated,

> The jump in reliance on surgical procedures and the fact that contraceptive sterilization had by 1970 become the most popular method among older couples appear to reflect the unsuitability of other methods of contraception for many couples who have already had all the children they want to have.

The report was written by Charles F. Westoff of Princeton University, former executive director of the Commission on Population Growth and the American Future.

Westoff wrote:

> It is estimated that as of 1970, some 2.75 million couples of reproductive age (fifteen to forty-four), and undoubtedly many more since 1970, had resorted to sterilization, which is usually regarded as an extreme solution to the problem of fertility control.

Sterilization was more common among older black couples using contraceptives than among older white couples, he said, but the black male was far less likely to have been sterilized than the black female or either of the white marriage partners.

"There is a considerable difference between black and white women in their belief that a vasectomy will impair male sexual ability," Westoff wrote.

The report, based on nationwide interviews with 5,884 married women under age forty-five and compared with a 1965 fertility study, said there was little change in the overall proportion of couples using contraception but significant changes in the methods used.

continued on page 2494

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Ger-O-Foam reduces pain[1] when its surface analgesic-anesthetic foam is massaged into the skin. This relief from pain facilitates increased range of motion in joints affected by rheumatoid or osteoarthritis, making prescribed exercise easier to perform. With Ger-O-Foam, pain relief occurs in minutes . . . lasts for hours.

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1. Gordon, E. E. and Haas, A., Indust. Med. & Surg. 28:217, May, 1959.

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continued from page 2492

Sharp increases were reported in use of "the pill," which remained the most popular contraceptive, sterilization, and the intrauterine device but a decline in use of condoms, diaphrams, the rhythm method, withdrawal, and douche.

Westoff concluded,

The adoption of the pill by American women has been an amazing phenomenon, considering the various side effects associated with its use, and is an indication of the wide market for effective contraception.

Medical News

Sickle cell screening program

The State Health Department currently is sponsoring a massive sickle cell screening program throughout New York State. State health commissioner Hollis S. Ingraham, M.D., reminds parents that children entering school in New York State for the first time must present proof of immunization against poliomyelitis, measles, rubella, and diphtheria and of having undergone a one-time screening test for sickle cell anemia. Smallpox vaccination is no longer mandatory.

Diagnostic test kits

The Food and Drug Administration has proposed procedures for regulating diagnostic products for human use. Diagnostic products, often referred to as "test kits," are used by both physicians and the public. Physicians use such products to examine specimens taken from the body to diagnose disease or to determine the state of health or of bodily functions. In addition, some are used by persons under professional direction, such as diabetics who test for sugar in their urine. Other uses for diagnostic test products include detection of pregnancy, blood typing, and determining the presence of antibodies produced by vaccines.

Review of vaccines and other biologic products announced

On August 18, 1972, the Food and Drug Administration initiated a comprehensive review of the effectiveness, safety and labeling of all vaccines and other biologic products for human use. In announcing the new program, to be conducted by the Food and Drug Administration's Bureau of Biologics, Charles C. Edwards, M.D., Commissioner of Food and Drugs, said: "Our purpose is to reassure ourselves, the medical community, and the American consumer that all vaccines and other biologic products licensed over the past seventy years are safe and effective when measured against the latest and most modern scientific criteria."

Harold G. Wolff, M.D., lecture award

The American Association for the Study of Headache has announced that the eighth annual Harold G. Wolff, M.D., lecture award will be awarded to the physician who submits the best original paper on headache, head pain, or on the nature of pain itself. The paper may be concerned with basic research, clinical studies, or both. All physicians, including those in training as fellows or residents, are eligible.

A prize of $1,000 will be awarded to the recipient of the lectureship, and he will be invited to present the paper at the annual meeting of the American Association for the Study of Headache. The next annual meeting will be held at the Plaza Hotel, New York City, New York, on June 23, 1973.

Papers should be submitted to: Donald J. Dalessio, M.D., University of Kentucky, College of Medicine, Lexington, Kentucky 40506. The deadline for submission of papers is March 15, 1973.

Federal regulation of blood banking

A two-pronged program for improving and extending Federal regulation of blood banking throughout the nation was initiated on August 25, 1972, by the Food and Drug Administration. The plan encompasses (1) registration and inspection of up to 5,000 blood collection facilities not presently operating under Federal licensure, and (2) Federal licensing of about 200 plasmapheresis centers engaged in the collection and processing of plasma as a source of blood products.

Charles C. Edwards, M.D., Commissioner of Food and Drugs said, "When joined with the existing interstate licensure program and with the continuing leadership and resources of such groups as the American Red Cross and the American Association of Blood Banks, the two programs will provide a uniform, nationwide system to more fully protect the public against unsafe blood and blood products.

Antigens and organ damage studies

Studies of the role of similar or shared antigens in components of mammalian and microbial cells that may play a role in organ damage will be undertaken by scientists at the New York University Medical Center. The principal investigator will be Felix T. Rapaport, M.D., professor of surgery and director, transplantation and immunology division, department of surgery at the Medical Center.

Clear understanding of the cross-reaction mechanism may lead to expanded knowledge of the autoimmune re

continued on page 2496

Material for inclusion in the medical news section must be received six weeks prior to publication date.

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continued from page 2494

sponse and may make it possible to predict the fate of kidney transplants. The technic to be employed may also identify those patients who, because of their existing level of hypersensitivity to streptococcal and renal antigens, may constitute particularly bad risks for renal transplantation.

Increase in foster family care payments

The State Department of Mental Hygiene has received approval from the State Division of the Budget to increase the foster family care payment per patient from $165 to $195 a month. The increase, effective October 1, 1972, was authorized by the State Legislature. Over 5,000 patients of State psychiatric hospitals and residents of State schools for the retarded are now receiving care in family settings. Placement with approved foster families affords patients and residents advantages which are inherent in family and community life and which cannot be provided in psychiatric hospital or state school settings. Persons interested in becoming family caretakers should write to the State Department of Mental Hygiene, 44 Holland Avenue, Albany, New York.

Rubella immunization program

Rubella, known popularly as "German measles," has decreased by almost 50 per cent in New York City since 1969. In 1969, there were 1,185 cases of rubella. Cases dropped nearly 50 per cent the next year, 1970, to 685 and to 626 cases in 1971. The last outbreak of rubella occurred in 1964. During that epidemic, nationwide some 20,000 children were born with birth defects and an additional 15,000 to 20,000 stillbirths and miscarriages resulted from the disease.

Pascal James Imperato, M.D., Director of the Bureau of Infectious Disease Control, warned that immunization is important because "women who get rubella during the first three months of pregnancy have a 20 to 25 per cent chance that their children will be born with severe birth defects which can include mental retardation, and impaired hearing or eyesight." Dr. Imperato said the city now has available a combined rubella-measles vaccine which can be administered through a single injection. Physicians can safely immunize 500 children an hour. For information on where to go for immunization, call 212-DI9-2255.

Jewish Institute for Geriatric Care

The new $25 million, nonprofit Jewish Institute for Geriatric Care on Long Island is now open to admit hundreds of elderly men and women from Long Island and the Metropolitan New York area whose medical, nursing, psychiatric, and rehabilitation needs it can serve. That announcement was made at the pioneering medical-geriatric-psychiatric facility this week by Jack Parker, president, and Sidney Feinberg, executive vice president.

John D. Timothy, M.D., medical director, who is regarded as one of the nation's foremost geriatricians, stressed that the Institute's major focus "is on restoring the well-being of as many older persons as possible and returning them to living in the community. We are giving top priority to those over sixty-five with severe medical conditions requiring both medical and continuous skilled nursing care. We are also admitting others in similar condition who may be currently receiving care which is inadequate for their needs, elderly persons requiring intermittent or followup medical and skilled nursing care who are partially ambulatory."

Admission to the Jewish Institute for Geriatric Care is open to all who qualify. For information contact the Social Service Department at the Institute, 271-11 76th Avenue, New Hyde Park, New York 11040 (Telephone: 212-343-2100 or 516-437-0090) and ask for application guidance and forms. The forms may be filled out by the applicant's own physician. Based on information supplied, appointments are set for discussion and examination.

Personalities

Appointed. Vahe E. Amassian, M.D., as chairman, Physiology Department, Downstate Medical Center, State University of New York in Brooklyn. . . . Lawrence C. Kolb, M.D., professor and chairman of the Department of Psychiatry at the Psychiatric Institute of New York City. Phillip Polatin, M.D., professor emeritus after thirty-six years of contribution to the educational and research effort of the department. . . . Downstate Medical Center. Herbert Pardes, M.D., chairman of the Department of Psychiatry, effective September 1. Anthony D. Nicastri, M.D., became acting chairman of the Department of Pathology on July 1. Calvin H. Plimpton, M.D., has announced the members of three search committees to seek replacements for the chairmen of the Departments of Medicine, Pediatrics, and Pathology. William G. Beadenkopf, M.D., clinical associate professor of environmental medicine and community health. Seymour Zeff, D.M.D., clinical associate professor of surgery. . . . Richard D. Amelar, M.D., director of urology at French-Polyclinic Health Center. Michael D. Turner, M.D., to the recently created Segal-Watson Chair of Gastroenterology in the Department of Medicine of the University of Rochester Medical Center. Dr. Turner is professor of medicine and head of the gastroenterology unit at the medical center. . . . Philip D. Wilson, Jr., M.D., was named surgeon-in-chief of the Hospital for Special Surgery of the New York Hospital-Cornell Medical Center, effective July 1, 1972. . . . Walsh McDermott, M.D., a distinguished medical educator and public health authority, the staff of the Robert Wood Johnson Foundation as special advisor to the president.

Promotions. New York University. Leo L. Orenstein, M.D., and Saul H. Fisher, M.D., to clinical professor of psychiatry. . . . Downstate Medical Center, State University of New York. Seymour M. Glick, M.D., to clinical professor of medicine. Edward Hirsch, M.D., and Felix Siegman, M.D., to clinical associate professor of surgery. George S. Zarou, M.D., to clinical associate professor of obstetrics and gynecology.

Grants awarded

Downstate Medical Center has been awarded a five-year grant of $2,169,139 to develop a model treatment, education, and research comprehensive sickle cell disease center in Brooklyn. The grant comes from the

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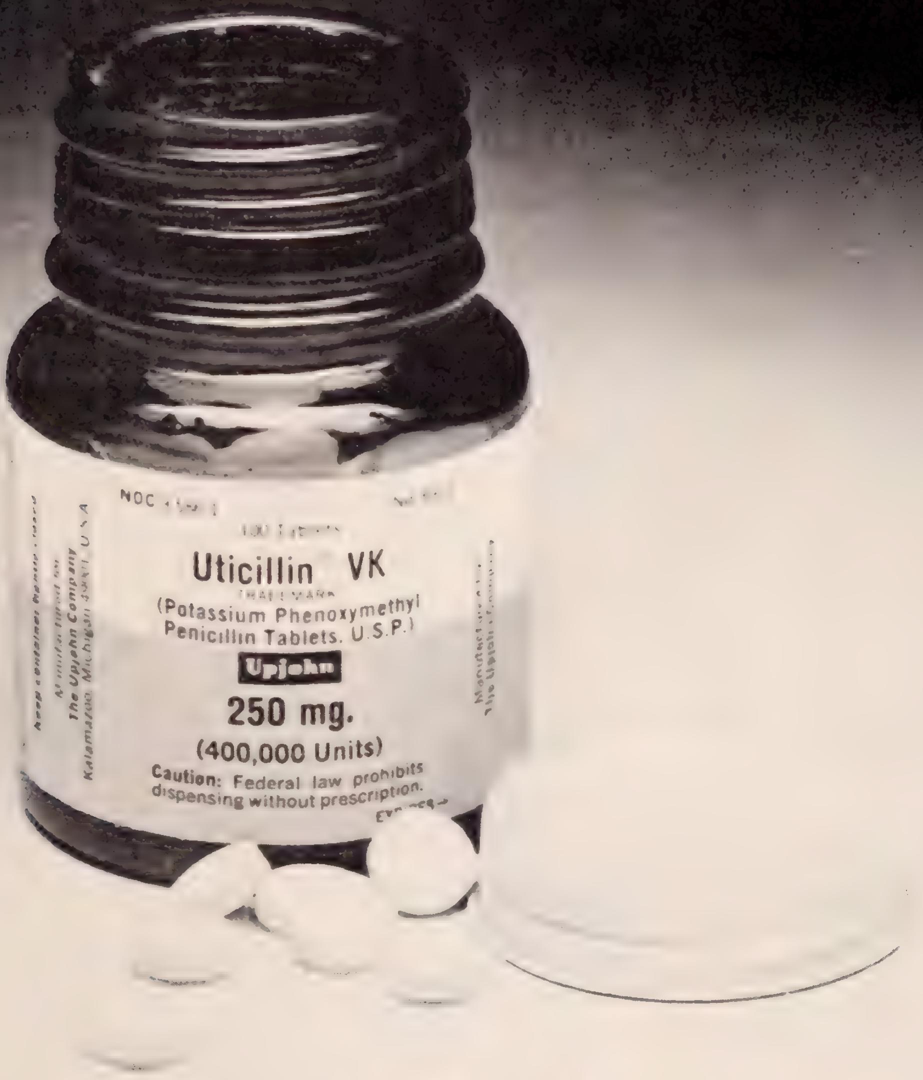
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New York State Journal of Medicine

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National Heart and Lung Institute. Richard D. Levere, M.D., is director of the project, and Dorothy M. Holden, M.D., is codirector. A community advisory board made up of local physicians and lay people will work closely with the project.

Seven states were recently awarded grants totaling $5,346,680 for the prevention, treatment, education, and rehabilitation programs dealing with alcohol abuse and alcoholism, HEW Secretary Elliott Richardson announced recently. The grants were awarded by the National Institute on Alcohol Abuse and Alcoholism, a component of the National Institute of Mental Health, Health Services and Mental Health Administration.

The Herman Goldman Foundation, New York, has approved a three-year grant of $225,000 to Syracuse University's Maxwell School of Citizenship and Public Affairs to enable the school and the Upstate Medical Center of the State University of New York, Syracuse, to establish a graduate training and research program in the delivery of health services. About 15 faculty members from both institutions will be actively involved.

The Institute of Experimental Pathology and Toxicology at Albany Medical College has been awarded a $1.6 million Federal research and training grant. The research will investigate the interaction of various environmental chemicals—such as methyl mercury, airborne lead, and food additives—in animal models including nonhuman primates. Training programs conducted by the institute are designed to prepare graduate students and postgraduate fellows for careers in toxicology.

The Albany Regional Medical Program was recently awarded a $225,000 grant to initiate seven new health care programs. The seven programs include a South End community health center; Carver comprehensive community health center; training for the delivery of home care; a health career incentive program; a community health education system; a program for the improvement of the health of migrant workers in Columbia County; and the development of regional activities for health occupations teachers, guidance counselors, and other health related participants.

Almost 40 per cent of the American Cancer Society's new nationwide research grants will go to scientists working in New York City. Yeshiva University's Albert Einstein College of Medicine received the largest allocation. Other institutions awarded grants are New York University, the Institute of Muscle Diseases, Hunter College, Columbia University, the New York Blood Center, Mount Sinai School of Medicine, the American Health Foundation, the Public Health Research Institute of New York City, Cornell University, Sloan-Kettering Institute, and Memorial Hospital. Subjects to be investigated cover biochemistry, chemotherapy, immunotherapy, radiation therapy, nucleic acids and protein, RNA, leukemia, tumors and viruses, genetic factors, and tobacco.

The National Heart and Lung Institute in the National Institutes of Health has made 12 new pulmonary academic awards totaling $547,267 to U.S. schools of medicine, bringing to 16 the number of awards made since the inception of the program in 1971. Mortality rates from emphysema and chronic bronchitis have increased more than five times since 1950.

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The University of Rochester has received a National Institutes of Health grant of $4,105,373 for its cancer research center. The grant will allow the school to continue training and research directed toward better care of the patient with cancer.

The New York State Office for the Aging recently announced the receipt of two Federal grants to conduct areawide model projects on aging in Erie and Monroe Counties. Syracuse and Onondaga County already have such a project.

New York State's first program for training physician's assistants is one of the first in the country to receive a grant from the U.S. Department of Health, Education, and Welfare. The two-year-old program is cosponsored by the Brooklyn-Cumberland Medical Center and Long Island University in downtown Brooklyn. Most of the funds will be spent for instructional purposes, but some will go for student stipends. Graduates of the training programs will assist physicians practicing family medicine, internal medicine, pediatrics, obstetrics, or emergency medicine. All training programs must meet the "Essentials of an Approved Educational Program for the Assistant to the Primary Care Physician," issued by the AMA's Council on Medical Education.

Grants available

The Parkinson's Disease Foundation offers research fellowships to medical students for a period of three months carrying stipends up to $750. The program is established to enable medical students interested in Parkinson's disease to work at their own or other institutions or at the Clinical Center for Parkinsonism at Columbia University College of Physicians and Surgeons under the supervision of a specified investigator. Each application should include: (1) personal data, education, and reason for applying; (2) the proposed program and name of the sponsor; and (3) a letter of recommendation from the sponsor outlining the proposed program of work and acceptance of the candidate. They should be sent to Melvin D. Yahr, M.D., Parkinson's Disease Foundation, 640 West 168th Street, New York, New York 10032, as soon as possible.

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Abstracts

Carlson, R. G., Landé, A. J., Twichell, J., Baxter, J., and Lillehei, C. W.: Prolonged cardiopulmonary support with disposable membrane oxygenator; during aortocoronary artery bypass grafts, ***New York State J. Med,* 72:** 2513 (Oct. 15) 1972.

Eighty-five patients received total cardiopulmonary support with the disposable Landé-Edwards membrane oxygenator during aortocoronary artery-vein graft operations. Two 3 square meter membrane oxygenators were linked in parallel to a standard roller pump apparatus (three 3 square meter membrane oxygenators for patients 80 to 103 Kg.). Excellent oxygen and carbon dioxide exchange (2 ml. oxygen per kilogram per minute) occurred during hypothermia at 30°C. at flows of 50 ml. per kilogram per minute during pump runs of one to six and one-half hours. Low sonar counts for microemboli (1,500 with membrane versus 18,000 with bubble oxygenator) were associated with platelet counts up to 200,000 per milliliter; therefore, fewer blood transfusions were needed. Plasma hemoglobin was below 50 mg. per 100 ml., and the urine remained yellow except when excessive suctioning occurred. Advantages of the membrane oxygenator over the bubble oxygenator were less mental sequelae, immediate awakening and ambulation within twenty-four hours, reduced lung complications, earlier hospital discharge, and safer prolonged total cardiopulmonary support.

Downey, M. J.: Nasotracheal intubation in infants and children, ***New York State J. Med.* 72:** 2521 (Oct. 15), 1972.

A series of 491 cases with prolonged nasotracheal intubation is reviewed. The technic is carefully outlined, and the causes are tabulated. There were no deaths attributable to the intubation or its management. The most common complications were nasal bleeding, hoarseness, difficult tracheal toilet, accidental extubation, and accidental endobronchial intubation. The relative advantages and disadvantages of nasotracheal intubation over tracheostomy are listed.

Roen, P. R., and Velcek, F.: Extensive urologic surgery without blood transfusion, ***New York State J. Med.* 72:** 2524 (Oct. 15) 1972.

For religious reasons, Jehovah's Witnesses refuse to receive blood transfusions. Many hospitals have refused surgery to these patients. Although a variety of methods have been used to decrease blood loss while performing surgery on these patients, the authors believe that normal surgical procedures can be performed without the use of special technics if particular attention is paid to the stoppage of bleeding. Several case reports of major urologic operations performed without special technics or blood transfusion are given.

Abstracts in Interlingua

Carlson, R. G., Landé, A. J., Twichell, J., Baxter, J. e Lillehei, C. W.: Mantenimento cardiopulmonar prolongate con le oxygenator de membrana jectabile durante le graffos aortocoronari, ***New York State J. Med.*** **72:** 2513 (15 de Octobre) 1972.

Octanta-cinque (85) patientes habeva mantenimento cardiopulmonar total con le oxygenator de membrana jectabile de Landé-Edwards durante le graffo arteriovenose aortocoronari. Duo oxygenatores de membrana de 3 m^2 esseva unite in parallelo a un pumpa cylindric standard (tres oxygenatores de membrana de 3 m^2 pro patientes de 80 a 103 Kg.). Le intercambio O_2 e CO_2 esseva excellente (2 ml. de O_2/Kg./min.) durante le hypothermia a 30°C. a flucto de 50 ml./Kg./min. e durante le travalio del pumpa inter 1 e 6 e media horas. Le contos sonar basse de microembolos (1,500 con membrana versus 18,000 con le oxygenator de bullas) esseva associate con contos de thrombocytos usque de 200,000 per ml. In consequentia, minus transfusiones sanguine esseva necessari. Le hemoglobina plasmatic esseva infra 50 mg./100 ml., e le urina restava flave, excepto in caso de suction excessive. Le avantages del oxygenator de membrana supra le oxygenator de bullas esseva minus sequelae mental, vigile immediate e ambulation inter 24 horas, minus complicationes pulmonar, discarga del hospital plus temprane e un mantenimento cardiopulmonar total plus secur.

Downey, M. J.: Intubation nasotracheal in infantes e pueros, ***New York State J. Med.*** **72:** 2521 (15 Octobre) 1972.

Un serie de 491 casos de intubation nasotracheal prolongate esseva revistite. Le technica es describite attentivemente, e le indicationes es tabulate. No mortes attribuite al intubation o su maneamento esseva producite. Le plus commun complicationes esseva hemorrhagia nasal, raucitate, toilette tracheal difficile, extubation accidental, e intubation endobronchial accidental. Le avantages e disavantages relative del intubation nasotracheal supra le tracheostomia es mentionate.

Roen, P. R., e Velcek, F.: Chirurgia urologic extensive sin transfusion sanguine, ***New York State J. Med.*** **72:** 2524 (15 Octobre) 1972.

Per rationes religiose, le Testes de Jehovah refusa reciper transfusiones sanguine. Multe hospitales ha refusate operar a iste patientes. Ben que un varietate de methodos ha essite usate pro reducir le perdite de sanguine durante un operation chirurgic in iste patientes, le autores crede que le procedimentos chirurgic normal pote esser facite sin usar technicas special si da attention particular al hemostasis. Varie informes de operationes urologic major facite sin technicas special o transfusiones sanguine es describite.

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Books Received

*The following books were received during the month of August, 1972.**

Proceedings of the European Dialysis and Transplant Association. Volume VIII. Dialysis and Renal Transplantation. Edited by J. Stewart Cameron, Daniel Fries, and Chisholm S. Ogg. Octavo of 589 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $33.75.

Understanding the Scientific Bases of Human Movement. By Alice L. O'Connell, Ph.D., and Elizabeth B. Gardner, Ph.D. Quarto of 264 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $19.75.

Advanced Immunochemistry. By Eugene D. Day, Ph.D. Octavo of 447 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $19.

Birth Defects: Original Article Series, Vol. VIII, No. 2; March 1972. The Fourth Conference on The Clinical Delineation of Birth Defects. G.I. Tract including liver and pancreas. Edited by Daniel Bergsma, M.D. Quarto of 199 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $18.50.

Transplantation Reviews. Volume 10, 1972. Antigen Recognition in Cell-Mediated Immunity. Edited by Göran Möller, M.D. Quarto of 176 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $18.25.

Textbook of Surgery. Third edition. Edited by David A. Macfarlane, B.Sc., M.Ch., and Lewis P. Thomas, B.Sc., M.Ch. Octavo of 796 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $16.50.

Mental Retardation. An Annual Review. Vol. IV. Edited by Joseph Wortis, M.D. Quarto of 234 pages. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $15.75.

Progress in Hemostasis and Thrombosis. Volume 1. Edited by Theodore H. Spaet, M.D. Quarto of 267 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $15.

Clinical Gynaecology. By Wallace Barr, B.Sc., M.B. Quarto of 261 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $13.75.

Computers in Medicine. Proceedings of the Second International Symposium held at Blackburn College of Technology and Design in March, 1971. Edited by J. Rose, M.Sc., Ph.D. Octavo of 166 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $13.25.

Current Pediatric Diagnosis and Treatment. Second edition. By C. Henry Kempe, M.D., Henry K. Silver, M.D., and Donough O'Brien, M.D. Quarto of 1,008 pages, illustrated. Los Altos, California, Lange Medical Publications, 1972. Fabrikoid, $12.

The Handicapped Child. Educational and Psychological Guidance for the Organically Handicapped. Third edition. By Agatha H. Bowley, Ph.D., and Leslie Gardner, B.Sc. Octavo of 203 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $8.25.

Sexually Transmitted Diseases. By C. B. S. Schofield, M.D. Duodecimo of 248 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $6.75.

Jamieson's Illustrations of Regional Anatomy. Section VI Upper Limb. Ninth edition. Revised by Robert Walmsley, M.D., and T. R. Murphy, M.Sc. Octavo of 47 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Spiral, $6.00.

Multiple Choice Questions for Ophthalmologists. Compiled by S. P. B. Percival, M.A., M.B. Duodecimo of 88 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $5.25.

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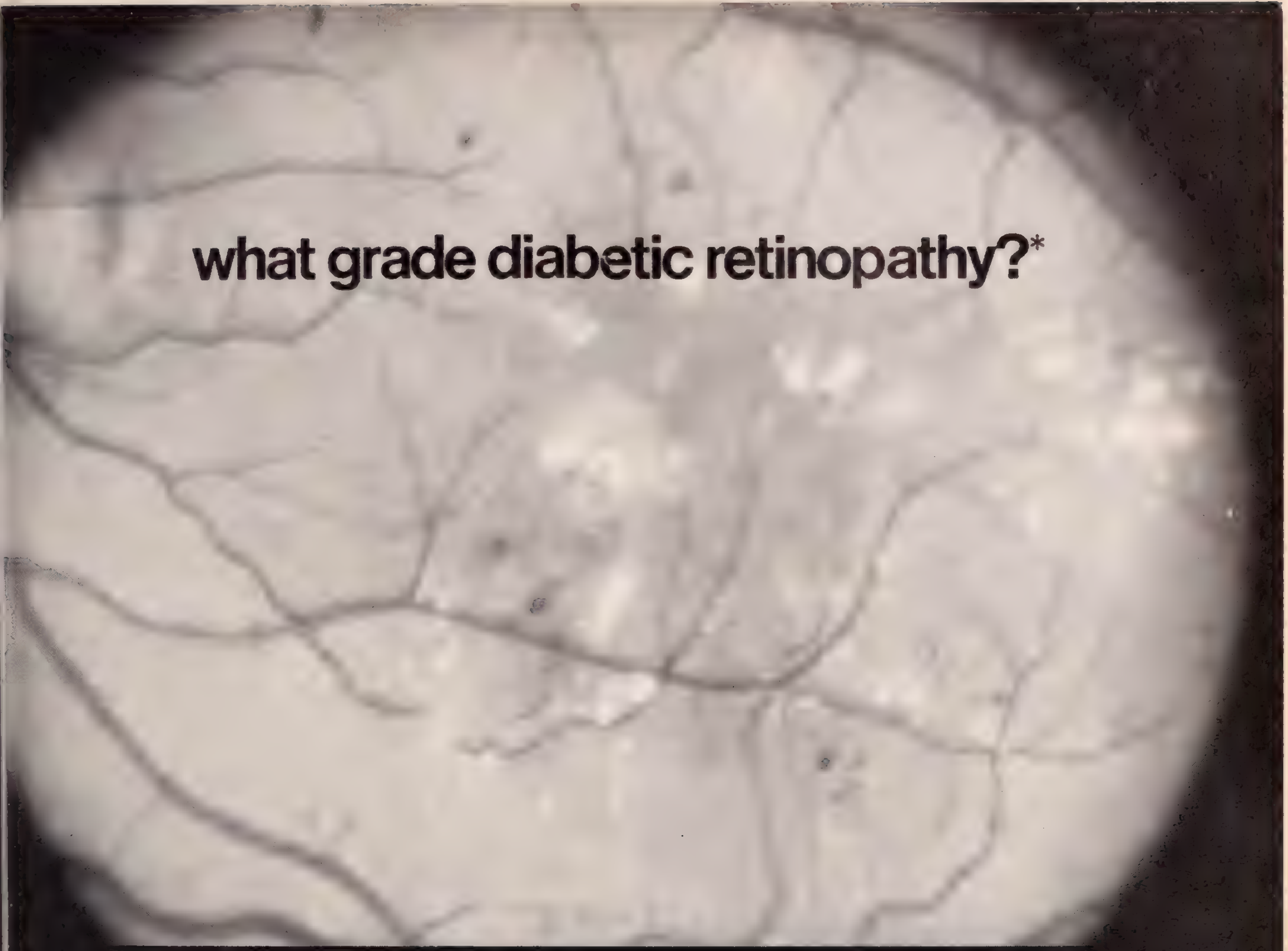
*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.



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Editorials

Abolition of percentage requirement for accreditation of hospitals

Et tu Brute

Over the years, medical science has been handicapped in its opportunities to learn what the autopsy can teach us, mainly because of disinterest and misunderstanding among families, physicians, surgeons, and even some pathologists.

The autopsy has also been spurned by many physicians whose principal interest lies with experimental research backed by supporting grants. There are, likewise, hospital administrators who are indifferent to the autopsy because of their stringent budgets and the absence, as yet, of any financial support for what Alfred Angrist, M.D., calls "the most effective basis of quality control in medical care." But of all the blows against this great contributor to medicine, "the most unkindest cut of all," the most distressing, has lately come from the Joint Commission on Accreditation of Hospitals. This group, in a recent action, has abolished the requirement that accredited hospitals perform a minimum percentage of autopsies.

Such a retrogressive stance seems completely inconsistent with the Joint Commission's avowed aim of encouraging high standards of medical care. It is folly to think that the autopsy's value has in any way been lessened by the development of such modern diagnostic technics as arteriography, radioisotope scanning, peroral intestinal biopsies, or specialized biochemical studies.

We can well reflect on the observant quote of Isidore Snapper, M.D., who said: "Every generation of physicians has overestimated the progress made by medicine n his own time." It is true that physicians today are better trained and better equipped than was the case twenty-five years ago. Disease is more thoroughly understood, studied more carefully, and treated more skillfully. But we must not complacently feel we have now reached our apogee in medicine. It is a plain fact hat most of what we do know about disease has come by way of the autopsy.

Furthermore, new autopsy technology is still discovering important new diseases, clarifying our understanding of known ones, and confirming and correcting our diagnoses. Heart disease, cancer, and stroke are ecognized as the foremost causes of death in America. Yet we actually do not know the true incidence of these common diseases.

The eminent director of the University of Cincinnati Medical Center, Edward A. Gall, M.D., has pointed out that "despite the disparagement of the ignorant and the patronizing smiles of the sophisticated, the autopsy still moves along in its time-honored steady pace, maintaining standards, contributing to knowledge and even, on occasion, stimulating the sluggard . . a goad and a checkrein, a beckoning hand and a stop sign."

The autopsy is now more important than ever for evaluating new surgical technics; for appraising the worth of new, dangerous, and potent drugs. It is important in attempting to establish some validity for our confused mortality statistics, for analyzing the effects of necessary but destructive radiation therapy, and for the education of us all—student, resident, clinician, surgeon, and pathologist. Medicolegally the autopsy helps eliminate speculation in the courtroom, expediting the fair administration of justice in civil and criminal cases alike. It has become invaluable as a guide in the skill of organ and tissue transplants; it gives us the tissues and organs, and the basis of study of the nature and the control of rejection and other reactions; it is a source of pituitary growth hormone that helps dwarfed children attain normal height.

And, with the increasing legal controls exerted by our government, the autopsy takes on vital importance in yet another way. It helps document human reactions to additives, atomic radiation, pesticides, and chemical pollution of food, air, and water. The controls considered and/or imposed by government must be based on accurate evaluation in these areas. The perils of mercury, lead, cadmium and beryllium, to name a few, must be determined exactly by the pathologist if proper limits of tolerance are to be known. Here, again, the most valuable fact-finder is the autopsy.

Alvin Feinstein, M.D., in his excellent book "Clinical Judgement," rightly notes that "even with elaborate colonies of animals, esoteric histochemical stains or ultramicroscopic vision, the pathologist still learns much from his surgical and necropsy material by using his naked eye, his customary stains, his standard magnifications, and his brain." For example: "A lesion that was asymptomatic and detected unexpectedly at necropsy may be an important clue to the complexity of nature, not an indictment of the clinician's competence or of a patient's perception."

It is difficult to understand why we in the United States do not emulate the practice in Scandinavian countries and some Swiss cantons, where permission for autopsies is implicit on admission to a hospital. Thus, if death occurs, the autopsy is performed automatically unless the next-of-kin specifically withdraws that permission in writing. Such a procedure eliminates the trauma that inevitably accompanies a request for consent during the emotional stress of bereavement. Similarly, it should be noted that almost every death in metropolitan hospitals of the Soviet Union is followed by an autopsy.

A recent communication from Cecil A. Krakower, M.D., chief pathologist of the University of Illinois Medical Center, notes that there has actually been a nationwide drop in U.S. autopsy rates. "The fault," he declares, "clearly lies with the clinicians—particularly the internists who have forsaken anatomic pathology—and the pathologists themselves who find doing autopsies an unwanted chore. Most departments of pathology, even the academic ones, derive their income from clinical and surgical pathology. Autopsy pathology is a very expensive service which doesn't bring in any income even though it makes greater demands on the pathologists' time than any of the other services. The neglect of the autopsy service is therefore understandable, even though it is deplorable." Dr. Krakower further suggests that we should "educate the public so that it will ask for autopsies on deceased relatives. It may be that an educated public can do more to revive the studies of the "seats and causes of disease" than our own profession."

One possible solution might lie in a form of insurance coverage which could include the cost of autopsies and thereby minimize some of the economic burden on hospitals. Furthermore, the Uniform Donor card, now available in all states under the Uniform Anatomical Gift Act statutes, might be expanded to encompass permission for autopsies as well as organ transplantation. And government subsidies for medical research should certainly encompass the all important potentials of the autopsy.

In defending the Joint Commission's relaxation of the autopsy requirements, its program director, Otto Arndal, M.D., explains that "in some small hospitals associated with one or more large nursing homes, patients are not allowed to die in the nursing homes and, therefore, are admitted to the hospital for the sole purpose of dying, with the death rate in hospitals proportionately increased. To perform 20 per cent or 30 per cent in a hospital of this kind, the Joint Commission feels, would be unrealistic, and autopsies would be done for the sole reason of satisfying a statistic, with no scientific knowledge. For this reason, the Joint Commission thought it best that we not set a national average for all hospitals . . but expects hospitals to exercise a great deal of interest in autopsies and made them part of their educational program."

The advanced age of a patient has often been cited as an excuse for not obtaining an autopsy. But, with our mounting interest in geriatrics, we should certainly be concerned with expanding our knowledge of disease afflicting the elderly. Frederick G. Zak, M.D., chief of anatomic pathology and clinical professor at the New York Downstate Medical School, says: "I perform autopsies on the occupants of various nursing homes who are transferred to Methodist Hospital (which has close to 600 beds). These old people suffer from a variety of medical or surgical ills and do not invariably succumb to their illnesses. But their autopsies are invariably instructive, whether it is an acquired megacolon or atypical bacterial endocarditis, a silent meningioma or a case of Paget's disease. It ssems to me illogical to do away with an autopsy quota across the board just because a few small hospitals may be swamped with autopsies from nursing homes."

"Human nature," he adds, "is such that unless a definite rule or law is formulated, matters will slide and the standards of medical care will be lowered as diagnostic and therapeutic errors will remain undisclosed and buried with the remains of the patient." How, indeed, are hospitals and physicians to be encouraged to obtain autopsies without the stimulus of standard accreditation requirements? Certainly the argument that some autopsies are poorly performed is no reason for removing the motivation to get autopsies. J. Hallen, M.D., and J. Norden, M.D., reporting on a series of 79 cases, substantiate this by pointing out that cirrhosis of the liver, for instance, may cause few if any symptoms, especially in elderly patients. Autopsy studies first brought this fact to light, and the findings have been instrumental in more accurate diagnosis and treatment of this malady.

Autopsies of the elderly have also revealed that bacterial endocarditis is more common than formerly suspected, establishing the fact that this diagnosis was "more often missed than made."

The work of Trinidad, Lisa, and Rosenblatt shows that metastatic lesions may produce clinical and histologic findings that are suggestive of primary bronchogenic carcinoma. The latter may be suspected clinically, confirmed by x-ray, and even by supraclavicular lymph node biopsy, only to be discovered at autopsy as secondary to carcinoma of some other organ such as the pancreas.

Our awareness of the high incidence of pulmonary embolism as detected by autopsy has enhanced greatly its treatment and prevention. Further extensive use of the autopsy can only increase our medical knowledge of this dreaded pathologic process. In yet another study involving 85 cases of liver abscess, it was found that 53 of them went unsuspected during lifetime. In another, 100 cases of syphylitic aortitis revealed that only 17 had been correctly diagnosed before autopsy. Similarly, autopsy data show that the vast majority of rena infarcts go unrecognized. Acute pancreatitis is frequently misdiagnosed as some type of pulmonary disease—pneumonia, pleural effusion, or pleurisy—or as acute renal failure, ascites or shock. M. L. Riccitelli M.D., has shown that the autopsy stands alone in stressing the important incidence of myocarditis. In one series of cases "myocarditis was rarely diagnosed before death and, in most of them, it was not even suspected."

Autopsy studies have shown that in 200 lethal cases of GI hemorrhage, the clinical diagnosis of the source—and this means appropriate therapy—was incorrect one third of the time. These, and comparable incontrovertible testimony, have come from large medical centers with high autopsy rates. But what about the smal hospitals which are not required to obtain 20 per cen or 30 per cent quotas of autopsies? Will they be aware of their "batting average?" Admittedly, it is disappointing to see one's diagnosis of a myocardial infarction proved incorrect, when an autopsy shows it t have been a pulmonary embolism, ruptured aortic aneurysm, or an abdominal disease such as pancreatitis But nothing is more instructive!

Every action has a reaction. I hope that when it is generally known that a certain percentage of autopsies is no longer required for hospital accreditation that a proper analysis of the reasons for this relinquishment of standards will be given by the Joint Commission on Accreditation of Hospitals.

In any event, interested physicians, the legal profession, our government health services, and a concerned public should work toward raising the disgracefully low autopsy rate in the United States. It is paramount that a purposeful effort be exerted to change the Joint Commission's damaging omission and reinstate the much-needed minimum autopsy rate for hospital accreditation. The further progress of medical knowledge depends so greatly on it.

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The autopsy—the key to quality control in medical care

The Joint Commission on Accreditation of Hospitals has ended its requirement of a minimum percentage of autopsies for hospital accreditation. One reason given for this shocking change is that a few unique hospitals exist that have a high census of terminal patients transferred from nursing homes. Such hospitals are burdened by an unusually high death rate. Consequently, a disproportionately large number of autopsies must be demonstrated by them for accreditation. The problem facing these unique hospitals could have been solved by some obvious accommodation for them and not by the sweeping backward step that was taken.

The autopsy rate, in the past traditionally expressed as a percentage, has always been a kind of grade for a hospital, and scrutinized carefully by the aspiring intern or resident in the internship and residency issue of the *Journal of the American Medical Association.* This jolting action by the Joint Commission on Accreditation of Hospitals forces one to review in earnest the values of the autopsy service which make its rate a reflection of the quality of a hospital.

What are autopsies for? The three reasons for the being of any hospital include patient care, teaching, and research. Our main concern in this editorial is with patient care and the role of the autopsy service in making it better. The role of the autopsy service in teaching and research will be touched on first for the sake of placing the issue of patient care in its proper preeminent perspective.

There is no question of the value of the autopsy for academic education in pathology. The need for this is obvious for all students in medical school and at formal postgraduate level for interns and residents. The need is as great for the education of the practicing physicians. Pathologists naturally come by a continuing education in the pathology of disease by participating in autopsies. Practicing doctors would likewise benefit from continuing exposure to findings at autopsy in their own cases and those of their colleagues.

The contributions of autopsies to medical research have been great. However, this important activity has been centered primarily in the teaching and university hospitals whose motivation for high autopsy rates is on a higher plane than mere satisfaction of Joint Commission on Accreditation of Hospital's bald percentage requirements for accreditation. Research activity arising from the autopsy service is a relevant concern in the average community hospital for it may be the only probing research possible in such an institution, and it can make a contribution here.

The main reason for the being of any hospital is patient care. This editorial is primarily concerned with the role of the autopsy as an instrument of quality control for the diagnosis and treatment of disease. The practice of quality control in laboratory medicine has been developed tremendously in the past fifteen years, particularly in such areas as clinical chemistry, hematology, and blood banking. The principle of having a minimum autopsy rate requirement for hospital accreditation was based on the premise that this would theoretically provide for a minimum but still satisfactory level of indirect quality control of medical care. The presumptions implicit in this goal included: 1. An autopsy is performed and analyzed with competence. 2. The pathologist and the patient's physician compare the autopsy findings with the clinical diagnosis. 3. Treatments administered during life are critically reevaluated by the patient's physician in the light of the autopsy findings. 4. If serious discrepancies in diagnosis and/or treatment are revealed by this evaluation, the case is scheduled for a medical staff conference so that all may learn from the lessons of the case. Traditionally such conferences have taken the form of either clinicopathologic conferences or mortality conferences.

There was no way of establishing without question that these presumed activities proceeded in any hospital. It has never been possible to measure concretely whether an elevation of medical care standards resulted from higher autopsy rates. The use of the autopsy service as an instrument of concrete quality control of medical care could be realized by the compilation of data on the answers to critical questions about each case autopsied. The data gathering would have to be done by a pathologist and physician or panel of physicians. The critical questions are as follows: 1. What was (were) the major clinical diagnosis (diagnoses) prior to death? 2. What was (were) the major postmortem diagnosis (diagnoses)? 3. Is there a significant discrepancy between (1) and (2), (yes or no)? 4. What was (were) the major treatment (treatments) administered during life? 5. What was (were) the major treatment (treatments) indicated by the actual postmortem diagnoses (No. 2 above)? 6. Is there a significant discrepancy between (4) and (5), (yes or no)? 7. If the answer to (6) is (yes), would the treatment (treatments) indicated in (5) have had significant life saving implications, (yes or no)?

The important questions which could be analyzed as a numerical score would be numbers 3, 6, and 7. Question numbers 2 and 4 would have to be answered before the autopsy was performed. Obviously, certain standards of acceptable scores would have to be carefully judged after some experience with this technic in hospitals willing to serve as experimental trial sites. Other considerations growing out of this kind of record keeping would be the answers to questions like what percentage of the cases with question number 7 in the affirmative were reviewed at appropriate mortality conferences?

This method makes the role of the autopsy, in contrast to its theoretic passive posture in the past, very direct and real in making quality control of medical care work. Without question, an appropriate and adequate minimum acceptable autopsy rate for accreditation would have to be reinstated to make this method work. The world today demands concrete relevance for everything we do and teach. The theoretic relevance of the autopsy should be made concrete.

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Editor's note: It was the autopsy that initiated the modern scientific era and period of progress in medicine. It is true that the law of diminishing returns does apply to the autopsy, as it does to so many other efforts. However, the abolition of the requirement of a set percentage of autopsies for the evaluation of a hospital is a sad and retrogressive step.

The Accreditation Commission has representation from the American Hospital Association, the American Medical Association, the American College of Physicians, and the American College of Surgeons. This decision to deemphasize, if not to denigrate, the autopsy in this manner is an administrative one. Was it based on the fact that the autopsy is costly to the hospital and brings in no income for anybody? The question was never presented before any pathology society for due consideration, nor before the component representative groups of the Accreditation Commission for any formal action to our knowledge.

This is a sad day for medical education, for clinical research, and for the accurate evaluation of medical care and the many new forms of diagnosis and of therapy, often dangerous in themselves, and the cause of much new and an ever-increasing incidence of iatrogenic disease.

This arbitrary decision is faulty and deserves careful consideration. The two editorials above on this subject seem to stress such a need for reconsideration. The effect of this new ruling is already evident in the recent significant lowering of percentage of autopsies in most if not all hospitals.

Iron therapy for anemia is almost as old as history itself

Celsus's empirical use of iron

Aulus Cornelius Celsus recommended an unusual form of iron therapy for the treatment of enlarged spleens—the oral administration of water that blacksmiths had used for dousing white-hot iron.

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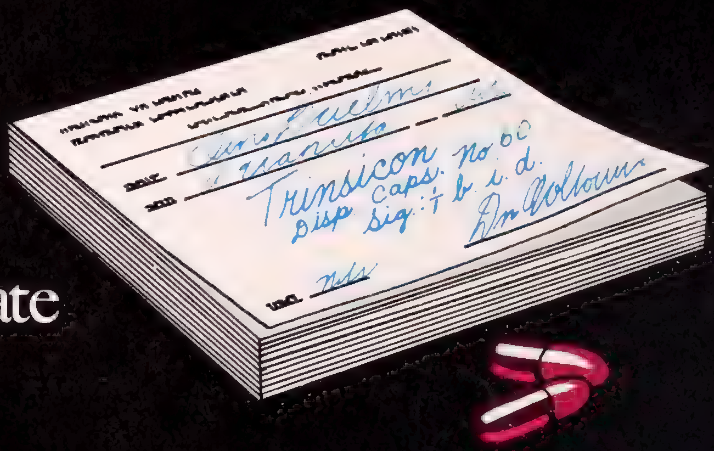
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Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	240 mg.
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Indications: Trinsicon is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron deficiency anemia. Therapeutic quantities of hematopoietic factors that are known to be important are present in the recommended daily dose.

Vitamin B_{12} with Intrinsic Factor—When secretion of intrinsic factor in gastric juice is inadequate or absent (e.g., in Addisonian pernicious anemia or after gastrectomy), vitamin B_{12} in physiological doses is absorbed poorly, if at all. The resulting deficiency of vitamin B_{12} leads to the clinical manifestations of pernicious anemia. Similar megaloblastic anemias may develop in fish tapeworm (*Diphyllobothrium latum*) infection or after a surgically created small-bowel blind loop; in these situations, treatment requires freeing the host of the parasites or bacteria which appear to compete for the available vitamin B_{12}. Strict vegetarianism and malabsorption syndromes may also lead to vitamin B_{12} deficiency. In the latter case, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient.

Potency of intrinsic factor concentrates is determined physiologically, i.e., by their use in patients with pernicious anemia. The liver-stomach concentrate with intrinsic factor and the vitamin B_{12} contained in two Pulvules Trinsicon provide 1½ times the minimum amount of therapeutic agent which, when given daily in an uncomplicated case of pernicious anemia, will produce a satisfactory reticulocyte response and relief of anemia and symptoms.

Concentrates of intrinsic factor derived from hog gastric, pyloric, and duodenal mucosa have been used successfully in patients who lack intrinsic factor. For example, Fouts *et al.* maintained patients with pernicious anemia in clinical remission with oral therapy (liver extracts or intrinsic factor concentrate with vitamin B_{12}) for as long as twenty-nine years.

After total gastrectomy, Ficarra found multifactor preparations taken orally to be "just as effective in maintaining blood levels as any medication that has to be administered parenterally." His study was based on twenty-four patients who had survived for five years after total gastrectomy for cancer and who had been taking two Pulvules Trinsicon daily.

Folic Acid—Folic acid deficiency is the immediate cause of most, if not all, cases of nutritional megaloblastic anemia and of the megaloblastic anemias of pregnancy and infancy; usually, it is also at least partially responsible for the megaloblastic anemias of malabsorption syndromes, e.g., tropical and nontropical sprue.

It is apparent that in vitamin B_{12} deficiency (e.g., pernicious anemia), lack of this vitamin results in impaired utilization of folic acid. There are other evidences of the close folic acid-vitamin B_{12} interrelationship: (1) B_{12} influences the storage, absorption, and utilization of folic acid, and (2), as a deficiency of B_{12} progresses, the requirement for folic acid increases. However, folic acid does not change the requirement for vitamin B_{12}.

Iron—A very common anemia is that due to iron deficiency. In most cases, the response to iron salts is prompt, safe, and predictable. Within limits, the response is quicker and more certain to large doses of iron than to small doses.

Each Pulvule Trinsicon furnishes 110 mg. of elemental iron (as ferrous fumarate) to provide a maximum response.

Ascorbic Acid—Vitamin C plays a role in anemia therapy. It augments the conversion of folic acid to its active form, folinic acid. In addition, ascorbic acid promotes the reduction of ferric iron in food to the more readily absorbed ferrous form. Severe and prolonged vitamin C deficiency is associated with an anemia which is usually hypochromic but occasionally megaloblastic in type.

Contraindications and Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

Folic acid *alone* is unwarranted in the treatment of pure vitamin-B_{12}-deficiency states, such as pernicious anemia. Indeed, the use of folic acid in large doses in pernicious anemia without adequate vitamin B_{12} may result in hematologic remission but neurological progression.

As with all preparations containing intrinsic factor, resistance may develop in some cases of pernicious anemia to the potentiation of absorption of physiological doses of vitamin B_{12}. If resistance occurs, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient. No single regimen fits all cases, and the status of the patient observed in follow-up is the final criterion for adequacy of therapy. Periodic clinical and laboratory studies are considered essential and are recommended.

In extremely rare instances, skin rash suggesting allergy has been noted following the oral administration of liver-stomach material. Allergic sensitization has been reported following both oral and parenteral administration of folic acid.

Hemochromatosis and hemosiderosis are contraindications to iron therapy.

Adverse Reactions: In rare instances, iron in therapeutic doses produces gastrointestinal reactions, such as diarrhea or constipation. Reducing the dose and administering it with meals will minimize these effects in the iron-sensitive patient.

Dosage: One Pulvule twice a day. (Two Pulvules daily produce a standard response in the average uncomplicated case of pernicious anemia.)

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Scientific Articles

Prolonged Cardiopulmonary Support with Disposable Membrane Oxygenator

During aortocoronary artery bypass grafts

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ARNOLD J. LANDÉ, M.D.
JOSEPH TWICHELL, M.D.
J. BAXTER, M.D.
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Eighty-five patients received total cardiopulmonary support with the disposable Landé-Edwards membrane oxygenator during aortocoronary artery-vein graft operations. Two 3 square meter membrane oxygenators were linked in parallel to a standard roller pump apparatus (three 3 square meter membrane oxygenators for patients 80 to 103 Kg.). Excellent oxygen and carbon dioxide exchange (2 ml. oxygen per kilogram per minute) occurred during hypothermia at 30°C. at flows of 50 ml. per kilogram per minute during pump runs of one to six and one-half hours. Low sonar counts for microemboli (1,500 with membrane versus 18,000 with bubble oxygenator) were associated with platelet counts up to 200,000 per milliliter; therefore, fewer blood transfusions were needed. Plasma hemoglobin was below 50 mg. per 100 ml., and the urine remained yellow except when excessive suctioning occurred. Advantages of the membrane oxygenator over the bubble oxygenator were less mental sequelae, immediate awakening and ambulation within twenty-four hours, reduced lung complications, earlier hospital discharge, and safer prolonged total cardiopulmonary support.

Complex coronary artery operations may require prolonged safe total cardiopulmonary support. Cumbersome but effective membrane oxygenators have been used clinically by Kolff *et al.*[1] since 1956. These surgeons, together with Clowes and Hopkins,[2] and later Dobel *et al.*[3] demonstrated that membrane oxygenators cause less damage to blood than bubbling, screening, and filming types and therefore appeared more suitable for prolonged use in patients. The crucial difference appears to be the absence of direct contact between blood and gas in membrane oxygenators which results in fewer physical and chemical stresses on blood in the membrane oxygenator.[4]

Prototypes of a new membrane oxygenator were developed by Landé *et al.*[5] Blood was separated from gas by a thin silicone rubber sheet folded and separated by a grooved plastic wafer. Blood and gas were manifolded into multiple countercurrent flow paths 3 cm. in length. Further models of the membrane oxygenator were developed. Minimal apparent blood damage in the Landé-Edwards membrane oxygenator was noted in vitro at physiologic gas tension.[6] The present 3 square meter disposable Landé-Edwards membrane oxygenator (Model 5110-3) has been used clinically for emergency prolonged cardiopulmonary bypass.[7] Patients in refractory cardiogenic shock were provided venoarterial nonpulsatile partial bypass perfusion at flow rates between 1,000 and 2,000 ml. per minute through a single 3 square meter oxygenator for periods of from nine to seventy-five hours. Satisfactory blood pressures were maintained without vasopressor agents. Urine output increased from anuric levels to hourly volumes of 40 to 200 ml. Plasma hemoglobin levels remained below 100 mg. per 100 ml., indicating minimal destruction of formed blood elements. These encouraging laboratory and clinical results with partial bypass in emergency situations led us to the clinical use of the Landé-Edwards membrane oxygenator for elective opera-

Presented at the 166th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Surgery, February 16, 1972.

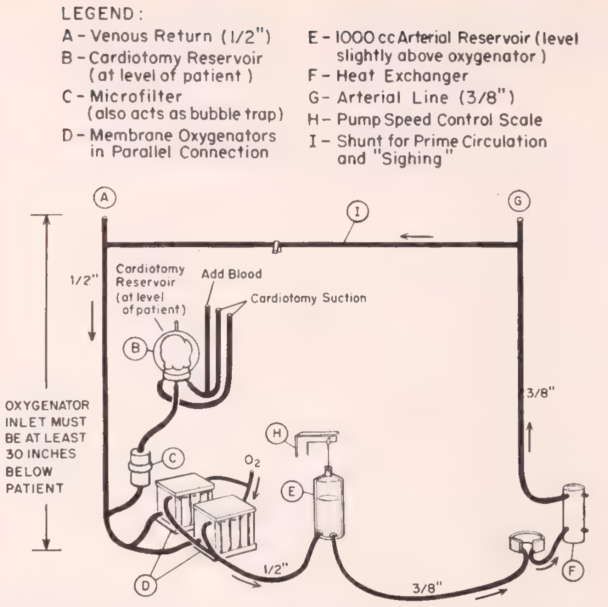
LEGEND:
A - Venous Return (1/2")
B - Cardiotomy Reservoir (at level of patient)
C - Microfilter (also acts as bubble trap)
D - Membrane Oxygenators in Parallel Connection
E - 1000 cc Arterial Reservoir (level slightly above oxygenator)
F - Heat Exchanger
G - Arterial Line (3/8")
H - Pump Speed Control Scale
I - Shunt for Prime Circulation and "Sighing"
A
I
G
1/2"
Cardiotomy Reservoir (at level of patient)
Add Blood
Cardiotomy Suction
B
3/8"
OXYGENATOR INLET MUST BE AT LEAST 30 INCHES BELOW PATIENT
H
C
O_2
E
1/2"
3/8"
D
F

FIGURE 1. Gravity flow system for total cardiopulmonary bypass with Landé-Edwards membrane oxygenator.

tions requiring total cardiopulmonary support. This communication describes the method and the results in 85 consecutive patients who had successful total heart-lung support with the Landé-Edwards membrane oxygenator.

Method

Gravity flow directly into the membrane oxygenators as first described by Baffes *et al.*[8] is now being utilized (Fig. 1). Two 3 square meter Landé-Edwards membrane oxygenators were connected in parallel for patients weighing up to 80 Kg. (Fig. 2). Three 3 square meter oxygenators were used in patients weighing over 80 Kg. The first 23 patients were linked to a circuit having a pump before and after the oxygenator.[9] In the gravity drainage circuitry now being used, venous blood flows from the level of the operating table down to and through the membrane oxygenators which are placed near the floor. The blood then flows into an arterial reservoir which must be placed slightly higher than the oxygenators to prevent air embolism through the membrane. The reservoir must be 30 to 50 cm. below table height to provide sufficient pressure head for adequate blood flow. An arterial pump takes the blood from the reservoir and returns it to the patient's arterial line via a heat exchanger. One L. of 5 per cent glucose in water is added to the system for each 3 square meter oxygenator. This dissolves

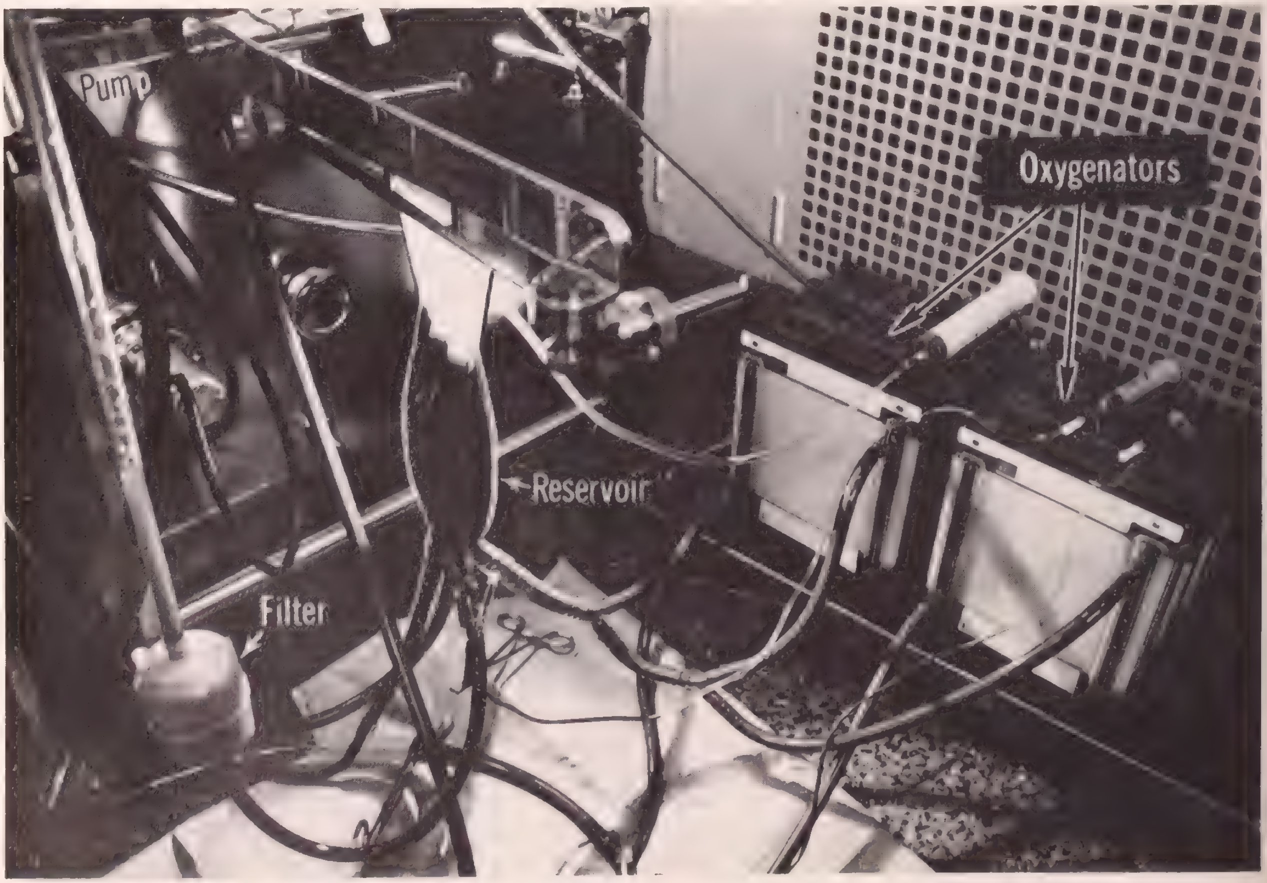
Pump
Oxygenators
Reservoir
Filter

FIGURE 2. Two 3 meter square Landé-Edwards membrane oxygenators linked for gravity flow into membrane and standard arterial roller pump. Microfilter in cardiotomy suction line entering venous inlet line.

the sodium chloride which was dusted on the membranes during manufacture to prevent the silicone rubber membranes from sticking to one another. Approximately normal to twice-normal saline concentration results.* Normal saline or any other crystalloid, blood, or colloid is used to fill the system completely.

All air is removed by rapidly rotating the pump while alternately clamping off the oxygenators, leaving only one unclamped. Then 12.5 Gm. of salt-poor serum albumin per oxygenator are added to coat the membranes and other plastic parts of the circuit. Finally, bottled blood is added via the cardiotomy suction reservoir taking care not to admit any air in the process. Significant hemodilution is avoided for long pump runs. A filter with 40-micron pore size removes tiny clots, fat debris, and other particulate matter from the cardiotomy suction and bottled blood.[10]

The speed of the arterial pump was regulated automatically by continuously weighing the blood reservoir contents. Oxygen was transmitted into oxygen inlets at 5 L. per minute per oxygenator. Since carbon dioxide transfer is the limiting factor in membrane oxygenator perfusion, carbon dioxide gas was only rarely used in the oxygen supply. Comments on technic are summarized as follows:

Use one 3 square meter membrane oxygenator unit per 40 to 50 Kg. body weight.

Maintain heart beat and pulmonary ventilation when practical during cooling and rewarming.

Pump at flow rates of 50 ml. per kilogram per minute or as previously mentioned.

Open unused membrane capillaries by periodic flushing every sixty minutes. To do this, shunt entire membrane oxygenator flow through one unit by clamping the blood outlet of the other unit for fifteen to thirty seconds.

Maintain the oxygen side of the membrane dry by continuous air flow if the unit is preprimed for many hours.

Parameters studied included blood gases, platelets, plasma hemoglobin, plasma proteins, fibrinogen, and effects on neurologic, psychiatric, pulmonary, and renal functions.

Arterial and venous blood gases, hemoglobin, and serum potassium levels were measured hourly during the procedures while off the pump and at half-hour intervals during bypass. Formed elements of the blood, including plasma hemoglobin, urine hemoglobin, platelet counts, plasma proteins, and fibrinogen levels were measured at the end of the pump run. Pre- and postoperative neurologic and psychiatric tests for brain dysfunction (Bender-Gestalt and Wechsler adult intelligence tests) were compared in alternate patients having similar operations while supported with membrane oxygenators or the Bentley bubble oxygenators. The Patterson-Pall Ultipor (Barrier) filter was added in alternate cases.[10] Clinical evaluation of brain function by tests including the Bender-Gestalt visual motor test and Wechsler intelligence tests were correlated with ultrasonic counts of microemboli.[11] A Sperry reflectroscope and ultrasonic transducer was used to count gas and particulate emboli as small as 50 microns in diameter in the arterial line of the pump oxygenator. Twenty-seven patients had cerebral function tests evaluated one to two days prior to operation and three to fifteen days postoperatively (average of five days).[12] The Bender-Gestalt tests were scored by our psychologist using the method of Pascal and Suttell.[13]

Pulmonary function was evaluated by postoperative blood gases, chest roentgenograms, and ventilation studies. Renal function was monitored by hourly urine output and postoperative blood urea nitrogen and creatinine levels.

Maximum blood perfusion flow rates were sought and were usually 3,000 to 4,500 ml. per minute (average 50 ml. per kilogram per minute). Arterial blood pressure was maintained above 60 mm. Hg during total bypass. Ventilation and spontaneous cardiac contractions were continued during cooling to 30°C. and during rewarming. Ventilating the lungs permits maximum carbon dioxide exchange during normothermic partial cardiac support. As described later, the carbon dioxide exchange was excellent at hypothermia (30°C.) but subnormal at normothermia when one 3 square meter membrane oxygenator per 40 Kg. body weight was used. Patient selection initially was limited to the more complicated cases requiring tedious epicardial dissections after previous mammary artery implantations, patients requiring multiple aortocoronary artery-vein grafts and/or other complex structural repairs, or patients with low-cardiac output requiring cannulation and cardiopulmonary support prior to opening the thorax and beginning the cardiac operation. Later, the membrane oxygenator was used for patients requiring routine open-heart operations.

Results

Eighty-five patients operated on by six different surgeons and pumped by five different technicians had successful gaseous exchange during perfusions. Details will be presented first of 26 consecutive patients who had successful total cardiopul-

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*It has been determined that removing the sodium chloride with 1 L. of 5 per cent dextrose in water per 3 square meter unit results in a saline solution whose concentration may range from 1.5 to 2.5 per cent. For this reason, it is recommended that in the absence of a means for determining the tonicity of the resulting rinse solution, the rinse procedure indicated in the operating instructions for the Landé-Edwards membrane oxygenator be strictly adhered to. That procedure requires circulating 1 L. of sterile aqueous blood-compatible solution per 3 square meter through the oxygenator at a flow rate of 1 L. per minute per square meter of membrane for three minutes. This rinse solution is then totally or near totally expelled from the system.

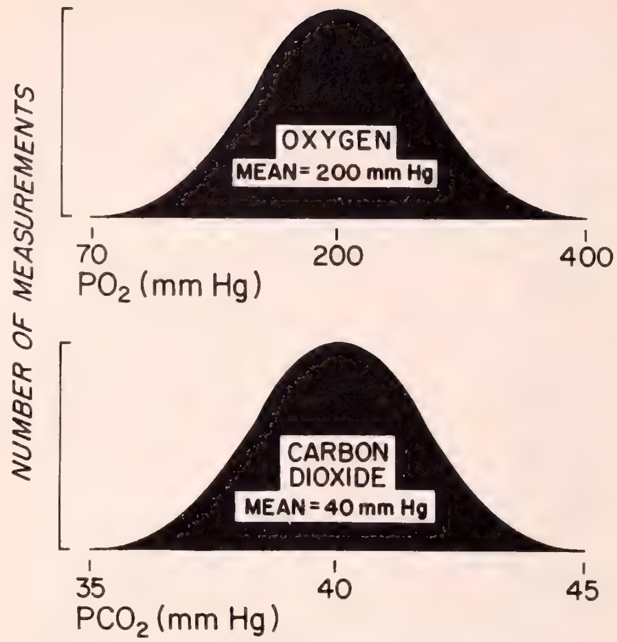


FIGURE 3. Arterial blood gases during total cardiopulmonary support at 30°C. with Landé-Edwards membrane oxygenator (85 patients).

monary support with the Landé-Edwards membrane oxygenator during elective aortocoronary artery bypass with saphenous vein grafts performed by one surgeon. Twenty-five of these 26 patients were discharged home improved. One patient with a hemodynamically successful pump run died on the operating table from an acute myocardial failure. The membrane oxygenator provided excellent replacement of cardiopulmonary function with minimal evidence of side effects on other organ systems.

Evidence for adequate total cardiopulmonary support. Excellent exchange of oxygen and carbon dioxide occurred at satisfactory pH levels when the membrane oxygenators were used as described. During total cardiopulmonary support at hypothermic temperatures of 30°C. the arterial blood gases were excellent as summarized in Figure 3. During total bypass at normothermia, hypercapnia gradually occurred unless the lungs were ventilated while the heart was beating. Carbon dioxide elimination was the limiting factor in normothermic perfusion. This problem was easily circumvented by keeping the heart beating and the lungs ventilated during cooling and rewarming. During hypothermia arterial oxygen pressure ranged from 71 to 625 mm. Hg, venous oxygen pressure ranged from 43 to 91 mm. Hg, arterial carbon dioxide pressure ranged from 26 to 50 mm. Hg, and arterial pH ranged from 7.24 to 7.51. Oxygen transfer averaged 150 ml. per minute or 2 ml. per minute per kilogram. Carbon dioxide transfer was satisfactory. Significantly fewer side effects were observed during and after total cardiopulmonary support with the membrane oxygenator. The effects on the blood, heart, lungs, brain, liver, and kidneys are summarized as follows:

Cardiac: Electrocardiogram improved after vein bypass; patient usually walked the day after operation.

Blood: Platelets: 80,000 to 200,000 per cubic millimeter. Plasma hemoglobin below 50 mg. per 100 ml. (excessive cardiotomy suctioning resulted in 250 to 300 mg. per 100 ml.). Immediate clotting after neutralizing heparin reduced postoperative blood transfusions.

Kidney: Blood urea nitrogen 12 to 25 mg. (rarely 35 mg. per 100 ml.); serum creatinine below 1.2 mg. per 100 ml.; urine output during membrane pumping 500 ml. per hour.

Brain: Patient alert enough to "discuss philosophy" the day after operation; less brain dysfunction by psychologic testing with Bender-Gestalt test compared with bubble oxygenator.

Lung: Earlier ambulation, fewer blood transfusions, reduced postoperative pneumonitis, and atelectasis compared with bubble oxygenator.

Liver: Normal serum bilirubin and prothrombin times.

Samples of blood were removed at the end of the membrane oxygenator pump run. Platelet counts ranged from 69,000 to 200,000 per cubic millimeter, usually about 150,000; plasma hemoglobin levels remained below 50 mg. per 100 ml. except when excessive cardiotomy suctioning had occurred; then the level rose to 240 to 300 mg. per 100 ml. The color of the urine, reflecting the plasma hemoglobin levels during and after the pump run, was closely related to the amount of cardiotomy suctioning. Without cardiotomy suctioning, the plasma and urine remained yellow during seven and one-half days of partial body perfusion at 3,000 ml. per minute for a thirty-five-year-old female with bilateral pneumonia. Immediate clotting occurred after administration of protamine to reverse the heparin, correlating well with the measured normal levels of fibrinogen and platelets. This immediate clotting occurred after long pump runs and reduced the number of blood transfusions needed. Serum albumin and globulin levels were normal. Most patients walked within twenty-four hours after operation. Immediately postoperatively, the lung function was much better than in similar patients supported with the bubble oxygenator. Postoperative chest roentgenograms showed fewer lung problems of pneumonia, atelectasis, or patchy infiltrates. Postoperative blood gases indicated less frequent and smaller right to left shunts than were commonly seen after prolonged bubble oxygenator pump runs. Spontaneous ventilation and normal tidal volume allowed early endotracheal extubation. The reduced need for blood transfusions

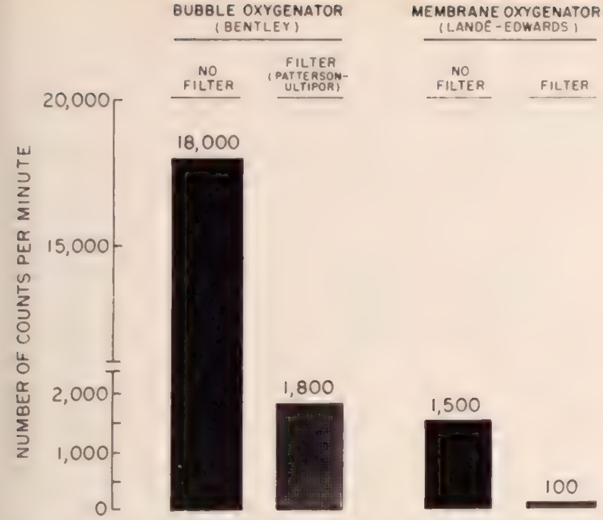


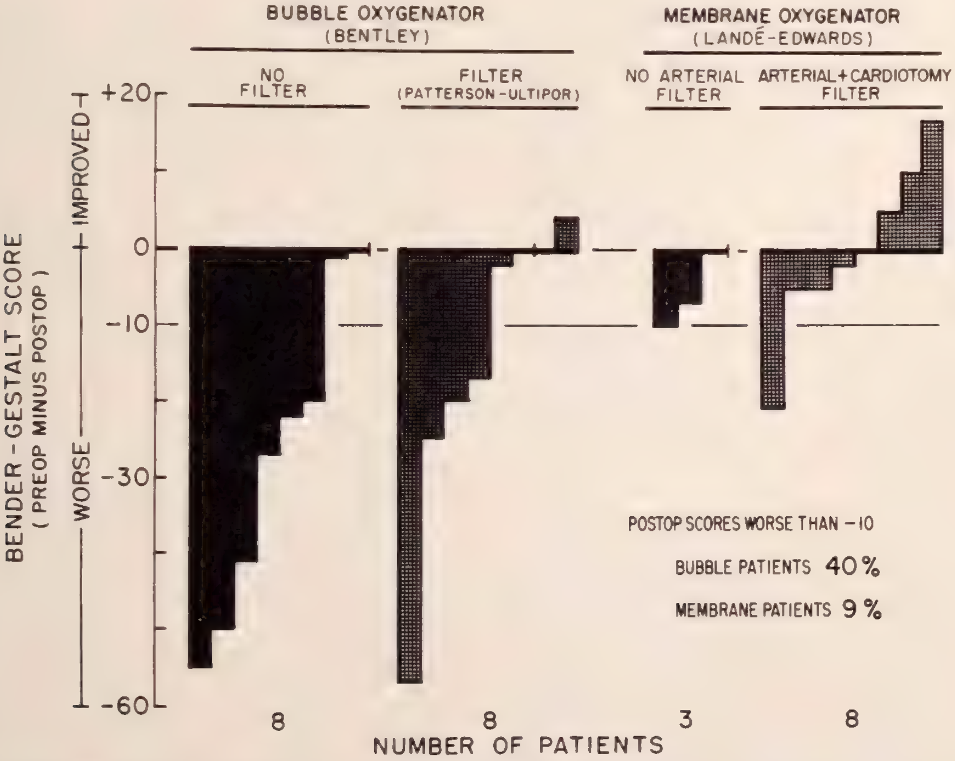
FIGURE 4. Microemboli were counted in arterial line of patients linked to either a Landé-Edwards membrane oxygenator or a Bentley bubble oxygenator. Ultrasonic detector counted particles (gaseous or solid) larger than 50 microns. Alternate cases had an arterial Patterson-Pall (Barrier) microfilter (40 micron pore size).

probably resulted in fewer venous microemboli into the lung.

Cerebral function rapidly returned to normal after membrane oxygenator pumping. The effects of bubble versus membrane oxygenators used in alternate cases was studied. Initial impressions indicate that much less brain dysfunction occurred after use of the membrane oxygenator. A typical example was a 96-Kg. male who was able to discuss philosophy the day after an operation needing a three-hour membrane oxygenator pump run. Microemboli 50 microns or larger were counted in the arterial line of the pump oxygenator. Patients linked to a bubble oxygenator had an average of 18,000 counts per minute. Adding a microfilter reduced the counts to 10 per cent or less of values measured without filters for both the membrane and bubble oxygenator pump runs (Fig. 4).

The Pascal and Suttell method of scoring the Bender-Gestalt visual motor test in 27 patients indicated better cerebral function after membrane oxygenator pump runs with an arterial microfilter added. Bubble pump runs without a microfilter produced the most cerebral abnormalities. Postoperative scores of 9 per cent of membrane patients versus 40 per cent of bubble patients showed deterioration greater than minus 10 when compared with preoperative values (Fig. 5).

Postoperative measurements of hepatocellular and excretory liver functions were unremarkable. Serum bilirubin and prothrombin times remained



IGURE 5. Mental sequelae as determined by Bender-Gestalt visual motor test and scored by method of Pascal nd Suttell. Note that postoperative scores had deteriorated below −10 in only 9 per cent of patients with the nembrane pump runs versus 40 per cent after bubble pump runs.

TABLE I. Blood gases during total and partial cardiopulmonary support with Landé-Edwards membrane oxygenator

Time	pH (Mm. Hg)	Carbon Dioxide Pressure (Mm. Hg)	Oxygen Pressure (Mm. Hg)	Pump Arterial Flow (Ml. per Minute)	Hematocrit	Temperature (Rectal °C.)
Preanesthesia	7.40	37	75	. . .	43	37
Opening chest	7.41	31	190	. . .	. . .	37
Total cardiopulmonary support (minutes)						
30	7.41	29	475	3,750	27	30
60	7.38	40	375	4,300	29	30
90	7.35	39	375	3,150	36	30
120	7.40	41	340	3,100	31	30
Partial cardiopulmonary support; heart beat and lungs ventilated (minutes)						
30	7.39	39	70	2,600	29	37
Closing chest	7.44	33	75	. . .	34	37

normal or returned to normal when abnormal preoperatively. Glomerular filtration and tubular excretion and secretion were normal or minimally altered postoperatively, except in 1 patient with hypertensive renal disease. During a trial of hemodilution for a few prolonged pump runs, excess diuresis and low-blood volumes caused temporary renal damage. This was avoided by omitting hemodilution. The urine hemoglobin levels were zero unless large quantities of cardiotomy suction produced transient plasma hemoglobinemia. Blood urea nitrogen levels measured on the first, third, and fifth days were usually below 25 mg. per 100 ml. and rarely elevated to 35 to 50 mg. per 100 ml. Urine output during perfusion averaged 500 ml. per hour.

Twenty-five of the first 26 patients survived elective vein graft operations for coronary artery disease by support with the membrane oxygenator and were discharged home (96 per cent improvement and survival). The 1 operative death was from acute myocardial failure although blood oxygenation was excellent. Ninety per cent of the vein grafts were patent by angiogram two weeks postoperatively.[14] In our experience the morbidity rate of our patients was much less with the membrane oxygenator than with the bubble oxygenator.

Case reports

Reoperation: (earliest case) membrane oxygenator for total cardiopulmonary support during vein bypass procedure. A forty-five-year-old, 70-Kg. male had continuous angina since his double mammary artery implant performed one year earlier for angina and prior posterior myocardial infarction. Selective coronary arteriograms indicated severe stenosis of the left anterior descending coronary artery and occlusion of the distal right coronary artery. Good distal run-off was seen in each diseased artery. The left ventriculogram indicated good anterior but hypokinetic posterior basal left ventricular contractions. On November 19, 1970, a successful double aortocoronary artery-vein graft operation was performed with two 3 square meter Landé-Edwards membrane oxygenators used for total cardiopulmonary support. Because of dense adhesions from the previous double mammary implant operation, the patient was connected to the pump-oxygenator for support immediately on opening the chest. Total cardiopulmonary support was continued for six and one-half hours. Postoperatively the patient is improved and working, although cytomegalic virus from blood transfusions resulted in a temporary febrile illness a few weeks postoperatively.

Multiple arterial lesions. An 80-Kg., forty-three-year-old male had two myocardial infarctions, six and two years earlier followed by progressive angina of one and one-half years' duration. No symptoms of clinical congestive failure had occurred, although the resting left ventricular end-diastolic pressure was 25 mm. Hg before the injection of any dye. The electrocardiogram indicated an old anterior myocardial infarction. Selective coronary arteriograms demonstrated an occluded left anterior descending coronary artery with good retrograde filling distally. The stenotic dominant right coronary artery supplied a stenotic origin of the posterior descending and a large left posterior lateral ventricular branch. During an uneventful three-hour total and partial cardiopulmonary support with the membrane oxygenator, a triple coronary artery bypass was performed. The left internal mammary artery was anastomosed end-to-side to the left anterior descending coronary artery, and a reversed saphenous vein bypass was grafted end-to-side to the posterior descending coronary arteries and side-to-side to the right coronary artery. While perfusing the distal vein graft, the opposite end was anastomosed to the ascending aorta.[15] Blood gases were normal throughout the operation (Table I). His postoperative course was uneventful.

Cardiopulmonary support with the membrane oxygenator for low cardiac output before and during vein-graft surgery. A forty-three-year-old, 68-Kg. male, four months prior to operation sustained an anterior myocardial infarction with mild cardiogenic shock and was supported medically. Exertional dyspnea and incapacitating angina led him to his present admission for a coronary bypass procedure. Severe stenosis was seen in the proximal left anterior descending, the right, and the large lateral marginal branch of the circumflex coronary artery. The arteries distal to the stenosis were of good caliber. The resting left ventricular end-diastolic pressure was 35 mm. Hg before dye injections. The anterior wall of the left ventricle had paradoxical motion suggesting an aneurysm.

The first operation was performed during support with the bubble oxygenator for two hours and forty minutes. Vein grafts were anastomosed to the right and anterior descending coronary arteries, and the anterior ventricular aneurysm was resected. At this first operation it was elected not to bypass the lateral marginal branch of the circumflex artery. The heart defibrillated easily, and subsequent cardiac output was fair. The following day the patient had two episodes of ventricular fibrillation successfully reversed by electrical defibrillation, but the systolic blood pressure remained 70 to 90 mm Hg. His prognosis appeared grave. Reoperation to anastomose a third vein graft to the nonoperated large lateral marginal branch of the circumflex coronary artery was considered necessary and was successfully performed as follows:

The patient was connected to two 3 square meter membrane oxygenators via femoral artery and vein cannulas placed under local anesthesia allowing bidirectional flow into the body and leg. Pump-oxygenator flow of 2,500 per milliliter per minute before thoracotomy resulted in immediate restoration of the systolic blood pressure from preperfusion levels of 80 mm. Hg to more satisfactory levels of 100 mm. Hg. The sternum was then reopened. A third vein graft was anastomosed to the lateral marginal branch of the circumflex coronary artery during the uneventful three-hour partial and total membrane support. The heart contracted well immediately after defibrillation. The systemic pressure continued to be 100 mm. Hg, and progressive improvement in cardiac function occurred postoperatively. Necrosis of his sternum required subsequent reoperation for debridement. Postoperatively the patient has had no angina and has been able to perform a modified work schedule for the past year since hospital discharge. However, so much of his heart was scarred from the prior myocardial infarctions that his cardiac output remains somewhat limited.

Comment

Gas exchange was influenced by the amount of flow through the membrane oxygenator, temperature, and weight of the patient, and by supplementing membrane oxygenator carbon dioxide exchange with pulmonary ventilation during partial support while cooling and rewarming the patient. Maximum venous blood return was sought; 40 to 50 ml. per kilogram per minute were usually adequate. The recirculation circuit used in the first 23 patients was found to be unnecessary. Excellent oxygen and carbon dioxide exchange was obtained in the next 62 patients using the simple gravity flow circuit. One 3 square meter unit per 40 to 50 Kg. body weight proved adequate. Two patients, 96 and 103 Kg., had satisfactory gas exchange with three 3 square meter units. The arterial oxygen pressure at 30°C., however, was maintained at 93 mm. Hg for ten minutes using only two units. Because carbon dioxide exchange is limited, continued pulmonary ventilation and maintenance of cardiac contractions during cooling and rewarming appear advisable in larger patients. With the membrane oxygenator, the length of the pump run is considered to be of less concern than the limited carbon dioxide exchange at normothermic temperatures. One 90-Kg. patient recently perfused with three 3 square meter membranes on gravity circuit required carbogen (3 per cent carbon dioxide and 97 per cent oxygen) because of hypocarbia. Another 70-Kg. patient had a single vein graft anastomosis at normothermia using 3 square meter membrane oxygenators.

Periodic high-flow perfusion every sixty minutes through each membrane oxygenator unit with the entire venous output appears to avoid "membrane atelectasis" by reopening any unused portions of the oxygenator. Twice in our early experience a membrane oxygenator circuit was filled with saline but with our gas flow for three days prior to operation. Diffusion of the stagnant saline through the memrane caused oxygenator "atelectasis" and indicated the necessity for drying the oxygen passages when prepriming was performed. Those 2 patients had poor gas exchange with membrane oxygenators primed for three days prior to usage in which no attempt was made to keep the oxygen pathways dry and open. Incidentally, low oxygenation in this case confirmed the "azygos" or low-flow principle which had permitted safe cross circulation cardiopulmonary support fifteen years earlier.[16]

Summary

Two 3 square meter Landé-Edwards membrane oxygenators were connected in parallel and joined with a standard roller pump apparatus for total cardiopulmonary support during aortocoronary artery-vein bypass operations. Three 3 square meter membrane oxygenators were used for patients weighing 80 Kg. or more. Normal levels of oxygen, carbon dioxide, and arterial pH were obtained when the membrane oxygenator was used properly. Satisfactory platelet counts (up to 200,000 per cubic meter^3) and plasma hemoglobin levels (below 50 mg. per 100 ml.) documented the minimal blood damage. Fewer microair and particulate emboli were counted; improved postoperative pulmonary and cerebral function as measured by Bender-Gestalt visual motor test were noted with membrane oxygenator support compared with the use of the bubble oxygenator support. Eighty-five patients operated on by six different surgeons using five different pump technicians had successful perfusions. Details are presented of 26 consecutive patients who had suc-

cessful total cardiopulmonary support. All improved except 1 with successful perfusion who died from myocardial failure during operation.

Prolonged pump runs were necessary when previous operations had produced pericardial adhesions, when multiple vein grafts were needed, often with additional procedures to correct structural cardiac damage, or when low-cardiac output dictated cardiopulmonary support prior to the operation. The patients weighed from 41 to 103 Kg. The pump runs were from one to six and one-half hours of total support.

The Landé-Edwards disposable membrane oxygenator provided safe, adequate exchange of oxygen and carbon dioxide and less blood trauma during elective total cardiopulmonary support for periods of more than six hours and partial support for more than seven days.

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Nasotracheal Intubation in Infants and Children

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A series of 491 cases with prolonged nasotracheal intubation is reviewed. The technic is carefully outlined, and the causes are tabulated. There were no deaths attributable to the intubation or its management. The most common complications were nasal bleeding, hoarseness, difficult tracheal toilet, accidental extubation, and accidental endobronchial intubation. The relative advantges and disadvantages of nasotracheal intubation over tracheostomy are listed.

A series of 491 cases of prolonged nasotracheal intubation covering the last five and one-half years is presented here. The technic used is given at the end of the report. These cases cover a wide variety of diseases and syndromes, all of which needed respiratory assistance.

Case material

Of the 491 cases, 121 involved the upper airway and 370 involved the lower airway. Infectious cases numbered 132 and noninfectious numbered 359. Subsequent tracheostomy was performed on 31 patients for cardiac problems, long-term airway problems, and for burns other than tracheal ones. Table I shows a breakdown of the causes of upper-airway obstruction. Acute epiglottitis and laryngotracheal bronchitis were considered as one entity. Although they are really distinct diseases, we found them to be associated frequently and therefore grouped them together.

The cases in Table I were the cases that gave impetus to the use of nasotracheal tubes rather than tracheostomy, mainly because of the short duration of the problem.

TABLE I. Causes of upper-airway obstruction

Cause	Number
Epiglottitis	53
Croup	40
Smoke inhalation	11
Ventricular cyst	1
Hemangioma pharynx	2
Pierre-Robin	5
Choanal atresia	4
Tracheal malacia	5
Total	121

Case 1. An interesting case in this group was one in which a tracheostomy was performed in another hospital for acute laryngotracheal bronchitis. Following decannulation, signs of obstruction appeared. The patient was transferred to Children's Hospital. Shortly after admission a nasotracheal tube was inserted pending further investigation. Two days later he was examined by bronchoscope, and a piece of cartilage ring that had been pushed into the trachea during tracheostomy was removed. It was probably the result of a cruciate incision through the tracheal rings.

TABLE II. Causes of lower-airway obstruction

Cause	Number
Pneumonia and bronchiolitis	39
Crushed chest	2
Status asthmaticus	35
Amyotonia congenita	3
Guillain-Barré syndrome	4
Respiratory disease	62
Post cardiac surgery	162
Hyperthermia	2
Post general surgery	17
Head injury	12
Miscellaneous	32
Total	370

Table II shows the causes of lower-airway obstruction. These represent the largest part of the series and were by far the most serious diseases treated. Ninety-nine per cent of the deaths that occurred were in this series, and all were due to patients' diseases. There were no deaths directly attributed to nasotracheal intubation or its management. The results with status asthmaticus were excellent. All of the ventilatory assistance was given in cases of lower-airway obstruction.

Presented at the 166th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Otolaryngology, February 16, 1972.

Case 2. The oldest croup case encountered was in a very large thirteen-year-old boy. He gave us some difficulty because his hoarseness lasted for about two and one-half weeks after extubation. Indirect laryngoscopy showed no deformation of the cords or glottis. His condition subsequently cleared completely.

Complications

Table III shows the major complications encountered. When this series began, the main interest was intubation for croup or epiglottitis. There was considerable concern about the possibility of severe complications. When the patient was extubated the second time, an otolaryngologist was present. If the airway was not clear, a tracheostomy was considered.

Early in the series, 2 tracheostomies were done. Both children recovered without any complications. Since that time, the tube has been replaced again or left in for a longer time. Again there have been no serious complications.

The other 29 cases of tracheostomy after intubation were in cases where a long airway problem was anticipated with ventilatory care or where there were severe problems with tracheobronchial toilet.

There were 5 cases of subglottic stenosis.

Case 3. A three-year-old girl underwent open correction for tetrology of fallot. Postoperatively she was intubated for two days. She appeared to be well, but two days after having returned to the floor she was again in some distress. The surgeon thought that a tracheostomy should be performed, and one was done. Subsequent decannulization could not be effected. Bronchoscopy indicated a narrowing just above the tracheostomy site. The otolaryngologist who corrected it believed that it was a high tracheostomy and that this was probably the cause of the stenosis. Although the intubation might have been contributory, it was not considered to be the whole cause. The child has completely recovered.

This had happened in the past and posed a problem for us. The patient was released from the intensive care unit too soon; floor care post intubation is not always carefully carried out. At the present time, all patients are held in the intensive care unit until they can be discharged to general floor care.

There have been 4 cases admitted to the hospital with respiratory distress and symptoms similar to croup. None of the patients were in sufficient distress to warrant intubation or tracheostomy. When the symptoms persisted, further investigation showed that all had subglottic narrowing. An acute upper respiratory infection on top of this narrowing caused respiratory distress. Intubation of these patients could easily have been blamed for the stenosis. Congenital narrowing or stenosis of the trachea with superimposed infection and intubation may be the reason for some of the severe complications of intubation or tracheostomy. Carefully obtained histories from the parents showed that the children had noisy respiration even when they had no colds. These 4 patients have been carried successfully through their distress. With time they may well grow out of their difficulty.

TABLE III. Complications encountered after nasotracheal intubation

Complication	Number
Nasal bleeding	43
Stenosis	5
Hoarseness (two to three days)	28
Accidental extubation	15
Difficult tracheal toilet	32
Granulomas	0
Death due to procedure or technic	0
Endobronchial intubation accidental and corrected	16

There are many people who believe that the complications of tracheostomy are as severe, if not more so, than the complications of intubation. I think this series shows that intubation can be used if a very careful regimen is carried out.

Technic

Meticulous care using the following technic has been used in treating all the cases in this series.

1. An evaluation of each patient is made in consultation with a pediatrician and an ear, nose, and throat physician.
2. When it is established that intervention is necessary because of an airway problem, the child is taken to the surgical suite, and general anesthesia is administered. This consists of nitrous oxide and oxygen, with Fluothane and succinycholine if necessary.
3. After careful selection of size, a Collins semitransparent thermoplastic nasotracheal tube with a straight plastic connector is soaked in hot water and inserted under direct vision. At the same time, a careful examination of the cords and glottis is done and the results recorded.
4. The possibility of endobronchial intubation is checked, particularly in small infants. This is done by x-ray if necessary.
5. One-inch nonallergic tape is placed on the cheek from nose to ear on each side to protect the skin. Regular one-half-inch tape is tightly wound around the back of the head and overlapped.
6. The stomach is decompressed.
7. The hands of the child are mittened and securely restrained for the first few hours or longer if necessary.
8. The child is immediately placed in an oxygen tent, and a DeVilbiss aerosol generator is started. Isoproterenol (Isuprel), 10 cc. in 200 cc. of water, is included in the mist.
9. Hydroxyzine hydrochloride (Atarax) is

given for sedation. The dose used is considerably larger than that recommended by the manufacturer. For some time, we have been using 1.5 mg. per pound every three to four hours. We think that this drug cuts down on the nausea and emesis that might occur and provides sedation without respiratory depression.

10. Hydrocortisone, 300 mg. per square meter per day in three doses, is given. It is used either intravenously or intramuscularly, depending on what route is available. Dexamethasone (Decadron), 12 mg. per square meter per day in three doses, may be used since this is considerably less expensive to the patient.

11. The nasotracheal tube is suctioned using a clean technic every thirty to forty-five minutes, after first instilling into the tube 0.5 to 2 cc. (depending on the size of the child) of a solution of half normal saline and 2.5 per cent sodium bicarbonate. We believe that this step has been the main reason for our tubes not plugging and for their being perfectly clean on extubation.

12. Artificial ventilation with a Bird, Bennett, or Engstrom respirator is carried out if necessary.

13. Therapy such as antibiotics and fluids is left up to the pediatrician.

14. When the temperature has been normal for twenty-four to thirty-six hours, the child is again anesthetized and the nasotracheal tube is removed with suction. The glottis is again carefully examined and the results recorded. If the airway is not clear, the child is reintubated using the same technic. It is left in place for another three to four days following the same therapy. At the end of that time, it is removed again under anesthesia, and an ear, nose, and throat specialist examines the glottis with us. The decision is then made whether or not to reintubate or perform a tracheostomy.

15. If the airway is potent on the first extubation, the child is sent back to the intensive care unit and mist, cortisone, and antibiotic therapy is continued for twenty-four hours. At that time, the mist is discontinued and the dose of cortisone cut in half. If the child appears well, he is discharged to the floor where the dose of cortisone is again cut in half on the next day, and discontinued on the following day.

Evaluation

The advantages of nasotracheal intubation are: (1) no surgical setup is needed, (2) a clear airway is easily and quickly established, (3) the glottis may be carefully inspected, (4) complications have been minimal and not serious, (5) there is no scar, (6) the ventilator may be easily connected, and (7) a better fit is obtained with an endotracheal tube.

Disadvantages include: (1) very meticulous care is necessary to perform the intubation, (2) the size of the bore of the tube, particularly the connector used in small babies, is especially important, (3) it is difficult to send the patient home with the endotracheal tube in place, and (4) the procedure is limited to the correction of short-term problems.

Summary

Nasotracheal intubation is not recommended for complete replacement of tracheostomy, but certainly if it is used judiciously, it can be used effectively and safely in the treatment of short-term (ten days to two weeks) airway problems.

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Extensive Urologic Surgery Without Blood Transfusion

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Scattered throughout the world, but principally centered in the Americas and Europe, are about 1.5 million adherents of a faith commonly known as Jehovah's Witnesses who have one fundamental tenet of their beliefs vitally important to medicine: their refusal to accept transfusion of blood or blood derivatives in treatment of their ailments. This is based on scripture, Genesis 9:3,4: "Every moving animal that is alive may serve as food for you . . . only flesh with its soul . . . its blood . . . you must not eat.' Acts 15 states "Christians are to abstain from blood."[1]

The stand by this religious group is a very strong one; only rarely can a physician persuade a member to forego his beliefs and accept blood transfusion. In the case of minors, there have been many instances where the courts have intervened on request from hospital authorities, and temporary guardians have been appointed by judges, paving the way for these new guardians to grant permission permitting blood transfusion. In the case of adults however, no such procedure is regularly available, and it becomes the burden of the attending physicians either to refuse to treat and operate on these individuals or to risk the greater hazard of medical and surgical care without transfusion. The Law and Medicine section of the *Journal of the American Medical Association* has held the following:

> A number of courts have equated blood transfusions with success in surgery. Courts have shown no reluctance in appointing guardians with the power to authorize the administration of blood to minors undergoing surgery when their natural parents insist that blood not be given.[2]
>
> There is no such unanimity, however, concerning unencumbered adults who insist that blood not be administered to them. Two highly respected courts have reached opposite opinions on factual situations which have great comparability. More will be heard on the right of an adult, especially one without responsibility to minor children, to withhold consent to blood therapy for religious reasons.[3]

In most instances physicians and hospital authorities have refused operation on Jehovah's Witnesses because of the problem of blood transfusions. We contend that it is wrong to deny operations to these people, no matter how extensive the contemplated surgery.

It must be pointed out that Jehovah's Witnesses refuse blood transfusion on religious grounds alone. On medical grounds, we as physicians should have some hesitation in insisting on blood transfusion—it is perhaps unnecessary to list potential consequences of blood transfusion which include transient allergic reactions as well as more serious complications such as renal shutdown from mismatch and hepatitis even when complete compatibility of the donor's and recipient's blood exists. Hemolytic transfusion reactions are estimated to be between 1 in 1,000 to 1 in 10,000 cases.[4]

Nontransfusion technics

Many approaches have been employed in the past when blood transfusion has been proscribed by the patient. Some of these methods follow.

Reduced body temperature. Lowering of the patient's temperature lessens metabolic need. The use of ice packs or ice mattresses can reduce general body temperature to as low as 86°F. (30°C.). This is, however, time consuming and requires several hours of slow body cooling prior to operation. But it is an effective adjuvant to the contemplated surgery particularly when a long procedure is anticipated. The cooling process should be continued during the operation; constant monitoring of the rectal temperature is obligatory.

Deliberate reduction of body temperature both during anesthesia and operation offers advantages, but there are dangers in the use of this method: (1) many physiologic alterations accompany hypothermia; (2) cardiac output is reduced, blood pressure declines, and the pulse rate falls; (3) as part of the general depression of tissue activity, respiration may become inadequate with resultant respiratory acidosis; and (4) myocardial irritability may occur, and nerve-tissue conductivity lessens. Despite these problems, however, hypothermia should be seriously considered for the substandard patient.

Transfusion of own blood. When elective surgery is possible and the patient is found to have a high or normal hemoglobin level, one can resort to preoperative successive patient bleeding over a short period of time with storage of 2 or 3 units of his own blood for potential use during operation.

Induced hypotension. The deliberate reduction of arterial blood pressure to produce a relatively bloodless field for operation should be considered carefully. Resultant capillary oozing is minimal, even nonexistent, but bleeding from larger vessels must be controlled by customary surgical means. By the use of hypotensive drugs, the anesthesiologist can reduce the patient's blood pressure making the operative bleeding less prominent. This has been resorted to on many occasions in neurosurgery, in plastic surgery, and in radical procedures for eradication of cancer, but it carries with it the risk of "overshooting the mark" and lowering blood pressure readings to dangerous levels. There also is the potentiality of all of the hazards of shock-level blood pressure, that is, renal shutdown, brain damage, and cardiac insult. Young healthy individuals can obviously withstand reduced blood pressure satisfactorily; older subjects with sclerotic vessels and question of coronary, cerebral, or renal insufficiency would be poor candidates.

Colloid fluid replacement. Blood expanders, that is, plasma substitutes, are available in the form of polymers of high molecular weight. The most widely used are dextrans, a term applied to a series of branched polysaccharides composed of glucose units. A 6 per cent solution of a molecular weight 75,000 product in isotonic sodium chloride is the approximate osmotic equivalent of plasma. Some antigenicity occurs in some cases, and allergic reactions may result. In a substantial number of cases a clinical bleeding tendency occurs. Dextrans of lower average molecular weight, about 40,000, are more desirable because they are less viscous, have better flow characteristics, and minimize blood clumping. Volume expansion obtained with this type of lower molecular weight dextran is adequate but of shorter duration than that obtained with the heavier molecular weight dextran because of the more rapid elimination of the smaller molecules.

Reclaiming blood lost. A method in use in a very few urologic clinics is that of processing the bloody irrigating fluid returns in transurethral prostatectomy and transfusing this reprocessed blood. This is, of course, a sophisticated, technically involved procedure. It is not generally available.

Use of crystalloid solutions. Our own method in caring for these patients has been that of employing only lactated Ringer's solution for blood replacement. No specific formula is employed, but we generally use three times the volume of this fluid over the sustained blood loss. The clinical status of the patient—blood pressure readings, central venous pressure, if possible, and so on—must also be judged in gauging fluid administration. It would, of course, be valuable to have laboratory aid in the form of blood-volume studies done preoperatively and compare these with values obtained during and after the operation. It is important to note that in the lower ranges of red blood cell mass, weakness of the respiratory muscles can contribute to poor ventilation, insufficient gas exchange, and eventual vascular collapse. One of our patients (Case 1) had to have assisted ventilation in the form of tracheostomy and the use of mechanical breathing via a Byrd respirator.

For religious reasons, Jehovah's Witnesses refuse to receive blood transfusions. Many hospitals have refused surgery to these patients. Although a variety of methods have been used to decrease blood loss while performing surgery on these patients, the authors believe that normal surgical procedures can be performed without the use of special technics if particular attention is paid to the stoppage of bleeding. Several case reports of major urologic operations performed without special technics or blood transfusion are given.

Although isotonic dextrose solution and isotonic saline solution are widely used, a "balanced" formulation is better—Ringer's solution contains potassium and calcium in addition to sodium and chloride. It must be noted that the calcium and potassium are present only in "physiologic" concentration and this preparation is not designed for replacing deficits of these ions. "Improved" Ringer's solution contains sodium lactate. The customary Ringer's solution has a slight acidifying effect; the lactated Ringer's tends to overcome this acidifying influence and is therefore the preferred crystalloid solution for intravenous administration.[5–10]

Paramount in the operative procedure is hemostasis. No surgeon is deliberately careless regarding blood loss, but the inability to transfuse makes a most meticulous technic essential. Attention to every fine detail is vital; the tiniest bleeding point must immediately be clamped. This does not necessarily mean that the operation has to be protracted. One can make measured speed with this detailed care to bleeding points so that total operating time is not prolonged. In fact, the necessity to be extra careful may obviate some of the errors made at the operating table by virtue of speed and may in the end prove to be faster and more salutary for any patient. No special anesthesia technics are employed. Cardiac monitoring is carried out both in the operating room and in the postanesthesia suite.

The half dozen cases reported herein are representative of various major surgical efforts on Jehovah's Witnesses over a number of years. They have been chosen to indicate various complexities of urologic operations in individuals with different diagnoses and complications.

Case reports

Case 1. *Massive bleeding following transurethral prostate resection.* A forty-two-year-old white Jehovah's Witness was transferred from another state to St. Barnabas Hospital in New York City because of bleeding subsequent to transurethral resection of a vesical neck obstruction. Although the operation had been performed with full knowledge of the proscription of blood transfusion, the urologist now refused to reoperate without blood administration and had treated the patient with conservative measures only. On admission to St. Barnabas Hospital the patient's hemoglobin was 5.1 Gm. per 100 ml. with a hematocrit of 17 and blood volume of 4.18 L. The bladder was filled with blood clots, and attempted transurethral evacuation of clots and control of bleeding was unavailing. Suprapubic cystostomy was performed under general anesthesia and the prostate bed hemorrhage controlled. Postoperative care included a tracheostomy and the use of a mechanical respirator. A urinary tract infection was controlled with kanamycin. The patient was discharged fifteen days postoperatively and returned to his home state. Follow-up reports showed that full recovery occurred.

Case 2. *Extensive renal carcinoma.* A sixty-year-old white male Jehovah's Witness was admitted to St. Barnabas Hospital from another hospital where operation had been refused by the patient because blood transfusion had been insisted on by his attending physicians. An enlarged left renal mass was readily palpable; further study indicated the presence of a huge neoplasm. The blood hemoglobin was 10.1 Gm. per 100 ml., and the hematocrit value was 32. Left radical nephrectomy was performed, and a greatly enlarged kidney with internal and external hemorrhage was found. Neoplastic extension was present through the capsule with extrarenal bleeding. Massive invasion of the left renal vein and tributaries was present. The renal vein and vena cava were not opened. Estimated operative blood loss was 200 cc. The postoperative course was uneventful. Twelve days later, the patient was dismissed from the hospital with a hemoglobin level of 9.5 Gm. per 100 ml. and hematocrit 31. Radiation follow-up therapy was given.

Case 3. *Hypertension due to renovascular origin, nephrectomy.* A thirty-seven-year-old woman entered the hospital because of blood pressure maintained at levels of 200/120 mm. Hg. Complete study, including renal arteriography and percutaneous needle biopsy on the right side, disclosed a small right kidney with renal artery stenosis. Right renal angioplasty was contemplated, but nephrectomy was considered preferable. This was accomplished without untoward incident; the pathologic report was that of fibromuscular renal artery dysplasia. The postoperative course was satisfactory; blood pressure readings were 120/70 and maintained that level at follow-up posthospital examinations. The hemoglobin both pre- and postoperatively remained stable at about 12.9 Gm. per 100 ml. Estimated operative blood loss was 150 cc.

Case 4. *Calculous pyonephrosis.* A forty-two-year-old woman, a Jehovah's Witness, had had two years of intermittent right lumbar pain, fever, hematuria, and passage of many small urinary stones. She had been a victim of rheumatoid arthritis for ten years and had received cortisone therapy with resultant Cushing's syndrome effects, obesity, fluid retention, and easy skin bruisability. Operation had been refused in her out-of-state hospital because the patient would not accept blood transfusion. Study showed a dendritic type of stone in a destroyed right kidney; the patient's hemoglobin was 10 Gm. per 100 ml. This patient was considered a very poor risk, but surgery was performed and right nephrectomy accomplished; estimated blood loss was 300 cc. Corticosteroid therapy was maintained postoperatively. Healing was normal. The patient was discharged twelve days postoperatively, the hemoglobin stable at 10 Gm. per 100 ml.

Case 5. *Prostatectomy for benign hyperplasia.* A fifty-four-year-old Jehovah's Witness had been refused surgery for an obstructing prostate at another hospital because he would not accept blood transfusion. After preliminary study following admission to St. Barnabas Hospital, transvesical prostatectomy was performed; estimated blood loss was 300 cc. The postoperative course was uncomplicated. Dismissal from the hospital was made ten days after admission, with the hemoglobin remaining level at 16 Gm. per 100 ml.

Case 6. *Bilateral hydronephrosis, hydroureter, and vesical neck obstruction.* A twenty-four-year-old white man, a Jehovah's Witness, was admitted to our hospital with complaints of fever, dysuria, and "kidney infection." At the age of six years, he had had an episode of gross urinary bleeding, but no urologic study had been performed because the parents refused the requested blood transfusions. He was free of symptoms for eighteen years.

Recent hospitalization was made in his home city for the present symptoms. Urologic study was made, but the patient refused blood transfusion; the surgeons in turn refused operation. Urologic survey revealed vesical neck obstruction with 500 cc. of residual urine and bilateral ureterovesical junction obstructive congenital lesions. Hydroureter and hydronephrosis was present bilaterally. Corrective surgery—ureteral reimplantation following ureteral tapering and vesical neck revision—was done. Blood loss was minimal, less than 400 cc., despite a long operative procedure, and no blood transfusion was given. A postoperative urinary infection was treated with suitable antibiotics. The patient was discharged with a postoperative hemoglobin of 10.7 Gm. per 100 ml. (preoperative level, 9.5 Gm. per 100 ml.) and hematocrit of 31. Follow-up study showed no urinary infection, the residual urine at 60 cc.

Comment

Our experiences with Jehovah's Witnesses requiring operative procedures has demonstrated to us that blood transfusions are not necessarily essential even when hemoglobin levels are low—as low as 5 Gm. per 100 ml. in one of our cases! This indicates that this experience in avoiding blood transfusion may be applicable to an overwhelming percentage of cases even if the patient will permit such blood transfusion. The only requirement is a careful and more meticulous operative technic. We have adopted this approach in all our cases, and blood transfusion is a most unusual event in our hands.

Summary

The stand of Jehovah's Witnesses in refusing blood transfusion during necessary major and extensive operative procedures provides a considerable problem and challenge for the urologist. Such patients cannot and must not be abandoned because of their religious beliefs. We have not hesitated to perform any and all indicated surgical procedures in the face of proscribed blood replacement. Although special technics to reduce bleeding and operative risk have been employed by others, such as induced hypothermia, deliberately induced hypotension, use of colloid blood expanders, and so on, we have not resorted to such measures. The surgical attack has been that of a most meticulous operative technic with emphasis on sparing every milliliter of blood possible and replacement of blood loss with simple crystalloid solution, namely, lactated Ringer's solution. The results have been most satisfactory. It is gratifying, moreover, not to have to be concerned about such complications of whole-blood transfusion as allergic or hemolytic reactions, renal shutdown, and hepatitis.

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Correlation Conferences in Radiology and Pathology

State University of New York
Upstate Medical Center
Syracuse, New York

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Nonfunctioning Kidney

Case history

Barton van Slyke, M.D.*: This case is that of a sixty-six-year-old white widow who was admitted to State University Hospital in March, 1970, for surgery for carcinoma of the rectum. She gave no history of urinary problems, and results of urine examination were normal. An abdominoperineal resection was performed. During her stay in the hospital her urine became infected, and cultures grew Bacillus proteus. The urinary tract infection was treated by chemotherapy, but in January, 1972, she began to have pain in the right flank and dysuria. She passed a calculus three weeks before readmission at which time she was found still to be infected with the same organism.

David M. Witten, M.D.†: I see a number of interesting findings. On the films of March 16, 1970, the right renal outline is normal. I do not see the left kidney outline very well, and there are several calcifications overlying the area. On the intravenous urogram there is a very dense nephrogram involving the upper half of the left kidney with some dilatation of the renal tubules and flattening and distortion of the upper pole calyx. This has the appearance of renal tubular ectasia, a form of mild dilatation of the tubules which is part of the spectrum one sees with medullary sponge kidney. There is a feature often seen in medullary sponge kidney: some calyces are involved and some not. The calcification is obscured by the contrast material, and presumably there is a calculus in the collection system (Fig. 1).

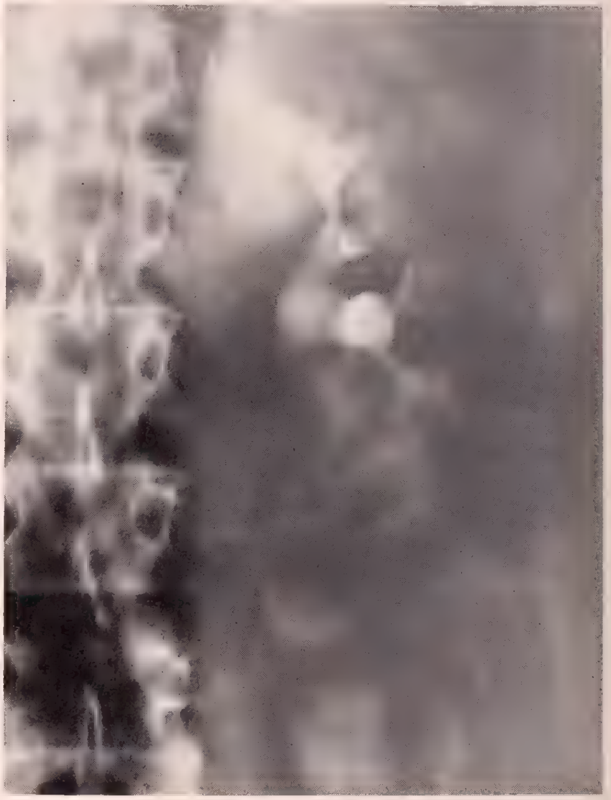
FIGURE 1. Intravenous pyelogram of left kidney, March 16, 1970.

In August, 1970, we see a large area of calcification in the upper calyces. In February, 1972, the appearance has changed again. Most of the calcified material has moved downward. The left renal outline has enlarged, and there is no evidence of function on the urogram, although the right kidney shows no change (Fig. 2A). A left retrograde pyelogram was then performed and shows a normal-appearing lower ureter (Fig. 2B). At the level of the midureter, extravasation of the contrast medium is visualized. This is not dissecting around the ureter in a linear fashion, as often happens when a catheter perforates the ureter; instead the contrast appears to have accumulated in a pocket. This woman has calculus disease, and it is likely that a calculus has perforated the ureter and produced an irregular pocket or urinoma into which the contrast medium has

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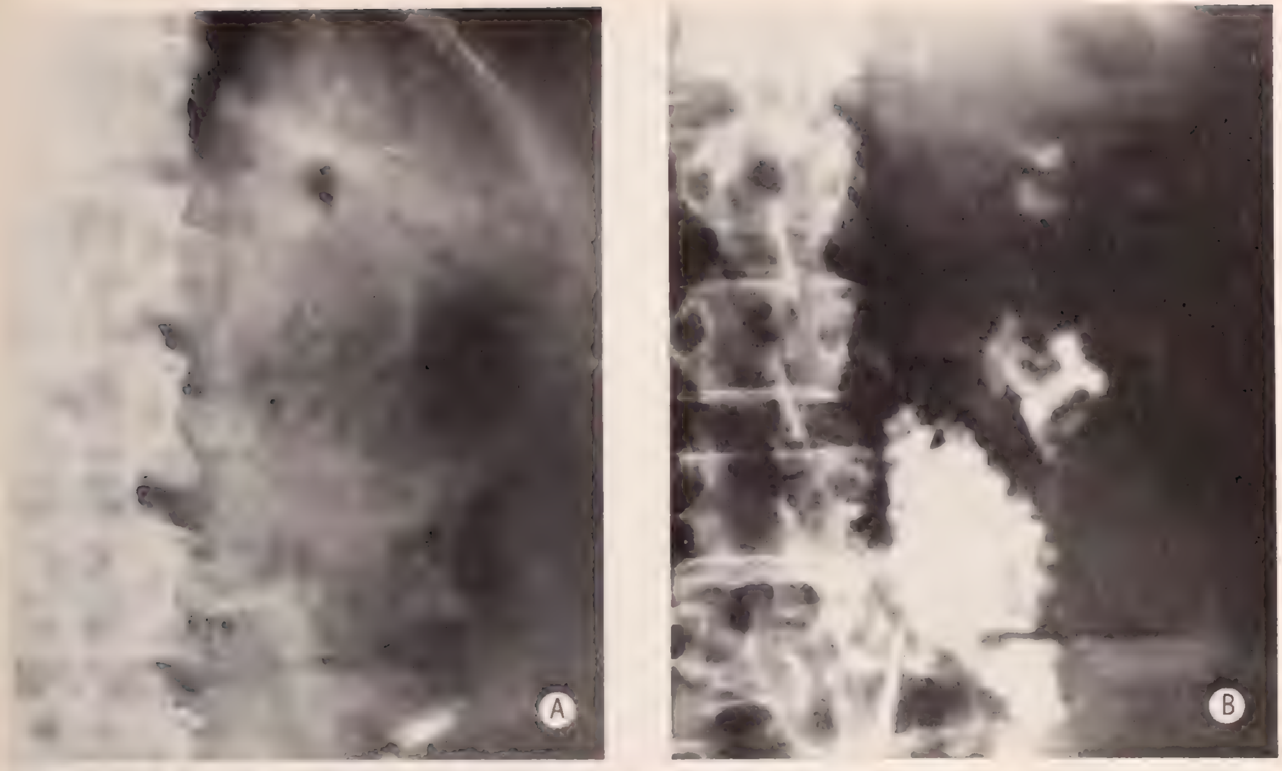

FIGURE 2. (A) Intravenous pyelogram of left renal area fifteen minutes post injection. (B) Left retrograde pyelogram, February, 1972.

entered. Conceivably, the ureter could be involved by recurrent carcinoma. Either situation would provide a mechanism for the development of hydronephrosis, or, considering her history, pyonephrosis, which could in turn account for the large nonfunctioning kidney. This looks like a nonfunctioning, nonviable kidney that is going to have to come out under any circumstance. Did you have arteriograms?

E. Robert Heitzman, M.D.*: No. The kidney was removed after the retrograde pyelogram, but we had some help from our nuclear medicine section before that. Edward G. Bell, M.D., will tell us about it shortly.

Dr. Witten: Well, I do not think an arteriogram is necessary in this case, but some people would have one. One cannot give a firm diagnosis on the information available so far. There is a strong possibility of calculus pyonephrosis. With a nonfunctioning kidney there is always a possibility of compromised renal circulation. We cannot exclude a renal tumor completely. There is another entity which could be considered as a form of pseudotumor, tumefactive xanthogranulomatous pyelonephritis. This is often associated with calculus disease.[1] Then we must not forget renal tuberculosis; this can resemble sponge kidney in its early stages.

Dr. Witten's diagnosis

1. *Calculus pyonephrosis*
2. *Exclude renal tumor, tumefactive xanthogranulomatous pyelonephritis, renal tuberculosis, and renal vascular accident*

Edward G. Bell, M.D.†: The patient was studied with both iodohippurate sodium (Hippuran) and Tc-99 (technetium-99) iron ascorbate complex. The iodohippurate sodium study demonstrates a patent arterial supply to the right kidney with normal excretory function and a patent urinary outflow tract (Fig. 3). There is no visualization of the activity in the region of the left kidney, a finding compatible with absence of the kidney or of total loss of the functioning renal cortical parenchyma or vascular supply.

The Tc-99^{m} iron ascorbate study illustrates a normal-appearing abdominal aorta and bifurcation. There is adequate and normal perfusion of the right kidney, but there is only faint activity seen in the region of the left kidney, best seen at twenty-one seconds (Fig. 4).

Immediately after the flow study was completed the kidneys were imaged in the posterior projection. On the immediate film this examination demonstrates activity in the right kidney and only faint activity in the region of the left kidney (Fig. 5). This film should be considered a "vascular-

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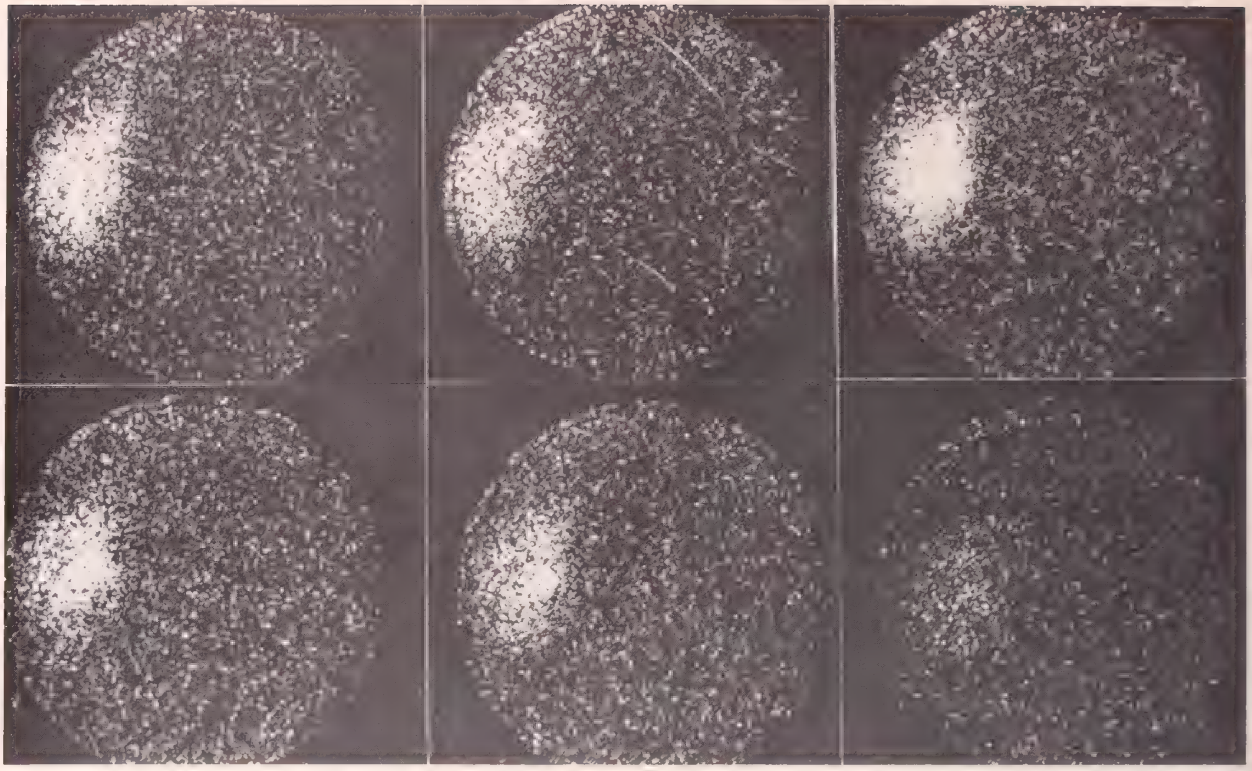

FIGURE 3. Iodohippurate sodium study. Top row, five, ten, and fifteen minutes post injection. Bottom row, twenty, twenty-five, and sixty minutes post injection.

pool" film and does not represent accumulation of the radiopharmaceutical agent within the renal parenchyma. In the thirty-minute film, activity is seen in the collecting system of the right kidney, and at the same time the activity seen in the region of the left kidney has faded slightly. At one hour's time the right kidney is visualized with a significant clearance of the radioactivity from the collecting system. There is little or no activity demonstrated in the left renal fossa. At twenty-four hours there is even better visualization of the right kidney with no activity present in the region of the left kidney.

The Tc-99^m iron ascorbate complex is handled

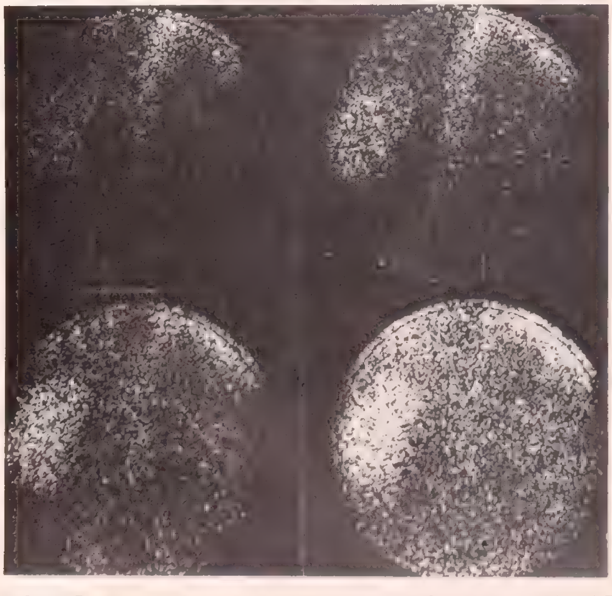

FIGURE 4. Venous angiogram performed with 15 millicuries Tc-99^m iron ascorbate complex. Top row, fifteen seconds; bottom row, twenty-one and twenty-four seconds post injection.

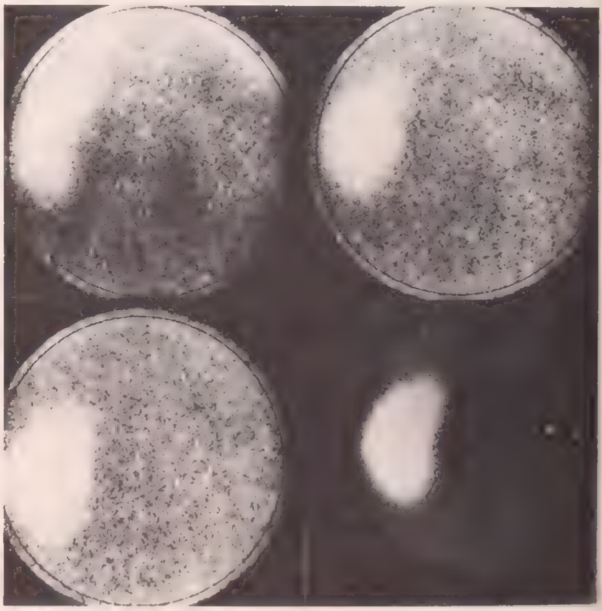

FIGURE 5. Images with Tc-99^m iron ascorbate. Top row, immediate and thirty-minute film; bottom row one hour and twenty-four hours post injection.

by approximately 80 per cent tubular function and 20 per cent glomerular function. Approximately 10 per cent of the administered dose is retained by the kidney, and the balance is excreted in the urine within the first hour after injection. As illustrated in Figures 4 and 5, the study gives information concerning the vascular supply to the kidney, on the adequacy of renal function, on the patency of the urinary outflow tract, and, in addition, information on the presence or absence of segmental renal disease. The patient's right kidney is totally within normal limits. The left kidney is abnormal and has absent parenchymal function. It is particularly important to note that in the immediate film activity is demonstrated in the region of the left kidney. Is the cause of this arterial, venous, or ureteric?

In arterial stenosis one may see a decrease in the vascular pool within the kidney such as seen on the immediate film; however, there is a preservation in the extraction efficiency of the renal parenchyma. Thus with time there is an increasing concentration of the radiopharmaceutical medium within the kidney. This is not what is noted here. If there were a complete occlusion of the left renal artery, one should not see the faint activity visualized in the left renal bed; therefore, it is fairly certain that the changes are not of arterial origin. If the problem were an acute obstructive uropathy, the study with the Tc-99^m iron ascorbate complex would illustrate a decrease in the vascular pool image, presumably due to an increased intrarenal pressure; delayed films should show visualization of the kidney, since there is a preservation of the extraction efficiency of the kidney. Therefore, one may exclude this differential possibility in this patient. In chronic obstructive uropathy the problem is somewhat more difficult to evaluate because of a loss of functioning renal parenchyma. If the renal parenchyma is markedly thinned and the kidney has lost its ability to concentrate the radiopharmaceutical product, there will be no visualization of either the renal parenchyma or the collecting system of the kidney. This is indeed a possibility in this patient. However, in this disease entity, it would be unusual to see faint vascular pool activity on the immediate film such as illustrated in Figure 5. In renal vein thrombosis one would expect to see images which differ depending on the site of the venous obstruction. That is to say, if the obstruction was near the vena cava, there might be a relatively normal study due to patent left adrenal or left ovarian veins. If the venous obstruction was in the region of the hilum of the kidney, one would expect a picture such as illustrated in Figure 5. There is presumably an intact arterial supply, but only faint activity is seen in the vascular-pool image of the kidney because of the significantly increased intravascular pressure. It is also quite possible that this represents only capsular activity; it is impossible to differentiate further between the possible sources of the visualized activity.

In conclusion, I believe that the study performed with the Tc-99^m iron ascorbate complex offers significantly more information than the study performed with the iodohippurate sodium. The former study gives information concerning the arterial supply to the kidneys, venous outflow, degree of the renal parenchymal function, presence or absence of segmental renal disease, and, in some cases, the patency of the urinary outflow tract. The studies illustrated here show that the right kidney was totally within normal limits and that the disease entity illustrated in the left kidney was most compatible with thrombosis of the left renal vein. However, it is impossible to rule out chronic obstructive uropathy; you must realize that, with any radioactive agent, one must have either functioning parenchyma which concentrates the agent or functioning parenchyma which allows concentration of the radioactive agent so that the collecting system can be visualized. In chronic obstructive uropathies with either the Tc-99^m iron ascorbate complex or iodohippurate sodium, if the cortex is very thinned, the ability to visualize either the kidney or its collecting system is lost. The only information that may be obtained on a gross hydronephrotic kidney is on the flow portion of the Tc-99^m iron ascorbate study in which one may see a relative void of radioactivity illustrating a large avascular mass. This finding, however, is not considered wholly reliable.

Dr. Bell's diagnosis

1. *Renal vein thrombosis*
2. *Chronic obstructive uropathy*

Pathologic discussion

Bedros Markarian, M.D.*: The left kidney was submitted for examination. It measured 15 by 7 by 12.5 cm. and weighed 255 Gm. The capsule was slightly thickened and quite adherent to the surface. The calyceal system contained a large calculus, was lined by reddish-gray purulent exudate, and was markedly dilated. The renal parenchyma in some areas measured only 0.2 cm. in thickness. Most of the renal substance was pale gray in color with multiple soft, yellowish areas measuring up to 2 cm. in greatest extent. The collecting system could not be followed from within the kidney to the hilus.

Microscopically, there was a marked acute inflammatory exudate and destruction of the kidney parenchyma with focal, nodular accumulations of pale, foamy histiocytes (Fig. 6A). This

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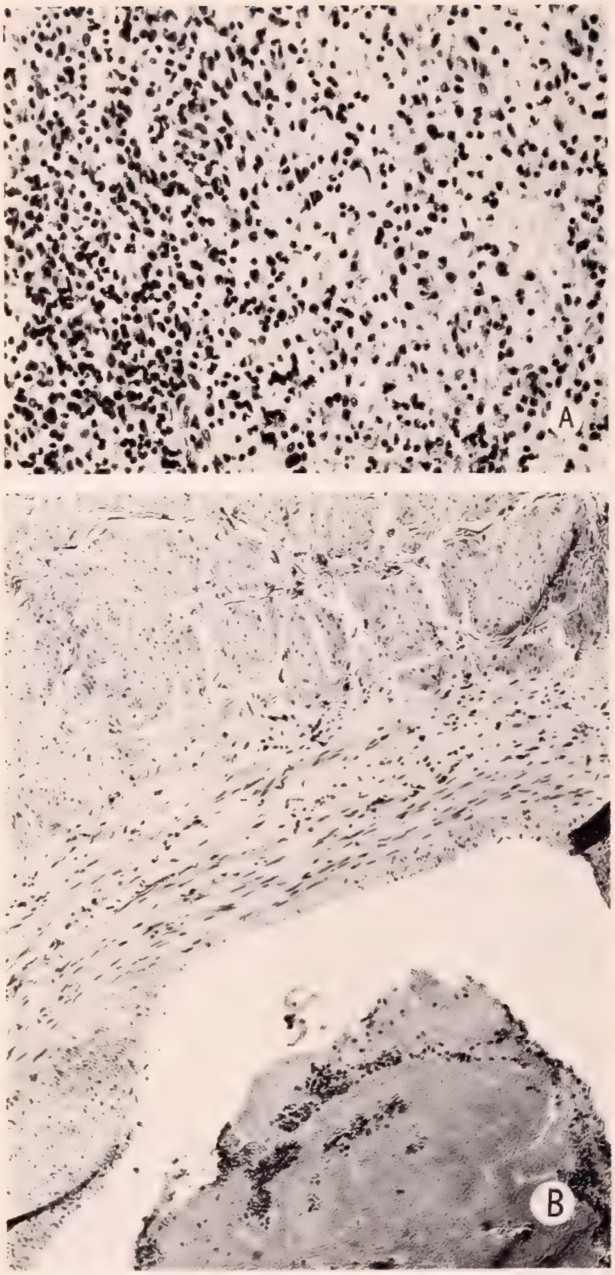

FIGURE 6. (A) Photomicrograph of renal parenchyma showing acute cellular exudate (dark area) and focal accumulations of pale foamy histiocytes (xanthogranuloma) (× 150). (B) Renal vein with mixed thrombus in lumen. (Hematoxylin and Eosin Stain)

xanthogranulomatous change can occasionally become tumefactive. Biologically, it represents a histiocytic response to breakdown of the kidney parenchyma by the acute inflammation. A section of the renal vein at the hilus showed a thrombosis which was most likely secondary to the inflammation in contiguous areas (Fig. 6B).

In summary, this case would appear to be one of an obstructive uropathy initiated by a calculus leading to hydronephrosis, acute pyelitis, and acute pyelonephritis. In addition, there is a secondary xanthogranulomatous change in the renal parenchyma and renal vein thrombosis.

Comment

Leo V. Gould, D.M.R.D.*: It is generally agreed that the type of pyelonephritis found in this patient was first described by Schlagenhaufer in 1916[2] who described it as staphylomycosis because of a resemblance to actinomycosis in a staphylococcal infection. However, no single organism has been consistently at fault. The current term xanthogranulomatous pyelonephritis was coined by Österlind.[3] It is characterized by nodular or diffuse replacement of the kidney parenchyma by cellular tissue rich in lipids—"foam cells." The process involves part or all of the kidney and extends to involve the capsule and the perirenal tissue, at times including even the peritoneum, bowel, and great vessels. Saeed and Fine[4] showed that the lipid is chiefly neutral fat and cholesterol esters. The masses of foam cells may mimic clear-cell carcinoma as in the case described by McKenzie,[5] and in one of the cases reported by Elliott, Johnson, and Balfour[6] sections from separate parts of the same kidney showed evidence of xanthogranulomatous pyelonephritis in one area and clear-cell carcinoma in another. The pathologic distinctions are dealt with at length by Saeed and Fine.[4] It is not a part of a generalized xanthomatous disease.

Almost all the cases in the literature are adults over the age of thirty, and the disease is unilateral. Pyuria and albuminuria are usual. Blood lipids were found to be normal by Elliott, Johnson, and Balfour.[6] Several reports include diabetic patients. The disease is probably not so rare as the number of published cases suggests. Hooper, Kempson, and Schlegel[7] found 15 cases in three years at Charity Hospital of Louisiana, and Kawaichi and Reingold[8] found xanthogranulomatous pyelonephritis in 3 of 19 infected kidneys from a group of paraplegic patients.

Reviewing the literature leaves one with the impression that few if any cases have been diagnosed precisely before surgery. While specific diagnosis is not a bar to effective treatment (nephrectomy), an accurate prospective diagnosis is desirable, and misdiagnosis might lead to ineffective courses of antibiotics or radiotherapy.

On plain films or tomograms the renal shadow may be small, normal, or enlarged, and the renal and psoas outlines may be obscured. Opaque calculi are often present. The lipid tends not to show as a radiolucency.[9] Intravenous pyelography may show nonfunction even when the lesion is segmental. Calyceal distortion is common. The contralateral kidney may show evidence of pyelonephritis.

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If the kidney fails to function, retrograde pyelography may enable contrast medium to be forced into the pelvicalyceal system and show it to be dilated and grossly distorted. Angiography may show reduced cortical thickness, multiple filling defects, and tapered and displaced vessels. Angiography may show that renal atrophy is masked by productive granulomatosis. The granulomatous area is relatively avascular in the nephrogram phase.[6,10]

The differential diagnosis includes clear-cell carcinoma, transitional-cell carcinoma with parenchymal invasion, tumor occurring in cysts, adult unilateral polycystic disease, healing abscesses, pyelonephrosis, tuberculosis, adenomas, and mesenchymomas.

Final diagnosis

1. *Renal vein thrombosis*
2. *Chronic obstructive uropathy due to calculus, with xanthogranulomatous pyelonephritis*

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Hypoglycemia in Postoperative Period

Surgery and anesthesia in the diabetic patient usually causes an interruption of the normal therapeutic regimen. If insulin has been discontinued and intravenous glucose administered during surgery, hypoglycemia, as illustrated by the following case report, is rarely seen.

Case report

A fifty-nine-year-old man was scheduled for a transurethral resection of the prostate for a benign prostatic hypertrophy. Past history revealed diabetes mellitus controlled on 30 units of NPH (isophane) insulin once daily. The remainder of the history and results of the physical examination were noncontributory. Twenty-four hours prior to surgery, NPH insulin was discontinued, and the patient was changed to fractional urine coverage with regular insulin. He required no insulin during this period.

Preoperative medication consisted of 50 mg. of meperidine and 0.4 mg. of atropine intramuscularly. Surgery proceeded uneventfully under subarachnoid anesthesia with a mixture of 9 mg. of tetracaine and 1 ml. of 10 per cent glucose. During the ninety-five minutes of surgery 1,100 ml. of 5 per cent dextrose in Ringers lactate were administered intravenously. In the recovery room, vital signs remained stable for ninety minutes; then the patient suddenly complained of weakness and malaise. Twenty minutes later the blood pressure fell from 130/80 torr to 90/60 torr, and his skin was clammy. He requested a drink of orange juice. An emergency blood sugar test using Aine's reagent strips (Dextrostix) revealed 50 mg. per 100 ml. Twenty-five ml. of 50 per cent dextrose in water injected intravenously ameliorated all these signs and symptoms. An additional 500 ml. of 5 per cent dextrose in water were administered, and the patient was discharged from the recovery room two hours later with no further complications.

Comment

Hyperglycemia in the diabetic patient is frequently seen postoperatively. The stress of surgery and anesthesia results in increased production of catecholamines and glucocorticoids, which in turn result in an increased breakdown of liver glycogen, increased mobilization of protein into glucose, and activation of circulatory insulin antagonist.[1]

Hypoglycemia in the surgical patient can be precipitated by starvation, administration of too large a dose of insulin, and failure to administer glucose. Although there had been no oral food intake for twelve hours, the patient received 55 Gm. of glucose, and insulin had been discontinued twenty-seven hours previously.

NPH isophane insulin is claimed to have a twenty-four-hour duration of action.[2] However, after a single injection in diabetes of moderate severity the blood sugar reaches 90 per cent of the control value after thirty-two hours and 100 per cent only after sixty hours.[3]

The sudden occurrence of a hypoglycemic episode, although rare, can occur in susceptible individuals who have been receiving intermediate-acting insulin preparations. This patient had received a regional anesthesia, was awake, and permitted the diagnosis to be made promptly. Anesthesiologists should also consider this possibility after general anesthesia if unexplained circulatory changes occur postoperatively in a diabetic patient.

Presented and discussed at a conference held at Montefiore Hospital and Medical Center, The Bronx, New York, April 24, 1972. Clinical Anesthesia Conferences are held on the fourth Monday of each month.

Blood sugar determination results are diagnostic in this situation.

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A series of reviews dealing with research background and clinical experience with drugs

Quarterly Review of Drugs

Pharmaceutical Research

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Research has become "big business" not only with the government but also with private industry. The Pharmaceutical Manufacturers Association estimates that in 1971 70 of its members spent about $625 million on basic, applied, and development research on drugs intended for use in human beings; of this $56 million were spent in foreign countries.[1] Between 35 and 40 of these firms are capable of synthesizing and screening new compounds for their usefulness as therapeutic agents. The number of firms with this capacity has always been small and probably does not exceed 200 on a worldwide basis. Their total research and development expenditures come probably close to one billion dollars, although no exact figures are available.

Research activities

The National Science Foundation[2] has offered the following explanation for the various forms of research activities:

Basic research. Basic research involves "original investigations for the advancement of scientific knowledge that do not have specific commercial objectives, although such investigations may be in the fields of present or potential interest to the reporting company."

Applied research. Applied research includes investigations directed to discovery of new scientific knowledge which have specific commercial objectives with respect to either products or processes.

Development research. Technical activities concerned with nonroutine problems which are encountered in translating research findings or other scientific knowledge into products or processes come under the heading of development research.

According to these definitions the American pharmaceutical industry spent $569.4 million in this country as indicated on Table I.

Of the applied research expenses of $356 million, which is primarily concerned with drug synthesis, pharmacology, and clinical evaluation, $54.1 or 15.2 per cent was probably spent mainly on the support of the latter activity which plays such an important role in product development today.

In spite of all this research activity annual introduction of newly synthesized drugs has declined on a worldwide basis from 82 in 1961 to 70 in 1968 and 1969 and to 60 in 1970. This development was clearly demonstrated in an analysis of new-drug introductions published by Reis-Arndt and Elvers[3] of the German firm of Boehringer Ingelheim. Of the 755 newly synthesized drugs introduced from 1961 to 1970 the largest numbers were introduced by the countries listed in Table II.

This declining curve of new introductions is evidence of the increasing complexity of new-drug development. Because we have learned much more of drug action and adverse reaction, the need for greater knowledge before introduction has become imperative. In addition, many of the basic needs for alleviation of disease have been fulfilled by new drugs. But it is considerably more difficult to develop drugs that will prevent or cure diseases, and more basic knowledge of disease process is

TABLE I. Research and development expenses in United States in millions of dollars

Research	Spent Within Own Research Establishment Amount	Per Cent	Granted to Outside Groups Amount	Per Cent	Total Amount	Per Cent
Basic	74.1	14.7	2.8	4.2	76.9	13.5
Applied	301.9	60.0	54.1	81.7	356.0	62.5
Development	127.2	25.3	9.3	14.1	136.5	24.0
Totals	$503.2	100.0	$66.2	100.0	$569.4	100.0
Overall per cents	...	88.4	...	11.6	...	100.0

TABLE II. Countries developing largest number of new synthesized drugs 1961 to 1970

Countries	Number of Drugs	Percentage
United States	183.5*	24.3
France	170.0	22.5
West Germany	107.5*	14.2
Japan	67.5*	8.9
Switzerland	57.5*	7.6
England	43.0	5.7
Italy	36.5*	4.9
	665.0	88.1

* 0.5 indicates development in two countries.

needed before such attempts can be made successfully. The major interest in new-drug development still centers around the antibiotics, tranquilizers, cardiovascular drugs for a palliative effect, and various kinds of hormones.

The Pharmaceutical Manufacturers Association has for many years endeavored to explain to the profession and the public at large the difficult and complex process of product development. Since science writers are a link between scientific activities and the public at large, the Pharmaceutical Manufacturers Association held a seminar for science writers on May 24, 1972, at the auditorium of Rockefeller University in New York. Research directors of several pharmaceutical companies presented reports on various aspects of drug research. This review presents a digest of some of the presentations given.

Timetable of a new drug 1944 to 1968

Many people think that today the treatment of tuberculosis has ceased to be a problem. This is far from the truth. The World Health Organization estimates that 20 million people in the world today have tuberculosis, and 3 million die of it each year. In 1969, 5,360 Americans died of tuberculosis, and 38,650 new cases were reported. The treatment of tuberculosis is prolonged, and the aim today is not to treat merely those afflicted with the disease but also those at risk. Vaccines have been unsuccessful against this disease, and the first effective drug was streptomycin, developed by Schatz, Bugie, and Waksman[4] of Rutgers University and introduced into therapy in 1945.

Dr. Ira Ringler, director of research of Lederle Laboratories, described vividly the attempt by his firm to add other effective compounds to the therapy of tuberculosis. This is the timetable of a long and arduous research.

In 1944 a screening program of compounds synthesized by Lederle and its parent company, American Cyanamid, was established. Tests for antituberculosis activity were made in ten guinea pigs, requiring 10 Gm. of each compound. Each animal was examined at autopsy, and comparison was made with untreated controls. Five hundred drugs could be tested annually with this long and tedious process.

There was a gradual improvement in the testing procedures permitting eventually the testing of 20,000 compounds per year. Five drugs were tested at the same time in each animal, requiring the use of 0.1 Gm. of each compound. The need for autopsy was eliminated, and follow-up studies made it possible to detect the most active compound. This development indicated that procedures in research are of utmost importance.

In 1944 the American Cyanamid Company and its affiliated divisions had a laboratory file of 103,000 chemical compounds, each identified in a computer record. To this about 5,000 compounds are added each year.

In 1957, thirteen years later, there was the first indication of progress. A chemical made at the Cyanamid's Stamford Research Center for use as an antioxidant additive for rubber, which proved unsuccessful, indicated antituberculosis activity of a promising nature. The most interesting part of this discovery was that the compound appeared to be active by a new and different mechanism of antibacterial action. Simultaneous work began on testing the toxicity of diisopropylethylenediamine and on chemical studies to find possibly better analogues.

The first compound was ready for clinical testing in 1959, but among the 600 new structures one was found to be about twice as active and one-tenth as toxic as the original compound. It was decided to wait further and conduct animal tests with the more active drug, hydroxybutylethylenediamine.

In November, 1960, the analogue was ready for clinical trial in critically ill tuberculous patients who had not responded to available drugs. There was positive action against tuberculosis, but large doses produced reversible toxicity in some patients.

The new drug was known to be a mixture of dextro- and levo-isomers. Attempts to separate the two isomers were successful, and it was found that all the antituberculosis activity resided with the dextro form, while 50 per cent of the toxic effects were due to the levo form. Completion of animal experiments with the compound and filing of an IND (investigational new drug application) so that the drug could be studied in human subjects occurred in 1963. In September, 1965, the NDA (new drug application) was filed with the Food and Drug Administration.

Ethambutol, as the drug was called, was accepted for marketing in the United States in 1968 by the Food and Drug Administration. Lederle made ethambutol (Myambutol) available in England, Germany, and Italy in 1967, and in France in 1970. It is especially effective in combination with isoniazid. Side effects seem of minor nature, except for reversible abnormality in visual function which occurs in about 6 per cent of patients and is dose and duration related.

This long-range research effort of twenty-four years required commitment of considerable funds and the cooperation of an interdisciplinary team of chemists, biologists, pharmacologists, pathologists, clinicians, statisticians, and other highly trained professionals.

Extending drug usage

Extending drug usage is an interesting approach to increasing the prescribing of a drug which is probably not made use of as much as it should. New uses of a drug may either be discovered by the alert clinician who prescribes the drug or may be based on sound reasoning supported by a thorough knowledge of the pharmacologic activity of the drug. We have seen some rather interesting surprises in this area, such as the use of the anticonvulsant diphenylhydantoin in the treatment of arrhythmias, the anticonvulsant carbamazepine for trigeminal neuralgia, or the use of the antiviral amantadine in parkinsonism. The analysis of the clinical literature on drugs from which I publish some 6,000 reports per year reveals many uncommon uses of drugs; some may be worth following up; others are not justified.

In October, 1971, Endo Laboratories marketed the narcotic antagonist naloxone (Narcan) for parenteral use. This drug had been synthesized by M. J. Lewenstein, and Dr. J. Fishman. Naloxone counteracts a narcotic depression within a minute or two when given intravenously but exerts no analgesic effect. The action lasts two to four hours and is without side effects. Given orally the effect is relatively short and requires much larger doses.

Narcotic addicts are inclined to transform a narcotic available for oral administration into an injectable form. It therefore seemed plausible that it might be advantageous to add small and orally ineffective doses of naloxone to oral narcotics that are effective both orally and by injection. The idea is that a small amount of oral naloxone would not interfere with the desired therapeutic action of the narcotic when taken orally, but if abused by injection the greatly increased antagonistic action of the naloxone would block the euphoric effect and other effects of the narcotic.

Dr. Irwin J. Pachter, of Bristol Laboratories, explained to the audience that Bristol Laboratories and the U.S. Addiction Research Center at Lexington, Kentucky, are now carrying out clinical studies with a combination of a narcotic and a small amount of naloxone. The antagonist might be added to paregoric, of which over 13 million ounces are sold annually and which is abused for intravenous administration. Naloxone might also be added to methadone to prevent diversion for intravenous use by street addicts. Experiments at methadone maintenance centers combining naloxone with methadone have shown that the combination is suitable for maintenance. At the U.S. Addiction Research Center it was shown that the combination is indistinguishable from methadone alone when taken orally; but when a ratio of 1 mg. of naloxone to 100 mg. of methadone is injected in addicts who have volunteered for research, it causes withdrawal symptoms. One should look forward to the results of these interesting experiments which must also establish the safety of a combination of a narcotic and an antagonist.

Prostaglandins—nature's molecular modifications

From time to time the pharmaceutical chemist is being reprimanded for carrying out too much molecular modification of known compounds to produce a more active or less toxic drug or to develop entirely different therapeutic uses. The modifications available today with sulfonamides, corticosteroids, the penicillins, and tranquilizers are well known. But nothing compares with what nature has done with the different forms of prostaglandins which were first discovered in the early 1930s by Raphael Kurzrok, M.D., and Charles C. Lieb, M.D., in New York and by Dr. Ulf von Euler, of the Karolinska Institute in Stockholm. The chemical isolation, synthesis, and pharmacologic determination of prostaglandins during the last forty years is a true cooperative effort between academic and industrial research. The most interesting aspect of the prostaglandins occurring in nature is the diversity and specificity of the pharmacologic action of each analogue and their eventual therapeutic potential.

Dr. David I. Weisblat, director of research of the Upjohn Company, revealed how his firm became involved in this research in the fall of 1957, how it helped solve the supply problem, which was critical, and assisted in the chemical identification and synthesis of prostaglandins and the creation of analogues which appear to be even more potent than the parent compounds. Upjohn standardized the toxicity studies to guarantee safety of administration, provided pharmacy know-how, critical to proper administration of accurate dosages, and last, but not least, financed a large, coordinated clinical research program conducted in many countries.

The major derivatives of prostaglandins and their clinical application are as follows:

Prostaglandin Derivative	Generic Name	Therapeutic Use
Prostaglandin $F_{2\alpha}$, U-14,583	Dinoprost	Labor induction, abortion, menstrual regulation
Prostaglandin E_2 U-12,062	Dinoprostol	Labor induction, abortion, menstrual regulation, duodenal ulcers, asthma, male infertility
Prostaglandin PGA_1 U-20,305	. . .	Hypertension, duodenal ulcers
Prostaglandin PGE_1 U-10,135	. . .	Hypertension, duodenal ulcers, asthma, nasal decongestant, male infertility

There are other possibilities such as clot inhibition and blood-platelet preservation. More will probably be discovered as this multiphasic research progresses. Today one to two reports are published daily on research with prostaglandins. The discovery of these highly potent hormone-like agents is offering many research establishments, commercial and academic, a much-needed spiritual lift which creates an atmosphere of excitement lacking in drug research in recent years. Its result will be a better understanding of many physiologic processes previously hidden from us. The Upjohn Company deserves credit for having visualized the importance of this, at the beginning, rather nebulous research project and having supported it with adequate funds and professional know-how of their own research personnel. To achieve new approaches to therapy usually requires many years of arduous and persistent research as well as faith that the ultimate result of therapeutic usefulness can be achieved. This is the story of the prostaglandins which will enter therapy in the next few years, probably first for the induction of labor and for abortion.

Contribution of pharmaceutical chemist

Many people think that it is easy to press powdered material into a tablet. This is far from the truth. Some chemicals can be given only in capsules or in solution because their physical and crystal form does not lend itself to compression. Consequently, as Dr. Louis C. Schroeter, director of pharmaceutical research and development for Merck Sharp & Dohme pointed out, the pharmaceutical scientist in industry views himself not as a simple formulator of dosage forms but as a designer of drug delivery systems. This is the new science of pharmaceutics which encompasses consideration of bioavailability, pharmacodynamics, and pharmacokinetics. All this requires a great deal of experimentation so that standards can be developed that can be conformed with in large-scale manufacture. Today the manufacture of tablets and capsules is a large-scale operation going into the production of many millions of units, usually at breath-taking speeds.

The designer of drug formulation must keep in mind that drugs must be in solution to be absorbed and that the quantities to be absorbed may differ from the gram to a nanogram. We are at the threshold of developing new delivery systems of drugs which may offer entirely new approaches to therapy, in which drugs are given once a month or even once a year, guaranteeing gradual absorption of minute quantities. These possibilities may alter drug therapy even more than new drugs. Sophisticated testing systems must be developed for assuring reliable and reproducible drug bioavailability. There is an entirely new science in the making, which requires attention to much greater detail in developing drug delivery systems than we have been accustomed to in the past. Again, progress in science resulting in greater efficiency also demands more costly equipment and procedures and greater scientific acumen.

Drug trial in patients

The function of the industry scientist in clinical pharmacology studies of a new drug is primarily that of an adviser and coordinator. Actual observations in patients can be made only by the clinician who must watch for not only expected but also unusual reactions of the patient. Murray Weiner, M.D., vice president of research of Merrell-National Laboratories described how through keen clinical observation the antidepressant action of imipramine was discovered for which animal experiments had suggested the use as a tranquilizer. We still lack good animal models which would help us to select the most promising clinical use of a drug. One sees time and again that animal studies suggest one use of a drug and that clinical experiments may then reveal an entirely different application. One wonders how many good drugs are missed in this fashion when animal usage is not promising and does not justify pharmacologic testing which would permit administration in human beings.

According to Dr. Weiner, the developer of a drug must provide the clinician with four requisites: (1) description of the nature of the chemical entity to be tested; (2) data on appropriate biochemical, pharmacologic, and toxicologic animal studies; (3) a recommended stepwise pattern of clinical observations to be made in volunteers under suitable conditions; and (4) well-designed clinical study plans which permit coordination of studies by various investigators.

The primary purpose of the clinical evaluation of a drug is to make observations and record these in detail so that they can be evaluated and the important be separated from the unimportant. It is impossible to predict in advance what data will prove to be one or the other. Consequently, more may be collected than may appear necessary when all available information is compiled. This unfortunate situation has caused irritation with some investigators but cannot be avoided. Too many times the data collected are not adequate and the work must be repeated.

Few of the clinical data that are presented in an NDA have been published. They serve primarily as background for categorical statements appearing in the package insert, which, incidentally, is prepared by the manufacturer. The Food and Drug Administration only exercises control over it. This is one of the rare situations in science in which statements are made to be seriously considered by others, that is, the practicing physician, without revealing details of the experiment that led to them. The Food and Drug Administration has proposed under the Freedom for Information Act to publish those data in an NDA that in its opinion should be made available to the scientific community. So far the Pharmaceutical Manufacturers Association has expressed opposition to this procedure.

For a number of years I have tried to persuade pharmaceutical manufacturers to publish voluntarily a summary of an approved NDA and state the names of the investigators who participated in the clinical evaluation of the drug. Certainly it requires effort and diligence to prepare such a document. But it is worth it, as it was proved by three manufacturers. Such a presentation offers the physician much more useful and comprehensive information than is supplied in the form of a package insert which is merely a poor digest and furnishes little education in the use of a drug. Today an approved NDA is almost as valuable as a patent or more so. But approval of an NDA is only part of its value; the real value is in the data, so why hide them? Some investigators who participated in the evaluation of a drug will publish their findings, but these cannot always be broadcast by the manufacturer, because reference may be made to claims or dosage schedules not approved by the Food and Drug Administration. What we need today is more communication of authoritative information on a new drug so that it can be used to its best advantage. Permission to use data in an NDA should not be given to other manufacturers making a similar drug unless equal bioavailability has been proved.

Designing drugs of the future

According to Dr. George de Stevens, director of research of CIBA-GEIGY Corporation, it is the task of future drug research to understand the intimate structural features of substrate molecules and, in so doing, to be able to ascertain the exact site where the drug substance is to exert its action. With this information in hand the laboratory chemist can design the drug molecule in a precise way so that it will fit the receptor site according to specification. It is hoped that current investigations in the field of molecular biology will be of great assistance in this direction.

Managing the behemoth

Managing a research organization with an annual expenditure of $50 million or even $10 million is not an easy undertaking. There is always the high mortality rate in research projects and the need for intelligent decision-making years before a new product is finally developed and marketed. Developments move so fast today that a drug may be outdated before it is marketed. These facts were clearly brought to the surface in a statesmanlike report by Faust,[5] director of research planning of Hoffmann-La Roche, Inc. The other eternal questions are: Can research be planned, and can it be controlled? Project selection and initiation is one of the most critical responsibilities because it must be attuned to the research capacity of a given institution as well as to the therapeutic requirements of a distant future. There is constant need for monitoring and appraising research activities. There are short and long projects requiring entirely different approaches for their realization.

All of this must be accomplished without any real guidelines or working model, since each situation differs from the other, and intuition is more decisive than experience. A certain amount of freedom of action must be allowed to the creative researcher, otherwise he loses his interest. To bring this in tune with a company's goal is not always easy or successful. The growing complexities of modern science make it more and more difficult for the nontechnical business director to understand fully what is actually being done in research. Research personnel must be kept fully informed as to what is published by others in the field and must be trained to make the best use of the information facilities available to them. The sheer quantity of the written word is so great today that special attempts must be made to highlight what is important and what research results correlate with others in related areas.

Dr. Faust pointed out there is no simple, satisfactory technic for measuring productivity of research, because there are so few projects that come to fruition. They may advance therapy in a given area, but financial results may not be significant. But this is progress, too. Pharmaceutical research and its administration is a constant adjustment to new situations and technics. Only those who are aware of what is going on around them can be successful in the long run, provided management and society guarantee them the necessary financial support that is essential.

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Recent Advances in Medicine and Surgery

Robert Turell, M.D., Editor

Cancer Chemotherapy

Part I

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Almost six years have passed since the appearance of the last review article on cancer chemotherapy in the ***New York State Journal of Medicine.*** Since that time, the specialty of medical oncology has become a recognized discipline. In 1966 there were few textbooks of cancer chemotherapy; now there are many. One book has even appeared in a second edition.[1]

Although the medical oncologist dislikes the term "chemotherapist," chemotherapy is his raison d'être. It is true that the medical oncologist must have a thorough knowledge of internal medicine, be well informed about the indications for radiotherapy, and be able to give emotional support to the cancer patient and his family. However, these requirements can be met by any conscientious physician. What sets the medical oncologist apart from his colleagues is his knowledge of chemotherapeutic drugs, which are potentially dangerous and sometimes lethal. Yet, in comparing chemotherapeutic agents with other drugs, such as quinidine, digitalis glycosides, and even aspirin, it becomes obvious that the dangers associated with anticancer drugs and other medications differ only in degree. The well-trained oncologist can treat with relative safety if he is careful and thorough. No longer must he apologize to his colleagues for dispensing "poisons."

The period since publication of the last review in October, 1966, has been marked by slow, steady progress rather than spectacular breakthroughs. Median survival in acute leukemia of childhood is now three years, while patients with testicular carcinoma, Hodgkin's disease, and some of the highly malignant tumors of childhood have been cured by chemotherapy alone. There is also considerably less toxicity with the use of 5-fluorouracil. Even more important has been the development of a pool of physicians capable of using most or all of the available chemotherapeutic agents safely and effectively. While there are still some who distrust the use of chemotherapeutic agents, many have seen the results produced by the experienced oncologist and know that toxicity can be minimized.

Much has been learned about the mechanism of action and pharmacology of cancer chemotherapeutic agents. An excellent summary is available in the chapter on cancer chemotherapy in the Goodman and Gilman[2] textbook of pharmacology.

The cancer chemotherapy literature which formerly emphasized empirical results is beginning to include discussions of the theoretic basis for planning chemotherapy regimens. There are two facets to the understanding of the theoretic basis of cancer chemotherapy. The first, the mechanism of action of the cancer chemotherapeutic agents, will be discussed shortly. The second is the study of cell kinetics, both of tumor and of normal cells.

Cell cycles

To understand the current literature on cell kinetics, we must first discuss the concept of cell cycles. All dividing cells follow a pattern known as the cell cycle which, by custom, is described from mitosis to mitosis. There are four phases to the cell cycle: (1) mitosis, (2) G_1 (Gap 1), (3) S (DNA [desoxyribonucleic acid] synthesis), and (4) G_2 (Gap 2).

G_1 is the phase of the cell cycle which has the greatest variation in length between different cell types. It is also the phase of the cell cycle in which those cells which are not dividing are usually arrested. When cells remain in G_1 for long periods, it is often called G_0. The concept of G_0 has become very important in the design of experimental chemotherapy regimens. The S phase, when DNA synthesis takes place, is of relatively constant duration in mammalian cells (six to eight hours), as is the length of G_2, the postsynthetic or premitotic phase, which averages about two hours.

The time that a cell takes to complete one cycle has been called the generation time. The generation time of cells of the small intestinal mucosa or of marrow stem cells is slightly less than twenty-four hours. It is with the generation time of these cells and of tumor cells that cancer researchers are most concerned.

Cell kinetics is the quantitative study of cell proliferation. To study this subject, assay technics are necessary. In 1961 Till and McCulloch[3] developed an assay for hematopoietic stem cells which depended on the capacity of these cells to give rise to macroscopic colonies in the spleens of heavily irradiated mice. Bruce[4] developed a modification of this assay to measure transplanted isologous lymphoma colony-forming cells. Bruce, Meeker, and Valeriote[5] then used these assays to examine and compare the sensitivity of the two cell types to a number of chemotherapeutic agents, with a view toward exploiting the difference between normal and lymphoma cells so as to damage the malignant cells selectively.

The data led to two conclusions: one that certain agents were specific for cells only during one phase of the cell cycle, and second that while over 99 per cent of the lymphoma cells were passing through the cell cycle, approximately 40 to 80 per cent of the marrow stem cells were in G_0.[5]

Methotrexate, cytarabine, hydroxyurea (Hydrea), and possibly 5-fluorouracil are effective in killing cells only during the S phase of the cell cycle, while vinblastine and vincristine affect cells just before and during mitosis.[5] Alkylating agents, on the other hand, damage cells during all phases of the cell cycle and even affect cells that are resting (those in G_0).

Bruce's group showed that when chemotherapeutic agents cause lowering of the white blood count, the resting marrow stem cells temporarily enter the cell cycle and proliferate rapidly. This information has led to the practice of spacing chemotherapeutic agents as in the intermittent cyclophosphamide regimen of Bergsagel, Robertson, and Hasselback,[6] the MOPP (nitrogen mustard, vincristine [Oncovin], procarbazine, and prednisone) regimen for Hodgkin's disease, and the various intermittent methotrexate regimens in which the interval between intensive courses of drugs is the time required for the marrow to return to its resting state.

The classic studies by Skipper, Schabel, and Wilcox,[7] Griswold *et al.*,[8] and Laster *et al.*[9] have emphasized the kinetics of tumor-cell growth, including the percentage of tumor-cell kill by different doses of chemotherapeutic agents. The first system studied by Skipper, Schabel, and Wilcox[7] was the transplantable L 1210 leukemia of mice. The assay system used to measure the number of tumor cells remaining after therapy was the life span of the mouse. This assay was useful since the leukemia cells doubled at a constant rate until a few days before the death of the mouse. One implanted leukemia cell caused death on an average of thirty to forty-five days. By mathematical studies of the percentage of tumor cells killed by various methotrexate regimens, Skipper and his associates[7] were able to determine that high-dose, short-term methotrexate therapy led to a high cure rate, while low-dose continuous therapy gave only moderate prolongation of life. Later studies by Skipper's group utilizing similar technics enabled them consistently to cure the hamster Fortner plasmacytoma.[7]

Griswold *et al.*[8] postulated that a single therapeutic dose or short course of a chemotherapeutic agent caused rapid cell death. The subsequent volume of the solid tumor was related to several factors: (1) the proliferating cells not killed, (2) the G_0 cells not killed, and (3) the dying, dead, and lysing cells. Radiobiologists have found that it may take several weeks for macrophages to remove dead tumor cells. It has also been shown that cells that eventually die may divide for several generations. They state that "solid tumor volume or mass behavior after therapy—the principal end point in both animals and human trials in the past—may underestimate by several orders of magnitude the tumor cell kill achieved."

More recently, Skipper's group studied carcinoma 755, originally described as an adenocarcinoma of the breast in a C57BL mouse.[9] Although this tumor is not particularly sensitive to chemotherapeutic agents, Skipper was able consistently to cure mice with this tumor by utilizing data obtained from studies of cell kinetics and cell kill.

Bruce, Meeker, and Valeriote's[4,5] data and Skipper's solid tumor data[8,9] are highly important, the former offering a kinetic interpretation of the mechanism of drug action, and the latter providing an example of how drug kinetics can be tailored to tumor kinetics to achieve cures. Hryniuk and Bertino[10] have written an excellent and intelligible review article on the subject of cell kinetics and cancer chemotherapy.

The alkylating agents are a group of compounds whose name is derived from the word alkane which denotes any hydrocarbon chain with the general formula C_NH_{2N+2}. Warwick,[11] in his outstanding review article, has defined alkylating agents as "those compounds capable of replacing a hydrogen atom in another molecule by an alkyl radical."

There have been many review articles on the biochemistry and pharmacology of the alkylating agents.[11-15] As can be expected, the list is dominated by publications from the Chester Beatty Institute, with Ross'[12] book published in 1962 remaining the classic in the field.

It is quite well established that alkylating agents act by binding to DNA. Experimental evidence indicates that alkylating agents produce their effects by interstrand binding from the N^7 in the guanine of one DNA strand to the N^7 of guanine on the opposite strand.

Support for the interstrand guanine N^7 linkage has been produced most forcefully by Brookes[16] who has shown that "the more active the alkylating agent and the greater its tendency to react with nucleophiles, the greater the extent of the reaction with the guanine moiety." In in vitro experiments his group has isolated the di-(guanin-7-yl) derivative of sulfur mustard when this agent was reacted with DNA.

Lawley and Brookes[17] have published results of an elegant series of experiments carried out with strains of Escherichia coli sensitive and resistant to sulfur mustard. They showed that both strains had initially equal uptake of S^{32}-labeled mustard in their DNA, but that the resistant strain was able enzymatically to remove the cross-linked diguaninyl mustard. Kohn, Steigbigel, and Spears[18] who performed similar experiments reached the same conclusions.

In 1966, Crathorn and Roberts[19] published data to indicate that enzymatic repair of cross-linking by sulfur mustard occurs in mammalian cells as well as in bacteria. However, it is not clear as to whether or not the repair mechanism is the reason for resistance to alkylating agents in mammalian cells. Alexander[20] has suggested that the lethal damage of alkylating agents is due to faulty repair after excision of cross-linked nucleotides rather than to prevention of DNA replication by interstrand cross-linking. Goldenberg *et al.*[21] present evidence that transport rates of alkylating agents into tumor cells influence the sensitivity of the cell to these substances.

Alkylating agents are teratogenic,[22] mutagenic,[15] and carcinogenic,[23,24] and also produce sterility after prolonged use.[25] In addition, these substances have immunosuppressive activity which is most pronounced for cyclophosphamide.[26]

Antimetabolites are small molecules which resemble normal metabolites in chemical structure but differ enough so that they interfere with some of the chemical reactions involving the metabolite.

The antifolic agents were the first antimetaboites used in cancer chemotherapy. At present methotrexate is the only folic acid antagonist in clinical use, although many of the biochemical studies in this field have been carried out with another antifol, aminopteroylglutamate (Aminoptern) which appears to act identically with methorexate. A great deal is known of the pharmacology of methotrexate, and many of this compound's effects can be explained at the biochemical level. However, as for all the anticancer drugs, little is known to explain methotrexate's selective toxicity for certain neoplasms over normal tissues. There are a number of excellent review articles on the mechanism of action of methotrexate.[2,27-29]

Folic acid, as such, is biochemically inactive in most cell systems, and must be reduced to THF (tetrahydrofolic acid) by the enzyme DHFR (dihydrofolic acid reductase). Once the THF is formed, it can be readily transformed into other derivatives which are important as coenzymes functioning as carriers of "one-carbon" units in many biosynthetic reactions in the body.[27,30] The most important reaction in which the THF coenzymes are involved is the thymidilate synthetase reaction in which deoxyuridilic acid is transformed to thymidilic acid by the addition of a methyl group.

Methotrexate acts to prevent the reduction of folic acid to THF by binding the enzyme DHFR with an affinity more than 100,000 times that of folic acid. Studies in rats have shown that minute quantities of methotrexate are still present in kidney and liver bound to DHFR eight months after administration of a single dose.

After a single dose of methotrexate there is binding of the drug by DHFR, and excess unbound methotrexate is rapidly excreted. If subsequent doses of methotrexate are not given, preformed DNA and RNA (ribonucleic acid) which code for the enzyme DHFR allow the cells to recover by producing new DHFR. Thus the duration of contact of methotrexate with tissues rather than the height of the blood level of the drug is the critical factor in determining drug effects.

Rapidly dividing cells such as bone-marrow stem cells, scalp hair follicle cells, and intestinal mucosal cells are most susceptible to folic acid antagonists. Since less rapidly dividing cells do not need to produce DNA as quickly, they can exist without functioning DHFR for longer periods of time.

The direct antagonist of methotrexate and other antifolics is THF, since by administering THF, the block in reduction of folic acid is bypassed. In practice one uses the THF derivative, citrovorum factor (Leucovorin) whose chemical name is N^5formyl-THF. It is most effective if given before or within four hours of administration of methotrexate, since the antagonistic effects diminish rapidly after this period. However, there is some modification of toxicity even when the citrovorum factor is given as long as twenty-four to forty-eight hours after methotrexate.

The purine antagonists, 6-mercaptopurine, 6-thioguanine, and azathioprine, are also antimetabolites, but their exact mechanism of action continues to elude investigators. A number of excellent review articles have been published.[2,31-35] The problem that confronts the investigator is that these compounds inhibit many different enzymes. Elion and Hitchings[36] list a number of enzyme reactions with which these compounds interfere, and Elion[35] states that "from the reactions discussed, it is obvious that the thiopurines can inhibit RNA and DNA synthesis, both early in de novo synthesis and at the purine nucleotide interconversion steps; they can be incorporated into nucleic acids thereby causing chromosome breaks as well as possible malfunctioning of a particular form of nucleic acid; they can inhibit co-enzyme formation and function and thereby interfere with various aspects of cell metabolism."

Both azathioprine and 6-mercaptopurine are catabolized in a reaction catalyzed by the enzyme xanthine oxidase, so that the action of these two purine antagonists is increased by the xanthine oxidase inhibitor allopurinol.

The active metabolite of 5-fluorouracil, fluorouridylic acid, exerts its action by competing with deoxyuridylate for the enzyme thymidylate synthetase.[37] Deoxyuridilate is the deoxyribotide of uracil, and the thymidylate synthetase reaction involves methylation of the pyrimidine ring in the 5 position to produce thymidilic acid, the deoxyribotide of thymine. The presence of thymidylic acid in DNA but not in RNA prevents the synthesis of the former substance but not of the latter by 5-fluorouracil.

Some 5-fluorouracil is converted to the ribotide, which is readily incorporated into RNA. It has been postulated 5-fluorouracil ribotide may be responsible for some of the toxicity of 5-fluorouracil without adding to its effectiveness.

Vincristine and vinblastine are naturally occurring alkaloids, extracted from the Vinca rosea plant, commonly known as periwinkle, which only differ in chemical structure by the replacement of a methyl group in vinblastine with a formyl group in vincristine. Although cross resistance between vinblastine and vincristine does not appear to occur in tumors in human subjects, the mechanism of action of these two complex large molecules appears to be the same. Sartorelli and Creasey[38] recently reviewed the mechanism of action of the vinca alkaloids which cause metaphase arrest, apparently by binding to the microtubular protein necessary for mitotic spindle formation.

Dactinomycin is the most active and least toxic of a group of antibiotics isolated from a culture broth of a species of Streptomyces. Several excellent review articles have discussed the biochemistry of dactinomycin.[39-41] Dactinomycin binds to DNA but not to RNA in the presence of guanine in a double helical configuration to form a relatively stable complex. In so doing it selectively inhibits RNA synthesis by RNA polymerase in microorganisms and mammalian cells but does not inhibit RNA polymerase.

Cytarabine (Cytosar) also called cytosine arabinoside and ara-C has recently been released. It is a synthetic nucleotide which differs from the naturally occurring cytidine and deoxycytidine in that the sugar moiety is arabinose rather than the naturally occurring ribose or deoxyribose. It was at first believed that the mechanism of action of cytarabine was inhibition of the enzyme ribonucleotide reductase which catalyzes the conversion of cytidylic acid to deoxycytidilic acid. However, it has been shown that cytarabine acts by inhibition of DNA polymerase.[42,43]

Procarbazine (Matulane) was also known as ibenzmethyzin. Although the exact mechanism of action of this compound is unclear, it is known that it causes fragmentation of the DNA molecule and interferes with DNA and RNA synthesis.[38] Procarbazine is a potent carcinogen[44] and teratogen[45] in animals. It is one of the most effective immunosuppressive chemicals known.[46]

Hydroxyurea (Hydrea) apparently acts by inhibiting the enzyme ribonucleoside diphosphate reductase, the enzyme that catalyzes the reduction of cytidilic acid to deoxycytidilic acid.[47]

Pipobroman (Vercyte) is believed to be an alkylating agent. Mithramycin (Mithracin) like dactinomycin is a product of a strain of Streptomyces and has a mechanism of action similar to dactinomycin.[48]

The compound o,p'-DDD (Mitotane) is used for the treatment of adrenal cortical carcinoma. It causes focal degenerative lesions in the adrenal cortex when given to dogs and decreases the production of 17-hydroxycorticosteroids, probably by inhibiting one of the enzymes important in corticosteroid production.

The enzyme, L-asparaginase, a recent addition to the chemotherapeutic armamentarium, acts by hydrolyzing the circulating amino acid L-asparagine. It is widely believed that L-asparaginase represents the first chemotherapeutic agent which exploits a qualitative difference between normal and tumor cells, since susceptible tumor cells are dependent on exogenous sources of L-asparagine and thus die when the circulating amino acid is hydrolyzed by L-asparaginase, while normal cells can synthesize their own L-asparagine from L-aspartic acid using the enzyme asparagine synthetase. Recent data, however, suggest that "certain normal cell-types responsible for the synthesis and excretion of proteins appear to be at least partially dependent on exogenous L-asparagine, since decreased levels of plasma albumin and clotting factors have been observed during the initial period of therapy with L-asparaginase."[49]

Several other promising experimental agents are undergoing extensive testing, although they have not as yet been released. Very little is known about the mechanism of action of such compounds as 5-(3,3-dimethyl-1-triazeno)-imidazone-4-carboxamide and BCNU (2-beta-chlorethyl nitrosourea). Clinical aspects of some experimental agents will be discussed later.

Alkylating agents

The alkylating agents are the single most useful group of cancer chemotherapeutic agents even though they do not significantly prolong life in most malignant conditions. However, cyclophosphamide[50] and melphalan[51] lengthen life in multiple myeloma, and controlled clinical trials from the Veterans Administration show that the alkylating agents slightly prolong survival in bronchogenic carcinoma.[52]

The alkylating agents are used principally for the palliation of Hodgkin's disease and other lymphomas, ovarian carcinoma, chronic leukemias, and multiple myeloma. There has been much controversy as to whether or not basic differences exist between the various alkylating agents. Although these drugs are interchangeable in most clinical situations, a few clinical distinctions are significant, such as the production by cyclophosphamide of complete remissions in some children with acute leukemia. In general, when a patient's tumor becomes refractory to one alkylating agent, it will rarely respond to another.

Mechlorethamine. Mechlorethamine (Mustargen) commonly called nitrogen mustard or HN_2 is a member of that group of alkylating agents known as nitrogen mustards. For almost ten years it was the only alkylating agent released commercially. In recent years its greater toxicity has led to diminished use of mechlorethamine, although it is one of the four agents used in the important MOPP regimen for the treatment of Hodgkin's disease. One small but well-controlled study comparing mechlorethamine with cyclophosphamide in patients with Hodgkin's disease and lymphosarcoma suggests that mechlorethamine produces significantly longer remissions in these two lymphomas.[116]

The present trend in the treatment of Hodgkin's disease is to attempt to cure the patient, particularly if he is under the age of fifty. Intensive extended-field radiotherapy[53] or combination chemotherapy[54] are used for this purpose. However, older patients, or those who fail on these regimens, still remain candidates for palliative local radiotherapy or single-agent chemotherapy. Although many prefer vinblastine,[55] mechlorethamine is an excellent drug for treating Hodgkin's disease. One popular regimen is to induce a remission with mechlorethamine, then, when the blood count returns to normal, switch to chlorambucil, another alkylating agent with less toxicity.

For anyone who plans to use mechlorethamine o treat patients with Hodgkin's disease, the 1949 article by Dameshek, Weisfuse, and Stein[57] is mandatory reading. Other good reports are available.[58–60]

Formerly, when mechlorethamine was considered the most effective drug for the treatment of Hodgkin's disease, it was used earlier in the course of the illness than at present. It would be unlikely that one could now duplicate the 80 to 90 per cent remission rates reported in the 1950s. This is true because the better candidates for chemotherapy receive combination regimens such as MOPP, while single-agent therapy is usually reserved for older patients and for those who have failed to respond to extended field radiotherapy or combination chemotherapy. It is well known that patients with more advanced disease who have had previous therapy are less likely to respond to treatment than the early cases.

It should be emphasized that modern therapy for Hodgkin's disease is remarkably effective and often curative. Under no conditions should the favorable patient be given "a shot of mustard" as initial treatment, since this may well prejudice the chances for achieving cure by more effective methods.

There has been a tendency to avoid mechlorethamine in patients with lymphomas other than Hodgkin's disease. Most authors consider cyclophosphamide more effective in patients with reticulum-cell sarcoma and chlorambucil safer for those with chronic lymphocytic leukemia or small-cell lymphosarcoma.[61–63]

Mechlorethamine is still used to treat lung carcinoma. Although subjective relief has been reported in many patients, objective response is obtained almost exclusively in those with the small-cell anaplastic (oat-cell) variety of lung cancer, but duration of remission is very short.[64,65] Green *et al.*,[52] in a large controlled study from the Veterans Administration Hospitals, found that mechlorethamine gave statistically significant but minimal prolongation of life in bronchogenic carcinoma. Mechlorethamine was slightly superior to cyclophosphamide in squamous-cell carcinoma of the lung but slightly inferior to the latter drug in the oat-cell type.

The injection of mechlorethamine directly into the pleural, peritoneal, or pericardial cavity after removal of most or all of the effusion is considered a standard form of treatment for recurrent malignant effusions, but its use is based on uncontrolled studies and clinical impressions.[66–69] Since intrapleural mechlorethamine causes adhesive pleuritis in some patients, most clinicians are reluctant to use the drug intraperitoneally because of the danger of adhesive peritonitis resulting in intestinal obstruction.

Mechlorethamine is available as a sterile dry powder which is packaged 10 mg. in each vial. For intravenous administration, it is dissolved in 10 cc. of sterile water, and the required amount of solution is injected into the tubing of a rapidly flowing intravenous infusion. Great care should be taken to prevent any of the solution from infiltrating into the patient's tissues. An alternate method is the use of a 23-gauge butterfly (scalp vein) needle and a two-syringe setup. To insure proper placement of the needle in the vein, 5 cc. of saline is initially injected from a syringe attached to the plastic tubing of the butterfly needle. If there is no infiltration, the saline syringe is replaced by one containing mechlorethamine. After injection of the drug, the tubing and needle are washed through with 10 cc. of saline and the needle removed from the vein. Either of these two technics is suitable for injecting other irritating chemotherapeutic agents, such as dactinomycin, vinblastine, or vincristine.

The standard mechlorethamine dosage is 0.4 mg. per kilogram, which is traditionally given in a 0.1 mg. per kilogram daily dose for four days, but many physicians prefer to give the entire dose at one time. The dose is lowered in those patients whose marrow might be more sensitive to alkylating agents. Occasionally, higher dosages have been used in patients with lung cancer.

Several technics have been described for the intracavitary injection of mechlorethamine.[66,68,69] Whichever method is used, it is important to make sure that there is free flow of fluid through the needle or trochar by frequently aspirating during the slow injection of mechlorethamine, as localized collections of the solution in loculated effusions or outside the serous cavity can cause tissue necrosis. Since it is also important to insure contact of the drug with all surfaces of the affected cavity, the position of the patient should be changed frequently in the first fifteen minutes after injection.

Systemic toxicity of mechlorethamine includes nausea and vomiting within the first day, and bone-marrow toxicity, which is delayed for more than a week. Since 90 per cent of patients experience nausea and vomiting which begin most often within one to three hours after injection and may persist for as long as twenty-four hours, most physicians use a phenothiazine or barbiturate as premedication for prevention or partial protection.

Bone-marrow depression, which presents a more formidable problem than gastrointestinal toxicity, was discussed in a classic article that appeared in 1946.[70] Although other good discussions of this subject have since appeared, little has been added. The drop in total white blood count may begin as early as four days after the initial mechlorethamine dose, with the maximum fall occurring from fourteen to twenty-five days after start of therapy. Recovery is usually complete by six weeks, although occasional patients may have prolonged granulocyte depression. Mechlorethamine therapy does not affect platelet production as much as it depresses granulocytes.

In general, those patients who have received extensive radiotherapy to marrow-producing areas or chemotherapy within six weeks prior to mechlorethamine treatment are most likely to sustain serious side effects from this drug. Patients with myelophthisis, lymphosarcoma, and chronic lymphocytic leukemia are also sensitive and, therefore, should receive smaller initial doses.

The local toxicity of mechlorethamine cannot be overlooked. Extravasation of the solution into subcutaneous tissues results in a painful inflammation, which may progress to a slough. Thrombosis and thrombophlebitis sometimes occur in the vein in which the drug was injected.

Triethylene thiophosphoramide. TSPA (triethylene thiophosphoramide) (Thio-Tepa) is used mainly for treating ovarian carcinoma and has produced remission rates up to 60 per cent in this disease.[71-73] Some responses have lasted for years, but the median duration is six to twelve months. Objective criteria of remission include disappearance or marked diminution in size of tumor masses and prevention of recurrent pleural or peritoneal effusions.

Chlorambucil, cyclophosphamide, or melphalan may be equally useful for ovarian carcinoma therapy. TSPA is effective against all cell types of ovarian carcinoma. The intracavitary use of TSPA for control of malignant effusions is popular, but there is no controlled clinical study to show that this route is any more effective than intravenous administration for this purpose.[74,75]

TSPA has been found to be as useful as other alkylating agents or 5-fluorouracil in the treatment of breast carcinoma.[76,77] The local instillation of this agent into the urinary bladder appears to be promising as an aid to the urologist in controlling recurrent or multiple superficial bladder cancers.[78,79]

TSPA appears to be an effective agent in the treatment of Hodgkin's disease, lymphosarcoma, or chronic leukemias, although most authors use other alkylating agents for these diseases. (Other sections of this report describe mechlorethamine, chlorambucil, busulfan, and cyclophosphamide.)

In a large cooperative study, it was demonstrated that systemic TSPA given at the time of surgery and for several days thereafter, was effective in delaying recurrence of breast cancer in menstruating women with more than four involved axillary nodes.[80] However, there was no favorable effect in any of the other subgroups in the study.

TSPA is given intravenously for systemic therapy. The powder is dissolved in 1.5 to 5 cc. of sterile saline or sterile water and given directly into the vein, as the solution is not irritating to tissues if infiltration occurs.

Although most authors use an initial loading dose of 50 to 75 mg. of TSPA over a five-day period, I prefer to give 30 mg. once a week for two weeks, and then continue with 15 mg. once weekly if blood counts permit. I believe the dosage recommendations in the current package insert are a little too high, particularly the suggestion that a

30-mg. weekly dose be given whenever that week's white blood count is over 6,000 per cubic millimeter. I agree that an occasional 30-mg. maintenance dose can be given if the white blood count consistently remains above 6,000 per cubic millimeter. I have discussed this topic in greater detail elsewhere.[1]

Although remissions can occur in ovarian carcinoma without marked lowering of the white blood or platelet count, most authors prefer to give sufficient amounts of TSPA to keep the white blood count between 3,000 and 4,000 per cubic millimeter until relapse is apparent, at which time the drug is stopped.

The main toxicity of TSPA is on the bone marrow. Although white blood cells and platelets are more sensitive than red blood cells, moderate red-cell depression is not uncommon after prolonged administration. Effects on the white blood count are first manifested within five to thirty days after the end of a five- to seven-day course. The maximum effect of a single weekly dose may not be manifested for ten to fourteen days, which is why I disagree with the package insert directions.

Chlorambucil. Chlorambucil (Leukeran) is a mustard derivative. It is frequently used in treating lymphomas, and is considered the drug of choice for C.L.L. (chronic lymphocytic leukemia) It has been found so helpful in ovarian carcinoma that it may replace triethylene thiophosphoramide as the drug of choice for this disease.

Chlorambucil has become one of the most useful alkylating agents, because it is relatively safe, has a wide spectrum of action, and is administered orally. Its onset of action is quite delayed as compared with that of mechlorethamine, cyclophosphamide, and triethylene thiophosphoramide. Although this property may be disadvantageous in the sicker patient, it makes chlorambucil safer than the other three compounds. However, the relative safety of chlorambucil should not cause overconfidence. Since it has the potential for complete marrow suppression, carelessness in its administration can lead to death. However, cessation of chlorambucil treatment at the early stages of toxicity will almost always be followed by rapid marrow recovery if the daily dosage prior to toxicity was not excessive.

Chlorambucil has been the standard chemotherapeutic agent for the treatment of C.L.L., but its effects are not as dramatic as those of busulfan in chronic myelogenous leukemia. Chlorambucil rarely produces a complete remission of C.L.L., and indications for its use are not always clear-cut.

An elevated white blood count per se is not an indication for therapy in C.L.L., but patients with peripheral white blood counts above 75,000 per cubic millimeter usually require treatment. Likewise, neither lymphadenopathy nor splenomegaly require therapy unless the enlarged organs produce symptoms by local pressure effects. Local radiotherapy is then usually the treatment of choice. Anemia in C.L.L., when due to hemolysis, is best treated by corticosteroids and will only occasionally respond to alkylating agents. When anemia in C.L.L. is not due to hemolysis, its response to chlorambucil is quite variable; significant hemoglobin rise occurs in less than half the patients.[81–83]

Thrombocytopenia in C.L.L. is also often unresponsive to chlorambucil therapy. Although "clinical improvement" was reported in more than two thirds of the patients, this term is hard to define. Objective change does occur, but it is usually not complete or dramatic.[81–83] Furthermore, the most usual objective changes, including shrinkage of lymphadenopathy and splenomegaly and drop in peripheral lymphocyte count, are not of great clinical importance. Remission lasted for more than six months without maintenance therapy in more than half the cases.[82] However, only 2 of Galton *et al.*'s[82] 43 patients had a response lasting for more than two years, and they were receiving maintenance chlorambucil.

Thus it can be seen that the indications for chlorambucil therapy for a patient with C.L.L. are often far from clear-cut. Frequently chlorambucil is started only because the patient feels sick. Weakness and fatigue, which are difficult symptoms to evaluate, usually improve often dramatically within a few weeks after starting chlorambucil treatment.

Many authors believe that when the basic cell in L.S.A. (lymphosarcoma) is the small lymphocyte, it is essentially the same disease as C.L.L. Therefore it can be assumed that chlorambucil is useful for L.S.A., since it is the alkylating agent of choice in C.L.L.[81–83] The more the basic cell in L.S.A. varies from the small mature lymphocyte, the less the disease corresponds to C.L.L. In L.S.A. of the more immature cell variety, cyclophosphamide or vincristine, often given in combination with corticosteroids, is the preferred form of chemotherapy. Although reticulum-cell sarcoma responds to chlorambucil in about 30 per cent of cases, cyclophosphamide is the preferred alkylating agent for this disease. Chlorambucil, although somewhat slower acting than mechlorethamine or cyclophosphamide, is also a good drug for palliating patients with Hodgkin's disease.[56,81]

Because of the limitations of surgery and radiotherapy in ovarian carcinoma, there is a great need for effective chemotherapeutic agents. Only a small percentage of patients with ovarian cancer are cured by surgery. Radiotherapy is useful mainly if the disease is confined to the pelvis, although there have been some good results with strip radiotherapy to the entire abdomen.[84] Chlorambucil appears to be as effective a chemotherapeutic agent as any for the treatment of ovarian cancer.[85–87] Masterson and Nelson[86] reported on

280 patients with ovarian carcinoma. One hundred forty had objective response, an additional 15 per cent had arrest of the disease, while 40 of the patients remained in remission for over two years.

Chlorambucil is also used to treat Waldenström's macroglobulinemia. Of 9 patients responding to chlorambucil therapy at the Mayo Clinic, only those 6 who received continuous therapy did not relapse, including 1 who was treated for five years.[88] A follow-up report from this clinic appeared in 1967.[89] The results of treatment continued to be excellent.

Chlorambucil is also valuable in breast cancer in which it is as effective as any other alkylating agent.[90] It has also proved to be useful in a few patients with metastatic seminoma of the testis who have not been cured by radiotherapy.[91]

The usual dose of chlorambucil is 0.2 mg. per kilogram per day as a single oral dose given on an empty stomach. Lower initial dosage is used in patients with C.L.L. or L.S.A., because bone-marrow replacement by lymphocytes makes these patients more susceptible to drug-induced bone-marrow depression. Maintenance dosage depends on the peripheral blood count. In patients with ovarian carcinoma it is advisable to give enough chlorambucil to maintain the white blood count between 3,000 and 4,000 per cubic millimeter.

The main toxicity of chlorambucil is bone-marrow depression, which affects granulocytes, platelets, and/or red cells, but irreversible marrow damage is rare if proper precautions are taken. If chlorambucil dosage is lowered as toxicity is approached and stopped when the total white blood count is still above 15,000 per cubic millimeter in C.L.L., and above 4,000 per cubic millimeter in L.S.A., Hodgkin's disease, and ovarian carcinoma, very low neutrophil counts can be avoided. The white blood count usually falls for a few days to a few weeks after the last dose of chlorambucil, which is the reason one stops before toxicity occurs.

Busulfan. Busulfan (Myleran) is considered the best drug for treating C.M.L. (chronic myelogenous leukemia).

At present, busulfan treatment is considered to be more effective than radiotherapy for C.M.L. In 1968, the British Medical Research Council's Working Party for Therapeutic Trials in Leukemia published a controlled clinical trial with minimum patient follow-up of three years, comparing the effectiveness of busulfan with that of radiotherapy in the treatment of C.M.L.[92] The median survival of the busulfan-treated patients was one hundred seventy weeks, with 20 per cent of the patients still alive at two hundred sixty-three weeks. With radiotherapy, one-half were alive at one hundred twenty weeks, and 20 per cent survived one hundred eighty-two weeks.

Most untreated C.M.L. patients are responsive to busulfan.[93–96] Approximately one half of busulfan nonresponders are patients who will soon enter the blastic phase of C.M.L., and most of the others probably have myelocytic cells which do not contain the Philadelphia chromosome.[97] The blastic phase or blastic "crisis" is the usual terminal event in C.M.L. It is a syndrome which resembles acute leukemia, and which rarely responds to therapy. Treatment of C.M.L. does not appear to delay the onset of the blastic phase. About 85 per cent of patients with C.M.L. show the Philadelphia chromosome when cultured bone-marrow cell mitoses are studied. Patients whose cells do not contain the Philadelphia chromosome may sometimes respond to busulfan, but their remissions tend to be briefer and less complete.

Most authors recommend starting treatment of C.M.L. with 4 to 6 mg. of busulfan daily until the white blood count is almost normal and then administering lower dosages until it drops below 10,000 per cubic millimeter. However, there is still no general agreement as to whether or not maintenance treatment is better than repeated courses instituted at the time of each relapse.

If maintenance therapy is decided on, a dosage of 2 mg. per day should be instituted as soon as the white blood count rises to over 10,000 per cubic millimeter and should subsequently be adjusted so as to maintain normal white blood counts.

Those who do not use maintenance therapy, reinstitute busulfan, 4 to 6 mg. per day when the white blood count rises to 25,000 to 50,000 per cubic millimeter, or when symptoms recur at a lower white blood count.

The maintenance therapy dose may vary between 2 mg. twice a week and 4 mg. per day, and must be carefully tailored to each patient's needs. Once the required dosage is determined, blood counts should be done every two to four weeks, and the white blood count kept between 8,000 and 10,000 per cubic millimeter.

Response to busulfan begins within one to two weeks. The patient notices subjective improvement, such as increased appetite, a sense of well-being, and disappearance of night sweats so regularly that there is no reason to believe that it is a placebo effect. Coincident with subjective improvement is a decrease in the number of immature granulocytes in the peripheral blood and a fall in the total white blood count. Most patients achieve normal white blood counts within two to three months, although the period is somewhat dependent on drug dosage and initial leukocyte levels. The hemoglobin starts to increase in the second or third week of therapy.

Toxicity of busulfan is usually minimal. The most important side effect is bone-marrow depression, but several other interesting and bizarre forms of toxicity have occurred. Busulfan therapy must be discontinued in less than 10 per cent of patients because of bone-marrow suppression, but thrombocytopenia as well as agranulocytosis is always a potential danger.

Kyle *et al.*,[98] in reviewing the toxicity of busulfan in great detail, included amenorrhea, skin hyperpigmentation, gastrointestinal reactions, hyperuricemia, testicular atrophy, gynecomastia, and interstitial pulmonary fibrosis. In addition, the authors described a syndrome resembling adrenal insufficiency which occurred after prolonged therapy. Although the syndrome was characterized by skin hyperpigmentation, severe weakness, fatigue, anorexia, and weight loss, laboratory tests excluded adrenal insufficiency. Other cases of this syndrome have been reported.[99]

Oliner *et al.*[100] were the first to publish a report on pulmonary fibrosis in C.M.L. patients who were on busulfan. Lung biopsy specimens showed diffuse interstitial fibrosis and the chest x-ray films revealed diffuse bilateral parenchymal infiltrates. Other authors[101] have since published reports on similar patients. Heard and Cooke,[101] in an autopsy study of 14 cases of C.M.L. treated with busulfan, found 6 patients with "busulfan lung." The pathologic findings were fibrinous edema which converted to fibrous tissue with atypical alveolar cells. It was emphasized that the fibrosis was intra-alveolar and not interstitial. However, only 1 of 7 C.M.L. patients who were not treated with busulfan showed fibrinous edema, and none demonstrated fibrosis.

Several authors reported that patients on long-term busulfan therapy have developed cytologic dysplasia in multiple organs.[102–104] Carcinomas also developed in some of these patients.

Cyclophosphamide. Cyclophosphamide (Cytoxan) is the alkylating agent with the widest spectrum of usefulness. It is the alkylating agent of choice for childhood acute leukemia, reticulum-cell sarcoma, and the malignant tumors of early childhood.

Cyclophosphamide is unique among the alkylating agents in its ability to induce a significant percentage of remissions in childhood leukemia. Given alone, cyclophosphamide produces only a 15 per cent complete remission rate in childhood acute leukemia, but in controlled studies it was shown that cyclophosphamide plus prednisone produced 59 per cent complete remissions in this disease.[105] The remission rate produced by this combination was equal to that produced by a 6-mercaptopurine-prednisone regimen.

Cyclophosphamide is the most frequently used alkylating agent for highly malignant sarcomas of hildren, but controlled studies have not as yet determined it the most effective. Cyclophosphamide has produced favorable results in neuroblastomas,[106–109] but the combination of vinristine plus cyclophosphamide is probably better han the latter drug alone.[110] Cyclophosphamide has also produced a high incidence of remission in hildren with Ewing's sarcoma, but the duration of response has usually been less than six months.[111]

Results in Wilms' tumor have been poor,[112] but Pinkel[113] noted three short responses in 7 children with embryonal rhabdomyosarcoma. Finkelstein, Hittle, and Hammond,[109] using a high-dose regimen, reported three complete remissions in 5 children with embryonal rhabdomyosarcoma, but the best responses were achieved with radiotherapy or surgery made possible by the chemotherapeutic reduction of tumor-mass size.

Cyclophosphamide appears to produce the same percentage of remissions in patients with Hodgkin's disease as mechlorethamine.[114,115] However, a recent study of a small group of patients by the Eastern Cooperative Oncology Group and the Acute Leukemia Cooperative Group B indicated that mechlorethamine might be superior to cyclophosphamide, not because it gave a higher incidence of response, but because it produced a considerably longer survival.[116]

Initially melphalan was considered the drug of choice for multiple myeloma, despite occasional reports of good results with cyclophosphamide. However, since the 1964 report of the Midwest Cooperative Chemotherapy Group, cyclophosphamide has been accorded equal status.[117] Rivers and Patno[118] have published results of a controlled study comparing cyclophosphamide with melphalan. There were 9 partial remissions and 22 questionable responses in 50 myeloma patients treated with 4 mg. per kilogram of cyclophosphamide daily. The median survival was 12.3 months. Fifty-three patients given melphalan 0.1 mg. per kilogram daily had 8 partial and 21 questionable responses, with a median survival of fifteen and one-half months. Rivers and Patno[118] also mentioned an earlier study which compared placebo with cyclophosphamide. The median survival for 29 multiple myeloma patients given cyclophosphamide was forty-nine weeks, while the 25 placebo-treated patients had a fifteen-week median survival.

Recently there have been reports that several chemotherapeutic agents produce long-term remissions in Burkitt's lymphoma, which are considered true cures by many investigators. This form of lymphoma, endemic to parts of Africa, is thought to be caused by a virus.[119,120] Jaw and ovarian tumors predominate, and its characteristic histology is the so-called "star in the sky" pattern. Four of 29 children with Burkitt's lymphoma, who were given cyclophosphamide 40 mg. per kilogram intravenously as a single dose, have been long-term survivors without receiving any other therapy. Ziegler *et al.*[120] used cyclophosphamide to sustain remission in 10 of 11 African children with Stage I or Stage II Burkitt's lymphoma.

Sporadic cases resembling Burkitt's lymphoma have been reported in the United States. Cohen *et al.*,[121] at the National Cancer Institute, have treated 11 such patients with cyclophosphamide, using high-dose intermittent intravenous therapy in the range of 40 to 50 mg. per kilogram every three to four weeks for six or more injections. At the time the report was published, 6 patients were in complete remission fifty-two to one hundred eight weeks from time of diagnosis. Four of the 6 had received no treatment from six months to more than a year.

Wollner and Burchenal[122] used a similar cyclophosphamide regimen in 13 children with lymphosarcoma which did not resemble Burkitt's lymphoma. They reported 6 patients alive and free of disease six to thirty months after onset of illness, and one to twenty-one months after administration of the last cyclophosphamide dose.

Cyclophosphamide is considered an effective agent for chronic lymphocytic leukemia and lymphosarcoma.[123,124] Several authors believe that the results from cyclophosphamide are superior to those of other alkylating agents in treating reticulum-cell sarcoma, but adequately controlled studies are lacking.[125,126] Cyclophosphamide also appears to be useful in Waldenström's macroglobulinemia,[127,128] and ovarian[125,129,130] and breast cancer.[129,131,132]

Green *et al.*,[52] in a large-scale random controlled study, found that squamous-cell bronchogenic carcinoma was more responsive to mechlorethamine than to cyclophosphamide, while small-cell undifferentiated bronchogenic carcinoma was more effectively treated by the latter drug. Both drugs led to a slight but significant prolongation of survival as compared with placebo treatment.

Cyclophosphamide is supplied as 50-mg. oral tablets and as a powder, 100, 200, or 500 mg. to a vial. The powder is dissolved in sterile water and given intravenously. There is no general agreement as to the correct dosage regimen for cyclophosphamide. Basically, the following four different regimens have been used:

1. Approximately 30 mg. per kilogram intravenously, followed by 10 to 15 mg. per kilogram once a week.[123,133]
2. Thirty to 50 mg. per kilogram intravenously, followed by a similar or slightly lower single intravenous dose at three- to eight-week intervals.[129,131,134]
3. Intravenous loading 2 to 6 mg. per kilogram per day for four to ten days up to a total dose of 35 to 60 mg. per kilogram, followed by oral maintenance of 1 to 3 mg. per kilogram.[129,132]
4. Daily oral dose of 2 to 3 mg. per kilogram.[117,123]

Regimen 1 has been used less extensively than the other three, and bone-marrow recovery studies indicate that such high doses probably should not be repeated at weekly intervals. Regimen 2 is supported by experimental studies of Bruce, Meeker, and Valeriote[135] and Bergsagel, Robertson, and Hasselback[134] which indicate that marrow recovery is optimum at approximately seventeen to twenty-one days after a large dose of cyclophosphamide. It is used in bronchogenic carcinoma[134] and childhood lymphosarcoma.[122] Regimen 3, the most popular, is the one included in the package insert but probably has no advantage over other schedules. The fourth regimen is most useful in patients with multiple myeloma, lymphosarcoma, chronic lymphocytic leukemia, and Waldenström's macroglobulinemia, because their marrow is more sensitive to depression by alkylating agents.

As with the other alkylating agents, the major toxicity of cyclophosphamide is on the bone marrow, but alopecia and bladder irritation are unique to this compound.

Pegg[136] concludes that cyclophosphamide has a greater effect on the peripheral white blood cells than on the platelet count in an excellent discussion of the marrow toxicity of this drug. This dissociation has been noted by most authors,[123] but Jacobs *et al.*[115] disagree.

Bladder toxicity has been a problem, especially in children. The first sign of bladder damage is urinary frequency, followed by dysuria, and finally hematuria. It has been shown that the bladder toxicity of cyclophosphamide is due to contact of its irritating metabolites with the bladder mucosa,[137] and this condition may be minimized by high-fluid intake or lower dosage.[107,138] However, there are reports of considerable bladder scarring at autopsy in children who received long-term cyclophosphamide, and the drug may have to be stopped in some cases. Daily oral cyclophosphamide is less likely to lead to bladder damage than the high-dose intermittent regimens.

Alopecia, an annoying but harmless condition, occurs most frequently with high-dose intravenous regimens, and usually clears after two to three months of oral maintenance therapy. It can be slight but is often severe and may even be complete.

Nausea and vomiting frequently occur with intravenous daily doses above 4 mg. per kilogram. These symptoms appear at least six hours after administration of the drug and last for approximately four hours. Nausea and vomiting associated with cyclophosphamide are less severe than with mechlorethamine.

Melphalan. Melphalan (L-phenylalanine mustard, L-sarcolysin, CB 3025), a phenylalanine derivative of nitrogen mustard, was released as Alkeran for use in multiple myeloma.

According to the published reports, melphalan is effective in 33 to 70 per cent of patients with myeloma.[139–143] Its most dramatic effects include relief of bone pain and decrease in the amount of abnormal serum globulin, but improvement in performance status, rise in hemoglobin and normal serum gamma globulin levels, and recalcification of bone lesions has occurred in some patients.

Although there have been isolated reports of objective response to urethane and other agents, no drug except cyclophosphamide has been as consistently effective as melphalan in the treatment of multiple myeloma. Remissions last from six to thirty-six months or longer when maintenance therapy is given.

There are two schools of thought concerning melphalan administration in multiple myeloma. One group favors continuous maintenance therapy, while the other favors high-dose intermittent drug administration. Controlled studies have been carried out, but as yet too few patients have been studied to settle the issue.[144]

Even though bone pain may be relieved within two weeks, rapid objective response to melphalan is the exception rather than the rule. Therefore, it cannot be emphasized too strongly that prolonged therapy is necessary. Most authors believe that temporary leukopenia must be produced by melphalan for it to be effective in multiple myeloma.

The toxicity of melphalan is almost purely on the bone marrow, and may affect white blood cells, platelets, or red cells. Large oral doses over 20 mg. may cause nausea.

Methotrexate. Methotrexate, a folic acid antagonist, is supplied both in an oral and parenteral dosage form, for the treatment of childhood acute leukemia and uterine choriocarcinoma.

The major use of methotrexate is in childhood acute leukemia, where it produces remission rates varying from 40 to 68 per cent when given alone.[27] About half of the responses are complete with full return to normal bone marrow, peripheral blood, and clinical state. Methotrexate is now rarely given to induce remissions in childhood acute leukemia, but it is used to maintain response in many regimens.

At present, the treatment of acute leukemia in children is in a state of flux, with some of the best results reported with some form of sequential therapy involving planned alternation of active agents on a definite schedule.[145] Equally good results have been reported by Djerassi *et al.*,[146] utilizing intensive intermittent methotrexate therapy for maintaining remissions after these have been induced by other drugs.

Methotrexate works better in the acute stem-cell and acute lymphoblastic varieties of childhood leukemia than in the acute granulocytic form. When given alone the drug produces a remission within three to six weeks. The median duration of complete remission using the older daily oral dose regimen was about four months. Remissions of considerably longer duration are seen with higher doses given twice a week.[147]

Adult acute leukemia responds to methotrexate far less favorably than does the childhood variety. The dividing line between childhood and adult leukemia seems to fall somewhere between the ages of fifteen and twenty. Huguley *et al.*[148] have attempted to improve the poor results in adults using divided oral doses. They reported 4 complete remissions in 9 adults with acute granulocytic leukemia.

The outstanding triumph of cancer chemotherapy is the sustained complete remission of metastatic uterine choriocarcinoma which is produced by methotrexate. The classic publication in the field is by Hertz, Lewis, and Lipsett[149] whose follow-up report appeared in 1966.[150] Other good reports are by Lamb, Morton, and Byron[151] and Brewer *et al.*[152]

Hertz, Ross, and Lipsett[153] feel that the distinctions between hydatidiform mole, chorioadenoma destruens, and choriocarcinoma are artificial. They prefer the term "trophoblastic disease" and state that "all of these lesions arise initially from an abnormal villus. They may therefore be considered to have a common pathogenetic pathway. In fact, nearly half the cases of choriocarcinoma are preceded by a hydatidiform mole. The vagaries of histologic diagnosis in this group of tumors are well known. Although the histologic findings provide a general statistical basis for anticipating the clinical outcome in a large series of cases, the ultimate clinical course in any individual case is not predictable. Moreover, these tumors manifest an inherent variability in biological behavior which may be determined by the graft-like quality of the fetal tumor tissue as it resides in the maternal host."

The latest study from the National Institutes of Health group reports on a total of 138 patients with metastasizing choriocarcinoma.[150] Ninety-one patients, or 66 per cent, were freed of disease. Complete remission occurred in 95 per cent of those who were treated early and who had human chorionic gonadotrophin titers below 1 million units according to the measurements of this group, corresponding to 100,000 international units. Only one patient who had remained in complete remission for over one year subsequently relapsed.

In 1967 the National Institutes group reported on 58 patients with nonmetastatic gestational trophoblastic neoplasms, including choriocarcinoma, chorioadenoma destruens, and hydatidiform mole.[154] Fifty-four obtained complete remissions on methotrexate, while 3 of the remaining 4 patients responded after either hysterectomy or dactinomycin therapy.

Intrathecal methotrexate is one treatment of choice for intracranial manifestations of acute leukemia.[155,156] The central nervous system complications of acute leukemia become more prevalent with lengthened life span, since methotrexate and 6-mercaptopurine, the most effective drugs for acute leukemia, do not cross the blood-brain barrier in significant concentration. Therefore, patients in complete remission can develop isolated central nervous system manifestations despite maintenance of a normal bone marrow. Skull-spine irradiation is an alternate method of treatment for central nervous system leukemia.

There are several other less widely accepted uses of methotrexate, including the palliation of squamous-cell carcinoma of the head and neck.[157] Although occasional excellent responses are seen, their duration averages two to three months.

Methotrexate has also been used with minimal success in breast cancer,[158] mycosis fungoides,[159] sarcomas,[160] gastrointestinal neoplasms, and lung cancer.[161]

Methotrexate is produced in both an oral form as 2.5-mg. tablets, and in a parenteral form, available in 5-mg. and 50-mg. vials.

Dosage regimens for methotrexate are far from standardized. It is imperative to remember that therapeutic effect and toxicity of the drug depend much more on the duration of effective concentration in the blood than on the blood level. For this reason, it is advisable to read several of the original articles before using methotrexate in any given disease condition, and not deviate from the dose regimen used by the authors, without full knowledge of the pharmacology. Frequent blood counts including platelet counts must be done, and careful questioning of the patient in regard to gastrointestinal toxicity and sore mouth is imperative. The presence of blood urea nitrogen elevation is an almost absolute contraindication to the use of methotrexate, while liver dysfunction represents a relative contraindication.

Perhaps the best standardized treatment schedule for methotrexate is the one used in the treatment of choriocarcinoma. Usually a single dose of 25 mg. per day is given either orally or intramuscularly for five days, but smaller doses are used if the marrow is depressed. The course is repeated when toxicity has cleared, which usually occurs one to two weeks after completion of the last course. The courses are repeated until all evidence of disease is gone, and urinary human chorionic gonadotropin titers have returned to normal. Frequent determinations of this parameter using a very sensitive method are needed.

At present, the most widely accepted regimen for maintenance of remission in childhood acute leukemia is methotrexate 30 mg. per square meter of body surface area as a single oral or intramuscular dose twice a week. A controlled study[147] has shown this dose schedule to be far more effective than 3 mg. per square meter per day.

Most authors use fairly intensive methotrexate regimens which sustain drug levels for one to several days for treating the more resistant tumors including breast carcinoma, head and neck tumors, and sarcomas such as leiomyosarcoma. One popular regimen, 2.5 mg. four times a day, can only be given for three to five days without producing severe toxicity, while another consists of daily infusions of methotrexate over eight- to twenty-four-hour periods. Such experimental regimens are extremely dangerous unless the dosage schedules are carefully tailored to the clinical status of the patient.

Intermittent high-dose methotrexate therapy has been useful in head and neck epidermoid carcinoma and has produced only moderate toxicity. It is best to start with a schedule of 25 to 50 mg. once a week given by intravenous or intramuscular injection, which should be continued if response occurs. If no response is obtained, and the patient does not develop side effects, the weekly dose can be raised to 60 to 75 mg. or the interval between injections decreased to four or five days. Methotrexate is usually used for patients with head and neck tumors who are symptomatic and have a short life expectancy, so that the risk of toxicity is justifiable. Unfortunately, the usual duration of remission is less than three months, although occasionally a patient will benefit for a longer period.

Toxicity of methotrexate has been thoroughly discussed in a number of articles.[27,151,152,162] It is due to inhibition of DNA synthesis in rapidly proliferating cells, and for this reason is manifested in the hematopoietic tissues, oral and intestinal mucosa, and skin and hair follicles.

The major limiting toxicity of methotrexate may be either on the bone marrow or gastrointestinal tract, where the first indication is ulceration of the buccal mucosa. When the "shallow, painful, white or yellow, red-edged lesions on the lips, tongue or buccal mucosa"[27] appear, therapy must be stopped, and should not be resumed for at least seven days. More severe gastrointestinal toxicity is manifested by diarrhea, which is morphologically accompanied by extensive areas of atrophic degeneration and denudation of the villous epithelium of the small intestine. Multiple hemorrhagic areas and mucosal ulcers develop throughout the mouth or small and large intestine, which may be clinically manifested by oral or rectal bleeding. If therapy is not stopped at this point, death will result.

Acute bone-marrow depression is reversible on withdrawal of the drug if the patient does not die during the period of marrow aplasia.

Hepatic fibrosis is another significant side effect. At first there was some question as to whether the hepatic damage was due to the leukemia itself, but Lipsett noted hepatic fibrosis in methotrexate-treated patients with uterine choriocarcinoma.[162] The development of cirrhosis may be insidious in patients on long-term methotrexate therapy. Periodic liver function tests may remain normal in patients who develop cirrhosis.

There is always the danger of uric acid nephropathy when methotrexate is used in the treatment of acute leukemia. Additional manifestations of toxicity have included: alopecia, which is common but usually mild and transient even on maintenance therapy; brownish skin pigmentation; skin rash, most often in the form of perifolliculitis; pleuritic type of chest pain, which has been associated occasionally with a transient pleural friction rub; and rare localized peritonitis, which may be confused with appendicitis. Other forms are rare middle ear hemorrhages leading to deafness,[27] and renal toxicity.[163] There has been 1 case of toxic epidermal necrolysis,[164] and a report[165] on "severe but self-limited respiratory illness characterized by fever, cough, dyspnea, cyanosis, and bilateral pulmonary infiltrate developing in 7 consecutive patients with acute lymphoblastic leukemia who received intermittent therapy with methotrexate, while in clinical and hematologic remission of leukemia."

Methotrexate almost always causes either abortion or a malformed fetus when given to a woman in the first trimester of pregnancy.

If an excessive dose of methotrexate is given inadvertently, citrovorum factor (folinic acid) should be administered within four hours to reduce or prevent toxicity. Even if it is given as long as twenty-four hours after methotrexate administration, the toxicity will be modified to some extent. The recommended intramuscular dose is 3 to 6 mg. Repeat doses at four- to six-hour intervals should be given for several days.

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Part II will appear in the November 1, 1972 issue.

Case Reports

Hemangiopericytoma of Central Nervous System

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Hemangiopericytoma is a rare tumor that was first described by Stout and Murray in 1942.[1] They considered the cell of origin to be the pericyte of Zimmermann, a cell lying outside the reticulin sheath of capillaries and postulated to be related to the smooth muscle cell of small arterioles.

Since the initial description, the tumor has been found in many different soft tissues; only rarely does it involve the central nervous system. Besides the basic question of histopathologic identification, the natural course and response to therapy of this tumor within the central nervous system has yet to be firmly established. This report is based on clinical experience with 6 cases of hemangiopericytoma involving the central nervous system.

Case material

The significant clinical data derived from 6 cases treated at the Neurlogical Institute of New York are summarized in Table I. The patients' ages ranged from thirty to seventy-four years. There were 2 males and 4 females. Clinical symptoms and signs were produced by local pressure and were related to the location of the lesion. Duration of symptoms prior to initial evaluation was estimated to be from three months to thirty-one years. Data summarizing the diagnostic studies are presented in Table II. The laboratory data and special studies had no diagnostic specificity, although the studies did localize the lesion accurately. The cerebrospinal fluid protein levels ranged from 36 mg. to 162 mg. per 100 ml., and the opening pressures ranged from 110 mm. to 270 mm. The brain scan was negative in 1 out of

TABLE I. Pre-operative clinical data

Patient	Age (years)	Sex	Duration of Symptoms	Primary Symptoms	Primary Signs
1	58	F	31 years	1958: Focal seizures, dementia; 1964: lethargy, right-sided weakness	1958: Left hemiparesis; 1964: right hemiparesis, aphasia, bilateral Babinski's sign
2	39	F	7 months	1964: Right frontal headaches, nausea, diplopia; 1968: therapeutic abortion, liver biopsy	1964: Chronic papilledema, positive Romberg's sign, left upper monoparesis with hyperreflexia; 1968: neurologically normal
3	74	F	1 year	1963: Sarcoma excised from scalp (outside hospital); 1965: listless, recurrent scalp tumor	1965: Bruit at operative site, left-sided hyperreflexia
4	54	M	6 months	1966: Headaches, lethargy, weight loss; 1967: recurrent symptoms; 1968: headaches, stumbling	1966: Dementia, papilledema, left Babinski's sign; 1967: confusion, left spastic hemiparesis; 1968: left spastic paresis, left astereognosis, left ataxia
5	30	M	2 years	1968: Left buttock and leg pain	1968: Left pelvic tilt, straight leg raising 50 degrees on left, plantar flexion weak on left, absent left ankle jerk, decrease pin sensation over lateral aspect of left calf
6	67	F	3 months	1968: Weakness, lethargy, memory changes, weight loss	1968: Left homonymous hemianopsia, left spastic hemiparesis

TABLE II. Laboratory and diagnostic study data

Patient	Year	Cerebrospinal Fluid Protein (Mg. 100 ml.)	Cerebrospinal Fluid Pressure (mm.)	Hg Brain Scan	Echoencephalogram	Electroencephalogram	X-ray Plain Films	Arteriogram	Pneumoencephalogram
1	1964	162	180	. . .	. . .	. . .	Hyperostosis frontalis	Left frontal mass with tumor stain	. . .
2	1964	36	270	Negative	Midline	Normal	Right occipital bony destruction	Right retrosylvian mass without tumor stain	Right occipital horn deformed with mass effect
2	1968	. . .	. . .	Negative	. . .	. . .	No change	. . .	. . .
3	1965	44	160	Right frontal uptake	Midline	Right frontal slowing	Evidence of prior operation	Right parasagittal tumor stain	. . .
4	1966	. . .	. . .	Right frontal uptake	Midline	Right frontal slowing	Negative	Right frontal tumor stain	. . .
4	1967	. . .	. . .	Same	7 mm. R → L	Same	Operative change	Same	. . .
4	1968	110	190	Same	5 mm. R → L	Left-sided slowing	Same	Right falx-tentorial tumor stain	. . .
5	1968	78	. . .	. . .	. . .	. . .	Negative	. . .	. . .
6	1968	63	110	Right occipital uptake	. . .	Right parieto-occipital slowing	Hyperostosis frontalis	Right falx-tentorial tumor stain	. . .

4 intracranial cases. In this case, no tumor stain was identified on an arteriogram in contradistinction to the other cases studied angiographically.

The operative findings and clinical course are summarized in Table III. At operation the typical finding was an extremely vascular lesion which bled profusely. Of the 6 patients, 2 failed to regain consciousness and died in the immediate postoperative period. One patient (Case 2) who received 3,600 r to the cranial site following gross total removal was found to have a large hemangiopericytoma (biopsy proved) of the liver without clinical evidence of intracranial recurrence three years after suboccipital craniectomy. Whether this case represents metastasis or a multifocal tumor origin cannot be determined.

One year after a subtotal removal of tumor from the right frontal region, another patient (Case 4) developed signs and symptoms of recurrence necessitating a second operation. Recurrent symptoms were found by arteriography to be due to an independent lesion on the right side at the falx and tentorial junction, again raising the question of multicentricity. There was some clinical improvement following a 5,000-r tumor dose to this lesion which was not operatively approached.

Two patients were symptom free one and four years after gross total removal of tumor. Neither received radiotherapy.

Pathologic report

The surgical specimens were examined by members of the Department of Neuropathology at the Neurological Institute. In each case the typical histologic features of the hemangiopericytoma were described. Figure 1 shows the highly cellular nature of the tumor. The closely packed cells have scanty cytoplasm. The nuclei are moderately large, oval or fusiform, and harbor abundant chromatin and often a small nucleolus. Occasional mitoses are seen, and there is a rich network of thin-walled blood vessels. Figure 2 (Laidlow's stain) reveals the network of reticulin in the tumor, often outlining collapsed blood vessels.

Ramsey[2] examined the hemangiopericytoma using the electron microscope. She described normal endothelial cells, large uniform tumor cells with occasional cytoplasmic clusters measuring 250 angstroms, and a perivascular extracellular material sending trabeculae into the tumor mass segregating cells into tightly packed groups. There was no cell-border interdigitation as seen in the meningioma.

Besides the distinct morphologic characteristics, further evidence for the specific nature of this pericyte tumor is derived from tissue explant studies. On culturing cells from the glomus tumor, the cells of which are identical to the hemangiopericytoma, Murray and Stout[3] showed the development of epithelioid cells enveloping endothelial

TABLE III. Hospital course and follow-up data

Case	Year	Operation	Blood Loss (cc.)	Pathologic Diagnosis	Radiotherapy	Course
1	1958	Right frontal craniotomy with mass excision	. . .	Meningioma	. . .	1958: Back pain with biopsy of first lumbar lesion revealing hemangiopericytoma
1	1964	Left frontal craniotomy with mass excision	2,000	Hemangiopericytoma	None	1964: Postoperative coma; expired in three weeks
2	1964	Biopsy of bony defect with gross removal of extradural tumor	0	Sarcoma	3,600 r	1964: Postoperative pulmonary embolism
2	1968	Liver biopsy at time of therapeutic abortion	. . .	Hemangiopericytoma (identical to 1964 biopsy)	. . .	1968: Methotrexate. Liver lesion acting as arteriovenous shunt causing cardiac failure and death in 1969. No evidence of intracranial recurrence
3	1965	Right frontal craniotomy with gross intra- and extradural tumor excision, cranioplasty	500	Hemangiopericytoma	None	1968: Negative brain scan. Doing well neurologically.
4	1966	Right frontal craniotomy with subtotal tumor removal	5,000	Hemangiopericytoma	None	1966: Improved mental status
4	1967	Reoperation with gross total tumor removal	1,500	Same	None	1967: Recurrence
4	1968	None	0	None	5,000 r	1968: Postradiotherapy decrease in symptoms
5	1968	Laminectomy with partial mass excision (preoperative third lumbar myelogram block)	4,000	Hemangiopericytoma	None	1968: Good return of function
6	1968	Right parieto-occipital craniotomy with subtotal tumor removal	11,000	Hemangiopericytoma	None	1968: Postoperative coma; expired in eleven days

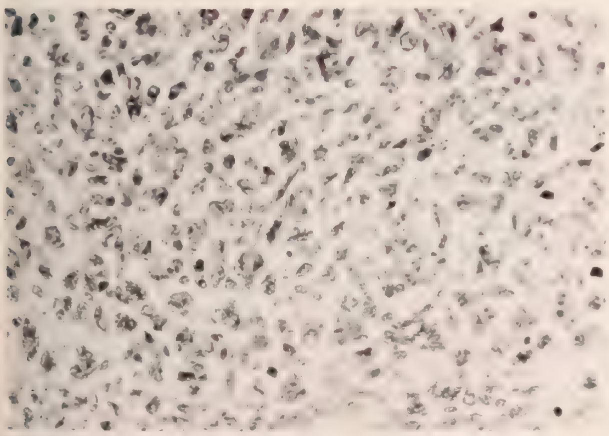

FIGURE 1. Case 6. Intracranial hemangiopericytoma. Hypercellularity of this tumor seen. Cells have scanty cytoplasm and abundant chromatin in the nucleus. Also present is rich network of thin-walled blood vessels (hematoxylin and eosin stain × 220).

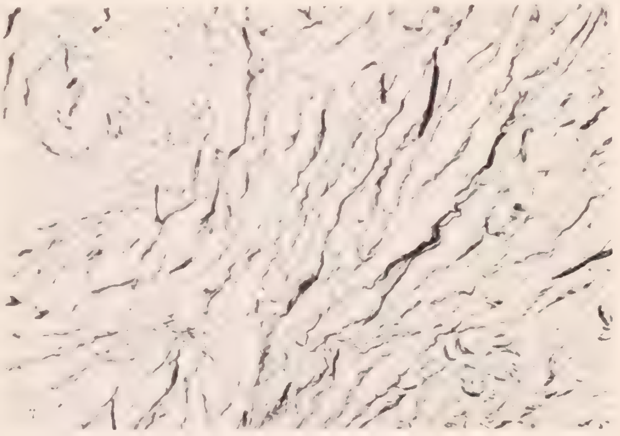

FIGURE 2. Case 6. Laidlow's stain outlines network of reticulin about collapsed blood vessels (× 220).

budding cells much as the pericyte does. Fisher, Kaufman, and Mason[4] cultured cells directly from the hemangiopericytoma and confirmed the previous findings.

Comment

Begg and Garret,[5] in reporting a case of hemangiopericytoma of the parietal meninges, noted the histopathologic similarity between their case and 6 cases of angioblastic meningioma type IV, variant I, reported by Cushing and Eisenhardt.[6]

Kruse[7] reviewed 900 tumors of the meninges and found 8 cases of hemangiopericytoma. The predominant presenting symptoms were headache, Jacksonian seizures, paresthesias, and paresis. Air studies, arteriography, brain scan, electroencephalogram, and cerebrospinal fluid studies, although demonstrating the presence of a lesion, were diagnostically nonspecific. All were operated on; 5 received radiotherapy. Follow-up study revealed tumor recurrence in 6 cases. Death occurred in 5 of these patients. One of the irradiated group was alive at the time of his report.

In their book on sarcomas of the brain, Kernohan and Uihlein[8] presented 25 cases of hemangiopericytoma. Ages ranged from six to sixty-five years. All areas of the brain were involved except the basal ganglia. Several of the tumors were found to have no meningeal attachment. At operation bleeding was typically profuse, posing a serious problem. Recurrence was frequent and distant metastases occurred in 3 of their cases.

In a review of 24 cases of soft-tissue hemangiopericytoma from the Memorial Hospital of New York, O'Brien and Brasfield[9] reported a metastatic incidence of 56.5 per cent and a mortality rate of 47.8 per cent over a one- to twenty-seven-year period. They pointed out that no response to radiotherapy or chemotherapy could be demonstrated. Mujahed, Vasilas, and Evans,[10] however, were not convinced of the lack of therapeutic response to irradiation. They reported 4 cases and reviewed 61 soft-tissue hemangiopericytomas in the literature. Of the cases reviewed, 10 had radiotherapy with or without surgery, and 9 of these showed some improvement manifested by shrinkage of tumor. They concluded that "since the behavior of any particular hemangiopericytoma is unpredictable . . . it would seem desirable to irradiate the operative site of all resected lesions."

Our experience is similar to that of other authors; although the presence of the lesion is clearly demonstrated, specific diagnosis cannot be made on the basis of clinical studies. Two patients are well two and four years after total excision without radiotherapy. One of our patients seems to have benefited by radiotherapy. Another patient had a distant lesion in the liver, but no recurrence of tumor at the primary site after total excision and radiation to the cranial site.

Summary

The distinct nature of hemangiopericytoma is supported by its histologic and tissue culture characteristics. The tumor is vascular, markedly cellular, and the cells lie outside the reticulin membrane of capillaries which have a normal endothelial lining. Furthermore, the occurrence of this tumor as a primary lesion in organ systems beyond the central nervous system supports the concept that it is a tumor type distinct from meningioma. The most effective treatment is wide surgical resection. A definitive statement on the effect of radiation and chemotherapy cannot be made on the basis of available data, but in some cases radiotherapy appears to have been justified.

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Meningioma Coexisting with Severe Hypertension

Problems of diagnosis

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The differential diagnosis of hypertension traditionally includes brain tumor, since the latter may produce high blood pressure, and the symptoms of each can be strikingly parallel.[1] In both diseases, headache is of insidious onset and progression. There may be a tendency toward irritative phenomena such as seizures and other signs of increased intracranial pressure, also seen with subdural hematomas.[2]

The following case report describes a delayed diagnosis of meningioma in a patient with longstanding, severe "essential" hypertension. The patient's hypertension persisted following removal of this tumor.

Case report

The patient, a fifty-year-old woman, had a long history of diastolic hypertension beginning at the age of twenty (1940) when a systolic pressure of 180 mm. Hg was found. The father and one sibling had diabetes mellitus, and the mother and three other siblings were hypertensive. She was hospitalized elsewhere in 1952 when a left renal cyst was removed without change in her blood pressure. In 1958, at the age of thirty-nine, the patient had her first child with some increase in hypertension in the last trimester. In 1965 she was admitted to this hospital for the first time with a blood pressure of 238/138 mm. Hg. Skull films, lumbar puncture, and electroencephalogram were normal. An intravenous pyelogram showed the left kidney 3 cm. shorter than the right, but bilateral renal arteriography indicated no vascular disturbance. Urinary protein was 990 mg. per twenty-four hours, and urea clearance was 63 per cent of normal. Twenty-four-hour urinary catecholamines were normal. In early 1966, after extensive attempts to control her blood pressure medically, the patient had bilateral lumbar sympathectomy with transient relief of hypertension. After two months, when hypertension returned, treatment with chlorthalidone, methyldopa, hydralazine, and guanethidine did not effect significant blood pressure reduction.

At her fifth admission on August 6, 1968, her chief complaint was a sensation of "pins and needles" on the left side most marked over the left upper extremity and the left side of the face, with "clumsiness" of the left leg, and a tendency to fall to the left. The following morning the "heaviness" in the left leg resolved, and parethesias persisted only in the left palm. The only other complaint was steady dull headaches over the left parietal area for two weeks since starting hydralazine in a dosage of 100 mg. per day.

Physical findings indicated a blood pressure in the right arm of 234/136 mm. Hg, pulse 72 and regular, and Grade II arteriosclerotic retinopathy, with normal disks. The maximum cardiac impulse was at the left mid-clavicular line; no murmurs were present. The remainder of the physical examination was normal except for decreased two-point discrimination in the left hand. The plantar reflex was dorsal on the left, and the left ankle jerk, knee jerk, and biceps were 2 plus as compared with 3 plus on the right.

At lumbar puncture, the opening pressure was 172 mm. Hg, the fluid was clear with no bacteria or cells; glucose 57 mg., and protein 40 mg. per 100 ml., and spinal fluid cultures grew out no bacteria. Results of the following studies were within normal limits: hemogram, prothrombin time, urinalysis, stool for occult blood, serology, electrolytes, serum glutamic oxaloacetic and pyruvic transaminases, lactic dehydrogenase, and glucose tolerance. The electrocardiogram was compatible with possible right atrial enlargement with nonspecific S-T segment and T-wave abnormalities, while roentgenogram of the chest was unremarkable. Electroencephalogram and angiograms were not done. At ophthalmalogic consultation the left disk margin was thought to be slightly "blurred" for the first time. Visual fields were normal.

It was believed that the patient had essential hypertension which was poorly controlled and a possible cerebral vascular insult on the right side.

Trimethaphan (Arfonad) drip reduced the blood pressure to 100 to 110 diastolic range. Medication then was altered to hydrochlorothiazide 100 mg. daily, hydralazine 200 mg. per day, and methyldopa 1,000 mg. per day with potassium supplements; subsequent blood pressures ranged from 95 to 100 mm. Hg diastolic supine and 86 mm. Hg on standing. The decreased two-point discrimination on the left side persisted, and the patient was discharged and followed in hypertension and neurology clinics.

Four months after discharge, she came to the emergency room because of a brief episode of "shaking" of the entire body. The blood pressure was 190/120 mm. Hg, but examination was otherwise not revealing. A week later on routine follow-up visit, she described a short attack of shaking of the left arm followed by unresponsiveness

(?coma) for "five to ten minutes" and incontinence. The blood pressure was 170/110 mm. Hg supine, optic disks were blurred, more marked in the left eye, with nystagmus noted on left lateral gaze. Plantar reflexes were normal, but the right biceps and triceps were slightly less responsive than the left. It was believed that the patient had focal symptoms caused either by hypertension or a brain tumor. Further outpatient studies were done. The electroencephalogram and skull x-ray films were normal, but a brain scan revealed a 3-cm. area of well-defined, increased radioactivity present in the right posterior frontal parasagittal region. The site of this abnormality and the well-defined nature of the high radioactivity was believed to be consistent with either meningioma or a cortical glioma.

The patient was therefore admitted to the hospital. Carotid angiogram strongly suggested a meningioma in the right parietal area. A right parasagittal meningioma was removed from this region at surgery.

Postoperatively the patient did well. At that time she was receiving cyclic conjugated estrogens (Premarin) 1.25 mg., hydralazine 100 mg. twice a day, hydrochlorothiazide 50 mg. daily, and diphenylhydantoin (Dilantin) 100 mg. five times a day. The fundi showed Grade II hypertensive retinopathy. Current blood pressures remained in the vicinity of 150/100 supine and 145/90 to 95 mm. Hg standing. She averaged less than one mild Jacksonian seizure monthly; these involved her left upper extremity and lasted a few seconds.

Comment

This case was complicated by multiple diagnoses including a past medical history of a peptic ulcer, episodes of depression, perhaps related to reserpine therapy, and progressive hypertension which proved difficult to control with procedures including bilateral lumbar sympathectomy and medical therapy. Paresthesias on the left side at the time of the fifth admission strongly suggested episodes of transient cerebral ischemia, reported to occur in from 20 to 30 per cent of patients with prolonged diastolic hypertension.[3] It is of interest that following the patient's fifth hospital admission, during which time a cerebral insult on the right side was suspected, headache was relieved and paresis abated following the lowering of the diastolic pressure to 100 to 110 mm. Hg with trimethaphan drip. Furthermore, the spinal fluid gave no clue as to the presence of tumor. Several electroencephalograms were not helpful. Only the brain scan and subsequent right carotid angiography suggested the correct diagnosis of meningioma.

It is unlikely that this meningioma was present for seventeen years and was related to her hypertension before it manifested itself clinically. Its removal did not affect the patient's hypertension which, in view of the strong family history, was thought to be on a "familial" basis. The differential diagnosis between cerebrovascular insufficiency, incipient stroke, and brain tumor may be very difficult when symptoms first appear. A hypertensive patient has been reported with hypalgesia of the left leg with mild left central facial paralysis, and in whom electroencephalogram, carotid arteriogram, and pneumoencephalogram all suggested a diagnosis of cerebral neoplasia.[4] In our patient the normal electroencephalogram results and the unremarkable findings on spinal fluid examination proved misleading. It would have been helpful to include the brain scan and cerebral arteriography in her initial evaluation.

Summary

Brain tumor may coexist with nonrelated severe hypertension, in spite of normal skull roentgenograms, electroencephalograms, and spinal fluid study. The usefulness of brain scan and arteriography is emphasized.

Addendum

Since submission of this report the patient has expired. An autopsy was performed on February 13, 1972. Of pertinence is the fact that three years after removal of the meningioma a recurrence of the parasagittal angioblastic meningioma, hemangioblastic in type, was found. The meningioma was 3 cm. in size. It was believed to be asymptomatic. The immediate cause of death was upper respiratory obstruction due to a mucus plug seven days after plication of a perforated duodenal ulcer.

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Special Article

Improvement of Medical Literature

From the point of view of the author

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To a detached observer, the advances made by man in the last three decades have been astonishing. The splitting of the atom and the harnessing of its forces to create or destroy, the conquest of the air, of under the sea, and now of space itself are achievements never witnessed before. Indeed the speed of these successes has been breathtaking. Possibly the fall of Central and South America to the Spanish is the only other comparable event in history to occur as rapidly. The increased knowledge of physics and chemistry with their application to the development of new machines of great power, versatility, and precision which have made these advances possible is known to all.

We are living in an age of rapid scientific development and of great social upheaval. No profession with its roots in science and its goal to serve society can remain unaffected by these changes taking place about it. Medicine today is such a profession. There has been no period in its long history when the demands on and expectations for medicine have been so great. In our zest for scientific advancement and technical skill however, we seem to have forgotten the satisfaction of scholarship. One regrettable effect of this increasing knowledge of science has been the almost total disappearance of scholarship among medical men. How true is the statement made by Sir James Barrie that "the scientific man is the only person who has anything new to say and who does not know how to say it."

Human diseases today leave no time for the humanities, and the only culture we know may be the bacteriologist's broth. The precise and accurate transfer of information on which modern scientific instrumentation depends is being increasingly neglected in the case of the human mind. Language appears today to be a lost tool of learning in the transfer of information and ideas in medical literature. What is therefore needed in medical authorship? I think Somerset Maugham gives us the answer in his commentary on his own life as a writer when he said "On taking thought it seemed to me that I must aim at lucidity, simplicity, and euphony. I have put these three in the order of importance I assigned to them." I would agree entirely with this, for the first requirement of a medical author is that his manuscript should be understood. The second is that the information or ideas given by the author, to be received by the reader, should not be distorted in the process of writing. In this way information and ideas should be easily and accurately transmitted.

Need to communicate

Let us think back to just over a century ago when other achievements changed the practice of medicine, namely the discipline of surgery, in an unbelievable way. I refer to the fundamental discovery of the role of microorganisms in producing sepsis. Anyone who reads Godlee's life of Lister can still get a chill of horror from what happened to patients in hospitals at that time. Lister's work in 1867 completely changed this picture. Having once grasped from his study of Pasteur's writings in 1861 and 1863 that microorganisms caused putrefaction and that such putrefaction was the basis of sepsis, Lister proceeded to elaborate methods for using chemicals to keep bacteria out of wounds, whether made by the surgeon or occurring accidentally. This fundamental innovation, initiated by Lister, the experimentalist, in due course brought the whole body to the attention of surgeons, after a period of development of what is called in modern jargon "increasing sophistication."

What lessons can the modern medical author learn from an example such as this? First of all Louis Pasteur made a discovery, and second, he thought it of sufficient importance to publish his findings. The account was written in such a manner, be it though in French, that it easily transmitted his facts and ideas to the mind of the reader. Furthermore his report was submitted to and published in a journal easily available and, at that time, widely read.

Young physicians often come to me to ask for ideas about what to write. I am always amazed

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at this. Demands of modern society have created new and diverse roles for the doctor of medicine.

Man is demanding more and more from his environment; with this, new diseases or new patterns of old diseases have evolved. There is much to record and publish whether it be a description of clinical experience, report of research, or drug trial; case reports or original contributions to etiology, pathology, epidemiology; or refinements in diagnosis or treatment.

Method of communication

When the author writes, he should write well. Short words of Anglo-Saxon origin have a force and clarity lacking in polysyllabic words from Greek or Latin. The material for a manuscript may consist of work that has taken one or more years to prepare. The purpose of the report may be to bring out three or more points, and this must be kept clearly in mind when writing it. Strict pruning of unnecessary or complex data is essential. Details such as tables and lists of figures should be chosen with care. The conclusion should be as clear at the introduction and include perhaps a final thought or a repetition of the main points or a brief speculation about future developments in the topic discussed. "The golden rule" of writing lies in the choice of words, and even when the article is fully prepared it is a useful exercise to reread it with a dictionary at hand, finding better words and eliminating clichés and words which, through constant use, have ceased to convey anything to the reader.

It is very tempting to use abbreviations; however, without explanation they are frustrating to those who are unfamiliar with them. Even though such symbols are obvious to the writer, many readers stumble over them. As an author one should be brief, for to quote Rudolph Virchow "Brevity in writing is the best insurance for its perusal."

As I have stressed, medicine today is very demanding, and preparation for a medical education alas leaves no time for study of the humanities or liberal arts. Barzun described the situation very well when he said, "If we stand off and look at the silhouette of the American college what we see is the thinning and flattening out of its once distinctive curriculum under pressure from above and below; the high school taking away the lower years, the graduate and professional schools the upper. The reality is that the best colleges today are being invaded, not to say dispossessed, by the advance agents of the professions, by men who want to seize upon the young recruit as soon as may be and train him in a tangible skill. In short both teachers and students are responding to the spirit of the times." It is indeed regrettable that the "spirit of the times" has, in my opinion, caused medical literature to suffer.

Prevention, however, is better than cure; but prevention implies understanding of causes. I have tried to outline what in my opinion is the most important cause.

An approach to this problem is seen in such highly specialized institutions as the Massachusetts Institute of Technology which has a division of humanities in which a department of English is prominent. The purpose of such departments is to humanize the scientist, or to parody Canning "It is necessary to call in the old humanities to redress the balance of the new."

What other ways are there of "prevention." In spite of these changing times and in spite of the demands of modern medicine, the study of medicine should be conducive to scholarship and writing. To record and to transmit information accurately and succinctly is a skill that should be basic to every branch of medicine. The patient's history at its best and its most useful should be a narrative with such form and style as can and should be employed for any other literary composition. Woven into the fabric of medical education there are thus, or should be, opportunities to practice and perfect style. Medicine in fact has a unique opportunity to fuse the two cultures. The standard of self-expression in the so-called literature of medicine is so lamentable that it suggests this opportunity is being lost. The same conclusion is reached from the abominably low standard of composition, verging on illiteracy, which all examiners of experience have encountered in grading essay-type questions.

I have absolutely no doubt where the responsibility for this near illiteracy lies; it lies with the teachers, the clinicians, and the editors. If teachers of medicine were quite ruthless in refusing to pass candidates who could not write grammatically or lucidly, if clinicians made students and house staff rewrite badly written case histories, and if editors were equally ruthless in refusing to publish papers containing loose, ambiguous, or prolix writings, then this fault would be remedied.

The most important way in which medical literature can be improved is for the author to write well, clearly, and concisely. He must learn this throughout his medical career. It is possible, in spite of the heavy demands made by medicine today. Let the author take advantage of modern scientific methods and technology. Many libraries in medical centers are linked by computers to other libraries. Let him take full advantage of this modern technology to enable him to seek out other articles and references pertinent to the topic in question. The author must not despair that he is being swamped by science. The medical profession is very resilient as our history has shown. Sigerist in *The University at the Crossroads* stresses this when he writes:

> The position of the physician in society, the tasks

> assigned to him and the rules of conduct imposed upon him by society changes in every period.
>
> The physician was a priest in Babylonia, a craftsman in Ancient Greece, a cleric in the early and a craftsman in the later Middle Ages. He became a scientist with the rise of natural science, and it is perfectly obvious that the requirements put upon the physician and the tasks of medical education were different in all these periods.

Yet he survived all these changes and in each period the progress of medicine was recorded in medical literature.

Finally, having written a manuscript to the best of the author's ability the last step is: to what journal should he submit his findings? This to many writers poses a problem. The trend toward specialization, each specialty with its own journal, and sometimes with its own jargon and terminology, creates problems in intercommunication. Nevertheless none of these developments should prevent a communication from being understood, provided it is properly written. The author must therefore submit his report to a journal appropriate to his topic. Judgment must be used however in this: a highly specialized piece should be submitted to the journal of that specialty. If the author feels his work is of sufficient interest to workers in many disciplines then he should submit it to a general medical journal which is widely read.

Comment

In conclusion therefore I would say that modern medical literature can only be improved by the author picking up the apparently lost tool of language. He must learn, from his college days, through his time in medical school, and during his postdoctoral training to write well, clearly, and concisely. This I know is difficult in this age when there is an increasing tendency for scientists and medical men in particular to speak, write, and even think in terms of new words or technical jargon. As you know this has two disastrous effects: information or ideas are not conveyed because they are not understood by the writer; or if they are conveyed at all, they are not conveyed accurately, either because the technical term itself lacks precision or because it is understood differently by the minds giving and receiving information. I am fully aware how difficult it may be to convey such information accurately. A new drug must have a name. A new substance for which evidence has been obtained in the body tissues needs a name. A new disease needs a name. Sometimes a new idea needs a name. All this is accepted. It is one of the less fortunate aspects of the growing harvest of scientific method. Unfortunately these grains of truth are often smothered with weeds of unnecessary and imprecise writings.

I hope I have said enough to convince you that if as authors we are to improve medical literature, and not destroy it, we must set our faces against loose or obscure or unnecessary jargon. We must pay attention to the meaning of the words we use, ensuring that we use only words whose meanings we understand, and, so far as is possible, words whose meaning others understand. We must remove the mote in our own eyes by taking a little trouble not only with what we write but also how we write it. In this way we as authors may perhaps rediscover the lost tool of language. This may be difficult. Learning is difficult enough, relearning the art of writing is not only difficult but is opposed by habit and false pride. It is nevertheless the price to be paid if we wish to be worthy members of a learned profession.

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History of Medicine

Colonial Medicine

Its roots and background

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Colonial medicine was an evolutionary process to which England in the colonial period, the pioneer and his descendants, Indian civilization, and European and English medicine and science contributed.

Feudalism began to disintegrate under the Tudors from 1485 to 1603 and reached its end with Cromwell's sucessful civil war (1640 to 1649). In this process sickness, filth, hunger, war, and unemployment prevailed. Tenants and serfs were evicted from manorial estates, and handicraft economy collapsed. Even Queen Elizabeth (1533 to 1603) observed: "There are paupers everywhere"; and Sir Gilbert complained that they (paupers) "... commit outrageous offenses and daily consumed by gallows."[1] The poor yearned for a better life; the rising class of merchants, manufacturers, and industrialists sought a source of raw material; and the fear of Spain's sea power faded when Elizabeth's navy sank the Spanish Armada in 1588, and her privateers boldly raided Spanish colonies and boarded Spanish galleons. In every respect, England was ready for colonial expansion.[1-3]

Early colonization

The first colonies, New Foundland (1583) and Roanoke Island (1585) were tragic misadventures; but Jamestown (1607), Plymouth (1620), and Maryland (1630) were successfully established during the reign of James I and Charles I. Colonization and immigration which subsided with Cromwell's democratic rule (1640 to 1660) flourished again under the repressive Stuart Restoration (1660).[3,4]

The pioneer who sailed 3,000 miles to an unknown land was a laborer, farmer, clergyman, government official, indentured servant, or adventurer seeking gold.[4,5] On board ship, he frequently fared no better than the sailor who was crowded in a dark, poorly ventilated hole; provided with restricted, inferior diet; and suffered or succumbed to scurvy, fevers, plague, yellow fever, smallpox, and skin diseases.[6,7] When he reached the promised land, often ill and weak, the pioneer faced Indians; strange flora and fauna; and lack of food, sanitation, shelter, and medical care.[8,9]

In New England, he settled a coastal plain of stone-filled soil and good harbors; developed agriculture, commerce, fishing, and shipbuilding; imported cattle (1624); launched the first vessel of 60 tons in Mystic, Connecticut (1630); and soon brought wine from Spain, linen from Florence, slaves from Africa, and sugar from the West Indies in his own ships.[10] To assure a literate ministry, Harvard College was founded in 1636.[4,11] But those who dared to violate the restrictive rules of Puritan theocracy suffered fines, whipping, pillory, and mutilation.

In the middle colonies—Pennsylvania, Delaware, and New Jersey—the pioneer farmed, raised cattle, created industry and manufacturing, and made Philadelphia the cultural center of the colonies.[12]

In the coastal plain of the South, with its rich soil and its rivers that emptied into wide bays, tar, timber, tobacco, cotton, and shipbuilding industries were developed. The occasional slave trade introduced in 1619 became a rich Stuart monopoly after 1660.

Class divisions, manifested early in the colonies, included gentlemen, goodmen, wage earners, and the lowest order of slaves, indentured servants, and Indians. By mid-eighteenth century baths, music, theater, books, wax candles, and the products of skilled craftsmen were enjoyed by the opulent.[2,3] Descendants of the pioneer went to Harvard (1636), William and Mary (1693), Yale (1701), College of New Jersey, later Princeton (1746), Kings (1750), Philadelphia (1755), Brown (1764), and Queens, later Rutgers (1766). Five hundred thousand slaves and 2 million whites (two-thirds were yeoman, one-third workers and the unfree, and a few wealthy) inhabited the American colonies in 1776.[4,11] Although English descendants were in the majority, one-third were Scotch, Irish, French, Welsh, Jewish, and German; and of the 56 signers of the Declaration of Independence, 18 were of non-English stock.[2]

In the area of the colonies, there lived, before the arrival of the pioneer, about 200,000 Indians. They were tall, silent men with sharp features and pale yellow to copper-colored skin who fished, farmed, hunted, and domesticated the dog. Disease, which to the Indian was evil, mysterious, and supernatural, was resisted with amulets, talismans, fetishes, body painting, and mutilation; and harmful spells were prevented by burning excrement, nail parings, and hair cuttings. The moaning, singing, dancing medicine man used omens and divination of the gods, as well as bleeding, herbals, some surgery, purification, counter-irritation, and cathartics to combat disease.[13,14] Friendly Indians taught the pioneer how to survive: taught him to clear the primeval forest; prepare land for cultivation; plant peas, melons, and cucumbers; grow corn, peanuts, pumpkins, and tomatoes; make fertilizer from fishheads; and make popcorn and maple sugar. The pioneer learned to construct a canoe and penetrate the wilderness; use snowshoes and toboggans; hunt and trap; and make moccasins and buckskins. Indian fighting methods helped in the War of Independence. Indian remedies were eagerly adopted; gall of rattlesnake for sweating; partridge berry for dropsy; bleeding root for jaundice; bear's foot for rheumatism; and beaver's skin for aching bones. In return, settlers encroached on Indian land; defrauded Indian hunters; introduced smallpox, Plasmoduim vivas and Plasmodium malariae; and committed brutal and thoughtless genocide.

Medical history

In Europe, the medicine of Galen (130 to 200 A.D.), which for more than a thousand years bound medicine and science to antiquity, was receiving shattering blows. Déscartes (1595 to 1650) and Newton (1642 to 1727) forsook the past for new pathways in thinking; and Francis Bacon (1564 to 1621) published *Novum Organum* in 1620 which hailed observation, experimentation, and inductive reasoning as the road to truth. The Royal Society was founded in 1645; and Rousseau (1712 to 1778) opened the "Age of Enlightenment" when he published *Contrat Social.* Copernicus (1473 to 1543) proclaimed the sun-centered solar system, and Galileo (1564 to 1643) invented the microscope. Paracelsus (1493 to 1541) introduced new therapeutics with mercury, antimony, and opium; Boyle (1627 to 1691) liberated science from alchemy; Priestley (1733 to 1804) discovered oxygen; and Lavoisier (1743 to 1794) pioneered in respiratory physiology. Vesalius (1504 to 1564), at the age of twenty-nine, published his dissections of the human body and thus hastened the downfall of Galenic authority; and Eustachius (1524 to 1576), Fallopius (1523 to 1562), Aquapendente (1547 to 1619), who was Harvey's teacher, and Willis (1621 to 1675) added to the knowledge of human anatomy. Paré (1510 to 1591), a barber surgeon, and John Hunter (1728 to 1793), a brilliant and devoted physician, made surgery a science. Servetus (1509 to 1553) described the pulmonary circulation; Harvey (1576 to 1658) proved that blood circulates; and Malpighi (1628 to 1694) demonstrated the capillaries. Physiology was advanced when Hales (1677 to 1761) inserted a glass tube into an artery of a mare and measured blood pressure and Haller (1708 to 1777) published his experiments in physiology.[15] Morgagni (1682 to 1772) revealed pathologic conditions of organs as the causes of symptoms, which was a mortal blow to the humoral theory of disease; and Bichat (1771 to 1802) described diseased tissue. Few who dared challenge Galenic tradition went unscathed. Vesalius was called by Sylvius, his teacher in Paris, "Impious madman whose breath poisoned Europe"; and Harvey was attacked for "Accusing nature of folly and error." Harvey delayed publication for thirteen years; Bacon, twelve years; Copernicus, twenty years; Newton, twenty years; and Malpighi, ignored by colleagues in Bologna, waited until he was sixty-one years old.[16,17]

In contrast to the scientific explosion in the seventeenth century, clinical advance was both slow and meager.[17,18] Sanctorius (1561 to 1636) counted the pulse and constructed a thermometer; Sydenham (1624 to 1689) identified disease; Boerhaave (1618 to 1738) applied chemistry, anatomy, physiology, and physics to clinical medicine and influenced, through his students, the medical schools of Edinburgh (Monro, Whytt) and Vienna (Van Swieten, de Hahn). Auenbrugger (1722 to 1809) discovered percussion, and Laennec (1781 to 1826) invented the stethoscope.

Therapy, except for variolous vaccination and digitalis, clung to the past. The *London Pharmacopeia* listed 2,000 remedies including stag penis, toad powder, and theriaca made of 50 or more ingredients. Treatment consisted of exotic concoctions of animal and vegetable matter, dieting, purging, bleeding, and sweating. Molière in the seventeenth century called physicians "pompous asses," and Hogarth in the eighteenth century created satirical engravings which ridiculed physicians and medicine.[5,19,20] The "royal touch," the "doctrine of signatures," the antimony cup, "Digby's sympathetic powder," and a multitude of quacks enjoyed great esteem.

In the seventeenth century, medicine in the colonies, as in England and among the Indians, was dominated by quackery, home remedies, and mystical and superstitious beliefs. Ailments of the colonists were differentiated as itch, flux, fevers, fits, and decay. Few diseases were identified; and clerics and laymen, who had read some physic, played the role of physician. Epidemics of diphtheria, smallpox, malaria, measles, pertussis, dysentery, and yellow fever plagued the colonies and were "killing diseases."[9,10,12,13,16,17] More than half the children died before the age of ten. Caulfield[21-23] described early eighteenth century epidemics in New England which had a "fearful mortality." Personal cleanliness was difficult; and settlers suffered from scabies, itch, lice, typhus, and pulmonary disease. Frequent childbirth and unskilled midwives created excessive morbidity and mortality; and those colonists who escaped injury, the hazards of a strange land, and survived epidemics lived to an old age. Prayer, fasting, diet, heat, bleeding, Indian remedies, and a few imported noxious drugs were the main therapy of the colonists.[9, 12, 24]

Advances in colonial medicine

As the pioneer prospered, medical care improved. Cleric healers were replaced by physicians and apprentices; and affluent students went abroad to London, Leyden, Edinburgh, and later to Paris to become doctors of medicine.[25] They returned to teach, establish medical schools and hospitals, found medical societies (New Jersey organized the first medical society in America in 1766), and publish journals. The Pennsylvania Hospital (1751), the American Philosophical Society (1761), the Medical College of Philadelphia, later the University of Pennsylvania Medical College (1765), the first insane asylum, in Williamsburg, Virginia (1773), and the *Medical Repository* (1797), the first medical journal, were the earliest evidences of the beginnings of American medicine and science.[26] In New York, the Kings Medical College (1767) and the New York Hospital (1775) were founded; and, in 1782, the Harvard Medical School in Boston.[16] The College of Physicians of Philadelphia was organized in 1787. Until the nineteenth century, medical students depended on lecture notes, which served to guide them in practice, and on European texts. Dissection, owing to public opposition, made little headway.[27–29]

At the beginning of the War of Independence, there were 2,500 practitioners. Four hundred were doctors of medicine and perhaps 50 were graduates of the two medical schools.[13]

It was during the second half of the eighteenth and the first quarter of the nineteenth century that American medicine began to develop as an independent profession. When the nineteenth century opened, Benjamin Waterhouse, M.D., of Harvard Medical School performed the first smallpox vaccination in America (1800). A new nation was moving forward and American medicine and science with it.

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Necrology

Ed Rucker Clardy, M.D., of Orangeburg, died on May 12 at the age of sixty-nine. Dr. Clardy graduated in 1929 from the University of Tennessee College of Medicine. He was a supervising psychiatrist at Rockland State Hospital and a consulting psychiatrist at Nyack Hospital. Dr. Clardy was a member of the American Psychiatric Association.

Alfred Goerner, M.D., of Huntington, died on September 7 at the age of seventy-nine. Dr. Goerner graduated in 1924 from Long Island College Hospital. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Aaron Goldbaum, M.D., of New York City, died on August 31 at the age of sixty-six. Dr. Goldbaum graduated in 1930 from the University of Vermont College of Medicine. He was an associate attending gynecologist at Harlem Hospital Center. Dr. Goldbaum was a Fellow of the American College of Obstetricians and Gynecologists.

Herman Godding Hofmann, M.D., of Larchmont, died on September 3 at the age of sixty-two. Dr. Hofmann graduated in 1941 from New York University College of Medicine. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Mark Hornstein, M.D., of New York City, died on September 20 at the age of eighty-five. Dr. Hornstein graduated in 1913 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Obstetrics and Gynecology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Fabych Jedwabnik, M.D., of New York City, died on September 3 at the age of eighty-three. Dr. Jedwabnik received his medical degree from the University of Berlin in 1913. He was a member of the American Geriatrics Society, the New York Cardiological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leon N. Kessler, M.D., of Brooklyn, died on August 22 at the age of sixty. Dr. Kessler received his medical degree from the University of Bern in 1936. He was an associate surgeon (off ward service) at Brookdale Hospital Center and an associate attending surgeon at Kingsbrook Jewish Medical Center. Dr. Kessler was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

H. Peter Maue, M.D., of The Bronx, died on September 17 at the age of seventy-five. Dr. Maue graduated in 1920 from Columbia University College of Physicians and Surgeons. He was a consulting physician at Lenox Hill Hospital. Dr. Maue was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

A. Alexander Neuwirth, M.D., of Tampa, Florida, formerly of New Rochelle, died on February 23 at the age of sixty-five. Dr. Neuwirth graduated in 1930 from New York University College of Medicine. He was a member of the American Public Health Association, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Francis O'Grady, M.D., of Buffalo, died on August 21, 1971, at the age of sixty-three. Dr. O'Grady graduated in 1935 from the University of Buffalo School of Medicine. He was an attending anesthesiologist at Sisters of Charity Hospital of Buffalo. Dr. O'Grady was a Fellow of the American College of Anesthesiologists and a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard Stephen Oppenheim, M.D., of Patchogue and Middle Island, died in August at the age of thirty-six. Dr. Oppenheim received his medical degree from the University of Louvain in 1966. He was an associate attending ophthalmologic surgeon at Brookhaven Memorial Hospital. Dr. Oppenheim was a member of the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leonard Paris, M.D., of Brooklyn, died on September 5 at the age of fifty-six. Dr. Paris graduated in 1945 from the University of Melbourne Faculty of Medicine. He was director of laboratories at Brooklyn Women's Hospital and Unity Hospital and an associate attending pathologist at Queens Hospital Center. Dr. Paris was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the American Society of Clinical Pathologists, the New York Pathological Society, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Ionel Florian Rapaport, M.D., of Staten Island and New York City, died on September 9 at the age of sixty-three. Dr. Rapaport received his medical degree from the University of Paris in 1937. He was a senior psychiatrist at Willowbrook State School. Dr. Rapaport was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Simone Joseph Scarano, M.D., of Forest Hills, died in March at the age of fifty-seven. Dr. Scarano graduated in 1940 from New York Medical College. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Alexander A. S. Stuart, M.D., of Wantagh, died on September 8 at the age of eighty. Dr. Stuart graduated in 1923 from the Tulane University School of Medicine. He was a member of the American Academy of General Practice, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles L. Suttles, M.D., of Hollis, died on March 1 at the age of seventy-four. Dr. Suttles graduated in 1927 from Johns Hopkins University School of Medicine. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Albert Sweet, M.D., of Chappauqua, died on September 16 at the age of ninety-two. Dr. Sweet graduated in 1902 from Syracuse University College of Medicine. Retired in 1964 he was a member of the Yonkers Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alvin J. B. Tillman, M.D., of New York City, died on September 18 at the age of sixty-eight. Dr. Tillman graduated in 1927 from Columbia University College of Physicians and Surgeons. He was an associate physician in obstetrics and gynecology (off service) at The Presbyterian Hospital. Dr. Tillman was a Diplomate of the American Board of Internal Medicine and a member of the New York Academy of Medicine, the Clinical Society, New York Diabetes Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Vincent Valensi, M.D., of New York City, died on August 29 at the age of forty-six. Dr. Valensi received his medical degree from the University of Geneva in 1961. He was an assistant attending radiologist at St. Luke's Hospital Center. Dr. Valensi was a Diplomate of the American Board of Radiology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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This national award will be given to a physician, surgeon or scientist who shall have made a widely beneficial scientific discovery in medicine, surgery or prevention of disease.

The award, comprising $2,000 and an appropriate scroll, will be presented at the Annual Convention of the Medical Society of the State of New York, February 11–15, 1973. It was created by the late Morris J. Bernstein in memory of his physician son who died in an accident while answering a hospital call on November 23, 1940.

The award was presented in 1972 to Samuel R. Powers, Jr., M.D., of the Albany Medical College, Albany, N.Y., for the development and application of modern engineering methods for the correction of the respiratory distress syndrome following trauma. The award was presented in 1971 to Ludwig Gross, M.D., for his pioneering studies of virus-induced leukemia in mammals, and presented in 1969 to Baruch S. Blumberg, M.D., of the Institute for Cancer Research, Philadelphia, for his discovery of Australia antigen, a possible cause of viral hepatitis.

You are invited to submit documentation with the name or names of those who, in your opinion, are eligible for this award, by December 15, 1972, to:

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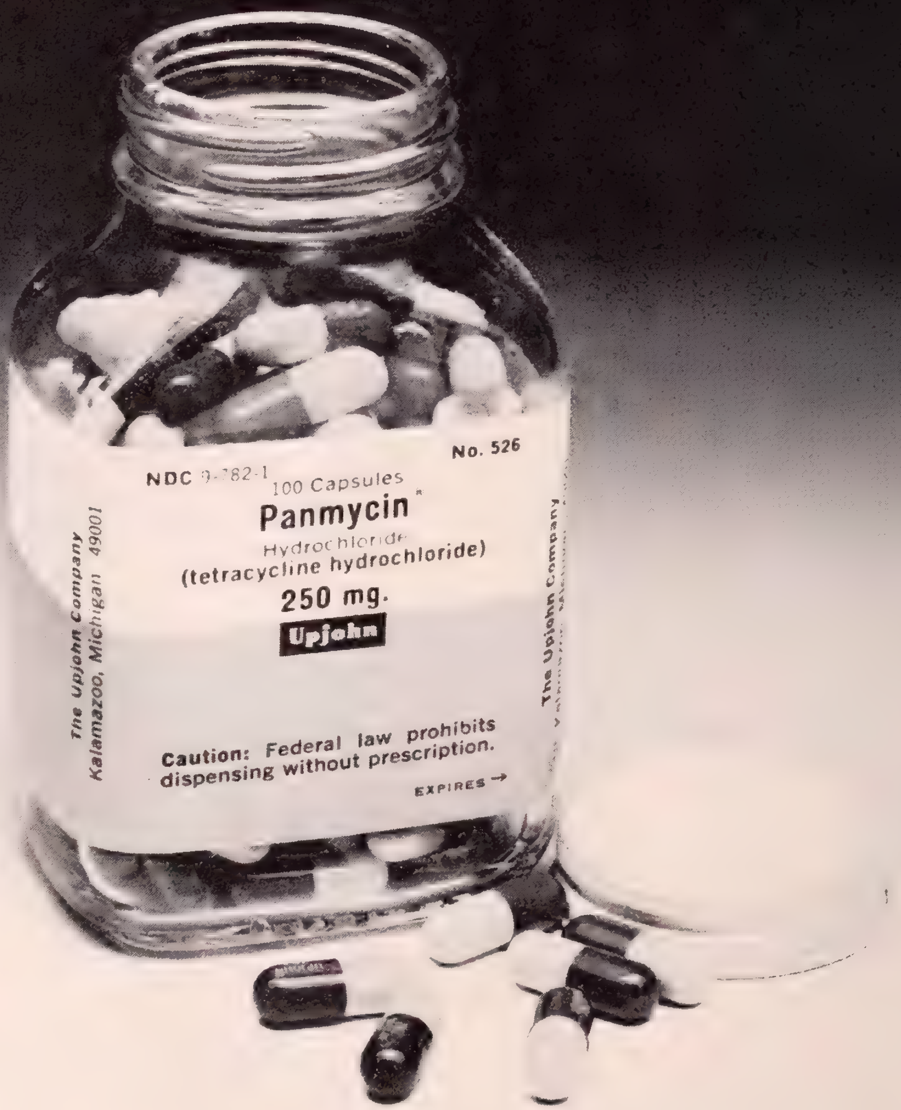
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Westchester Campus
Valhalla (Westchester County)

SYMPOSIUM ON BREAST CANCER

This Symposium is sponsored by the Cancer Researcl Center Committee of New York Medical College. Authorities on breast cancer from other institutions will joi faculty of NYMC in examining the development, behavior and therapy of breast cancer.

FEE: $25 CREDIT: 7 hours AAFP

Write for Program: RAYMOND McBRIDE, M.D., Chm., Cancer Research Center Committee, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029.

November 3 and 10, 1972

8:00–9:30 a.m., Fridays

Maimonides Medical Center

Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

November 3

The Elective Pediatric Surgical Conditions and Current Concepts in Management

BERTRAM D. COHN, M.D.

November 10

Current Concepts in Office Care of the Rheumatoid Arthritic

AUSTIN SCHLECKER, M.D.

NOTE: These lectures are part of a Course for Family Physicians and Pediatricians which started October 13, 1972 and runs through April 13, 1973. The Fee for the entire course is $20 and Credit for the course is 30 Elective hours by AAFP. WHAT GOES ON will publish the Lectures in chronological order.

November 3 and 4, 1972

10:00 a.m.–5:00 p.m., Friday and Saturday

Downstate Medical Center

Continuing Education Conference Center
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

MENIERE'S SYNDROME

Under the direction of
HERBERT B. GOLDMAN, M.D.

FEE: $50 (includes lunch)
No fee for residents and students

To register, contact ABRAHAM LAPIDOT, M.D., Division of Otolaryngology, Box 40, above address.

FRIDAY, NOVEMBER 3

8:30 p.m.

American Association of Medical Assistants, Queens Chapter

Medical Society of the County of Queens
112-25 Queens Boulevard
Forest Hills

MEMBERSHIP MEETING

Information: MARIE OWEN, 31-22 29th Street, Long Island City, N.Y. 11106

SUNDAY, NOVEMBER 5

9:00 a.m.–5:00 p.m.

Downstate Medical Center

Coney Island Hospital Auditorium
Ocean and Shore Parkways
Brooklyn

DIABETES DAY

DAVID MUMFORD and SEYMOUR GLICK, M.D.'s
with Invited Lecturers

CREDIT: 7 Prescribed hours AAFP

To register, contact: DR. MUMFORD, Dir., Medical Education, above address. Tel. (212) 743-4100, Ext. 460.

November 6 and 7, 1972

9:00 a.m.–5:00 p.m., Monday & Tuesday

The Page and William Black Post-Graduate School of Medicine

Fifth Avenue at 100th Street

NEURO-OPHTHALMOLOGY

MORRIS B. BENDER, IRVING LEOPOLD, M.D.'s
and Faculty
Mount Sinai School of Medicine

FEE: $200

MONDAY, NOVEMBER 6

8:30 p.m.

Rudolf Virchow Medical Society and Pirquet Society of Clinical Medicine

New York Academy of Science
2 East 63rd Street

Joint Scientific Meeting

1. **For Pirquet Society**
   Evaluation of Roentgenometrie
   GERHART S. SCHWARZ, M.D.

2. **For Rudolf Virchow Society**
   Some New Development in the Field of Immunotherapy
   MANFRED WEICHSEL, M.D.

November 7 and 14, 1972

9:00 a.m., Tuesdays

Queens Hospital Center Affiliation

Long Island Jewish-Hillside Medical Center
Triboro Hospital-9th Floor Auditorium
Parsons Boulevard and 82nd Drive
Jamaica

Division of Pulmonary Medicine

November 7

Acute Hydrocarbon Pneumonia

D. COHEN, M.D.

November 14
A Review of the Sarcoidosis Clinic in the Division of Pulmonary Medicine

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November 7 and 14, 1972
8:00–9:00 a.m., Tuesdays

The American Academy of Family Physicians

Richmond Chapter
The Staten Island Hospital
101 Castleton Avenue
Staten Island

Postgraduate Lectures on Renal Disease

November 7
Fluid Balance
R. HOFFMAN, M.D.

November 14
Renal Physiology—Diuretics
J. McGINN, M.D.

November 8 and 9, 1972
9:00 a.m.–5:00 p.m., Wednesday & Thursday

The Page and William Black Post-Graduate School of Medicine

Fifth Avenue at 100th Street

A SYMPOSIUM ON THE EXPERIMENTAL AND IMMUNOCHEMOTHERAPY OF CANCER

EZRA M. GREENSPAN, M.D. and Faculty
Mount Sinai School of Medicine

FEE: $50 (House Staff $25)

November 8 and 15, 1972
4:00–5:00 p.m., Wednesdays

Flushing Hospital and Medical Center

Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lectures in the First Floor Conference Room

November 8
Use of Aminocentesis in Genetic Counseling
MELVIN GERTNER, M.D.
Mount Sinai School of Medicine

November 15
Infection in the Neonatal Period and Early Infancy
J. KELLY SMITH, M.D.
North Shore Hospital

November 9 and 16, 1972
3:00–5:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine

Fifth Avenue at 100th Street

OPHTHALMOLOGIC EXAMINATION OF THE CHILD

EDWARD L. RAAB, M.D.
Mount Sinai School of Medicine

FEE: $50

FRIDAY, NOVEMBER 10

8:30 p.m.

The Semmelweis Scientific Society

(The American-Hungarian Medical Association)
New York Academy of Medicine Room 20
2 East 103rd Street

1. **Ignaz Semmelweis: A Non-Conformist in Medicine**
   MICHAEL M. DACSO, M.D.
   Daughters of Jacob Geriatric Center
2. **Introduction of the Semmelweis Lecturer**
   ANDREW K. BERNATA, M.D.
   N.Y.U. School of Medicine
3. **Correlation Between Psychiatry and Medicine—Historical Evaluation of Psychosomatic Medicine**
   SANDOR LORAND, M.D.
   Downstate Medical Center
4. **Presentation of the Semmelweis Medal and Scroll to** SANDOR LORAND, M.D.

November 12 / 14, 1972

American Academy of Orthopaedic Surgeons

New York Sheraton Hotel
7th Avenue and 56th Street

Postgraduate Course on:

THE MANAGEMENT AND CARE OF THE SCOLIOSIS PATIENT

For applications and programs, please write: HUGO A. KEIM, M.D., 161 Ft. Washington Avenue, New York N.Y. 10032.

November 13 and 14, 1972
8:15 a.m. Registration

The Institute of Human Nutrition, Columbi University and the National Foundation-March of Dimes

Americana Hotel

Symposium on

NUTRITION AND FETAL DEVELOPMENT

MYRON WINICK, M.D., Chairman

FEE: $40 CREDIT: 11 Elective hours AAFP

For information and Program write: Executive Director, New York Chapter, The National Foundation March of Dimes, 315 Park Avenue, New York, NY 10010. Telephone: (212) 677-2100.

November 13 / 17, 1972

9:00 a.m.–12:00 noon, Monday–Friday

The Page and William Black Post-Graduate School of Medicine

Fifth Avenue at 100th Street

CLINICAL CHEST DISEASES

LOUIS E. SILTZBACH, M.D. and Faculty
Mount Sinai School of Medicine

FEE: $75

November 13 / 17, 1972

9:00 a.m.–5:00 p.m., Monday–Friday

French and Polyclinic Medical School and Health Center

345 West 50th Street

STAPES SURGERY

ALAN A. SCHEER, M.D.

November 13 / 17, 1972

Full-time, Monday–Friday

N.Y.U. Post-Graduate Medical School in cooperation with

The American Association of Industrial Nurses
550 First Avenue

OCCUPATIONAL HEALTH FOR NURSES

Under the direction of

DAVID H. GOLDSTEIN, M.D.

FEE: $75

Apply, Office of the Recorder, Room 156 MSB, New York University Post-Graduate Medical School, above address.

November 13 / 27, 1972

3:30 p.m., Mondays

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

November 13

Current Topics in Cardiology

JACOB HAFT, M.D.
Bronx V.A. Hospital

November 20

Small Airway Disease

ALBERT MILLER, M.D.
Mount Sinai School of Medicine

November 27

Diabetic Hyperomolar Coma

ROBERT MATZ, M.D.
Morrisania Hospital

TUESDAY, NOVEMBER 14

9:00 a.m.

New York Infirmary

Stuyvesant Square East and 15th Street
Toscanini Room

THE PATHOPHYSIOLOGY OF COR PULMONALE

ROBERTA M. GOLDRING, M.D.
N.Y.U. Medical Center

10:00 a.m.

Maimonides Medical Center

Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

Pediatric Conference

COMPUTERIZED DISCHARGE SUMMARIES IN PEDIATRICS

NORMAN NECHES, M.D.

8:30 p.m.

The New York Psychoanalytic Society

2 East 103rd Street

The Abraham A. Brill Lecture

TITLE TO BE ANNOUNCED

HANS W. LOEWALD, M.D.

WEDNESDAY, NOVEMBER 15

9:00 a.m.–5:00 p.m.

Downstate Medical Center

Basic Sciences Building, 1st Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

THE BIOLOGY OF OSTEOARTHRITIS—TEACHING DAY IN RHEUMATIC DISEASE

LEON SOKOLOFF, M.D.
National Institute of Arthritis, Metabolism, and Digestive Diseases
CHARLES M. PLOTZ, M.D.
Downstate Medical Center
with Invited Lecturers

NO FEE CREDIT: 7 Prescribed hours AAFP

To register, contact DR. PLOTZ, Dir., Continuing Education, above address.

11:00 a.m.

Jewish Memorial Hospital

Broadway and 196th Street

Pediatric Conference

NEONATAL INTESTINAL OBSTRUCTION

KEITH M. SCHNEIDER, M.D.
Albert Einstein College of Medicine

4:00–5:30 p.m.

Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

COAGULATION AND DISORDERS OF COAGULATION

SAMUEL MELAMED, M.D.
Montefiore Hospital

NO FEE CREDIT: 1½ hours

8:30 p.m.

The New York Academy of Medicine

Section on Historical Medicine
2 East 103rd Street

EDWARD JENNER, JOHN HUNTER, AND FIELDING GARRISON: AN HISTORIC MUDDLE

IAGO GALDSTON, M.D.
Fairfield Hills Hospital
Newtown, Connecticut

FUTURE EVENTS

December 1 and 2, 1972

State University of New York

Upstate Medical Center in Syracuse
Hotel Syracuse

POSTGRADUATE COURSE IN OPHTHALMOLOGY

J. DONALD M. GASS, M.D.
Miami, Florida
DAVID L. KNOW, M.D.
Baltimore, Maryland
WHITNEY G. SAMPSON, M.D.
Houston, Texas

FEE: $35

Write: JAMES L. McGRAW, M.D., 750 East Adams Street, Syracuse, N.Y. 13210.

December 7 / 9, 1972

9:00 a.m.–4:30 p.m., Thursday / Saturday

The Page and William Black Post-Graduate School of Medicine

Fifth Avenue at 100th Street

NEUROCHEMISTRY

GERARD M. LEHRER, M.D., and Faculty
Mount Sinai School of Medicine

FEE: $150

February 11 / 15, 1973

Medical Society of the State of New York

The Americana Hotel
Seventh Avenue and 52nd Street

167th ANNUAL CONVENTION

March 15 and 16, 1973

National Foundation—March of Dimes and Cornell University Medical College

Commodore Hotel

SYMPOSIUM ON

DRUGS AND THE UNBORN CHILD

Co-Chairmen
W. W. McCRORY, M.D.
MARIA NEW, M.D.

Note: The purpose of the two-day session is to provide a forum where pediatricians, obstetricians, pharmacologists and scientists actively working in the field of human development can meet to discuss recent advances and unsolved problems in fetal pharmacology.

For further information, write Department of Pediatrics, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021

April 13 and 14, 1973

9:30 a.m.–5:30 p.m., Friday and Saturday

The City of New York

Office of the Chief Medical Examiner
520 First Avenue

10th Annual Symposium on

FORENSIC SCIENCES 1973

MILTON HELPERN, M.D.. Chief Medical Examiner
The City of New York

BUFFALO AREA

November 4 and 5, 1972

The State University of New York at Buffalo

Statler Hilton Hotel

Postgraduate Course

EXERCISE TESTING AND TRAINING FOR THE PREVENTION AND TREATMENT OF CORONARY HEART DISEASE

FEE: $50

Apply: LENORE R. ZOHMAN, M.D., 111 E. 210th Street, Bronx, N.Y. 10467.

THURSDAY, NOVEMBER 9

10:00 a.m. Registration

State University of New York at Buffalo School of Medicine

Statler Hilton Hotel

COMMUNITY HEALTH—WHAT IS IT?

FEE: $15 (includes lunch and dinner)
CREDIT: 7 hours AAFP

Write: Continuing Medical Education, Main Street Division—School of Medicine, State University of New York at Buffalo, 2211 Main Street, Buffalo, N.Y. 14214, or telephone (716) 831-5526.

FRIDAY, NOVEMBER 10

8:15 a.m., Registration

State University of New York at Buffalo School of Medicine

Statler Hilton Hotel

WORKSHOP IN RESPIRATORY MANAGEMENT

FEE: $30 CREDIT: 7 hours AAFP

Write for program and application form at above address. (see previous announcement)

JOHNSON CITY

November 2 and 9, 1972

11:00 a.m., Thursdays

Charles S. Wilson Memorial Hospital

Johnson City

BASIC SCIENCE SEMINARS

Conducted by Upstate Medical Center at Syracuse

TOPICS AND SPEAKERS TO BE ANNOUNCED

CREDIT: Category I AAFP

Medical Grand Rounds will be held at 10:00 a.m., preceding each of the above sessions.

NASSAU COUNTY

WEDNESDAY, NOVEMBER 15

8:00–10:00 a.m.

Mercy Hospital

MacArthur Auditorium
Rockville Centre

SHOCK LUNG

JAMES W. WILSON, M.D.
Duke University Medical Center

SYRACUSE AREA

WEDNESDAY, NOVEMBER 8

9:00 a.m.–3:00 p.m.

American Cancer Society, Onondaga County Unit

Sheraton Motor Inn
Electronics Parkway
Syracuse

UTERINE CANCER TEACHING DAY—DETECTION, DIAGNOSIS AND TREATMENT

FEE: $3.00 (includes lunch)

For further information, contact: MISS BETTY SWINEHART, Program Director, 1054 James Street, Syracuse, N.Y. 13203.

TROY AREA

THURSDAY, NOVEMBER 9

8:30 a.m.

American Cancer Society, Rensselaer County Unit

Holiday Inn
Troy

COLON AND RECTAL CANCER—FIGHT CANCER WITH KNOWLEDGE

FEE: $4.00 (includes lunch)

For further information, contact: ELEANOR KENYON, Ex. Dir., Rensselaer County Unit, 24 Second Avenue, Troy, N.Y. Tel. (518) 274-5303.

WESTCHESTER COUNTY

WEDNESDAY, NOVEMBER 8

9:15 a.m.

Grasslands Hospital

Eastview Hall—Conference Room C
Valhalla

Seminar—Joint auspices of The American Cancer Society, Westchester County; The Division of Dentistry, Grasslands Hospital; and the Ninth District Dental Society

Coordinator
MANUEL M. MASLANSKY, D.D.S.
Columbia University

1. **Early Diagnosis of Oral Facial Neoplastic Disease**
   EDWARD V. ZEGARELLI, D.D.S.
   Columbia University
2. **Post-Operative Prosthetic Reconstruction**
   SEBASTIAN BRUNO, D.M.D.
   Columbia University
3. **The Surgical Treatment of Oral Facial Cancer**
   ROBERT C. EBERLE, M.D.
   St. Vincent and Jewish Memorial Hospitals
4. **Radiation Deep Therapy and Chemotherapy as Treatment Modalities**
   HAROLD W. JACOX, M.D.

WEDNESDAY, NOVEMBER 15

2:00 p.m.

American College of Obstetricians and Gynecologists, District II, Section 7

Westchester Obstetrical and Gynecological Society
Department of Ob/Gyn, New York Medical College
Division of Ob/Gyn, Grasslands Hospital
Grasslands Campus
Valhalla

1st Annual

OBSTETRICAL AND GYNECOLOGICAL REGIONAL POSTGRADUATE MEETING

1. **Fetal Maturity and Intrauterine Diagnosis**
   ALLAN B. WEINGOLD, M.D. and WALTER L. FREEDMAN, M.D.
2. **Choice of the Proper Contraceptive Agent**
   HOWARD C. BALIN, M.D.
3. **Cervical Dysplasia and Carcinoma In Situ**
   ALEXANDER SEDLIS, M.D., LEOPOLD G. KOSS, M.D., RALPH M. RICHART, M.D.

Evening Session

5:30 p.m. at The Hilton Inn, Tarrytown

After Dinner Scientific Session

THE MANAGEMENT OF SEXUAL INADEQUACY

Please address all correspondence to WALTER L. FREEDMAN, M.D., Director, Division of Obstetrics and Gynecology, Grasslands Hospital, Valhalla, N.Y. 10595. Telephone: (914) LY 2-8500, ext. 2794.

OTHER PLACES

November 12 / 16, 1972

International College of Surgeons

Town and Country Hotel
Convention Center
San Diego, California

5th WESTERN HEMISPHERE CONGRESS

Write: 5th Western Hemisphere Congress, 136 N. Brighton Street, Burbank, California 91506

November 13 / 16, 1972

Interstate Postgraduate Medical Association of North America

Washington-Hilton Hotel
Connecticut Avenue at Columbia Road, N.W.
Washington, D.C.

SCIENTIFIC ASSEMBLY—INTERSTATE

Write: ROY T. RAGATZ, Exec., Dir., Interstate Postgrad. Med. Assn., P.O. Box 5445, Madison, Wisconsin 53705

November 25 / 30, 1972

New York Medical College

Department of Ophthalmology
Sharon Towers Hotel
Herzliya, Israel

INTERNATIONAL SYMPOSIUM ON METABOLIC EYE DISEASES

Write: Department of Ophthalmology, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029.

February 15 / 24, 1973

New York Medical College

Department of Ophthalmology
Princess Hotel
Acapulco

Fourth Annual Seminar

CONTROVERSIAL ASPECTS IN OPHTHALMOLOGY

1. **Simplified Hard Lens Fitting**
2. **The Soft Lens Story**
3. **Therapeutic Soft Lens—Fact or Fancy**
4. **A Continuously Worn Soft Lens—Is It Feasible?**
5. **Practical Soft Lens Fitting**
6. **Routine Cataract Extraction—A Fresh Approach**
7. **Is Cataract Phacoemulsification a Step Forward?**

8. **Results of 500 Phacoemulsification Cases Compared with Results of 500 Routine Cataract Extractions**
9. **Do Cryopreserved Corneas Work?**
10. **Keratoprosthetics—Good or Bad**
11. **An In-Depth Review of Intracameral Prosthetics**

Further information may be obtained by writing: Department of Ophthalmology, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029

PHYSICIANS' PLACEMENT

BROOKLYN, N.Y., Kings County. Part time Medical Director for Physician Associate Program capable of teaching physical diagnosis

CONTACT: ARNOLD LEWIS, M.D., The Brooklyn Hospital, 121 DeKalb Avenue, Brooklyn, N.Y. 11201. Tel. (212) 270-4532.

POTSDAM, N.Y., St. Lawrence County. State University College at Potsdam seeks a Director of Medical Service

CONTACT: Mr. WILLIAM SLOAN, Dir. of Personnel, State University College at Potsdam, Potsdam, New York 13676. Tel. (315) 268-2944.

KINGSTON, N.Y., Ulster County. General Internist or Family Medicine.

CONTACT: MR. NICHOLAS SHEA, 14 Arlington Ave., St. James, N.Y. 11780. Tel. (516) 584-6324

PORT JERVIS, N.Y., Orange County. Surgeon and G.P.s to be associated with hospital.

CONTACT: DANIEL P. SCHULTZ, M.D., Doctors Sunnyside Hospital, 140-160 Hammond St., Port Jervis, N.Y. 12771. Tel. (914) 856-5121.

EVENTS RECEIVED AFTER DEADLINE

October 15, 1972 / April 1, 1973

9:00 a.m.–12:00 noon, Sundays

Peninsula Hospital Center

51-15 Beach Channel Drive
Far Rockaway

19-Session Lecture Series on

INTENSIVE REVIEW FOR COMMUNITY PHYSICIANS
(Co-sponsored by Queens County Medical Society under the auspices of Downstate Medical Center)

Topics will include diabetes mellitus; endocrine disorders; renal disease; pulmonary function and disease; acid-base balance and electrolytes; genetic counseling and family planning; obstetrics and gynecology; gastroenterological, cardiac, hematologic, and neurologic disease; and clinical immunology.

FEE: $100

CREDIT: 57 hours AAFP Category I and A.M.A. Physicians Recognition Award

To register, contact: SEYMOUR MALLIS, M.D., Chm., Continuing Medical Education Committee, above address. Tel. (212) GR 4-7378.

**** October 26, 1972 / May 17, 1973***

11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center

Recreation Activities Building

Pediatric Postgraduate Series

Recent Advances in Early Pediatric Burn Care

BERTRAM E. BROMBERG, M.D.
State University, Kings County Medical Center

November 2

Anomalous Pulmonary Venous Connections

JAMES R. MALM, M.D.
Columbia University

November 9

The Interpretation of Blood Gas Determinations

ROBERT SHICK, M.D.
Good Samaritan Hospital

* This program started October 5, 1972

WEDNESDAY, NOVEMBER 8

8:00 p.m.

New York Surgical Society

2 East 103rd Street

Case Report:

Colonic Necrosis Complicating Postoperative Pancreatitis

P. KATZ, M. J. DORMAN and A. H. AUFSES, M.D.'s

Papers:

1. **Early Respiratory Insufficiency in Acute Pancreatitis**

   J. H. C. RANSON, B.M., Ch., D. F. ROSES and S. D. FINK, M.D.'s

2. **Experiences with the Use of Intracholedochal Heparinized Saline for the Treatment of Retained Common Duct Stones**

   B. GARDNER and R. MASUR, M.D.'s; and J. PATTI, B.S.

3. **Cardiac Output Estimation by Pulse Contour Methods: Validation of Their Use for Monitoring the Critically Ill Patient**

   R. A. JURADO, M.D., D. MATUCHA, J. J. OSBORN, M.D., and R. S. LITWAK, M.D.

8:30 p.m.

Adelphi Hospital

Fifty Green Avenue
Brooklyn

Panel Meeting

MEDICAL GENETICS IN 1972

1. **Determining Parentage**
   ALEXANDER S. WIENER, M.D.
2. **Genetics and Cancer**
   MAX LEVITAN, Ph.D.
   Mount Sinai School of Medicine
3. **Cytogenetics**
   UTA FRANCKE, M.D.
   School of Medicine, University of California
   San Diego, Calif.
4. **Amniocentesis and Prenatal Diagnosis of Hereditary Disease**
   MELVIN GERTNER, M.D.
   Mount Sinai School of Medicine
5. **Melanoma of the Small Intestine**
   PHILIP ROSENBLATT, MAN SO LEE, and
   FRANK MAINELLA, M.D.'s

November 13 / 17, 1972

N.Y.U. Medical Center's Department of Rehabilitation Medicine and the American Academy of Physical Medicine and Rehabilitation

400 East 34th Street

4th Annual Course in

PEDIATRIC REHABILITATION

BARBARA BIBER, Ph.D., Bank Street College of Education; HERBERT BIRCH, M.D., Albert Einstein College of Medicine; ROGER D. FREEMAN, M.D., The University of British Columbia, Vancouver; and STEPHEN A. RICHARDSON, Ph.D., Albert Einstein College of Medicine and the Faculty of N.Y.U.

FEE: $150 (Limited to 50 participants)

Contact: JOSEPH GOODGOLD, M.D., above address

NASSAU COUNTY

**** October 18 / December 27, 1972***

4:00 p.m., Wednesdays

Nassau County Medical Center—Meadowbrook Hospital

Radiology Department Classroom
2201 Hempstead Turnpike
East Meadow

Guest Lecture Series

October 18

Brain Scanning
STANLEY GREEN, M.D.
Brunswick Hospital

October 25

Soft Tissue Calcifications and Ossification
HAROLD CHIAT, M.D.
Nassau Hospital

November 1

Interesting Scanning Problems in a Community Hospital
ARTHUR DRAZAN, M.D.
Southside Hospital, Bayshore

November 8

Cooperative Residents' Teaching Program
MILTON ELKIN, M.D.
Albert Einstein College of Medicine

November 15

Legg-Perthes' Disease
RICHARD LASKIN
Nassau County Medical Center

* Program started August 23, 1972

NEW JERSEY

WEDNESDAY, NOVEMBER 9

8:30 a.m.

The New Jersey Academy of Ophthalmology and Otolaryngology

Robert Treat Hotel

FALL MEETING

FEE: $20 (includes Luncheon, Cocktails, Buffet Supper)

Apply: Eye Institute of New Jersey, 15 South 9th Stree
Newark, N.J. 07107

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE LAKES AREA REGIONAL MEDICAL PROGRAM

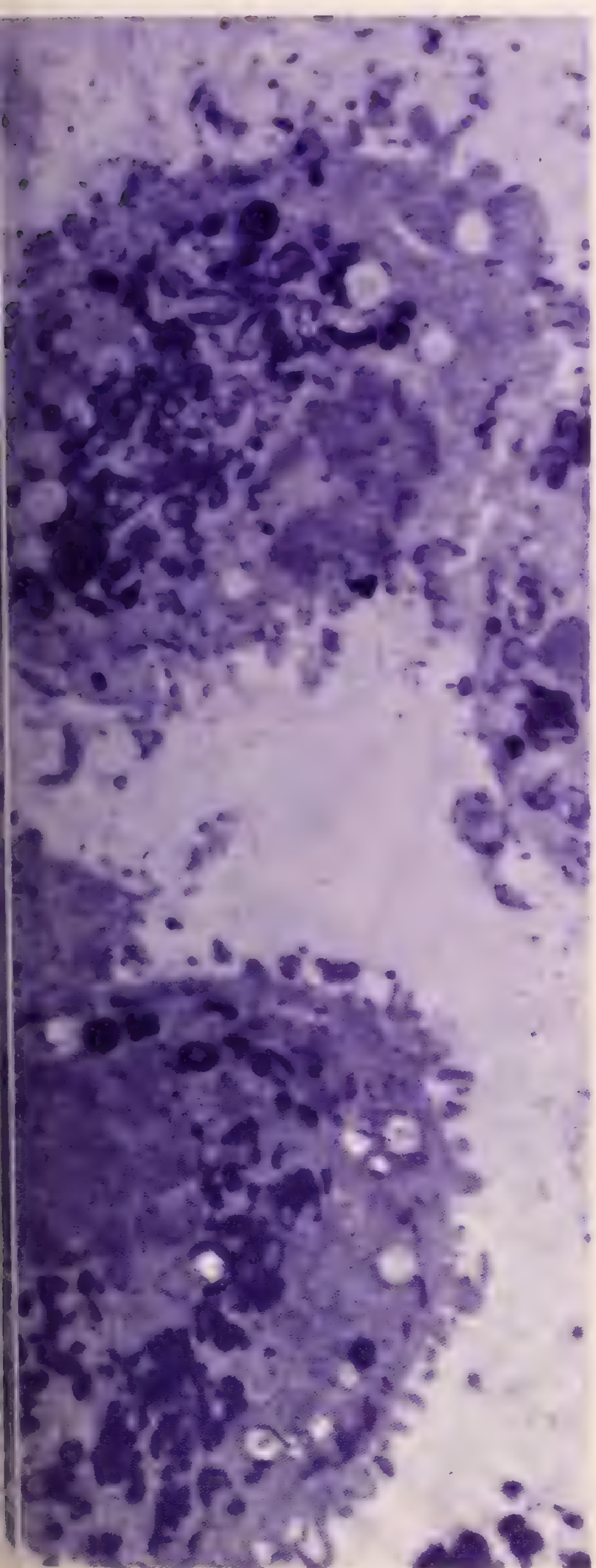
The School of Medicine presents various programs via th facilities of the Telephone Lecture Network of the Region Medical Program for Western New York. The Netwo covers the counties of Erie, Niagara, Genesee, Wyomin Chautauqua, Cattaraugus, Allegany, and Steuben in Ne York State and the counties of Erie, McKean and Crawfo in the Commonwealth of Pennsylvania.

Programs are presented in two series:

1. A weekly series of general interest considered useful all physicians presented at 11:30 a.m. on Tuesdays.
2. The monthly series on Cancer sponsored by the Rosw Park Memorial Institute and presented on the thi Wednesday of each month under the direction of Gera P. Murphy, M.D.

For further information, contact the State University of Ne York at Buffalo, 2211 Main Street, Buffalo, N.Y. 14214. T (716) 831-5526.

but few have seen.



Bronkotabs...important in asthma protection

How Bronkotabs helps prevent or relieve attacks:

- Bronkotabs offers potent bronchodilation to relieve dyspnea.
- Contains an effective decongestant to shrink swollen membranes.
- Provides an efficient expectorant to encourage productive cough.
- Bronkotabs provides economical long-term therapy.

PRECAUTIONS: With Bronkotabs therapy sympathomimetic side effects are minimal, and there are none of the dangers or side effects associated with steroid therapy. However, frequent or prolonged use may cause nervousness, restlessness, or sleeplessness. Bronkotabs should be used with caution in the presence of hypertension, heart disease, or hyperthyroidism. Drowsiness may occur. Ephedrine may cause urinary retention, especially in the presence of partial obstruction, as in prostatism.

RECOMMENDED DOSAGE: One tablet every 3 or 4 hours, not to exceed five times daily. Children over 6: one half adult dose.

SUPPLIED: Bottles of 100 and 1000 scored tablets.

Bronkotabs®

Each tablet contains ephedrine sulfate 24 mg; glyceryl guaiacolate 100 mg; theophylline 100 mg; phenobarbital 8 mg (warning: may be habit-forming).

BREON

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Change the AMA!

Maybe you're one of those doctors at odds with some AMA policies. Your question is: how do you change them?

First, consider who sets those policies. In a real sense, it is you. You elect the delegates to your state association. They in turn elect the delegates who will represent your views in the AMA House.

As an active, involved member, you can influence policy by making your views known to your delegates, both national and state. It is your democratic right—and responsibility.

Write your delegates, call them, see them. If they aren't responsive, tell them they'll be hearing from you at election time.

You can also go directly to the top and express your views before the AMA House's Reference Committees at either of the two annual conventions.

But it's up to you. If you have strong convictions about something that should be changed, you can be heard.

Join us. We are only what the doctors of this country want us to be. Find out more about the AMA. Send for the pamphlet, "The AMA and the American Doctor: Sharing a Common Goal." Write: Dept. DW, at the address below.

JOIN US.
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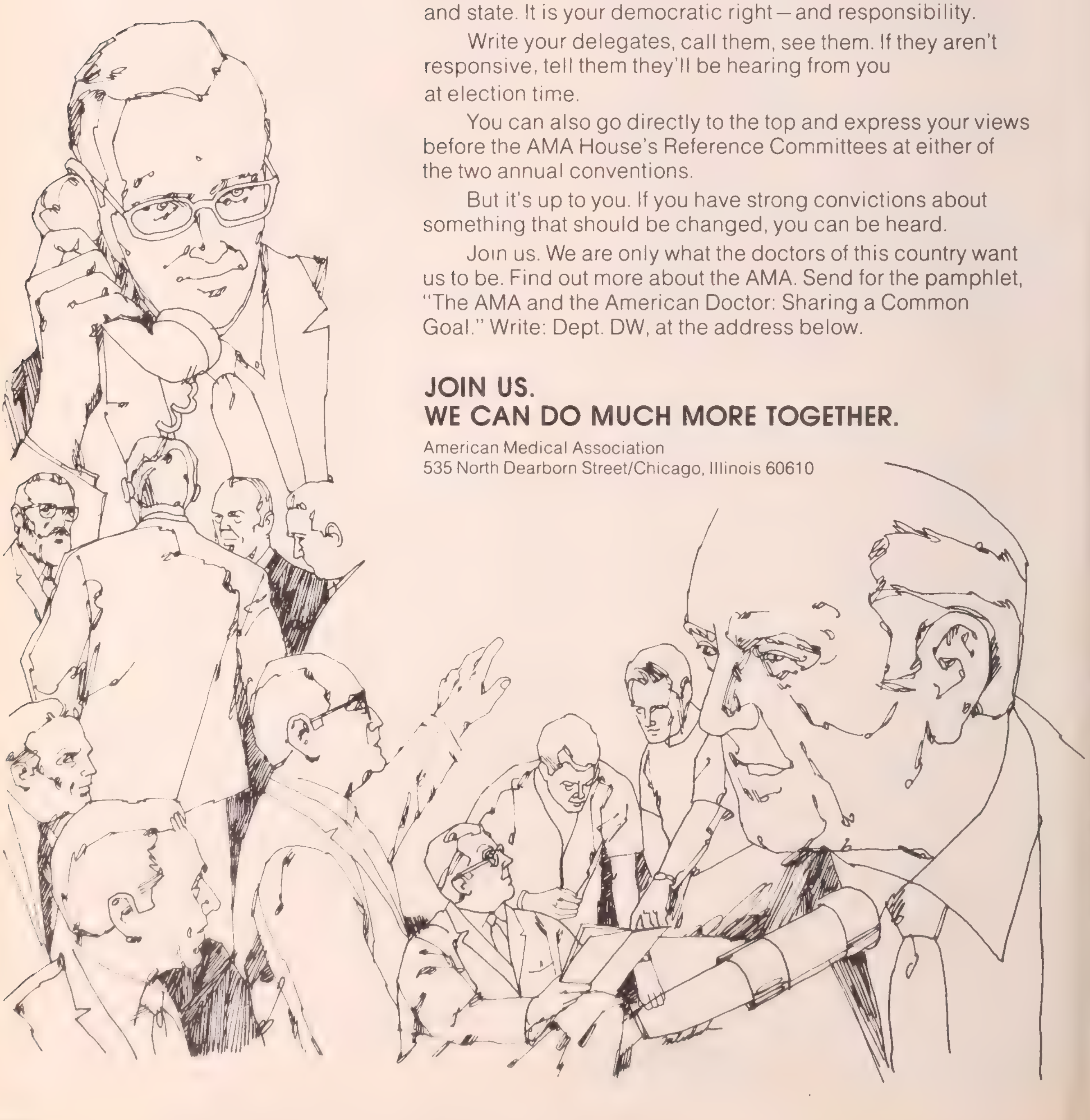

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The Medical Society of the State of New York announces the opening of competition for the 1973 ALBION O. BERNSTEIN, M.D. AWARD.

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The award was presented in 1972 to Samuel R. Powers, Jr., M.D., of the Albany Medical College, Albany, N.Y., for the development and application of modern engineering methods for the correction of the respiratory distress syndrome following trauma. The award was presented in 1971 to Ludwig Gross, M.D., for his pioneering studies of virus-induced leukemia in mammals, and presented in 1969 to Baruch S. Blumberg, M.D., of the Institute for Cancer Research, Philadelphia, for his discovery of Australia antigen, a possible cause of viral hepatitis.

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Candidates for 1973 will be evaluated by the Awards Committee of the Medical Society of the State of New York, chaired by Alfred A. Angrist, M.D., Editor, New York State Journal of Medicine.

New York State Journal of Medicine

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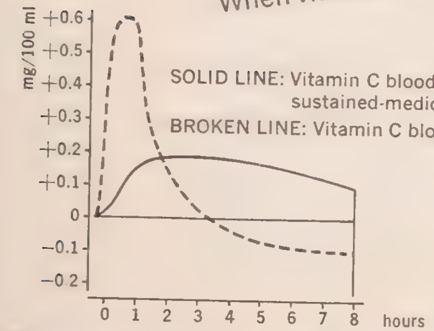

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Books Reviewed

Psychology of Language. A Local Habitation and a Name. By John M. Dorsey, M.D., LL.D. Octavo of 145 pages. Detroit, Michigan, Center for Health Education, 1971. Cloth, $6.95.

John M. Dorsey is well qualified to write "Psychology of Language" not because he is an M.D. or was a professor and chairman of the Department of Psychiatry, training psychiatrists, and so forth, but because he has arrived at the state of genius,—"when man has arrived within his own heart and mind that he is no different from anyone else, this is genius" (R. W. Emerson). His M.D. to me means a man of divinity. He writes as H. W. Beecher said, "when the English language gets in my way, it doesn't stand a chance."

Dorsey writes well in that he frequently uses the "I feel" and "have arrived at." He also speaks of my Aristotle, or Plato, or Keats, and others, in that he feels the union with them—"we read fine things, but we really do not understand them until we have gone through the same steps of the author" (Keats). Reading the book is a poetic experience, especially if you are "there" (inwardly). As Aristotle felt, "the philosopher should end with medicine, the physician commence with Philosophy." This author's book is one of philosophy. He, as with Wordsworth and others, wrote mostly of his self . . . he considered art to be the spontaneous overflow of powerful feelings.

Reading Dorsey is like hearing a great sermon by an artist whose metamessages (Hayakawa) are not only read but also felt. With his great quotes of the poets with metaphors and imagery, it reenforced his "arrival at" . . . it struck at my every fiber while reading. Reik states that the metaphors of a poet are often more meaningful than technical scientific language with all its precision. Dorsey's message is simple, beautiful, dynamic, and direct about his self.

"Psychology of Language" will be of value to those in the healing arts, teaching, ministry, and especially for psychiatrists who are oriented to one school of psychiatric thought, or so rational and logical, without artistry or charisma. It will be an inventory for the self of the reader to see if he is "there," cerebrally or in tune with the Infinite . . . "That they have gone through the steps of the Author." All to get back to that inner wisdom, or religion (re ligare—to bind back to those feelings of union, oneness, or allness with which one came into this world). We are all born free and equal in this feeling. **Samuel A. Greenberg, M.D.**

Renal Transplantation. Theory and Practice. By Jean Hamburger, M.D., Jean Crosnier, M.D., Jean Dormont, M.D., and Jean-Francois Bach, M.D. Octavo of 326 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. No price listed.

This is an up-to-the-minute comprehensive "state of the art" presentation of the problems and successes of kidney transplantation. Hamburger's team at Hôpital Necker and the Merrill group at Boston's Peter Bent Brigham Hospital have conducted a friendly, frequently collaborative, rivalry for two decades, during which renal transplantation has been transformed from a hazardous experiment to a highly successful, though still complicated, every day clinical undertaking. In a preface which reads as an adventure novel, the contribution of Merrill's Paris sabbatical year to the Necker effort is described for the first time.

Chapters on immunosuppression, antilymphocyte sera, and the search for specific tolerance stand as small gems incorporating in a short space nearly all of the controversial and confusing pertinent literature.

Minor quibbles, such as the overemphasis on live donors and the inattention to long-term complications, do not detract from the unusual merit of the text, which is recommended as a first source for nephrologists, students, and graduate nurses. **Eli A. Friedman, M.D.**

Principles of Cardiac Arrhythmias. By Edward K. Chung, M.D. Quarto of 540 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $24.75.

The author sets out to discuss in depth all the known arrhythmias and in this he succeeds admirably. The book is easy to read, has numerous, excellent illustrations, and has a detailed bibliography at the end of each chapter.

The book includes introductory chapters on the anatomy, electrophysiology, and hemodynamics of arrhythmias. This is followed by chapters for each category of arrhythmia. Other chapters deal with differential diagnosis, management of arrhythmias, the relationships to digitalis and electrolyte disturbances, and the arrhythmias related to acute myocardial infarction.

The book is a welcome addition to electrocardiography and can be recommended to students, house staff, internists, and cardiologists. **Jack Budow, M.D.**

Clinical Immunology. By Samuel O. Freedman, M.D., with contributions by Phil Gold, M.D., David Hawkins, M.D., and Joseph Shuster, M.D. Octavo of 697 pages, illustrated. New York, Harper & Row, Publishers, 1971. Cloth, $20.

In its clinical setting, immunology has developed from a series of exercises in the diagnosis of infectious disease to an adjunct of rheumatology and hematology and then to an autonomous discipline. This development has resulted from an extraordinary increase in our fund of factual knowledge about antibodies and better definition of the cellular mechanisms involved in response to antigenic stimulus. Much of this information has been derived from new studies of clinical disease and clinical answers in turn are being sought from the immunologist. Samuel O. Freedman, a frequent contributor to the immunologic literature, in collaboration with three of his colleagues at McGill University has written a concise introductory textbook to the field. Chapters outlining basic immunologic informa-

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tion, such as the now familiar dissection of the immunoglobulin molecule and the interaction of cellular elements are followed by chapters concerned with the immunologic problems of various organs and organ systems. Other sections approach disease entities and immunologic technics. The chapters describing technics emphasize interpretation and clinical usefulness rather than details of procedure.

The basic chapters are excellent, leading the unsophisticated reader easily through complex, if somewhat simplified information. The chapters dealing with diseases are less satisfactory. In an attempt at completeness, areas are skimmed which were better omitted. A page and a half plus a table presented as a review of the treatment of lymphoreticular malignancies listing drug dosages is, at best, of no value.

These and other faults aside, this book, which is eminently readable, is well suited to its intended audience, the nonimmunlogically oriented medical practitioner who would like an overview of this newly developed clinical discipline. **Alan S. Josephson, M.D.**

Gonadotrophins and Ovarian Development. Proceedings of the two Workshop Meetings on the Chemistry of the Human Gonadotrophins and on the Development of the Ovary in Infancy, Birmingham, 1969. Edited by W. R. Butt, B.Sc., Ph.D., A. C. Crooke, M.A., M.D., and Margaret Ryle, M.A., Ph.D. Octavo of 400 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1970. Cloth, $19.

This book combines the abridged essays of one workshop under the auspicies of the Gonadotrophin Club confined to the chemistry of the human gonadotropins and another of a separate but related group; also of international membership researching the development of the ovary in infancy. The conference was held at Birmingham, England, and was sustained by the financial support of Searle & Co. Limited, the Organon Laboratories Limited, both in England, and the Nordisk Insulinfond, Copenhagen.

The gonadotropin workshop comprises 19 formal presentations. They delineate the individualized approach of each group towards resolving problems confronting efforts to characterize the gonadotropins with the aid of the most modern physicochemical, biologic, and immunologic technics. The ingenuity of the experiments described provides very interesting reading matter.

Despite very satisfactory progress, the exact structure of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) continue to elude the eager researchers. Presently, purified FSH contains traces of both LH and thyroid-stimulating hormone and LH contains traces of FSH. Furthermore the gonadotropins derived from the pituitary, the chorion, and from menopausal urine are found unidentical—cause undetermined.

For the most part special strains of mice and rats are used in the experiments, and it is clear that some factor inhibits the action of gonadotropins in newborn animals and monitors their effects so that they do not exert their full function until the puberty or the maturity of the animal.

The second workshop, "Development of the Ovary in Infancy," occupies about one third of the book divided into three sections. The first section consists of six formal papers on various aspects of the cellular growth—infantile ovary. The second section contains ten formal essays relating experiments aimed at assaying the effects of gonadotropins on the ovaries of infant mice, infant mice deprived of endogenous gonadotrophins, and on the in vitro growth of infant mouse ovaries stimulated by gonadotropins. Studies also describe the effects on nucleic acid metabolism, enzyme activities, and protein synthesis in vitro and in vivo. The third section presents, in three formal papers, experiments in which testosterone injections were given to immature and mature mice followed by widespread disruptive effects leading to the formation of follicle cysts.

In conferences such as these are found the building stones for future advances in gynecologic endocrinology. Summaries and discussions are provided under separate headings for those who wish to enjoy the conclusions without assessing the technics. **Kenneth G. Jennings, M.D.**

Laser Applications in Medicine and Biology. Volume I. Edited by M. L. Walbarsht. Octavo of 288 pages, illustrated. New York, Plenum Publishing Corporation, 1971. Cloth, $18.

Dr. Wolbarsht, professor of ophthalmology and director of research, Department of Ophthalmology at Duke University, has reviewed the first decade of laser research in medicine and biology. The only major clinical use of the laser to date is to repair retinal tears with photocoagulation, some 4,000 patients have been so treated in this country.

The bulk of the laser story at this moment is about measuring; calibration, that is, output measurements; and biologic effects, particularly at the cellular level.

The accomplishments of the laser in tumor therapy are soberly described. Little has been accomplished to date.

Laser applications through holography would appear to be the most promising area for the future.

The physics and biology sections, written by several contributers, could benefit by better illustrations. The photographic reproductions are qualitatively inferior to those of the daily *New York Times*.

This book is a poor buy for $18. **David L. Benninghoff, M.D.**

Cell Membranes. Biological and Pathological Aspects. Edited by Goetz W. Richter, M.D., Dante G. Scarpelli, M.D., Ph.D., and Nathan Kaufman, M.D. Quarto of 180 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $16.

The cell membrane is a true frontier in medical research. Much of our current knowledge of red cell abnormalities, understanding of transport mechanisms, nerve and muscle function, as well as the growing body of knowledge regarding cancer cell markers, stems from research in cell membranes. This volume is the publication of a symposium on cell membrane research sponsored by the American Association of Pathology and Bacteriology.

The editors have arranged the nine contributions to

continued on page 2689

> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
>
> *—George Sarton, from "The History of Medicine Versus the History of Art"*

Are combination drug products useful in treatment involving concomitant use of two or more drugs?

Opinion

Results of a questionnaire to 7,000 physicians:

62.9%
Believe combination drug products are useful.

13.8%
Do not believe combination drug products are useful.

Are combination drug products useful in treatment involving concomitant use of two or more drugs?

Opinion & Dialogue Dialogue

Doctor of Medicine

Louis Lasagna, M.D.
Professor and Chairman
Department of
Pharmacology & Toxicology
University of Rochester
School of Medicine
and Dentistry

Obviously, many drugs are given concomitantly. Whether it makes sense to combine medications in one preparation, be it capsule, tablet, or liquid, is a question that can be answered only by examining the advantages and disadvantages in the individual case.

Among the advantages is, first of all, convenience. The more medications that are taken concurrently and the more complicated the directions, the less likely the patient is to take medications accurately. From the standpoint of convenience and accuracy, and economy as well, you can make an important case for putting medications together in one preparation, as long as they are compatible.

By the same token, when you prescribe a properly tested and rational combination, you should have less worry about pharmaceutical or pharmacological compatibility — and about reasonable dosage ratios as well. Compatibility of the formulation should be demonstrated in the laboratory and clinic before the product is available for prescription—which is more than can usually be said for the physician's own spontaneous creations. And, the dosage ratios employed in rational precompounded combinations are designed to meet the needs of substantial numbers of "typical" patients.

There is no doubt that many "atypical" patients are to be found, and for them the prefabricated combination must be rejected. But that hardly argues for eliminating rational combinations from the market. Think, for example, of the problems that would arise if the components of widely accepted combinations, like the oral contraceptives and the diuretic-antihypertensives, always had to be prescribed, purchased and ingested separately.

One disadvantage that comes to mind is some doctors' unawareness of the ingredients a given combination contains. For example, a doctor might know that a patient is allergic to aspirin but forget that a certain analgesic mixture, which he knows only by its trade name, contains aspirin. His prescription, then, causes considerable discomfort, to say the least. This problem is a function of physician education, rather than of combination therapy as such. Improving doctors' knowledge about all medicaments they prescribe is a problem that deserves tackling on its own.

Another accusation leveled at combination drugs is that they encourage sloppiness of diagnosis and treatment. In many cases, however, a combination may prove to be the most effective choice. A good example of the usefulness of combinations appears in a recent article in the *Journal of Chronic Diseases* on the efficacy and side effects of an antihypertensive containing three ingredients, in which the track records of the combination drug and the individual ingredients were compared. Interestingly enough, whether the drugs were given individually or together, incidence and severity of side effects were the same. But blood pressure control was invariably better when the drugs were taken in one combination tablet than when they were taken separately (in "titratable" dosage) or in two or three different tablets.

Deciding which combinations constitute rational therapy obviously leads to a discussion of who is to determine which should be used and which should not. Realistically, I think combinations should be evaluated somewhat differently if they are old and established or new and untried.

In today's regulatory atmosphere, there is no possibility of a new combination being put on the market without a substantial amount of acceptable evidence in the form of controlled trials that show it to be safe and efficacious. On the other hand, I believe a different set of standards should apply to combination preparations that have been around for a long time. In other words, physician acceptance over a long period should be given some weight as evidence of the efficacy and safety of these drugs.

The FDA, however, does not seem to share this attitude. It often requires, for these older products, controlled trials that will monopolize the time of already overtired investigators and cost a greal deal of money. I wish we could agree on a "grandfather clause" approach to preparations that have been in use for a number of years and that have an apparently satisfactory track record.

For example, I think some of the antibiotic combinations that were taken off the market by the FDA performed quite well. I am thinking particularly of penicillin - streptomycin combinations that patients—especially surgical patients—were given in one injection. This made for less discomfort for the patient, less demand on nurses' time, and fewer opportunities for dosage errors. To take such a preparation off the market doesn't seem to be good medicine, unless actual usage showed a great deal of harm from the injections (rather than the proper use) of the combination.

The point that should be emphasized is that there are both rational and irrational combinations. The real question is, who should determine which is which? Obviously, the FDA must play a major role in making this determination. In fact, I don't think it can avoid taking the ultimate responsibility, but it should enlist the help of outside physicians and experts in assessing the evidence and in making the ultimate decision.

Maker of Medicine

W. Clarke Wescoe, M.D.
President
Winthrop Laboratories

If two medications are used effectively to treat a certain condition, and it is known that they are compatible, it clearly is useful and convenient to provide them in one dosage form. It would make no sense, in fact it would be pedantic, to insist they always be prescribed separately. To avoid the appearance of pedantry, the "expert" decries the combination because it is a fixed dosage form. When the "expert" invokes the concept of fixed dosage form he obscures the fact that single-ingredient pharmaceutical preparations are also fixed dosage forms. By a singular semantic exercise he implies a pejorative meaning to the term "fixed dose" only when he uses it with respect to combinations. What is ignored is the simple fact that only in the rarest of circumstances does any physician attempt to titrate an exact therapeutic response in his patient. It is quite possible that some aches and pains will respond to 500 mg. of aspirin yet that fact does not militate against the *usual* dose being 650 mg.

The other semantic ploy often called into play is to describe a combination product as rational or irrational.

Take antibiotic mixtures, the source of much of the criticism generated against combinations generally. Obviously, no one should be exposed willy-nilly to the potential side effects of two or three antibiotics when only one is needed. At the same time there are cases where it is prudent to prescribe more than one. The clinician is the judge in these circumstances, as he should be.

There is no clear definition of the word rational. Most persons, I suppose, would find it synonymous with reasonable, but in many circumstances it may best be defined as the opinion of those in power at the moment.

Other factors govern combination therapy, not the least of which has been its broad use by practicing physicians anxious to achieve convenience in prescribing, to reduce medication error, and to save money for their patients. Combinations clearly have met the test on all three counts.

I have been impressed by studies showing that the rate of error climbs markedly with the number of medications to be taken, even with sophisticated patients. When medically justified, therefore, this factor alone supports the logic of combination therapy.

The cost argument for combinations appears to be irrefutable. In 1971, R. A. Gosselin studied the 71 combination products (excluding oral contraceptives) among the 200 most prescribed drugs. The study found that if all 71 products were discontinued, and if each ingredient in these combinations were prescribed separately, the price of medicines to patients would jump by $443.2 million on a national basis! At a time when the cost of medical care is under so much fire, it would be nonsensical to boost costs without clearly irrefutable medical reasons.

The part played by government on this question, of course, is fundamental. The FDA should play a role in determining which combinations are reasonable. That role, as defined by law and regulation, is to ensure that any medication on the market is safe and effective in line with its label claims. Certainly combinations are entitled to as much consideration as single entities—neither more nor less. So long as the addition of one drug to another does not make either less safe, or less effective, so long as they are compatible in a formulation, we have a reasonable product. It makes no sense to recommend the use of two products for certain conditions and to deny their being combined in a single form. An unhappy side effect of the problem concerns the efficacy panel discussions of many products submitted for review. The term "effective, but" has been freely interpreted to mean "ineffective" in toto, regardless of the merit of the individual drugs. This interpretation has placed numerous useful combination products in needless jeopardy.

In reading the actual reports of the review panels, it seems clear that some of the ratings were based less on scientific research and clinical observation than on the "informed" opinions of the panelists. These "informed" opinions were accepted at face value, while the "informed" opinions of others who had used the products were rejected. All of this put combination products into a sort of scientific never-never land.

It should be kept in mind by all, government as well as others involved in our health care system, that advances in therapy are seldom made in leaps and bounds but rather by small painstaking steps—and that some of these steps have resulted from research in combination drugs as well as with single entities. Given the near-infinite biologic variation in patient response, this is hardly surprising to clinicians. It should not be to regulatory agencies either.

In the end, the practicing physician is in the best position to decide if a particular combination makes sense. Such a decision should not be made exclusively by those whose responsibility for continuing clinical care is limited. Clinicians are the best judges of efficacy because the ultimate proof of any product's effectiveness is acceptance by physicians who have observed its actions in patients over time. The corollary statement may be made about over-the-counter medicines, which would not long survive if they failed to afford the relief the user anticipates. That the antihistamine in a "cold" remedy may not *always* be necessary is no reason to proscribe the combination generally.

Opinion & Dialogue

What is your opinion, doctor?
We would welcome your comments.

P·M·A

The Pharmaceutical Manufacturers Association
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Book Notes

Head Injuries. Proceedings of an International Symposium held in Edinburgh and Madrid 2nd to 10th April 1970. Sponsored by various departments of the United Kingdom and Spain. Quarto of 242 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $22.25.

This symposium on head injuries covers a wide range of pertinent topics, including diagnosis, long-term complications and care, as well as neurosurgical treatment. Summaries of sessions and additional reference material are also included.

Series Haematologica. Volume IV, 2, 1971. The Biochemical, Genetic, and Clinicopathological Aspects of Haptoglobin. By Jan Pintera. Quarto of 183 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $19.25.

The present number of this series is concerned with several important aspects of haptoglobin. These include its isolation, metabolism, quantitative estimation and qualitative determination, as well as its role in acute hemolytic states.

Transplantation Reviews Volume 7, 1971. Immunological Surveillance Against Neoplasia. Edited by Göran Möller, M.D. Quarto of 171 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $16.50.

It is the aim of this series to publish comprehensive and analytic reviews within the fields of clinical and experimental transplantation as well as cellular immunology. This number contains six papers, by various authors, which demonstrate the variety of immunologic defenses against neoplasia.

Immunohematology. Second edition. By Chester M. Zmijewski, Ph.D., and June L. Fletcher, B.S., M.T. Quarto of 334 pages, illustrated. New York, Appleton-Century-Crofts, 1972. Cloth, $15.50.

This is a textbook for students in all areas of biologic sciences who are interested in acquiring a working knowledge of the immunology of human blood group systems. References are limited to "classics" in the field and to those works which will aid the student in gaining a better understanding of the subject matter.

Hormonal Contraception. By Jürgen Haller, M.D. Translated from the 3rd German edition by Herbert Gottfried, Ph.D. Octavo of 314 pages, illustrated. Los Altos, California, Geron-X, Inc., 1972. Cloth, $13.

After a detailed discussion of normal, rhythmic ovulation in women, the author considers the different possibilities for its inhibition by hormone applications. The effect of these on the various endocrine glands and the body itself are also considered, and a special section is devoted to the possibility of cancer.

Obstetrics. By E. Stewart Taylor, M.D. Condensed from **Beck's Obstetrical Practice,** ninth edition. Quarto of 311 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $11.

This students' edition has been prepared to meet the need for a textbook of the essentials of obstetrics and contains basic information on reproductive physiology and pathology. More detailed information is contained in the parent volume.

Pharmacy, Drugs and Medical Care. By Mickey C. Smith, Ph.D., and David A. Knapp, Ph.D. Octavo of 278 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1972. Paper, $9.50.

In this work, the subject is presented within the context of the system in which it is practiced. Thus there are discussions of many aspects of health care, including the patient and his illness as well as the various agencies which administer to his care.

Statistics in Small Doses. By Winifred M. Castle, M.B., B.S. Octavo of 216 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $9.50.

The intention of this work is to remedy the "statistical deficiency" which exists among many medical personnel. It is mainly a programmed learning text and information is dispensed in "frames" with questions and answers to test the reader's grasp of the subject matter.

Essentials of Artificial Ventilation of the Lungs. By A. R. Hunter, M.D. Octavo of 95 pages, illustrated. Third edition. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $7.75.

In this new edition, out-of-date material has been eliminated and the remainder of the text fully revised, particularly the section on the central control of respiration. Also, a new chapter on the diagnosis of death has been added.

An Introduction to Clinical Research. By W. P. Small, V.R.D., Ch.M., and Urban Krause, M.D. Octavo of 125 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $7.75.

This book is an outline of the special methods involved in long-term clinical research. The authors consider such important topics as the collection and recording of clinical data, evaluation, and the presentation of results.

Introduction to Electrocardiography. Second edition. By Thomas M. Blake, M.D. Octavo of 218 pages, illustrated. New York, Appleton-Century-Crofts, 1972. Cloth, $7.50.

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The aim of this work is to provide an introduction to electrocardiography with emphasis on concepts rather than details, and it is intended to aid the advanced medical student as well as the technician. Numerous references to recent papers have been included in the text.

Handbook of Obstetrical and Gynecological Data. By Robert C. Goodlin, M.D. Duodecimo of 526 pages, illustrated. Los Altos, California, Geron-X, Inc., 1972. Paperback, $7.00.

This handbook represents the outgrowth of the author's need for an efficient filing system of gynecic data. Where feasible, the data are arranged alphabetically with the index serving as a cross reference.

Infection in Hospital. A Code of Practice. Edited by G. L. Gibson, M.D. Octavo of 101 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $6.75.

The authors feel that a compact, easily consulted handbook is needed to give guidance to the hospital staff in meeting the problem posed by hospital infection. The measures outlined are not intended to be rigid codes of conduct, although a few of the recommendations are mandatory by force of law in certain countries.

Fundamental Physics of Radiology. Second edition. By W. J. Meredith, O.B.E., D.Sc., and J. B. Massey, B.Sc. Quarto of 666 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $28.75.

In this new edition, the chapter on radioactive isotopes has been considerably enlarged and so has the section on radiation protection, particularly in relation to the protection of the patient. Also, more attention has been given to the use of particle beams in radiotherapy and especially to developments in neutron therapy.

Pediatrics. Fifteenth edition. Edited by Henry L. Barnett, M.D., and Arnold H. Einhorn, M.D. Quarto of 2,070 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Cloth, $26.50.

This new edition offers more extensive discussions not only of clinical pediatrics, but also of psychological, physiological, and biochemical aspects of diseases of infants and children. It is intended to provide the pediatrician with a textbook which provides pertinent basic, as well as applied, information about his subject.

Air Pollution and Respiratory Disease. Edited by W. W. Holland, M.D. Quarto of 163 pages, illustrated. Westport, Connecticut, Technomic Publishing Company, Inc., 1972. Paper, $20.

This publication has two aims: to make a critical review of the relevant literature and to evaluate current methods of investigation. Some chapters are principally descriptive and are intended to give a general outline of recent studies and the way in which their findings have furthered our understanding of the health effects of pollution.

Series Haematologica. Volume IV, 3, 1971. Hemoglobin Synthesis. Edited by Kaj Gert Jensen and Sven-Aage Killmann. Quarto of 132 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $16.50.

The study of hemoglobin synthesis brings together many disciplines: developmental biology, biochemistry, genetics, and clinical medicine. This issue of *Series Haematologica* is devoted to articles in this area reviewing current aspects of these investigations.

Transplantation Reviews. Volume 8, 1972. Immunological Tolerance. Effect of Antigen on Different Cell Populations. Edited by Göran Möller, M.D. Quarto of 136 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $14.

It is the aim of this series to publish comprehensive and analytic reviews within the fields of clinical and experimental transplantation as well as cellular immunology. This volume contains five articles on different aspects of immunologic tolerance.

The Preterm Baby and other Babies with Low Birth Weight. Seventh edition. By V. Mary Crosse, O.B.E., M.D. Octavo of 290 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $13.25.

In this new edition, all chapters have been brought up-to-date, especially the chapter on complications, which has again been almost completely rewritten. New sections are included on hypomagnesemia, idiopathic neonatal diabetes, infants of mothers addicted to narcotics, neonatal necrotizing enterocolitis, and the Wilson-Mikity syndrome.

Series Haematologica. Volume IV, No. 4, 1971. The Differentiation of Haemopoietic Stem Cells. By C. D. R. Dunn, M.D. Quarto of 71 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Paper, $11.25.

The major part of this review has concerned those stem cells which produce colonies of mature, hemopoietic cells under suitable experimental conditions. It also emphasizes several fields of bone-marrow research which deserve priority in future studies.

Transplantation Reviews. Volume 9, 1972. Lymphoid Cell Replacement Therapy. Edited by Göran Möller, M.D. Quarto of 72 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $11.25.

This review, the latest number in the series, contains two articles: "The Use and Abuse of Hemopoietic Cell Grafts in Immune Deficiency Diseases" and "Adoptive Immunotherapy in Malignant Disease."

Practical Electrocardiography. Fifth edition. By Henry J. L. Marriott, M.D. Octavo of 325 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $10.50.

This text is designed to be digestible for beginners without lacking value to those who have some acquaintance with electrocardiography. In this new edition, sixty new figures have been added as well as numerous key references.

Medical Meetings

Godfrey Nurse lecture

Charles Dubost, M.D., of Paris, an international authority on heart surgery, delivered the Fifth Godfrey Nurse Lecture at the Harlem Hospital Center, according to an announcement by Jose M. Ferrer, M.D., director of surgery of that institution. Dr. Dubost's address was on "Surgery of the Aneurysms of the Aorta," on Wednesday, October 11, 1972, in the auditorium of the Martin Luther King Pavilion at 135th Street and Lenox Avenue, New York, New York.

Breast Cancer symposium

The Cancer Research Center Committee of New York Medical College and the American Cancer Society are sponsoring a symposium on breast cancer to be held at the New York Medical College, Westchester Campus, Valhalla, New York, on November 3, 1972. A $25 registration fee will be charged for the course. It has been approved by the American Academy of General Practice and the American Medical Association. Participants will receive seven credits.

Care of the scoliosis patient

The American Academy of Orthopaedic Surgeons will sponsor a postgraduate course on "Management and Care of the Scoliosis Patient" November 12 through 14, 1972, at the New York Sheraton Hotel. The program will be devoted to practical considerations of scoliosis care and will be of special interest to orthopedists, nurses, and orthotists. The course has been approved for twenty elective hours by the American Academy of Family Physicians.

For application forms and further information, contact Hugo A. Keim, M.D., 161 Fort Washington Avenue, New York, New York 10032, or the American Academy of Orthopaedic Surgeons, 430 North Michigan Avenue, Chicago, Illinois 60611.

Postgraduate anesthesiologists assembly

The New York State Society of Anesthesiologists will hold its Twenty-Sixth Annual Postgraduate Assembly December 10 through 13, 1972, at the New York Hilton, New York, New York. For further information, write to Mrs. Eugenia Sinisi, Executive Secretary, 30 East 42nd Street, New York, New York 10017.

American Psychoanalytic Association meetings

The fall meeting of the American Psychoanalytic Association will be held from November 30, 1972, through December 3, 1972, at the Waldorf-Astoria Hotel, New York, New York. The Association's annual

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

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167TH

ANNUAL CONVENTION

OF THE

MEDICAL SOCIETY OF THE STATE OF NEW YORK

February 11–15, 1973

at the
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New York City

HIGHLIGHTS

General Sessions

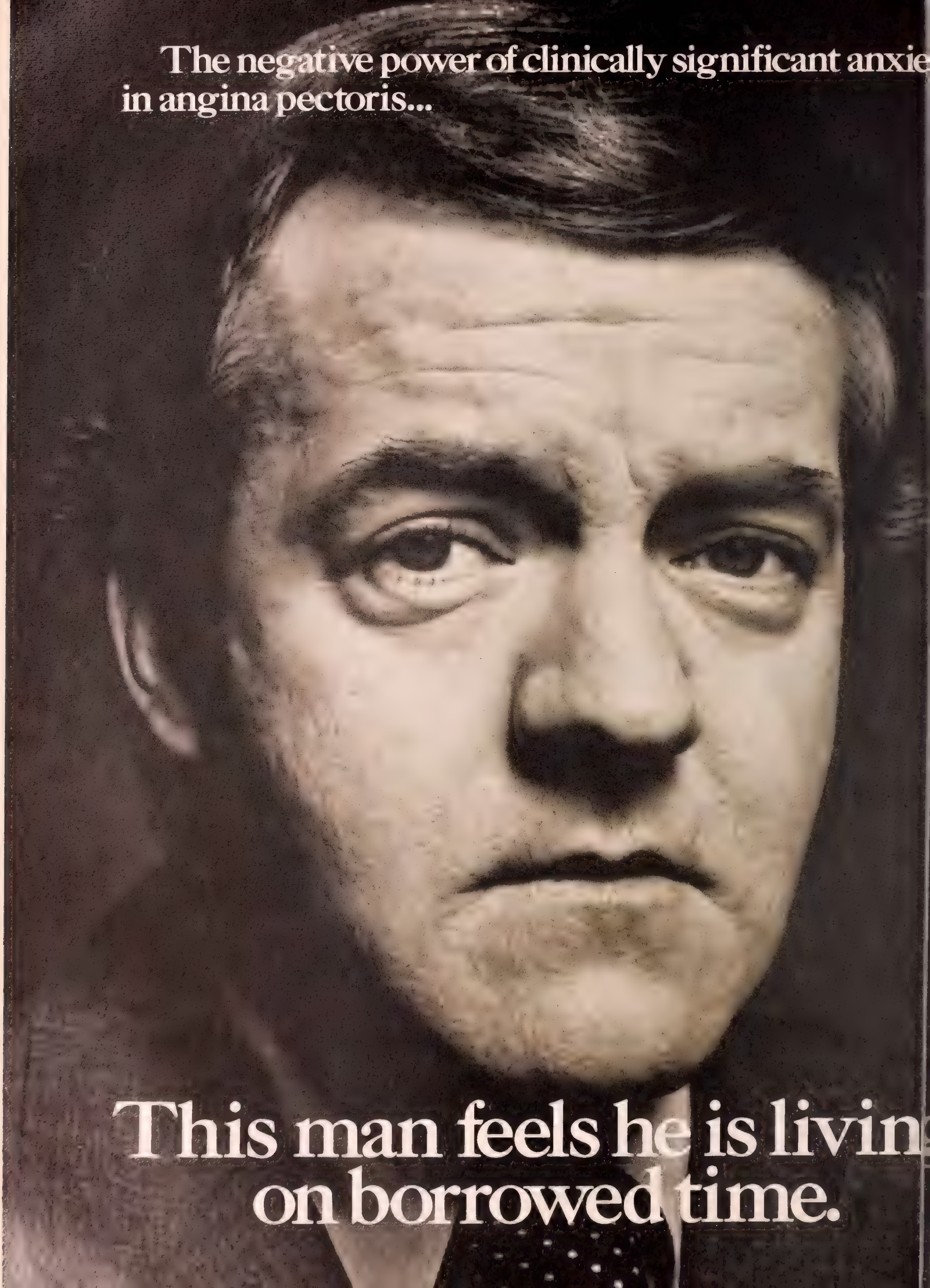
Sunday, February 11th
Acupuncture

Monday, February 12th
Alcoholism

Tuesday, February 13th
Immunology

Wednesday, February 14th
Heart Day

Scientific Sections; Symposia; Panel Discussions; Annual Meeting of House of Delegates; President's Reception and Dinner Dance; Scientific and Technical Exhibits; Scientific Motion Pictures.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Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido — all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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*Levine, S.: "Angina Pectoris and Emotional Overlay," Scientific Exhibit presented at the Annual Meeting of the Maine Medical Association, Kennebunkport, Me., June 13-15, 1971.

A copy of the Levine study may be obtained from your Roche representative.

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meeting is scheduled for May 3 through 7, 1973, at the Hilton Hawaiian Village, Honolulu, Hawaii. Information about both meetings may be obtained from Mrs. Helen Fischer, Executive Secretary, 1 East 57th Street, New York, New York 10022.

Refresher course in anesthesia

The State University of New York, Upstate Medical Center, Syracuse, New York, sponsored its Seventh Annual Refresher Course in Anesthesia October 18 through 20, 1972. The course was given in Room 1100, State University Hospital, 750 East Adams Street, Syracuse, New York.

Course for family physicians

The Departments of Pediatrics, Obstetrics and Gynecology, Surgery, and Medicine, State University of New York, Downstate Medical Center, and the Kings County Chapter, American Academy for General Practice, have scheduled their 1972 to 1973 course "Pediatrics, Gynecology, Surgery, and Medicine for the Family Physician." The fee for the course is $20. Information regarding registration, which is required, may be obtained from the Maimonides Hospital, 4802 Tenth Avenue, Brooklyn, New York 11219.

The following lectures will be given each Friday from 8:00 A.M. to 9:30 A.M. in the Fuhs Auditorium, Maimonides Hospital:

Lecturer	**Title**
1972	
Oct. 13	
Felix A. Silverstone, M.D.	Office care of the diabetic
Oct. 20	
Carl Schiller, M.D.	Current concepts in plastic surgery particularly as applied to office procedures
Oct. 27	
Norman Posner, M.D.	Diagnosis and treatment in gonorrhea of the female
Nov. 3	
Bertram D. Cohn, M.D.	The elective pediatric surgical conditions and current concepts in management
Nov. 10	
Austin Schlecker, M.D.	Current concepts in office care of the rheumatoid arthritic

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CONTRAINDICATIONS: Hypersensitivity to oxycodone, aspirin, phenacetin or caffeine.
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Interaction with other central nervous system depressants: Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with Percodan may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.
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Salicylates should be used with caution in the presence of peptic ulcer or coagulation abnormalities.
PRECAUTIONS: *Head injury and increased intracranial pressure:* The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.
Acute abdominal conditions: The administration of Percodan or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.
Special risk patients: Percodan should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.
Phenacetin has been reported to damage the kidneys when taken in excessive amounts for a long time.
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Other adverse reactions include euphoria, dysphoria, constipation and pruritus.
DOSAGE AND ADMINISTRATION: Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. The usual adult dose is one tablet every six hours as needed for pain.
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An antagonist should not be administered in the absence of clinically significant respiratory or cardiovascular depression.
Oxygen, intravenous fluids, vasopressors and other supportive measures should be employed as indicated.
Gastric emptying may be useful in removing unabsorbed drug.

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One tablet of Percodan every six hours is usually sufficient for adults. However, it occasionally may be necessary to exceed the usual dosage in cases of severe pain or in those patients who have built up a tolerance to the analgesic effect of narcotics. Percodan. The APC/narcotic that doesn't contain codeine.

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Please refer to brief summary on facing page.

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Pediatrics conferences

The Department of Pediatrics, Jewish Memorial Hospital, New York, New York, has scheduled the following calendar of conferences. Each conference will be held at Jewish Memorial Hospital Broadway and 196th Street, New York, New York 10040, at 11:00 A.M.

	Lecturer	Title
1972		
Oct. 18		
	Peter Auld, M.D.	Respiratory distress syndrome
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	William A. Blanc, M.D.	Pathology of the premature, yesterday and today
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	Ira Greifer, M.D.	A new look at kidney disease in children

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Abstracts

Levin, D. C., and Baltaxe, H. A.: Effect of radiopaque contrast material on left ventricular end-diastolic pressure, ***New York State J. Med.*** **72:** 2619 (Nov. 1) 1972.

Fifty patients undergoing coronary arteriography and left ventriculography were studied. There was a good correlation between the initial resting LVEDP (left ventricular end-diastolic pressure) and the degree of ischemic heart disease. There was a significant rise in LVEDP after selective coronary arteriography and a second rise after ventriculography. The authors stress that left ventricular function must be measured before any contrast material is injected. The degree of LVEDP elevation is not considered a valid stress test of left ventricular performance.

Flamm, E. S., Rovit, R. L., Kricheff, I. I., and Ransohoff, J., II: Periaqueductal neoplasms and vascular malformations, ***New York State J. Med.*** **72:** 2623 (Nov. 1) 1972.

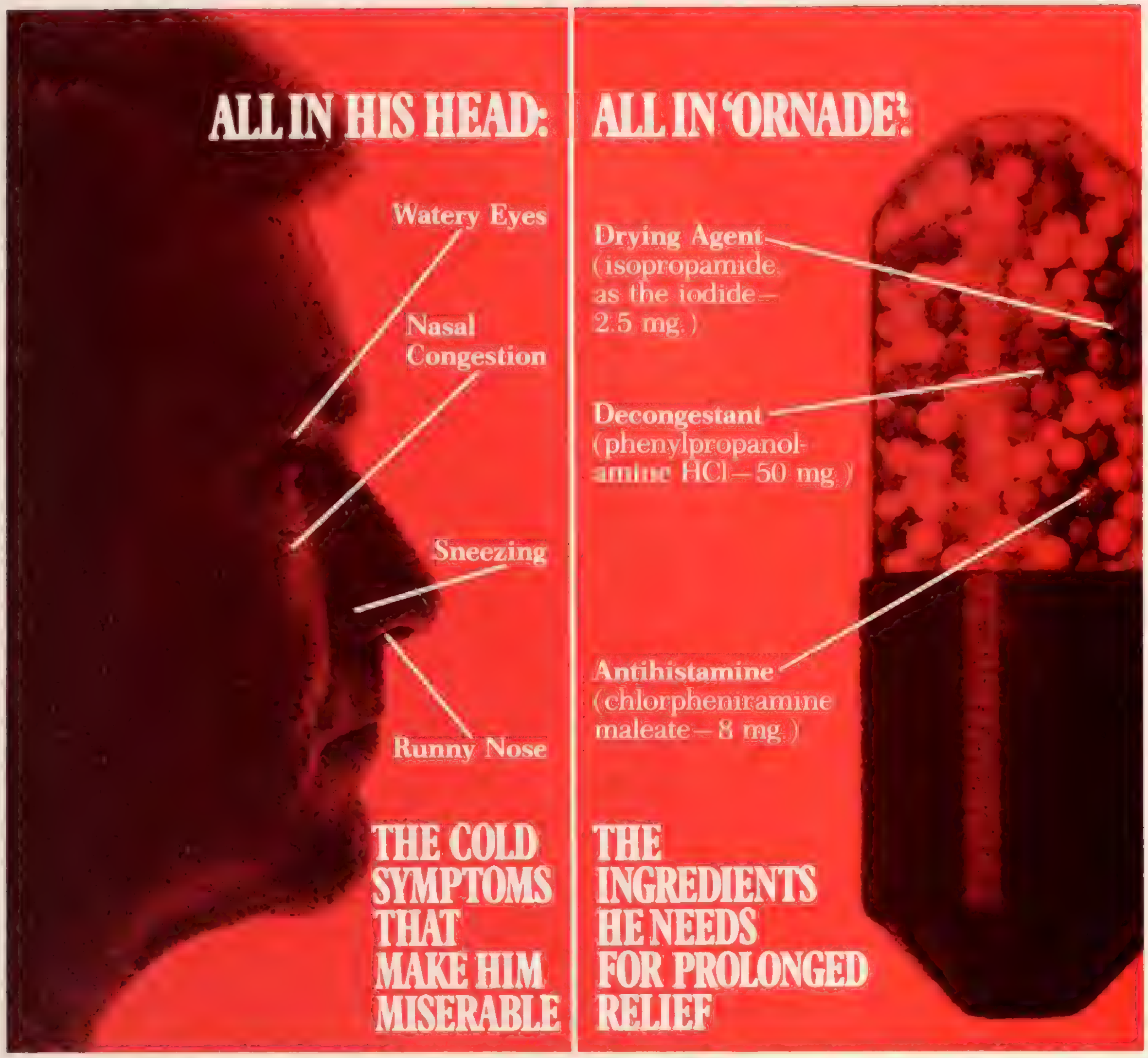
The case histories of 7 patients with midbrain mass lesions producing aqueductal obstruction were reviewed. Two had vascular malformations surrounding the aqueduct, 1 had a periaqueductal glioma, and the remaining 4 were presumed to have periaqueductal gliomas on the basis of contrast radiologic studies. The predominant symptom was headache. The only other universal symptoms present were those of increased intracranial pressure. Common were the neurological findings papilledema and nystagmus. A comprehensive literature review relates the present findings with those of other authors. Pantopaque ventriculography is indispensable in the diagnosis of aqueductal obstruction. The primary treatment has been shunting procedures used in other cases of noncommunicating hydrocephalus. If glioma is suspected, radiation therapy is advised, and chemotherapy when symptoms recur.

Ariel, I. M.: Treatment of hepatic metastases from rectal and colon cancers by infusion of 5-fluorouracil into umbilical vein, ***New York State J. Med.*** **72:** 2629 (Nov. 1) 1972.

In this study, 20 patients with hepatic metastases from primary rectal or colon cancers were treated with 5-fluorouracil infused into the umbilical vein. There was apparently no demonstrated advantage of administering the drug via the umbilical venous channel over administering it through a peripheral vein, and the method has been abandoned. Factors which could have affected the failure are discussed.

Fish, J. B.: Cuneiform osteotomy in treatment of slipped capital femoral epiphysis, ***New York State J. Med.*** **72:** 2633 (Nov. 1) 1972.

Cuneiform osteotomy is the preferred method of treatment of slipped capital femoral epiphysis. This article describes the operation in detail and uses several case reports to illustrate the efficacy of the operation. Cuneiform osteotomy is the only method of treatment that restores the normal relationship of the head and neck of the femur.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Editorials

Coloscopy,* with some reference to polypoid lesions

Today, just as in the days of Hippocrates, "life is short and the art long; occasion fleeting; experience fallacious and judgment difficult." In addition, one cannot neglect recognition of the fact that certain medicolegal considerations have forced on us the practice of "defensive" medicine and surgery. One of the sad by-products is resort to all known diagnostic procedures and tests regardless of merit or clear-cut indications largely in fear of missing or overlooking something. Coloscopy is no exception. This flagrant defensive practice results in considerable waste of energy, resources, and time, as well, as discomfort, and in some instances outright danger to the patient.

The purpose of this editorial is to put coloscopy in its proper perspective in the general diagnostic and therapeutic schemes. In spite of his pioneer work in coloscopy one of us† has recently stated: "I have remained conservative in the application of coloscopy because during the past 2 years, in a very active private practice, I have not found a single instance of a completely asymptomatic patient in which coloscopy was either especially needed or helpful. One of the reasons is my association with excellent gastroenterologists and roentgenologists." Thus far we resorted to coloscopy rarely and largely on gentle persuasion by referring clinicians in order to have a "complete" record. The one common indication for coloscopy is the problem of bleeding via the anus, overt or occult, when prior general and regional studies, including conventional endoscopy and roentgenography, fail to elucidate the cause. However, it should be emphasized that such cases are of very rare occurrence indeed. Against such a rare diagnostic triumph one may allude to false benign diagnoses on biopsy via the coloscope when the roentgenograms suggest the presence of a malignancy. Also, coloscopy may fail to detect an existing cancer when x-rays reveal its presence. At this point it should be emphasized forcibly that the tiny biopsy forceps used in conjunction with the coloscope are decidedly inadequate for the removal of sufficient tissue, especially from the depth of a polypoid lesion such as a villous adenoma which may harbor an invasive cancer in its very depth. In many instances the diagnosis on a very limited histologic issue just cannot be resolved on the basis of too *little* tissue. In general, false results in both directions are known to have followed fractional biopsies. Parenthetically, roentgenography of the colon should precede endoscopy whenever biopsy is contemplated (to prevent a blowout at the site of the biopsy following subsequent x-ray studies).

On the basis of a long and extensive experience we have advocated the disposition of all sessile lesions regardless of the histologic architecture, especially in normal-risk patients, by means of electrothermia when situated within the reach of the conventional, 25 cm.-long endoscope, or by intestinal resection (a cancer operation) when the lesions are located above the reach of the scope so as not to miss the one and, perhaps, only opportunity of removal of an unrecognized or latent polypoid early invasive cancer. We do not temporize with these flat lesions. If the lesion should prove to be totally benign intestinal resection (total biopsy) is still warranted as intestinal continuity is reestablished. Preoperative periodic observation of the lesion for growth (hence possible malignancy) by any means is not without risk.

The problem is different in the case of pedunculate adenomas. Those situated within the reach of the 25 cm.-sigmoidoscope are snared electrosurgically under *direct* vision. The lesions which are situated above the reach of the conventional sigmoidoscope are individualized. In the absence of significant bleeding and/or abdominal cramps or in poor-risk patients, this lesion does not have to be removed immediately on recognition, if at all. One of us (R.H.M.) has followed numerous patients with pedunculate polyps for decades without regret. We do not believe that this lesion in otherwise normal colons has any greater potential for malignancy than the surrounding mucosa. The concept that "every adenoma removed is a carcinoma prevented" has led to the wholesale removal of polyps, even in subrisk patients, especially since the advent of coloscopy to which "wonders" have been ascribed by a few who are publicizing coloscopy aggressively. Theoretically, this amounts to removal of polyps in 1 of every 2 patients who are sixty years old or older with possible iatrogenic risks or complications far in excess of the risk of cancer. Little, if any, consideration has been paid to the fact that in elderly persons adenomas may be the natural product of the aging process, and may therefore be accorded benign neglect with periodic follow-up.

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*The original term coloscopy is preferred to colonoscopy because the root of a word is usually desirable and certainly sufficient.

†Turell, R.: S. Clin. North America **52:** 826 (Aug.) 1972.

As to complications one reads about none, but one hears of a variety of many mishaps such as significant bleeding, perforation et cetera. We do not know of any provisions made against possible intracolonic gas explosions. This complication is frequently fatal. The negative aspects, let alone the outright bad results, are usually not mentioned or just ignored. This is the common one-sided practice of the enthusiast. Names of senior authors, who themselves have apparently not performed coloscopy, appear in exhibits and in published papers.

Even though coloscopy has been accorded exaggerated significance and its use is being overdone, every medical center should nevertheless have facilities and trained personnel for the performance of coloscopy when unequivocally indicated. If performed outside a hospital, the office facility should be well equipped with its own fluoroscopic and roentgenographic units as well as a full operating room so it can function as a quasi hospital.

ROBERT TURELL, M.D.
25 East 83rd Street
New York, N.Y. 10028

RICHARD H. MARSHAK, M.D.
1075 Park Avenue
New York, N.Y. 10028

With the means at hand to drastically reduce the number of deaths each year from uterine cancer, we have embarked on a nationwide, life-saving program. Its goal is a Pap test by 1976 for every woman 20 years or older to whom the test is applicable, and for younger women at risk. An ambitious program, doctor, and one which can only be realized with your help.

We are faced with these facts: only 53% of women over 20 have ever had a Pap test; only 20% get a Pap test periodically; each year about 43,000 new cases are diagnosed; this year 12,000 women in this country will die of uterine cancer. And about 75% of these deaths will result from cervical cancer—as you know, almost 100% curable when diagnosed early and treated promptly.

We hope to reach women in the target group not only with the message about the *vital* Pap test, but also with the urgency of including it in the *regular* health checkup. The mortality rate from uterine cancer could thus be dramatically curtailed.

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Scientific Articles

Effect of Radiopaque Contrast Material on Left Ventricular End-Diastolic Pressure

Fifty patients undergoing coronary arteriography and left ventriculography were studied. There was a good correlation between the initial resting LVEDP (left ventricular end-diastolic pressure) and the degree of ischemic heart disease. There was a significant rise in LVEDP after selective coronary arteriography and a second rise after ventriculography. The authors stress that left ventricular function must be measured before any contrast material is injected. The degree of LVEDP elevation is not considered a valid stress test of left ventricular performance.

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Left ventricular end-diastolic fiber length and end-diastolic tension are fundamental determinants of the force of left ventricular contraction. These parameters, however, cannot be directly measured in the intact patient. LVEDP (left ventricular end-diastolic pressure) is a closely related and widely used parameter which has the advantage of being easily determined at the time the ventricle is catheterized. Its role has been discussed by Braunwald and his associates.[1-5] This measurement provides a valuable indication of left ventricular performance, since it has been shown that elevation of LVEDP is characteristic of a failing ventricle. Similar pressure elevation may occur without actual myocardial damage in cases of hypervolemia, valvular disease, circulatory shunts, and pericardial effusions, but these conditions can generally be suspected on a clinical basis. In their absence, elevation of LVEDP indicates some degree of ventricular decompensation, due to either coronary artery disease or myocardiopathy.

We believed that a possible source of error in making this measurement might arise from injection of radiopaque contrast material into the coronary arteries prior to left ventricular catheterization and pressure recording. If selective coronary arteriography were to depress ventricular function, any subsequent LVEDP measurements would be elevated and lead to underestimation of the performance of the ventricle. The present study was undertaken primarily to assess this effect and thereby determine the proper sequence in which to carry out these procedures.

Method

The study covers 50 consecutive patients referred to the radiology department at The New York Hospital-Cornell Medical Center for coronary arteriography and left ventriculography to evaluate suspected coronary atherosclerosis. There were 42 males and 8 females. Their ages ranged from thirty-eight to sixty-three, with a mean of fifty. Premedication was not routinely administered, although occasionally a very anxious patient was given diazepam (Valium), 5 mg. intravenously, for sedation. All patients were relatively stable with no evidence of acute congestive heart failure at the time. The procedures were carried out by percutaneous femoral puncture, utilizing the catheters (Cordis Ducor) described by Judkins[6] and Amplatz *et al.*[7] Pressure recordings were obtained with a strain-gauge transducer (Statham P23Db) and an oscilloscopic recorder (Electronics for Medicine DR-8).

In each case the right coronary catheter designed by Judkins[6] was first introduced into the femoral artery. Its shape is such that it can readily be passed across a nonstenotic aortic valve. The catheter was accordingly passed into the left ventricle, and initial resting LVEDP was recorded before the injection of any contrast agent. After this initial pressure measurement, the catheter was pulled back into the aorta for selective right coronary arteriography. Selective left coronary arteriography was then performed after appropriate catheter exchange. Next, a "pigtail" catheter was inserted into the left ventricle, and postcoronary arteriography LVEDP was recorded. This measurement was generally obtained three to six

TABLE I. LVEDP for patients with normal arteries and normal ventriculograms (Group I)

	—LVEDP (Millimeters Hg)—		
Patient's Sex and Age	Before Coronary Arteriography	After Coronary Arteriography	After Ventriculography
49M	5	11	17
50 F	6	14	19
48 M	7	7	15
52 M	11	15	18
58 F	12	14	22
50 F	12	18	25
39 M	13	22	28
40 M	15	15	23
Mean	10.1	14.5	20.9
Standard deviation	3.6	4.4	4.4

TABLE II. LVEDP and diseased arteries in patients with diseased coronary arteries and normal ventriculograms (Group II)

	—LVEDP (Milliliters Hg)—			
Patient's Sex and Age	Before Coronary Arteriography	After Coronary Arteriography	After Ventriculography	Diseased Arteries
52 M	5	10	30	R, AD, C
42 M	7	9	15	AD, C
45 M	7	15	19	AD, OM
51 M	8	9	33	R, AD, C
38 F	8	28	42	L
52 F	10	17	20	R, C
57 M	10	18	29	R, AD
48 M	12	27	35	R, C
49 M	12	23	25	R, C
43 M	15	15	25	AD
47 M	17	29	36	R, AD*
54 F	20	24	29	AD, D
52 M	20	26	28	AD
44 M	20	30	32	AD
50 M	23	25	33	R, AD, OM
51 F	23	24	30	R, AD
49 M	25	33	41	R, AD
49 M	25	34	41	R, AD
Mean	14.8	22.0	30.2	. . .
Standard deviation	6.9	8.0	7.6	. . .

* Mitral insufficiency.

Key: R = right coronary artery, AD = anterior descending artery, C = circumflex artery, OM = obtuse marginal artery, L = left main coronary artery, D = diagonal artery.

TABLE III. LVEDP and diseased arteries in patients with diseased arteries and abnormal ventriculograms (Group III). Key same as Table II

	—LVEDP (Millimeters Hg)—			
Patient's Age and Sex	Before Coronary Arteriography	After Coronary Arteriography	After Ventriculography	Diseased Arteries
62 M	8	21	45	R, AD
40 M	10	13	27	R, AD
63 M	11	23	23	AD, D
55 M	11	32	21	R, AD, C
61 M	12	23	37	AD
40 M	13	23	30	AD, C
49 M	15	24	29	R, AD, OM
48 M	16	16	18	R, AD
40 M	16	27	31	R, AD
49 M	17	18	23	AD
54 M	17	20	26	R, AD, C
60 M	18	27	36	R, AD, D
59 M	19	30	38	R, AD
43 M	20	20	45	R, AD
56 M	21	15	40	R, AD
63 M	21	50	50	R, AD*
61 F	22	29	28	AD
45 M	22	30	34	R, D
44 M	22	29	38	R, AD†
44 M	24	29	35	R, AD
55 M	28	34	50	R, AD, C
43 M	29	29	32	AD, C, OM
58 M	29	30	30	R, D
61 M	30	50	50	R, AD, C
Mean	18.8	26.8	34.0	. . .
Standard deviation	6.3	9.1	9.3	. . .

* Mitral and aortic insufficiency.

† Mitral insufficiency.

minutes after the final left coronary injection. Ventriculography was then performed, and finally, a postventriculography LVEDP was recorded thereafter. Thus each patient's LVEDP was measured before coronary arteriography, after coronary arteriography but before ventriculography, and then after ventriculography.

Contrast injections into the coronary arteries were made by hand using 6 to 8 cc. of 76 per cent meglumine and sodium diatrizoate (Renografin 76). We generally made four separate injections into each artery. Including contrast material used for test injections, the total amount injected into each artery was from 40 to 50 cc. Fifty cc. of 75 per cent sodium and meglumine diatrizoate (Hypaque 75M) were injected with a Gidlund injector at a pressure of 7 Kg. per square centimeter for ventriculography.

The 50 patients studied have been grouped into three separate categories according to their angiographic disease pattern. Group I consists of 8 patients who had normal coronary arteriograms and normal ventriculograms (Table I). Group II consists of 18 patients who had significant stenosis (greater than 50 per cent) of at least one major coronary artery but a normal ventriculogram (Table II). Group III consists of 24 patients with significant stenosis of at least one major coronary artery and an abnormal ventriculogram (Table III). Abnormal ventriculograms were those showing hypokinesia of the entire ventricle or akinesia or dyskinesia of any portion of it. The accompanying tables show in separate columns the three LVEDP readings for each patient. The order of patient listing is by increasing levels of initial LVEDP.

The upper limit of normal LVEDP has in some laboratories been set at 12 mm. Hg. Because of the inherent difficulties in making these measurements with complete accuracy and the fact that one cannot arbitrarily assume such an abrupt transition from normal to abnormal, we have considered measurements between 12 and 15 mm. Hg to be "borderline." For tabulation purposes, these have been considered within the normal

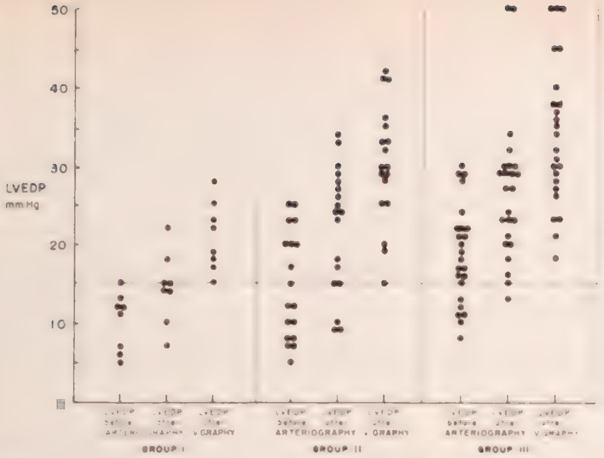

FIGURE 1. Distribution of LVEDP values within three patient groups before coronary arteriography, after coronary arteriography, and after ventriculography. Each black dot represents one measurement in individual patient. Readings above horizontal dashed line considered elevated. Note upward trend in LVEDP after coronary arteriography and again after ventriculography within each of groups. Note also higher initial LVEDP levels of Group II as compared with Group I and among Group III compared with Group II.

range. Only pressures above 15 mm. Hg are considered definitely abnormal.

Results

The three tables and Figure 1 show that although some patients had little or no change in LVEDP after selective coronary arteriography, the majority had significant increases. Thirty-six of the 50 had increases of over 20 per cent compared with their initial resting levels, and in 10 of them the increase was more than 100 per cent. Thirty-seven patients showed a second rise of an additional 20 per cent or more following the ventriculogram. Among Group I patients, the mean initial LVEDP of 10.1 mm. Hg rose to 14.5 after coronary arteriography and to 20.9 after ventriculography. Among Group II patients, the mean initial LVEDP of 14.8 mm. Hg rose to 22 after coronary arteriography and to 30.2 after ventriculography. Among Group III patients, the mean initial LVEDP of 18.8 mm. Hg rose to 26.8 after coronary arteriography and to 34 after ventriculography. Within each group, the 3 mean values are statistically dissimilar ($P < 0.05$).

All the patients in Group I had initial LVEDP within the normal range. Of the 18 patients in Group II, 10 had initial LVEDP within the normal range. The other 8 had elevated initial LVEDP, the highest being 25 mm. Hg. Of the 24 patients in Group III, only 7 had normal initial LVEDP. The other 17 showed elevated initial LVEDP, the highest being 30 mm. Hg.

Comment

The results indicate that care must be taken to perform these procedures in the proper sequence. The LVEDP must be measured prior to selective injection of contrast into either the coronary arteries or left ventricle. Otherwise it will be spuriously elevated, and ventricular function will be underestimated. Since the right coronary catheter passes into the left ventricle relatively easily, this catheter can be used initially to measure LVEDP before any contrast is injected, then withdrawn and selectively placed for coronary arteriography.

The results also show that combined coronary arteriography-left ventriculography generally provides a double stress to the heart, as manifested by a two-stage increase in LVEDP. In addition to the increase produced by selective coronary arteriography, most patients experience another rise of similar magnitude following left ventriculography. A number of patients had an LVEDP greater than 30 mm. Hg, and some even greater than 40 mm. Hg, by the time the entire study was completed. Although this is generally well tolerated, an LVEDP of over 40 mm. Hg may signify impending acute cardiac decompensation. We therefore delay ventriculography in any patient whose LVEDP is over 40 mm. Hg following coronary arteriography. Generally a fifteen- to thirty-minute interval is sufficient to allow ventricular recovery and a decrease of LVEDP below this level.

Because of the demonstrated double stress, we recommend that coronary arteriography be performed prior to ventriculography. The coronary injections are the more dangerous part of the procedure and are better tolerated when myocardial function is still optimal, rather than when myocardial depression has occurred as a result of ventriculography.

The value of the LVEDP measurement can be inferred from comparison of the data among the three groups. Of the 8 patients with normal coronary arteriograms and ventriculograms (Group I), none had elevated initial LVEDP. Of the 18 patients with significant coronary artery disease but angiographically normal ventricles (Group II), 44 per cent had elevated initial LVEDP. Of the 24 patients with significant coronary artery disease and abnormal ventriculograms (Group III), 71 per cent had elevated initial LVEDP. The mean initial LVEDP for Group I patients was 10.1 mm. Hg, for Group II 14.8 mm. Hg, and for Group III 18.8 mm. Hg. These values are statistically dissimilar ($P < 0.10$). It is thus apparent that many patients with coronary artery disease maintain a high LVEDP even in the absence of clinical evidence of cardiac failure. This is a manifestation of the diminished contractility and compliance that accompany progressive myocardial scarring. As expected, the high-pressure levels are more likely to be present in patients with abnormal ventriculograms than in those with normal ventriculograms, but the relationship is not invariable.

Ventriculography provides excellent anatomic detail but has serious limitations as a test of coordinated chamber function. The injection of contrast produces significant changes in ventricular hemodynamics and volumes within a matter of seconds.[8] Since the injection also frequently triggers multiple extrasystoles, slight abnormalities noted thereafter in myocardial contractility, end-diastolic volume, and ejection fraction are very difficult to evaluate. LVEDP measurement provides another easily obtained but highly significant parameter of ventricular function.

Gensini *et al.*[9] also found elevation of LVEDP to result from the performance of coronary arteriography. They note that the numeric increments tend to be greater among patients with coronary artery disease than among normal subjects and consider this to be a useful stress test in the evaluation of left ventricular function. Although our figures also show greater numeric increments for Groups II and III (patients with coronary artery disease) than for Group I (normal subjects), we do not think that this constitutes a valid stress test. When computed on the basis of percentage elevation over the initial resting LVEDP, there is virtually no difference whatsoever among the three groups.

Although there is no doubt that the injection of radiopaque contrast material into the cardiac chambers or coronary arteries depresses cardiac function, the underlying physiologic mechanisms remain incompletely understood. Friesinger *et al.*[10] think they are related to the hypertonicity of the injected agents. Brown *et al.*[11] suggest that the effects are caused by an increase in blood volume which in turn results from increased serum osmolarity. Benchimol and McNally[12] believe they are caused by transient myocardial ischemia. Gootman, Rudolph, and Buckley,[13] working with experimental animals, concluded that the effects are due to the high sodium content of certain contrast agents and can be abolished by the use of sodium-free agents. Unfortunately this is not feasible in human patients since the use of sodium-free contrast material for coronary arteriography has produced a high incidence of ventricular fibrillation.[14] We and others have found 76 per cent meglumine and sodium diatrizoate a highly effective contrast agent with which to study the coronary arteries. The sodium content of this drug (4.48 mg. per milliliter) is closer to that of normal saline (3.6 mg. per milliliter) than are those of other widely used contrast agents of high iodine content. The fact that significant LVEDP elevation occurs after intracoronary injection of this drug suggests that sodium content is not the critical factor. Perhaps several different mechanisms come into play, with myocardial ischemia being primary when contrast material is introduced directly into the coronary circulation in relatively high concentrations.

Summary

A study of 50 patients undergoing coronary arteriography and left ventriculography showed good correlation between initial resting LVEDP (left ventricular end-diastolic pressure) and severity of ischemic heart disease. Most patients experienced a significant rise in LVEDP after selective coronary arteriography and a second rise of similar magnitude following ventriculography. It is therefore necessary that this important parameter of left ventricular function be measured at the beginning of the procedure before any contrast is injected.

The degree of LVEDP elevation is not considered a valid stress test of left ventricular performance.

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Periaqueductal Neoplasms and Vascular Malformations

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The case histories of 7 patients with midbrain mass lesions producing aqueductal obstruction were reviewed. Two had vascular malformations surrounding the aqueduct, 1 had a periaqueductal glioma, and the remaining 4 were presumed to have periaqueductal gliomas on the basis of contrast radiologic studies. The predominant symptom was headache. The only other universal symptoms present were those of increased intracranial pressure. Common were the neurological findings of papilledema and nystagmus. A comprehensive literature review relates the present findings with those of other authors. Pantopaque ventriculography is indispensable in the diagnosis of aqueductal obstruction. The primary treatment has been shunting procedures used in other cases of noncommunicating hydrocephalus. If glioma is suspected, radiation therapy is advised, and chemotherapy when symptoms recur.

Intrinsic midbrain mass lesions are uncommon, and their clinical symptomatology is nonspecific. We have recently encountered 7 patients with midbrain mass lesions producing aqueductal obstruction. There was a tendency on our part initially to regard the hydrocephalus in these patients as a manifestation of congenital aqueductal stenosis. Further clinical and radiographic study disclosed that this was not the case. Two of these patients were proved eventually to have had vascular malformations surrounding the aqueduct, and 1 patient had a confirmed periaqueductal glioma. In the remaining 4 patients, the presumptive diagnosis of an intra-axial, periaqueductal glioma has been made by contrast radiographic studies.

This report consists primarily of a retrospective analysis of our experiences with these patients. In it we delineate the clinical symptomatology in patients with intra-axial periaqueductal mass lesions. Since the diagnosis has been based on the specific contrast procedures, we have reviewed the radiographic findings that have led us to the diagnosis in these cases.

Clinical material

These 7 cases are summarized briefly in Table I. With the exception of the infants, all patients came to us with a history of at least one year's duration and for as long as three to four years in 2 instances. The predominant symptom in all cases was headache, usually of a diffuse, poorly defined nature. Five of the 7 patients exhibited a decrease in their intellectual performance. With the exception of 1 patient who displayed some tremor and incoordination (Case 5), no specific neurologic symptoms occurred. The only other symptoms which were invariably reported in the present series were those commonly associated with increased intracranial pressure: nausea, vomiting, and blurred vision.

Neurologic findings were limited to papilledema, nystagmus, and, occasionally, a mild organic mental syndrome. The findings in Case 5 are difficult to evaluate because of previous surgery with attempted cannulation of the aqueduct. Case 4 had a third nerve paresis, contralateral hemiparesis, and incoordination, symptoms characteristic of Benedikt's syndrome. Five of the 7 patients displayed papilledema of varying severity.

None of the patients in the present series displayed the major eye findings of the Koeber-Salus-Elchnig (Sylvian aqueduct) syndrome. Although isolated extraocular motor palsies and nystagmus were noted in several of our patients, impaired vertical gaze with retraction and convergent nystagmus was not documented. These latter signs have been reported previously in both vascular and neoplastic lesions, usually rather extensive pinealomas, involving the periaqueductal gray matter but often extending to impinge on the posterior third ventricle as well as the midbrain.[1]

In Case 5 the diagnosis became apparent after one year, during which time several ventriculograms were performed, the last with iophendylate

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TABLE I. Synopsis of cases of periaqueductal lesions

Patient	Sex and Age (Years)	Diagnosis	Signs and Symptoms	Duration of Symptoms	Cerebrospinal Fluid Protein (Mg. Per 100 Ml.)	Comment
1	F, 1 month	Glioma	Hydrocephalus.	2 weeks	. . .	Confirmed at autopsy.
2	F, 30	Glioma	Headache, papilledema, nystagmus.	3 years	180	Doing well 1 year after shunt.
3	M, 42	Glioma	Headache, organic mental syndrome, papilledema.	4 years	126	Doing well 2 years after shunt.
4	F, 9	Glioma	Headache, personality change, papilledema, Benedikt's syndrome.	1 year	5 (ventricular)	Shunt and x-ray therapy. Lost to follow-up after 1 year.
5	F, 16	Glioma	Headache, organic mental syndrome, papilledema, resting and intention tremor.	2 years	45, 178, 217	Progression of symptoms over 4-year period.
6	F, 35	Arteriovenous malformation	Headache, ataxia, papilledema, nystagmus.	3 years	6	Doing well 4 years after shunt, 2 subsequent subarachnoid hemorrhages.
7	F, 0.5	Arteriovenous malformation	Hydrocephalus, cranial bruit.	1 month	28	Confirmed at autopsy.

(Pantopaque). In this period, the cerebrospinal fluid protein increased to abnormal levels. In Cases 6 and 7, original diagnoses of periaqueductal gliomas were entertained until arteriography delineated extensive arteriovenous malformations of the midbrain.

In summary, the clinical syndrome seen in our patients with periaqueductal lesions was specific for neither any one anatomic locus nor any single pathologic entity. It is essentially the picture of obstructive hydrocephalus with occasional involvement of cerebellar pathways and eye movements. The differential diagnosis under these circumstances includes a large variety of lesions occurring in the region of the aqueduct and the midbrain, such as congenital anomalies, vascular malformations, inflammatory processes, and neoplasms.

Autopsies have been performed in 1 case of periaqueductal glioma (Fig. 1) and 1 of arteriovenous malformation of the midbrain (Fig. 2).

Midbrain lesions

Congenital aqueductal lesions. Russell[2] offers a suitable classification of the causes of obstruction of the aqueduct. Congenital malformations of the aqueduct include simple narrowing or stenosis, atresia or forking, and the formation of a membrane across the lumen of the iter. Another common lesion that may be inflammatory in nature is gliosis in the periaqueductal region.

From the clinical standpoint, the overwhelming majority of patients harboring these congenital aqueductal lesions show signs of hydrocephalus early in life. However, this is not always the case; the symptoms of increased intracranial pressure may not appear until the second or third decade of life. They may even be an unsuspected finding at postmortem examination.[3] In patients with

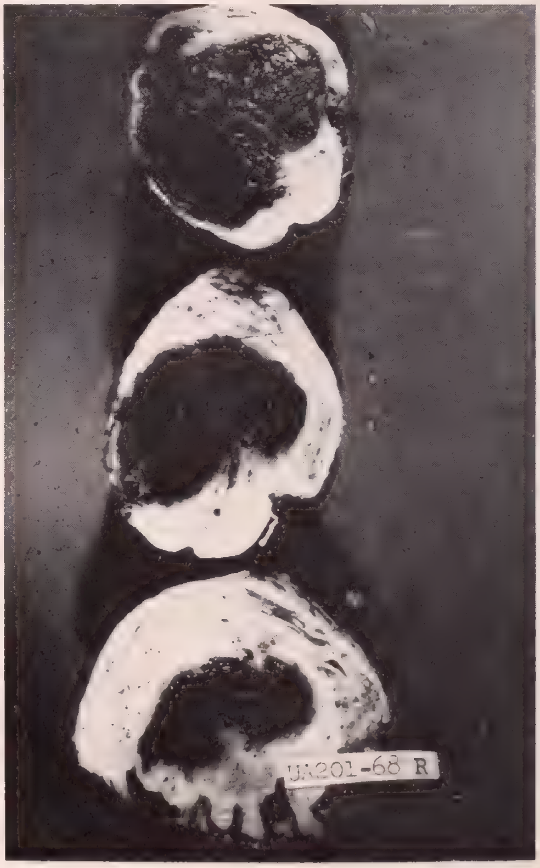

FIGURE 1. Case 7. Sections of brain stem showing massive disruption by abnormal vessels and intra-axial hematoma.

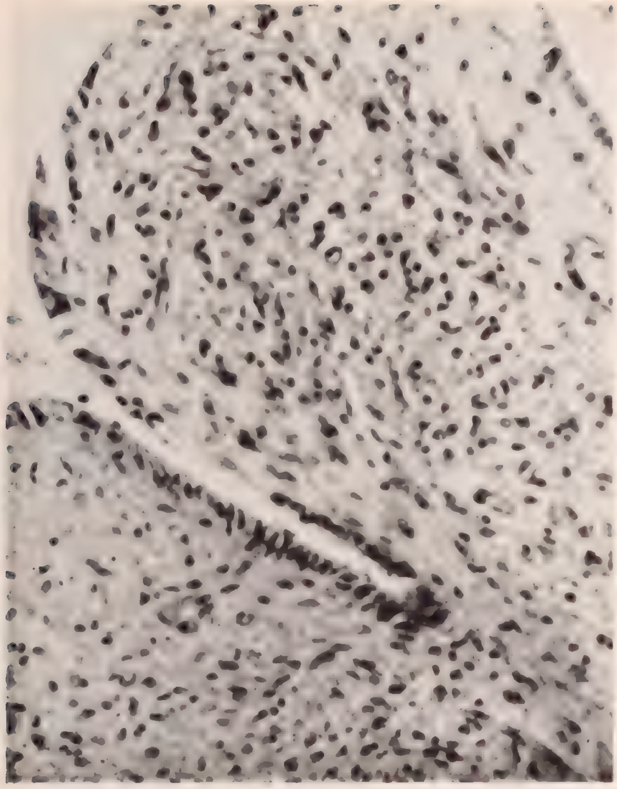

FIGURE 2 Case 1. Nodule of astrocytoma in subependymal area protruding into lumen of aqueduct

congenital aqueductal obstruction and hydrocephalus, frank cerebellar signs are most unusual, and, aside from abducens palsies secondary to increased intracranial pressure, extraocular movements disorders are not common.

Intra- and extra-axial vascular lesions of the mesencephalon. Vascular malformations occurring either intra- or extra-axially may initially make themselves manifest with symptoms of obstructive hydrocephalus.[4] Occasionally cranial nerve deficits are produced by these lesions, and, in the absence of subarachnoid hemorrhage, the true diagnosis often goes unsuspected. The 2 patients with proved vascular malformations in the present series were felt to have congenital aqueductal obstruction (Case 7, Fig. 1) and a periaqueductal glioma (Case 6) before their clinical course evolved to the point where definitive diagnostic studies were performed.

Aneurysms and vascular malformations involving the great vein of Galen comprise another group of vascular lesions in the region of the midbrain that may, at least initially, produce signs and symptoms of hydrocephalus without displaying any findings referable to the point of obstruction.[5]

Periaqueductal gliomas. While many reports of brain-stem gliomas have appeared in the literature, these have dealt primarily with lesions involving the pons.[6–9] The well-known syndrome of cranial nerve, cerebellar, and long-tract involvement in the absence of increased intracranial pressure has frequently been discussed. Only with extension do these tumors reach the aqueduct and obstruct ventricular pathways. Although pontine tumors occur with greater frequency in children, they are by no means rare in adults.[9]

Pathologically, the pontine gliomas have been variously classified as astrocytomas, spongioblastoma polare, or glioblastoma multiforme.[10,11] There is usually a good correlation between the patient's clinical signs and symptoms and the location of the tumor within the lower brain stem.

Only sporadic reports have appeared in which the authors have discussed intrinsic tumors involving the midbrain. In contrast to the pontine gliomas, the majority of the patients with periaqueductal neoplasms have displayed longstanding hydrocephalus and have been free of most focal neurologic deficits.

Cushing[12] reported 1 such instance in a nine-year-old boy whose definitive diagnosis was not established clinically or even at the time of the original postmortem examination. A subependymal glioma in the aqueduct was found only years later when the pathologic material was reviewed. Sheldon, Parker, and Kernohan[13] reported 2 cases with similar lesions in 1930.

Alpers and Watts in 1935[6] presented 10 cases of mesencephalic gliomas. These included several patients with thalamic and/or pontine tumors that extended into the midbrain. Only 3 of their cases had tumors confined to the tectal region. These authors concluded that a specific clinical diagnosis of a periaqueductal glioma was not possible due to a paucity of localizing signs in their patients. The use of air encephalography for obtaining a definitive diagnosis was discussed, but this method was not employed in their own cases.

Stookey and Scarff[14] discussed 2 cases of periaqueductal tumors. They attempted to distinguish neoplastic from non-neoplastic aqueductal lesions by the mode of presentation, but no definite syndrome that would permit this differentiation on purely clinical grounds was forthcoming. Guillain, Bertrand, and Messimy[15] presented a similar case of mesencephalic glioma in 1936. They were impressed by the lack of symptoms produced by the lesion, even when extensive infiltration of the periaqueductal gray matter had occurred. They summarized the clinical syndrome as one of increased intracranial pressure with mild cerebellar signs and weakness of ocular convergence.

In 1942, Globus, Kuhlenbeck, and Weller[16] reported 4 cases of midbrain lesion. One was a periaqueductal glioma, 2 were hemangiomas, and 1 was a pinealoma in the periaqueductal region.

Netsky and Strobos[17] reviewed the literature of tumors confined to the midbrain and reported an additional 4 cases of their own, bringing the total up to 23 cases analyzed up to 1952. The youngest patient in the entire series was fifteen months old, and the oldest was fifty-six years of age. There was a male to female ratio of 2 to 1. In collating the clinical data, the authors attempted to differentiate those symptoms due to local destruction by the tumor from those effects secondary to increased intracranial pressure, although it was freely admitted that this distinction was often difficult to sustain. The most common ocular changes were loss of convergence and paresis of upward gaze, although each was noted in only 25 per cent of the cases. Approximately three fourths of the patients displayed some degree of ataxia at one time or another. Pyramidal tract signs were noted in 65 per cent of patients. One half of the reported cases had papilledema. Mental changes ranging from confusion and loss of memory to overt psychotic behavior were present in approximately 70 per cent of the patients and occurred in cases both with and without hydrocephalus. These mental abnormalities had previously been commented on by Cairns[8] in patients with pontine gliomas not associated with increased intracranial pressure.

Barnett and Hyland[7] reviewed 90 cases of brainstem tumors including pinealomas and fourth-ventricle tumors. Thirty-three patients had tumors arising primarily within the brain stem. Although the authors did not divide their group into patients with midbrain, as differentiated from pointine, tumors, they did point out that the patients with periaqueductal lesions frequently presented signs and symptoms of obstructive hydrocephalus. They also noted that 20 per cent of the patients with brain-stem tumors had no cranial nerve involvement and that one half of the patients had no subjective or objective involvement of long tracts.

Kernohan and Sayre[10] succinctly summarized the significance of periaqueductal gliomas:

> These relatively slow-growing gliomas strategically placed in the aqueduct of Sylvius are in all probability the smallest tumors in the human body that lead to the death of the patient.

Radiologic considerations in diagnosis

Final resolution of the differential diagnosis in cases displaying aqueductal stenosis or occlusion requires the use of neuroradiologic contrast procedures. Toward this end, several writers have, in the past, attempted to distinguish the various forms of aqueductal obstruction using radiologic criteria.[18–24]

Paine and McKissock[20] presented a radiologic classification of aqueductal lesions. They described partially and completely occluded aqueducts, the latter with the proximal portion of the iter appearing funnel shaped or ending in a bulbous pouch. It was concluded that all three types of obstruction were compatible with non-neoplastic stenosis of the aqueduct. A fourth category of aqueductal obstruction consisted of cases in which the contrast material did not progress caudad to the posterior third ventricle. This was called "aqueductal atresia," although no part of the aqueduct was definitely visualized.

More recently, Taveras and Wood[23] have divided aqueductal obstructing lesions into congenital and acquired categories. They concluded that congenital aqueductal atresia was associated with a short tapering segment just caudal to the posterior third ventricle, while acquired stenosis, presumably the result of gliosis, usually was evident on ventriculography with the picture of a funnel-shaped aqueduct. These authors did not feel that they could definitely distinguish periaqueductal tumors from gliotic aqueductal stenosis by radiologic criteria.

Turnbull and Drake[24] described 4 cases of membranous occlusion of the aqueduct and called attention to the bulbous ending of the aqueduct in this disease entity. This finding was said to be virtually pathognomonic of membrane formation.

Schechter and Zingesser[22] have reviewed the radiologic literature of aqueductal stenosis and summarized their own findings on this subject. They determined that there was considerable variation in the radiologic appearance of the aqueduct in both congenital stenosis and the acquired type of obstruction resulting from gliosis. A funnel-shaped aqueduct could not be equated with gliosis, nor could a lesion just caudad to the third ventricle be considered pathognomonic of forking as had been suggested by Taveras and Wood.[23] Moreover, only 1 of their 5 cases of membranous occlusion of the aqueduct demonstrated a large bulbous pouch, while lesions other than congenital membranes were associated with this type of abnormality in their series. The use of iophendylate to outline the aqueduct and fourth ventricle was stressed, as was the fact that positive contrast material was almost indispensable for delineating the exact configuration of the aqueduct. The authors presented several radiographs in which the lumen of the aqueduct was irregular in contour but not displaced from its normal position, a situation which in their experience was indicative of periaqueductal glioma. Peterson and Baker,[21] Bland and Clark,[18] and Lang and Russell[19] also have stressed the need for positive contrast ventriculography to delineate fully the region of the posterior third ventricle and the aqueduct.

From our experience, we would agree that iophendylate ventriculography is indispensable if one is to demonstrate fully the configuration of the aqueduct. Air ventriculography should always be the initial study, for this will permit assessment of the entire ventricular system. Exquisitely detailed films of the posterior third ventricle and aqueduct can be obtained by using

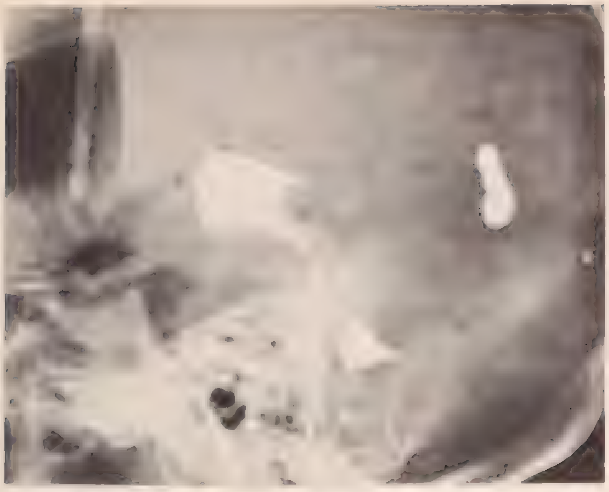

FIGURE 3. Case 3. Multiple large and small nodularities partially obstruct undisplaced aqueduct. Note normal prepontine cistern.

tomography. Air will frequently stop in an area of narrowing in the aqueduct that is more proximal to the site of greatest obstruction. It has been our experience that, in most instances, iophendylate is an invaluable adjunct to the ventriculographic study of periaqueductal masses. One cc. of contrast material is easily manipulated into the posterior third ventricle and aqueduct. The patient should then be positioned so that gravity assists the medium in filling as much of the aqueduct as possible. Delayed films frequently show the progress of the iophendylate through the obstructed area. Unless a diagnosis of a periaqueductal lesion can be made using air, iophendylate should be a part of the examination. Air alone is insufficient to rule out the diagnosis of periaqueductal mass.

The diagnosis of periaqueductal glioma, in our cases, has been based primarily on the radiographic finding of an irregularly narrowed but nondisplaced aqueduct (Fig. 3). Progression of the clinical and radiographic findings have been helpful in establishing the diagnosis. Nevertheless, it must be recognized that no radiologic picture can be considered pathognomonic of a periaqueductal glioma. Cases 6 and 7 illustrate the point that the aqueduct can be irregularly narrowed by an arteriovenous malformation (Fig. 4). These latter cases indicate the necessity for including angiography in the evaluation of certain atypical forms of hydrocephalus, a point of view which has also been stressed by Raimondi.[4] Certainly those cases of hydrocephalus with bloody cerebrospinal fluid or intracranial bruits, as well as patients with irregular obstruction of the aqueduct, require four-vessel angiography as part of their diagnostic work-up.

The present series suggests that interval examinations may be necessary to demonstrate the progressive nature of the obstruction caused by periaqueductal glioma. In Case 5, the lesion was not apparent when the patient was first studied but became quite evident when the radiographic procedures were repeated because of progressive deterioration in the clinical picture. Brain scans may be helpful in disclosing large vascular lesions, although their usefulness in the posterior fossa is somewhat circumscribed. Determination of the cerebrospinal fluid protein has been valuable in delineating cases of periaqueductal gliomas; in 3 of our cases cerebrospinal fluid protein level was considerably elevated (180, 126, and 217 mg. per 100 ml.).

A full discussion of therapy is beyond the scope of the present report. The primary treatment in

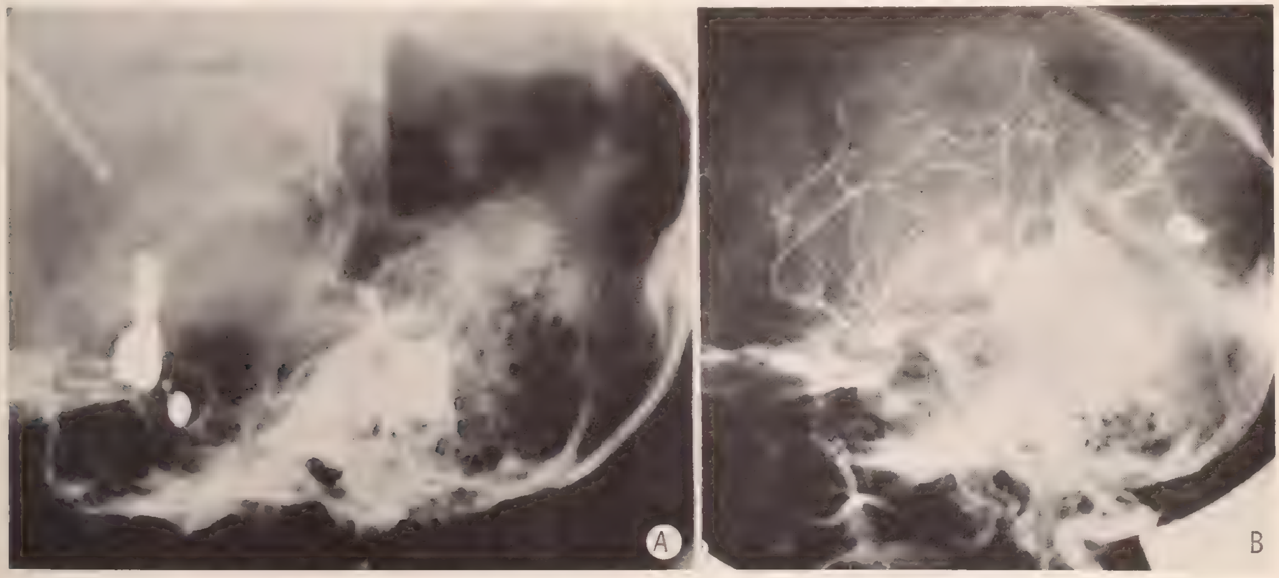

FIGURE 4. Case 6. (A) Numerous nodularities indenting aqueduct and upper portions of floor and roof of fourth ventricle. (B) Right brachial angiogram demonstrates large midbrain arteriovenous malformation made up of densely packed small vessels. Residual iophendylate continues to outline obstructed aqueduct.

these patients has consisted of shunting procedures as in any other case of noncommunicating hydrocephalus. Where the clinical or radiographic picture convinced us that we were dealing with a probable periaqueductal glioma, even though pathologic confirmation was not obtainable, radiation therapy in the range of 5,000 r has been advised. Chemotherapy has been considered for use at the time of recurrent symptoms.

Summary

Seven cases of intra-axial midbrain lesions have been reviewed. The diagnosis of periaqueductal glioma in 1 case and of arteriovenous malformation in 2 of the cases has been confirmed. The presumptive diagnosis of periaqueductal glioma has been made in the other 4 cases. Those aspects of the clinical course and the radiographic findings that have led us to the diagnosis of intra-axial midbrain lesions are discussed. The need for angiography in all cases of aqueductal occlusion that are atypical is stressed. The diagnosis of periaqueductal glioma is strengthened by a progressive clinical course, the radiographic findings of an irregularly narrowed but undisplaced aqueduct, and an elevated cerebrospinal fluid protein level.

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Hepatic Metastases from Rectal and Colon Cancers

Treatment by infusion of 5-fluorouracil into umbilical vein

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In this study, 20 patients with hepatic metastases from primary rectal or colon cancers were treated with 5-fluorouracil infused into the umbilical vein. There was apparently no demonstrated advantage of administering the drug via the umbilical venous channel over administering it through a peripheral vein, and the method has been abandoned. Factors which could have affected the failure are discussed.

Although metastases from primary colon and rectal cancer may occur locally, in the regional lymph nodes, or in the liver, many cases are encountered in which the metastases exist in the liver alone. The treatment of such metastases, which cannot be surgically excised, poses many problems. One of these is determining the drugs most useful in controlling the cancerous growths in the liver and the most efficient method by which these drugs may be introduced.[1-3] The drugs most frequently used are the pyrimidine antagonist fluorouracils (5-FU and 5-FUDR).[4] Our experience has been limited to the utilization of 5-fluorouracil.

As part of a continuing program to determine the effectiveness of various methods of treating hepatic cancer, we have analyzed our data regarding the effects of administering 5-fluorouracil systemically by means of a peripheral vein.[5] We found no significant increase in longevity, but symptomatic improvement did occur in a significant number of patients. This report relates to our experience with 20 patients with metastatic cancer to the liver from primary colon or rectal cancer who received 5-fluorouracil by means of the umbilical vein.

The discovery that the umbilical vein is potentially patent, although nonfunctional, has led to the utilization of this vein for a number of conditions outlined recently by Rochlin, Guasch, and Hansen.[6] The umbilical vein connects directly with the portal vein and thus offers a means of access to the portal circulation.

Case material

Twenty patients with metastases to the liver from primary colon or rectal cancer were treated. In 5 of these patients the cancer was discovered at the time of the primary operation for the rectal and/or colon carcinoma and the patients were asymptomatic. In the additional 15 patients, symptoms had been produced as a result of increase in size of the metastases which produced anorexia, pain or a mass in the abdomen, sensation of distention, and ascites and/or jaundice. All of the 15 patients had hepatomeglia, anorexia, weight loss, and weakness; 2 suffered from ascites; and 6 were jaundiced.

The patients were categorized as being in one of the following stages:

1. Stage I. Less than 10 per cent of the liver is involved by the cancer.
2. Stage II. From 20 to 30 per cent of the liver is involved.
3. Stage III. From 30 to 50 per cent of the liver is involved.
4. Stage IV. More than 50 per cent of the liver is involved.

A plus sign after the stage was used to indicate extrahepatic metastasis.

Technic

A 3-inch vertical midline incision is made through the skin of the epigastrium under either local or general anesthesia. We prefer general anesthesia because it permits exploration of the liver and opportunities to obtain a biopsy specimen and to evaluate the extent of the involvement. The umbilical vein, a cord-like structure in the falciform ligament, is easily identified. The operation can be done extraperitoneally or transperitoneally; we prefer the transperitoneal approach. The vein is isolated, transected, then gradually dilated until firm resistance is encountered at the junction of the umbilical vein with the left branch of the portal vein. Once this firm area of resistance is traversed, the catheter will slip easily into the portal vein. Then a polyethylene catheter is

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TABLE I. Duration of life after treatment of patients with metastases to the liver from colon and rectal carcinoma from the time of diagnosis

Method of Treatment	Number of Patients	Average Duration of Life (Months)
No treatment[9]	353	9
Systemic 5-fluorouracil	35	9
Umbilical-vein 5-fluorouracil	20	8

inserted through the umbilical vein into the portal vein and ligated in position with 4-0 silk. The catheter is connected to a slow, continuous intravenous drip of a solution containing 5 per cent glucose and distilled water containing 500 mg. of 5-fluorouracil. An average dose of between 500 mg. and 1 Gm. is administered in a twenty-four hour period. This course of therapy starts at the completion of the operation and continues for a period varying between four and seven days. At the completion of this stage of therapy the patient has received a total dose of between 50 to 90 mg. per kilogram of fluorouracil. The patients are then given a rest for two weeks, and any further decrease in the hematopoietic components is noted. If there is none, therapy is recommenced by administering 500 mg. of 5-fluorouracil as a bolus through the umbilical vein biweekly until the white blood cells decrease to 3,000 per millimeter or other signs of toxicity develop.

In 2 patients with advanced hepatic cancer 50 millicuries of ^{90}Yttrium microspheres were administered into the umbilical vein. This provided radiation for scanning purposes and internal irradiation. It is not believed that the administration of the isotope had any detrimental effects, but there was a very questionable salutary effect.

Results

As a means of evaluating the results obtained in the treatment of metastatic cancer to the liver we have devised the following empiric formula:

$$\text{Result} = \frac{\text{Longevity} + \text{Response (Objective, Subjective)}}{\text{Risk} + \text{Trauma} + \text{Cost}}$$

The overall beneficial results are placed in the numerator. They are longevity plus the objective and/or subjective response. Such factors as risk, trauma to the patient, and expense are listed in the denominator. When this formula is applied to umbilical-vein catheterization for the administration of 5-fluorouracil, it is seen that those factors in the denominator do not play a significant role. There is little if any risk in this procedure, and the trauma is not great. Contrast these values with those for a right hepatic lobectomy for the treatment of metastases to the liver, where the risk, trauma, and expenses are extremely great.[7,8] A review of the literature of patients who received no treatment revealed an average survival of nine months. This was not significantly increased by the administration of 5-fluorouracil through a peripheral vein.[5]

Longevity. Table I compares the results of the umbilical-vein administration of 5-fluorouracil with those obtained by systemic administration of the drug in 35 patients. For comparison the results obtained in 353 patients culled from the literature by Pestana *et al.*,[9] who received no therapy, are also presented. It will be noted that in those patients who received no therapy, the survival averaged nine months, and 35 patients treated by the author who received systemic 5-fluorouracil also survived an average of nine months. The 20 patients who received umbilical-vein 5-fluorouracil survived an average of eight months. Although this slightly lower figure might suggest that the 5-fluorouracil contributed to an earlier death, such is not the case. The procedure was found to be safe. The earlier death is probably related to other, unknown variables.

Table II compares the overall results regarding longevity—analyzed according to the percentage of patients surviving each month post therapy—of patients treated by systemic 5-fluorouracil, those treated by umbilical-vein 5-fluorouracil, and those who received no treatment at all as reported by Jaffe *et al.*[10] No significant advantage was obtained by the umbilical vein method of treating this cancer over that obtained by systemic 5-fluorouracil.

All patients are dead. Those whose lesions were discovered at celiotomy survived an average of fourteen months. The 15 patients whose metastases had produced symptoms survived an average of six months, with a range of two to eight months.

Objective and subjective response. No apparent benefit by the umbilical-vein administration of 5-fluorouracil was encountered in the 5 pa-

TABLE II. Survival of patients with metastases to liver from colon and rectal cancer from the time of diagnosis

Method of Treatment	Number of Patients	Number of Months									
		3	6	9	12	15	18	21	24	27	30
		(Percentage of Patients)									
Systemic 5-fluorouracil	35	90	70	50	30	22	20	15	10	2	0
Umbilical-vein 5-fluorouracil	20	85	75	50	30	20	15	15	5	0	0
No treatment[10]	177	76	40	25	20	...	...	...	...	...	...

tients who were asymptomatic and whose metastases to the liver were discovered at the time of operation for the primary cancer. Of the 15 patients whose livers had enlarged to the point of producing symptoms after treatment of their primary cancer, 2 manifested an objective response, with shrinkage of the size of the tumor to less than 50 per cent of its pretreatment size. A subjective response was obtained in 5 of the 15, with a sense of well-being, improvement in appetite, and relief of symptoms. In 2 patients with ascites and 6 with jaundice, no benefit was obtained. The subjective responses obtained by this form of therapy were not considered significantly different from those obtained by systemic 5-fluorouracil.

Toxicity. The results of administering the cancer chemotherapeutic agents into the umbilical vein on the hematopoietic system are approximately the same as those obtained by administering it into the systemic circulation. In this series, 3 patients developed leukopenia which was easily controlled, 2 patients developed anemia believed to be the result of the 5-fluorouracil administration, and 3 patients developed gastrointestinal symptoms consisting of ulceration and mild bleeding from the mucous membranes of the mouth, stomach, and rectum, thus indicating that the drug is systemically distributed and not localized to the liver. In 1 patient, not included in this series because he received other forms of therapy, the catheter became dislodged from the portal circulation and by some unusual mechanism found entrance into the stomach via the greater curvature.

Comment

Metastases to the liver from primary cancers of the colon and rectum are believed to reach the liver via the portal circulation. Once these are deposited in the liver, branches from the hepatic artery, which supply the metastatic deposit with circulation, develop. There appears to be a certain amount of collateral circulation with both the portal circulation and the hepatic-artery circulation contributing. The discovery of the potential patency of the portal vein allowed for utilization of the vein for such clinical conditions as confirming the diagnosis of portal hypertension, permitting portal manometry and hepatoportography, and demonstrating collateral circulation. It also provides a means of accomplishing portal-vein decompression extra-abdominally through anastomosis of the femoral vein and the umbilical vein. In view of these uses, its use as a means of introducing cancer chemotherapeutic agents for the treatment of metastatic cancer of the liver seemed justified. Our data indicate no superiority of the administration of 5-fluorouracil via the portal vein over systemic administration of the drug via a peripheral vein.

Several factors may contribute to the poor results obtained in our series. Certain patients whose cancers were so bulky that catheterization of the hepatic artery was difficult or impossible were used as candidates for umbilical-vein catheterization. Twelve of the 15 symptomatic patients in this series were in Stages III and IV of the disease.

Another disadvantage is that we could not adequately catheterize the umbilical vein in approximately 8 per cent of our patients. Attempts at catheterization resulted in rupture of the umbilical vein or inability to gain entrance into the portal circulation. Patients in whom it was impossible to catheterize the umbilical vein satisfactorily are not included in this report.

Another disadvantage is a technical one, probably the result of faulty technics utilized by the author. The catheter occasionally was inserted too far into the portal circulation, and thus only the left portal vein was cannulized. A scan of one such patient in whom ^{90}Yttrium microspheres were injected revealed a localized deposit of the ^{90}Yttrium microspheres adjacent to the umbilical vein catheter, not throughout the liver.

The overall poor results obtained in our series by treating metastases to the liver from primary colon and rectal neoplasms by administering 5-fluorouracil via the umbilical vein have caused us to abandon this method as a primary method of treatment.

For those patients who are referred because of symptoms of metastatic cancer of the liver and who are not candidates for the intrahepatic infusion of cancer chemotherapeutic agents by means of the hepatic artery, we continue to use the intravenous route for palliation, realizing that the effects on longevity are not significant.

Summary

The average survival of patients with metastatic cancer of the liver treated by the administration of 5-fluorouracil via the umbilical vein was not prolonged. The average survival equalled eight months from the time of the therapy. This value is not significantly different from that of patients treated by administering the drug through a peripheral vein.

Palliation produced by this route for administering the anticancer agent was not significantly different from that obtained by systemic administration of the drug.

Scans with radioactive microspheres occasionally demonstrated a faulty distribution of the isotope when given through the umbilical vein.

This route of administration in our series offered no advantage over systemic administration of anticancer agents. Therefore we have abandoned this technic and are pursuing studies regarding the effects of administering anticancer agents via the hepatic artery.

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Cuneiform Osteotomy in Treatment of Slipped Capital Femoral Epiphysis

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Cuneiform osteotomy is the preferred method of treatment of slipped capital femoral epiphysis. This article describes the operation in detail and uses several case reports to illustrate the efficacy of the operation. Cuneiform osteotomy is the only method of treatment that restores the normal relationship of the head and neck of the femur.

Howorth[1] **stated in 1949** that, "The lesion always heals spontaneously and treatment is of no value unless it produces a better result than would have been accomplished by nature." The natural result of a chronic third-degree slipped capital femoral epiphysis is severe osteoarthritis (Fig. 1). Therefore, it behooves us to find a treatment program that will restore a normal hip to children afflicted with this disorder. A review of the literature reveals the difficulties in treatment of this disease, whether it be operative or nonoperative.[2-5]

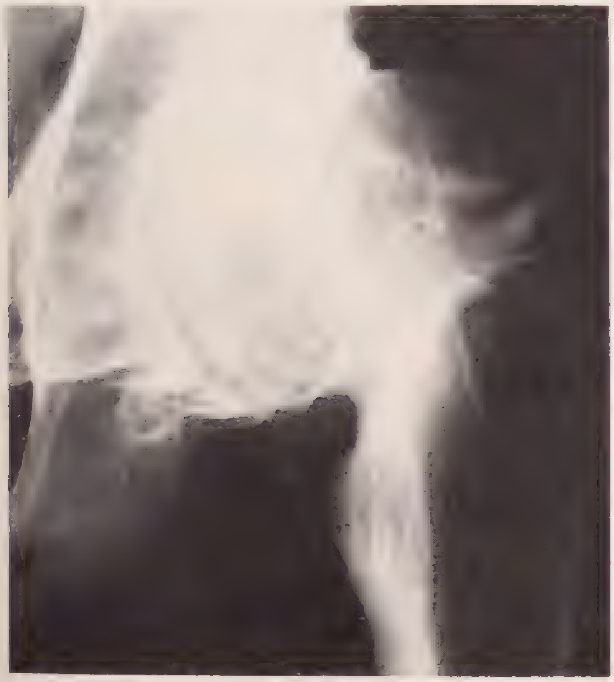


FIGURE 1. Late results of untreated third-degree slipped capital femoral epiphysis.

There are three major operative approaches to the treatment of slipped capital femoral epiphysis in the unacceptable position. Epiphysiodesis and osteoplasty, as advocated by Herndon, Heyman, and Bell,[6] does not restore the anatomic alignment of the head, neck, and shaft of the femur. Further slip is prevented by the epiphysiodesis, and osteoplasty merely removes an obstructive piece of bone, the normal metaphyseal portion of the neck of the femur. Trochanteric osteotomy, as proposed by Thompson[7] and Southwick,[8] emphasized the safety of this procedure, but it cannot correct the femoral head and neck relationship. The only way to restore the normal anatomy of the hip is to replace the head of the femur on the neck by cuneiform osteotomy.[9,10] This procedure cannot be undertaken lightly. Thorough review of the literature reveals results of cuneiform osteotomy that range from disastrous to satisfactory.[9-11] However, in most of these series, cuneiform osteotomy is not the only factor leading to unsatisfactory results.

Clinical review

A study was made of 42 children with slipped capital femoral epiphysis, involving 52 hips, that have been followed from 1960 to January, 1971. The follow-up ranged from one to eleven years and eight months, with an average time of four years. All children were Caucasians; 80 per cent were boys. The average age of onset for boys was 13.8 years, and that of the girls was 11.4 years. The right hip was involved 24 times and the left 28 times. The disease was bilateral in 24 per cent of the cases.

Treatment

These children were treated by four basic methods (Table I). There were 26 hips in which a preslip or first-degree slip occurred. These chil-

TABLE I. Number of operations performed for slipped capital femoral epiphysis

Treatment	Hips
Fixation in situ with pins	26
Manipulation and reduction, acute slip	5
Subtrochanteric osteotomy	3
Cuneiform osteotomy	18

TABLE II. Results of fixation in situ of 26 hips

Result	Occurrence
Limb length discrepancy	none
Cartilage or bone necrosis	none
Range of motion	full
Symptoms	none
Complications: unable to remove pins	9

dren had fixation in situ with multiple pins. Five had an acute slip that was gently manipulated and reduced and fixed with pins. Three children had subtrochanteric osteotomy as a means of reducing the head and shaft relationship. Eighteen children had cuneiform osteotomy to restore the head to an anatomic position on the neck. These children were all subject to a critical review as outlined by Hall[12] and Newman.[11] This review assessed the patient's opinion regarding the surgical result, the amount of pain he had, his function, range of motion, and x-ray appearance.

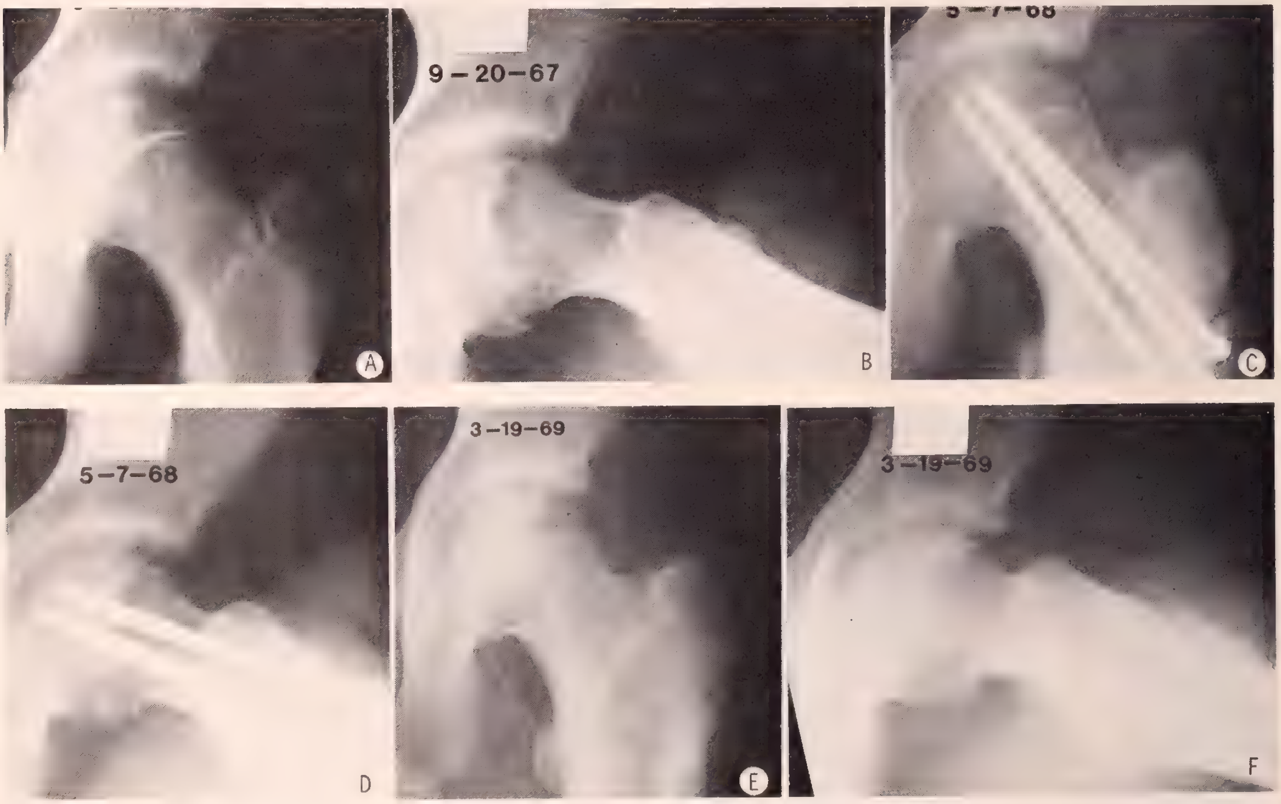


FIGURE 2. Anteroposterior and lateral roentgenograms of fourteen-year-old boy with first degree slipped capital femoral epiphysis. (A) and (B) Before treatment. (C) and (D) Immobilization with multiple smooth pins. (E) and (F) Final results after removal of pins. Treatment lasted six months.

Fixation in situ. The 26 children who had fixation in situ with multiple pins had results that were all considered excellent (Table II). The x-ray films showed no evidence of cartilage necrosis, aseptic necrosis of bone, or arthritic change. A first-degree slipped capital femoral epiphysis in a fourteen-year-old boy is illustrated in Figure 2 A and B. This was immobilized with three smooth pins, and the final result after pin removal and closure of the epiphyseal plate was excellent (Fig. 2 C to F). Our only complication in this group was our inability to remove the metallic fixation device. Threaded Hagie pins were used until 1964. Since 1964 we have used a smooth pin, and extraction has been done without difficulty.

Manipulation, reduction, and fixation. Five children had acute slipped capital femoral epiphyses. The epiphyses could all be reduced completely with gentle manipulation and multiple pin fixation. The results were all considered excellent (Table III). Figure 3 A and B show an example of acute slipped epiphysis seen in an eleven-year-old girl. Reduction was accomplished by gentle manipulation, and fixation was done with multiple smooth pins (Fig. 3 C and D). This healed

TABLE III. Results of manipulation, reduction, and pin fixation of 5 hips for acute slip

Result	Occurrence
Limb length discrepancy	none
Cartilage or bone necrosis	none
Range of motion	full
Symptoms	none
Complications: unable to remove pins	2

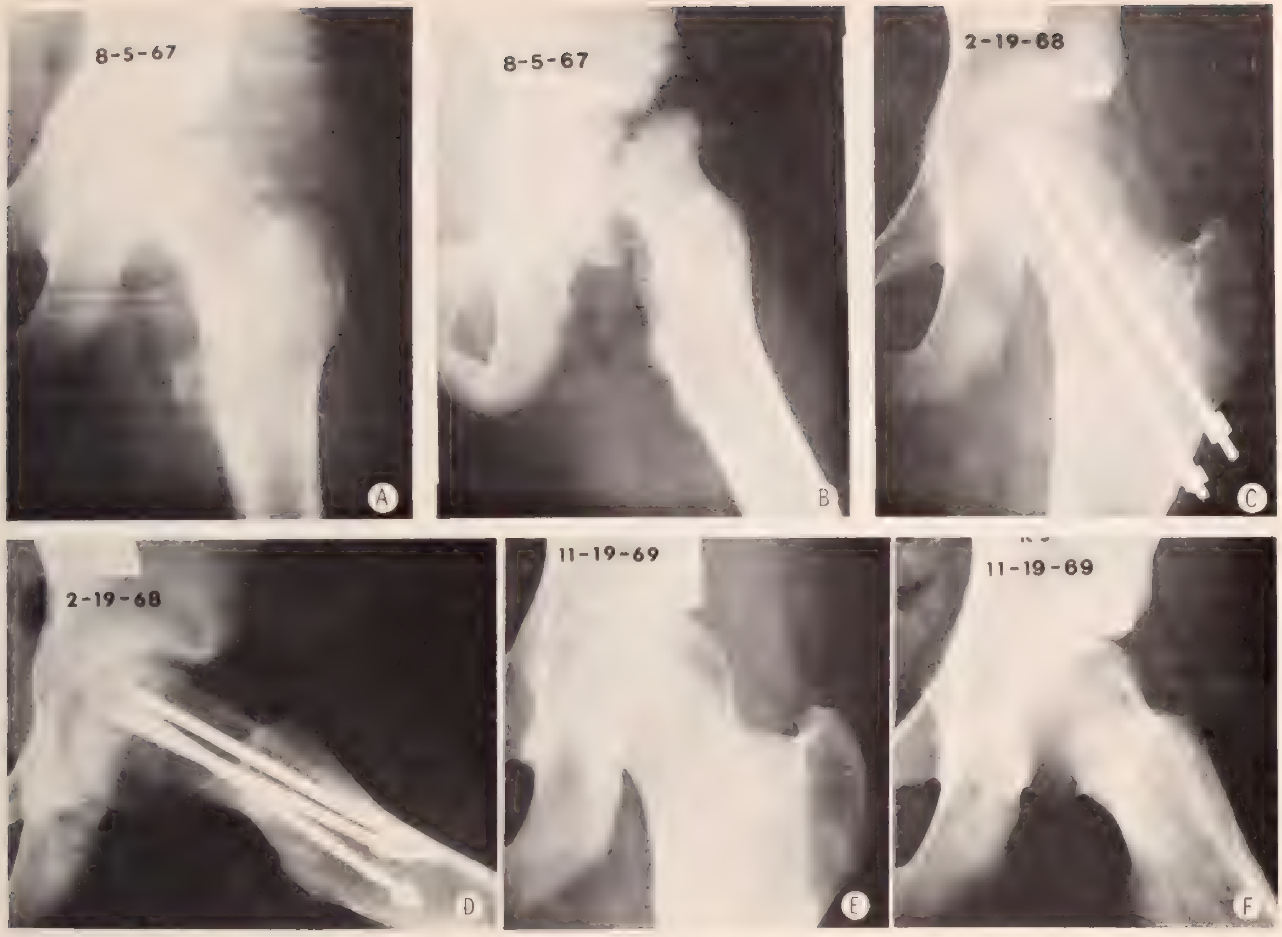


FIGURE 3. Anteroposterior and lateral roentgenograms of eleven-year-old girl with acute slipped capital femoral epiphysis. (A) and (B) Before treatment. (C) and (D) After gentle manipulation and fixation with multiple smooth pins and healing of epiphyseal plate. (E) and (F) Final result after pins have been removed.

uneventfully. Figure 3 E and F demonstrates the final excellent result.

Subtrochanteric osteotomy. Subtrochanteric osteotomy was done in 3 children with very severe slipped capital femoral epiphysis (Table IV). It was in this group of children that the greatest problems occurred. Shortening ranged from three-quarters to one and one-half inches. There was cartilage necrosis in 1 child which showed restoration of the joint space after one year. One child complained of discomfort, and 1 demonstrated a limp with ambulation. Revision of the osteotomy was necessary in 1 instance. In this case x-ray films have shown early osteoarthritic changes with subluxation of the head. This child was placed in the "fair" group as described by Hall[12] and Newman.[11]

Cuneiform osteotomy. Cuneiform osteotomy was done in 18 hips in which the epiphysis had slipped into an unacceptable position (Table V). The alignment was restored anatomically, and fixation was accomplished with multiple pins. There was a limb-length discrepancy measuring one-half inch or less in 7 children. There was no incidence of cartilage necrosis, but 1 child developed aseptic necrosis. This child had no pain but loss of motion and a limp. All the other children have been asymptomatic without complications and have a full range of motion. These remaining children were considered to be in the excellent group as described by Hall.[12]

TABLE IV. Results of subtrochanteric osteotomy on 3 hips

Result	Occurrence
Limb length discrepancy	3
Cartilage or bone necrosis	1
Range of motion limited	2
Symptoms	
Discomfort	1
Limp	1
Complications	
Subluxation head	1
Revision osteotomy	1

TABLE V. Results of cuneiform osteotomy on 18 hips

Result	Occurrence
Limb length discrepancy	7
Cartilage or bone necrosis	1
Range of motion limited	1
Symptoms: limp	1

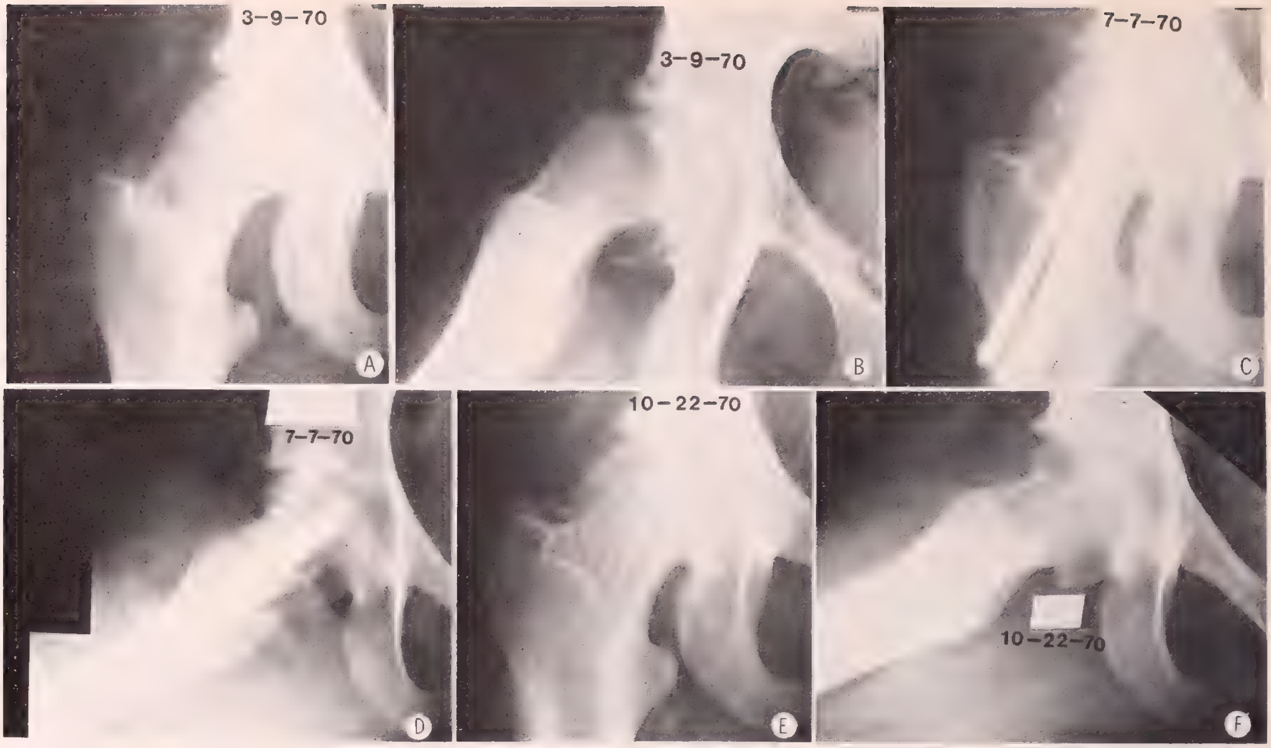


FIGURE 4. Thirteen-year-old girl with five-month history of aching in right hip and limp. (A) and (B) Before treatment. (C) and (D) Four months after cuneiform osteotomy and multiple smooth pin fixation. Osteotomy has healed. (E) and (F) Final result with normal x-ray appearance.

Case reports

Case 1. A thirteen-year-old girl was seen with a classic history of five months of intermittent aching and discomfort in the knee and a limp (Fig. 4 A and B). Cuneiform osteotomy was accomplished, and reduction was maintained with three smooth pins (Fig. 4 C and D). Five months later the pins were removed. The final result is shown in Figure 4 E and F.

Case 2. A fourteen-year-old young man was seen with acute onset of pain in his left hip. A diagnosis was made of an acute slip superimposed on a chronic slipped capital femoral epiphysis (Fig. 5 A and B). An attempt was made under anesthesia to gently reduce this by manipulation. Reduction, however, was not satisfactory, and cuneiform osteotomy was performed (Fig. 5 C and D). The reduction was anatomic, and four months later the hip was completely healed, and the pins were removed (Fig. 5 E and F).

Case 3. A child who developed aseptic necrosis had acute slipped epiphysis superimposed on a chronic slip (Fig. 6 A). The injury had been rather violent since this heavy child had been running, slipped, and fell on wet grass. Gentle manipulation was done under anesthesia, but reduction was not accomplished, and cuneiform osteotomy was performed (Fig. 6 B and C). Three months later early changes of avascular necrosis were evident (Fig. 6 D and E). This progressed to complete destruction of the head of the femur (Fig. 6 F). A vitallium cup arthroplasty was done, and the patient progressed satisfactorily (Fig. 6 G).

This is the only child we have had with aseptic necrosis of the head of the femur. This young man lost the blood supply to the head of the femur. Whether this occurred at the time of cuneiform osteotomy or at the time of his acute injury is not certain. It is certain, however, that forceful manipulation was not done in an attempt to reduce the head, so no damage was done to the capsule at the time of manipulation.

Operative procedure

The operation is performed on the operating table with the leg draped free. An anterolateral approach is made, with the dissection carried between the tensor fascia femoris and the gluteus medius muscle to the anterior hip joint. A "T" incision large enough to allow good exposure of the neck of the femur is made in the capsule.

The most feared complication of this approach and procedure is aseptic necrosis of the head of the femur. Trueta, in 1957,[13] described what he termed the preadolescent period, which would apply to the blood supply of the epiphysis in a child in this age group. During this period the epiphyseal plate is a closed barrier to the vessels of the metaphysis, and the blood supply is capsular, primarily through the lateral epiphyseal vessels. It follows that any operative approach must be gentle and meticulous to avoid any injury to the periosteum of the neck. A carelessly directed osteotome can perforate the posterior lateral peri-

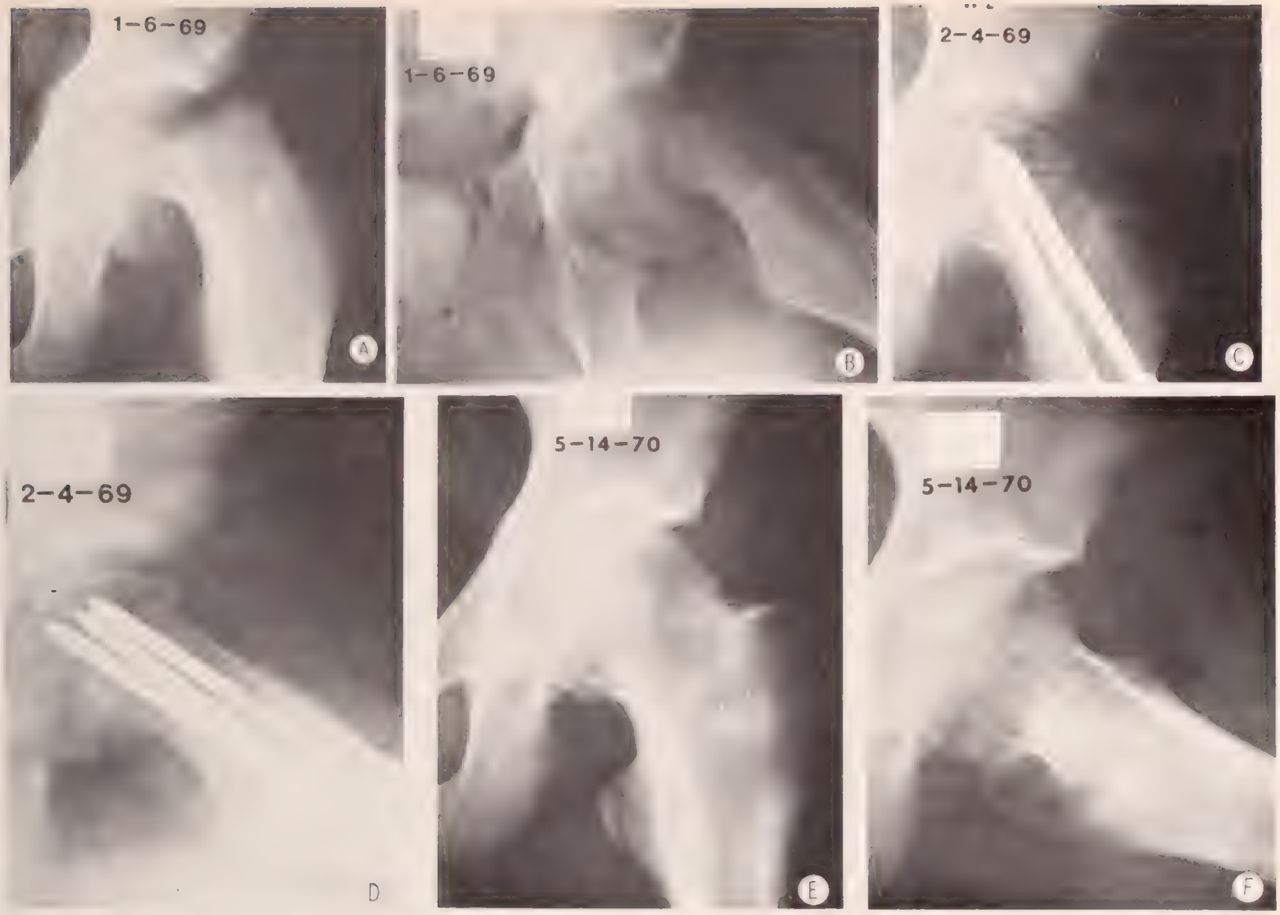


FIGURE 5. Fourteen-year-old boy with acute slip superimposed on chronic slipped capital femoral epiphysis. (A) and (B) Before treatment. (C) and (D) After cuneiform osteotomy with multiple pin fixation. (E) and (F) Final result four months after treatment was instituted.

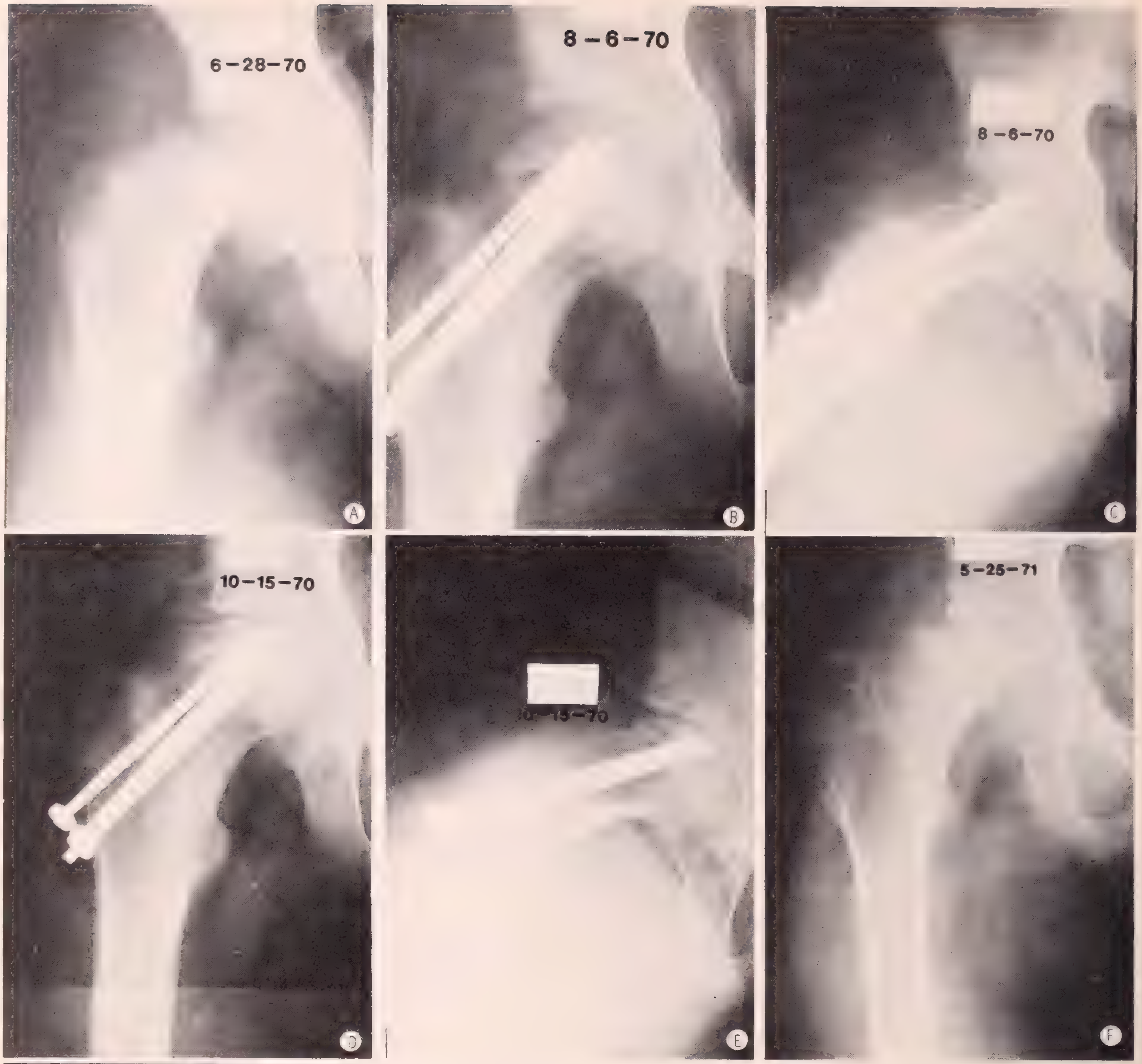
osteum and sever the blood supply (Fig. 7). Any excessive traction on the capsule by insufficient bone removal or forceful manipulation can embarrass the posterior visceral periosteal tissue (Fig. 8).

On opening the capsule anteriorly, the capital femoral epiphysis is usually barely visible at the rim of the acetabulum. The metaphysis of the neck is very obvious. As the capital femoral epiphysis passes posteriorly and inferiorly, the cartilage-covered metaphysis of the neck becomes very prominent anteriorly and superiorly. This structure is very obvious and should not be confused with the head of the femur (Fig. 9). It is very important that this anatomic relationship be made, since it is necessary at this point to pass a curved osteotome through the epiphyseal plate. This is to be done gently and carefully; excessive force is not necessary to determine this plane. Once the epiphysis is free, a cuneiform osteotomy is made through the neck, removing enough bone anteriorly and superiorly to allow complete correction of the head of the femur. This, again, is done very carefully, and no attempt should be made to remove this bone in one block. The bone to be removed is cuneiform in shape, producing a curved surface on the remaining neck. It is very important to take sufficient bone posteriorly, so that the posterior capsule will not be levered over a sharp spike of bone or the healing ridge of bone that occurs posteriorly in the chronic slip (Fig. 10).

When the osteotomy has been done properly, there should be a freely bleeding, curved, cancellous surface of the femoral neck that will approximate the curve of the epiphyseal plate.

After the child passes from the preadolescent to the adolescent period, the plate deteriorates permitting anastomosis of the metaphyseal vessels with the epiphyseal vessels.[12] We have speculated that, in an osteotomy through the epiphyseal plate, complete removal of the plate with a curet and meticulous osteotomy of the metaphysis would allow close bony apposition so that some of the blood supply to the epiphysis possibly could be obtained through the metaphysis.

If enough bone has been removed, particularly posteriorly, the femoral head will reduce effortlessly by mere flexion and internal rotation of the leg. If any force is required, undue tension is placed on the posterior periosteum. Once an easy reduction



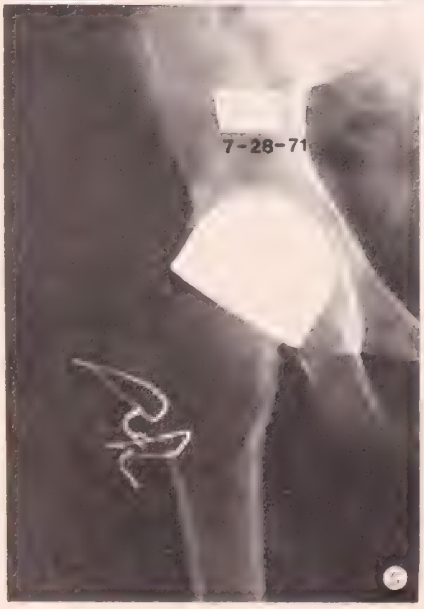


FIGURE 6. Fourteen-year-old boy with acute slipped femoral epiphysis superimposed on chronic slip. (A) Before treatment. (B) and (C) Cuneiform osteotomy performed after unsuccessful manipulation and reduction. (D) and (E) Early evidences of aseptic necrosis in head of femur with collapse of capital femoral epiphysis. (F) Complete destruction of capital femoral epiphysis after removal of fixation pins. (G) Postoperative vitallium cup arthroplasty.

is accomplished, the capital femoral epiphysis is held in position with multiple smooth pins. X-ray pictures are taken in the operating room in the anteroposterior and frogleg lateral positions to determine position of the pins. As soon as the child is comfortable, he is permitted to use crutches. He remains nonweight bearing until there is roentgenographic evidence of healing of the osteotomy. The average time to full-weight bearing after cuneiform osteotomy has been 4.8 months (Table VI).

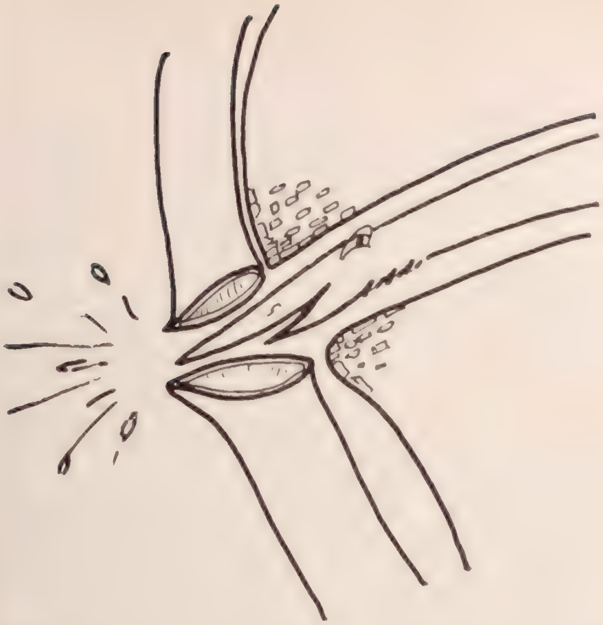


FIGURE 7. Schematic diagram representing penetration of posterior periosteum on femoral neck by carelessly directed osteotome, cutting blood supply to epiphysis.

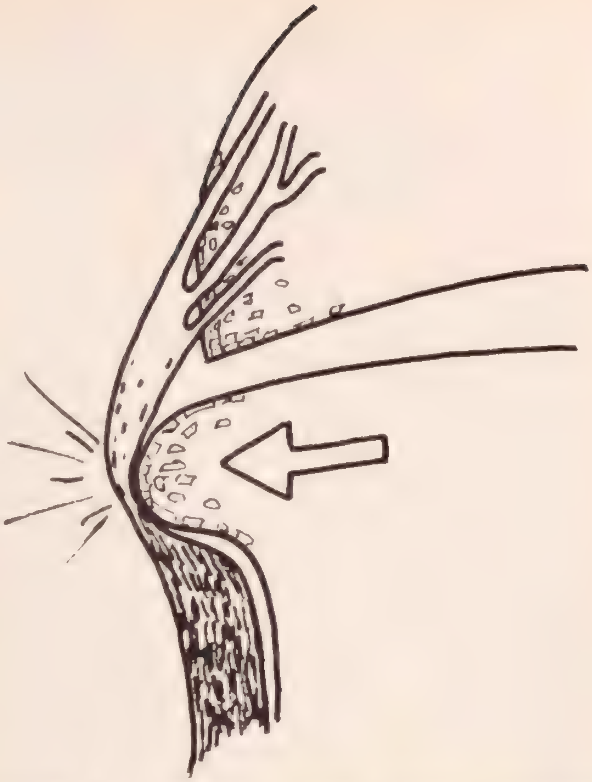


FIGURE 8. Schematic diagram showing embarrassment of blood supply to femoral head by excessive traction on posterior periosteum by insufficient bone removal or forceful manipulation.

Comment

Our approach to this disorder has been an aggressive operative treatment program. The results we have obtained are summarized in Table VII. They are a result of four major factors. First, the condition demands diagnosis as early as possible and urgent treatment. Second, opera-

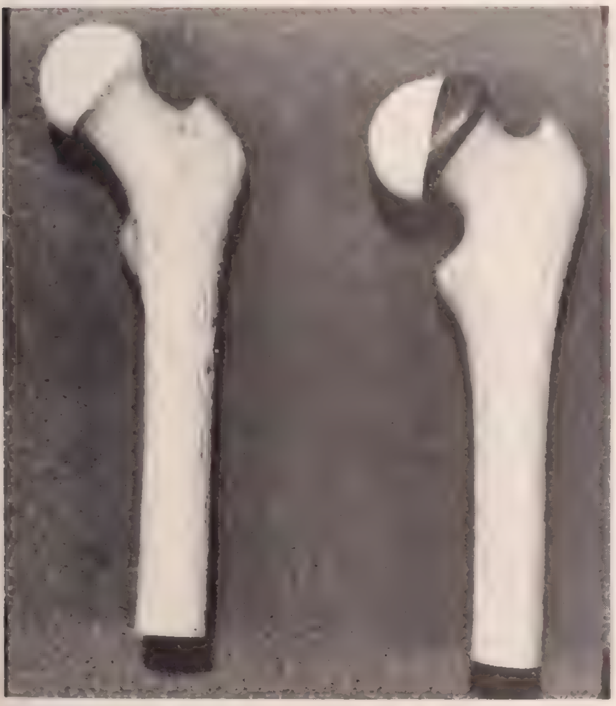


FIGURE 9. Metaphysis of femoral neck becomes prominent anteriorly and superiorly as capital femoral epiphysis passes posteriorly and inferiorly. Darkened area represents bone to be removed.

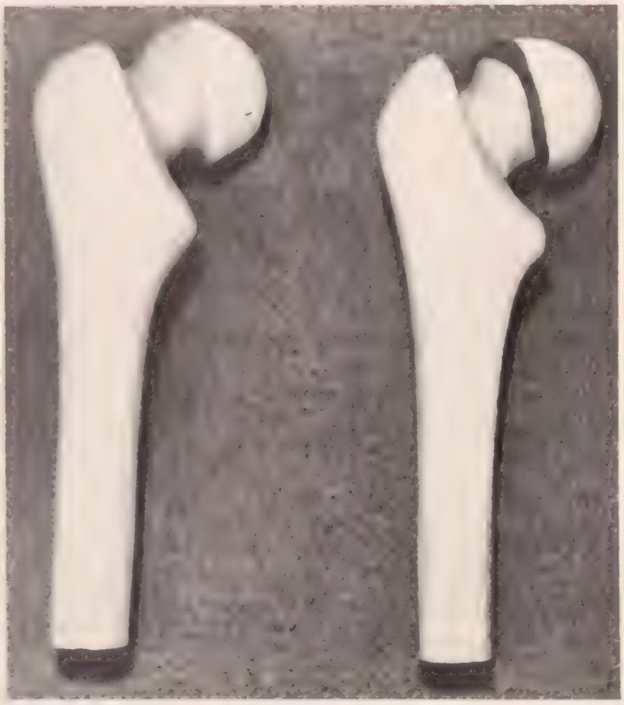


FIGURE 10. Enough bone must be removed posteriorly to prevent excessive traction on posterior periosteum by ridge of bone. Darkened area represents bone to be removed.

TABLE VI. Average time to full-weight bearing

Operation	Time (Months)
Fixation in situ	3.1
Acute slip, manipulation	4.3
Subtrochanteric osteotomy	7.0
Cuneiform osteotomy	4.8

TABLE VII. Results of all operations performed on children with slipped capital femoral epiphysis

	Results				
Operation	Excellent	Good	Fair	Poor	Total
Fixation in situ	26	0	0	0	26
Manipulation and fixation	5	0	0	0	5
Subtrochanteric osteotomy	0	2	1	0	3
Cuneiform osteotomy	17	0	0	1	18
TOTAL	48	2	1	1	52

tive treatment is the treatment of choice. Third, manipulation with any force is dangerous. Newman[11] emphasized this factor when he stated, "Reduction of the acute slip should be achieved by coaxing and not by strong manipulation." Finally, restoration of the displaced femoral head to its normal alignment with respect to the acetabulum and the shaft should be accomplished to prevent the late sequela of osteoarthritis. Reduction must be adequate to allow weight to be borne in a mechanically sound fashion.

The treatment of the slipped capital femoral epiphysis in the unsatisfactory position by cuneiform osteotomy requires a thorough understanding of anatomy. The femoral head and neck relationship of the chronic slip must be fully appreciated. Frequently there is healing bone posteriorly that must be removed prior to the reduction of the head to prevent traction on the posterior visceral capsule. Any attempt at forceful manipulation is to be condemned, since this produces tension on, or rupture of, the posterior periosteum of the neck (Fig. 8).

Interference with the blood supply in this area would result in aseptic necrosis of the capital femoral epiphysis. Bone removal in the cuneiform osteotomy is slow and meticulous, particularly posteriorly, and no attempt should be made to remove the bone in one cuneiform block. If the osteotomy has been done correctly, the head will reduce on the neck without forceful manipulation and with good cancellous bony contact, the blood supply of the posterior visceral capsule will be preserved, and bone contact will allow acceleration of the adolescent phase.[13]

Summary

Fifty-two cases involving slipped capital femoral epiphyses have been reviewed with respect to their treatment program and final results. The results were excellent or good in all but 2 patients. Cuneiform osteotomy, if done properly, offers excellent results and is the only method of treatment for the displaced epiphysis that restores the normal femoral head and neck relationship.

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A series of review articles dealing with medical progress

Recent Advances in Medicine and Surgery

ROBERT TURELL, M.D., Editor

Cancer Chemotherapy

PART II

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Part I of this report, which appeared in the October 15th issue of the JOURNAL, described the toxicity and uses of the alkylating agents, mechlorethamine, chlorambucil, busulfan, cyclophosphamide, triethylene thiophosphoramide, melphalan, and the antimetabolite, methotrexate.

Purine antagonists

At present the three purine antagonists appear to have the same mechanism of action, and there is cross resistance in their antitumor effects.

6-Mercaptopurine. 6-Mercaptopurine (Purinethol) is useful in treating only two neoplastic diseases, acute leukemia and chronic granulocytic leukemia. Little has been added to the literature on 6-mercaptopurine since the symposium published in the December, 1954, issue of the *Annals of the New York Academy of Sciences.* Other good articles have appeared,[166-168] and 6-mercaptopurine is used as one of the agents in acute leukemia regimens involving drug combinations or planned alternation of agents.[145]

Although 6-mercaptopurine alone is not used any longer for remission induction of acute leukemia in childhood, it did produce 26 to 47 per cent complete remissions in this disease.[169] In adult acute leukemia, the results with 6-mercaptopurine have been poorer than with children, partially because of the fact that most adults have the poorly responsive acute granulocytic form. Bross[169] summarized results of several authors using 6-mercaptopurine alone to induce remissions in adult patients with acute leukemia. Response rates varied from 4 to 17 per cent.

It is generally agreed that 6-mercaptopurine is inferior to busulfan for treating chronic myelogenous leukemia.

The generally accepted dosage for 6-mercaptopurine is 2.5 mg. per kilogram per day given as a single dose. If there is no response after four weeks of treatment, many authors advise an increase in the dose to 5 mg. per kilogram per day.

Toxicity of 6-mercaptopurine is almost entirely directed to the bone marrow. Depression of white blood cell count, platelet count, or red cells can occur, but the major effect is on the granulocytes. Toxic effects to the bone marrow caused by 6-mercaptopurine usually clear within seven days after the drug is stopped.

Liver damage is the second most important toxicity of 6-mercaptopurine. The jaundice appears to be cholestatic and is almost always reversible on stopping the drug.[170-172]

Thioguanine. Thioguanine appears to offer no advantages over 6-mercaptopurine, since its mechanism of action, indications, and toxicity appear to be identical with those of the latter drug. However, a recent controlled study indicates that the combination of thioguanine and cytarabine is more effective than that of 6-mercaptopurine and cytarabine for the treatment of acute leukemia in the adult.[173]

Thioguanine is available in 40-mg. tablets. The dose is 2 mg. per kilogram per day given in a single oral dose. Thioguanine is said to cause fewer gastrointestinal side effects, such as nausea, than 6-mercaptopurine. Since unlike 6-mercaptopurine and azathroprine, it is not catabolized by the enzyme xanthine oxidase, it is not necessary to lower the dosage of thioguanine when it is given together with allopurinol (Zyloprim).

Azathioprine. Azathioprine, an imidazolyl derivative of 6-mercaptopurine, is identical with 6-mercaptopurine in its mechanism of action. When azathioprine is given, the active drug, 6-mercaptopurine, is released in the tissues. Azathioprine has had minimal trial as a cancer chemotherapeutic agent. Its main use has been as part of the regimen for prevention of homotransplant rejection. It has been considered a more effective "immunosuppressant" than 6-mercaptopurine on the basis of a few animal studies,[174] but Berenbaum[175] questions the validity of this belief.

Pyrimidine antagonists

5-Fluorouracil (Fluorouracil) was the only pyrimidine antagonist available for clinical use until recently when another compound, 5-fluorouracil-2'deoxyuridine, was released for use in arterial infusion therapy of tumors.

The fluoridinated pyrimidines are of great interest, because they are the only compounds which can produce objective remissions in a significant percentage of patients with adenocarcinoma of the gastrointestinal tract.

5-Fluorouracil has been used most frequently in adenocarcinoma of the gastrointestinal tract. Heidelberger and Ansfield,[176] in a review of 25 reported series covering a total of 1,041 patients, noted 308 with objective responses. They found that the remission rate was the same for stomach, pancreas, or colon and rectum carcinomas, but most authors consider pancreatic carcinoma to be less responsive.

The literature appears to indicate that the median duration of 5-fluorouracil-induced objective remission in gastrointestinal carcinoma is in the range of six months, although occasional patients may have responses lasting more than one year.[177,178]

Response rates in breast carcinoma are slightly higher than those in gastrointestinal cancer. Most authors report remission rates in the range of 25 to 35 per cent.

5-Fluorouracil has also been used in female genital malignant conditions. Although there are some favorable reports, too few patients with these tumors have been treated to determine the usefulness of 5-fluorouracil.[176-179]

At the end of 1970 a preparation of 5-fluorouracil (Efudex), was released as a 5 per cent cream and a 2 and 5 per cent solution for topical chemotherapy of solar (actinic) keratoses. Since the drug company literature does not recommend topical 5-fluorouracil for treating basal cell carcinomas, such use still remains experimental. However, 5-fluorouracil has been applied topically to the skin for treatment of superficial basal cell carcinomas with apparently excellent results.[180,181]

5-Fluorouracil is available in 10-cc. ampuls as an aqueous solution containing 50 mg. per cubic centimeter of the compound. It is given intravenously without dilution, using a 23- or 25-gauge needle.

Dosage regimens for 5-fluorouracil have changed drastically in the last few years. Although the package insert still recommends a regimen that will occasionally lead to severe toxicity, many chemotherapists are following the lead of the Eastern Cooperative Oncology Group[182] and the Western Cooperative Cancer Chemotherapy Group[183] and are using 15 mg. per kilogram once weekly without a preliminary course of daily injections. These groups produced response rates equal to those achieved by authors using older regimens, and toxicity was almost insignificant.

Although Ansfield's group now uses weekly doses of 5-fluorouracil for remission maintenance, they still start their good-risk patients on a preliminary loading dose regimen consisting of 12 mg. per kilogram per day for five days followed by 6 mg. per kilogram every other day for 11 doses.[184] Naturally, the course is stopped if toxicity occurs. The problem with such a loading regimen is that 5-fluorouracil toxicity is delayed for from three to ten days, so that several injections may be given after a toxic dose has been reached.

In light of my past experience and the data presented previously, I stopped using loading doses more than a year ago. I have produced a number of excellent responses administering 15 mg. per kilogram weekly and have seen no instances of more than mild toxicity. The response rates appear to be as high as they were with older regimens.

Even more recently, several groups have used 5-fluorouracil orally, administering the commercially available injectable solution.[185,186] Bateman *et al.*[186] performed a controlled clinical trial comparing weekly oral with weekly intravenous 5-fluorouracil and found the oral route superior. Lahiri, Boileau, and Hall[185] suggest that the oral route is superior for patients with liver metastases.

In view of the minimal toxicity and equally good results produced by the new regimens, the indications for 5-fluorouracil therapy should perhaps be broadened. There is an increasing tendency to treat colorectal carcinoma patients with proved residual disease even when they are asymptomatic. A recent controlled study suggests that this is useful.[187] In those symptomatic patients who respond to 5-fluorouracil, maintenance therapy should be continued until relapse occurs.

Gastrointestinal tract injury was the major side effect of earlier more toxic dose regimens of 5-fluorouracil with stomatitis occurring in 48 to 75 per cent of patients. Stomatitis commonly takes the form of small shallow ulcerations on the inner surface of the lower lip, and sore mouth may precede stomatitis by one or more days.

Diarrhea was also seen with earlier regimens but is rarely troublesome with weekly therapy. 5-Fluorouracil should be withheld if watery diarrhea occurs and then resumed several days later in a lower dosage if blood counts permit.

Nausea and vomiting are quite common even on the weekly regimen. However, these symptoms rarely last beyond the first twenty-four hours and are rarely troublesome enough to cause the patient to stop treatment. Less than one third of patients vomit, and some of those will do so only once or twice and then may have no symptoms after the next few injections, only to have a recurrence of the problem a month or so later.

Bone-marrow toxicity, formerly severe and frequent, is mild and uncommon with weekly therapy. Both white blood cell count and platelet depression can occur, so that these parameters should be determined before each injection. The drug should be withheld if the white blood cell count is below 3,500 per cubic millimeter or the platelet count less than 125,000 per cubic millimeter. For office practice the experienced chemotherapist can estimate the platelet count by examining the Wright-stained blood smear.

If one still uses loading doses of 5-fluorouracil, he must respect the bone-marrow depressant effects of the drug, since death can occur. The earliest regimens, now fortunately discarded, produced a 3 to 6 per cent mortality rate. Alopecia is occasionally seen but again is less frequent and milder with newer regimens.

Floxuridine. Floxuridine (FUDR), released early in 1971, is the deoxyriboside of 5-fluorouracil and has the same mechanism of action and spectrum as the latter agent. In uncontrolled studies the intra-arterial infusion of floxuridine has been reported to produce a higher remission rate than that obtained by the intravenous injection of 5-fluorouracil.[188,189]

The drug is useful only in gastrointestinal neoplasms and breast cancer, and only when the major manifestations of the tumor are in the area supplied by an accessible artery.

There are no controlled studies which compare intra-arterial infusions of 5-fluorouracil with similar infusions of floxuridine, nor are there any studies comparing systemic 5-fluorouracil therapy with intra-arterial infusions of either floxuridine or 5-fluorouracil. Because of the lack of these data and the hazards and difficulties of intra-arterial infusions, I believe this type of therapy must remain experimental.

Cytarabine. Cytarabine (Cytosar), also known as cytosine arabinoside, arabinosyl cytosine, or ara-C, is one of the best drugs available for treating adult acute leukemia. Since there are several more effective agents, cytarabine remains a second line drug in treating acute leukemia of childhood.

A number of studies have been carried out in acute leukemia of the adult which show that approximately 25 per cent of those treated have a useful response to the drug.[190–192] Response rates in acute leukemia of childhood are approximately the same.[193,194]

At present, the major use of cytarabine is in combination with 6-thioguanine for the treatment of acute leukemia in the adult.[173] Dosage regimens have not been standardized, so that reference to original publications is advised.

Major toxicity of cytarabine has been bone-marrow suppression. Leukopenia or thrombocytopenia occur in approximately two thirds of patients, and a megaloblastic marrow probably develops in all patients. Acute Leukemia Group B[190] found that megaloblastosis occurred with doses as low as 3 mg. per square meter when given daily for seven days by constant infusion, although neither leukopenia nor thrombocytopenia were present. Cytarabine should not be used unless platelet transfusions are available because thrombocytopenia is a frequent complication.

Gastrointestinal toxicity, manifested by nausea, vomiting, and diarrhea, occurs only occasionally. Abnormal liver function tests have been found in a small percentage of children and adults. Oral ulceration occurs occasionally, alopecia rarely.

Vinblastine. The Vinca rosea alkaloids, vinblastine and vincristine, represented a significant advance in cancer chemotherapy when they were introduced in the early 1960s.

Since vinblastine (Velban) is among the least toxic of all effective cancer chemotherapeutic agents, it is unfortunate that, for the most part, it is useful only in the treatment of Hodgkin's disease. However, it may be helpful for uterine choriocarcinoma, breast cancer, and Kaposi's sarcoma. Objective remissions occur in Hodgkin's disease in 50 to 90 per cent of patients treated.[195–198] Responses may last for several weeks to several years, and their median duration is approximately ten months. Several authors have reported patients still in remission after twelve months, and I have treated a few patients whose remissions lasted more than four years. Although rare patients with Hodgkin's disease have had prolonged responses after only one course of therapy, there is general agreement that maintenance treatment is necessary. Patients refractory to alkylating agents appear to respond as well as those not so treated.

The onset of remission in Hodgkin's disease occurs fairly rapidly after the start of vinblastine therapy. If an effective dose is given, the patient will often notice disappearance of fever and improvement in general clinical status within a week. Most patients who undergo remission will exhibit significant subjective or objective improvement within two weeks, although occasionally patients may not respond for as long as four weeks.

There are controlled clinical trials that compare vinblastine with mechlorethamine[199] and vinblastine with cyclophosphamide.[200] Results were not conclusive, but vinblastine is considered by most experts to be the single most effective drug against Hodgkin's disease.[196]

Vinblastine is effective in treating uterine choriocarcinoma but is not the drug of choice.[201] In addition, several groups have found this alkaloid to be a useful agent for treating Kaposi's sarcoma.[202,203] We have treated 5 patients with advanced skin involvement by Kaposi's sarcoma using systemic vinblastine. Two patients had almost complete remissions, while a third had partial control of the disease.

Vinblastine is administered intravenously. The dry powder is packaged in a 10-mg. vial which should be kept refrigerated, and its contents are dissolved in 10 cc. of sterile water prior to injection. Since infiltration of the vinblastine solution into the tissues surrounding the veins causes a severe local reaction, great care must be taken to inject the solution entirely into the lumen of the vein. The safest and most convenient method is to use a two-syringe setup with a "scalp vein" or "butterfly" needle as described for mechlorethamine.

Intravenous vinblastine is given once every seven days until remission or toxicity occurs. Maintenance therapy is then given every one to four weeks, although most patients will relapse if the interval between injections is greater than two weeks.[196,198] The initial dose is usually 0.10 mg. per kilogram intravenously, but if the patient has had recent extensive radiotherapy or recent chemotherapy with another agent, the initial dose should be even lower. The dose is then increased 0.05 mg. per kilogram per week until response or toxicity is reached. As leukopenia is approached, weekly increments of less than 0.05 mg. per kilogram are advisable.

If remission occurs, the dosage is maintained at weekly and then gradually increasing intervals, although it is unusual for a patient to be able to remain in remission with injections less frequent than one every two weeks. Most patients will experience either remission or leukopenia by the time the dosage reaches 0.3 mg. per kilogram per week. If toxicity occurs before remission, smaller doses may be tried at weekly intervals.

Irreversible leukopenia is not seen, although death can occur from infection during a period of white blood cell depression. Leukopenia is maximum within four to seven days after injection, and the white blood cell count rises rapidly thereafter. The effect of vinblastine on the platelet count is far less than on the white blood count.[196,204]

The maintenance dosage sufficient to maintain remission does not automatically cause leukopenia. However, the physician should not stop vinblastine in a patient who has had a remission and then relapsed, until the white blood cells fall below 3,000 per cubic millimeter. If relapse is not reversed after several successive leukopenia-producing dosages of vinblastine, it may be concluded that the drug-induced remission is over.

Nausea, which usually occurs transiently after the injection, is noted in approximately one fifth of patients, and diarrhea is a rare side effect. Alopecia, which is dose dependent, occurs in 5 to 10 per cent of cases and may be reversible during maintenance therapy. Neurologic complications are mild but fairly frequent, especially at higher doses.[204] A feeling of depression, the most common neurologic complication, was noted by Johnston and Novales[205] in their 6 patients coincident with the appearance of leukopenia. Frei *et al.*[204] using higher dosages, noted psychosis, mental depression, and convulsions. Most authors describe paresthesias and loss of deep-tendon reflexes in the lower extremities in less than 10 per cent of cases.

Phlebitis may occur in less than 10 per cent of patients. Local infiltration outside the vein causes severe pain in the subcutaneous tissues, which may not become apparent until as long as twenty-four hours after the injection. However, after that time, both you and the patient will know of the mishap, since the pain is quite severe and may require narcotics for relief at night. Although actual necrosis and sloughing of the skin is uncommon, I have seen several patients with prolonged ulceration because inexperienced personnel injected large quantities of vinblastine sulfate solution subcutaneously. Care should be taken that none of the vinblastine sulfate solution is sprayed into the eye of the patient or the administering physician.

Vincristine. Vincristine (Oncovin), formerly known as leurocristine, although probably the safest of all cancer chemotherapeutic agents, is nevertheless one whose usefulness is severely decreased by its toxicity. This apparent paradox is explained by the fact that its neurotoxicity is a limiting factor, which is rarely if ever lethal. Vincristine is approved for use in acute leukemia in children, but it is also active against lymphosarcoma and reticulum cell sarcoma.

Although vincristine alone is now rarely used for inducing remissions in childhood leukemia, it is still worthwhile to review those studies in which vincristine was given as the sole treatment. In 1966 the Acute Leukemia Cooperative Group B reported on 117 patients who were given vincristine for remission induction, 64 of whom underwent complete remissions, while 18 had a partial remission.[206] Within the subgroup of acute lymphoblastic leukemia the complete plus partial remission rate was 73 per cent in 103 patients treated, although only 6 of 14 patients with acute myelogenous leukemia had a remission.

Heyn *et al.*[207] treated 163 patients under the age of 15 with the diagnosis of acute leukemia. One hundred twenty-one of these patients underwent an adequate trial of vincristine, of whom 11.6 per cent achieved complete remission, while another 35.5 per cent had a good partial remission.

Evans[208] summarized five studies of vincristine therapy in acute leukemia of childhood. The combined remission rate consisting of complete plus good partial remissions varied from 45 to 70 per cent. When vincristine maintenance therapy was given, the median duration of remission was sixty-three days, while it was only forty-two to fifty-nine days without maintenance therapy. In previously untreated children with acute leukemia the remission rate was 79 per cent, but it was only

50 per cent in children who were resistant to antimetabolites, corticosteroids, or cyclophosphamide.

Vincristine has been increasingly useful in the treatment of the tumors of infancy and childhood, especially in Wilms' tumor. Sullivan[209] reported that 8 of 12 patients with this condition had a complete regression of tumor after having been treated with vincristine. In 6 of the 8 patients, the onset of tumor regression occurred before the third week of therapy, but the median duration of response was unfortunately only eight weeks. When the results of this study were combined with those of a previous one, it was found that although only 1 of 10 patients with lung metastases from Wilms' tumor treated with vincristine alone had a possible cure, 5 of 13 receiving vincristine plus radiotherapy to the lungs were cured of their lung metastases. Sullivan *et al.*[210] reported that vincristine had rendered 4 inoperable Wilms' tumors in children operable.

Vincristine used alone produces an objective response in a significant number of neuroblastoma patients but does not affect a cure. However, a combination of vincristine and cyclophosphamide has apparently cured a few children with neuroblastoma even when they have had marrow and bone involvement.[110] Vincristine has also proved useful in the treatment of other malignant solid tumors of children particularly embryonal rhabdomyosarcoma.[211-214]

Vincristine has been found to be valuable in the treatment of lymphomas. Its use in the MOPP (mechlorethamine, vincristine, procarbazine, and prednisone) combination chemotherapy regimen for Hodgkin's disease and in various combinations for the treatment of other lymphomas will be discussed later under "Combination Chemotherapy." Vincristine alone, however, is seldom useful for long-term treatment of lymphomas. Prolonged remissions of as long as a year's duration have been reported in Hodgkin's disease using vincristine therapy alone.[215,216] Remissions have been seen often enough in vinblastine-resistant patients to conclude that there is no cross resistance.[196,216] It would appear that a small percentage of patients with Hodgkin's disease have a tumor so sensitive to vincristine that useful remissions can occur with minimal toxicity, but because of its neurotoxicity and lesser effectiveness, vincristine is generally less useful than alkylating agents or vinblastine in this disease.

Yount and Finkel[217] pointed out that low- rather than high-dosage vincristine therapy was more effective in treating patients with reticulum cell sarcoma, because neurotoxicity precludes prolonged maintenance therapy with high-dosage vincristine although the initial response rate is quite good. In Yount and Finkel's group of 9 patients, there were 6 remissions. Three lasted over a year, and 3 patients were still responding three to four months after onset of vincristine treatment.

Desai, Ezdinli, and Stutzman[218] used vincristine to produce some response in 25 to 30 patients with reticulum cell sarcoma, 16 of 26 with Hodgkin's disease, and 2 of 9 with lymphosarcoma but achieved no results at all in 6 patients with chronic lymphocytic leukemia. Although 16 of the 25 remissions in reticulum cell sarcoma were complete, their median duration was only four weeks after the achievement of maximum response.

In a controlled study comparing cyclophosphamide and vincristine in the treatment of reticulum cell sarcoma and lymphosarcoma, Acute Leukemia Group B and the Eastern Solid Tumor Chemotherapy Group found cyclophosphamide to be clearly superior in the treatment of lymphosarcoma but vincristine equal to cyclophosphamide in reticulum cell sarcoma.[219] Studies appear to indicate that the immature varieties of lymphosarcoma are more responsive to vincristine plus prednisone than well-differentiated small cell lymphosarcoma.

The dosage schedule for treatment of childhood acute leukemia with vincristine appears to be well standardized at 0.075 mg. per kilogram per week or 2 mg. per meter square BSA (body surface area) per week given for from four to six weeks. Most authors combine the vincristine with 1 to 2 mg. per kilogram per day of prednisone given orally and stop the vincristine as soon as remission occurs. However, the dosages are less standardized in adults with lymphoma, and amounts as high as 0.05 mg. per kilogram per week may be given for two to three weeks without prohibitive neurotoxicity. I strongly recommend not giving a single dose greater than 0.05 mg. per kilogram. The usual maintenance dose in adults is 0.015 to 0.025 mg. per kilogram per week.

Neurotoxicity is the most common side effect of vincristine, but there is no general agreement as to the exact site of the initial neural lesion. Different authors have suggested sensory cells of dorsal root ganglia and the anterior horn cells,[220] dorsal root cells,[221] muscle spindle system,[222] and the axon[223] as the site affected by vincristine.

Clinically, the most frequent and troublesome neurotoxicity has been peripheral neuropathy, whose earliest signs are paresthesias and loss of deep-tendon reflexes, usually occurring after a month of therapy. Muscle weakness is considerably more frequent in children probably because of the higher-dosage regimen. Neurotoxicity is definitely dose dependent. Karon *et al.*[206] found vincristine neurotoxicity in acute leukemia to be half as frequent if the drug was stopped as soon as remission occurred.

More severe neurotoxicity in the form of neuritic pain, foot drop, wrist drop, and muscular atrophy are not uncommon, and a slapping gait as a result of foot drop and muscle weakness has been described.[224,225] Hoarseness, vocal cord paresis, extraocular nerve damage, and seventh nerve involvement are seen.

Severe constipation, considered a form of neurotoxicity, has been a troublesome and frequent complication of vincristine therapy. High fecal impaction with no stool in the ampulla has also been considered a manifestation of vincristine-induced bowel hypomotility.

Jaw pain, an unusual form of neurotoxicity, has been seen in children receiving vincristine, usually within twenty-four hours after drug administration.[207,226] Unlike the other forms of neurotoxicity, it is most common after the first or second vincristine injection and subsequently rare.

Milder neurotoxicity may be reduced or even disappear when dosage is lowered. However, sensory loss, paresthesias, and muscle weakness are not so readily controlled, since they may last as long as three months after discontinuance of vincristine therapy.

Hair loss, often total, occurs in almost half the patients, but regrowth begins with cessation of the drug or when a lower dose is used for maintenance. Vincristine-induced alopecia may be minimized by use of a scalp tourniquet applied just prior to the injection and left on for ten minutes after its completion.[227]

Bone-marrow toxicity has been a problem only with high-dosage regimens. Weight loss was reported with a higher dosage than now recommended.[224] As with vinblastine, injection of vincristine outside the vein leads to prolonged painful induration of the subcutaneous tissue.

Dactinomycin. Dactinomycin (Cosmegen) has produced dramatic results in Wilms' tumor and uterine choriocarcinoma. Many articles on the use of dactinomycin in the treatment of Wilms' tumor of children have appeared,[228–232] but only one of these is based on a controlled study with random selection of patients.[229] In the other reports the authors present only a comparison of their results with those obtained in the predactinomycin era. Although no definitive figures are as yet available, one unequivocal fact is that whereas prior to the use of dactinomycin, cures of metastatic Wilms' tumor were extremely rare, they are now a commonplace occurrence.

Farber and Mitus[228] state that "when dactinomycin was administered routinely at the time of surgical removal of the Wilms' tumor and was followed by local irradiation of the tumor bed immediately after operation, metastases were prevented in almost all patients. The two-year survival rate (equivalent, with rare exceptions, to cure) was raised from the 40 per cent average level when surgery and irradiation were used alone to more than double that figure (89%)."

Farber and Mitus[228] report that 58 per cent of children with lung metastases from Wilms' tumor were apparently cured by a combination of systemic dactinomycin and low-dose radiotherapy to the lungs.

The Children's Cancer Study Group A made the only controlled study of the usefulness of dactinomycin in the prophylaxis of metastases in children with Wilms' tumor, while treating 45 children with unilateral resectable Wilms' tumor with radiotherapy following surgery.[229] The control group of 23 were later treated with one course of dactinomycin 15 micrograms per kilogram per day for five days, while the other 22 children received the same therapy, followed by repeat courses of dactinomycin at six weeks and three months after surgery, and an additional course every three months for the first fifteen months of the postoperative period. Eleven of the 23 patients in the control group survived, while 19 of 22 of the group receiving prolonged dactinomycin therapy were alive and well at the time of reporting.

One group suggests that postoperative prophylactic dactinomycin therapy is unnecessary in children younger than the age of one who do not have gross or microscopic evidence of local spread or invasion of the renal capsule or blood vessels.[230]

The results of dactinomycin treatment for uterine choriocarcinoma are perhaps even more spectacular than those obtained in Wilms' tumor. Hertz[153] reported three complete remissions in 7 patients with choriocarcinoma who received dactinomycin as initial therapy, while 10 complete remissions occurred in 17 patients who either relapsed after initial response to methotrexate or had not responded at all.

The overall cure rate for uterine choriocarcinoma using methotrexate or dactinomycin now approaches 80 per cent. If the patient fails to respond to either one of these drugs, she should be immediately switched to the other. Hertz[153] suggests that dactinomycin be used as initial therapy for uterine choriocarcinoma if there is evidence of preexisting liver disease.

Objective responses have been reported with dactinomycin in other tumors, especially the highly anaplastic tumors of children including embryonal rhabdomyosarcoma.[232–236] In general, the drug has been used in combination with local radiotherapy to major tumor areas, but it is not known if combined therapy is better than radiotherapy alone. Results have been only temporary except in rare instances. Dactinomycin is a component of the so-called "triple therapy" regimen first discussed by Li *et al.*[237]

Dactinomycin (Lyovac Cosmegen) is packaged in ampules containing 0.5 mg. (500 micrograms) of dry lyophilized powder plus 20 mg. of mannitol, which can be reconstituted with 1 cc. of sterile water for injection. No other diluent should be used since it may cause precipitation. The solution is then administered in the same manner as mechlorethamine, using the two-syringe method.

a scalp vein needle, and a scalp tourniquet.

The recommended dosage regimen depends on the author and the type of tumor to be treated. For Wilms' tumor each course consists of 0.010 to 0.015 mg. per kilogram for five to eight days, although Farber and Mitus[228] recommend 0.08 to 0.10 mg. per kilogram over eight to ten days, given at the rate of 0.010 mg. per kilogram per day. When radiotherapy is given concurrently, they suggest 0.07 to 0.08 mg. per kilogram over a seven- to eight-day period administered at the same rate. Farber and Mitus[228] claim that the regimen of 0.015 mg. per kilogram per day for five days suggested by other authors leads to an increased incidence of oral ulceration. In Wilms' tumor one gives repeat courses of therapy at six-week to three-month intervals for fifteen months to two years after either the surgical removal of the primary tumor or institution of therapy for metastatic disease.

For the treatment of metastatic uterine choriocarcinoma, Brewer *et al.*[238] recommend 0.01 mg. per kilogram per day for five days, with repeat courses to be initiated when all evidence of toxicity except alopecia subsides, until the attainment of complete remission which is defined as disappearance of all physical, endocrinologic, roentgenologic, and pathologic evidence of disease. In addition three consecutive normal chorionic gonadotropin titres at weekly intervals are required, after which monthly gonadotropin determinations should be performed for one year. Thereafter these measurements are performed at increasing intervals. Since dosage regimens for other tumors are less standardized, reference to the original articles is recommended.

Toxicity of dactinomycin is potentially quite severe but usually does not start until two to four days after completion of a course of the drug, with maximal toxicity sometimes not present until one to two weeks after completion of therapy.

The major toxicity of dactinomycin is bone-marrow depression, with thrombocytopenia of equal if not greater importance than leukopenia. The second major site of toxicity is the gastrointestinal tract with vomiting usually occurring within four to five hours after an injection. Farber and Mitus[228] found slight nausea and vomiting in almost all patients, while severe nausea and vomiting were seen in 96 of 500 courses. Although Tan, Dargeon, and Burchenal[232] reported oral toxicity 60 per cent of the time, Farber and Mitus[228] noted only 11 incidents of stomatitis possibly because 0.01 mg. per kilogram was their maximum daily dose.

Skin reactions are common, especially at the site of previous radiotherapy, where erythema or increased pigmentation resembling the usual radiation skin reaction may appear. The most vulnerable time is within the first three months after completion of radiotherapy, although skin changes have occurred as long as seventeen months after the completion of irradiation. Skin eruptions at nonirradiated sites and acneiform lesions have also been reported. Alopecia was reported by Tan, Dargeon and Burchenal[232] in 47 per cent of children, usually starting seven to ten days after completion of a dactinomycin course. However, regrowth of hair very often began within two to four weeks after the onset of loss.

Miscellaneous agents and technics

There are a number of other cancer chemotherapeutic agents, some of which are commercially available while others are not. Permission to use experimental drugs, not commercially available, can be obtained by writing to the Cancer Therapy Evaluation Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland, 20014. In addition, excellent summaries of available chemical and clinical data will be sent by the National Cancer Institute on request.

Procarbazine hydrochloride. Of a number of methylhydrazine drugs which have been tested for antitumor activity in both animals and human subjects, so far the most successful has been procarbazine hydrochloride (Matulane).

Procarbazine hydrochloride is at present recommended for use only in the palliation of Hodgkin's disease. Although the incidence of remissions in Hodgkin's disease with procarbazine hydrochloride is equivalent to that obtained with alkylating agents and vinblastine, the duration of remission appears to be somewhat shorter. Remission rates vary from 50 to almost 100 per cent.[239–244] Most authors noted that the best responses were obtained in early cases, but there was no cross resistance with alkylating agents or vinblastine. Duration of remission averages about four months, and maintenance therapy is considered helpful in maintaining response.

Procarbazine hydrochloride is available in 50-mg. capsules which are ivory colored. The drug is generally given in divided doses after meals. Original dosage recommendation in the literature specified 4 to 7 mg. per kilogram daily, but this amount is undoubtedly too high. Because of delayed onset of bone-marrow depression, the initial course of drug should be stopped at an arbitrary time without waiting for manifestations of toxicity. Naturally, should toxicity appear before that arbitrary time, the drug would be stopped and would be resumed later with a lower-dose maintenance regimen only when the toxic condition had cleared.

At present, I would recommend the following dosage regimen for patients with normal or high white blood cell and platelet counts and good bone-marrow reserve. A course of 4 mg. per kilogram daily in divided doses should be given for twenty-one days. This 4 mg. per kilogram level is reached only after a preliminary period in which the dosage is built up by daily 50-mg. increments to minimize nausea and vomiting. If no response is achieved at 4 mg. per kilogram and toxicity has not occurred, the dose may be raised as high as 6 mg. per kilogram per day after a two- to three-week rest.

Lower dosages are recommended if the marrow is compromised or the patient has had extensive radiotherapy to marrow areas. For patients with severe leukopenia and/or thrombocytopenia, we have given 50 mg. the first day and then 100 mg. daily for the next fourteen days. After the initial fourteen- to twenty-one day course, maintenance therapy is started with dosages varying from 50 mg. daily to 50 mg. every other day. Occasionally 100 mg. daily is needed for maintenance. During the initial period, white blood cell and platelet counts should be done twice a week, but thereafter weekly checks are sufficient.

The package insert for procarbazine hydrochloride is certainly a good example of "full disclosure." Its frankness and honesty is a tribute to the new attitude of the drug industry and the Food and Drug Administration, but in trying to be honest I am afraid all concerned have exaggerated somewhat. Several adverse reactions were not even mentioned in over 20 articles on procarbazine hydrochloride read by me. Such complications as effusion, ascites, cough, and papilledema which are listed in the insert are more likely due to the disease itself rather than to treatment by the drug.

The main toxic effect of procarbazine hydrochloride is bone-marrow depression. Anorexia and nausea are almost inevitable, and vomiting is common but may be diminished by starting the drug slowly as described earlier. Giving the drug in divided doses or at bedtime may also minimize nausea and vomiting, although some patients ultimately have to discontinue procarbazine hydrochloride because of this side effect. Antiemetics are of some use, but phenothiazines should not be given because procarbazine hydrochloride may potentiate their hypotensive and sedative action. Nausea is much less pronounced on the lower maintenance dosage.

Bone-marrow depression is characteristically delayed and often may not occur until several weeks after the initial fourteen- to twenty-one-day course is stopped. White blood cells are affected somewhat more frequently than platelets, but depression of either may require cessation of therapy. Marrow depression may last from one to three weeks after stopping the drug. Neurotoxicity, although occurring in 25 to 75 per cent of patients, is usually not severe. It is manifested mainly by restlessness and drowsiness and occasionally by psychosis. Although paresthesias are common, more severe peripheral neuropathy rarely occurs. Potentiation of phenothiazines and flushing after alcoholic drinks have been noted and are believed to be part of the neurotoxicity.

Hydroxyurea. Hydroxyurea (Hydrea), an extremely simple chemical compound, appears to be a useful agent in the therapy of chronic granulocytic leukemia, although the number of patients treated is still small. Excellent results in this disease have been reported by Kennedy and Yarbro[245] in 9 patients and by Krakoff, Savel, and Murphy[246] in 6. Fishbein *et al.*[247] also reported rapid response in the small number of patients they treated.

Hydroxyurea was released in October, 1967, as a drug effective in the treatment of both chronic granulocytic leukemia and malignant melanoma. In a brochure issued at that time, it was stated that 14 of 67 hydroxyurea-treated patients with malignant melanoma reported to the manufacturer had responded. However, the consensus of opinion is that hydroxyurea is relatively ineffective in the treatment of melanoma.[248,249]

The dosage of hydroxyurea is 20 to 30 mg. per kilogram orally daily, usually divided into two doses. Toxicity is mainly on the bone marrow with the occurrence of either white blood cell count, platelet, or hemoglobin depression, but its reversal is apparently rapid with return to normal levels within ten to thirty days after stopping the drug. On higher-dose regimens anorexia and vomiting occur occasionally, and skin rash, stomatitis, and alopecia rarely.

Megaloblastic erythropoiesis is seen very commonly, and in one series almost all patients showed this picture on examination of bone-marrow aspirates. There is one report of mild reversible renal-function depression using 40 mg. per kilogram per day, a dose slightly higher than usual, and elevation of serum uric acid, thought to be a renal tubular effect.[250] Since hydroxyurea is a teratogen in rats and chicks, it should not be given to pregnant women unless there are extreme clinical indications.[251]

Pipobroman. Pipobroman (Vercyte) was released for use in the treatment of chronic granulocytic leukemia and polycythemia, despite the fact that very few patients had received the drug. The AMA Council on Drugs[252] in its evaluation of pipobroman in May, 1967, stated "There are insufficient data to provide a comparison of the effectiveness of pipobroman in polycythemia vera with the responses and remissions produced by conventional therapy . . . . Until such comparisons are available it is suggested that pipobroman be used for polycythemia vera only in patients who do not respond to established measures." Clinical data on the treatment of chronic granulocytic leukemia are also limited. On the basis of available reports, there is little evidence that pipobroman offers therapeutic advantages over irradiation or busulfan.

The major toxicity of pipobroman is bone-marrow depression which may not appear for as long as four weeks after start of treatment. A rapid fall in hemoglobin values accompanied by an increase in serum bilirubin levels and reticulocytosis has occurred in several patients.[252] Other adverse reactions include nausea, vomiting, abdominal cramping, diarrhea, and occasional appearance of skin rash.

Imidizole carboxamide dimethyl triazeno (DIC). This compound (NSC45388) called DIC, TIC, DTIC, or ITC for short, has been used experimentally in a variety of malignant conditions.[253] The largest group reported to the National Cancer Institute was made up of 226 patients with malignant melanoma, 52 of whom had a response for a rate of 23 per cent, but the samples of patients with other types of tumor were too small to give any reliable indication of drug effectiveness. The best results in malignant melanoma have occurred in patients with only cutaneous tumors. Although responses have been obtained in central nervous system metastases, massive liver involvement is unlikely to respond. Remissions have lasted a few weeks to a few months, and we have had 1 patient with a remission of greater than two years' duration.

The Southwestern Cancer Chemotherapy Study Group,[253] reporting on its results with DIC in malignant melanoma noted 21 responses in 110 patients, while Burke, McCarthy, and Milton[254] reported 4 objective responses in 20 patients.

DIC is administered intravenously by infusion over a fifteen- to twenty-minute period in a dose of 100 to 400 mg. per square meter per day for five days. Sometimes the 100 mg. per square meter per day dose is given for ten days. Courses are repeated at four-week intervals.

Toxicities include nausea, vomiting, moderate hepatotoxicity, and bone-marrow depression, manifested by leukopenia and thrombocytopenia. A notable feature is that the bone-marrow depression may not appear until two to four weeks after the last dose of DIC. A number of investigators have noted a "flu-like syndrome" characterized by malaise, headache, and myalgia.

Hexamethylmelamine. Several groups have found that hexamethylmelamine (NSC13875) has antitumor activity in cancer of the lung and ovary. Wilson *et al.*[255] noted 6 responses in 15 patients with oat cell carcinoma of the lung, and 3 responses in 10 with lung adenocarcinoma. However, only 1 of 13 patients with lung carcinoma with other histologic characteristics responded.

The dosage of hexamethylmelamine is approximately 10 to 12 mg. per kilogram daily, divided into three oral doses, given for twenty-one days. The limiting toxicity is nausea and vomiting, but moderate reversible leukopenia and occasional thrombocytopenia have also been reported. When repeated courses were given, peripheral neuropathy occurred occasionally, which in 2 cases was irreversible.

Mithramycin. Mithramycin (Mithracin), released early in 1970 is a chemotherapeutic agent of limited usefulness and great toxicity as evidenced by the fact that only 305 patients were listed as having received mithramycin for carcinoma of the testis in an excellent booklet, provided by the manufacturer although this disease is one of the two indications for its use.

Although dactinomycin is the drug of choice, the major indication for mithramycin is metastatic testicular tumors other than seminoma. Ream *et al.*[256] in treating 30 patients with metastatic testicular carcinoma, achieved 2 complete and 7 partial remissions in 26 evaluable patients, while Koons *et al.*[257] noted 2 complete and 3 partial responses in 14 patients with the same disease. Although the partial remissions lasted only three to nine weeks, 1 of the patients with a complete response remained in remission for more than sixteen months.

Kennedy[258] reported that of 23 patients with metastatic testicular tumors who had been treated with mithramycin, 5 had complete regression of tumor and are alive nineteen to forty-nine months after start of treatment. Five others had less impressive objective improvement.

Mithramycin has been used experimentally in several other tumors but so far has been helpful only in testicular carcinoma, especially in the embryonal variety. Retroperitoneal node metastases of testicular carcinoma rarely disappear with mithramycin therapy, while pulmonary metastases are the most likely to respond.

Of the few reports on the use of mithramycin in the treatment of hypercalcemia due to malignant disease, the best is by Perlia *et al.*[259] who treated 25 patients. Serum calcium fell in all their patients and returned to normal levels in 18 within twenty-four to forty-eight hours after the start of treatment. Gubisch *et al.*,[260] also reporting on the use of mithramycin in cancer-associated hypercalcemia, found the drug effective in a dose range well below that which causes toxicity.

The dose of mithramycin is far from standardized. The best results, with markedly reduced toxicity have been reported by Kennedy,[258] who used 50 micrograms per kilogram given every Monday, Wednesday, and Friday until toxicity, with repetition of this schedule four weeks after the initial injection but at least two weeks after the last injection of the initial course.

The drug is administered by intravenous infusion over a four- to six-hour period. Extravasation of the solution should be avoided because it is locally irritating to the tissues. Most authors continue treatment for six to twelve months after complete remission occurs.

There is no standard dosage regimen for treating hypercalcemia, but the current recommendation is 25 micrograms per kilogram daily for one to four days.

The toxic side effects of mithramycin include bleeding tendencies, hemorrhage, liver toxicity in almost all patients, occasional renal damage, hypocalcemia, hypokalemia, stomatitis, and fever. Bleeding, which usually is mild to moderate, occurred in approximately one third of patients when the earlier regimen of 50 micrograms per kilogram per day was given. Elevation of the prothrombin time is a common occurrence, as are other clotting abnormalities. With the current dosage recommendations, fatal hemorrhage is quite uncommon, although in the early studies the mortality rate was significant.

Elevation of serum glutamic oxaloacetic transaminase, lactic dehyrogenase, and other hepatic enzymes is present in almost all patients who receive mithramycin but return to normal within a few weeks after the last dose. Moderate nausea and vomiting which frequently are seen within six hours after the administration of mithramycin last twelve to twenty-four hours. Fever is common, while mild central nervous system depression is occasionally seen.

Daunomycin. Daunomycin (NSC82151), a new antibiotic with antitumor activity, is an effective agent for inducing remissions in childhood and adult acute leukemia, especially when given in combination with other drugs, but toxicity precludes its use for maintenance therapy.[261–264]

The side effects of daunomycin may be extremely severe. Bernard *et al.*[261] noted bone-marrow aplasia in all responsive patients between the tenth and twentieth days of therapy, lasting a mean of ten days in those who survived the toxicity. Cardiotoxicity manifested by the sudden appearance of congestive heart failure, with a mortality rate approaching 50 per cent, is another very serious adverse reaction. The National Cancer Institute daunomycin fact sheet states that the overall incidence of cardiotoxicity is 4 to 10 per cent and is more likely to occur with higher dosages. This side effect should rarely occur if the drug is used only as an inducing agent in refractory acute leukemia. Phlebitis, nausea, vomiting, abdominal pain, alopecia, oral mucosa inflammation, fever, and skin rashes are other toxicities.

BCNU. BCNU, 1,3-bis (2-chloroethyl)-1-nitrosourea, a promising experimental cancer chemotherapeutic agent, is effective in Hodgkin's disease and may also prove useful in solid tumors.

By far the best results with BCNU have been noted in the treatment of Hodgkin's disease. Lessner[265] reported data collected by the Southeastern Cancer Chemotherapy Study Group at a conference held in Washington, D.C., under the auspices of the National Institutes of Health. There were 6 excellent, 18 good, and 4 fair responses in a total of 60 patients with Hodgkin's disease who had been treated with BCNU. This group's earlier studies were reported in 1968.[266]

Objective improvement usually begins within fourteen days after starting therapy, and subjective improvement is seen by one to three days after the start of treatment. BCNU does not show significant cross resistance to either standard alkylating agents or vinblastine. The median duration of response to BCNU is 120 days, while the mean is 229.[265]

Young *et al.*[267] reported similar results in BCNU-treated patients with Hodgkin's disease. Results in patients with other lymphomas have generally been poor, and Moertel, Reitemeier, and Hahn[268] found the drug of minimal effectiveness in treating gastrointestinal cancer. BCNU, used in combination with vincristine, produced remission rates as high as 30 per cent in malignant melanoma.[269]

Because the onset of toxicity is delayed, BCNU is given daily for two days with an interval of four weeks before its next administration. The current dosage recommendation is 100 mg. per square meter per day intravenously for two days, with repetition of this course at four- to six-week intervals, depending on tolerance.

BCNU is available as a lyophilized powder in 100-mg. ampules, which must be kept frozen until ready to use. The powder is dissolved in 3 cc. of absolute ethanol and then in 27 cc. of distilled water. The dose, then dissolved in approximately 250 cc. of normal saline, is given over a thirty- to sixty-minute period.

The major toxicity of BCNU is bone-marrow depression. Lessner[265] found that 47 per cent of his patients showed a significant depression of at least one of the formed blood elements, usually occurring between the third and fourth week after treatment. The average duration of toxicity is between two and three weeks, with only an occasional patient demonstrating toxicity lasting as long as four weeks. Nausea and vomiting are often noted within two to six hours after administration of the drug. Mild but reversible liver toxicity has been seen. Many patients complain of pain along the course of the vein during the infusion of BCNU.

Mitomycin C. Although Japanese investigators have written enthusiastic reports about mitomycin C (NSC26980), their results have not been duplicated in the United States. Whittington and Close[270] noted an objective response in 14 per cent of 281 tumor patients receiving mitomycin C, with a median duration of only six weeks. Moertel, Reitemeier, and Hahn,[271] using mitomycin C to treat advanced gastrointestinal cancer, also found that the agent was not helpful because of excess toxicity and the brief duration of tumor regression. Toxicity includes nausea, diarrhea, and vomiting. Bone-marrow depression, which may be quite delayed in its onset, also occurs, and skin ulcerations develop at the site of subcutaneous infiltration of the drug.

Streptonigrin. Streptonigrin (NSC45383), an antibiotic isolated from broth filtrates of a variety of Streptomyces, is apparently an effective agent for the treatment of lymphomas but one whose toxicity severely limits its usefulness.

Rivers, Whittington, and Medrek,[272] who treated lymphoma patients with streptonigrin, reported 9 of 15 patients with Hodgkin's disease had objective response, while similar results were obtained in 5 of 6 patients with lymphocytic lymphosarcoma and 4 of 5 with chronic lymphocytic leukemia. Remissions were obtained in both patients with mycosis fungoides. Harris *et al.*[273] reported similar results in lymphoma and mycosis fungoides.

In a controlled study, Kuang *et al.*[274] compared chlorambucil with streptonigrin in lymphoma patients. Although the drugs were equally effective, streptonigrin had a greater degree of toxicity.

Streptonigrin has been administered orally, intravenously, and intra-arterially, generally on a daily basis. Bone-marrow depression is the most significant side effect, usually peaking approximately three to four weeks after the start of treatment. Nausea and vomiting are seen in a significant percentage of patients, while diarrhea is less frequent.

L-asparaginase. L-asparaginase is a cancer chemotherapeutic agent which has excited a great deal more interest than is warranted by its actual practical usefulness. At present, L-asparaginase is helpful only in acute lymphoblastic leukemia in which responses are obtained in as many as 60 per cent of patients.[275-278] It does have some antileukemic activity in patients with acute myelogenous leukemia. The most important role of L-asparaginase is in the induction of remission in acute lymphoblastic leukemia, because its ability to sustain a remission has been disappointing.

Dosage regimens are far from standardized. Weekly intravenous doses are currently favored. Despite its reputation for exploiting a qualitative difference between leukemic and normal cells, L-asparaginase causes a considerable amount of toxicity. Malaise, anorexia, nausea, and occasional vomiting occur, and most patients lose approximately 5 per cent of their body weight. Abnormal liver function tests develop in 75 per cent of patients during the first two weeks of therapy, but the values return to normal after cessation of treatment. Liver biopsies in these cases have shown fatty liver.

Hypoalbuminemia sometimes occurs and can lead to massive anasarca. Although clotting factor levels are often decreased, severe bleeding is infrequent. Acute hypersensitivity reactions develop in approximately 10 per cent of patients, and the blood urea nitrogen increases in about one-fourth. Pancreatitis, which occurs in a significant number of patients, has occasionally caused death. Central nervous dysfunction, manifested by drowsiness and occasionally frank coma, has been seen in adults receiving the drug. Several good review articles have appeared in the last few years which give more details on the usefulness and toxicity of L-asparaginase.[275, 279, 280] Capizzi *et al.*[277] suggest that toxicity is less severe with equally effective low-dose regimens.

Streptozotocin. Streptozotocin (NSC85998), an antibiotic isolated from a strain of Streptomyces, has been used successfully to treat a few patients with malignant pancreatic islet cell tumors.[281, 282]

Administered intravenously once or twice a week, streptozotocin has not produced bone-marrow depression but is hepatotoxic in dogs and monkeys. Although capable of producing diabetes mellitus in experimental animals, it has not done so in the few human patients receiving the drug. In animal studies nicotinamide has prevented streptozotocin-induced diabetes without inhibiting the drug's antitumor effects. One patient died from drug-induced renal toxicity, and postinjection nausea and vomiting are common. Recently, Sadoff[283] reviewed the nephrotoxic effects of streptozotocin in 18 patients under his care. Azotemia developed in 9, 2 of whom became anuric. Renal tubular defects including the Fanconi syndrome were frequent.

o,p′-DDD. Recently, o,p′-DDD was released for use in the treatment of inoperable adrenal cortical carcinoma. Although its generic name is mitotane and the commercial one Lysodren, it is customary for authors to use the trivial name o,p′-DDD, which is derived from the chemical name.

In 1966 Hutter and Kayhoe[284] published a summary of the use of o,p′-DDD in 138 patients with adrenal cortical carcinoma which indicated that 20 of 59 patients with measurable disease had objective responses. They noted responses as early as two and as long as twenty-eight weeks after the onset of therapy, with a mean of nine weeks, while the mean duration of tumor regression was 10.2 months. Of the 62 patients with elevated pretreatment urinary corticosteroid excretion, 43 had a good decrease in this value.

Lubitz, Freeman, and Okun[285] reported data compiled by 95 investigators on 115 patients with adrenal cortical carcinoma who had been treated with o,p′-DDD. The results in this series were somewhat better than those of Hutter and Kayhoe[284] in that there was a significant reduction of elevated urinary steroid levels in 85 per cent of the patients, while 61 per cent of those with measurable disease had an objective response. It is generally agreed that nonfunctioning adrenal cortical carcinoma responds in approximately the same percentage of cases as do the functioning tumors.

The drug is supplied as 500-mg. scored oral tablets. The usual dose is 8 to 10 Gm. per day given as divided doses three to four times a day. Some patients will not tolerate doses in this range, and occasional patients will respond to amounts lower than those recommended. If the patient tolerates the drug, it should be continued for at least three months before deciding that a response will not occur. If the patient does have an objective response, maintenance therapy should be continued in the same dosage.

Unfortunately, o,p'-DDD is a rather toxic drug, but fortunately its side effects are more disturbing than dangerous. Mild adrenal insufficiency is quite common in patients receiving o,p'-DDD so that corticosteroid replacement is often necessary.

Gastrointestinal disturbances occur in 80 per cent of patients. Nausea and vomiting accompanied by anorexia occurs in well over half, while diarrhea is seen in approximately one-fifth. Mild central nervous system toxicity, skin rash, and visual disturbances are not uncommon. Bone-marrow or liver toxicity have not occurred.

Bleomycin. Bleomycin, a drug which has been tested mainly in Japan, is actually a mixture of antibiotics isolated from a strain of Streptomyces found in a soil sample in a Japanese coal mine. Bleomycin is unusual in that it has no bone-marrow toxicity, occasionally causes severe lung disease, and is effective in squamous cell carcinoma of the skin, especially cancer of the penis, epidermoid carcinoma of the head and neck, and occasionally esophageal and uterine cervix cancer.[286-292] Yagoda *et al.*[290] noted a high response rate in patients with Hodgkin's disease, but remission duration was brief.

Apparently, response rates in carcinoma of the penis are very high, approaching 70 to 80 per cent, with complete disappearance of the tumor not unusual, but no data are given on the duration of remission. The drug is also somewhat effective in lymphomas other than Hodgkin's disease. Because bleomycin has no bone-marrow toxicity, it may be useful in patients with lymphoma who can no longer receive conventional chemotherapeutic agents due to bone-marrow depression.

Pulmonary toxicity, often fatal, fortunately occurs in less than 5 per cent of patients. It is more common in patients over the age of sixty, or in those who have received larger than average total doses. Five of the 8 patients developing lung toxicity died in the French study of 237 patients treated with one course of bleomycin.[287] Skin rash, particularly on the hands and elbows, occurs in a few patients and is characterized by erythema or hyperkeratosis. Mucosal ulceration and fever are also fairly common.

Adriamycin. Adriamycin is an antibiotic which appears to be very similar to daunomycin in its mechanism of action, effectiveness, and toxicity, except for its diminished cardiotoxicity. The best results with adriamycin have been seen in patients with acute leukemia and those with childhood embryonal tumors. In most responsive patients, good results were noted in two to three weeks, with little further regression thereafter, so that Bonadonna *et al.*[293] state that "adriamycin seems therefore more indicated to induce a rapid tumor regression than as maintenance therapy."

Adriamycin is given intravenously in a brief course daily or every other day for four to eight days. Maintenance therapy does not often appear worthwhile, so that radiotherapy or other drugs must usually be used to maintain remission.

Toxicity of adriamycin is similar to that of daunomycin except for a lower incidence of cardiotoxicity.[293,294] Mouth ulcers are usually the first side effect and indicate that the drug should be stopped. Bone-marrow depression occurs frequently, and is occasionally irreversible.[293] In addition, alopecia and mild nausea and vomiting are not uncommon. The drug is irritating to tissue if the intravenous infusion infiltrates.

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Part III will appear in the November 15th issue.

Clinical Anesthesia Conference

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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Complications of Preoperative Omission of Long-Term Drug Therapy

Many patients scheduled for surgery are taking drugs to control various ailments such as hypertension, convulsions, and psychologic disorders. The anesthesiologist's decision of whether to continue or omit this medication before surgery can be difficult. The following cases illustrate examples of complications due to omission of the long-term preoperative drugs.

Case reports

Case 1. A sixty-seven-year-old man weighing 75 Kg. was scheduled for repair of a right inguinal hernia. He was originally hospitalized for the treatment of agitation, belligerence, and delusion with a severe persecution complex. The patient's symptoms were controlled by the daily oral administration of 500 mg. of chlorpromazine. Because of this drug's long duration of action and its interaction and potentiation of other sedative and anesthetic drugs, medication was discontinued seven days before surgery. The patient remained calm and cooperative during this time.

Premedication consisted of the intramuscular injection of 100 mg. of pentobarbital, 100 mg. of meperidine, and 0.4 mg. of atropine. The patient arrived in the operating room struggling, noisy, abusive, and uncontrollable by 4 attendants. Operation was postponed with the plan to restart medication and reschedule surgery.

Case 2. A twenty-nine-year-old woman in good health was scheduled for dilatation and curettage for dysfunctional uterine bleeding. Past history was unremarkable except for an idiopathic epilepsy of five years' duration controlled with 100 mg. of diphenylhydantoin twice daily. Physical examination and laboratory findings were within normal limits.

The patient was premedicated with 100 mg. of sodium pentobarbital and 0.4 mg. of atropine intramuscularly. Anesthesia was induced with 200 mg. of sodium thiopental and maintained with a mixture of 5 L. of nitrous oxide and 2 L. of oxygen. This was supplemented with intermittent doses of thiopental, up to a total dose of 450 mg. Surgery lasted twenty minutes. The patient returned to the recovery room completely reactive.

Approximately thirty minutes later, she had a grand mal seizure which lasted thirty to forty-five seconds. The airway was maintained by elevation of the chin, and the vital signs remained stable. They were carefully monitored for the next sixty minutes. Since no further complications occurred, she was discharged to her room, and her medication was restarted.

Case 3. A twenty-seven-year-old female in good health was scheduled for an elective tubal ligation for multiparity. Past history was unremarkable except for a three-year history of epilepsy, controlled with 100 mg. of diphenylhydantoin, and 100 mg. of phenobarbital daily. Physical examination and laboratory findings were within normal limits.

The patient was premedicated with 100 mg. of pentobarbital, 10 mg. of diazepam, and 0.5 mg. of atropine intramuscularly sixty minutes prior to surgery. Anesthesia was induced with 225 mg. of sodium thiopental and maintained with a mixture of 3 L. each of nitrous oxide and oxygen and 1 per cent halothane. The procedure lasted thirty minutes, and the patient was returned to the recovery room reacting.

Approximately twenty-five minutes later, the patient had a grand mal seizure which persisted for twenty to thirty seconds. Vital signs remained stable, and the patient was discharged from the recovery room ninety minutes later, her routine medication was resumed.

Comment

The decision to continue or omit long-term medication before the administration of an anesthetic may be a challenging problem. It is accepted that patients who have been taking steroids for a significant period of time must be covered with such drugs during the stress of surgery. It has also been shown that Rauwolfia prepara-

Presented and discussed at a conference held at Montefiore Hospital and Medical Center, The Bronx, April 24, 1972. Clinical Anesthesia Conferences are held on the fourth Monday of each month.

tions should not be discontinued preoperatively.[1] It is a much more difficult decision to continue or omit chlorpromazine in psychotic patients. This drug markedly enhances the respiratory depressions produced by meperidine and increases the sedative effect of morphine and barbiturates.[2] It causes hypotension by inhibiting pressor reflexes and alpha adrenergic blockade.[3] These properties of the drug may cause severe circulatory depression during anesthesia and are difficult to control with intravenous fluids and vasopressors. In addition it is a very long-acting drug.[4] Six to twelve months after discontinuation in hospitalized mental patients, chlorpromazine and its metabolites are detectable in the urine. Because of this long duration of action it is probably preferable to continue medication and to conduct induction and maintenance with careful monitoring of vital signs and with minimal amounts of anesthetic drugs. Hypovolemia and hypotension should be prevented with prophylactic pre- and intraoperative hydration.

The second and third cases had been receiving diphenylhydantoin therapy for epilepsy. It is common practice to omit this oral medication before minor surgical procedures and use short-acting barbiturates as part of the anesthetic regimen to protect against convulsions until oral medication can be resumed. The duration of diphenylhydantoin is short compared with that of chlorpromazine, and the drug is completely excreted in twenty-four hours.[5] Side effects and drug interaction is minimal. A sterile preparation of sodium diphenylhydantoin is available for intravenous used.

It may be advisable to inject half the oral dose intravenously as soon as the patient reacts from anesthesia to protect him from seizures until oral medication can be resumed.

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Number two hundred eight in a series of Clinical Anesthesia Conferences

Electrocardiograms of the Month

Montefiore Hospital and Medical Center
The Bronx, New York

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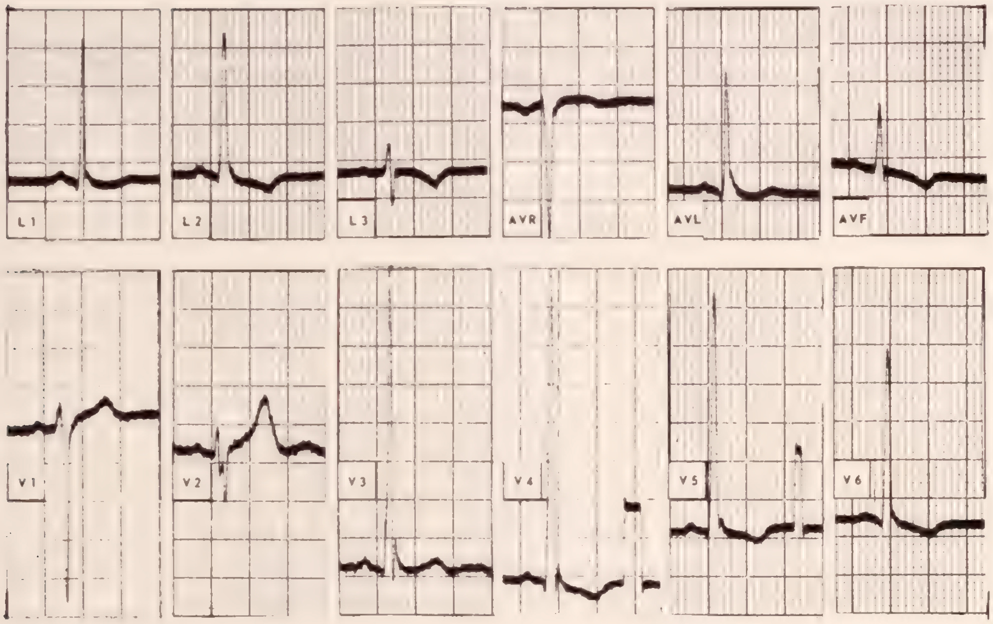
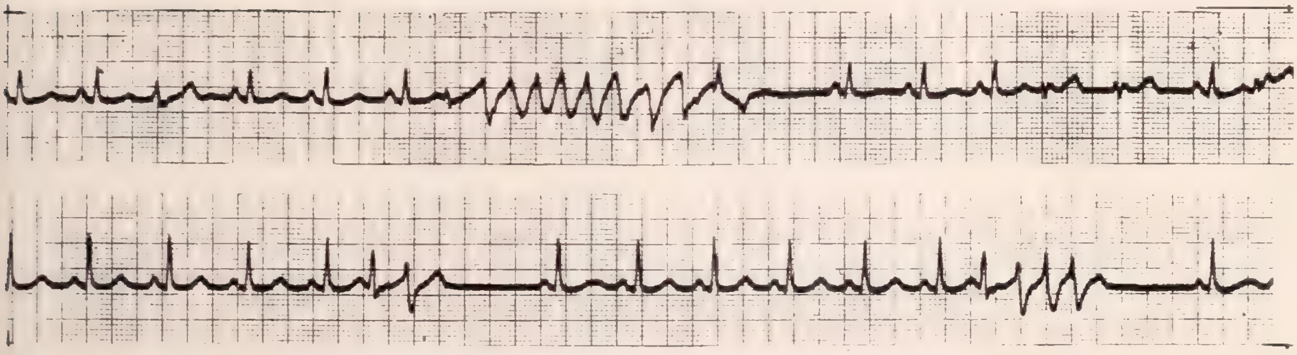


QUESTION 117. A sixty-year-old female was admitted for surgery. What is the diagnosis?



QUESTION 118. The patient was admitted with an acute myocardial infarction (leads I and II). What is the rhythm, and what treatment is indicated?

Electrocardiograms of the Month

ELUCIDATION

Question 117. The rhythm is regular sinus. There is increased voltage, especially in the midprecordial leads. T-wave inversion is present in V_4 to V_6, II, III, and aVf, with slight S-T depression in leads I and aVl. These changes are due to an enlarged left ventricle. The symmetrical T-wave inversions in leads II, III, aVf, and V_4 to V_6 may be due to left ventricular hypertrophy, but other causes, such as myocardial ischemia or damage, should be considered.

Question 118. The third beat is a junctional premature beat showing slightly aberrant conduction with a compensatory pause. The P wave is buried in the QRS. This occurs again following beat number 6, and there is then a burst of ventricular tachycardia at a slightly irregular rate. Sinus rhythm then resumes. After three sinus beats the junctional beats recur. In lead II, beat number 5 is followed by a junctional premature beat. There is a P wave superimposed on the S-T segment of this beat which conducts with aberration. A junctional premature beat recurs after the next six sinus beats and is followed by a run of three ventricular beats. Such bursts of ventricular tachycardia should be treated promptly with an antiarrhythmic agent to prevent protracted ventricular tachycardia or ventricular fibrillation.

Correction: The Wilson Research Foundation and the New York County Academy of Family Physicians are sponsoring a postgraduate course on "Diagnosis and Management of Male and Female Sex Hormone Disorders." The course will be held at the Holiday Inn, 440 West 57th Street, New York City, **ON NOVEMBER 8.**

Case Reports

Recurrent Ventricular Fibrillation

Treated with countershocks, bretylium tosylate, and rapid cardiac pacing

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Direct-current cardioversion, bretylium tosylate, and rapid cardiac pacing are three of the more recent therapeutic approaches to the management of resistant ventricular rhythm disorders.[1-14] The following case is reported to demonstrate the successful combination of these modes of therapy in the treatment of recurrent ventricular fibrillation.

Case report

A seventy-two-year-old white woman was admitted to the cardiac intensive care unit of Flower and Fifth Avenue Hospitals on February 1, 1970, with a chief complaint of crushing chest pain which radiated to the jaw and left arm. The pain was unrelieved by nitroglycerin. Ten years prior to admission an inferior wall myocardial infarction had been documented.

Pertinent findings on physical examination included a weight of 65 Kg., blood pressure of 140/80 mm. Hg, and an irregular pulse rate of 80 beats per minute. There was no venous distention, and only a few bibasilar rales were heard. On examination of the heart, the point of maximal impulse was nonpalpable, the heart sounds were of normal quality, and an atrial gallop and a Grade II/VI systolic ejection murmur at the apex were noted. Occasional extrasystoles were also observed.

Initial laboratory data were within normal limits. Enzyme studies revealed serum glutamic oxaloacetic transaminase 116, serum glutamic pyruvic transaminase 26, lactic dehydrogenase 283, and creatinine phosphokinase 144 units per milliliter. Electrocardiograms showed changes consistent with an acute inferior wall myocardial infarction with lateral wall extension (Fig. 1). A portable chest film showed mild cardiomegaly with clear lung fields. The diagnosis on admission was acute myocardial infarction.

Shortly after admission multifocal ventricular extrasystoles with intermittent episodes of bigeminy appeared. Intravenous lidocaine was administered, but the frequency of the extrasystoles continued to exceed 5 per minute. Consent to insert a transvenous pacing wire was refused by the patient. On the seventh hospital day extrasystoles suddenly increased to 15 and 20 per minute. Oral procainamide, 2 Gm. per day, was administered without suppression of the ectopic beats. The dose was increased to 4.5 Gm. daily. However, gastrointestinal disturbances forced discontinuance of the drug, and 300 mg. of quinidine sulfate per day were begun. After twenty-four hours the patient experienced nausea and epigastric distress; the quinidine was also discontinued. After four days numerous ventricular extrasystoles persisted, and propranolol, 20 mg. per os every six hours, was started. Moderate suppression of extrasystoles occurred. However, the patient's blood pressure dropped from 110/70 to 90/60 mm. Hg, and propranolol was discontinued. Procainamide, 500 mg. per os every six hours, was restarted.

After two doses of procainamide had been given, there was a sudden worsening of the patient's condition. The patient complained of weakness and malaise but denied chest pain or diaphoresis. The blood pressure was 70 to 80/40 mm. Hg. The pulse was 70 per minute and irregular, temperature was 100.4°F., and Cheyne-Stokes respirations were present. Bibasilar rales were heard, and the central venous pressure remained at 4 cm. of water. Complete blood count, blood urea nitrogen, and electrolytes were within normal limits. Chest x-ray films and electrocardiograms revealed no acute changes. Arterial blood gases were compatible with a mild respiratory alkalosis. Blood, urine, and throat cultures

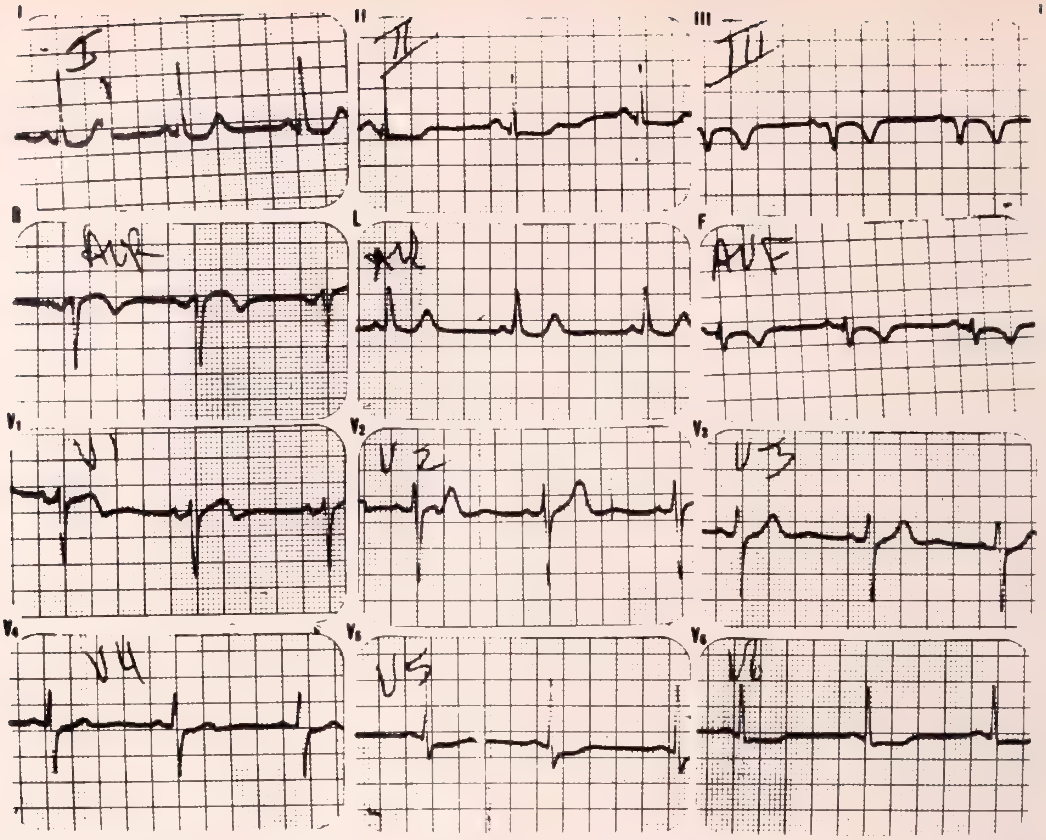
I
II
III
R
L
F
V1
V2
V3
V4
V5
V6

FIGURE 1. Electrocardiogram, February 1, 1970. Normal sinus rhythm at 60 beats per minute is present. Q waves noted in leads III and aVf, S-T segment depressed in leads I, II, V_5 and V_6.

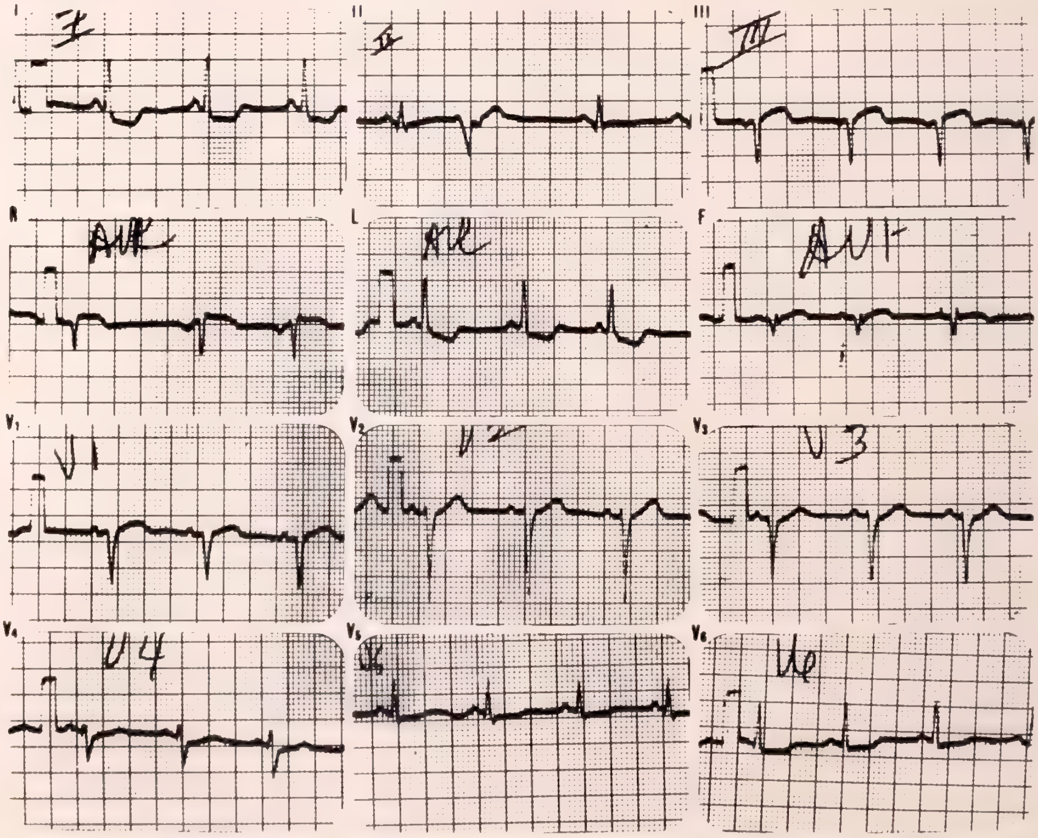
I
II
III
R
L
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FIGURE 2. Electrocardiogram, February 26, 1970. S-T segment elevated in lead III and depressed in leads V_2 through V_6.

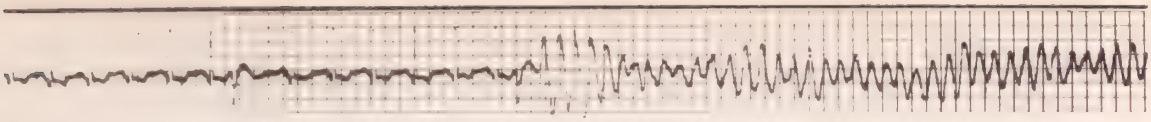

FIGURE 3 Tracing shows sinus tachycardia with two ventricular extrasystoles. Second precipitated development of ventricular flutter-fibrillation.

taken at this time were later reported as negative. Nasal oxygen was administered, and a Foley catheter was inserted. The blood pressure was maintained at 90/60 mm. Hg by means of intravenous isoproterenol (1 microgram per minute) and hydrocortisone. The urine output exceeded 30 cc. per hour for the next twelve hours.

Fifteen hours after procainamide was stopped, the blood pressure rose to 120/70 mm. Hg, and isoproterenol was stopped. At 1:00 A.M. the patient complained of mild chest pain, at which time the blood pressure was 130/86 mm. Hg. Nitroglycerin was given with some relief. At 3:00 A.M. the blood pressure rose to 170/100 mm. Hg, and the patient complained of severe crushing substernal chest pain. Blood pressure suddenly fell to 100/60 mm. Hg. Electrocardiograms showed renewed acute elevation of the S-T segment in lead III with further depression of the S-T segment in leads V_4 to V_6 (Fig. 2).

With continuous electrocardiographic monitoring, a short run of ventricular tachycardia was noted at this time. In spite of the intravenous administration of lidocaine, 100 mg. as a single injection, the patient progressed to ventricular fibrillation (Fig. 3). Direct-current countershock was administered, and regular sinus rhythm was restored. Intravenous lidocaine, at a rate of 4 mg. per minute; isoproterenol, at 0.5 micrograms per minute; and hydrocortisone were administered intravenously. An endotracheal tube was inserted, and oxygen was administered. The patient had 6 additional episodes of ventricular fibrillation, each episode being successfully converted to regular sinus rhythm by direct-current countershock with energies of 400 watt-seconds. Less energy was uniformly successful.

In view of the failure of these measures to prevent the recurrent rhythm disorder, bretylium tosylate was added to the previously described regimen at 4:00 A.M. The initial dose was 150 mg. dissolved in 50 cc. of 5 per cent dextrose in water solution given intravenously over a twenty-minute period. For the twenty-minute period following bretylium administration, there were no episodes of ventricular fibrillation. Shortly afterward episodes of ventricular tachycardia and ventricular fibrillation recurred, requiring cardioversion. Bretylium was again administered as described, but episodes of ventricular fibrillation persistently recurred.

In 31 of the 80 episodes of ventricular tachycardia and fibrillation that occurred in the next eight hours after bretylium administratioh, regular sinus rhythm spontaneously disappeared or could be restored with a sharp thump over the sternum. The remaining 49 episodes required direct-current, countershock with 100 to 400 watt-seconds for conversion. Except for one episode requiring closed-chest cardiac massage and artificial respiration, consciousness was retained, and breathing was spontaneous throughout. The blood pressure remained at 90 to 100/60 mm. Hg, and urine output exceeded 30 cc. per hour.

Seven hours after the initial episodes of ventricular fibrillation, consent was obtained to introduce a unipolar intracardiac pacing electrode. During a period of sinus rhythm, the electrode was passed at the bedside under constant electrocardiographic monitoring. Overdrive suppression was begun through right ventricular pacing at a rate of 110 per minute. Thereafter, the patient continued to have fewer than 10 extrasystoles per minute, and ventricular tachycardia or fibrillation did not recur. Bretylium was discontinued six hours later without any further increase in extrasystoles. Blood pressure returned to 110/70 mm. Hg, and isoproterenol was discontinued. Pacing was continued over the next twenty-four hours. An occasional ventricular premature beat was noted, but the patient's course remained stable. Subsequently, the pacing was stopped. The patient remained in a regular sinus rhythm with fewer than 5 ventricular extrasystoles per minute (Fig. 4). The patient was discharged to a cardiac convalescent home without further incident. The patient was last seen one year after these events and was doing well.

Comment

This patient entered the hospital with a fresh myocardial infarction. Her hospital course was characterized by persistent ventricular extrasystoles. The patient's ventricular rhythm disorder did not respond to lidocaine, and she was unable to tolerate either quinidine or procainamide.

On the twenty-fifth hospital day there was a hypotensive episode; the patient responded to treatment with isoproterenol over the next eighteen hours with an increase in pressure. Following discontinuation of isoproterenol, a further rise in blood pressure was observed, culminating in an episode of crushing substernal chest pain and a sharp fall in blood pressure, probably reflecting an extension of her myocardial infarction. We believe that the subsequent life-threatening

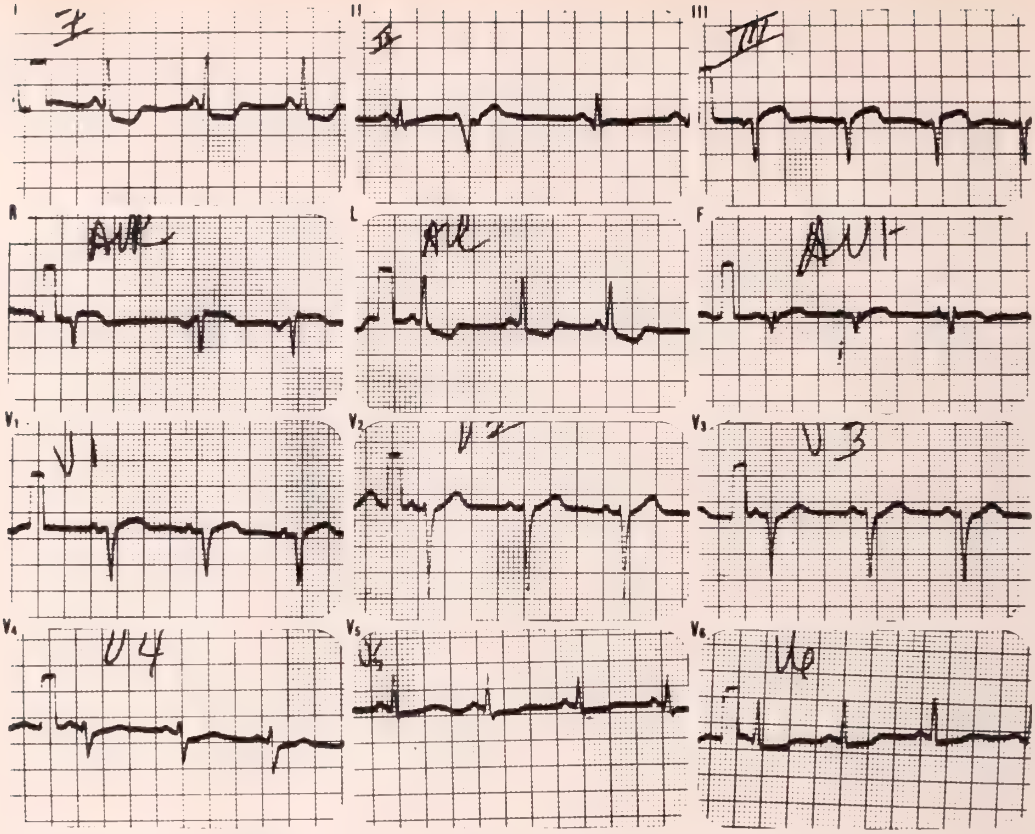

FIGURE 4. Electrocardiogram, March 2, 1970. Regular sinus rhythm present at rate of 82 beats per minute. Ventricular extrasystole noted in lead II.

arrhythmia resulted from this fresh myocardial damage.

Since ventricular fibrillation recurred after many episodes of direct-current cardioversion, it was decided to administer bretylium tosylate in an attempt to suppress the ventricular arrhythmia without blocking cardiac adrenergic receptors. Bretylium therapy diminished the incidence and severity of the ventricular rhythm disorder; however, the continued presence of these rhythm disorders necessitated the passing of a transvenous catheter electrode into the right ventricle and the institution of cardiac pacing. It is possible that either bretylium or pacing alone might have proved effective; however the combination of overdrive and bretylium successfully brought the rhythm disorder under control.

This case represents the successful use of a combination of therapeutic maneuvers in the treatment of ventricular tachycardia and fibrillation, that is, multiple countershocks, adrenergic neuronal blockade with bretylium tosylate, and rapid cardiac pacing. Repeated countershock has been used in the past to terminate recurrent ventricular tachyarrhythmias.[3] Stept and Safar[2] reported a case of 42 countershocks in a fifty-nine-year-old man who lived for eight days and subsequently died of renal failure. Kong and Proudfit[4] reported 140 countershocks in a man with ventricular fibrillation probably secondary to anoxia. McLaughlin *et al.*[5] reported a twenty-five-year-old woman who received 99 shocks for recurrent ventricular fibrillation of digitalis intoxication. In our case direct-current countershock was employed 56 times to terminate recurrent episodes of ventricular fibrillation.

Pharmacologic agents have provided a major advance in the management of previously uncontrollable arrhythmias associated with myocardial infarction. In the presence of normal atrioventricular conduction, ventricular arrhythmias may be effectively treated with the membrane-stabilizing drugs—lidocaine, quinidine, and procainamide. In this patient lidocaine was not effective in suppressing the recurrent ventricular arrhythmia. Procainamide and quinidine were withheld because of previous untoward reactions. Propranolol was not employed, since a blood-pressure drop followed its use on the previous day. Moreover, the establishment of beta-adrenergic blockade with propranolol would preclude the use of sympathomimetic amines in supporting cardiac function. Isoproterenol was used in this patient following preliminary studies in this institution demonstrating the efficacy of this amine in improving cardiac function in patients following myocardial infarction.[6]

Adrenergic neuronal blockade was selected in the management of this patient. Depression of the adrenergic nervous system has been proposed as an important antiarrhythmic procedure. Bretylium tosylate has been used for recurrent ventricular rhythm disorders both in experimental animals and in man.[7,8] The drug is thought to act at the level of the adrenergic postganglionic nerve terminal, preventing adrenergic transmitter release.

Encouragement for the clinical use of bretylium stemmed from experimental data showing that the electrical thresholds required to induce ventricular fibrillation in dogs increased more than threefold after bretylium administration.[7] Bacaner[8] used bretylium in 6 patients with ventricular fibrillation complicating acute myocardial infarction. Three patients continued to have unstable rhythms after cardioversion, but regular sinus rhythm resumed when recardioversion took place within twenty minutes of bretylium administration (5 mg. per kilogram intravenously). It was also noted that bretylium enhanced the capacity of the dog's heart to defibrillate itself spontaneously, a phenomenon rarely seen in untreated cases.[7] This phenomenon is noteworthy since in this patient, prior to bretylium administration, all episodes of ventricular fibrillation required conversion; however, subsequent to bretylium administration, many episodes of ventricular fibrillation reverted spontaneously to regular sinus rhythm.

The use of rapid cardiac pacing in the management of tachyarrhythmias is well documented.[10-11] Zoll, Linenthal, and Zarsky[3] in their report on 8 patients with ventricular tachycardia and fibrillation treated with countershock, treated 1 patient with external electrical stimulation for an extended period with good results. However, pain and local skin ulceration necessitated termination of stimulation. Since then Moss, *et al.*[12] have reported atrial pacing for recurrent ventricular fibrillation, and more recently Friedberg, Lyon, and Donoso[11] reported 7 patients who had rapid ventricular pacing which led to suppression of recurrent ventricular arrhythmias. Although some electrical instability persisted in the initial period of pacing, shortly afterward the patient demonstrated a marked decrease in irritability.

In the present case it is difficult to dissociate the effects of bretylium from those of overdrive suppression. Pharmacologic and clinical evidence indicates that the combination of rapid cardiac pacing and the administration of antiarrhythmic drugs are synergistic.[13,14]

Summary

The successful use of multiple direct-current countershocks, rapid cardiac pacing, and bretylium tosylate in the management of recurrent ventricular tachycardia and fibrillation is reported.

Acknowledgments: The authors would like to thank P. Villamena, R.N., and her entire nursing staff, especially L. Zalenski, R.N., A. Sarapa, R.N., and P. Bianchi, R.N. We are grateful to Dorothy Kunstadt, M.D., for the bretylium tosylate, and to Nancy Klein for her assistance in the preparation of the manuscript.

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Aortic Ball Degeneration with Splenic Rupture*

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Aortic valve replacements have been complicated by the development of degeneration of the silastic ball, or ball variance. This complication occurs two or more years following aortic valve replacement and has been reported in 25 to 75 per cent of the cases with the Starr-Edwards 1,000 aortic series.[1] Frequently the diagnosis of ball variance is made only at death, which usually is sudden, or by the rapid development of congestive heart failure. The late appearance of a murmur of aortic insufficiency or the occurrence of multiple emboli suggests ball degeneration. Attempts to diagnose ball variance premortem by use of phonocardiography and spectrophonocardiography analyzing the intensity and frequency of aortic opening and closing sounds have been successful in a significant number of cases.[2,3] It has been noted that patients with ball variance usually have a ratio of intensity of aortic opening sound to closing sound of 0.5 or less, while with a normally functioning valve the ratio will be closer to 1. In addition the frequency response of the variant ball is lower, usually less than 1,300 cycles per second. Recently we have had the opportunity to observe a patient who presented with splenic rupture from ball degeneration.

Case report

A twenty-nine-year-old female, had a 1,000-series Starr-Edwards aortic valve replacement in 1963 because of severe aortic insufficiency which was causing angina. Her operative course was complicated by a coagulation defect consisting of a 97 per cent congenital deficiency of platelet factor XI. Following surgery recovery was good, with disappearance of all symptomatology and with return of normal findings on electrocardiogram and on x-ray. Anticoagulants were not used because of the factor XI deficiency. In 1968 she had a variety of complaints which were thought to be related to emboli; an evaluation for ball variance, which included cardiac catheterization and phonocardiography, did not support that diagnosis. The patient was therefore treated with the anticoagulant warfarin (Coumadin). She did well until November, 1969, when she had the sudden onset of severe abdominal pain. On admission to the hospital the blood pressure was 100/70. Cardiac sounds were thought to be normal, but the aortic opening sound component (S_1) appeared somewhat dull and reduced in intensity. A short grade 2 to 6 systolic murmur was heard at the base and was felt to represent flow through the aortic prosthesis. The second sound was a physiologic split, and the aortic prosthetic component was louder than the pulmonic component. There was diffuse abdominal tenderness and normal bowel sounds. The hematocrit was 28. Stool examination was negative for blood, and a urinalysis result was normal. There was no evidence of severe hemolysis. A complete coagulation work-up confirmed the 97 per cent deficiency of factor XI. Prothrombin time was 18 with a control of 11 seconds. It was felt that the patient was bleeding retroperitoneally, most probably from warfarin and from factor XI deficiency. Warfarin was discontinued, but she continued to bleed. Vitamin K and fresh frozen plasma, an excellent source of factor XI, were then given. Over the course of the next thirty-six hours, in spite of 10 units of blood, the hematocrit continued to fall. An exploratory laparotomy was performed at which the abdomen was found filled with blood. A massive subcapsular splenic hemorrhage was found, and the bleeding seemed to be originating from this area, although a gross laceration could not be found. The spleen was removed, and the patient was discharged from the operating room in satisfactory condition.

Approximately four days after surgery, with relatively normal prothrombin times and factor XI levels, she had gross hematuria with some minimal right upper quadrant pain. Cystoscopy and retrograde studies showed the bleeding was localized to the left kidney, but no gross structural abnormality was outlined. The following day severe crampy abdominal pain occurred, and a reflex ileus developed. The possibility of multiple systemic emboli and ball variance was considered likely. A phonocardiogram showed an aortic opening to closing sound ratio of 0.57. This was considered suggestive of ball degeneration, a diagnosis supported by microscopic examination of the spleen which showed scattered foreign-body giant cells surrounding refractile material (Fig. 1). This material was thought to be silastic coming from the degenerating ball. The patient was

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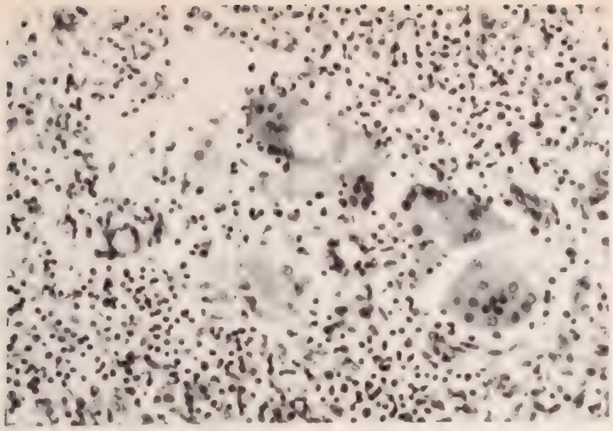

FIGURE 1. Photomicrograph of spleen. Note large number of giant cells, some of which contain amorphous crystalline material considered to be silastic (high-power magnification).

reexplored on January 9, and the diagnosis of ball variance was confirmed. The ball was swollen, softened, and ridged (Fig. 2A). It moved with great difficulty even when guided into the grooves formed by the struts (Fig. 2B). A large amount of thrombus material was found on the struts and cage surface. The defective valve was removed and a new valve inserted. The patient's postoperative course was uneventful, and she was discharged from the hospital in satisfactory condition.

Comment

Although manifestations of silastic ball deterioration may be bizarre, splenic rupture has not previously been reported.[1] Spontaneous splenic rupture from factor XI deficiency has also not been a recognizable clinical entity. The combination of embolization and an anticoagulant defect —either congenital factor XI defect, warfarin, or both—is a more likely explanation for the events which occurred. It is quite apparent that bleeding in patients with prosthetic valves who are given anticoagulants should not be assumed to be a complication of therapy in all instances, since it may be secondary to hemorrhagic infarction.

The pathologic appearance in the spleen of foreign-body giant cells with refractile material, a finding consistent with multiple microemboli, has been noted in 3 additional cases, in liver, spleen, and lymph nodes, and always in association with ball degeneration.[4,5] A positive biopsy finding of liver or lymph node would therefore be strong supportive evidence of ball deterioration and would make reoperation mandatory.

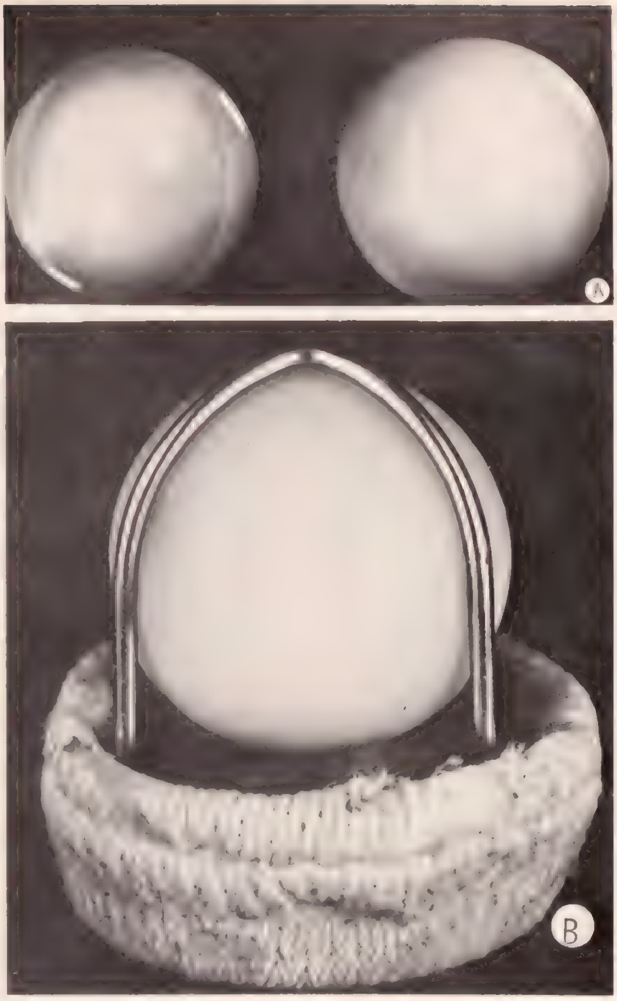

FIGURE 2. Silastic balls. (A) Variant ball on right swollen and ridged, also opaque, discolored, and soft; the latter not discernible in photograph. (B) Ball shown slightly rotated and stuck in apex of cage. Ridges made by cage struts again easily identified.

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Celiac Axis Compression

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Extrinsic compression of the celiac axis with its resultant effects is an entity which has been described in the recent literature. The symptom complex frequently consists of abdominal crampy pain, often postprandial, diarrhea, nausea, vomiting, eructation, and flatulence. In practically all cases a nonradiating epigastric bruit has been reported. The syndrome appears to affect young women predominantly. In most reports, the narrowed celiac axis has been caused by extrinsic pressure from the median arcuate ligament of the left crus of the diaphragm, although several cases of celiac plexus compression have also been cited.

The purpose of this communication is to report 6 cases of radiographically demonstrated compression of the celiac axis along with a description of some unusual associated radiologic and clinical features. One of these, Case 1, had surgical verification and correction. Extrinsic celiac artery compression is thought to be more common than was considered previously; these 6 cases were found during one year at an acute general hospital.

Case reports

Case 1. A forty-five-year-old woman was admitted to Albert Einstein College Hospital because of abdominal pain, nausea, and vomiting of two days' duration. She gave a history dating back to 1947 of seven admissions to various hospitals for "intestinal obstruction" that had been treated with intubation and three laparotomies. On her first admission here, no definite cause for the suspected intestinal obstruction was found. There was a long history of epigastric pain often brought on by solid foods, sometimes associated with sweating, chilliness, and nausea. Physical examination revealed a well-nourished white female with moderate abdominal pain, abdominal distention, and high-pitched bowel sounds. There were no abdominal bruits. Laboratory findings, gastrointestinal series, barium enema, oral cholecystogram, and intravenous pyelogram all showed normal findings. However, the aortogram and celiac arteriogram did reveal extrinsic narrowing of the celiac artery near its origin (Fig. 1). Because of this, the patient was taken to surgery, where the celiac artery was noted to be compressed by diaphragmatic fibers which were dissected free. After release of the constriction, there was a considerable increase in the pulsation and flow of the celiac arterial branches. Since operation, the patient has remained asymptomatic, with no further bouts of abdominal distention which had occurred prior to surgery about once a month.

Case 2. A twenty-four-year-old Negro male was found to have hypertension of two years' duration. On physical examination, a continuous murmur was audible over the epigastrium, and because of this finding he was admitted for renal angiography. There were no gastrointestinal symptoms. Arteriography showed narrowing of the celiac artery (Fig. 2). The patient was discharged subsequently on medical treatment for his hypertension.

Case 3. A thirty-one-year-old woman was admitted to the hospital because of an abdominal bruit heard in the epigastrium on routine physical examination. She had been completely asymptomatic with regard to this, and review of symptoms was unremarkable. Abdominal examination revealed no masses or tenderness. There was a loud bruit in the epigastrium radiating to the left, with both a systolic and diastolic component. Arteriography demonstrated a narrowing celiac axis (Fig. 3). In view of the lack of symptoms, it was decided to discharge the patient and observe her periodically.

Case 4. A forty-eight-year-old man was transferred from another hospital because of massive gastrointestinal hemorrhage. He had previously undergone exploration which revealed probable bleeding gastric varices. The abdomen was soft, nontender, with a surgical incision in the upper midline. There was no abdominal bruit. A Sengstaken tube was inserted and inflated. Emergency splenoportography demonstrated a splenic vein block with gastric varices. Subsequently, arteriography confirmed this. Extrinsic

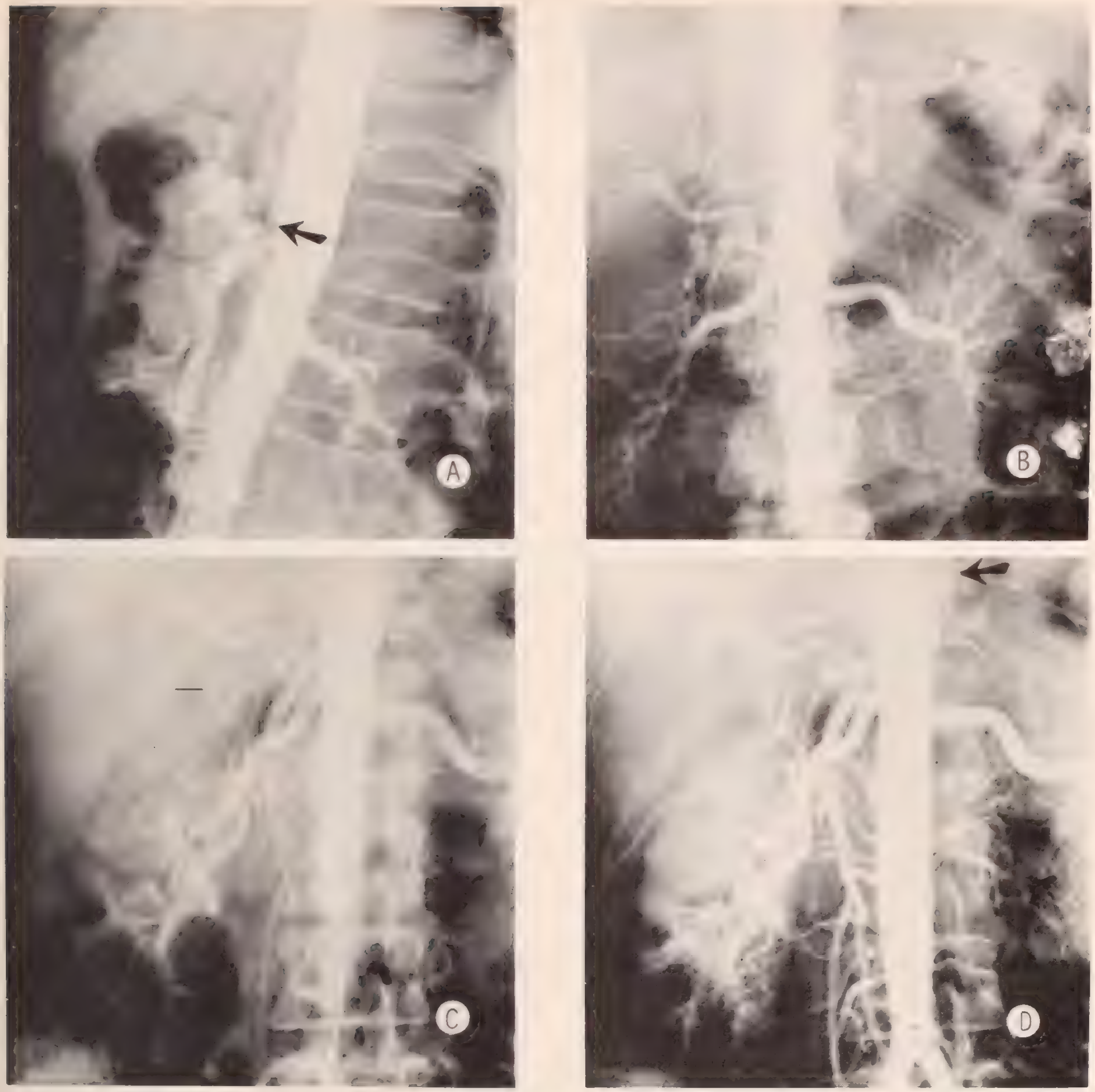

FIGURE 1. Case 1. (A) Extrinsic narrowing near origin of celiac artery (arrow). (B) Anteroposterior aortogram with simultaneous filling of celiac and superior mesenteric arteries. (Hepatic artery originates from superior mesenteric.) (C) Right posterior oblique projection at same time interval after injection as (B). Note lack of filling of celiac axis, although gastroduodenal (line) is filled from superior mesenteric anastomosis. (D) Later stage of right posterior oblique injection; celiac axis and splenic (arrow) eventually opacify.

narrowing of the celiac axis was incidentally noted (Fig. 4). The patient underwent splenectomy for localized splenic hypertension, and made a rapid recovery. There were no abdominal symptoms in spite of the celiac narrowing.

Case 5. A forty-seven-year-old man was admitted because of fever of unknown origin. For sixteen months he had been feeling "sick" and had a mild weight loss. Physical examination revealed the abdomen was soft and nontender, with no masses palpated. There were no bruits. An intravenous pyelogram disclosed a mass lesion of the lower pole of the right kidney. Arteriography confirmed the presence of a vascular neoplasm of the right kidney. Also found incidentally was unrelated narrowing of the celiac artery (Fig. 5). At surgery a clear-cell carcinoma was found. Again, there were no signs of abdominal angina.

Case 6. A twenty-four-year-old nurse, admitted for evaluation of an epigastric bruit, had de-

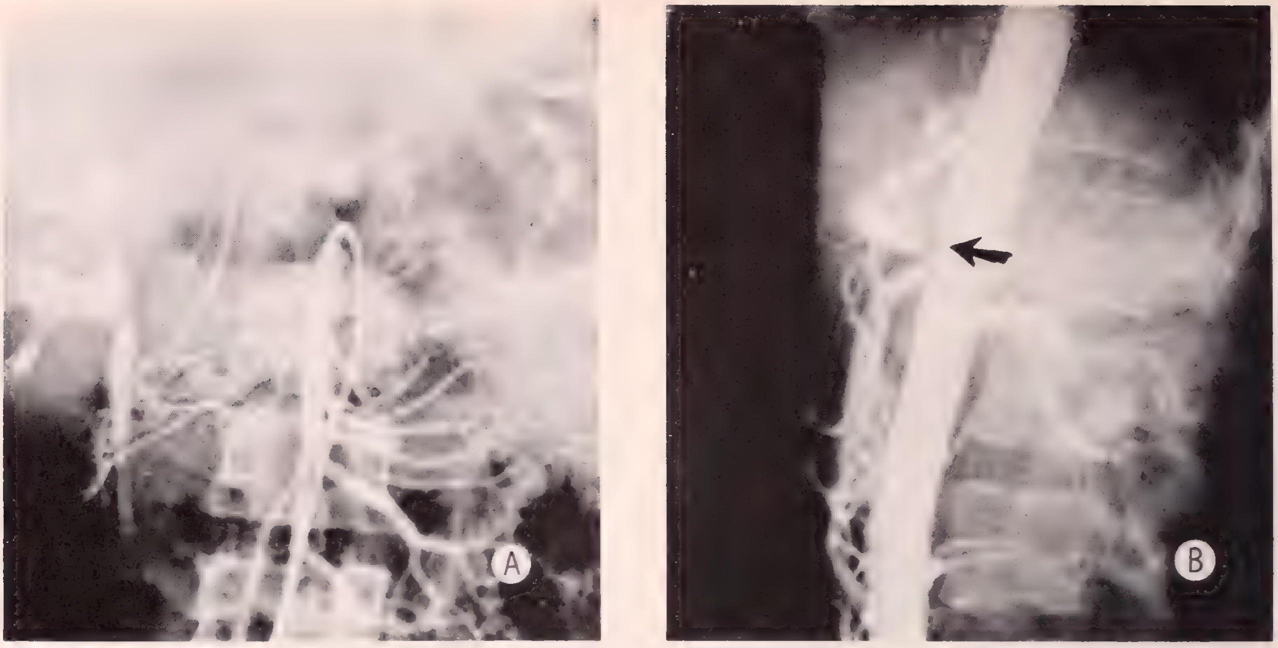

FIGURE 2. Case 2. (A) Selective injection of superior mesenteric opacifies celiac artery. (B) Celiac axis 90 per cent occluded near origin.

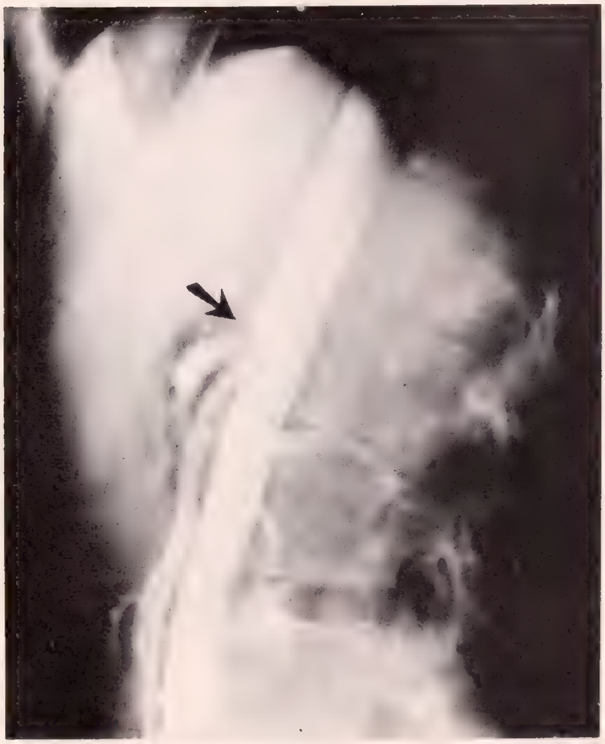

FIGURE 3. Case 3. Celiac compression of approximately 60 per cent.

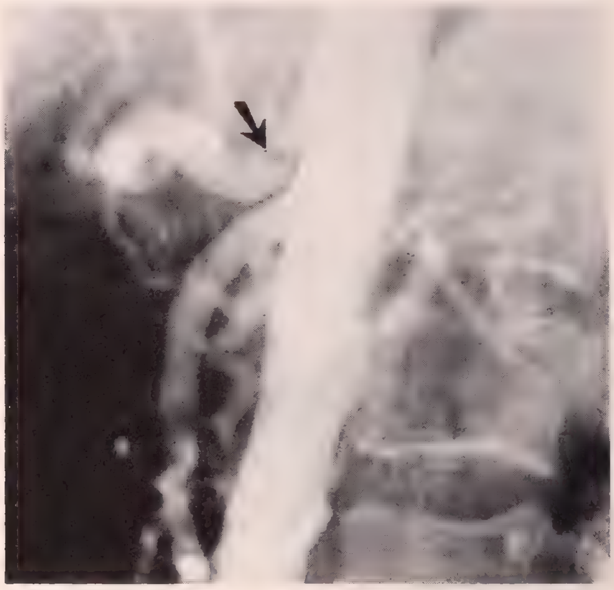

FIGURE 4. Case 4. Extrinsic compression of proximal celiac (arrow).

veloped intermittent upper abdominal bloating associated with nausea, anorexia, and occasional diarrhea. Examination of the abdomen revealed no masses or tenderness. There was a systolic bruit in the epigastrium radiating to the left upper quadrant. The bruit did not radiate to the back. Aortography and celiac angiogram revealed celiac artery narrowing (Fig. 6). The patient's symptoms improved spontaneously, and it was decided to delay surgical intervention indefinitely until such time as symptoms recurred.

Comment

Dunbar *et al.*[1] first reported on abdominal angina from diaphragmatic celiac trunk compression in 1965. They demonstrated 15 such patients who had nonradiating epigastric bruits, postprandial nausea, crampy abdominal pain, and diarrhea. Of these, 13 had surgery, which consisted of cutting the fibers of the median arcuate ligament

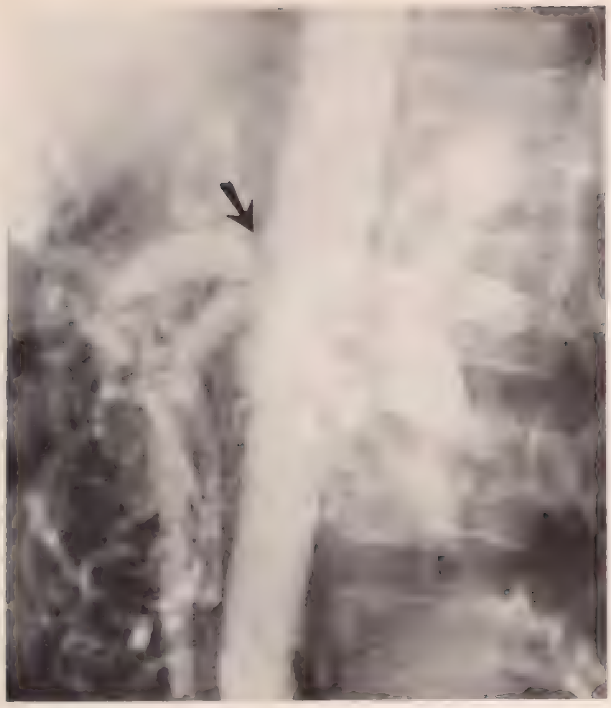

FIGURE 5. Case 5. Celiac narrowing

of the left diaphragmatic crus at the aortic hiatus. Following surgery, the pressure gradients (which averaged 20 to 25 mm.) disappeared along with the preexisting symptoms. A follow-up study in 1968 which included 30 patients had much the same results.[2]

Other studies have indicated similar findings.[3-6] Stoney and Wylie[5] had 8 patients with abdominal symptoms due to diaphragmatic compression. Some cases of persistent residual arterial defects after operation were confirmed by postoperative aortograms. In 8 of 12 cases reported by Lord, Stoney, and Wylie,[4] the celiac artery did not regain its normal caliber following diaphragmatic decompression, although abdominal symptoms were relieved. Those cases which had narrowed arterial segments resected showed intimal thickening and deposition of fibrous tissue.

Extrinsic compression of the celiac axis has also been ascribed to the neurofibrous tissue of the celiac ganglion which lies in the front of the left crus of the diaphragm at the origin of the celiac artery. Rob[7] cited 4 such cases in which the celiac ganglion compressed the artery from outside the vessel wall. Snyder, Mahoney, and Rob[8] reported 2 cases of celiac arterial narrowing which they claim was due solely to compression by the celiac ganglion and not to the left side of the diaphragm.

Whether caused by the crus of the diaphragm, celiac plexus, or an adhesive band, the extrinsic pressure defect does produce a characteristic radiographic appearance. The narrowing of the celiac artery is smooth and invariably eccentric, the lumen being indented in our 6 cases at its superior aspect. The degree of luminal reduction ranged from 40 to 90 per cent, and the length of the constriction from 3 to 5 mm. Celiac filling from the pancreatic arcade anastomosis was variable, and, judging from some case reports, delayed celiac opacification has not seemed to be a constant finding associated with abdominal symptoms.[1]

It is thought that diaphragmatic impingement

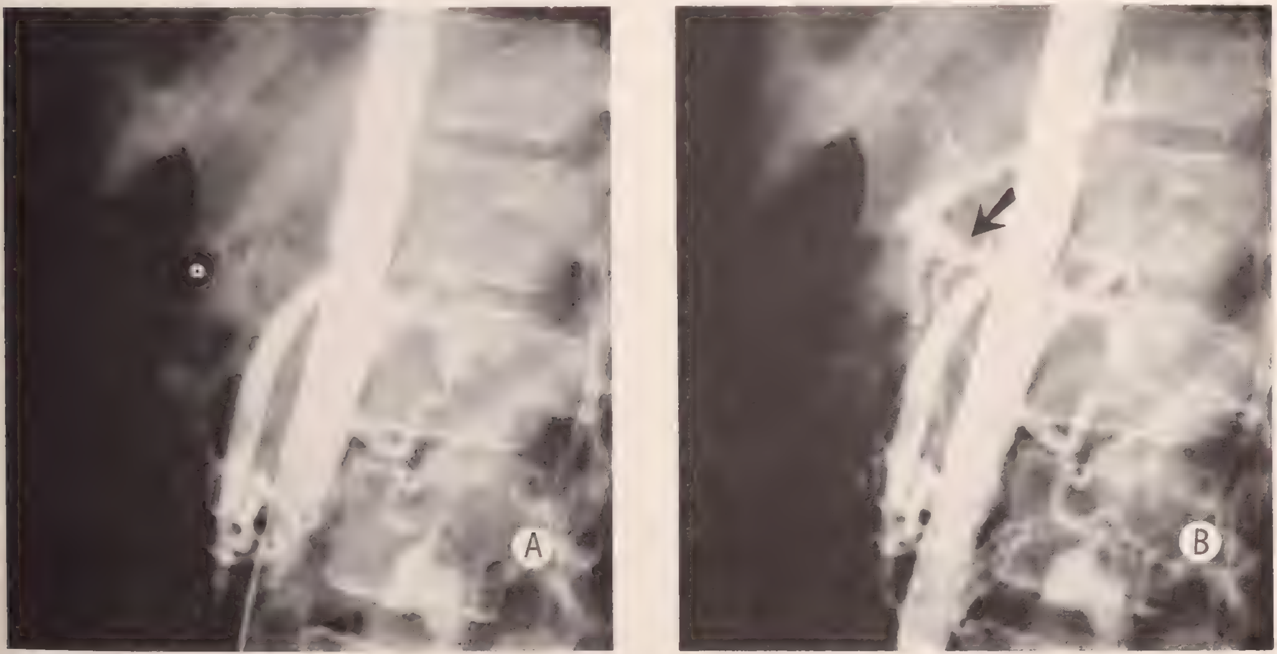

FIGURE 6. Case 6. (A) Lateral aortogram with delayed opacification of celiac artery. (B) Later phase of same injection. Note eccentric, smooth narrowing of celiac artery (arrow), not very severe in this case but sufficient to cause filling from superior mesenteric artery.

on the celiac axis is the result of an unusually high origin of that artery with relation to the aortic hiatus. In fact, change in the diaphragmatic position can in some cases apparently affect abdominal pain, as manifested, for example, by assumption of a knee-elbow position.[3] In Case 1, with the first aortic injection in the anteroposterior supine position, the celiac and superior mesenteric artery filled simultaneously. With the second aortic flush in the right posterior oblique projection, the celiac axis opacified well after the superior mesenteric artery. The celiac filled via the pancreatic arcade anastomosis. With the right side dependent, the left hemidiaphragm was more depressed. In this particular case, the resulting increased pressure on the celiac axis by the depressed edge of the aortic hiatus was believed to have caused the retrograde filling of the celiac from the superior mesenteric artery supply.

An epigastric bruit is usually considered to be present in most cases of celiac compression with abdominal signs. Case 1, however, without a bruit was surgically proved to be an exception to this rule. Case 6 had both bruit and abdominal symptoms. Cases 4 and 5 did not have bruits and had no abdominal symptoms. Cases 2 and 3 conversely had prominent murmurs but also were asymptomatic. Celiac artery compression should thus be considered as a cause of asymptomatic abdominal bruits. It is also apparent that in some cases of celiac artery compression, a coexisting bruit may not be clinically significant. Nevertheless, presence of abdominal symptoms and an epigastric bruit should alert one to the possibility of celiac axis compression.

Summary

Six cases of radiographically demonstrated extrinsic celiac artery compression are presented, along with a description of the syndrome sometimes accompanying this finding. Their roentgen appearance, effects of change of position, and the varying clinical significance of epigastric bruits are discussed.

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Spontaneous Rupture of Left Gastric Artery

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Spontaneous intraperitoneal rupture of an aneurysm of a great vessel is not uncommon. Spontaneous rupture of an aneurysm of a branch of the celiac axis (exclusive of the splenic artery) is, however, exceedingly uncommon, and spontaneous rupture of the left gastric artery is extremely rare. This presupposes no demonstrable abnormality of the vessel and no known trauma. Stachenfeld *et al.*, in 1961,[1] reported 131 aneurysms of the hepatic and gastric arteries in a review of the literature. Rupture of aneurysms of these two arteries may occur into the free peritoneal cavity or into the gastric lumen, in which case the presenting signs may be massive hematemesis, melena, or both. A review of the literature by Thomford, Yurko, and Smith, in 1968,[2] revealed 15 cases, including 1 of their own, in which massive intraperitoneal hemorrhage resulted from spontaneous rupture of an aneurysm of a gastric artery. There was no sex differential in their series, 12 patients were over fifty years of age, 8 patients were reported as having hypertension, and all had epigastric pain. The left gastric artery was involved in 8 cases. Arteriosclerosis was a common finding.

A correct preoperative diagnosis is not usually made, although Stachenfeld *et al.*,[1] in a case of melena, made the diagnosis of left gastric artery aneurysm by transfemoral aortography. With the increasing use of arteriography, splanchnic arterial bleeding points hopefully can be identified and treated surgically.[1,3,4] Usually the diagnosis of intraperitoneal rupture is made at autopsy or at laparotomy after rupture of the aneurysm has caused sudden abdominal pain and hypotension. Brewer and Marcus, in 1948,[5] collected 28 cases of spontaneous intraperitoneal hemorrhage. In 10 cases no source of the bleeding could be found, and in 3 cases the left gastric artery was responsible. The following case report is an additional case of spontaneous hemorrhage from an apparently normal left gastric artery.

Case report

A fifty-year-old white female was seen at home by her physician because she complained of weakness, nausea, and vomiting. Symptomatic medication was prescribed. A short while later, he was again called because the patient was experiencing severe epigastric pain, dyspnea, and syncope. Her blood pressure was 70/40, pulse was unobtainable, and the patient appeared semiconscious. The patient was admitted to the hospital, and parenteral fluids were started. Her blood pressure rose to 130/70 and remained stable.

On admission, the hemoglobin count was 9 Gm. per 100 ml., hematocrit 30, white blood cell count 11,000 per cubic millimeter, blood urea nitrogen 23 mg. per 100 ml., and amylase 45 Somogyi units per 100 ml. Flat films of the abdomen showed gastric dilatation. Physical examination revealed normal results except a distended abdomen with few borborygmi and tenderness to moderate palpation in the epigastrium. Electrocardiographic results were normal. Inasmuch as her clinical condition was improved, she was placed under observation.

The following day, one observer recorded a pelvic mass, and a gynecologic consultation was obtained. The gynecologist was unable to feel a mass, but on cul-de-sac tap he found nonclotting blood. Further history obtained at this time revealed a previous total hysterectomy with both ovaries left in. A moderate hypertension with a diastolic murmur ranging between 100 and 110 had been noted but not treated in the past fourteen months.

It was believed that the patient most likely was bleeding from a ruptured ovarian cyst, and immediate laparotomy was advised. An initial right lower rectus muscle retracting incision was made. The abdomen was filled with old and new blood. After partial removal of blood, two small atrophic normal ovaries were revealed. The incision was extended cephalad, and palpation revealed a large mass in the region of the celiac axis. Fresh bleeding became quite brisk as the lesser sac was entered, and further dissection revealed a hemorrhagic mass, composed of old hematoma and fresh blood, at the superior border of the midportion of the stomach which had extended down to the pancreas and up to the esophageal hiatus. This mass, when fully opened, revealed brisk arterial bleeding from the left gastric artery which was controlled with suture ligation. After all blood was aspirated and the peritoneal cavity was cleansed, no further bleeding occurred. The abdomen was closed after inspection revealed no other intra-abdominal pathologic findings.

The patient's postoperative course was smooth, and she was discharged ambulatory on the twelfth postoperative day. Blood pressure on discharge was 160/90.

Summary

A case of spontaneous rupture of an apparently normal left gastric artery treated successfully surgically is reported. A correct preoperative diagnosis is not usually made, but rather the condition is found at laparotomy or autopsy. Increasing availability of splanchnic arteriography may allow diagnosis to be made if it is considered preoperatively.

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Methadone Maintenance Program

A voluntary hospital's experience

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Narcotics addiction has become the major community health problem in many urban population centers. General hospitals in such areas are coming under increasing community pressure to help combat this problem. The Mount Sinai Hospital is a 1,000-bed voluntary general hospital located in the East Harlem section of New York City, an area with an extremely high prevalence of drug addiction. In an attempt to deal with the addiction problem in its own neighborhood, the hospital inaugurated a methadone maintenance treatment program in March, 1969. The program was based on the Dole-Nyswander approach, using methadone in maintenance doses to attempt to alleviate drug hunger in the addict and to block the effects of heroin.[1,2] The premise of the plan rests on removing the craving for heroin and its euphoric effects so that the addict may attempt to rehabilitate himself and become a productive member of society. This report will deal with the follow-up of 111 patients admitted to the program.

Description of program

The program was initiated as a new clinic within the outpatient department of The Mount Sinai Hospital. Funds for operation were included in the hospital budget. The staff consisted of a part-time internist, a third-year medical resident, and a part-time psychiatrist. There were also a receptionist, a nurse, and a former drug addict, who acted as a counselor and was known as a research assistant. The physical facilities, including the reception area, consisted of only 350 square feet. A small alcove was partitioned off for male urine collection, and existing bathroom facilities outside the clinic were used for female urine collection.

The original criteria for acceptance into the program were (1) age greater than twenty-one years, (2) residence in the East Harlem area served by Mount Sinai Hospital, (3) absence of mixed addiction, and (4) a minimum of three years of heroin addiction. Because of its limitations of space and staff, we were only able to accept 3 new patients per week. The clinic opening was not publicized so as to avoid inundation by applicants and to allow time to observe the community's reaction to the program. The response was nonetheless overwhelming. Within two weeks over 200 applications had been filed. Because of the large number of applications, priority of acceptance was given to (1) addicted individuals who were part of a family unit or were caring for dependent children, and (2) individuals who had suffered a serious medical complication secondary to drug addiction and had been referred from the medical services. In each case a field visit was made by the counselor to verify data submitted on the application.

All patients entering the program were given a complete physical examination. Psychiatric evaluation was done if there were symptoms or a history of psychiatric disorder. Addiction-related problems, as well as unrelated medical problems, which were noted on this examination or found after admission into the program were cared for by The Mount Sinai Hospital Medical Center. Minor disorders were attended to by the methadone clinic staff.

The program protocol was similar to that described by Dole and Nyswander.[1,2] Patients were started on methadone in divided doses of 40 mg. per day, building up at a rate of 20 mg. per week to a single maintenance dose of 100 mg. per day. Daily urine specimens were collected for chromatographic determination of the presence of morphine, barbiturates, methadone, quinine, and amphetamines. Analyses were performed according to the method described by Dole.[3] While the patients were being stabilized on methadone, attempts were made to provide supportive care in the form of individual and group counseling and vocational guidance with placement in jobs, training programs, or schools.

Results

From February, 1969, to May 1, 1970, the clinic

TABLE I. Ethnic characteristics of 100 patients on methadone maintenance treatment program

	Negro	Puerto Rican	White	Total
Male	18	61	6	85
Female	8	6	1	15
Total	26	67	7	100

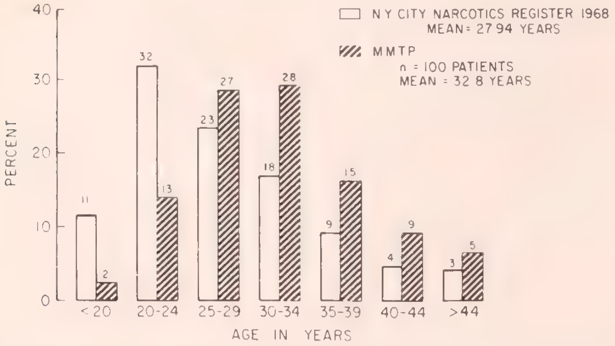

FIGURE 1. Percentage distribution by age of patients in The Mount Sinai Methadone Maintenance Program compared to *New York City Narcotics Register* 1968.

accepted 111 patients, 100 of whom are still enrolled. This report will deal with the 100 patients as a group. The 11 patients who are no longer in the program will be considered separately.

Of the current patients 85 per cent are male and 15 per cent are female, making a male to female ratio of 5.4:1. Because of the small number of female patients and the lack of significant distinguishing characteristics between them and their male counterparts, all 100 patients are considered as a single group. The ethnic composition of those in the program is shown in Table I.

The mean patient age is 32.8 years (Fig. 1). Fifty-five per cent are between the ages of twenty-five and thirty-four. Two patients are under twenty-one years of age. Both of these patients suffer from severe diabetes mellitus and were accepted, despite their age, at the request of The Mount Sinai Hospital diabetic clinic physicians.

The age at onset of addiction and the duration of addiction is shown in Figure 2. Sixty-two per cent of the patients became addicted in their teens; 18 per cent, however, became addicted after twenty-five years of age. Forty-two per cent of the patients had been addicted for ten to fifteen years. Twenty-eight per cent had habits of longer than fifteen years.

The arrest records of all patients revealed that 30 per cent of all patients had never been arrested (Table II). Twenty-three per cent experienced only one arrest, and 47 per cent experienced more than one arrest related to narcotics use. Thirty-six per cent of the patients had been arrested for offenses not related to drugs; 3 per cent had more than five such arrests.

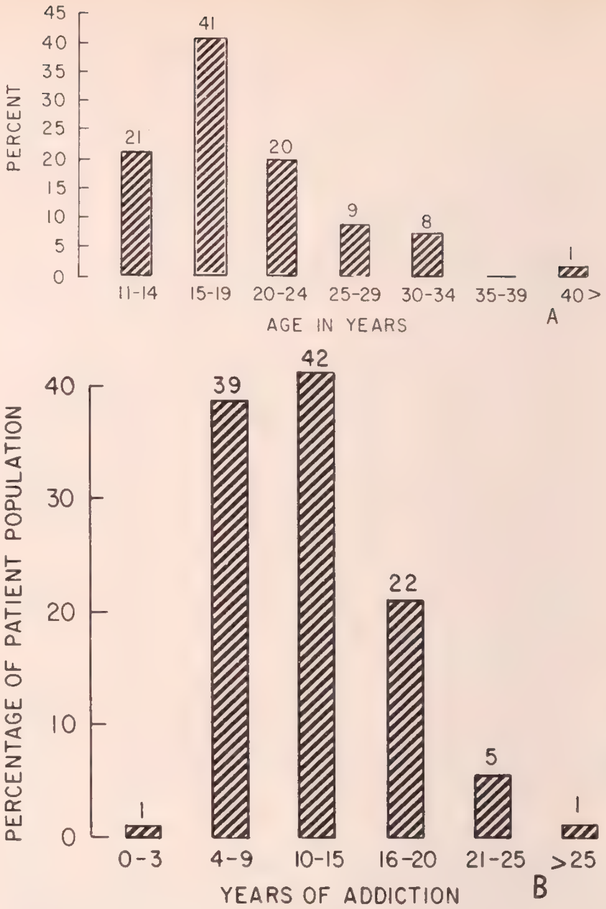

FIGURE 2. (A) Percentage distribution of age at start of addiction. (B) Percentage distribution of years of addiction of patients entering The Mount Sinai methadone program.

TABLE II. Arrest record of methadone maintenance treatment program patients prior to admission to program (per cent of patients)

Number	0	1	2	3	4	5	>5
Drug-related arrests	30	23	11	14	2	9	11
Other arrests	64	16	15	4	1	2	3

TABLE III. Per cent distribution of methadone maintenance treatment program patients' attempts at self-withdrawal exclusive of arrests

Number of Attempts	Per Cent Distribution
0	1
1	18
2	14
3	14
4	10
5	8
>5	35

All but one of the patients had attempted to detoxify themselves before applying to our program (Table III). Thirty-five per cent of the patients had attempted self-detoxification more than five times, exclusive of legal incarceration. The one patient who had not attempted self-detoxifi-

TABLE IV. Problems encountered with patients on methadone maintenance

		Number of Patients
Muscle cramps		2
Impotence		6
Alcoholism		20
Able to function at job without difficulty	11	
Unable to hold job	3	
Women with dependent children	5	
Dropped from program	1	
Psychotic disturbances		3

cation was a twenty-one-year-old, brittle diabetic who had been addicted for three and one-half years.

Fifty-eight per cent of the patients are employed, and 27 per cent are participating in vocational training programs. Only 6 per cent of the employable patients are not working or attending training programs. Two-thirds of the female patients (10 per cent of the total) are unable to work because of child-care responsibilities at home.

Problems encountered with patients maintained on methadone were muscle cramps, impotence, alcoholism, and psychiatric disturbance (Table IV).

Eleven patients are no longer in the program. Excluding the patient transferred to another program, the attrition rate was 9 per cent. Three patients were arrested, one on narcotics charges prior to entrance into the program, and two on narcotics charges brought against them while in the program. Two patients left the program to "try to make it on their own" and have since resumed heroin usage. Five were dismissed for persistent heroin abuse, which was detected by the urine examination.

Comment

The ethnic distribution of patients in the program (67 per cent Puerto Rican, 26 per cent Negro, 7 per cent Caucasian) differs from the ethnic distribution of addicts listed in the *New York City Registry* (21.5 per cent Puerto Rican, 45.7 per cent Negro, and 28.2 per cent Caucasian) and reflects the population distribution of the East Harlem community surrounding the hospital. The male to female ratio (5.4:1) is higher than the 4:1 ratio listed in the city registry.

The mean age of our patients (32.8 years) is significantly older than the 27.9 years reported in the *New York City Narcotics Register.*[4] Winick[5,6] has reported that two thirds of all addicts become abstinent or "burn out" by their mid-thirties after an average duration of addiction of 8.6 years. Statistical information drawn from our study and that of other methadone programs indicates that the "burn out" concept is erroneous.[7] Data to substantiate the "burn out" theory has been drawn from the *Federal Narcotics Register,* in which addicts are classified as inactive if they are not arrested for a five-year period. The *Federal Register* does not include addicts interred in prisons and those addicts able to conceal their addiction from local authorities. Data on addicts dead from addiction-related causes are also excluded.

The data from our program indicate that 30 per cent of the addicts have no arrest record whatsoever. Furthermore, most of the older addicts in our program have had arrest-free records for at least five years. Such "senior addicts" have developed reliable sources for their drugs and are able to avoid encounters with law-enforcement authorities. Most of these people have merged into the community without attracting any attention from their neighbors. Perhaps the older heroin-dependent population can best be described as being the base of an iceberg, the tip of which consists of the young heroin user who receives most of the notoriety.

The medical problems that were encountered were few. Constipation, muscle cramps, and impotence were the most commonly observed side effects attributable to methadone. Constipation was readily controlled by mild laxatives and seemed to subside as the patient's dose was stabilized. Muscle cramps also subsided as the dosage was increased. Although 25 per cent of the patients complained of impotence at some time during their first three to four weeks in the program, the complaint persisted in only 6 per cent of the patients after a maintenance dose was reached.

Impotence is a difficult symptom to evaluate. It appeared in groups of patients at about the same time, rather than in one individual at a time. Ghetto folklore asserts that methadone can be harmful by "remaining in the bones" and can cause impotence and sterility. Anxiety about sexuality and sexual performance is common among addicts. Most patients complaining of impotence at first claimed to have had no prior history of the disorder, but subsequently indicated earlier problems in sexual performance. The addict who replaces heroin, an antianxiety agent, with methadone may experience a return of old anxieties sufficient to impair sexual performance and even interest in sex. Supportive psychotherapy in the form of reassurance, guidance, relieving of guilt, and often joint interviews with patients and their wives was most helpful. We did not find it useful to lower methadone dosage temporarily as advocated by Nyswander.[7]

Alcoholism has become the leading medical problem encountered in our program. Excessive alcoholism accounted for 18 per cent of male and 28 per cent of female dropouts in other addiction treatment programs. In our program, 20 per cent of the patients suffered from alcoholism, and one patient had to be dropped from the program because of it. For most of our patients, alcoholism was a serious problem prior to joining the program. Eleven of the 20 alcoholic patients on our program were unable to hold down jobs without difficulty; however, only 3 of the 20 patients who were eligible to work were not doing so. We have attempted to deal with the alcoholic patient with group therapy and disulfiram (Antabuse) with limited success.

Three patients with known diagnoses of overt psychosis were admitted to the program. These patients have not done well and will probably not be able to continue in the program much longer. Their disturbances are not of any one type, and we have seen addicts with all types of psychoses, neuroses, and character disorders as well as addicts in whom no psychiatric diagnosis can be made.

Although there are no absolute psychiatric contraindications for methadone maintenance, the selection of patients depends on the services available in the program. If methadone is offered with little or no additional professional services, only the best integrated and best functioning addicts can be accepted. On the other hand, if the program has adequate resources at its disposal and is prepared to offer psychiatric treatment, particularly on an extended basis, patients with much greater psychopathy can be accepted.

It is difficult to objectively evaluate the success of any therapeutic modality involving the heroin-dependent individual. One method might be to consider the rate of unemployment among the program's members. At present only 6 per cent of the employable persons are not working. This is not to imply that this figure is representative of the addicted population in East Harlem. On the contrary, on admission to the program a significant number of patients were unemployed. Only by careful canvassing of the neighborhood by the research assistant were jobs located for these people.

It is realized that much more than a one year follow-up is needed. However, what should be emphasized is that with a minimal amount of funds and personnel a voluntary hospital was able to organize an effective on-going program for heroin addicts who resided in the surrounding community. Vocational placement was accomplished through community cooperation. It was possible to meet all of the patients' health needs at one central location. The addicted individual was thus able, with the help of methadone, to quickly remove himself from the milieu of the heroin addict's society without becoming estranged from his geographic community.

This situation is in marked contrast to many larger methadone programs where patients must either travel considerable distances in order to obtain their medication or receive their methadone in small dispensing stations that do not attempt to meet the individual's total health needs. It should be stressed that if the more than 100 hospitals in the New York City area were to establish community-based methadone treatment programs with a patient load of only 200, an additional 20,000 chronic heroin dependent individuals could have access to this form of therapy. Most of the patients currently enrolled in New York City methadone programs have waited up to one year for admission.

The authors recognize that much more is required in the long-term treatment of heroin addiction than simple administration of methadone. However, this program has shown that it is feasible for a community hospital to provide a methadone-maintenance treatment program using physicians without specialized training for the program drawn from the departments of medicine and psychiatry and with the facilities generally available in most hospitals.

Summary

A successful community-oriented methadone maintenance program has been established in a voluntary general hospital. Professional staffing was sharply curtailed because of financial considerations; nevertheless, during sixteen months, 111 patients were enrolled. Only 9 per cent of the patients are no longer in the program. Of the currently enrolled, employable persons 94 per cent are either working or in training programs. Side effects related to methadone therapy were few; constipation, muscle cramps, and impotence were the most frequent. Almost all side effects subsided when stabilizing doses of methadone were reached. Mixed drug abuse and inability to follow clinic procedures were the most important problems associated with methadone therapy. In the majority of cases the drug abuse had been present before enrollment of the patient in the program and was intensified during treatment. Our experience suggests that voluntary hospitals situated in areas with a high prevalence of narcotic addiction establish methadone maintenance as a treatment program utilizing already available resources.

Addendum

Since submission of this paper for publication, a twenty-three-month follow-up of the original 111 patients has been obtained. Of this group, 70 per cent are still enrolled in the program. Of those patients no longer enrolled, 60 per cent voluntarily discontinued methadone-treatment in an attempt to maintain a totally drug-free state.

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Need for Burn-Care Facilities in New York State

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During the last twenty-five years it has been shown that care of the burned patient requires special medical skills and often special facilities. As a result of this newly recognized need, in 1970, the New York State Legislature passed a bill establishing a Burns Care Institute within the Health Department. This institute is responsible for a statewide burn-care and prevention program. This report outlines the extent of the problem and a plan for burn-care services.

In the United States, over 2 million burn accidents occur each year, and approximately 74,000 patients are hospitalized. About 9,000 die from these accidents. The 8,900,000 days of disability and estimated medical costs of $300 million emphasize the problem. Table I presents the statistics for New York State.

Progress toward improvement, however, is still painfully slow. At the present time, less than 100 of the 6,000 general hospitals in the United States provide specialized burn care.[1] Figure 1 shows existing facilities and programs located in New York State.

TABLE I. Burn problem in New York State*

Variable	Data on Burn Injuries Per Year	
Incidence		200,000
Mortality		600
Hospital admissions		6,700†
Disability days		800,000
In hospital	120,000	
In bed (not hospital)	180,000	
In restricted activity	500,000	
Hospital and/or medical costs		$27,000,000

* Compiled using data from the New York State Department of Health, the U.S. Public Health Service, the Commission on Professional and Hospital Activities, Ann Arbor, and the National Burn Information Exchange, Ann Arbor.

† 6,400 burns of the skin and 300 eye and internal burns.

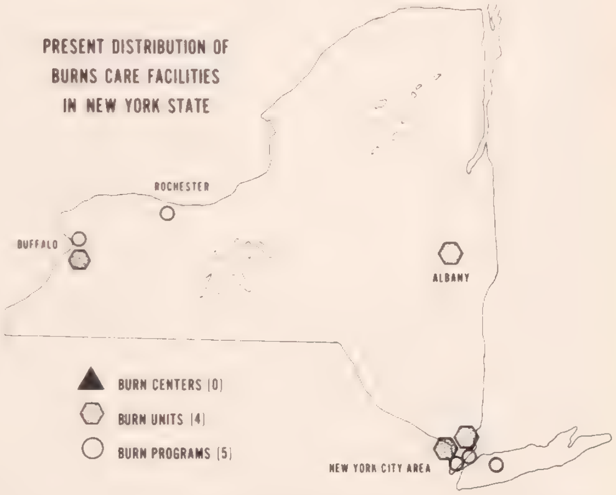


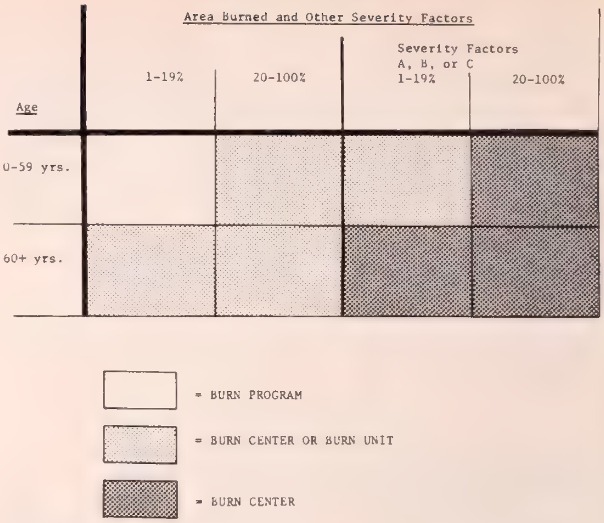
FIGURE 1. Present distribution of burn-care facilities in New York State.

The slow rate of progress cannot be blamed simply on the hospitals and their administrations. A special hospital facility is of little value without adequately skilled medical personnel to utilize it, and it is the medical schools which are ultimately responsible for supplying these skilled personnel. At the present time, only 41 of the 92 medical schools in the United States are affiliated with hospitals offering any specialized burn care, and

% BURN	AGE 0-1	2-4	5-9	10-19	20-39	40-59	60-100	TOTAL
0 - 9	100	100	100	100	100	98	91	99
10 - 19	99	99	100	99	99	97	74	97
20 - 29	93	95	98	99	97	90	49	93
30 - 39	75	83	86	97	90	66	17	80
40 - 49	58	65	80	86	79	47	8	68
50 - 59	23	47	51	71	67	28	7	50
60 - 69	0	23	44	52	45	30	3	36
70 - 79	20	14	24	25	20	11	0	17
80 - 89	0	5	10	20	12	7	0	9
90 - 100	0	10	0	13	0	0	0	2
TOTAL	91	89	89	90	85	74	50	83

January, 1971

FIGURE 2. Per cent survival of burn patients according to age and total body area burned.



	Area Burned and Other Severity Factors			
			Severity Factors A, B, or C	
Age	1-19%	20-100%	1-19%	20-100%
0-59 yrs.	☐	░	░	▓
60+ yrs.	░	░	▓	▓

☐ = BURN PROGRAM

░ = BURN CENTER OR BURN UNIT

▓ = BURN CENTER

FIGURE 3. Recommendations for burns-care facility triage determined by severity of burn. Severity factors: (A) refers to part of body burned: a perineal burn or combination burn of the face, neck, and chest. (B) Refers to past medical history affecting present health, such as diabetes, heart disease, and so on. (C) Refers to concurrent injury in addition to burn, such as skull fracture, severe abdominal injury, and so on.

only 9 of these have burn centers for teaching and research as well as for patient care.

The net effect of today's shortage of medical skills and facilities for burn treatment is that approximately 90 per cent of all burn patients do not receive the quality of care they need.

Treatment for all hospitalized burn patients

All patients with burns serious enough to require hospitalization require some level of specialized treatment. They have lost some of the protective and regulatory functions of their skin and are therefore susceptible to infections, fluid loss, metabolic disorders, and other complications. A considerable amount of time and attention is required to avoid or contain these complications. It is estimated that the average length of hospitalization for patients with skin burns is eighteen days, which is 80 per cent higher than the average length of hospitalization for patients with other types of injuries.

The primary purpose of the burn-treatment facility is to provide the resources required for care of the burn accident victims. Since all burns are not alike, the facilities required for their treatment are not alike.

Specialized burn-care facilities have been classified into three levels: (1) burn program, (2) burn unit, and (3) burn center. These are defined as follows.

Burn program. At the program level, the hospital has no specialized facilities or areas for burn care; however, a consistent plan is followed for management of burn patients, conducted by an interested and experienced physician or physicians. As a measure of experience, it is assumed that the physician is treating at least 25 burns per year.

Burn unit. A burn unit is conducted in a specialized facility which is used only for burns. It is assumed that this facility has at least four beds and that at least 35 burn patients per year are treated there. A limited amount of research and teaching may be performed on an intermittent basis.

Burn center. A burn center is a larger burn unit with a special emphasis on research and teaching as well as patient care. The facility provides very intensive burn-patient care which requires the support of the research and teaching staffs. In turn, the intensive care environment provides the ideal "classroom" for teaching the complexities of burn care and also serves as a "laboratory" for research into the many uncertainties of present-day burn treatment. It is assumed that the facility has at least six beds and at least 50 burn patients are treated there per year.

Burn care

The major factors considered in judging the relative severity of a burn injury, and hence the level of burn care required are:

1. The age of the patient
2. The total size (area) of the burn, including full thickness and partial thickness skin loss, measured as a per cent of total body surface.
3. The depth of the burn; that is, the area of full thickness skin loss (third degree burn) measured as a per cent of total body surface.
4. The location(s) of the burn on the body.
5. The past medical history of the patient.
6. The presence of other injuries in addition to the burn.

Of these factors, the first three are the most im-

TABLE II. Hospital admissions for burn injuries in New York State

Type of Patient		Estimated Annual Admissions
Burns of the skin		6,400
Severe*	1,300	
Moderate†	5,100	
Eye or internal burns		300
TOTAL		6,700

* Defined as a patient with total burn of 20 per cent or more or age sixty years or more. Estimated average mortality for this group is 20 per cent.

† Defined as a patient with total burn less than 20 per cent and age less than sixty years. Estimated average mortality for this group is 1 per cent.

TABLE III. Types of facilities recommended for patients with skin burns in New York State

Recommended Facility	Number and Type Of Patients Severe*	Moderate†	Total
Burn unit or center	1,300	1,300**	2,600
Burn program	. . .	3,800	3,800
TOTAL	1,300	5,100	6,400

* Defined as a patient with total burn of 20 per cent or more or age sixty years or more. Estimated average mortality for this group is 20 per cent.

† Defined as a patient with total burn less than 20 per cent and age less than sixty years. Estimated average mortality for this group is 1 per cent.

** Expected admissions from communities local to burn center or burn unit.

TABLE IV. Projected average daily census if adequate burn care facilities were available in New York State

Recommended Burn Care Facility	Type of Burn Patients Severe*	Moderate†	Total
Burn unit or Burn center	125	53	178
Burn program	. . .	156	156
TOTAL	125	209	334

* Defined as a patient with total burn of 20 per cent or more or age sixty years or more. Estimated average mortality for this group is 20 per cent.

† Defined as a patient with total burn less than 20 per cent and age less than sixty years. Estimated average mortality for this group is 1 per cent.

TABLE V. Proposed distribution of burn centers and/or units in New York State

Region	Burn Center Or Unit Average Daily Census*	Number Of Beds Needed At 90 Per Cent Occupancy	Total Burn Centers And Units Proposed†
New York City	94	106	6
Nassau Suffolk	25	27	2
Buffalo	16	18	1
Westchester Rockland	12	13	2
Rochester	9	10	1
Albany	8	9	1
Syracuse	7	8	1
Utica	4	5	1
Binghamton	3	4	1
TOTAL	178	200	16

* Distributed proportionately to areas based on 1960 population.

† Based on a minimum size of 4 beds and an average size of 15 beds in densely populated areas.

portant. Also, since the size of burn and depth of burn are often correlated, the knowledge of just the patient's age and total area burned can often yield an accurate prognosis. Figure 2 demonstrates the relationship of survival to age and total area burned for a sample of 9,000 patients, as reported by participants of the National Burn Information Exchange.[2] Consideration of this and other severity factor data led to the establishment of general criteria for determining the kind of facility that would be adequate for a burned patient. These criteria are summarized in Figure 3. Note that the factor of full-thickness burn is not included, because it cannot be determined accurately until later in the treatment process.

Each year approximately 6,700 patients with burn injuries are admitted to hospitals in New York State. Using the criteria from Figure 3, admissions are divided into three categories: (1) "severe" skin-burn patients—those who require treatment in a burn unit or burn center, (2) "moderate" skin-burn patients—those who require treatment in a hospital with a burn program, and (3) eye or internal burn injuries—those whose unique problems are best handled on an ophthalmology or general surgery service (Table II).

Table III shows the types of facilities recommended for the 1,300 severe and 5,100 moderate burn patients in New York State. Note that burn centers and burn units are not expected to refuse admission to moderate burns from the local community. It is assumed that nonspecialized-care institutions will refer moderate burns to the nearest burn program, and also that burn programs (as well as nonspecialized-care institutions) will refer severe burns to the nearest burn unit or burn center. An ideal referral plan may never be completely implemented. However, the experience of the University of Michigan Burn Center is that such a referral pattern can develop over a period of about five years, even without official encouragement, once the proper facilities are established and available.

Table IV shows the projected average daily census of severe and moderate burn patients in New York State, if adequate burn-care facilities were available, using the admission distribution of Table III. If the "burn unit or burn center" census was distributed proportionately to the seven largest metropolitan areas in the State, based on 1960 census figures, New York State would require 16 burn units or burn centers, with a total capacity of 200 beds to meet the present needs of the State. This is based on an estimated occupancy rate of 90 per cent, a minimum practical facility size of 4 beds, and an average facility size

TABLE VI. Proposed distribution of burn programs in New York State

Region	Burn Program Average Daily Census*	Total Burn Programs Proposed†
New York City	72	36
Nassau/Suffolk	18	9
Buffalo	12	6
Westchester/Rockland	9	4
Rochester	7	3
Albany	6	3
Syracuse	5	2
Utica	3	1
Binghamton	3	1
Other	21	10
TOTAL	156	75

* Distributed proportionately to areas based on 1960 population.
† Based on an average daily census of 2 patients.

of 15 beds for the New York City area. These figures are presented in Table V.

In a similar fashion, if the "burn program" census from Table IV was distributed to population areas (with the population outside of the seven major metropolitan areas combined as an eighth area) there would be an average census of 2 patients per burn program. This would mean that about 50 patients per year would be treated at each hospital with a burn program. On the basis of this estimate, New York State would require 75 burn programs to meet present needs. These figures are presented in Table VI.

Figure 4 shows a proposed geographic distribution of 4 burn centers, 12 burn units, and 75 burn programs consistent with the information presented in Tables V and VI. No precise basis was established for the location of the 10 burn programs outside of major metropolitan areas other than proximity to larger cities or towns. Also, no precise basis was established for delineation and location of burn centers other than the present existence of specialized care in the area, the presence of a medical school in the area, and the desirability of a geographic "spread." Hence, the general location of burn centers and many burn programs would best be determined after careful consideration of the availability of qualified doctors, paramedical personnel, and supportive facilities in each area. The specific location ("parent" hospital) of every burn center, unit, and program must require consideration of these same factors at the specific hospital.

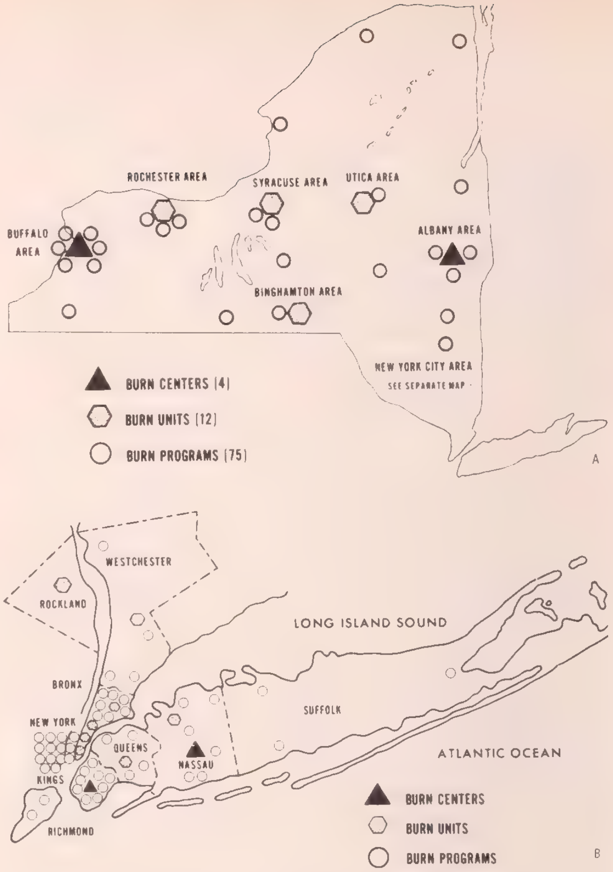

ROCHESTER AREA
SYRACUSE AREA
UTICA AREA
BUFFALO AREA
ALBANY AREA
BINGHAMTON AREA
NEW YORK CITY AREA
SEE SEPARATE MAP
▲ BURN CENTERS (4)
⬡ BURN UNITS (12)
○ BURN PROGRAMS (75)
A
WESTCHESTER
ROCKLAND
LONG ISLAND SOUND
BRONX
NEW YORK
QUEENS
NASSAU
SUFFOLK
KINGS
ATLANTIC OCEAN
RICHMOND
▲ BURN CENTERS
⬡ BURN UNITS
○ BURN PROGRAMS
B

FIGURE 4. Proposed distribution of burn care facilities in (A) New York State and (B) New York City.

Comparing Figure 1 (present burn care facilities) with Figure 4 (proposed burn care facilities) leaves little doubt that New York State does not yet have the facilities to provide adequate treatment to burned patients. Where 16 burn centers and burn units are needed, only 4 exist; where 75 burn programs are needed, only 5 exist. The Burns Care Institute plans to assist interested physicians and hospitals in remedying this situation.

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Stephen Smith, M.D.

In pursuit of health care for all

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Syracuse, New York

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Si l'espèce humaine doit être sauver, c'est dans la médecine qu'il faut en chercher les moyens.—Descartes, 1596–1650

The Sunday New York Times of December 4, 1932, published a report of the nation's first comprehensive survey of the economics of medical practice, made public the last week in November by the Committee on Costs of Medical Care, the product of a five-year study. That health care appeared then in a degree of crisis patently understates the stark situation.

The majority report, prepared by Ray Lyman Wilbur, M.D.,* summarized:

> Whatever means may be employed, the time has come for action . . . We in the United States, above all other countries, are now in a position to go forward intelligently . . . A body of data is at hand which will enable each community and each state to take wise and adequate action.
>
> Human life in the United States is being wasted, as recklessly, as surely, in times of peace as in times of war. Thousands of people are sick and dying daily in this country because the knowledge and facilities that we have are so inadequately supported. We must promptly put this knowledge and these facilities to work! Delay can be tolerated no longer . . . .

When these words were written, Stephen Smith, founder and first president of the American Public Health Association (1871), had been in his grave less than ten years; that his ideals lived on is attested to by the vigor of the logic in the health manifesto subscribed to by Dr. Wilbur and his associates, almost forty years ago.

Having struck the thought period of the predepression 1920s, and before moving deeper into the 1970s, it might be instructive to go back to the historic stirrings of health-care consciousness in the late eighteenth and early nineteenth centuries and to become acquainted with some of the immortals who pioneered in this noble mission.

To cite an outstanding example, physicians in England, working in cooperation with lay philanthropists, had probably reduced the infant mortality rate nearly 50 per cent between 1770 and 1800 by dint of a program of education and prevention.

After a period of laxity in the early nineteenth century, the introduction of vaccination was hailed; however, at first this was restricted to private practice because of the cost, and, thus, only a very small minority of people benefited.[1]

When cholera broke out in the British Isles in July, 1831, it attacked the poor and destitute more severely, hitting harder in Scotland and Ireland, where slum conditions were even worse than those in England. The intimate connection between wretched living conditions and cholera was too flagrant to be longer ignored. After 1831, a marked increase of concern arose throughout Europe and America with the whole abominable specter of public hygiene. Fear now joined with humanitarianism in frenzied demand for cleanups, investigations, and general sanitary reform, since these exigencies had never been demanded before. When enthusiasm spasmodically waned, further invasions supplemented by recurring outbreaks of yellow fever, typhoid, typhus, and smallpox terrified authorities into renewed activity. From these origins is to be found the awakening of twentieth century public health conscience.

By 1847, T. Southwood Smith, M.D., a celebrated London physician, justly irate over the continued indifference of Parliament, penned "An Address to the Working Classes." After reviewing the tragedy of unnecessary suffering and death among the masses, he concluded:

> For every one of these 15,000 individuals who perished and who might have been saved . . . those are responsible who have the power to save . . . . Let a voice arise from your streets, your lanes, your alleys . . . that shall startle the ear and command the attention of the legislature.[2]

About the same time in the United States, the cornerstone of the public health institution was laid once and for all in 1850, with the publication of the report of the Sanitary Commission of Massachusetts entitled "Report of a General Plan For the Promotion of Public and Personal Health."

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*Dr. Wilbur was Secretary of Interior in the cabinet of President Hoover, 1929 to 1933.

Lemuel Shattuck

As Lemuel Shattuck wrote: "Sanitary professorship should be established in all our colleges and medical schools and filled by competent teachers. The science of preserving health and preventing disease should be taught as one of the most important sciences. It would be useful to all and particularly to the student in curative medicine."[3]

This extraordinary document, as well as the commission itself, was originated by Lemuel Shattuck (1793 to 1859) as one of his many civic endeavors. Former schoolmaster, Boston bookseller, and an outstanding citizen, this remarkable man combined keen interest in public affairs with insight and determination. In Concord he served as a member of the school committee and reorganized the public school system there. From an interest in genealogy, he became attentive to the value of correct vital statistics. This led to his becoming one of the charter founders of the American Statistical Society in 1839, and then into active promotion of the passage of Massachusetts legislation in 1842, for the registration of vital statistics.

A short time later he had completed the "Census of Boston in 1845," that was published as an official document. Shattuck was shocked by the appalling mortality rates revealed by the Boston census and other observations he had made. Characteristically, he took forthright and successful action to secure the appointment of a commission to make a sanitary survey of the state, and became its totally responsible and dedicated chairman. The subsequent *Report* and its author have long been honored in public health circles. But citizen Shattuck died in 1859 without general recognition of his contributions and without even the satisfaction of seeing his recommendations enacted into law.[4]

The *Report* is an important landmark in the evolution of community health action. It outlined a basis for sound public-health action and made recommendations that to a large extent have been realized in the intervening hundred and more years. Shattuck recommended the establishment of a state health department and local boards of health in each town. In addition, he urged sanitary surveys of particular urban communities and other localities. Considering his interest in vital statistics, it is not surprising to find detailed recommendations on this subject. These include a decennial census, uniform nomenclature for causes of disease and death, and collection of data by age, sex, race, occupation, economic status, and locality. Environmental sanitation, control of food and drugs, and communicable disease control are considered at length. Stress is laid on vaccination against smallpox. Well-child care, the health of school children, and mental health are all discussed. The far-sighted character of the assizement is indicated by the proposals on smoke control, alcoholism, town planning, and the teaching of preventive medicine in medical schools.[5]

To repeat, the 50 recommendations which he formulated have all been effected to a varying degree. Bacteriology was the only thing he did not foresee.[6]

Specifically, the Shattuck *Report*, as it came to be commonly known, minces no words:

> It is the duty of the state to extend over the people its guardian care, that those who cannot or will not protect themselves may nevertheless be protected; and that those who can and desire to do it may have the means of doing it more easily. This right and authority should be exercised by wise laws, wisely administered; and when this is neglected, the state should be held answerable for the consequences of this neglect.

As if to affirm the conscience overshadowing these convictions, Disraeli was to observe a few decades later in a renowned pronouncement, "The health of the people is really the foundation upon which all their happiness and all their powers as a state depend." Even as early as Sybil (1845) there is this remark, "The youth of a nation are the trustees of posterity."[7]

In the midst of this desperate climate of mid-nineteenth century privation, Stephen Smith was studying for the Doctor of Medicine from Columbia in the spring of the year 1850. The full bloom of his next seventy-two years has been but sketchily chronicled. More notably, Fielding H. Garrison[8] in one of his matchless forays reminds the medical profession, and all of us, of the enormous debt of gratitude owed to this extraordinary human being whose public activities extended over half a century. Apart from those of his specialty, Smith's activities included the broadest and most beneficent kinds of social service, from hospital construction (Roosevelt, Johns Hopkins) and the improvement of the homes of the working classes and tenement population of New York City, to the sane and humane treatment of the insane, as well as the advancement of public hygiene in his own State.

Early life

Smith was born near Skaneateles in Onondaga County in 1823, and brought up on his father's farm in upper New York State. His own native intelligence soon thrust him beyond the normal schooling, and when, at age twenty, he was able to attend Cortland Academy, he had already taught himself Latin, Greek, and higher mathematics

His first preceptor was Caleb Green, M.D., formerly Professor of Materia Medica at the Geneva Medical College, where Dr. Smith took his first course of lectures. (For an engaging account of Elizabeth Blackwell's experience in anatomy, 1847 to 1848, see his enchanting tale.[9])

For his second course of lectures he attended the Buffalo Medical College, and in 1849, became resident pupil in the Buffalo Hospital of the Sisters of Charity, where he had considerable experience with cholera, which was then epidemic. In the autumn of that year he embarked on his third course at the College of Physicians and Surgeons, from which he was graduated and, as an earlier description relates, "found himself in a strange city, with legalized power to practice and nobody to treat."[8]

However, there happened to be a providential vacancy in the resident staff of Bellevue Hospital, and Dr. Smith, having passed the rather rigid Board examination, began his duties there. In the early period at Bellevue his first important paper was published, "A Contribution to the Statistics of Rupture of the Urinary Bladder," later translated into French and German.[10] In it he was able to collate and tabulate some 78 cases of rupture of the bladder from external violence: a most salutary feat of painstaking labor in the days when, as Garrison observes, medical bibliographies in the Billings' sense were completely nonexistent.

Professional life

He was a teacher at Bellevue Hospital from 1854 to 1891, professor of surgery at that hospital's medical school from 1861 to 1865, and professor of anatomy from 1865 to 1874; and also consulting surgeon at Bellevue, St. Vincent's, and Columbus hospitals. Dr. Smith was joint editor of the *New York Journal of Medicine* from 1853 to 1857, and editor from 1857 to 1860; editor of the *American Medical Times* 1860 to 1863; sometime New York correspondent for *The Lancet*, and for over thirty years a frequent contributor. He was author of *Handbook of Surgical Operations*, published during the Civil War; *Principles and Practice of Operative Surgery*, 1887; *Civil Obligations of the Surgeon*, 1908; *Who is Insane?*, 1916; and *The City That Was*, 1911.

In 1864, Dr. Smith became a member of the Council of Hygiene of New York City, the investigations and report of which led to the creation of the Metropolitan Board of Health. He was New York State Commissioner of Lunacy from 1882 to 1888. He introduced new and more humane methods in caring for the insane, and his plans for the work resulted in "The State Care Act," which became law in 1890. Smith was appointed a member of the State Board of Charities in 1893, and continued a member until 1918, resigning at the age of ninety-five.

In 1870, he had called together a conference of the health officers of principal cities to form an association for the improvement of public health. This conference served as the impetus for the founding of the American Public Health Association which came into being a year later. Dr. Smith was chosen the first president.

The year 1878 found him preparing a bill providing for creation of the National Board of Health. (The name was abandoned a few years later and the entity absorbed into the already existing Marine Hospital Service.) He was U.S. Commissioner to the Ninth International Sanitary Conference at Paris (1894) and assisted in drafting a sanitary code to avert the danger of epidemics attendant on the annual pilgrimages to Mecca.[11]

In 1921, at its semicentennial celebration, the American Public Health Association showed its esteem for Dr. Smith by presenting him with a bronze medal bearing his portrait. He responded to the honor by regaling his audience with an account of the sanitary conditions existing in the City of New York in 1860 to 1870 in the days when Boss Tweed was in full control of the city government; it was to defeat his schemes that a citizens' association was formed. The first step was a sanitary inspection of the city, paid for by private donations. Theoretically, one of the functions of the aldermen of New York at that time was to act as a Board of Health, but when a medical delegation waited on the then mayor, with a view to getting the Board called together to take measures against approaching cholera, the mayor replied, "I shall not call the Board, for I consider it more dangerous to the city than cholera." At the same time there was a Health Commission for New York, but its duties were not well defined, and its chief official, who was at the head of the street-cleaning department, "had an annual appropriation of nearly 1 million dollars to expend upon his political followers;" he did appoint some scores of Health Wardens "who were generally saloon keepers." One of these, being asked how he acted when called to a case of contagious disease, replied that he went to the house and called the people into the street, where he gave his orders, which were to burn sulphur, but that he himself never went into that house.[12]

Later years

Earlier in the year 1921, Dr. Smith granted an interview to Van Buren Thorne, M.D., of which there are these excerpts:[13]

> One might have expected, reporter Thorne begins, to find Dr. Smith in his home at all hours, perhaps spending most of his time in bed. I called in the afternoon, and, as it had been several years since I last

saw him, expected to find him somewhat broken with age. He was quite the contrary to my astonishment. This was the appearance of the Nestor of the medical profession of America and probably of the world: Figure slight, trim, even elegant; broad-shouldered, erect as in youth, for not labor, not study, nor years have given him the slightest indication of stoop. His cheeks were pink and freshly shaven, and in his daughter's apartment at 1000 Park Avenue, he was garbed for whatever eventualities the day might bring.

"Then you still go out walking?"

"Oh, yes, up to a year or two ago I walked about eight miles a day. Now, however, I go out one, two, or three times a day for short walks. Of course, I stay in when the weather is rough, for one of my age must be careful to avoid pneumonia."

Thorne: Then the venerable teacher, author, editor, surgeon, founder of institutions, creator of sanitary codes and laws for the benefit of the poor, the sick, and the insane, plunged into an eager discussion of the medical problems of the day. It must be kept in mind that Dr. Smith does not live in an atmosphere of retrospection as do the majority of the aged; he is old only in years, and his reminiscences are called into play only when required for comparison with present conditions. Who would not summon such a reservoir of memories if one had a century of them?

"What do you think of this threatened invasion of typhus?"

Dr. Smith smiled. It is characteristic of him that a never-failing humor tempers his every remembrance of historic importance.

"I can't think of it without recalling how we cured typhus patients when I was an interne at Bellevue Hospital seventy years ago. This camp follower of the ages is coming in now from the Balkan countries. When I was at Bellevue it was brought into the city by Irish immigrants. We had many names for it, but the most durable was Irish fever. We had fully a thousand cases. Twelve interns had it and two of them died. I, myself, had had it two years before in Buffalo.

"I don't know whether it shows the height of discretion to give the treatment now that prohibition has gone into effect. Well, Dr. Alonzo Clark, professor of the practice of medicine, had supervision over all these Bellevue cases. He was a very positive, forceful and able man. He talked to us about them, saying: 'These people are dying off too fast. I believe if we take them when they are dying, when they are unconscious, with their mouths open, their tongues black, dry and protruding, when they are just barely breathing, if we take them then and pour hot brandy and milk or hot whiskey and milk far back in their mouths, the irritation will cause them to swallow, and I believe the alcohol will cure them.' Professor Clark instructed one of the interns to watch and treat the worst cases during the first night. 'And keep on pouring the liquor down their throats till they become conscious,' he concluded, 'never mind how much it takes.'

"Well, this interne administered as much hot brandy as he thought was safe to give in one night, and then he stopped. In the morning one of the patients was dead. Professor Clark was furious. 'The only discretion I want shown around here,' he stormed, 'is the discretion I give you. Now, you can all line up 'til I get a look at you.' All the staff lined up, and he stepped up to me and said: 'Did you ever attend a common school?'

"I said I had.

" 'And did you ever hear a teacher say that if you did so-and-so, he'd lick you within an inch of your life?'

" 'Yes, I replied, I've not only heard it, but I've experienced it.'

" 'Well,' he went on, 'I want you to take charge of those typhus patients and feed hot brandy and milk within an inch of their lives.'

"I carried out his instructions and the patients began to get well. The fame of our cures spread all over the country. I remember they were having an epidemic of it in St. Louis at the time, and one of the men who had charge of the patients there—he was a professor—visited us at Bellevue to find out how we handled our patients.

"He expressed doubt as to the efficacy of the treatment. Professor Clark said to him: 'You just pick out a dozen cases that you are sure are going to die and we'll show them to you again in the morning.'

"The St. Louis doctor picked out a dozen and said, 'And there's one, that girl, but she's dying now and it would be a shame to disturb her.'

"During the night I poured three quarts of hot brandy down the throats of those thirteen patients, and by morning all were conscious, hungry for breakfast, and on the road to recovery. The St. Louis doctor slept in the hospital, so I called him and took him to the ward. He looked the patients over, but didn't say anything until we were alone.

" 'See here,' he began, eyeing me suspiciously, 'aren't you trying to play a trick on me? Those are not the same patients I saw last night.' I assured him they were the very same."

The interviewer then mentioned that Dr. Smith had been practically an invalid through a large part of his life and that during a sojourn in Paris he had learned to drink wine, with the happy result that he had been well ever since.

The conversation took another tack, "The modern freedom of women, their emancipation, their entrance into public life, what do you think of all this? Will it tend to deprive them of their feminine charm?"

"I have always been a suffragist! The women's entrance into public life is a good thing, and they will never lose their charm. Why, a few years ago all they could do was sew and cook and work around the house. Now they can do anything and their influence is good. In the 40s at the Geneva Medical College I had as a classmate Elizabeth Blackwell, the first woman medical student in America. It was a wild class, but you should have seen how it tamed down when she appeared."

The physician was questioned as to whether he thought organotherapy, or the transplantation of glands, that one hears so much about nowadays, was going to be much of a factor in prolonging human life.

"We are only in the beginning of our knowledge in that line. We have been studying the ductless glands and their functions for years. Take the thyroid gland, for instance. There it is, a small gland sitting astride the windpipe, and now we know it regulates the assimilation of food in the body.

"A British scientist ascertained that the animal lives five years as long as it takes for the full development of the bony skeleton. In man this is twenty years. Therefore, the life of man should be five times that, or one hundred years.

"The great Virchow discovered that the body was made up of billions of cells-units, he called them.[14] He estimated that the little gray mass called the brain was made up of two thousand million of them. It has often been said that man renews himself every seven years. In seven years the cells have all been renewed by what has been carried to them by the blood. Man can keep this up about one hundred years, but somehow when he gets to be a hundred, he loses the power to renew these; he is worn out."

The interviewer: "We are accustomed to think of evolution as something that has taken place in the past, something that is over and done with. Has it not appeared to you in your lifetime that evolution is taking place much more rapidly now than ever before—evolution in the brain, for example?"

"I do not believe there will be any higher type than man," said Dr. Smith, "but the question brings up a subject in which I am intensely interested, and that is the subject of mental defectiveness. The multiplicity of inventions indicates brain development, and changes in facial characteristics in a generation succeeding the onset of immigrants show what change of food and environment will do. But what I wish to say is that there is no degree of mental deficiency, no idiot so low in mentality, that something cannot be done with that brain by proper care, treatment, education, and environment. I have always insisted on the point, and my labors in that direction are not over yet.

"In 1881, I was appointed a Commissioner of the New York State Commission on Lunacy, a position I held for six years. I took the insane out of the poorhouses and three institutions and put them in proper asylums and secured the passage of the act creating the State Commission. These reforms gave New York the best system of custody and care of the insane in the United States."

So terminated the conversation between Dr. Thorne and the physician he introduced at the outset as the oldest and the wisest in America, and probably the world.[13]

Comment

From the obituary, we know that Stephen Smith, M.D., died on August 26, 1922, aged ninety-nine years, six months, and seven days.[15] The funeral was held Tuesday afternoon, the 29th of August. Reverently, he was borne to his rest in his beloved home of Skaneateles by those who respected and loved him.

The obituaries were heaped with tribute. The *Boston Medical and Surgical Journal,* September 7, 1922, credited him with laying down a health regimen of hard work, plenty of milk and sleep, but not too much meat. It recounted that he was the son of a cavalry officer in the Revolutionary War; that his life as a boy on a farm occurred in the days when farmers got up at four o'clock in the morning and were busy with their varied chores until after dark; that even before the Civil War he became absorbed with improving the sanitation of New York, and through the publicity and support of the *New York Evening Post,* he was able to draft a law creating a board of health under which he accomplished yeoman service in cleaning the streets and combating the blighted areas of bad housing which he called "fever nests" leading to typhus; and that while a delegate to the Sanitary Conference in Paris, when seventy years old, he cured himself of chronic dyspepsia by following the French custom of taking wine with his meals. (His account of this experience caused the newspapers to cite him as an advocate of alcohol, and the prohibition propagandists to refer to him with scorn.[16])

Again, witness this eulogy from the *New York State Journal of Medicine:*[17]

> Had this modest, gentle, sweet spirit escaped from its earthly tabernacle in France, he would have lain in state in the Panthéon in Paris, and would have been borne to rest in Père la Chaise, to lie with the greatest of the storied Gallic dead; had England encompassed the life and death of this indomitable spirit, this courageous and beloved physician who was so deeply touched with human need, his mortal remains would have been interred in Westminster Abbey.

From his dear friend Ravenel,

> In considering Dr. Smith's public services, one may justly wonder at the extent of the work accomplished, especially when it is taken into account that he was from early professional life a teacher and enjoyed an extensive surgical practice; but he never put the business side of his profession to the fore, and never permitted the glitter of gold to blind him to the needs of the lowly and the wretched. In this lies the glory of his professional career and his life itself.

It seems altogether fitting and proper to conclude with the eloquent words of Stephen Smith, surgeon, pioneer sanitarian, and man of ineffable compassion, at the conclusion of his extraordinary address to the American Public Health Association on the occasion of its 50th anniversary celebration, November 14, 1921. He was then ninety-eight years old:

> May I be permitted reverently to suggest that our purpose has the same sentiment as was heard by the shepherds on the plains of Judea at the Nativity? Then the "good will to man" was announced to be

> the salvation of the soul from sin by divine appointment; while we now learn that salvation from the sins of the body must be effected by man himself who created them.
>
> Let us apply ourselves to the task with renewed vigor and thus enable those who will greet the centennial anniversary of this Association to hear from sanitary officials the good news that the death rate of the year 1971 is limited to those afflicted with old age, or to disease or accidents unpreventable and incurable by any agencies known to science . . . .[18]

If anything remains to be added to the stature of this giant of the art of medicine, who deserves to have the citizenry of this nation stand in awe and gratitude, let it be the life he so exquisitely exemplified according to his own lights: Happy the man whose life, whether short or long, is filled with honest efforts to cultivate every art that benefits mankind, and has seized on every occasion to apply it where and when it was most needful and useful in uplifting the race.

Addendum

In the fall of 1896, Stephen Smith, M.D., bequeathed his personal library to the Syracuse University College of Medicine. It is presently a treasured collection in the holdings of the Library of the Upstate Medical Center. This, incidentally, was the same year as the discovery of radioactivity with which are associated the names of Antoine Henri Becquerel and Pierre and Marie Curie.

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Necrology

Edward Gordon Bell, Jr., M.D., of New York City, died on September 20 at the age of fifty-nine. Dr. Bell graduated in 1938 from the University of Virginia School of Medicine. He was an associate attending ear, nose, and throat physician at Flower and Fifth Avenue, Metropolitan, and Bird S. Coler Memorial Hospitals, and acting director of the ear, nose, and throat service at St. Clare's Hospital. Dr Bell was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Academy of Compensation, Medicine, Inc., the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Berg, M.D., of New York City, died on October 1 at the age of seventy-two. Dr. Berg graduated in 1923 from Jefferson Medical College of Philadelphia. He was a member of the American Psychiatric Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Marvin Lee Blevins, M.D., of New York City, died on September 23 at the age of seventy-one. Dr. Blevins graduated in 1927 from Columbia University College of Physicians and Surgeons. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin C. Braynard, M.D., of Glen Cove, died on September 27 at the age of eighty-eight. Dr. Braynard graduated in 1910 from New York Homeopathic Medical College and Flower Hospital. He was an emeritus member of the medical staff at Community Hospital of Glen Cove. Dr. Braynard was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Gralnick, M.D., of Brooklyn, died on August 27 at the age of sixty-seven. Dr. Gralnick graduated in 1927 from Columbia University College of Physicians and Surgeons. He was an attending general practitioner at St. John's Episcopal Hospital. Dr. Gralnick was a member of the American Academy of General Practice, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

John Harrison Greenwood, M.D., of Watertown, died on October 2 at the age of fifty-seven. Dr. Greenwood graduated in 1941 from Syracuse University College of Medicine. He was a member of the Jefferson County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Gerard Healy, M.D., of Buffalo, died on September 26 at the age of fifty-nine. Dr. Healy graduated in 1939 from the University of Buffalo School of Medicine. He was an attending general practitioner at Sisters of Charity Hospital of Buffalo. Dr. Healy was a member of the American Academy of General Practice, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ross E. Herold, M.D., of Dannemora, died on March 6. Dr. Herold graduated in 1924 from the University of Toronto Faculty of Medicine. Retired, he had formerly been director of the Dannemora State Hospital.

Ross Edward Hobler, M.D., of Elmira, died on July 27 at the age of sixty-one. Dr. Hobler graduated in 1935 from the University of Pennsylvania School of Medicine. He was an attending surgeon at Arnot-Ogden Memorial Hospital. Dr. Hobler was a Fellow of the American College of Surgeons, and a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph L. Kovacs, M.D., of Ocean Beach, died on July 15. Dr. Kovacs received his medical degree from the University of Budapest in 1919. He was a Fellow of the American College of Physicians and a member of the American Rheumatism Association.

Benjamin Kramer, M.D., of Brooklyn, died on September 29 at the age of eighty-five. Dr. Kramer graduated in 1909 from University and Bellevue Hospital Medical College. He was a consulting pediatrician at Brookdale Hospital Center and Peninsula General Hospital and emeritus director of pediatrics and consulting pediatrician at Maimonides Hospital of Brooklyn. Dr. Kramer was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the American Society for Clinical Investigation, the American Pediatric Society, the American Physiological Society, the Society for Experimental Biology and Medicine, the Society for Pediatric Research, the New York Academy of Medicine, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

William W. Kunz, M.D., of Dunkirk, died on September 8 at the age of forty-four. Dr. Kunz graduated in 1953 from the University of Buffalo School of Medicine. He was an attending physician in internal medicine at Brooks Memorial Hospital. Dr. Kunz was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Michael Frank Mogavero, M.D., of Buffalo, died on September 8 at the age of sixty. Dr. Mogavero graduated in 1938 from the University of Buffalo School of Medicine. He was an honorary ophthalmologist at Sisters of Charity Hospital of Buffalo, a consulting ophthalmologist at Millard Fillmore Hospital, and an assistant attending ophthalmologist at Deaconess Hospital. Dr. Mogavero was a member of the Pan American Association of Ophthalmology, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Pepe, M.D., of Mohegan Lake, died on September 11 at the age of seventy-five. Dr. Pepe graduated in 1929 from Columbia University College of Physicians and Surgeons. Retired, he was formerly an honorary consulting radiologist at Carson C. Peck Memorial Hospital and Brooklyn-Cumberland Medical Center. Dr. Pepe was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Radiology, and a member of the Radiological Society of North America, Inc., the American Academy of Compensation Medicine, Inc., the New York Roentgen Society, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

William George Roberts, M.D., of Penn Yan, died on June 21 at the age of fifty-eight. Dr. Roberts graduated in 1937 from the University of Buffalo School of Medicine. He was a senior attending physician at Soldiers and Sailors Memorial Hospital. Dr. Roberts was a member of the Geneva Academy of Medicine, the Yates County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Grant Rodgers, Jr., M.D., of Syracuse, died on August 13 at the age of eighty. Dr. Rodgers graduated in 1915 from Albany Medical College. He was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry) and a member of the American Psychiatric Association, the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Dorothy N. Shaver, M.D., of Lancaster, died on August 28 at the age of fifty-four. Dr. Shaver graduated in 1944 from the University of Buffalo School of Medicine. She was an associate clinical director of pathology at the Edward J. Meyer Memorial Hospital. Dr. Shaver was a Diplomate of the American Board of Pathology and a member of the American Society of Clinical Pathologists, the American Association of Pathologists and Bacteriologists, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Henry Smith, M.D., of Elmira, died on September 11 at the age of forty-nine. Dr. Smith graduated in 1946 from Johns Hopkins University School of Medicine. He was an attending radiologist at Arnot-Ogden Memorial Hospital. Dr. Smith was a Diplomate of the American Board of Radiology and a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clarence Armstrong Spence, M.D., of Amsterdam, died on September 10, 1971, at the age of seventy-seven. Dr. Spence graducated in 1923 from the University of Toronto Faculty of Medicine. He had been an attending surgeon at Amsterdam Memorial Hospital and an honorary surgeon at St. Mary's Hospital. Dr. Spence was a Fellow of the American College of Surgeons and a member of the Montgomery County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ernest S. Steblen, M.D., of Amenia, died on August 22. Dr. Steblen graduated in 1921 from Queen's University Faculty of Medicine. He was a member of the American Psychiatric Association.

William Swanton, M.D., of Saranac Lake, died on July 1 at the age of seventy-five. Dr. Swanton graduated in 1924 from the University of London Faculty of Medicine. He was a member of the New York Opthalmology Society, the Franklin County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Hudson Thompson, Jr., M.D., of Middletown, died on October 6 at the age of fifty-six. Dr. Thompson graduated in 1942 from the University of Pennsylvania School of Medicine. He was an attending surgeon at the Elizabeth A. Horton Memorial Hospital and a consulting surgeon at Arden Hill Hospital (Goshen). Dr. Thompson was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Varmus, M.D., of Freeport, died on October 3 at the age of sixty-five, Dr. Varmus graduated in 1931 from Tufts University School of Medicine. He was an attending general practitioner on the medical staff at Doctors and Meadowbrook Hospitals. Dr. Varmus was a member of the American Academy of General Practice, the Nassau Academy of Medicine, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Stanley Arthur Weglikowski, M.D., of Buffalo, died on September 23 at the age of sixty-one. Dr. Weglikowski graduated in 1935 from the University of Buffalo School of Medicine. He was an attending physician at Mercy Hospital. Dr. Weglikowski was a member of the Amercan Academy of General Practice, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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this volume so that the information flows from the biochemistry and morphology of membrane ultrastructure to more explicitly biologic problems. However, there are very few clinical aspects of membrane research presented.

The volume is in no sense a text, nor does it purport to be. It is a compilation of preclinical studies meant to be read by research peers. The studies presented here may be of some interest to pathologists, but it is stiff reading indeed for a clinician. For example, the index lists not a single reference to cancer, neoplasms, or the growth process. This reviewer is familiar with at least one other symposium on the cell membrane published in 1972 which has much greater relevance for the clinician. **Daniel G. Miller, M.D.**

Blood Disorders in the Elderly. By J. H. Thomas, M.R.C.P., and D. E. B. Powell, M.D., M.R.C.P. Quarto of 284 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $15.50.

This text was published by Bristol, John Wright & Sons Ltd., in 1971. The authors, a pathologist and a physician in charge of a geriatric unit, have compiled a unique view of problems seen in this hematologic evaluation in the elderly. Myths somehow evolved regarding lessened ability of the elderly to react appropriately to hematologic stress are shattered. The approach to this problem of the aged, particulary the influence of diseases on the blood picture, is presented nicely. The presentation is lucid and written concisely, if somewhat abbreviated.

However, the internist who deals with an elderly group will profit substantially with this informative and easily read book. **Alan N. Morrison, M.D.**

Recent Advances in Haematology. Edited by A. Goldberg, M.D., D.Sc., and M. C. Brain, D.M. Octavo of 387 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1971. Cloth, $15.50.

Each of the 10 chapters in this book deals with a hematologic area concisely updated but generally written in a readable style. Included are chapters relating to folic acid and B_{12} interrelationship, iron metabolism, hemoglobinopathies and red cell metabolism, platelets, porphyrin metabolism, treatment of malignant blood diseases, leukocyte groups, automation in the hematology laboratories, and a section on anemia in the tropics.

The strength of this volume lies in the documentation of all references. Because of this, the book is ideally suited for students and medical practitioners who feel a need for updating their knowledge in hematology. **Alan N. Morrison, M.D.**

Patterns of Skin pH from Birth through Adolescence. With a Synopsis on Skin Growth. By Hans Behrendt, M.D., and Marvin Green, M.D. Quarto of 115 pages, illustrated. Springfield, Illinois, Charles C Thomas, Publisher, 1971. Cloth, $8.25.

The authors, who are both pediatricians at the New York Medical College, have assembled quite a bit of information on the physiology and biochemistry of skin surface pH and the regulation of this function during the early part of life. The chapters are well organized and cover the subject with respect to both the healthy and pathologic states. The early chapters on the growth and development of the sweat and sebaceous glands are particularly useful as background information for the rest of the book. The authors present evidence that pH measurement of the skin surface of the axillary vault can be used as a measure of assessing sexual maturation. They also describe potentiometric and colorimetric procedures for determining skin surface pH. Although, at first glance, the title would indicate that the scope of the book would appeal to a very limited group, it is fair to say that the subject matter should be of interest to a larger audience, including morphologists, biologists, physiologists, dermatologists, and pediatricians. **Burton S. Sherman, Ph.D.**

Contemporary Ophthalmology. Honoring Sir Stewart Duke-Elder. Edited by John G. Bellows, M.D., Ph.D. Quarto of 554 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $34.75.

The first 15 pages are tributes to Sir Stewart Duke-Elder, an ophthalmologist of world eminence and the author of a 15-volume "System of Ophthalmology" considered the "bible" of this specialty. In the rest of the book 85 ophthalmologists, experts in their subspecialties, from all over the world, have contributed 65 articles on a wide-range of topics classified under eight groupings starting with "External Inflammatory Diseases" and ending with "Genetics, Biochemistry, and Blindness." Only a few are reprints from ophthalmic journals. The topics are geared for the most part to the practicing ophthalmologist and cover the newest concepts and improvements in the management of glaucoma, cataract, strabismus, diabetic retinopathy, intraocular tumor, plastic surgery, congenital retinoschisis, senile macular degeneration, and such. This is a valuable book that bridges the gap between the standard textbook and up to the minute innovations, and should be in the library of all ophthalmologists. **Jesse M. Levitt, M.D.**

Trophoblastic Neoplasia. Its Basic and Clinical Aspects. By Toshio Hasegawa, M.D. Quarto of 395 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $26.50.

In a conference on the chemotherapy of choriocarcinoma, held in the Philippines in 1965, the term "trophoblastic" or "chorionic neoplasia" originated. These are the fetal tumors or new growths, consisting of syncytial and Langhans cells of fetal ectodermal origin in a state, as in hydatidiform mole or chorioepithelioma. In order to conduct investigations into the natural history of this neoplasia, an annual symposium was inaugurated. This volume commemorates the 15th anniversary of the founding of The Chorionic Tumor Committee.

The author concludes from the results of chromosomal studies that each disease constituting trophoblastic neoplasia is considered one of a series of diseases closely connected with each other, rather than one entirely independent of itself. Hydatidiform mole is regarded as a disease belonging to a category of trophoblastic neoplasia.

The author discusses the subject in several phases: (1) General concepts, including basic studies with histochemical aspects, tissue culture, and experimental induction of trophoblastic neoplasia. (2) Hydatidiform mole. (3) Chorioepithelioma.

The discussion is complete in all sections and includes the symptomatology, diagnosis, prognosis, and treatment. The author places special emphasis on chemotherapy, although other modalities of treatment are quite complete.

The entire book is well printed and the illustrations are excellent. This monograph should be an excellent reference source for gynecologists and surgeons. **Alan A. Kane, M.D.**

Changing Concepts in Cardiovascular Disease. Edited by Henry I. Russek, M.D., and Burton L. Zohman, M.D. Octavo of 469 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $23.75.

Toward the end of 1970, the American College of Cardiology and St. Barnabas Hospital collaborated on a highly successful 3-day symposium in New York City entitled "New Frontiers in Cardiovascular Disease." This textbook contains the edited proceedings of the concerted efforts of 56 outstanding clinicians and investigators. At this meeting, the authors successfully presented the latest concepts and technics in this field. The 37 articles are primarily concerned with ischemic heart disease. However, thromboembolism, pulmonary heart disease, essential hypertension, intractable heart disease, cardiomyopathies, and new drugs are also given adequate consideration. Of special interest is the section related to priorities in cardiovascular research (treatment of hyperlipoproteinemias and arterial hypertension and prevention of coronary artery thrombosis).

Despite all these monumental gains, the reader may become depressed by the lack of any clear evidence supporting improved trends in mortality or longevity. A major but unavoidable failing of this type of presentation is the inevitable long delay in the publication of the papers on "recent achievements in the medical and surgical cardiology" (eighteen months). However, the presentations are generally easy to absorb and the text is profusely illustrated and well indexed.

This textbook should provide a most useful source of reference to new and important aspects of cardiology. Although its major appeal is for the cardiologist, it is highly recommended for the general practitioner and resident staff. **Nathaniel E. Reich, M.D.**

Instructional Course Lectures. American Academy of Orthopaedic Surgeons. Volume XX, 1971. Quarto of 244 pages, illustrated. St. Louis, Missouri, C. V. Mosby Company, 1971. Cloth, $21.50.

The editors and publishers should be commended on the papers, topography, and fine reproduction of illustrations selected from the instructional course section of the American Academy of Orthopedic Surgeons annual meeting of 1970. There are 21 papers divided into 12 subjects.

The recognition and orthopedic management of cerebral palsy, the painful shoulder, and osteoarthritis of the hip take up the largest sections of the book, with smaller sections devoted to orthopedic infections, orthopedic management of hemophilia, fractures of the radius and ulna, surgery of the knee, synovial fluid and synovial membrane abnormalities in arthritis of the knee joint. The authors all give lucid presentations of their subjects.

Residents in rehabilitation medicine and physicians in cerebral palsy clinics will profit by close reading of this book. Orthopedic surgeons and residents will do well to read and reread the chapters on evaluation and surgical management of spastic cerebral palsy before picking up a scalpel. **Herbert Berner, M.D.**

The Human Nervous System. An Anatomic Viewpoint. By Murray L. Barr, M.D. Quarto of 413 pages, illustrated. Hagerstown, Maryland, Medical Department, Harper & Row, 1972. Cloth, $17.50.

This new text in the field of neuroanatomy is an exceptionally well written book but is not organized in a manner which will be ideal for many medical school courses.

The major portion of the book is concerned with regional anatomy of the spinal cord and brain, while there is only a relatively brief section on a systemic approach. Consequently, courses which emphasize functional systems may not find this to be an ideal text.

The photographs of cord and brain stem sections as well as gross dissections are generally very good, although it would be helpful if some were magnified to a little greater degree.

The drawings are clear but tend to be oversimplified so that in some instances it is difficult to relate them to the actual anatomy.

The Glossary of Neuroanatomical Terms and the identification of investigators which are mentioned primarily in eponyms is a very excellent addition to the book which could well be noted by other authors of anatomic texts.

In summary, this book should fit in well with many although not all courses in neuroanatomy for medical, dental, and physical therapy students. There is enough emphasis placed on commonly occurring clinical conditions which will point up the importance of this discipline and will provide information which will be useful in subsequent more clinically oriented courses. **George B. Talbert, Ph.D.**

Letters to the Editor

Correction

To the Editor: In spite of the fact that omission was made in not mentioning the Suffolk Rehabilitation Center, and not giving full credit for the scope of activities in the United Cerebral Palsy Center, the wording of "Multihandicapped Children's Center" [***New York State Journal of Medicine*** 72: 1031 (May 1) 1972] appeared to have created the greatest of all misunderstandings. Unfortunately we were unable to find a better expression to express the purpose of our program, and since the term, Multihandicapped Children's Center, has been in use in the past to describe the multidisciplinary rehabilitation programs for the neuromuscularly handicapped, a false impression was created. The Child Development Center ventures farther than a good rehabilitation program, even when such a program has access to a broad scope of diagnostic and treatment facilities in the best medical tradition. Our concept was to include comprehensive facilities for learning disabilities, school problems, behavioral and emotional problems along with the neuromuscularly handicapped in a multidisciplinary investigation of such children. Physical disabilities and treatment programs constitute about 50 per cent of the case load handled at the Child Development Center.

Much of the diagnostic facilities are probably identical with the services offered at other rehabilitation centers except that the Child Development Center is attached to a major teaching hospital providing a broad scope of diagnostic facilities and hospital-based diagnostic and corrective technics being immediately available. This also means the utilization of the multitude of consultants on a teaching hospital's staff. Psychiatric in- and outpatient services are in close cooperation with the Child Development Center sharing many of the key services. Children who are discharged after critical illness or for congenital birth defects are immediately referred to the center providing uninterrupted continuity of their medical care, often being cared for by the same team. This concept is not new but followed through only at the Nassau County Medical Center in such a comprehensive fashion so far.

Another broad and long neglected group cared for here are the great number of multihandicapped children whose behavioral, scholastic, and medical profile indicates problems not so much in performing normal physical activities but signals of serious danger in later success in life. Such children are traditionally not regarded as multihandicapped children, yet the combination of emotional, physical, and intellectual factors may make them so. This group of children are now evaluated by the team of multidisciplinary specialists, and the necessary remedial steps are either administered by the center or located in the community with follow-up visits assuring continuum at the Child Development Center. The community is intimately involved in this program of psychoeducational rehabilitation.

The Child Development Center has a harmonious and intimate working arrangement with both the Board of Cooperative Educational Services and with the individual school districts. Key personnel from both areas regularly participate in conferencing and following up their referrals, thereby building a partnership with the Child Development Center. We regard such children also multihandicapped, hence the use of the term in our paper.

It is evident from this partial description that the Child Development Center tried to realize the concept of the total care for the child through the entire spectrum from the severely handicapped to basically normal but deprived or maladjusted school child.

The article was an early report of the first years' statistical profile and did not endeavor an exhausting description of the facilities. It is most regrettable that the two outstanding institutions did not receive the proper credit in the article, and I would like to request you to make any corrections which you judge as appropriate.

My personal belief is that if an error is made, it should be rectified, but the job is so great and the need for mutual support among the few agencies who participate in the care of the handicapped is so self-evident, that any competitive approach to the task would be self-defeating and irrelevant.

Thank you for your help and cooperation.

STEVEN MAITINSKY, M.D.
Director, Child Development Center
Nassau County Medical Center
Plainview Division
1425 Old Country Road
Plainview, New York 11803

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Abstracts in Interlingua

Levin, D. C., e Baltaxe, H. A.: Effecto del contraste radio-opac supra le pression diastolic final del ventriculo sinestre, ***New York State J. Med.*** 72: 2619 (1 de Novembre) 1972.

Cinquanta (50) patientes con arteriographia coronari e ventriculographia sinestre esseva studiate. Habeva un bon corelation inter le reposo initial del pression diastolic final del ventriculo sinestre (PDFVS) e le grado del morbo cardiac ischemic. Habeva un significative elevation del PDFVS depost le arteriographia coronari selective, e un secunde elevation depost del ventriculographia. Le autores insiste que le function del ventriculo sinestre debe esser determinate ante de injectar qualunque material de contraste radiologic. Le grado de elevation del PDFVS non es considerate valide como test de effortio pro evalutar le travalio del ventriculo sinestre.

Flamm, E. S., Rovit, R. L., Kricheff, I. I., e Ransohoff, J., II: Neoplasmas periaqueductal e malformationes vascular, ***New York State J. Med.*** 72: 2623 (1 de Novembre) 1972.

Le historias clinic de 7 patientes con tumores del cerebro medie causante de obstruction aqueductal es revidite. Duo (2) patientes habeva malformationes vascular cingente le aqueduct, altere habeva un glioma periaqueductal, e le restante quatro (4) habeva le suspicion de tener gliomas periaqueductal supra le base de studios radiologic de contraste. Le symptoma predominante esseva dolor del capite. Le altere sol symptomas universal esseva illos relative al pression intracranial elevate. Papilledema e nystagmus esseva manifestationes neurologic commun. Le revision complete del litteratura permite relationar le trovatos actual con illos de altere autores. Le ventriculographia con Pantopaque es indispensabile pro le diagnose de obstruction aqueductal. Le tractamento primari ha essite le anastomoses usate in altere casos de hydrocephalus non communicante. Si un glioma es suspectate, le radiotherapia es consiliate, e le chimiotherapia debe esser usate si le symptomas reappare.

Ariel, I. M.: Tractamento del metastases hepatic de cancer del recto e colon mediante le injection intravenose de 5-fluorouracilo in le vena unbilical, ***New York State J. Med.*** 72: 2629 (1 de Novembre) 1972.

In iste studio es commentate le tractamento con 5-fluorouracilo injectate in le vena umbilical de 20 patientes con metastases hepatic provenente de un cancer primari del recto o colon. Apparentemente, non habeva avantages al administrar le composto via le vena umbilical supra le injection in un vena peripheric; pro isto, le methodo ha essite discontinuate. Le factores que poteva haber intervenite in iste fallimento es commentate.

Fish, J. B.: Osteotomia cuneiforme in le tractamento del epiphysis capital femoral glissate, ***New York State J. Med.*** 72: 2633 (1 de Novembre) 1972.

Le osteotomia cuneiforme es le methodo therapeutic preferite del glissamento del capite femoral. In iste articulo, le operation es describite in detalio. Usa se varie reportos pro illustrar le efficatia del operation. Le osteotomia cuneiforme es le sol methodo de tractamento que restaura le relation normal inter le capita e le collo femoral.

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Basic Science 6
Cancer 3, 4, 6
Cardiology 4
Dermatology 5
Family Practice 3, 4, 5
Gastroenterology 5
Genetics 3
Hematology 2, 3
Historical Medicine 2
Internal Medicine 5
Medicine 2, 4, 6, 7, 8
Neurology 4, 5
Obstetrics/Gynecology 4, 5, 7
Occupational Medicine 5
Ophthalmology 5, 8
Orthopedics 5
Otology 6
Otolaryngology 5
Pathology 5
Pediatrics 2, 3, 5, 7
Psychiatry 2, 4, 7, 8
Public Health 5
Pulmonary Disease 3, 5, 6
Radiology 6
Rehabilitation 5, 8
Space Medicine 5
Surgery 5, 6
Urology 2, 5
Legislation, Workmen's Compensation, etc. 5, 8

The Deadline Dates for 1972 are as follows:

Meeting Dates	*Deadline Dates*
November 16–30	September 25
December 1–15	October 10
December 16–31	October 25

NEW YORK CITY AREA

WEDNESDAY, NOVEMBER 15

9:00 a.m.–5:00 p.m.

Downstate Medical Center

First Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

THE BIOLOGY OF OSTEOARTHRITIS
Teaching Day in Rheumatic Disease

LEON SOKOLOFF, M.D.
National Institute of Arthritis, Metabolism, and Digestive Diseases
CHARLES M. PLOTZ, M.D.
and Invited Lecturers

NO FEE CREDIT: 7 Prescribed hours AAFP

To register, contact CHARLES M. PLOTZ, M.D., Dir. Continuing Education, above address; tel. (212) 270-2421

11:00 a.m.

Jewish Memorial Hospital

Broadway and 196th Street

Pediatric Conference

NEONATAL INTESTINAL OBSTRUCTION

KEITH M. SCHNEIDER, M.D.
Albert Einstein College of Medicine

4:00–5:30 p.m.

Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

COAGULATION AND DISORDERS OF COAGULATION

SAMUEL MELAMED, M.D.
Montefiore Hospital

NO FEE CREDIT: 1½ hours AAFP

4:00–5:00 p.m.

Flushing Hospital and Medical Center

First Floor Conference Room
Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lecture

INFECTION IN THE NEONATAL PERIOD AND EARLY INFANCY

J. KELLY SMITH, M.D.
North Shore Hospital

8:00 p.m.

The New York Allergy Society

Hotel Commodore
Forty-Second Street

IMMUNOGLOBIN SUBCLASSES: STRUCTURE AND FUNCTION

J. DONALD CAPRA, M.D.
Mount Sinai School of Medicine

8:30 p.m.

The New York Academy of Medicine

Section on Historical Medicine
2 East 103rd Street

EDWARD JENNER, JOHN HUNTER, AND FIELDING GARRISON: AN HISTORIC MUDDLE

IAGO GALDSTON, M.D.
Fairfield Hills Hospital
Newtown, Connecticut

8:30 p.m.

The New York Academy of Medicine

Section on Urology
2 East 103rd Street

1. **The Management of Coronal Hypospadias and Related Problems**
   TERRY D. ALLEN, Dallas, Texas
2. **Experiences with the Hodgson Repair for Hypospadias**
   NORMAN B. HODGSON, M.D., Milwaukee, Wisconsin

Discussant:

EDWARD C. MUECKE, M.D., New York, N.Y.

THURSDAY, NOVEMBER 16

8:00 p.m.

The Harvey Society in Affiliation with The New York Academy of Medicine

Caspary Hall
Rockefeller University
York Avenue at 66th Street

ANATOMY AND PHYSIOLOGY OF A REGULATORY ENZYME ASPARTATE TRANSCARBAMYLASE

HOWARD K. SCHACHMAN, Ph.D.
University of California, Berkeley

8:30 p.m.

Postgraduate Center for Mental Health

124 East 28th Street

Specialty Training Program

in Psychoanalytic Medicine

CHRONIC ANALYSTS AND CHRONIC PATIENTS: THE THERAPIST'S PERSON AS INSTRUMENT

HAROLD KELMAN, M.D., Dean

Discussant:

MORTON B. CANTOR, M.D., Associate Dean

9:00-11:00 p.m

Albert Einstein College of Medicine

1300 Morris Park Avenue
The Forchheimer Building, 1st Floor Lecture Hall
Bronx

HEMATOLOGY

SAUL MOROFF, M.D.

Note: This lecture is part of the Annual Postgraduate Course in Family Practice. Next meeting December 7, 1972

Contact: MRS. FRIEDA FAGIN, Office of Continuing Education, above address.

FRIDAY, NOVEMBER 17

8:00-9:30 a.m.

Maimonides Medical Center

4802 Tenth Avenue
Brooklyn

CANCER OF THE RECTUM, OFFICE DIAGNOSIS STRESSED

SIDNEY LIPTON, M.D.

Note: This Lecture is part of the Course for General Practitioners and Pediatricians which started October 13.

SATURDAY, NOVEMBER 18

1:00-6:00 p.m.

French and Polyclinic Medical School

345 West 50th Street

HUMAN GENETICS

ERNEST LEIBER, M.D.

November 20 and 27, 1972

3:30 p.m., Mondays

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

November 20

Small Airway Disease

ALBERT MILLER, M.D.
Mount Sinai School of Medicine

November 27

Diabetic Hyperosmolar Coma

ROBERT MATZ, M.D.
Morrisania Hospital

November 21 and 28, 1972

8:00-9:00 a.m., Tuesdays

The American Academy of Family Physicians

Richmond Chapter
The Staten Island Hospital
101 Castleton Avenue
Staten Island

Postgraduate Lectures on Oncology

November 21

Solid Tumors

T. CARBONARO, M.D.

November 28

Use of Cytotoxic Agent in Neoplastic Disease

T. McGINN, M.D.

November 21 and 28, 1972

9:00 a.m., Tuesdays

Queens Hospital Center Affiliation

Long Island Jewish-Hillside Medical Center
Triboro Hospital
Parsons Boulevard and 82nd Drive
Jamaica

November 21

Multiple Lung Cancers

N. S. SERIFF, M.D.

November 29

Pulmonary Complications of Hodgkin's Disease

R. LIEVANO, M.D.

November 21 and 28, 1972

10:00 a.m., Tuesdays

Maimonides Medical Center

Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

Pediatric Conferences

November 21

Observations on Heroin and Methadone Withdrawal in the Newborn

RITA GILMAN HARPER, M.D.
Downstate Medical Center

November 28

Clinical Pathological Conference

TUESDAY, NOVEMBER 28

9:00 a.m.

New York Infirmary

Toscanini Room
Stuyvesant Square East and 15th Street

NEWER TREATMENT OF LYMPHOMAS

ARIEL DISTENFELD, M.D.
N.Y.U. Medical Center

November 28, 1972 / for 20 Sessions

8:00–10:00 p.m., Tuesdays

Department of Psychiatry

New York Medical College
5 East 102nd Street

Postgraduate Course

DIAGNOSIS AND TREATMENT OF SEXUAL DISORDERS

FEE: $300

For information, write or call: BENJAMIN J. SADOCK, M.D., Chief of Continuing Education in Psychiatry and Director, Division of Group Process, New York Medical College, above address. Tel. (212) EN 9-7900.

November 29 and December 6, 1972

8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis

329 East 62nd Street

THE MANAGEMENT OF DEPRESSION IN MEDICAL PRACTICE

JASON MILLER and CYRUS LOVERRO, M.D.'s

WEDNESDAY, NOVEMBER 29

8:30 p.m.

Association for the Advancement of Psychoanalysis

329 East 62nd Street

THE FEAR OF ABANDONMENT

WARREN J. MUHLFELDER, M.D.
North Dauphin County Mental Health
and Mental Retardation Center

Discussant:

BELLA S. VAN BARK, M.D.

SUBSCRIPTION

Subscriptions to "WHAT GOES ON" are being offered at less than cost. The $3.00 one-year subscription rate guarantees you 22 issues mailed first class in advance of the *New York State Journal of Medicine*. Write or call the Editor for an order blank.

THURSDAY, NOVEMBER 30

9:00 p.m.

Bronx Chapter AAFP

New York Heart Association and
Misericordia Hospital Medical Center
School of Nursing Auditorium
Bronx

MANAGEMENT OF ACUTE M.I. AND COMPLICATIONS

ROBERT F. GOMPRECHT, M.D.

FUTURE EVENTS

December 7 and 8, 1972

8:00 a.m.–3:00 p.m., Thursday and Friday

French and Polyclinic Medical School

345 West 50th Street

ENDOSCOPY IN GYNECOLOGY AND INFERTILITY

MAXWELL ROLAND, M.D.

December 7 / 9, 1972

9:00 a.m.–4:30 p.m.

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
Fifth Avenue and 100th Street

NEUROCHEMISTRY

GERARD M. LEHRER, M.D.
and Faculty

FEE: $50

SUNDAY, DECEMBER 10

9:00 a.m.–4:00 p.m.

French and Polyclinic Medical School

345 West 50th Street

MANAGEMENT OF TERMINAL CANCER
A Seminar for General Practitioners

ALVIN M. GELB, M.D.
and Invited Lecturers

FEE: $15

For Further information, address: The Dean, above address.

January 6 / 27, 1973

10:00 a.m.–5:00 p.m., 4 Saturdays

Columbia University P & S

630 West 168th Street

HYPNOSIS AND PSYCHIATRY

Under the Direction of

HERBERT SPIEGEL, M.D. with A. A. BRIDGER, M.D.

With Guest Lecturers

RALPH V. AUGUST, LEWIS JACOBS, RONALD KATZ, HANS KRAUS, MARTIN T. ORNE, E. E. ROCKEY, HERBERT E. WALKER and L. S. WOLFE, M.D.'s

FEE: $100

For further information and application forms, write to MELVIN D. YAHR, M.D., Associate Dean, above address.

January 13 / March 17, 1973

10:00 a.m.-12:00 noon, Saturdays

Downstate Medical Center

Second Floor Lecture Room
450 Clarkson Avenue
Brooklyn

HOSPITAL ADMITTING OFFICE MANAGEMENT I

MR. MURRAY RIMMER, B.A., WITH MR. DWIGHT D. DIXON, B.B.A., and invited lecturers

FEE: $35

To register, contact: MR. DWIGHT D. DIXON, Chm., College of Health Related Professions, above address.

January 15 / June 25, 1973

8:00-10:00 p.m., Mondays

Downstate Medical Center

Second Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

SURGICAL ANATOMY

RAYMOND K. J. LOUMANEN, M.D.

FEE: $125

To register, contact: CHARLES M. PLOTZ, M.D., Dir., Continuing Education, above address.

February 11 / 14, 1973

Medical Society of the State of New York

Hotel Americana, New York City

ANNUAL CONVENTION

SCHEDULE OF SCIENTIFIC MEETINGS

SUNDAY, FEBRUARY 11

10 A.M. **GENERAL SESSION**, Royal Ballroom
ARCHIVES, Versailles Ballroom
OPHTHALMOLOGY, Versailles Terrace

2 P.M. **ANESTHESIOLOGY**, Versailles Terrace

MONDAY, FEBRUARY 12

9 A.M. **(DATA PROCESSING IN MEDICINE)** .... joint meeting
(PATHOLOGY, CLINICAL PATH., & BLOOD BANKING), Versailles Terrace
DERMATOLOGY & SYPHILOLOGY, Royal Ballroom B
GASTROENTEROLOGY & PROCTOLOGY, Royal Ballroom A
SCHOOL HEALTH, Princess Room
(PLASTIC & RECONSTRUCTIVE SURGERY)
(UROLOGY) ...... joint meeting, Versailles Ballroom

2 P.M. **GENERAL SESSION**, Royal Ballroom A
NEUROLOGY, Royal Ballroom B
(ORTHOPEDIC SURGERY)
(PEDIATRICS) .... joint meeting, Versailles Ballroom

TUESDAY, FEBRUARY 13

9 A.M. **CHEST DISEASES**, Versailles Terrace
(FAMILY & GENERAL PRACTICE)
(PSYCHIATRY) ... joint meeting, Versailles Ballroom
OBSTETRICS & GYNECOLOGY, Royal Ballroom A
PHYSICAL MEDICINE & REHABILITATION, Royal Ballroom B

2 P.M. **GENERAL SESSION**, Royal Ballroom A
MEDICAL LEGAL & WORKMEN'S COMP. MATTERS, Royal Ballroom B
OCCUPATIONAL MEDICINE, Versailles Ballroom
SPACE MEDICINE, Versailles Terrace

WEDNESDAY, FEBRUARY 14

8:45 **INTERNAL MEDICINE**, Royal Ballroom

9 A.M. **ALLERGY**, Princess Room
NEUROSURGERY, Versailles Terrace
PREVENTIVE MEDICINE & PUBLIC HEALTH, Versailles Ballroom

2 P.M. **GENERAL SESSION**, Royal Ballroom
OTOLARYNGOLOGY, Versailles

Ballroom
RADIOLOGY, Versailles Terrace
SURGERY, Princess Room

SCIENTIFIC MOTION PICTURES AND SCIENTIFIC AND TECHNICAL EXHIBITS, SUNDAY through WEDNESDAY, February 11 through 14, open at 9 A.M., close at 5 P.M. SCIENTIFIC MEETING ROOMS, 2nd Floor. EXHIBITS, MOTION PICTURES, Albert Hall, Lower Lobby.

For further information and complete program, see New York State Journal of Medicine, January 1, 1973, or write Medical Society of the State of New York, 420 Lakeville Road, Lake Success, N.Y. 11040.

April 12 and 13, 1973

Columbia University P & S
630 West 168th Street

AN INTRODUCTION TO DIAGNOSTIC ULTRASOUND

Under the Direction of:

DONALD L. KING, M.D.

Write: MELVIN D. YAHR, Associate Dean.

April 23 / 27, 1973

Brooklyn Eye and Ear Hospital
29 Greene Avenue
Brooklyn

TYMPANOPLASTY COURSE

Under the Direction of:

ADOLPH WOLFERMAN, M.D.

FEE: $350 (limited to 8 participants)

To apply, write to MISS TRUDI CURRY, Secretary to the Executive Administrator, above address.

ALBANY AREA FUTURE EVENT

January 5 / 22, 1973

Albany Medical College
Department of Postgraduate Medicine

14th POSTGRADUATE MEDICAL SEMINAR CRUISE

An 11-day cruise from New York aboard the "Gripsholm" of the Swedish American Line.

Faculty of the Albany Medical College will present a comprehensive shipboard postgraduate program, covering subjects in pediatrics, psychiatry, surgery, hematology and physiology.

For information write to: FRANK M. WOLSEY, JR., M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

BROOME COUNTY

November 16 / December 7, 1972
11:00 a.m., Thursdays

Charles S. Wilson Memorial Hospital
Johnson City

BASIC SCIENCE SEMINARS

Conducted by Upstate Medical Center at Syracuse

TOPICS AND SPEAKERS TO BE ANNOUNCED

CREDIT: Category I AAFP

Medical Grand Rounds will be held at 10:00 a.m., preceding each of the above sessions.

BUFFALO AREA

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE LAKES AREA REGIONAL MEDICAL PROGRAM

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany, and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in two series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 a.m. on Tuesdays.
2. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.

For further information, contact the State University of New York at Buffalo, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

NASSAU COUNTY

WEDNESDAY, NOVEMBER 15

8:00–10:00 a.m.

Mercy Hospital
MacArthur Auditorium
Rockville Centre

SHOCK LUNG

JAMES W. WILSON, M.D.
Duke University Medical Center

November 15 / 29, 1972
4:00 p.m., Wednesdays

Nassau County Medical Center—Meadowbrook Hospital

Radiology Department Classroom
2201 Hempstead Turnpike
East Meadow

Guest Lecture Series

November 15

Legg-Perthes' Disease

RICHARD LASKIN, M.D.

November 22

Extragastric Masses

ROBERT HOCHSTIM, M.D.
South Nassau Communities Hospital

November 29

Inflammatory Diseases of the Colon

DAVID FAEGENBURG, M.D.
Nassau Hospital

November 16 and 30, 1972

11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center

Recreation Activities Building

Pediatric Postgraduate Series

November 16

The Recognition and Management of Agranulocytic Infection

DONALD FERNBACH, M.D.
Baylor College of Medicine, Texas

November 30

Recent Advances in Neuromuscular Diseases

W. KING ENGEL, M.D.
National Institute of Neurological Diseases and Stroke

MONDAY, NOVEMBER 27

8:15 p.m.

The Long Island Psychoanalytic Society

Nassau Academy of Medicine
1200 Stewart Avenue
Farden City

THE CHOICE OF SYMBOLS

ELEANOR GALENSON, ROBERT MILLER and HERMAN ROIPHE, M.D.'s

Discussant:

JUDITH KESTENBERG, M.D.

WEDNESDAY, NOVEMBER 29

9:00–10:00 a.m.

Mercy Hospital

MacArthur Auditorium
Rockville Centre

NEPHROTIC SYNDROME: DIFFERENCE AND DIFFERENTIAL DIAGNOSIS

GADDO ONESTI, M.D.

ROCKLAND COUNTY

MONDAY, NOVEMBER 20

9:00 p.m.

Good Samaritan Hospital

Department of Pediatrics
Educational Building
Suffern

NEW CONCEPTS IN VIROLOGY

LOUIS COOPER, M.D.

WESTCHESTER COUNTY

WEDNESDAY, NOVEMBER 15

2:00 p.m.

American College of Obstetricians and Gynecologists, District II, Section 7

Westchester Obstetrical and Gynecological Society
Department of Ob/Gyn, New York Medical College
Division of Ob/Gyn, Grasslands Hospital
Grasslands Campus
Valhalla

1st Annual

OBSTETRICAL AND GYNECOLOGICAL REGIONAL POSTGRADUATE MEETING

1. **Fetal Maturity and Intrauterine Diagnosis**

   ALLAN B. WEINGOLD, M.D. and WALTER L. FREEDMAN, M.D.

2. **Choice of the Proper Contraceptive Agent**

   HOWARD C. BALIN, M.D.

3. **Cervical Dysplasia and Carcinoma In Situ**

   ALEXANDER SEDLIS, M.D., LEOPOLD G. KOSS, M.D., RALPH M. RICHART, M.D.

Evening Session

5:30 p.m. at The Hilton Inn, Tarrytown

After Dinner Scientific Session

THE MANAGEMENT OF SEXUAL INADEQUACY

Please address all correspondence to WALTER L. FREEDMAN, M.D., Director, Division of Obstetrics and Gynecology, Grasslands Hospital, Valhalla, N.Y. 10595. Telephone: (914) LY 2-8500, ext. 2794.

OTHER PLACES

November 19 / 22, 1972

Pan American Medical Association

Deauville Hotel
Miami, Florida

47th ANNIVERSARY CONGRESS

Write for Program: JOSEPH J. ELLER, M.D.
Director General, PAMA, 745 Fifth Avenue,
New York, N.Y. 10022

November 25 / 30, 1972

New York Medical College

Department of Ophthalmology
Sharon Towers Hotel
Herzliya, Israel

INTERNATIONAL SYMPOSIUM ON METABOLIC EYE DISEASES

Write: Department of Ophthalmology, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029.

February 15 / 24, 1973

New York Medical College

Department of Ophthalmology
Princess Hotel
Acapulco

Fourth Annual Seminar

CONTROVERSIAL ASPECTS IN OPHTHALMOLOGY

Further information may be obtained by writing: Department of Ophthalmology, New York Medical College, 1249 Fifth Avenue, New York, N.Y. 10029

PHYSICIANS' PLACEMENT

BROOKLYN, N.Y., Kings County. Part time Medical Director for Physician Associate Program capable of teaching physical diagnosis

CONTACT: ARNOLD LEWIS, M.D., The Brooklyn Hospital, 121 DeKalb Avenue, Brooklyn, N.Y. 11201.
Tel. (212) 270-4532.

PORT JERVIS, N.Y., Orange County. Surgeon and G.P.'s to be associated with hospital.
CONTACT: DANIEL P. SCHULTZ, M.D., Doctors Sunnyside Hospital, 140-160 Hammond Street, Port Jervis, N.Y. 12771. Tel. (914) 856-5121.

EVENTS RECEIVED AFTER DEADLINE

WEDNESDAY, NOVEMBER 1

8:00–9:00 p.m.

The New York Academy of Medicine, Section on Physical Medicine and Rehabilitation with

The New York Society of Physical Medicine and Rehabilitation
2 East 103rd Street

NEUROSURGICAL TREATMENT OF THE OCCLUSIVE VASCULAR DISEASED PATIENT

LEONARD MALIS, M.D.
Mount Sinai School of Medicine

BUFFALO AREA

School of Medicine

State University of New York at Buffalo

FALL 1972 CONTINUING MEDICAL EDUCATION LECTURE CONFERENCE PROGRAMS

The School of Medicine of the State University of New York at Buffalo offers a variety of programs including disease-oriented programs for all physicians, specialized programs for specialists and multidiscipline programs for physicians, nurses and other health professionals. All offer the chance for direct interchange of information and opinion among participants and faculty in formal and informal settings.

Sites

Programs are presented at hotels and at hospitals.

Fees

The fee for each program is determined by its content, duration and location. When a program is funded by a sponsoring organization the fee is nominal.

Accreditation

The programs are accredited by the Council on Medical Education of the American Medical Association. Most of the programs will also have the approval of the American Academy of Family Physicians. A certificate of attendance is issued for each program.

DECEMBER 1–2

Health Legislation **Statler Hilton Hotel**

DECEMBER 9

Sexual Problems in Marriage
Statler Hilton Hote

POSTGRADUATE PROGRAM IN PEDIATRICS

In 1972 The Children's Hospital of Buffalo again offer its program of postgraduate education in pediatrics, combining tutorial instruction and the opportunity to becom integrally involved in clinical services at the hospita for 4–8 weeks. General practitioners and pediatrician accepted become immediately involved in evaluation an treatment of patients and will be able to concentrate o one of seven specialized areas: cardiology, endocrinolog general pediatrics, metabolic diseases, mental retardatio nephrology and radiology. Each participant's program i individually planned to meet his interests and requirements.

Candidates are requested to apply early, specifyin subspecialty in which they are interested. Special co sideration is given candidates from rural areas. Pleas write Dr. Thomas Aceto, Jr., chairman of postgradua education, at Children's Hospital, 219 Bryant Stree Buffalo, New York 14222.

For information on above programs and preceptorship write:

Continuing Medical Education
2211 Main Street
Buffalo, New York 14214

Before deciding to make Valium (diazepam) part of your treatment plan, check on whether or not the patient is presently taking drugs and, if so, what his response has been. Along with the medical and social history, this information can help you determine initial dosage, the possibility of side effects and the ultimate prospects of success or failure.

While Valium can be a most helpful adjunct to your counseling, it should be prescribed only as long as excessive psychic tension persists and should be discontinued when you decide it has accomplished its therapeutic task. In general, when dosage guidelines are followed, Valium is well tolerated (see Dosage). For convenience it is available in 2-mg, 5-mg and 10-mg tablets.

Drowsiness, fatigue and ataxia have been the most commonly reported side effects.

Until response is determined, patients receiving Valium should be cautioned against engaging in hazardous occupations requiring complete mental alertness, such as driving or operating machinery.

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Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 100 and 500. All strengths also available in Tel-E-Dose® packages of 1000.

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- ☐ **phenobarbital—for associated anxiety and tension**

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Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.

Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.

Dosage: *Adults:* One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms.

Children 2 to 12 years: One-half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.

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(from the Greek **kinetikos**,
to move,
and the Latin **sedatus**,
to calm)

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New York State Journal of Medicine

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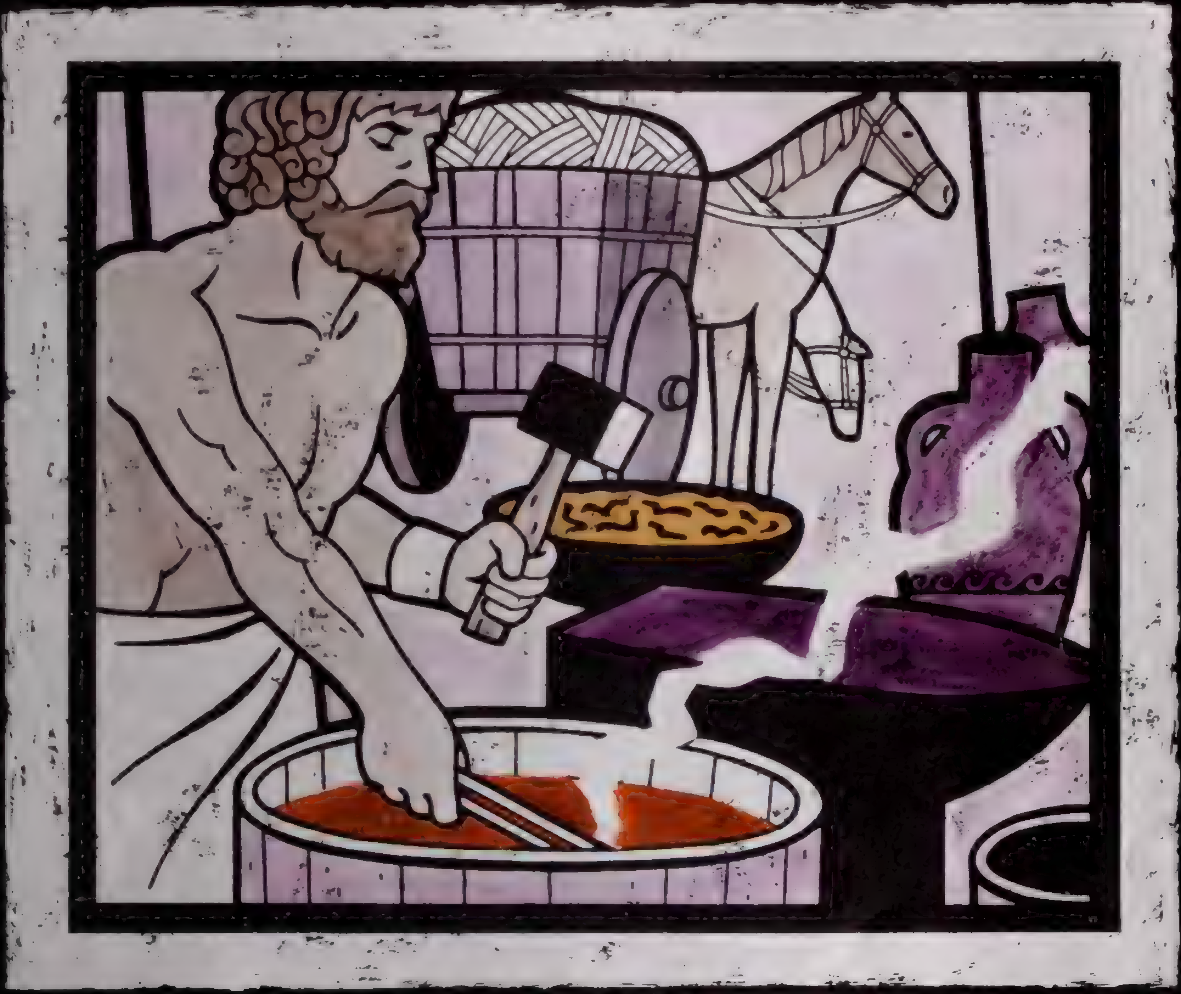

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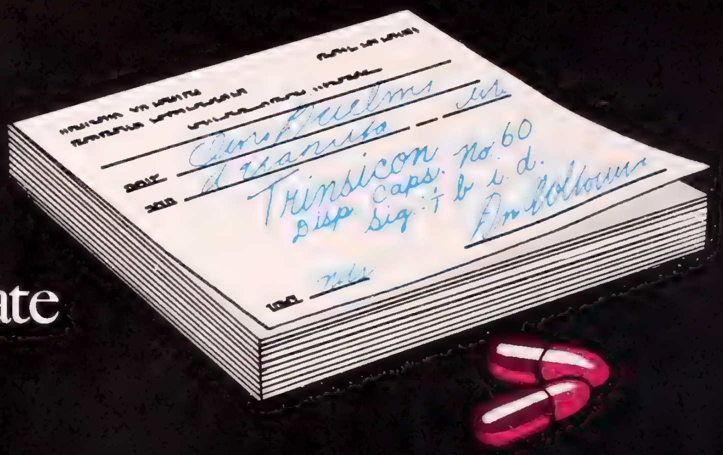
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Vitamin B_{12} with Intrinsic Factor—When secretion of intrinsic factor in gastric juice is inadequate or absent (e.g., in Addisonian pernicious anemia or after gastrectomy), vitamin B_{12} in physiological doses is absorbed poorly, if at all. The resulting deficiency of vitamin B_{12} leads to the clinical manifestations of pernicious anemia. Similar megaloblastic anemias may develop in fish tapeworm (*Diphyllobothrium latum*) infection or after a surgically created small-bowel blind loop; in these situations, treatment requires freeing the host of the parasites or bacteria which appear to compete for the available vitamin B_{12}. Strict vegetarianism and malabsorption syndromes may also lead to vitamin B_{12} deficiency. In the latter case, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient.

Potency of intrinsic factor concentrates is determined physiologically, i.e., by their use in patients with pernicious anemia. The liver-stomach concentrate with intrinsic factor and the vitamin B_{12} contained in two Pulvules Trinsicon provide 1½ times the minimum amount of therapeutic agent which, when given daily in an uncomplicated case of pernicious anemia, will produce a satisfactory reticulocyte response and relief of anemia and symptoms.

Concentrates of intrinsic factor derived from hog gastric, pyloric, and duodenal mucosa have been used successfully in patients who lack intrinsic factor. For example, Fouts *et al.* maintained patients with pernicious anemia in clinical remission with oral therapy (liver extracts or intrinsic factor concentrate with vitamin B_{12}) for as long as twenty-nine years.

After total gastrectomy, Ficarra found multifactor preparations taken orally to be "just as effective in maintaining blood levels as any medication that has to be administered parenterally." His study was based on twenty-four patients who had survived for five years after total gastrectomy for cancer and who had been taking two Pulvules Trinsicon daily.

Folic Acid—Folic acid deficiency is the immediate cause of most, if not all, cases of nutritional megaloblastic anemia and of the megaloblastic anemias of pregnancy and infancy; usually, it is also at least partially responsible for the megaloblastic anemias of malabsorption syndromes, e.g., tropical and nontropical sprue.

It is apparent that in vitamin B_{12} deficiency (e.g., pernicious anemia), lack of this vitamin results in impaired utilization of folic acid. There are other evidences of the close folic acid-vitamin B_{12} interrelationship: (1) B_{12} influences the storage, absorption, and utilization of folic acid, and (2), as a deficiency of B_{12} progresses, the requirement for folic acid increases. However, folic acid does not change the requirement for vitamin B_{12}.

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Contraindications and Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

Folic acid *alone* is unwarranted in the treatment of pure vitamin-B_{12}-deficiency states, such as pernicious anemia. Indeed, the use of folic acid in large doses in pernicious anemia without adequate vitamin B_{12} may result in hematologic remission but neurological progression.

As with all preparations containing intrinsic factor, resistance may develop in some cases of pernicious anemia to the potentiation of absorption of physiological doses of vitamin B_{12}. If resistance occurs, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient. No single regimen fits all cases, and the status of the patient observed in follow-up is the final criterion for adequacy of therapy. Periodic clinical and laboratory studies are considered essential and are recommended.

In extremely rare instances, skin rash suggesting allergy has been noted following the oral administration of liver-stomach material. Allergic sensitization has been reported following both oral and parenteral administration of folic acid.

Hemochromatosis and hemosiderosis are contraindications to iron therapy.

Adverse Reactions: In rare instances, iron in therapeutic doses produces gastrointestinal reactions, such as diarrhea or constipation. Reducing the dose and administering it with meals will minimize these effects in the iron-sensitive patient.

Dosage: One Pulvule twice a day. (Two Pulvules daily produce a standard response in the average uncomplicated case of pernicious anemia.)

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Abstracts

Safirstein, S. L.: Psychotherapy for geriatric patients, ***New York State J. Med.*** **72:** 2743 (Nov. 15) 1972.

Various aspects of the treatment of geriatric patients with psychotherapy are discussed and illustrated with 10 case reports. Three of the 10 patients are considered as chronic patients, still undergoing treatment, and 7 were given short-term therapy for crisis situations. Brief, goal-directed treatment is recommended. Ways to avoid the elderly patient's tendency to transfer dependence to the therapist are discussed.

Mones, R. J.: Parkinson's disease treated with L-dopa; three-year follow-up report, ***New York State J. Med.*** **72:** 2749 (Nov. 15) 1972.

Two-hundred forty-two patients with Parkinson's disease have been treated with L-dopa for two and one-half to three years. Only 89 of the original 242 patients are now clearly improved. Sixty-three patients who had responded initially to the drug have now had progression of their disease during maximal L-dopa therapy. Side effects of L-dopa limit the amount of the drug that can be taken, thus reducing the efficacy of L-dopa. This is particularly true of dyskinesias which occurred as a limiting factor in 63 patients. These data imply that L-dopa, although the drug of choice in parkinsonism, does not stop progression of the disease. Additional work is needed to determine the cause of parkinsonism and thus help in its elimination.

Kaunitz, V. H., and Trivedi, J. M.: Cardiopulmonary resuscitation in community hospital, ***New York State J. Med.*** **72:** 2751 (Nov. 15) 1972.

A small community hospital has devised a method of emergency resuscitation which can be carried out by interns and the attending nursing staff. The major components of the program are a continuing education program for nursing personnel and attending staff and an especially prepared emergency cart with all necessary supplies. Results were reasonably good; of 127 patients on whom resuscitative efforts were carried out, 46 were resuscitated and 26 were eventually discharged alive and well from the hospital.

Varkarakis, M. J., Bhanalaph, T., and Murphy, G. P.: Kidney involvement in neuroblastoma, ***New York State J. Med.*** **72:** 2753 (Nov. 15) 1972.

The urinary system can be involved in neuroblastoma by direct extension of the tumor or metastasis. In this study of 62 patients with neuroblastoma 27 showed involvement of the urinary system. Alterations also occurred chiefly from direct pressure effects by the tumor. Roentgenologic examination of the urinary system can provide useful prognostic information in patients with neuroblastomas, and intravenous pyelograms are valuable in evaluating extension and stage of the disease for the proper therapeutic considerations.

Abstracts in Interlingua

Safirstein, S. L.: Psychotherapia pro le patientes geriatric, ***New York State J. Med.*** **72:** 2743 (15 de Novembre) 1972.

Varie aspectos del tractamento psychotherapic del patientes geriatric es commentate e illustrate con le description de 10 casos. Tres de 10 patientes esseva considerate casos chronic, totavia in tractamento, e 7 habeva therapia de breve duration pro situationes critic. Un tractamento breve e ben dirigite es recommendate. Le modo de evitar le tendentia del patientes ancian a transferer su dependentia del therapista es commentate.

Mones, R. J.: Morbo de Parkinson tractate con L-dopa; Reporto supra 3 annos de observation, ***New York State J. Med.*** 72: 2749 (15 de Novembre) 1972.

Duo centos quaranta e duo (242) patientes con morbo de Parkinson esseva tractate con L-dopa durante duo e medio (2½) e tres (3) annos. Solmente 89 del 242 patientes original ha ora un evidente melioramento. Le 63 patientes que inicialmente respondeva al droga presenta ora un progresso del morbo durante le terapia maxima con L-dopa. Le effectos secondari de iste composto limitate le cantitate que pote tomar le patientes; iste reduce le efficatia del droga. Isto es particularmente ver in le caso de dyskinesias que esseva un factor limitante in 63 patientes. Iste observation implica que le L-dopa, ben que es le droga de election in le parkinsonismo, non pote arrestar le progresso del morbo. Es necessari un travalio additional pro deter-

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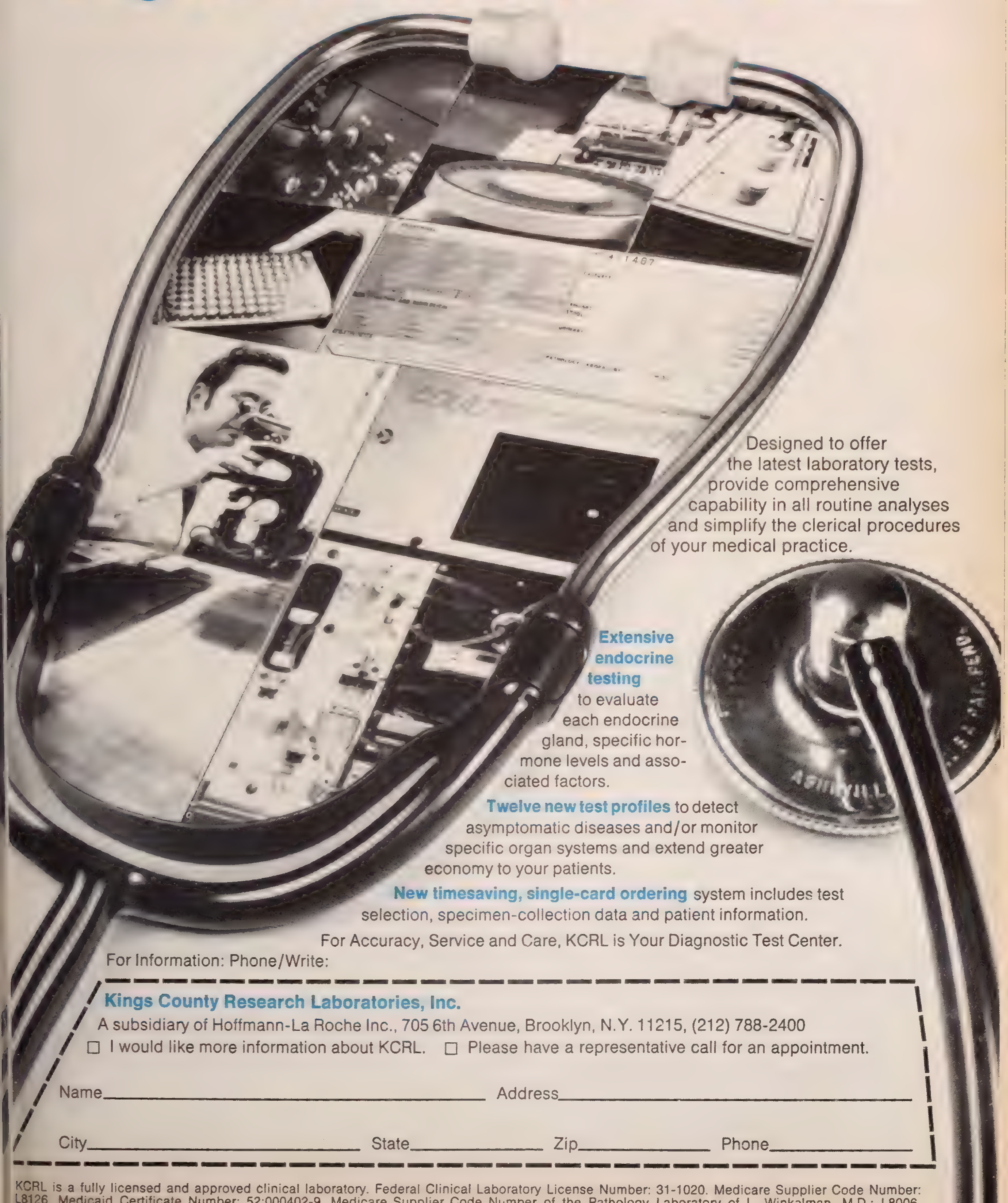

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Month in Washington

The American Medical Association supported a two-year extension of the federal National Health Service Corps program, under which Public Health Service personnel are assigned to areas with critical health manpower shortages.

Richard E. Palmer, M.D., a member of the AMA Board of Trustees, told the House Health Subcommittee, that the Association believed that the NHSC program, which got underway eighteen months ago, was having "an auspicious beginning" and promised "to help alleviate the maldistribution of health personnel affecting shortage areas." He said, "its capabilities for bringing needed services into shortage areas are yet to be fully demonstrated."

"Additional experience will permit a fuller evaluation of the program's potential," Dr. Palmer said. "In supporting the NHSC, however, we believe it is essential that incentives now contained in the program are retained so that we may hopefully achieve our overall objective of meeting community needs on a long-term, continuing basis."

The AMA spokesman objected strenuously to a proposed deletion of a requirement for certification by state and district health societies that such health personnel are needed before assignment to a particular area:

". . . Much of the . . . planning to date has been centered around community participation in the NHSC program to further encourage the Corps physicians, dentists, and other professionals to feel they are part of the community life," Dr. Palmer said. "We urge this committee not to take any action now which would block communities and professionals from attaining this goal.

"Certification by the physician's or dentists' peers—the local members of his own profession—that his services are needed, together with concurrence by local government, provides the strong and necessary base of community acceptance and participation in his assignment. Removing this base could erect barriers and prevent the level of contact and rapport with peers which are significant factors in stimulating the professional man to establish professional roots in a community.

"Furthermore, the record of cooperation by the medical profession at the local, state, and national levels speaks against the proposed amendment deleting the certification provision. The AMA has worked closely with the NHSC to help make the NHSC a reality.

". . . At the Corps' request, the AMA has also distributed to all state medical associations and county medical societies brochures on the program, together with lists of NHSC personnel in central and regional offices to be contacted, requesting assistance in identifying areas particularly short of health manpower. All of these activities, and others, have been undertaken to inform state and local medical societies of the program's interest, method of operation, and goals.

"Most recently the Association has contracted with the Corps for the AMA to recruit physicians to serve in areas of need on a short-term basis. This undertaking, which we call 'Project U.S.A.,' will be a valuable adjunct to the Corps in its operational phases of its program.

"In short . . . the AMA has actively provided assistance in the implementation of the NHSC. The medical profession shares . . . with government, and with communities the common goal of getting needed medical services into shortage areas.

"Even more directly than our activities at the national level, we believe that the measure of success to date of this new program can be attributed to the cooperation received at the local level from the various medical communities. It should be kept in mind that the great number of assignments of physician personnel made in this program to data have been possible *because* the local and state societies have certified to the need for such health personnel. As a fact, in some instances, the medical society has been a moving party in seeking assignment of personnel under this program.

". . . we believe that the foregoing is strong evidence that the active participation of organized medicine is to the advantage, and not to the detriment of the program. We must assert strongly that we are opposed to the deletion of the present certification requirements in the law. The record of cooperation warrants continuing these requirements. The absence of such requirements could defeat the goal we all share."

The AMA also recommended continuation of a provision giving the Secretary of Health, Education, and Welfare latitude as to the use of PHS facilities, rather than requiring their use as proposed and recommended against providing additional medical training scholarship arrangements in connection with the program.

* * *

President Nixon signed into law legislation providing for expanded research programs to combat heart and lung diseases. The National Heart and Lung Institute is authorized to increase its expenditures for such research to $1.38 billion over the next three years.

The new law provides for a comprehensive program for research into the cause and the prevention of all forms of heart, lung, and blood diseases; research into basic biologic processes; research into technics, drugs, and devices used in diagnosis and treatment; establishment of programs for field studies and large-scale testing and demonstration of preventive therapeutic and rehabilitative approaches, including emergency medical services for persons suffering from heart and lung diseases; and public and professional education relating to all aspects of these diseases.

The bill also authorizes the Heart and Lung Institute to provide for the development of 15 new centers for

continued on page 2724

Prepared by the Washington, D.C., office of the American Medical Association.

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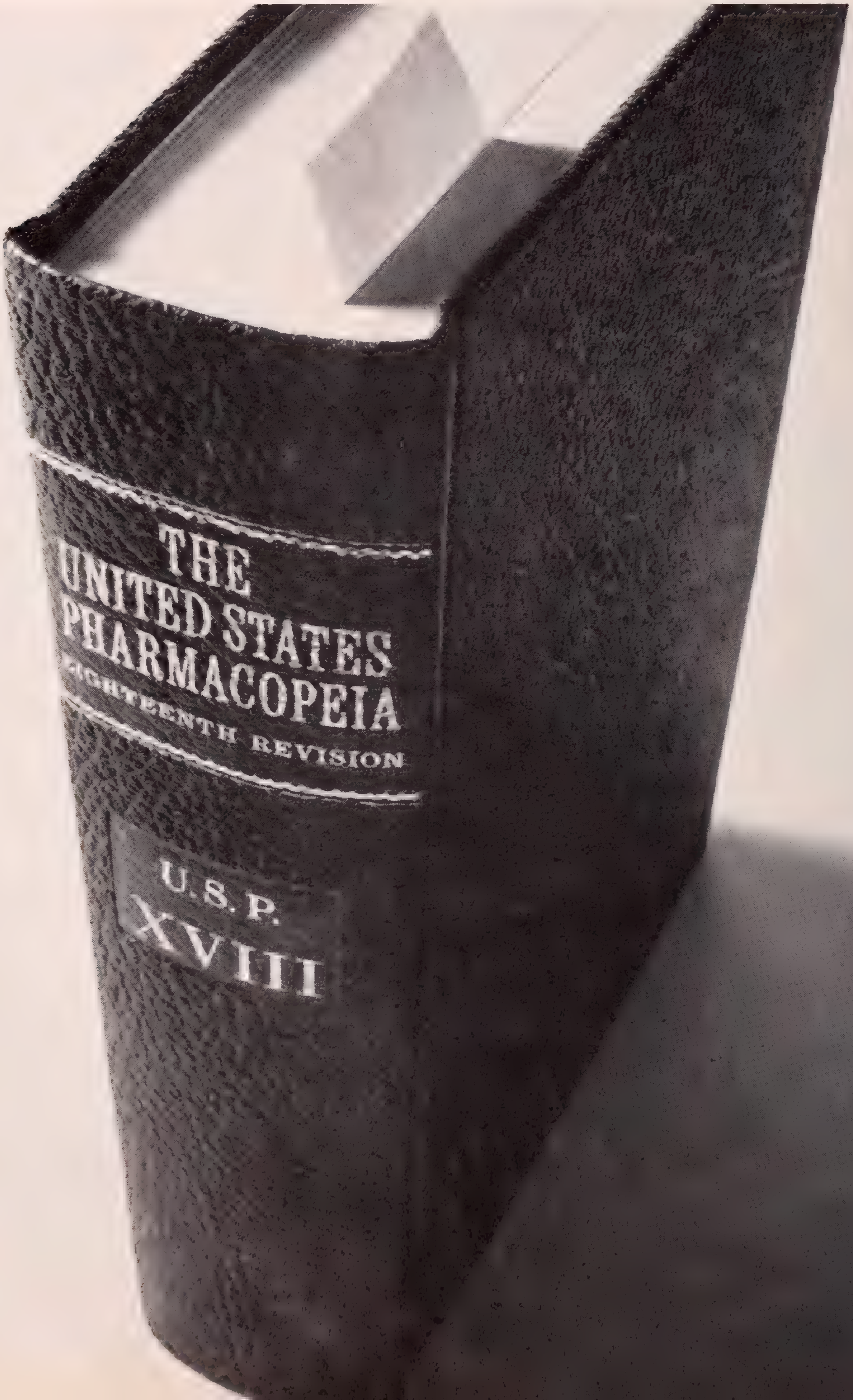
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In the male: Continuous therapy over prolonged periods of time may produce gynecomastia, loss of libido, and testicular atrophy.

Dosage and Administration: Cyclic administration is recommended (3 weeks of daily estrogen therapy and 1 week off).

If patient has not menstruated within last two months or more, cyclic administration is started arbitrarily. If patient is menstruating, cyclic administration is started on day 5 of bleeding.

If breakthrough bleeding occurs (bleeding or spotting during estrogen therapy), increase estrogen dosage as needed to stop bleeding. In the following cycle, the dosage level which was employed for hemostasis should be used for daily administration. In subsequent cycles, the estrogen dosage is gradually reduced to the lowest level which will maintain the patient symptom-free. (See Precautions.)

Menopause (natural or artificial)—PREMARIN 1.25 mg. daily, cyclically. Adjust dosage upward or downward according to severity of symptoms and response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Many clinicians favor continuing cyclic estrogen replacement therapy throughout the postmenopause as a protective influence against accelerated degenerative changes at the cellular level.

Postmenopause—(If uterus is intact the patient is considered postmenopausal from one year after cessation of menstruation to end of life span.) If the presenting symptoms are those of the menopause, see above for dosage. As a protective measure against premature degenerative changes in bone and cellular metabolism (*e.g.* atrophic vaginitis, osteoporosis), give PREMARIN daily and cyclically. Adjust dosage to lowest effective but subbleeding level.

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continued from page 2720

basic and clinical research into the diseases of the heart, blood vessels, and blood, and 15 new centers for basic and clinical research into lung diseases.

The research program for these diseases is upgraded similarly to the expansion of cancer research authorized last year.

* * *

Establishment of a military medical school is authorized under a recently enacted law. A companion program will provide up to 5,000 full federal scholarships in effect at one time for would-be physicians to go to civilian medical schools if they agree to serve in the armed services for five to seven years after graduation. The scholarships would provide the full cost of tuition and fees and $100 a week living allotment.

The military medical school is to be called the Uniformed Services University of the Health Sciences and is to be located within 25 miles of Washington, D.C. It will be set up to have 100 graduates a year.

Authorization of the military medical school capped with success a long fight of Rep. F. Edward Hebert (D.—Louisiana), chairman of the House Armed Services Committee. This year, the House approved the school, but the Senate only approved a study of the proposal. However, Hebert succeeded in getting the House-Senate conferees to approve establishment of the school.

A report on the conference on the legislation said the Senate conferees "pointed out their concern over the apparent lack of any clear concensus in the government and the health professions as to the need and desirability of establishing such a university . . . and questioned the overall philosophy embodied in the principle of establishing a university of this type entirely supported by federal funds."

Related legislation, which was supported by the American Medical Association, would raise the pay of military physicians to attract them to the armed services. Ernest B. Howard, M.D., Executive Vice-President of the AMA, wrote the House Armed Services Committee: "The American Medical Association supports the principle of providing special incentives through which the Armed Forces may secure and retain qualified medical officers on active duty. This approach is entirely consistent with the concept of an all-volunteer Armed Force, which would require adequate manpower in the critical health professions. We support incentives designed to provide adequate medical manpower on a more equitable financial basis."

* * *

A report of the National Cancer Institute indicates a substantial betterment in patient survival in some forms of the disease. The fourth annual "End Results in Cancer" was prepared by the Institute-sponsored End Results Group. It summarizes the survival experience of white patients diagnosed with cancer from 1940 through 1969 in more than 100 United States hospitals. Similar information on black Americans is currently being collected and analyzed for future publication. The data cover 52 anatomic sites of cancer treated by surgery, radiation, and chemotherapy. Varying survival rates up to fifteen years are given for each form of cancer.

The report indicates several cancer sites for which there is marked improvement in patient survival. The three-year survival rates for patients whose cancers were diagnosed from 1965 through 1969 that show an increase over the rates of those diagnosed from 1940 through 1949 are shown in Table I.

TABLE I. Three-year survival rates (per cent) for cancers that have shown improved prognosis

Types of Cancer	1940 to 1949	1965 to 1969
Bladder	48	62
Brain	28	37
Chronic lymphocytic leukemia	33	53
Larynx	47	67
Melanoma of the skin	49	74
Multiple myeloma	10	27
Prostate	49	66
Thyroid	67	86

Other cancers for which there have been important increases in patient survival since the 1940s are childhood leukemia, Hodgkin's disease, and breast cancer. The one-year survival rate for children under fifteen with leukemia indicates continuing progress and provides hope for further improvement. The rate has increased from 36 per cent in 1955 through 1964 to 59 per cent in 1965 through 1969. Among children with acute lymphocytic leukemia diagnosed in 1965 through 1969, the one-year survival rate was 67 per cent. Due to greatly improved methods of chemotherapy, radiation technics, and life support systems, the three-year survival rate for children has increased from less than 6 per cent to 15 per cent over the past ten years. This represents the results achieved in a broad cross-section of hospitals.

Similar progress has also been noted in the treatment of patients with Hodgkin's disease. Twenty years ago only 35 per cent of Hodgkin's disease patients survived three years; among patients diagnosed in 1965 through 1969, 61 per cent survived three years.

The outlook also has improved for women with breast cancer. For all stages of breast cancer, the three-year survival rate has increased from 63 per cent twenty years ago to 72 per cent in the most recent time period. Of patients with localized disease diagnosed during 1965 through 1969, 91 per cent were alive three years after diagnosis.

However, there has been little or no improvement in life expectancy for patients with lung cancer and cancer of the pancreas. Lung cancer is the most common male cancer with 62,000 new cases and 56,000 deaths annually among U.S. men, and the incidence is still increasing. There has been little change since the 1940s in the proportion of cases classified as localized at diagnosis–only 18 per cent in 1965 through 1969. However, treatment results for localized forms of the disease have improved. For all lung cancers, the three-year survival rate is only 11 per cent; for localized disease, the three-year rate has increased from 17 per cent in the 1940s to 39 per cent in 1965 through 1969.

Survival rates for cancer of the pancreas have shown no improvement over the past twenty years. During this time interval, the incidence has risen from 7 to 9 cases per 100,000 persons. An estimated 19,000 new

continued on page 2727

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cases are diagnosed each year in the United States. Over 90 per cent of these patients die within one year. The three-year survival rate of the 1940s, 2 per cent for all stages of this disease, has not improved in recent times. Even when detected in the early stages, the three-year survival rate is still only 4 per cent.

Most cancers are diagnosed after middle age. Seventy-five per cent of all cancers among U.S. men and 63 per cent of cancers in women are diagnosed at age fifty-five or over. Generally, the outlook for survival decreases with age. For cancer patients fifteen and under, however, life expectancy is as low as for patients sixty-five years of age or older.

Women survive longer after cancer diagnosis than men. For example, only 31 per cent of men with cancer survive five years or longer while 42 per cent of women patients live ten years or more. This pattern holds true for localized as well as for all stages of cancer, and for each age group.

The marked survival advantage of female patients is due in part to the fact that for the major cancers in women (breast, colon, uterine cervix, and uterine corpus) survival is more favorable than for those occurring most frequently in men (lungs, prostate, colon, and bladder). In addition, for most cancer sites common to men and women, survival rates are higher for women.

Surgery is the form of treatment used most often. During the ten-year period 1955 through 1964, 55 per cent of all patients were treated by surgery, 29 per cent by radiation, and 18 per cent by chemotherapy. Although surgery has remained the treatment of choice in recent years, more patients are receiving radiotherapy (34 per cent) and chemotherapy (22 per cent).

Early detection, while the cancer is localized or limited to the organ of origin, offers the best opportunity for control. There has been an encouraging increase in the proportion of cancers of the breast, prostate, bladder, and brain and melanoma of the skin being diagnosed while localized. The percentage of breast cancers localized at diagnosis has increased from 38 per cent to 47 per cent in the past twenty years; for prostatic cancer, the percentage localized has increased from 49 per cent to 63 per cent in the same time period.

Women with cancers of the cervix and body of the uterus have a good outlook for survival, particularly when their cancers are diagnosed while localized. The three-year survival rates for women with early disease are 82 per cent for the cervix and 88 per cent for the body of the uterus. For all stages, long-term survivals are also encouraging, with ten-year survival rates of 55 per cent for women with cervical cancer and 69 per cent for patients with cancer of the body of the uterus.

Medical Meetings

Scientific and educational meeting in Israel

The American Medical Association in cooperation with the Weizmann Institute of Science will sponsor a scientific and educational meeting in Israel from February 18 through March 1, 1973. The Hebrew University Hadassah Medical School in Jerusalem and the Tel Aviv University Medical School will participate in the sessions. Registration is limited to six hundred, and inquiries should be sent to the Department of International Medicine, American Medical Association Headquarters, 535 North Dearborn Street, Chicago, Illinois.

Jewish Memorial Hospital meetings

The Jewish Memorial Hospital, Broadway and 196th Street, New York City, will hold the following meetings, each at 8:30 P.M.: January 2, 1973, Roy Hertz, M.D., Professor of Obstetrics and Endocrinology, New York Medical College, "Endocrine Related Tumors;" February 6, 1973, H. Sherwood Lawrence, M.D., Professor of Medicine, New York University School of Medicine, "Transfer Factor Therapy of Immunodeficiency Disease;" and March 6, 1973, Donald Armstrong, M.D., Associate Professor in Medicine, Memorial Hospital, "Laboratory Aids in Diagnosis of Infectious Diseases."

Tympanoplasty course

A five-day course on tympanoplasty will be given under the direction of Adolph Wolferman, M.D., at the Brooklyn Eye and Ear Hospital from April 23rd to 27th, 1973. The course is limited to eight participants. For application, write to Miss Trudi Curry, Secretary to the Executive Administrator, Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn, New York 11238.

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

Medical News

American Academy of Pediatrics address

Charles C. Edwards, M.D., Commissioner of Food and Drugs, delivered the keynote address at the American Academy of Pediatrics' forty-first annual meeting on October 16, 1972, at the New York Hilton Hotel. Dr. Edwards spoke on the Food and Drug Administration and medical practice today.

Albert R. Fritz traveling fellowships

Calvin H. Plimpton, M.D., president of the Downstate Medical Center, announced the establishment of the Albert R. Fritz traveling fellowships on September 16, 1972. The fellowships are to be awarded to senior medical students and recent graduates for three months' study abroad.

Prenatal diagnosis

Through the use of amniocentesis, a technic of detecting certain birth defects in an unborn child by culturing and analyzing cells in the mother's amniotic fluid, prenatal diagnosis has been made available to physicians in a 10-county area of Upstate New York by the Laboratory for Prenatal Detection of Birth Defects at the University of Rochester Medical Center.

continued on page 2730

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Richard A. Doherty, M.D., assistant professor of pediatrics and director of the laboratory, said that these services "enable physicians to inform parents whether a fetus has certain abnormalities early enough to allow the choice of therapeutic abortion, if they wish." Through the use of amniocentesis the physician can determine the sex of an unborn child, the possibility of biochemical defects characteristic of more than 25 inherited metabolic diseases, and the presence or absence of certain chromosomes or parts of chromosomes which define such conditions as trisomy-21, or mongolism.

Training course on alcoholism

In an attempt to halt the estimated 8 to 10 billion dollar annual loss in the United States through alcoholism, 50 representatives from New York City agencies, including fire, police, sanitation, and health services, have signed up to take a month's course in on-the-job detection and treatment of the disease. In the seminar, sponsored by the New York Council on Alcoholism, Inc. (Alcoholism Center Coordinating Education, Prevention, and Treatment), counselors will learn technics and skills of management in rehabilitating alcoholic employes within the framework of the employer organization, with the confidential nature of treatment always stressed.

The seminars take place every Monday and Thursday at the Police Academy, 235 East 20th Street, New York City, from 6:30 to 9:30 P.M. The course is a pilot project which will lead to other expanded courses later on this year and early in 1973. Certification is given each attendee who covers the classroom hours and required reading. Monseigneur Joseph A. Dunne, Director of the New York City Police Department Alcoholism Unit, is program director for the course.

Pilot light accidents

Hollis S. Ingraham, M.D., State health commissioner, has warned people against placing flammable substances, such as tile paste, lacquer thinner, and kerosenes, near pilot lights of stoves or heaters. Dr. Ingraham cautioned that flammable substances placed even several feet away from a pilot light may vaporize and ignite, causing a flashback and possible burn. In addition, he said "if you turn off your pilot light, make sure that it is relighted only after the working area has been well ventilated." Dr. Ingraham asked that all reports of burn injuries resulting from a pilot-light accident be forwarded in writing to the Burns Care Institute, 84 Holland Avenue, Albany, New York 12208.

Personalities

Elected. Edmund Pellegrino, M.D., chairman of the American Medical Association's committee on nursing, member of the Council on Health Manpower, and vice-president for health affairs and director of the health sciences center at the State University of New York at Stony Brook, as one of 52 leaders in the health field elected to the Institute of Medicine of the National Academy of Sciences.

Awarded. Samuel Karelitz, M.D., F.A.A.P., director emeritus and consultant in pediatrics at the Long Island Jewish Hillside Medical Center, New York City, the 1972 Clifford G. Grulee Award of the American Academy of Pediatrics.

Granted. Biologists at Rensselaer Polytechnic Institute were awarded a four-year grant for $260,000 from the Public Health Service, National Institutes of Health, for the study of nonpathogenic relatives of the viral disease lassa fever. The purpose of the study is to determine a means of cure for the disease, which is fatal in over 90 per cent of cases, and to investigate the use of drugs to control oral infections . . . Edwin A. Mirand, M.D., associate director of Roswell Park Memorial Institute at Buffalo, the State Health Department cancer research and treatment center, received a one-year, Federal grant of $213,888 for a continuing education program in cancer research from the U.S. Public Health Service. The program is designed to provide cancer research training, leading to an advanced degree, to graduate students in biochemistry, biology, biophysics, biostatistics, chemistry, experimental pathology, microbiology, the natural science, pharmacology, and physiology.

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Sunday, February 11th
Acupuncture

Monday, February 12th
Alcoholism

Tuesday, February 13th
Immunology

Wednesday, February 14th
Heart Day

Scientific Sections; Symposia; Panel Discussions; Annual Meeting of House of Delegates; President's Reception and Dinner Dance; Scientific and Technical Exhibits; Scientific Motion Pictures.

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minar le causa del parkinsonismo pro contribuer a su elimination.

Kaunitz, V. H., e Trivedi, J. M.: Resuscitation cardiopulmonari in hospitales communitari, ***New York State J. Med.*** 72: 2751 (15 de Novembre) 1972.

In un parve hospital communitari ha essite ideate un methodo de resuscitation de emergentia que pote esser usate per internos e le personal de infirmeros. Le componentes principal del programma de resuscitation es le enseniamento continuo del personal de medicos e nurses, e un carretta specialmente preparate con omne material necessairi. Le resultatos ha essite rationabilemente bon: de 127 patientes tractate con le methodo resuscitatori, 46 esseva resuscitate e 26 esseva discargate del hospital in bon conditiones de salute.

Varkarakis, M. J., Bhanalaph, T., e Murphy, G. P.: Compromisso renal in neuroblastomas, ***New York State J. Med.*** 72: 2753 (15 de Novembre) 1972.

Le systema urinari pote esser compromititte in caso de neuroblastoma per extension directe del tumor o per metastases. In iste studio, de 62 patientes con neuroblastoma 27 habeva compromisso del systema urinari. Altere alterationes es principalmente producite per le effectos del pression directe del tumor supra le ren. Le examination roentgenologic del systema urinari pote proportionar un utile information prognostic in patientes con neuroblastoma. Le pyelogramma intravenose es valutabile pro determinar le extension e stato del morbo e pro facer le proprie considerationes therapeutic.

Myeloradiculoneuritis from rubella vaccine

In a recent issue of *Journal of Pediatrics* (**80:** 404 [March] 1972), it was stated that previously postvaccination symptoms in recipients of live attenuated rubella virus vaccine have been relatively low in incidence. The most significant of the symptoms have been those of arthritis in mature women. According to R. C. Gilmartin, J. T. Jarbour, and D. A. Duenas, after a mass immunization effort, 36 prepubertal children were found to have two neurologic manifestations, brachial radiculoneuritis and lumbosacral radiculoneuritis. The reactions appeared on an average of about six weeks following vaccination and lasted an average of twenty-five days. The disorder differed from the arthritis of rubella in symptom pattern, incubation period, and age predisposition. The only consistent laboratory abnormality was nerve-conduction velocity.

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Book Notes

Handbook of Pharmacology. The actions and uses of drugs. Fifth edition. By Windsor C. Cutting, M.D. Octavo of 659 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Paper, $9.95.

This work aims to present knowledge about drugs in a compact form. Each family of drugs is brought together to stress the common characteristics of structure, action, toxicity, and use.

Core Text of Neuroanatomy. By Malcolm B. Carpenter, A.B., M.D. Quarto of 269 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $9.75.

This text is patterned after part of the material appearing in Truex and Carpenter's *Human Neuroanatomy*, 6th edition, and utilizes a similar format and many of the same illustrations. Material which properly falls within the provinces of gross anatomy, histology, and embryology has been left to those disciplines except where it is germane to the subject under discussion.

Jamieson's Illustrations of Regional Anatomy. Section 1 Central Nervous System. Ninth edition. Revised by Robert Walmsley, M.D., and T. R. Murphy, M.Sc. Octavo of 56 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Spiral, $6.50.

The editors of this edition believe that medical students should have access to a simple atlas that will assist them in the study of regional anatomy. Therefore, they have considerably curtailed the number of legends that were present in previous editions, made the leader lines more conspicuous, and arranged them in a more appropriate way.

Ethanol and muscle damage

Muscle disease associated with chronic use of alcohol has been recognized since 1957. Muscle lesions in man also have been associated with malnutrition and certain drugs, so it has not been clear whether such lesions are due solely to alcohol or to dietary or other factors associated with chronic alcoholism. Sun K. Song and Emmanuel Rubin, in a recent issue of *Science* (**175:** 327 [January 21] 1971) described an experiment designed to study the effects of ethanol in man under controlled conditions. Three nonalcoholic young men were given repeated doses of ethanol representing 42 per cent of total caloric intake for twenty-eight days. Results of the study indicated that chronic ingestion of ethanol for twenty-eight days, independent of nutritional and other factors, leads to increased serum creatinine phosphokinase activity and striking ultrastructural changes in skeletal muscle.

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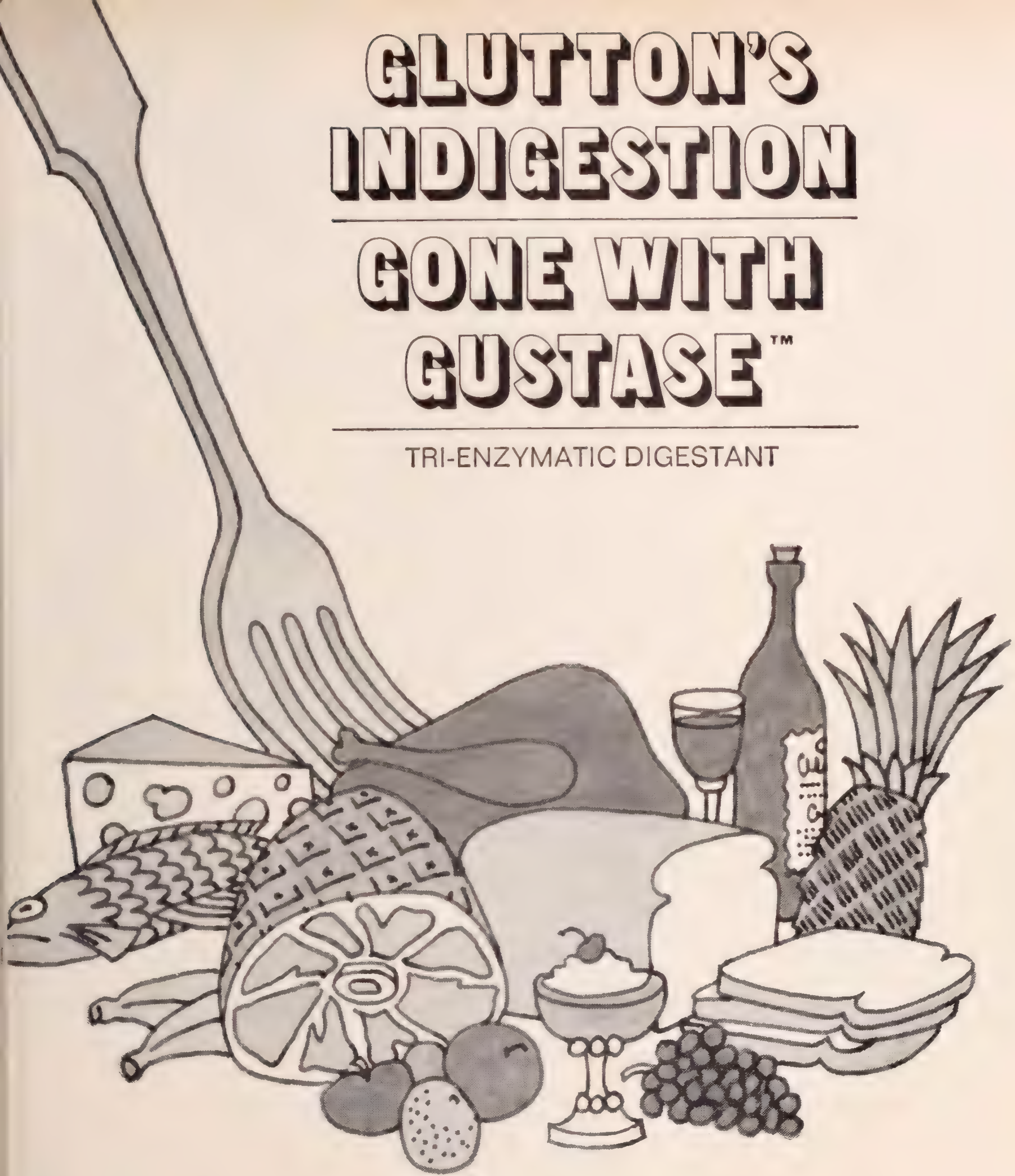

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The ***New York State Journal of Medicine*** is a reflection of the practice of medicine in the State of New York and helps physicians in the State maintain the highest professional standards. Its objective is set forth in Article I of the Constitution and Bylaws as follows: "To extend medical knowledge and advance the science and art of medicine."

Each issue of the ***Journal*** is an omnibus. There is something for everyone; more than 60 per cent of our readers are specialists. As a scientific publication it is not used for propaganda purposes. The ***Journal*** concentrates on scientific subjects and items of assistance to the physician in practice; its goal is to disseminate knowledge. The ***Journal*** solicits original contributions and promotes continuing education by reporting clinical studies and basic science contributions applicable to clinical medicine, thus keeping the membership abreast of advances in medicine. This reflects the high priority given to postgraduate continuing education by the Officers and Council of the State Society.

The scientific articles published in the ***Journal*** usually conform to one of the following categories: those which contain or establish new facts, new modes of practice, application of general principles derived from experimental work, studies of the literature, and determinations and summaries of conferences and seminars of real value in clinical medicine; and those articles presenting such complete review of facts on any particular subject that the writer has deduced therefrom conclusions of importance and general value; and this includes condensed surveys of recent advances by qualified authorities.

A survey of the headings in the table of contents is the simplest method of realizing the extent and nature of the material that appears in the ***Journal.*** Scientific articles with preliminary abstracts naturally constitute the mainstay of the ***Journal.*** One will find as subject headings: Recent Advances in Medicine, Clinicopathologic Conferences, Correlation Conferences on Radiology and Pathology, Urologic-Radiologic Reviews, Quarterly Review of Drugs, Electrocardiograms of the Month, Clinical Anesthesia Conferences, Topics in Orthopedics, Industrial Health, Nutrition Reports, Case Reports, Special Articles, Medical Arts and Letters, History of Medicine, Editorials, and Letters to the Editor. Notices of meetings and courses, medical news, book notices, and medical school news are also found. Attention is given to special programs of meetings of interest to particular specialty groups and to general practitioners. General items of medical news of interest and of practical usefulness to members of the State Society and other readers are included. "Information for Authors" appears in detail in each issue of the ***Journal*** as an aid in the preparation of material for publication.

As the official organ of the Medical Society of the State of New York the ***Journal*** reflects the activities of the Medical Society and efforts of the organization that are of concern to the membership. Edited verbatim minutes of official meetings, as at the Annual Convention and some other special sessions, and reports of committees and of officers, are published in special issues. In this manner all members of the Society are kept advised of all pertinent happenings and all actions taken by the State organization.

One section in the ***Journal*** is devoted to "What Goes On." This section includes an indexed listing of meetings by areas in the State. This function is under Norman S. Moore, M.D., Director of Scientific Activities.

If controversial material is printed in any section of the ***Journal,*** equal opportunity is offered for statements to the contrary and for viewpoints in refutation. This is done in the "Letters to the Editor" section, and such communications are encouraged. Subjects of political, social, and economic interest are usually handled in special articles and are given a high priority in other publications of the Society, as the "News of New York."

As noted the ***Journal*** solicits special articles and reviews from eminent authors. It aims to make this function of increasing importance and a significant contribution to the program of continuing education, to which the Council and the Society are committed.

The Associate Editorial Board is carefully selected to help review and evaluate manuscripts in specialized fields. The Editorial Council, selected therefrom, is designed to bring the medical schools in closer liaison with the ***Journal*** and consists of one representative from each of the 12 faculties in New York State.

The ***New York State Journal of Medicine*** welcomes any comments, suggestions, or criticisms which will help the ***Journal*** fulfill its purpose and give the membership of the Society a publication which will be effective in keeping physicians abreast of the rapid progress in medicine and of the changing scene, as it involves its ethical, moral, and economic aspects.

Public health in action

New York was one of the states devastated by the disastrous floods of hurricane Agnes in June, 1972, with 21 counties declared disaster areas. The greatest natural disaster in the history of the United States resulted in 31 deaths and 898 injuries in this State alone. The homes of 39,643 families were damaged or destroyed. The public facilities, factories, and business establishments involved stagger the imagination. Eight clinics and hospitals suffered more than 11 million dollars worth of damage.

Along with communications, there was disruption of water, food and milk supplies, sewage and sanitary facilities, light, heat, road networks, shelter and domicile. The situation was ripe for the development of all types of contagion from that by contact, to water and foodborne and rat and mosquitoborne varieties of disease.

This was no accident, and recognition for a massive public health operation and accomplishment must be extended to the State Department of Health, as well as to local and federal authorities. Extensive preplanning involved almost all aspects of public health except radioactivity and snakebite.

To illustrate the involvement of public health physicians, engineers, and sanitarians, mention is made of the broad aspects of disaster medicine, central and local operation centers were manned around the clock. Supervision and inspection, and, operative assistance was rendered to all public water supply systems. Evacuee and feeding centers and emergency food, water and milk supplies required attention. Cots, blankets, and portable toilets were obtained. Dairy farms and pasteurizing plants required supervision. Debris and garbage disposal along with rodent control were affected. Hospitals and nursing homes were assisted with inspections, supplies, evacuation, and professional personnel, as well as emergency lighting.

Water analysis and chlorine supply, mosquito spraying, emergency instructions, and radio announcements were some of the fields of activity.

For all of this, the people of the State of New York are grateful to all concerned for a tremendous successful operation in the field of public health.

I. G. FROHMAN, M.D.
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Rockaway Beach, New York 11694

Bio-Science Reports

Serum Triiodothyronine (T_3) by Radioimmunoassay (RIA)

The level of Triiodothyronine (T_3) in serum is extremely small in comparison with Thyroxine (T_4), and it has only recently become possible to measure such levels accurately. It now appears that the euthyroid individual has a serum T_3 level in the range of 100 to 200 ng/100 ml. (1 ng or nanogram = .001µg). Although this represents only 1/50th of the concentration of T_4, the greater biologic activity of T_3 compared to T_4 and the recognition of a disease entity by Hollander and Sterling, in which T_3 but not T_4 is elevated (T_3 thyrotoxicosis), make accurate measurement important.

The technic of radioimmunoassay for T_3 measurement, utilizing antisera produced in rabbits by injections of T_3 coupled to various proteins, has been developed by a number of investigators. Whole serum is allowed to interact with the antiserum in the presence of radioactive T_3. After sufficient time (several hours to days depending upon the affinity of the antiserum for T_3), the T_3 bound to antibody is separated from unbound T_3 and radioactive counting of the separated fractions is performed to determine the amount of T_3 in the unknown. A standard curve is prepared by adding known increments of T_3 to the antiserum-radioactive T_3 system. We have modified the method of Chopra which utilizes serum directly in the presence of a TBG blocking agent. The antiserum we use was developed in our own laboratories.

An abstract entitled "A Radioimmunoassay Method for the Determination of Triiodothyronine in Serum," by Pileggi, Demetriou and Beattie, briefly describes our procedure, the limits of sensitivity, precision, and normal range found. A copy of the abstract will be sent to you on request.

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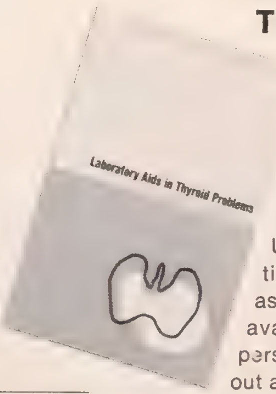
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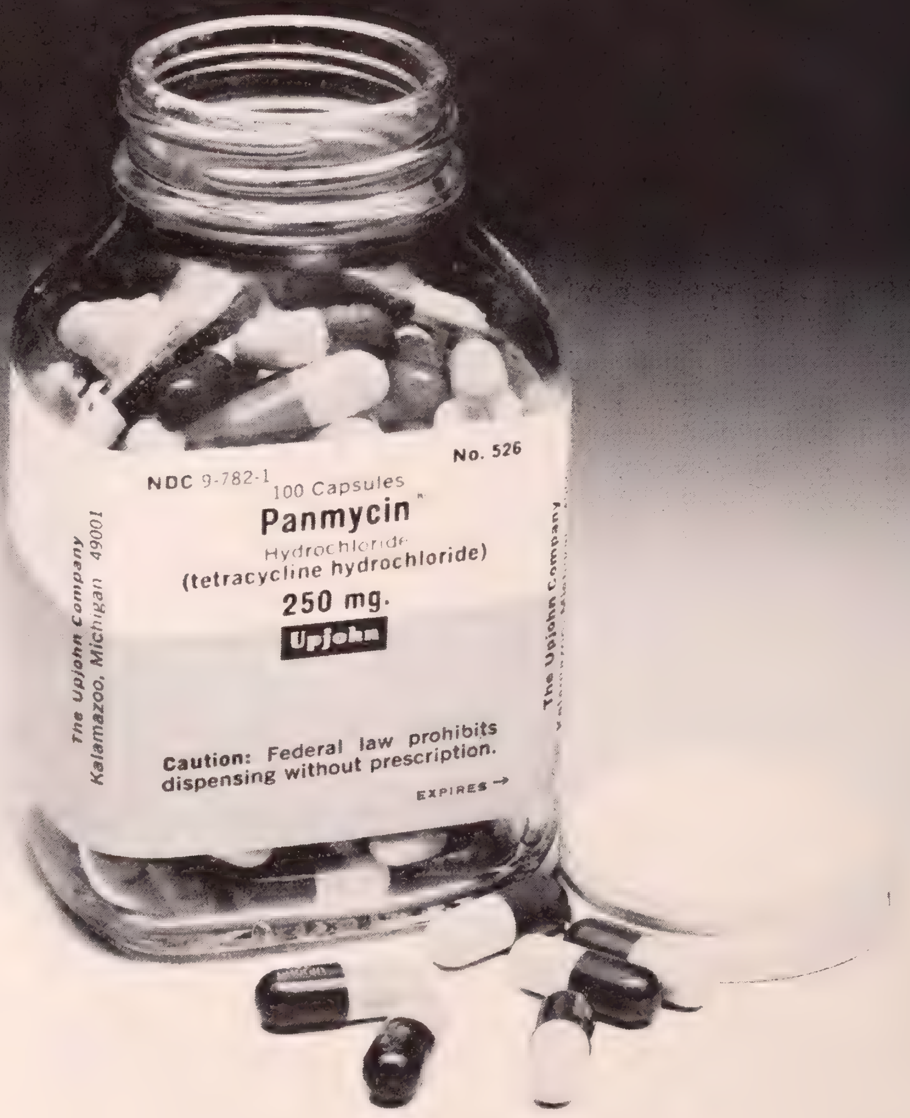
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Psychotherapy for Geriatric Patients

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Various aspects of the treatment of geriatric patients with psychotherapy are discussed and illustrated with 10 case reports. Three of the 10 patients are considered as chronic patients, still undergoing treatment, and 7 were given short-term therapy for crisis situations. Brief, goal-directed treatment is recommended. Ways to avoid the elderly patient's tendency to transfer dependence to the therapist are discussed.

There is a popular saying that if you want to know what your prospective bride will look like thirty years hence, all you have to do is to observe her mother. Conversely, when one tries to understand an aged person, the knowledge of his early years is indispensable; a daughter or a son often helps to fill in the data. Two assumptions can be made from these statements: the aged person has to be seen longitudinally and historically, and psychodynamic laws apply to aged as well as to other younger individuals.

As a psychiatrist in private practice I have had the opportunity of seeing a number of older patients. In the course of the past eighteen years I have seen 33 patients aged sixty and over. Of these, 23 were referred as consultations for requests of opinions concerning an aged parent or relative; 10 remained in therapy. The latter group, which we are concerned with here, can be divided in two groups; 3 became chronic patients, and 7, after brief psychotherapy, were discharged to function on their own.

In reference to chronic patients, a distinction should be made between patients suffering from a chronic illness and those who became chronic patients. It can be safely stated that any psychiatric illness is chronic. The majority of neurotics or psychotics never become patients. They function on whatever level they are able to function and are accepted by family and community. Occasionally someone may mention that they are somewhat eccentric or peculiar, but one never thinks of them as sick. They go through their lives without ever being diagnosed. Only those who become an annoyance to themselves and/or to others because of their overt symptoms come to the attention of a psychiatrist. When treatment is instituted, such patients may become chronic patients or even "professional" patients when secondary gains become involved.

Treatment of older patients

There has been controversy among psychiatrists about what to treat in psychiatric patients. Is it enough to treat the acute episode of illness, or does it behoove us to treat the chronic anlage as well, whenever possible? The answer to this question hinges on the words "whenever possible." Opinions are divided. Some believe it is possible, some believe it is sometimes possible, and others believe it is not possible. Recently, there has been a trend to avoid the "sickness-cure" approach, which bypasses the "what-to-treat" controversy, and to substitute the "functional approach" to mental illness. What we do is help the patient to function, reestablish his premorbid capabilities, or rehabilitate him to a different level of functioning as long as he can remain in and is accepted by the community. When the functional approach is used, the patient does not remain long in psychotherapy and does not become a chronic patient.

With the aged this controversy ceases to be too important, because few psychotherapists would engage in reconstructive psychotherapy with people in their sixties and over. Occasionally, however, long-term therapy with the aged is unavoidable to keep the individual out of hospitals and to lend him stability. The 3 chronic patients mentioned herein fall into this category.

Presented at the 14th Annual Meeting of the Group Without a Name, Warren, Vermont, October 14 through 17, 1971.

Chronic patients

Decompensation. If we believe that human behavior has meaning, even if we may not always understand it, and we therefore subscribe to the psychodynamic point of view, we must also subscribe to the hypothesis that we are subject to drives, be they libidinal or aggressive, and to defenses against them. Most of the time acculturation leads to a homeostatic equilibrium between drives and defenses. At times, whole pathologic entities may be compensated for by defenses of the self. When the person reaches the sixth or seventh decade, these defenses tend to loosen up and may no longer hold the drives in check, and decompensation occurs.

Case 1. A sixty-one-year-old Jewish married woman, mother of 2 grown children, came because her family was "falling apart." She felt she had been able to hold her family together for the past thirty-four years; however, recently her daughter, aged thirty-two, a diagnosed schizophrenic, was getting worse and rehospitalization had to be considered; her son, aged twenty-seven, had been keeping "bad company;" and her husband who had had one heart attack was showing approaching symptoms of another heart attack. As far as the patient herself was concerned, she was riddled with generalized pains and aches, could not sleep, and showed symptoms of anxiety bordering on panic. It did not take long to realize that she herself had been a schizophrenic of long standing, now threatened with incipient decompensation and showing a thought disorder consisting of bizarre ideation and ideas of reference. It was she who was falling apart, but she externalized it onto her family.

As she was the dominant factor in the family, her treatment influenced the whole family. During the course of therapy, the daughter changed her incompetent therapist and settled down to a good therapeutic relationship which obviated the need for rehospitalization; when the patient ceased to interfere with her son's life, he was able to find a career in accounting and, later on, married. There ensued a better relationship with her husband, a schizophrenic in his own right. Unfortunately, he eventually died of his heart condition. She has weathered this and other difficult events well in the course of eight years of therapy. She is being sustained by the therapeutic relationship and is able to function on a satisfactory level. She does not want to be without therapy and is not being pressured to do so.

Observation. This patient, who had been able to keep her schizophrenic manifestations in check most of her life, was on the verge of an acute decompensation. She returned to her premorbid homeostatic equilibrium by strengthening her defenses in psychotherapy. Her underlying schizophrenia was not treated.

Chronic depression. A different struggle is exemplified in the lifelong drama of the following patient.

Case 2. A sixty-two-year-old homosexual single male came to therapy because of impotence. He had been depressed all his life, as far as he could remember, and in his early twenties he spent several years on the psychoanalytic couch in classic analysis, five times a week. It was a therapeutic failure, and eventually the analyst interrupted treatment because for weeks and weeks the patient and analyst did not say a word to each other. When he was still in his twenties, the patient received electric convulsive therapy also with no results. He spent most of his life being more or less depressed. Suicidal thinking was his steady companion. He had a jar containing about 100 tablets of sodium pentobarbital (Nembutal), and when the going was really rough, he counted them and fantasied how it would be if he were dead. He never actively made a suicidal attempt. He was addicted to sodium pentobarbital and needed 6 or 7 1.5-grain tablets each night for sleep.

The first step in therapy was detoxification. At present he is sleeping well without chemical aid and has done so for the past three years. His impotence turned out to be a pseudoimpotence due to unmanageable anxiety and perfectionistic ideals, particularly marked in the sexual area where his expectations concerning performance are sky high. He still has episodes of depression, albeit less frequently and of lesser duration and much less depth. He still keeps his jar of sodium pentobarbital as his "ace in the hole" and on two occasions during the last three and one-half years of therapy has counted them. In view of the real danger of suicide, his belief that he has been greatly helped by treatment, and the hope that therapy will eventually win over and substitute for the jar of sodium pentobarbital, the therapy is being continued.

Observation. The chronic depressive outlook on life, something I like to call "depressive diathesis," has been what this patient has been fending off most of his life. In therapy his own defenses have found an ally. The going is easier, and the load is lighter. He should not be denied his working alliance.

Dependent addiction. The following case illustrates the plight of a person with a morbidly dependent, addictive personality.

Case 3. Fourteen years ago, this woman, then sixty years old, was brought to my office in a state of drunkenness by a friend. An alcoholic for many years, she had hit the bottom of human degradation and debasement. Despite sexual promiscuity, there had been only one man in her life. He had eventually married her after their son, born out of wedlock, was ten years old. After a number of years he left her. During the marriage and after the divorce he had liaisons with many women. This did not diminish or change her feelings of devotion to him. The main feature of her personality is this attachment to another person. Unless she is able to live through and for another person she is unable to function. Attached to another person, she can function fairly adequately.

Her attachment to me became total. She was still drinking during the first week of therapy but then stopped and has never touched a drop since that time. She became a member and later an officer of an Alcoholics Anonymous chapter where she has been quite active throughout the years. She also gave up other compulsive activities like gambling, smoking, sexual promiscuity, and sleeping pills. Although she never had worked in her life, she became a telephone operator and has worked steadily for the past thirteen and one-half years, the last ten in the same establishment. She comes to her sessions religiously and on time. I have accepted the fact that this is a patient for life, hers or mine. A weekly session is a small price to pay for what therapy has done for this person's life.

Temporarily disrupted patients

Loss. Old age is a time of loss; loss of friends and relatives, partial loss of function, and loss of sensory acuity, potency, earning capacity, status, and choice. Each loss has to be absorbed, integrated, allowed for and accepted by the individual. This may be difficult, especially when one considers that flexibility is often diminished and the adaptive capacity of the self is impaired with old age. A crisis may arise, and outside help may be required.

Case 4. *Loss of potency.* A sixty-seven-year-old man was referred to me because of loss of sexual potency. He was active and vigorous in every other area. A more detailed history revealed that he was able to have erections but could not maintain them in face of his wife's lack of cooperation and interest in the sexual act. She was never much interested in sex and rationed sexual intercourse to once a week or once in two weeks. His moral standards did not permit him to look for sex elsewhere. He was greatly dependent on his wife and feared any disagreement with her. He was also mildly depressed.

Treatment consisted of helping him to influence his wife to be more cooperative in terms of his sexual needs, especially since his need for sexual intercourse was infrequent and what mattered more to him was his wife's acceptance of him generally. The duration of treatment was 11 sessions.

Case 5. *Loss of status.* A sixty-nine-year-old Jewish orthodox man presented himself crying bitterly. He could not stop his tears. He had been an active independent man and a good provider. His greatest pleasure was working for the synagogue. His wife was in the hospital in an oxygen tent following a coronary occlusion. His son had just finished a series of electric convulsive therapy in a mental hospital and seemed confused. Passover was six weeks hence, and a man needs his family together at such a time. How could he face his friends and rabbi without his family? The tears kept running down his face and beard. The following session he was still crying, but in the next session he reported that his wife was feeling better. In the fourth session he told me his son was much less confused and did I think God could perform a miracle and reunite his family before the holiday? Of course he could and did. The duration of treatment was six sessions.

Case 6. *Depression following loss of status and financial assets.* A sixty-two-year-old married accountant came with classic symptoms of depression of eight weeks' duration, the most frightening symptom being the inability to concentrate which was interfering with his work. Several months previously he had made an unwise investment in the stock market, involving 80 per cent of his life's savings, against his wife's advice. The shares were now worth a fraction of their purchase price. His wife was trying to be nice about it, but he was certain that she despised him. He needed her approval and support. Matters were further aggravated when he tried to be nice and loving toward her but could not perform sexually. With supportive psychotherapy he gradually began to improve and regained all his premorbid faculties. The duration of treatment was three months.

Trauma. Old people are quite prone to accidents. Some of them may be serious and debilitating. The following case illustrates this point.

Case 7. A sixty-seven-year-old married hypomanic dentist sustained a fall while going to the bathroom in the middle of the night. His head hit the corner of the bathtub, injuring his left eye which required enucleation. Depression followed. He had been elated most of his life and worked fourteen hours a day. After the accident he liquidated his enormous dental practice but then did not know what to do with himself. Among his innumerable symptoms the most important were claustrophobia, indecision, and crippling anxiety. Things were further aggravated by the discovery of a lesion on his remaining eye which, fortunately, turned out to be a macular cyst and required no intervention.

Little by little he began to use his unlimited resourcefulness, taking courses, writing, doing volunteer work, and traveling. In no time he was busier than ever and reverted to his usual mildly hypomanic state with a maximum of three hours of sleep a night. He terminated treatment just before he left on a long trip to India. The duration of treatment was five months.

Concealed psychologic factors. The next case illustrates an important point in geriatric psychiatry, namely, that one can easily overlook psychologic factors in the face of documented organic disorders.

Case 8. A sixty-three-year-old homosexual male presented a routine picture of depression with a great deal of suspiciousness. Eight years previously he had his first grand mal seizure; there were several other seizures afterward. A neurologic work-up showed some electroencephalographic changes, and the diagnosis of idiopathic epilepsy was made. His condition was controlled by dilantin. Two weeks prior to consulting me he lost consciousness while at his desk. He awakened in a psychiatric hospital. While in the hospital he had several hallucinatory experiences of being in a coffin and of being about to be cremated. His assaultive behavior with the nursing personnel required physical restraint. It was after discharge from the hospital that he became depressed. His greatest concern was what he might have revealed during his days of being unconscious. Did he indicate by words or action that he was a homosexual?

In two years he was due to retire from a fairly high position in the field of education, and were his homosexuality to become known to the authorities, his pension might be denied him. Like so many homosexuals, he was convinced that no one in his surroundings knew his deep secret. All his life he did everything he could to cover up his secret, including dating women.

In therapy his suspicions were aired and explored. He eventually was able to believe that no one among his superiors knew his secret. He applied for retirement, and there were no difficulties with his pension. There were no repetitions of his seizures during the nine months of therapy until his discharge.

Depression. Depression is a syndrome frequently resorted to by elderly people when the going gets difficult. As a rule, they have had such episodes earlier in life as well but were able to weather them without outside help. Around the age of sixty, a similar episode of depression is likely to become more than the individual's defensive capacity can handle, and professional attention is required. Such depressive episodes may occur periodically with increasing frequency. They are usually triggered off by events in life pertaining to interpersonal relations. Some times they have a seasonal character, occurring mostly in the fall or spring or around the person's birthday. Cyclic depressions are reported in the following vignettes of two patients.

Case 9. A sixty-year-old married dentist, the father of 2 sons, came for help because of depression. His character structure was obsessive-compulsive with marked dependency on his wife. Not only was she in charge of all matters at home, but she was also his nurse and assistant in the office. There were frequent periods of depression throughout his life which were called "broodings." After he passed his fiftieth birthday, he became overly concerned with old age, and at fifty-six he had his first depression requiring psychiatric help. Several more depressions followed, most of them in the fall (his birthday was in the fall). I saw him through this one. His behavior during the three months of therapy seemed to say, mostly to his wife: "Look how miserable and how wretched I am; you would not, could not, abandon me, could you?"

Case 10. A sixty-nine-year-old married woman, mother of 1 son, came during an episode of agitated depression. When younger she was considered a beauty and had many suitors. She had 8 brothers who adored her. She was the apple of her father's eye. Her husband adored her. Her character structure was narcissistic. Her first depression requiring medical attention occurred at age fifty-five during menopause. The next depression was at age sixty-six when her only son failed his Ph.D. exams. There followed another depression at sixty-eight when her son married, and the present depression coincided with her becoming a grandmother. She recovered after five months of therapy.

Comment

The division between the 3 long-term patients and the 7 short-term patients is arbitrary but helpful. It is my contention that psychotherapy of the elderly should be brief. It can be compared to surgical intervention; the surgeon enters the abdominal cavity for a specific purpose and gets out. The elderly are more prone to become dependent on the therapist than are patients of any other age group. Inattention to this issue is likely to produce iatrogenic attachment to the therapist which could not be undone in the patient's lifetime.

Dependence. A great deal has been written about the infant's dependence on the parents, and much has also been written about the regressive manifestations of old age. The "child-like" old man is a known concept, easily verifiable clinically. Many elderly people, fearful of isolation and loneliness, attach themselves to a "protective other" from whom they cannot be separated.[1] This could be a spouse, relative, or friend with whom a dependent relationship had existed for a long time. The clinging and clutching develop around the time of senescence.

What may have been a symbiotic relationship turns into a parasitic one. The dependent partner's relatedness is ambivalent. His external compliance, affability, and even servility cover up an underlying hostility, resentment, and contempt toward the needed and envied partner. What may have been a relationship among relative equals, becomes a relationship between slave and master or servant and boss.

Retaliation. The clinging elderly person looks for constant reassurance that the "protective other" is not about to forsake him; he pledges love and devotion and requires the around-the-clock presence and attention in return. Any temporary absence of the partner, no matter how brief and how necessary, is suspected as a threat of abandonment and may require coercive behavior. The grasping elder may resort to somatic manifestations of an infinite variety. One that is particularly affected and effective is the function of elimination. Incontinence or constipation including impaction as well as urinary retention could be as much the result of interaction of the clinging elder and his partner as the outcome of a chronic or acute organic brain syndrome. "The battle of the pot," characteristic of toilet training of the child, is re-enacted during old age.

Confusion, disorientation, and clouding of sensorium also could be retaliatory manifestations of a depressive episode rather than results of organic brain damage (Cases 6, 8, 9, and 10).

Depression as retaliation is a primitive and regressive way of dealing with a significant individual. It is similar to a child's saying, "If I die you'll be sorry." It is amazing how this kind of thinking can remain operative throughout a person's life. Case 2 sees himself lying dead after suicide, but at the same time he observes his friends and relatives passing with sad expressions, some even shedding tears. But the main culprit in his life, the father, is the target of the patient's hostility. He sees his now-dead father sorry that he did not treat his son better; that he yelled at him, made him work as hard as any other employe in his shoe factory, and did not love him more. There is a complete blocking out of the otherwise fairly good sense of reality that, once dead, his ability to perceive what is taking place around him is gone.

Physical illness, as a form of coercive behavior which worked so well in attracting the parents' attention, sympathy, toys, and power when the individual was a child, is unhesitatingly re-enacted with friends, relatives, or even total strangers with the expectation of yielding the same results. Cases 9 and 10, through their depressive episodes, were able effectively to turn their spouses into servants if not slaves. Their misery and suffering made them masters of their mates to whom it would never occur to question any of the exorbitant claims and demands exacted. Through weakness and helplessness the sick aged can become holders of absolute power, another similarity to the growing child.

Response to dependence. There are important implications of these dynamics. The "protective other" may sooner or later reach the limit of his endurance and try to get rid of this all-consuming burden. He will try to do it in a socially acceptable way because his own feelings toward the clinging elder are ambivalent. This usually involves trying to obtain an opinion from a medical authority that his difficult-to-handle relative belongs in an institution. The relative who brings the elderly patient to the psychiatrist usually has a vested interest in exaggerating the difficulties of the patient. The psychiatrist's job is to diagnose the situation appropriately without succumbing to the relative's pressure. It still may be the best solution for both—the patient in terms of his illness and the relative in terms of his potential guilt—to allow the two to live together rather than to separate them. Some counseling of the partner on how to handle the elderly patient may be all that is needed for the relationship to continue in a way acceptable to both. Some of the consultations not reported here had to do with such situations.

Role of therapist. There is more the therapist has to be aware of. He is the natural recipient of the patient's "sticky" transference and, if transference is abetted, the physician-patient relationship may become the same as the patient-relative relationship already described. The physician may find this relationship impossible to bear and may try to get rid of the patient by institutionalizing him. Such situations are not infrequently seen when supervising psychiatric residents. They allow their patients to cling to them in the name of giving tender loving care. When realization of their expectations of fast and complete cure do not materialize, these physicians tire of their patients, exaggerate their "worsened" condition, and hope to obtain the supervisor's consent to hospitalization. Proper handling of such a situation makes for a profitable teaching experience.

Handling of the elderly patient's clingingness is of utmost importance.[2] Unless the therapist allows the clinging to take hold for reasons inherent in the treatment of the patient and thereby takes the calculated risk of having a lifetime patient on his hands (Case 3), preventive measures to avoid a sticky transference from taking hold are indicated. They consist mainly of diluting the transference by spacing sessions, limiting phone calls, discharging the patient on improvement with the understanding that he may return, talking to and seeing significant relatives, and assigning the patient to group therapy with a different therapist. If the patient has to merge with someone, it should be a friend, a spouse, a nurse, or a housekeeper, someone other than the therapist.

The therapist should be helping the patient in the exercise of whatever he can do for himself. Taking over and allowing the patient to be totally dependent hastens institutionalization and complete disorganization of the personality. Helping him to function on whatever level he is able to function is the best way to help his integration of the self with attendant self-respect and self-esteem.

Rewards of geriatric psychotherapy. Psychotherapy with older people is rewarding. With the exception of Cases 1, 2, and 3, in whom deeply imbedded character defects were involved, treatment was brief and results were tangible. However, even in the first 3 cases the therapeutic results were impressive, and the fact that the therapy had to continue did not detract from the subjective and objective improvement that had taken place in those patients. Yet with Cases 4 through 10, although treatment was terminated, the possibility always remains that some of them will return with another bout of illness requiring another term of therapy. Old age is a chronic state, and the longer it lasts the more likely an emotional disequilibrium is apt to occur requiring psychiatric intervention.

What makes geriatric psychiatry rewarding is that in most cases one deals with mature people who have lived a long time and have experienced a great deal. These are people who understand more, are able to cooperate better, and as a rule do not expect absolute results. With the wear and tear of time not only have their defenses loosened but their drives have also weakened. Case 4 did not expect a restitution of his potency as it was when he was twenty or thirty. He hoped for an occasional sexual intercourse, but what he needed mainly was a better, closer, more accepting relationship with his wife. Case 5 saw his family disintegrate, his status in the community wane, and he himself began to totter and shake. When his wife's and son's health began to improve somewhat, his own equilibrium began to return. He knew that both were sick people and that at best his family would be a limping one; but this was satisfactory to him.

Many psychiatrists care only for the YAVIS type of patient. YAVIS is the acronym for young, attractive, verbal, intelligent, and successful. The ancient Greeks admired the beauty and vigor of youth but also venerated the wisdom and experience of the old. In modern psychiatry childhood has been the most active area. Old age, like its outcome death, has been shunned, avoided, and even denied. Recently, more attention is being given to the declining years as well as to the topic of death. The process of living is fascinating in all its aspects: its beginning, its course, and its end.

Summary

Ten cases of psychotherapy with aged patients are briefly presented. Three patients showing serious character difficulties still remain in treatment after a prolonged period of time. The remaining 7 were discharged after brief psychotherapy. The psychodynamic point of view is used and brief, goal-directed treatment advocated. The utilization of the elderly patient's own assets and resources for as long as possible is suggested, and ways to avoid his tendency to cling are discussed. Aged persons are seen as rewarding patients to work with.

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Parkinson's Disease Treated with L-dopa

Three-year follow-up report

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Two-hundred forty-two patients with Parkinson's disease have been treated with L-dopa for two and one-half to three years. Only 89 of the original 242 patients are now clearly improved. Sixty-three patients who had responded initially to the drug have now had progression of their disease during maximal L-dopa therapy. Side effects of L-dopa limit the amount of the drug that can be taken, thus reducing the efficacy of L-dopa. This is particularly true of dyskinesias which occurred as a limiting factor in 63 patients. These data imply that L-dopa, although the drug of choice in parkinsonism, does not stop progression of the disease. Additional work is needed to determine the cause of parkinsonism and thus help in its elimination.

The treatment of chronic Parkinson's disease in patients with large amounts of oral L-dopa was started by Cotzias, Van Woert, and Schiffer in 1967,[1] and since that time many observers have noted that L-dopa is the treatment of choice in parkinsonism.[2-6] Most early reports have noted an improvement in at least 50 to 70 per cent of patients treated with L-dopa. This report, an analysis of the general effects of L-dopa on 242 patients over a three-year period, is an attempt to determine the long-term results of L-dopa.

Material and methods

The initial 242 patients with Parkinson's disease seen at Mt. Sinai Medical Center from November, 1968, to June, 1969, were treated with a trial dose of L-dopa. The details of this treatment and the rating system has been described previously.[6] The patients were treated on increasing amounts of oral L-dopa to a maximum effect which usually ranged from 3 to 6 Gm. per day. Most patients were limited in the amount of L-dopa they could take because of nausea, vomiting, and dyskinesias. A smaller number of patients have had difficulty with the drug because of mental changes or low blood pressure. All patients who were not completely responsive to L-dopa were given anticholinergic drugs and/or amantadine (Symmetrel) along with L-dopa. Recent results with alpha methyl dopa hydrazine and alpha methyl dopa are not included in this study.

All of these patients have been followed personally by the author for at least two and one-half years. The only exception is 28 patients who had been lost to follow-up as of July, 1971, but who were contacted by telephone and mail in December, 1971. The data of their clinical status have been included in this report when the results of L-dopa therapy appeared to be clear.

Results

The results of the clinical evaluation of patients in L-dopa are summarized in Table I. One hun-

TABLE I. Clinical evaluation of 242 patients started on L-dopa from November 1, 1968, to June 1, 1969

	Dates of Evaluation			
Patient Data	July, 1970	January, 1971	July, 1971	January, 1972
Number followed on L-dopa	206	185	173	179*
Results of therapy				
Significantly better	159	116	119	89
Improved but recent progression	. . .	. . .	. . .	34
Responded but now worse	. . .	. . .	. . .	29
Unresponsive	. . .	. . .	. . .	27
Stopped drug or lost to follow-up	20	37	44	25
Died	16	20	25	38
TOTALS	242	242	242	242

* Twenty-eight of these 179 are under supervision of other physicians.

TABLE II. Status of patients who stopped L-dopa

Status	Number	
Stopped L-dopa		8
No help	2	
Stroke	2	
Mental changes	2	
Dyskinesia	1	
Nausea and vomiting	1	
Died		38
Cardiovascular	7	
Pneumonia	8	
Cancer	4	
Suicide	1	
Cause unknown	11	
Other causes	7	
Lost to follow-up		17
TOTAL		63

dred seventy-nine patients of the original 242 are still taking L-dopa. One hundred fifty-one of these are being actively followed at Mt. Sinai Medical Center, and 28 are under supervision of other physicians. Of these 179 patients, 89 are significantly improved and have not shown any progression in their disease since starting L-dopa therapy. All but 10 of these patients, however, still have evidence of Parkinson's disease which limits some of their activities. In these 89 patients, side effects of L-dopa limit the amount of drug that can be taken and, therefore, limit the efficacy of treatment. Forty-nine patients are limited in the amount of L-dopa that can be taken because of dyskinesias. Nineteen are limited because of nausea and vomiting and 4 because of mental changes with higher doses of L-dopa.

Another 34 patients, although still better than they were before starting L-dopa, have shown definite progression in their disease in the past year. The amount of L-dopa given these 34 patients has been limited because of dyskinesias in 18, nausea and vomiting in 8, and mental changes in 5.

Twenty-nine patients, who initially responded to L-dopa therapy, now have progressive disease on maximal L-dopa therapy and are worse than their pre-L-dopa status. These patients have continued taking L-dopa; however, dyskinesias limit the amount of drug that can be taken in 9, and nausea limits the amount in 7. Mental changes have occurred on higher doses of L-dopa in 4 of these patients.

Twenty-seven other patients have been relatively unresponsive to L-dopa throughout their course of treatment, but they have continued the drug in the hope that progression of the disease can be modified or stopped. Ten of these 27 patients became worse when L-dopa was withdrawn; therefore, they have continued the drug.

Table II summarizes the status of the patients who have stopped L-dopa therapy since the initial trial. Thirty-eight patients have died; however, in none of these does death appear to be directly attributed to L-dopa therapy.

Comment

The finding of a decreased amount of dopamine in the basal ganglia of patients with parkinsonism was the original stimulus for the treatment of these patients with L-dopa.[7] It is presumed that the decrease of dopamine is secondary to the destruction of the substantia nigra. L-dopa increases the amount of dopamine in the striatum and thus probably improves the clinical status of patients. There is no reason, however, to believe that the degeneration of the substantia nigra neurons could in any way be affected by L-dopa medication.

The clinical data presented here imply that progression of Parkinson's disease can continue during L-dopa therapy in many patients. This progression has now occurred in 63 of the original 242 patients we have been treating. The efficacy of L-dopa has also diminished because of its side effects. In many patients, who have done well on L-dopa initially, dyskinesia has been a common problem which limits the amount of the drug that can be taken and in that way perhaps decreases the efficacy of the drug. Nausea, vomiting, and mental changes are also important side effects of the drug which can reduce its efficacy in certain patients. It is not certain, however, if the patients whose disease has been progressing despite L-dopa therapy would improve if greater amounts of L-dopa could be given without increasing the side effects of the medication. The use of dopa decarboxylase inhibitors may prove to be of help in certain cases.

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Cardiopulmonary Resuscitation in Community Hospital

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A small community hospital has devised a method of emergency resuscitation which can be carried out by interns and the attending nursing staff. The major components of the program are a continuing education program for nursing personnel and attending staff and an especially prepared emergency cart with all necessary supplies. Results were reasonably good; of 127 patients on whom resuscitative efforts were carried out, 46 were resuscitated and 26 were eventually discharged alive and well from the hospital.

Emergency resuscitation of the patient who suddenly and unexpectedly has stopped breathing or had cardiac arrest has become an increasingly frequent event in hospitals throughout this country. In larger institutions, such as university hospitals and other teaching centers where a resident staff is available, a team concept has usually been established. There is twenty-four-hour coverage by a resident team trained in cardiopulmonary resuscitation. Some measure of success should be expected with this setup. Denfield and Hickey in 1968[1] reported a 36 per cent successful initial resuscitation effort and a 12 per cent long-term result; that is, 12 per cent of those who had resuscitation attempts were discharged from the hospital alive and well. Even better results may be expected now with the widespread use of coronary care units in which trained nursing personnel can institute the resuscitation measures more rapidly since they are in constant attendance and have automatic alarm systems.

This report summarizes the cardiopulmonary resuscitation results in a 350-bed community hospital without resident staff. Only interns, all foreign trained, were available, and these interns served for periods no longer than twelve months.

Procedure

A "crash cart" was set up with appropriate equipment, kept to a minimum, for the emergency resuscitative procedures. The cart is small enough to fit into all the hospital rooms, is readily mobile, and has three drawers and a lower cupboard with hinged doors. The top drawer contains airway equipment; the second drawer contains syringes, needles, suction catheters, blood pressure cuff, ophthalmoscope, and gloves; and the third drawer contains cardiac medications. The cupboard contains intravenous solutions, a blood transfusion set, a central venous pressure set, and a cut-down set. On the top of the cart is placed the monitor-defibrillator equipment (Mennen Greatbatch cardiac monitor, direct-current defibrillator, and pacemaker). A small Gomco suction unit is also fastened to the top of the cart. The manual cardiac press (Rensch) is fastened to the back of the cart. One electrical wire with plug suffices, since all the electrical equipment on the cart is plugged into this circuit. The cart is inspected each morning by an assigned nurse, who restocks any items that have been used during the previous twenty-four hours.

A record book with looseleaf sheets is kept in the cart. The nurse involved in each resuscitation event is instructed to fill out the form with the aid of the physician participating. This report is a one-sheet report with items taken from the recommended report form in the *American Heart Association Emergency Resuscitation Manual.*[2] It has been found quite adequate for accurate records with the addition of two items, the duration of resuscitation in minutes and the working diagnosis. These records are collected by nursing supervisor personnel and kept in the office of the coordinator of resuscitation efforts, who is a member of the intensive care committee. The reports are reviewed periodically and form the basis for this review. Periodic instruction sessions are held for nursing personnel, for the house staff, and for the attending physicians on the active staff of the hospital. These teaching sessions are repeated at approximately six-month intervals.

Results

The program at the Niagara Falls Memorial Medical Center was established in December, 1968. During the following three-year period, through December 31, 1971, 247 resuscitation episodes occurred on 214 patients. These will be divided into two periods for purposes of comparison.

TABLE I. Location of cardiopulmonary episodes and success rates

Location	Total Episodes Number	Total Episodes Per Cent	Success Rate Number	Success Rate Per Cent
Intensive care unit	101	66.5	47	47
Floor	37	24.5	15	40.5
X-ray department	2	1.3	1	50
Emergency room	11	7.3	2	18
TOTAL	151	...	65	43

TABLE II. Patients discharged after successful cardiopulmonary resuscitation

Location	Number Successfully Resuscitated Patients	Discharged Patients Number	Discharged Patients Per Cent	Discharged Patients Per Cent Total Resuscitated Patients (N = 127)
Intensive care unit	32	17	53	16.8
Floor	11	7	65	19
X-ray department	1	1	100	0.8
Emergency room	2	1	50	0.8
TOTAL	46*	26	56.5	17.2

* 36 per cent.

The first period of evaluation was from December, 1968, through April 1, 1970. During this time there were 96 resuscitation episodes on 87 patients. Twenty-eight per cent of the resuscitations were successful, in 23 patients (26.4 per cent).

During the second period of evaluation, April 1, 1970, through December 31, 1971, there were 151 resuscitation episodes on 127 patients (Table I). There were 65 successful resuscitations (43 per cent) in 46 patients (36 per cent). More cardiopulmonary resuscitations were performed during this second period, probably because of the more frequent occurrence of crises in the intensive care and coronary care units where they were diagnosed and treated promptly by the trained nursing staff. The success rate during the second period also was appreciably greater, probably due to the same factors.

During the second period of evaluation, of the 46 patients who were successfully resuscitated initially, 26 were discharged alive and well from the hospital (Table II). This is 56.5 per cent of the successfully resuscitated patients and 14 per cent of the total of 127 patients in whom resuscitation was attempted. A further follow-up was carried out on the discharged group, and 14 patients were found to be alive and well from one to eighteen months after discharge. This was 30.5 per cent of the 46 successfully resuscitated patients, 54 per cent of the 26 discharged patients, and 11 per cent of the 127 resuscitated patients. The 26 patients discharged from the hospital represent pure salvage and make the program worthwhile.

It was interesting to find that a significant success rate was obtained in patients occupying ordinary hospital rooms, cared for by general-duty "floor" nurses (Tables I and II); 24.5 per cent of the resuscitations occurred in this group of which 40.5 per cent were successful. The success rate in sicker patients in the intensive care unit was 47 per cent. Sixty-five per cent of the resuscitated "floor care" patients were discharged alive and well.

Summary

Cardiopulmonary resuscitation in a community hospital without resident staff is a practical, valuable adjunct in the care of the inpatient population. With an adequately equipped "crash cart" and a continuing educational program for both nursing personnel and attending medical staff, such a program can result in significant saving of patients who would otherwise die.

In a recent nineteen-month period, cardiopulmonary resuscitation was carried out on 127 patients; 46 patients (36 per cent) were successfully resuscitated, and 26 patients were discharged alive and well, representing 17.2 per cent of the 127 patients on whom resuscitative effort was carried out and 56.5 per cent of the 46 successfully resuscitated patients.

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Kidney Involvement in Neuroblastoma

The urinary system can be involved in neuroblastoma by direct extension of the tumor or metastasis. In this study of 62 patients with neuroblastoma 27 showed involvement of the urinary system. Alterations also occurred chiefly from direct pressure effects by the tumor. Roentgenologic examination of the urinary system can provide useful prognostic information in patients with neuroblastomas, and intravenous pyelograms are valuable in evaluating extension and stage of the disease for the proper therapeutic considerations.

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Neuroblastoma is a common neoplastic disease in childhood and may originate in the adrenal gland or sympathetic ganglions of the cervical, posterior mediastinal, retroperitoneal, and abdominal regions. Unusual primary origins of the tumor, such as the bladder, lip, and sciatic nerve, have been reported.[1,2] The urinary system can be involved in neuroblastoma disease mainly by direct extension of the tumor. This obviously may occur more often in primary abdominal involvement.

Prognostic criteria, such as diagnosis of the disease before one year, site of the primary tumor, lack of known dissemination, tumor maturation, and surgical stage of the disease, have been discussed previously.[3-9] However, there is still uncertainty in the minds of urologists and radiologists as to the prognostic importance of kidney involvement in patients with neuroblastoma. How often does renal involvement occur in the clinical picture of the different types of neuroblastoma and in different stages of the disease? What is the prognostic value of normal or abnormal findings on intravenous pyelograms in patients with neuroblastoma tumors? Is the radiologic examination of the urinary system a helpful tool for staging neuroblastoma disease? The purpose of this study is to attempt to answer such questions by reviewing 62 cases of neuroblastoma, histologically diagnosed and treated in Roswell Park Memorial Institute between 1950 and 1965.

Materials and methods

This study represents a review of 62 cases which were classified as neuroblastoma according to histologic criteria previously described.[10] The urinary tract involvement in the disease was evaluated by clinical examination, including hematologic evaluation, urinalysis, intravenous pyelography, and, in most cases, surgical exploration. Special attention in this study was focused on the radiologic findings.[8] In reviewing postmortem findings the urinary system and especially the kidney received special attention. Vanilmandelic-acid excretion was measured in 30 per cent of the cases. Other clinical and laboratory findings have been discussed previously.[11,12]

Staging of the disease was completed according to the criteria proposed recently by Evans, D'Angio, and Randolph.[5] In our study those criteria were provided from clinical observations and surgical exploration. All patients were followed for at least five years until the end of 1970. Long-term survivors were considered to be those living free of disease more than three years.

Results

A male predominance was observed in the study (33:29). Only 16.2 per cent of the patients were less than two years old, and 11.2 per cent of the patients were between ten and twenty years of age. Cervical and thoracic primary tumor involvement was found in 15 cases (24 per cent), adrenal involvement in 15 cases (24 per cent), and extra-adrenal abdominal primary tumor origin was found in 27 cases (43.5 per cent). In 5 cases the primary origin of the tumor was unknown.

One patient had stage I disease, 14 patients stage II, 19 patients stage III, 26 patients stage IV, and 2 patients stage IV-S.

The appearance of a large abdominal mass on physical examination was a prominent symptom in cases with primary adrenal or extra-adrenal abdominal tumor involvement. Signs related to the urinary system were not often encountered at the time of primary diagnosis of neuroblastoma.

TABLE I. Intravenous pyelographic changes according to staging and site of primary involvement in 62 patients with neuroblastoma

Stage	Cervical and Thoracic	Retroperitoneal	Adrenal	Unknown	Totals
I	...	0 of 1	...	...	0 of 1
II	1 of 7	0 of 2	3 of 5*	...	4 of 14 (28.5)†
III	0 of 5	7 of 9**	4 of 5	...	11 of 19 (57.8)
IV	0 of 3	7 of 13	4 of 5	1 of 5††	12 of 26 (46.1)
IV-S	...	0 of 2	...	...	0 of 2 (0)
TOTALS	1 of 15 (6.6)	14 of 27 (51.8)	11 of 15 (73.3)	1 of 5 (20)	27 of 62 (43.5)

* Two patients with poor unilateral renal function.

† Figures in parentheses represent per cent.

** One patient with poor unilateral renal function.

†† One patient with poor unilateral renal function.

Only 2 patients had renal colic, and 1 had urinary retention. The latter complication appeared in the course of the disease in another 3 patients, who had primary abdominal tumors and secondary spinal cord involvement.

The diagnostic help of roentgenography and biochemical tests prior to histopathologic study for the malignant disease has been appreciated in the present study, as noted previously.[8] Elevated vanilmandelic-acid excretion was observed in the study in 90 per cent of the patients tested regardless of stage in the presence of a neural crest lesion.

Normal pyelographic appearance was found in 56.5 per cent of the patients in the study (35 of 62) and was abnormal in 43.5 per cent (27 of 62). Abnormal pyelographic appearance was due mainly to extrinsic pressure on the kidney, ureter, or urinary bladder from the tumor. This was evident from the postmortem examination, especially in the extra-adrenal primary neuroblastoma tumors. These roentgenographic alterations included changes of kidney position, deformity of the pelvicalyceal system, hydronephrosis, displacement of the ureter, pressure defects on the bladder, and mass with or without calcification.

The renal function of the affected side was maintained at good levels as judged by the intravenous pyelographic appearance. Four patients had poor renal function on the side affected by neuroblastoma. Two of these patients had adrenal primary tumors. Another patient with bilateral hydronephrotic changes died from uremia. This latter patient had general disease of unknown primary origin. Calcification of the kidneys was found in 5 cases (8 per cent) and was noted mainly with disease located primarily in the adrenal gland. Kidney changes were related mainly to primary adrenal tumors, and ureteric deformities were associated principally with retroperitoneal neuroblastoma lesions. Pyelographic changes were unilateral except for 6 cases in which they appeared bilaterally. The latter appearance was observed mainly in the disseminated form of the disease in primary retroperitoneal tumors.

Table I illustrates the intravenous pyelographic changes according to the staging of the disease and primary organ involvement at the time of the clinical diagnosis of neuroblastoma. Of 15 patients with localized tumors (stages I and II), only 4 had abnormal intravenous pyelographic appearance. Of the last cases, 2 had poor renal function. In stage III disease, in which the lesion extended in continuity beyond the midline with bilateral regional lymph-node involvement, the highest percentage of abnormal intravenous pyelographic appearance (11 of 19 cases or 57.8 per cent) was found. On the other hand, patients with disease involving skeletal organs, soft tissue, distant lymph nodes, and so on (stage IV) had nearly the same pyelographic evidence of urinary system involvement. Of 26 patients with stage IV disease, 12 showed abnormal findings on intravenous pyelograms (46 per cent), and only 1 patient had poor unilateral renal function. Finally, 2 patients with localized primary lesions and metastases to the liver, skin, or bone marrow (stage IV-S) had a normal intravenous pyelographic appearance.

It is obvious from Table I that urinary system involvement was rare in primary neuroblastoma originating above the diaphragm (cervical and thoracic primary tumors). On the other hand, retroperitoneal primary tumors were revealed more frequently by abnormal findings on intravenous pyelograms. From 27 such cases, 14 showed evidence of displacement or some degree of obstruction of kidney, ureters, or bladder. When the primary origin of the neuroblastoma could not be determined, there was no extensive effect on the urinary system, despite the general involvement of the disease. One of 5 such patients showed bilateral hydronephrosis with uremia. The highest percentage of kidney involvement in neuroblastoma was found in primary adrenal tumors, as was anticipated. Of 15 patients, only 4 had intravenous pyelograms with normal findings. The remaining 11 cases showed abnormal results on intravenous pyelograms due mainly to pressure or invasion of the kidney by the tumor.

Table II depicts the survival rate of patients with normal or abnormal intravenous pyelo-

TABLE II. Survival rate (in months) of patients with neuroblastoma in different stages according to the intravenous pyelographic changes*

	Survival Rates		
Findings	Stage II	Stage III	Stage IV
Normal	36.4 ± 22	13.2 ± 3.2	17.8 ± 21.2
Abnormal	26.6 ± 11.4	12.7 ± 3.9	12.6 ± 16.2

* Mean values ±1 S.D.

TABLE III. Invasion of kidney and urinary bladder by tumor in 62 patients with neuroblastoma according to site of primary involvement

Site	Number	Per Cent
Cervical and thoracic	1 of 15	6.6
Retroperitoneal	4 of 27*	14.8
Adrenal	8 of 15	53.3
Unknown	0 of 5	0
TOTAL	13 of 62	20.9

* One case without abnormal pyelographic appearance at time of clinical diagnosis.

graphic appearance in different stages. The mean survival of the patients with stage II disease and with normal results on intravenous pyelograms was 36.4 months as contrasted with 26.6 months for the patients with similar stage but abnormal intravenous pyelographic appearance. In stages III and IV the mean survival rate was almost the same regardless of whether abnormalities on intravenous pyelograms were present or not. It is important to emphasize that all 7 patients (mainly with stage I and II) who had survived for more than three years clinically free of the disease had normal results on intravenous pyelograms.

Table III indicates that 13 of 62 patients with neuroblastoma (20.9 per cent) showed evidence of urinary system involvement at postmortem examination, with presence of tumor in the system resulting from direct invasion by the tumor. Two patients had invasion of the urinary bladder, and the remainder of the patients had renal involvement by direct tumor extension. All these patients, save 1, had primary abdominal tumors. Half of these tumors originated in the adrenal gland. It is also important to note that 12 of 13 patients with urinary system involvement in neuroblastoma disease at the postmortem examination had abnormalities on intravenous pyelograms at the time of clinical diagnosis of the disease.

Comment

The present study demonstrates that urinary tract involvement in neuroblastoma, as judged mainly by intravenous pyelographic changes, can provide additional significant prognostic information. In this study an abnormal pyelographic appearance was found in 51 per cent of the patients with extended forms of disease (stages III and IV) and in 26 per cent of the cases with localized forms of tumor (stages I and II). Furthermore, the survival rate in patients with stage II of the disease and normal pyelographic findings was better than in patients having the same stage but abnormal radiographic appearance.

The site of the primary neuroblastoma involvement appears also to be another prognostic sign.[4,6-8] It has been suggested that primary tumors originating above the diaphragm have better prognosis than lesions arising primarily below the diaphragm. In this study the urinary system involement in neuroblastoma disease was dependent mainly on the primary site of the tumor. Cervical and thoracic primary tumors in localized or disseminated forms of disease infrequently had urinary system involvement. On the other hand, in tumors originating below the diaphragm, as in adrenal or extra-adrenal abdominal cases, involvement of the urinary system was frequent (59 per cent). The primary tumors located in the adrenal area involved the kidney in all stages of disease. In contrast. retroperitoneal primary tumors showed evidence of intravenous pyelographic abnormalities only in disseminated forms of disease (stages III and IV). Crossing of midline in retroperitoneal primary tumors (stage III) did not affect the urinary system more often than multiple metastases (stage IV). Patients with stage IV-S had a good prognosis and also showed normal intravenous pyelographic appearance.[13] Thus, abnormal findings on intravenous pyelograms in neuroblastoma may suggest either a primary adrenal tumor or a disseminated retroperitoneal form of disease. Since adrenal involvement has an ominous prognosis as well as disseminated stages of retroperitoneal disease, evidence of an abnormal finding on intravenous pyelograms at the time of the clinical diagnosis is a bad prognostic sign and may influence therapeutic considerations.[5,6,9]

On the other hand, normal intravenous pyelographic appearance at the time of the clinical diagnosis of neuroblastoma disease suggests that tumor originated above the diaphragm, a localized retroperitoneal primary tumor, or stage IV-S of disease. Patients with localized retroperitoneal tumors or stage IV-S of disease appear to have a good prognosis.[5,13] On the other hand, tumors of cervical or thoracic primary involvement have better prognosis than primary tumors originating below the diaphragm.[4,7] The small number of patients with unknown primary origin of the disease makes it difficult to draw conclusions about the prognostic value of the radiographic examination of the urinary system in this form of disease.

The staging of neuroblastoma is provided mainly from findings on surgical exploration.[5] From this study, it is apparent that the extent of the disease can also be evaluated by the radiographic examination of the urinary system. In the retroperitoneal primary tumor a normal intravenous pyelographic appearance appears to indicate a localized form of disease, while abnormal findings on intravenous pyelograms appear to be associated with the more advanced stages of neuroblastoma with an ominous prognosis.

Clinical and postmortem information in this study demonstrated that the involvement of the urinary system in neuroblastoma disease resulted mainly from pressure effects of the tumor on the different parts of the system and consequently may not be a serious complication per se. Only 1 of 62 patients with neuroblastoma tumors died from obstructive renal failure.

Summary

Of 62 patients with neuroblastoma, 27 showed involvement of the urinary system as evidenced by intravenous pyelographic changes. These alterations occurred chiefly from direct pressure effects of the tumor. On postmortem examination 13 of these patients had disease in the kidney or urinary bladder, which resulted in direct invasion of these organs by the tumor. Urinary system involvement in this study was dependent mainly on the site of the primary tumor and was associated principally with abdominal primary lesions. Abnormal pyelographic appearance was noted mainly in the advanced stages of disease (III and IV), which have an ominous prognosis. In contrast, in localized forms of neuroblastoma (stage I and II) most of the patients appeared to have normal pyelographic appearance.

It is reasonable to suggest that the roentgenologic examination of the urinary system can provide useful prognostic information in patients with neuroblastoma, especially in abdominal primary tumors. In this latter group the intravenous pyelographic appearance is an additional valuable sign for evaluating the extension of the disease and staging the lesion and can influence therapeutic considerations.

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A series of review articles dealing with medical progress

Recent Advances in Medicine and Surgery

ROBERT TURELL, M.D., Editor

Cancer Chemotherapy

Part III

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Part I of this report, which appeared in the October 15th issue of the ***JOURNAL,*** described the uses of the alkylating agents. Part II, published in the November 1st issue, discussed the purine and pyrimidine antagonists and described at length the miscellaneous agents and technics.

Combined drug therapies

Combination chemotherapy, the concurrent use of two or more chemotherapeutic agents in an effort to improve treatment, is now the most discussed topic in modern cancer therapy. Despite many reports of series of patients treated, controlled clinical trials have been few.

Before discussing the clinical applications, a short discussion of the theoretic basis of combination chemotherapy is in order. The basic aim of cancer chemotherapy is to eradicate tumor cells to palliate or cure the patient's disease. Venditti *et al.*[295] recognized that it mattered little whether a combination of drugs was synergistic, additive, or antagonistic, since the most important consideration was the effect of the combination on the tumor cells as compared with its toxic effects on the patient. They coined the term "therapeutic synergism," defined as "the combined action of agents which results in improved therapies," and later as "instances in which drugs in combination produced a therapeutic response superior to the maximum response to either drug alone."[296]

A number of authors have discussed the theoretic basis for therapeutic synergism. The review by Venditti and Goldin[296] includes an excellent discussion of both theoretic concepts and experimental data, but the briefer and more recent article by Sartorelli[297] is perhaps more useful to the clinician. These reviews discuss synergism on the level of enzymatic reactions in the cell. Another approach to achieving "therapeutic synergism" is to use two or more agents with different limiting toxicities in the hope that such a combination will additively affect the tumor but not the host cells. This approach can be illustrated by explaining the rationale behind the MOPP (mechlorethamine, vincristine [Oncovin], procarbazine, and prednisone) regimen for the treatment of Hodgkin's disease.[54,298] In this combination, mechlorethamine and procarbazine produce their major toxicity on the bone marrow. Vincristine, with minimal marrow toxicity, is the only drug in the combination which produces neurotoxicity, while the fourth drug, prednisone, produces little acute toxicity at all. Therefore, the only additive toxicity is that of the two drugs which affect the marrow, and thus there is little or no combined toxicity for the cells of any organ system. Yet each drug produces a toxic effect on the tumor.

In addition to "therapeutic synergism," a second major consideration of combination chemotherapy is the prevention of development of resistance to the chemotherapeutic agents. Analogous to bacteria, it was assumed that tumors initially sensitive to a chemotherapeutic agent eventually no longer responded because the tumor cell became resistant to the drug. In most cases, it is now believed that although sensitive tumor cells are killed, mutant tumor cells resistant to the chemotherapeutic agent survive, allowing regrowth of the tumor. If the chances of the tumor cell being resistant to chemotherapeutic agent A are one in 10^{10}, and the chances of the tumor cell being resistant to agent B are also one in 10^{10}, and if there is no cross resistance between the two agents, the chances of the tumor cell being resistant to the combination is one in 10^{20}.

As yet the promising results of combination chemotherapy for experimental tumors have not been translated into dramatic improvement in the treatment of human cancer. However, several drug combinations have found an established place in the armamentarium of the cancer chemotherapist.

Modern treatment of childhood acute leukemia involves two phases, the induction of remission and its maintenance. Different drug combinations and schedules are used for each phase. At present a combination of a chemotherapeutic agent and prednisone is the accepted method of inducing remission in childhood acute leukemia. The most popular combination is vincristine plus prednisone.[299] Methotrexate, 6-mercaptopurine, or cyclophosphamide plus prednisone may also be used.[299-301]

The VAMP and POMP regimens which are of great experimental interest, have produced excellent remissions in both childhood acute leukemia and occasionally in the adult variety.[299] The most dramatic aspect of these remissions is that they may last anywhere from several months to several years despite discontinuation of all antileukemia therapy. However, there is no evidence that these regimens are more effective in the long run than standard antileukemia therapy. At present the combination of 6-thioguanine and cytarabine is producing improvement in survival of adults with acute leukemia.[302]

The alternation of vincristine and cyclophosphamide in the treatment of childhood neuroblastoma was introduced by James *et al.*[110] This regimen consists of vincristine 1 mg. per square meter intravenously every two weeks alternating with cyclophosphamide 300 mg. per square meter intravenously every two weeks. In 1967 James[303] presented follow-up data which indicated that 3 of his original patients were still in complete remission twenty-two to thirty-two months from diagnosis, while 2 more were free of disease after chemotherapy had converted inoperable to operable tumors. The James regimen appears to be standard therapy for childhood neuroblastoma, although other groups[304,305] have not had results quite as good as those reported by James.[303]

Radiotherapy is the treatment of choice for Hodgkin's disease, but for those patients who are not suitable for "curative" radiotherapy, physicians at the National Institutes of Health have recently developed a regimen of combination chemotherapy called MOPP which hopefully will be curative in at least some patients with Stage IIIB or Stage IV Hodgkin's disease.[298]

In 1970 DeVita *et al.*[54] of the National Institutes of Health, reported on 43 patients with Hodgkin's disease who had been treated according to the MOPP regimen and noted that 35, or 81 per cent of them, had complete remission. As of March 1, 1971, the median duration of complete response from the last day of treatment was thirty-six months, and 15 of the patients were still in remission, while 27 of the 35 complete responders were alive with a minimum follow-up of four years. Some of the patients who relapsed after initial response were successfully retreated.[306]

The regimen used by DeVita *et al.*[54] involves six two-week courses or cycles of medication given over a six-month period. On the first and eighth days of the cycle, 6 mg. per square meter of mechlorethamine and 1.4 mg. per square meter of vincristine are given intravenously. On the first through the fourteenth day, procarbazine 100 mg. per square meter is given orally, and in the first and fourth cycle, prednisone 40 mg. per square meter is also given daily by mouth. The time interval between cycles is two weeks, so that the entire course takes six months, after which no maintenance therapy is given. However, I understand that because of the gradually increasing relapse rate, the group at the National Institutes of Health is experimenting with maintenance therapy after the initial six-month treatment period. A number of other groups have also used this regimen, but their results do not appear to be quite as dramatic as those obtained at the National Institutes of Health.[307-310] The major difference has not been in percentage but rather in duration of remissions induced.

Combination chemotherapy may prove valuable in the lymphosarcoma-reticulum cell sarcoma group of lymphomas. The treatment of these diseases is far from standardized and until recently offered mainly palliation with little, if any, prolongation of life. Because of general dissatisfaction with these results, there has been recent experimentation with more radical therapy. Preliminary data appear to indicate that these approaches are more successful in prolonging life, although no controlled clinical studies are available to prove or disprove this point. One promising approach for lymphosarcoma is the use of total body irradiation and/or total nodal irradiation.[311] The combination chemotherapy regimens now being developed by various cooperative chemotherapy study groups are also promising.

Acute Leukemia Group B showed that vincristine plus prednisone is as effective as a three-drug combination of vincristine 0.025 mg. per kilogram per week, cyclophosphamide 15 mg. per kilogram per week, and prednisone 1 mg. per kilogram per day in inducing remission in lymphosarcoma or reticulum cell sarcoma.[312]

Recently the group at the National Institutes of Health has used the same three drugs in intensive five-day courses every three weeks to treat lymphosarcoma with results that appear to be superior.[313] Cyclophosphamide 400 mg. per square meter was given orally for five days along with prednisone 100 mg. per square meter. Vincristine 1.4 mg. per square meter was administered intravenously on the first day of each cycle. Thirty-five patients were treated, with 20 complete and 12 partial remissions. Eighty-nine per cent of the complete remissions lasted more than a year.

Recently, Lowenbraun, DeVita, and Serpick[314] published data on MOPP therapy in the treatment of lymphosarcoma and reticulum cell sarcoma. The results were not as impressive as those achieved in Hodgkin's disease. Of 15 patients with lymphosarcoma, there were 7 complete and 5 partial remissions. The mean duration of response was 11.7 months with some patients still in remission. Of 8 patients with reticulum cell sarcoma treated, there were 3 complete and 2 partial remissions, with the mean duration of complete response greater than 32 months at the time of reporting.

The best results achieved with combination chemotherapy have been in patients with acute leukemia, Hodgkin's disease, lymphomas, and childhood neuroblastoma. However, a whole host of solid tumors have also been treated with combination chemotherapy with few, if any, impressive results. James *et al.*[315] used dactinomycin and vincristine in a number of malignant tumors of childhood. Although results were good in both Wilms' tumor and embryonal rhabdomyosarcoma, the duration of remission tended to be brief. Chanes *et al.*[316] administered a combination of vincristine and dactinomycin in adult solid tumors with a fairly high remission rate.

A number of other combination chemotherapy regimens have been devised. The most important is the original "triple therapy" regimen for testicular tumors developed by Li *et al.*[317] at Memorial Hospital, which produced complete regression in some patients. Whitmore[318] published follow-up studies from Memorial Hospital in 1962 which noted objective response in all 3 seminomas, 17 of 25 embryonal carcinomas, 11 of 17 teratomas, and 7 of 10 choriocarcinomas of the testis. Ansfield *et al.*[319] also reported similar results using the triple drug therapy regimen in testicular tumors in 1969. This regimen has also been used with some success in patients with choriocarcinoma of the uterus.[320]

The triple therapy regimen combines daily oral chlorambucil and methotrexate with short courses of intravenous dactinomycin. There are two- to three-week drug-free rest periods between each course which lasts sixteen to twenty-five days. Stomatitis, diarrhea, and/or marrow depression are almost invariable accompaniments of triple therapy, but recovery is fairly rapid, occurring in seven to fourteen days.

MacKenzie,[321] who is also at Memorial Hospital in New York, treated 163 patients with metastatic carcinoma of the testis using various combination chemotherapy regimens differing from Li's triple therapy, and concluded that dactinomycin alone was as successful as any of the combination chemotherapy regimens, including Li's. Almost all regimens gave a good percentage of patients with initial response and a small number of patients with long-term remissions which may ultimately be cures.

Jacobs[322] reported on the use of 0.025 mg. per kilogram per week of vincristine, combined with 2 mg. per week of dactinomycin and cyclophosphamide 2 mg. per kilogram per day orally. His results in testicular tumors paralleled those of MacKenzie,[321] and he noted objective responses in 8 of 17 patients with soft-part sarcomas.

A number of other authors have used various combination chemotherapy regimens in treating solid tumors, but none of them appear to give more than transient response.[323-332] At this point a quotation from an article by Nathanson[330] is appropriate: "In tumors which tend to be relatively drug-insensitive, combination of agents . . . did not seem to improve the speed or completeness of response."

Greenspan[331] was a pioneer in the field of combination chemotherapy for breast carcinoma which has become fashionable recently.[327,329,332] The medical newspapers have featured reports presented at various meetings over the last several years suggesting that combination chemotherapy was effective in this disease. Hanham, Newton, and Westbury[332] reported on 14 patients with breast cancer treated with cyclophosphamide, methotrexate, vincristine, and 5-fluorouracil, 6 of whom had complete and 8 partial remissions. All the complete responses lasted for more than six months. At Montefiore Hospital and Medical Center we have experimented with the use of cyclophosphamide, plus 5-fluorouracil, plus methotrexate in the treatment of breast carcinoma. Results appear to be somewhat better than with single drug therapy, but duration of remission is usually only slightly longer than with a single agent.

Kennedy and Theologides,[333] in a recent editorial, warn against too rapid acceptance of combination chemotherapy and sensibly suggest that controlled studies comparing combinations with the most effective single agents be carried out.

Combined radiotherapy and chemotherapy

Chemotherapy is used in combination with radiotherapy for either one of two purposes in the treatment of advanced cancer. Systemic chemotherapy may be given to control tumor in areas not included in the radiation field. However, in this section I will stress its role in potentiating the effect of radiotherapy in the area treated. Of course, there is a great deal of overlap between the two types of combined usage.

There have been several articles on the rationale of combination chemotherapy and radiotherapy, including the excellent theoretical reviews by Vermund and Gollin[334] and Andrews.[335] The same question arises here as in combination chemotherapy. Is the combination more effective in killing tumor cells than in damaging normal cells? While it is possible to measure true potentiation in cell culture, it is far more difficult to do so in the intact animal, so the question again arises as to whether or not the combination of chemotherapy and radiotherapy produces better results than either modality alone.

There are several ways in which chemotherapeutic agents may potentiate radiotherapy. One is for the chemotherapeutic agent to reduce the tumor cell mass so that radiotherapy has fewer cells to kill. A given dose of radiotherapy kills the same percentage of cells regardless of the number present, although in large tumors there is poor oxygenation, and the percentage of cell kill is less. Chemotherapeutic agents may act by making DNA (deoxyribonucleic acid) molecules more sensitive to radiotherapy. An apparent example of this method is the incorporation of 5-bromodeoxyuridine (BUDR) into the DNA molecule. Chemotherapeutic agents can also increase radiosensitivity by interfering with repair of the DNA molecule which is the mechanism postulated for dactinomycin and the alkylating agents.

Sometimes there appears to be an improvement in results by combining chemotherapy and radiotherapy. However, when one is comparing radiotherapy alone with a combination of chemotherapy and radiotherapy, the infinite number of variations in regimens makes controlled studies virtually impossible to evaluate. The best one can attempt to do is to give the maximum tolerated radiotherapy dose and to compare this with a maximally tolerated combination regimen, but one never knows whether the radiotherapy dose should have been increased and the chemotherapy dose decreased, or vice versa. In the last analysis the physician will use the therapy which he finds most effective.

Ansfield *et al.*[336] combined 5-fluorouracil with radiotherapy to treat head and neck tumors in a controlled study. Unfortunately, the groups were small, but the authors did find a significant improvement in survival for patients with T_3 (locally advanced) lesions treated by the combination, as compared with those receiving radiotherapy alone. There was increased survival in patients with advanced tonsil and intraoral cancer, but no difference for those with lesions of the nasopharynx, hypopharynx, and extrinsic larynx. A national study is now underway in which radiotherapy alone is compared with radiotherapy plus methotrexate in patients with head and neck carcinomas.

Equivocal results have been reported about the combination of 5-fluorouracil and radiotherapy in the treatment of bronchogenic carcinoma.[337-339] The Mayo Clinic group, in a controlled study of 188 patients, found no statistically significant improvement in survival when 5-fluorouracil was added to radiotherapy for the treatment of lung cancer.[339] Ansfield *et al.*[337] found improved survival using the combination, but Killen, Zukoski, and Gobbel[338] reported no difference. Although Edland, Wear, and Ansfield[340] noted that 5-fluorouracil did not improve the results of radiotherapy in the treatment of bladder carcinoma, the Mayo Clinic Group in a small series showed impressive prolongation of survival in patients with stomach or pancreatic carcinoma who were treated with a combination of 5-fluorouracil and radiotherapy.[341] Their patients had locally inoperable disease but no metastatic tumor at the time of treatment.

A number of reports of improved results with a combination of chemotherapy and radiotherapy in the treatment of ovarian carcinoma have appeared,[342-345] but unfortunately only one of these is a controlled study.[343] This study compares an inadequate dose of radiotherapy with the same dose of radiotherapy plus chemotherapy, giving predictable results. Three groups have reported improved survival in retinoblastoma of the eye using the combination of an alkylating agent plus radiotherapy.[346-348] Since this tumor is very rare, it should be treated only by an experienced group.

In childhood Wilms' tumor, a number of authors have reported good results using a combination of either vincristine and/or dactinomycin plus local radiotherapy.[349-352] Radiotherapy to the primary tumor site plus chemotherapy to eradicate minute distant metastatic foci have also been used with some success in Ewing's sarcoma[353-354] and childhood rhabdomyosarcoma.[355-356]

Regional chemotherapy

The basic principle of regional chemotherapy is to deliver a high concentration of chemotherapeutic agent to the tumor, while sparing the normal tissue as much as possible. Lawrence,[357] in an encyclopedic article, which is required reading for anyone interested in this field, reviews all technics and drugs used in regional chemotherapy. His concluding paragraph is still an excellent summary of the current status of the field:

> For clinical treatment of cancer, regional chemotherapy in its present state appears to be of very limited value. In my opinion, it remains an investigational technic, and further study of these methods should be limited to those institutions where the clinical material, laboratory facilities, and supporting staff will allow pursuit of the leads that have arisen. Eventually regional chemotherapy will probably find an established place, either as the principal therapy or, more likely as adjunctive therapy in

> a few specific neoplastic diseases. At the present state of development of regional chemotherapy, however, the patient who received well-administered, conventional therapy for his cancer is still receiving the best treatment that is available. Until further advances are realized from these studies of regional chemotherapy, the majority of patients, in my opinion, should still be treated by established techniques.

There are several reasons for this rather pessimistic view of the value of regional chemotherapy. The main one is that there are very few situations in which regional chemotherapy is more effective than systemic chemotherapy. There is also a high complication rate with present technics, including postoperative hemorrhage, local damage to arteries by the drug or catheter, arterial or venous thrombosis, skin and other tissue toxicity due to the drug, local or systemic infection, and air embolism, although the complication rate is decreasing with more experience.

The most effective use of regional chemotherapy, discussed earlier, is the administration of melphalan by perfusion for local recurrence of malignant melanoma in an extremity, and, therefore, any patient with local recurrence of melanoma or metastases confined to an extremity should be considered for referral to a center where isolation perfusion is carried out. Creech and Krementz[358] report early objective responses in 70 per cent of patients with melanoma who received regional perfusion, while in patients with Stage II melanoma with involvement of regional nodes, satellitosis, or local recurrence, control was obtained in 27 of 84 patients five years after perfusion. Shingleton[359] carried out perfusion of extremities with melphalan in 35 patients with recurrent melanomas involving skin or subcutaneous tissues or both, a majority of whom had regional nodes positive for melanoma. Fourteen patients survived two years following perfusion and 12 were alive, 10 apparently free of disease at the time of reporting.

McBride[360] used a combination of melphalan, dactinomycin, and mechlorethamine (nitrogen mustard) in the management of advanced malignant melanoma of the extremities. Over a four-year period 50 isolation perfusions were performed with this drug combination. Half of the patients followed for two or more years were free of disease, and only one fourth had a recurrence in the treated extremity.

All other forms of regional chemotherapy must be considered experimental at this time. Stehlin *et al.*[361] reported excellent results in a group of 13 patients with squamous-cell carcinoma of the hand using infusions of methotrexate combined with systemic protection by leucovorin injection. Ten patients obtained a good response, and 3 of 4 patients who received no additional therapy were free of disease for periods ranging from ten to sixty-seven months after the infusion. The authors believe that the proper use of a combination of regional chemotherapy, excision, and radiotherapy will often promote the cure of this disease without resort to amputation. Creech and Krementz[358] reported that perfusion and wide excision produced control of sarcoma confined to the limbs in 16 of 22 patients at five years. The less malignant soft-tissue sarcomas such as fibrosarcoma, liposarcoma, or neurofibrosarcoma are most suitable for this form of therapy.

The administration of 5-fluorouracil or FUDR by constant infusion through a catheter placed in the hepatic artery at laparotomy has produced significant palliation in a number of patients with liver metastases from colorectal carcinoma.[361-363] It is doubtful that this method gives results justifying its added risk and inconvenience, since systemic 5-fluorouracil is also somewhat effective in such patients. Methotrexate infusions for squamous-cell carcinoma of the head and neck are minimally beneficial.[361,364]

Special problems in toxicity

Although the mechanism of action of each of the various classes of cancer chemotherapeutic agents is quite different, there are a number of problems that are common to most of the drugs. The most important side effects of bone-marrow and gastrointestinal mucosa toxicity have been discussed for each agent in its appropriate place. While special problems unique to each agent have already been covered, several forms of toxicity common to most drugs still remain to be discussed. These include administration of chemotherapeutic agents to pregnant women, uric-acid nephropathy, and alopecia.

Administration of chemotherapeutic agents to pregnant women. The treatment of malignant disease in the pregnant woman presents special problems. Two aspects must be considered: damage to the fetus and production of a genetic change that may not show up until future generations. This second danger is a potential hazard with radiotherapy and possibly with the alkylating agents. However, most authors have tended to disregard this problem. The first and greater danger, that of damage to the fetus by radiotherapy or chemotherapeutic agents, is a real one.

There are two aspects to the problem of fetal damage: (1) death of the fetus and (2) induction of fetal abnormalities insufficient to cause death. There have been several useful review articles on this subject.[365-370] Nicholson[365] has come as close to a complete review of the literature as is possible in this age of scientific information explosion. Since Nicholson's article, several additional individual case reports have appeared.

The antifolics, aminopterin and methotrexate, are extremely dangerous when given in the first trimester of pregnancy. Thiersch in 1952[371] gave aminopterin to 12 pregnant women in the first trimester, 10 of whom had spontaneous delivery of the dead fetus soon thereafter. Two women required surgical removal of the fetus, both embryos showing congenital abnormalities. Meltzer,[372] Warkany, Beaudry, and Hornstein,[373] and Shaw and Steinbach[374] each reported the birth of an infant with fetal abnormalities after the mother had received aminopterin in the first trimester of pregnancy.

Nicholson[365] was able to find reports of 52 pregnancies in which aminopterin was given in the first trimester. Thiersch's[371] cases are included. Thirty-four pregnancies resulted in abortion. In the 12 cases in which the fetus was described there were 10 with malformations, while the other 2 fetuses were apparently normal. No fetal abnormalities were noted in 3 pregnancies in which aminopterin was used after the first trimester. Surprisingly, Nicholson[365] was unable to find any reports of women who had received methotrexate in the first trimester of pregnancy. However, he did report on 5 women who had received methotrexate after the first trimester, 4 of whom were also receiving 6-mercaptopurine and the fifth who was simultaneously receiving chlorambucil and dactinomycin. One of these pregnancies resulted in a spontaneous abortion at six months with no fetal abnormalities, while the other 4 pregnancies resulted in 5 normal living babies.[366]

There is no doubt that the antifolics, aminopterin or methotrexate, when given in the first trimester of pregnancy, almost invariably result in spontaneous abortion or an abnormal fetus. These drugs should not be given to the pregnant woman in the first trimester unless there is a life-threatening disease that can be helped by the drug. If the antifolic is used, and the mother does not have a spontaneous abortion, therapeutic abortion should be performed. The small amount of data that we have would appear to indicate that aminopterin and methotrexate do not cause harm when given after the first trimester of pregnancy.

Although most of the other cancer chemotherapeutic agents including 6-mercaptopurine,[375] azathioprine,[376,377] 5-fluorouracil,[378] the alkylating agents,[379,380] the vinca alkaloids,[381,382] and procarbazine[383,384] are known to be teratogenic in animal experiments, surprisingly there have been very few case reports of fetal abnormalities resulting from the use of these agents in the first trimester of pregnancy other than the previously mentioned ill effects of the antifolics. However, since isolated instances of fetal abnormalities have been reported, all cancer chemotherapeutic agents should be avoided in the first trimester of pregnancy if at all possible.

6-Mercaptopurine has been reported to have been used in a number of pregnancies. Nicholson[365] found 20 case reports in which 6-mercaptopurine was administered in the first trimester of pregnancy and 28 in which it was used after the first trimester. Only 1 fetal abnormality was reported, and this occurred in a case in which the mother was given both 6-mercaptopurine and busulfan in the first trimester of pregnancy. In addition, she received splenic radiotherapy during the first month.[385] Thiersch[375] noted fetal abnormalities in animals only when the mother was given a higher dosage of 6-mercaptopurine by weight than the usual human dosage, 2.5 mg. per kilogram. I was able to find four reports of women who were given azathioprine during the first trimester of pregnancy, each of whom subsequently delivered a normal baby.[386-389] Azathioprine is a chemotherapeutic agent whose mechanism of action appears to be identical with that of 6-mercaptopurine. While there are no reports of mothers who received 5-fluorouracil in the first trimester of pregnancy, there is one recorded case of azaserine being given during the same period.[365] In this patient the embryo was resorbed. Whether or not the drug was a causative factor is not known.

While the preceding discussion has been limited to the use of antimetabolites in pregnancy, there have also been a number of pregnant women who have received various alkylating agents. Nicholson[365] was able to find 34 patients who received an alkylating agent during the first trimester and 26 women who received such drugs after the first trimester of pregnancy resulting in a total of 4 abnormal fetuses. These occurred in a woman who received chlorambucil,[390] a woman who received cyclophosphamide,[391] and 2 women who had been treated with busulfan.[365,385]

Although the alkylating agents are well-known teratogens in animal experiments, the dosage regimen for treating humans is apparently such that the incidence of fetal abnormalities is low.[379,380] However, since fetal abnormalities have occurred and are an ever-present danger, alkylating agents should not be used in the first trimester or pregnancy unless the patient's life is threatened.

In Hodgkin's disease, radiotherapy is the preferred treatment for the pregnant woman if the fetus can be shielded. Smith, Sheehy, and Rothberg[367] reviewed the literature in 1958 and were able to find 54 patients with Hodgkin's disease who received radiotherapy during pregnancy. The fetus was naturally not in the irradiated field, and no harm to it was noted. However, it is not known whether or not genetic damage occurred which might show up in later generations.

Nicholson[365] recorded the birth of normal babies to 4 women who had received vinblastine during pregnancy, 2 in the first trimester, and found 1 instance in which normal twins were born to a woman who received dactinomycin in the first trimester. He also noted a number of pregnancies in which multiple drugs were given, and only in the case of the previously mentioned patient who received 6-mercaptopurine and busulfan and had splenic radiotherapy did an abnormal fetus result.

It should be mentioned that a number of patients have conceived while on busulfan or 6-mercaptopurine. This apparently had no effect on the incidence of fetal abnormalities. The incidence of spontaneous abortions in patients on the various cancer chemotherapeutic agents is fairly high. However, it should be noted that many of these patients were ill with diseases, such as acute leukemia, in which the frequency of abortion is increased. There is no evidence that cancer chemotherapeutic agents other than the antifolics appreciably increase the abortion rate.

Since Nicholson's review article, Sinkovics and Shullenberger[392] reported 1 patient who received cyclophosphamide throughout the entire pregnancy and delivered a normal baby, and a second patient with neuroblastoma who received vincristine and cyclophosphamide during the third trimester of pregnancy and gave birth to a normal infant. This is the only report that I have been able to find on the use of vincristine during pregnancy.

In *Cancer Chemotherapy Abstracts* there is a summary of a 1965 article from South America about 3 patients who received chemotherapeutic agents for chronic granulocytic leukemia.[393] One woman received 6-mercaptopurine from the sixth month of pregnancy onward and delivered a normal child. A second patient receiving busulfan in the first two months of pregnancy had a therapeutic abortion which revealed a normal fetus. The third patient, however, is of interest since this patient received radiotherapy plus busulfan just prior to conception. Whether or not the drug was continued during pregnancy is not clear from the abstract. However, the patient had a spontaneous abortion of a malformed fetus. This is especially interesting since Nicholson[365] points out in his review article that the 4 patients who delivered abnormal fetuses after receiving drugs other than antifolics had also received radiotherapy during the first trimester of pregnancy. Therefore, he cautioned specifically against the combination of radiotherapy and cancer chemotherapeutic agents in the first trimester of pregnancy. However, this may be purely coincidental because, although a number of patients have received both, statistical analysis of data has not yet been carried out.

There has been one report of a case in which a child was conceived while the mother was on procarbazine.[394] The drug was taken in a dose of 150 mg. per square meter body surface area throughout the first month of pregnancy. A normal 9-pound baby was delivered at term.

TABLE I. Urinary uric-acid excretion in untreated patients with leukemia[395]

Diagnosis	Urine Uric-Acid Excretion (Mg./Kg./24 Hours) Mean	Range
Normals	6.5	5.2 to 7.3
Leukemia		
Acute lymphocytic	30.2	11.9 to 74.8
Acute myelogenous	13.0	6.2 to 20.5
Chronic myelogenous	13.5	12.8 to 14.1
Chronic lymphocytic	5.2	3.5 to 6.8

Uric-acid nephropathy. One serious complication of therapy of the lymphomas and leukemias is uric-acid nephropathy, defined as impaired renal function due to precipitation of uric acid crystals in the distal tubules, collecting ducts, and/or pelves of the kidneys. This condition is usually accompanied by oliguria, and if untreated may lead to anuria and death. A great number of cases of this condition have been reported. As will be seen in the discussion that follows, many patients are likely subjects for this complication, and constant care must be taken in its prevention.

Sandberg, Cartwright, and Wintrobe[395] studied the urinary uric-acid excretion in untreated patients with various leukemias and did a few studies on the effects of treatment. Their results are summarized in Table I.

As can be seen, patients with acute lymphocytic leukemia have the most striking increases in uric-acid excretion. Those with acute and chronic myelogenous leukemia also have marked increases, but all patients with chronic lymphocytic leukemia have normal uric-acid excretions.

What is the cause of this elevated uric-acid excretion, and, by inference, increased production in untreated leukemia? The marked turnover and increased production of nucleic acids, related to the large number and rapid growth of tumor cells, explain this increased uricosuria. The long-life span of the lymphocyte, possibly as much as two hundred days, means that the turnover of cells in chronic lymphocytic leukemia is not as great as in the other leukemias, explaining the normal uric-acid excretion in this disease.

The effects of treatment further aggravate the uric-acid load the kidneys must excrete, especially when large quantities of leukemia or lymphomatous cells are destroyed rapidly. Sandberg, Cartwright, and Wintrobe[395] studied the effect of therapy on total daily urine uric-acid excretion in a few patients, and noted that when therapy lowered the white blood cell count in acute myelogenous or acute lymphocytic leukemia, the elevated uric-acid excretion increased further.

Uric-acid nephropathy usually occurs within six days after treatment is instituted and occasionally as soon as a few hours after onset of therapy.

Particularly notable are Murphy's[396] patient, in whom oliguria and marked decrease in size of an abdominal mass developed eight hours after the start of an eight-hour infusion containing 5 mg. of prednisolone; the patient of Krakoff *et al.*[397] whose uric acid rose from 7 to 51 mg. twenty-four hours after receiving 75 mg. of hydrocortisone; and Case 1 of Holland *et al.*,[398] a ten-year old boy with acute blastic leukemia whose uric acid rose from 7.1 to 31.5 mg. in a twenty-four-hour period during which he received 60 mg. of prednisone. While corticosteroids are more likely to cause the rapid onset of uric-acid nephropathy, this complication developed in the patient of Richmond and Beardsley[399] on the third day after receiving 16 mg. of mechlorethamine on the first and again on the second day.

The greatest danger of the development of uric-acid nephropathy lies in patients with leukemia, with initially elevated white blood cell counts, who respond rapidly to therapy. No patient with leukemia, acute or chronic, myelocytic or lymphocytic, is immune, and patients with lymphosarcoma or reticulum-cell sarcoma with rapid dissolution of tumor masses due to therapy are also susceptible. Uric-acid nephropathy has not occurred in Hodgkin's disease, although elevated serum uric acid is common in this condition. Other factors which enhance the danger of uric-acid nephropathy are fever and dehydration.

Ultmann[400] suggests that carcinomas can produce the syndrome, and presents 2 patients with carcinoma and hyperuricemia who at autopsy had urate crystals in the renal tubules. He was able to find a number of other carcinoma patients with elevated serum uric acid, and he suggests that this problem may become more frequent as effective therapy for carcinomas is discovered. It is of interest that he found a correlation of elevated serum uric acid with anaplastic histologic characteristics and with liver and bone metastases.

Before discussing prophylaxis and therapy of uric-acid nephropathy, a discussion of pathogenesis is in order. An excellent exposition of the pathophysiology is presented by Frei *et al.*[401] These authors point out that at a urine pH of 5.4 one half of the urine uric acid is in the unionized, less-soluble form, while at the physiologic blood pH over 99 per cent is in the more soluble, ionized, urate form, which is not only more soluble but also tends to remain in supersaturated solution when solubility is exceeded. Maximal urine acidity and concentration occur in renal collecting ducts, which are the initial and major sites of uric-acid precipitation. Smith and Lee[402] cite microdissection studies in rabbits infused with uric acid to confirm this theory. Pathologic studies in human patients with uric-acid nephropathy tend to confirm this conclusion. When mechanical obstruction of enough tubules occurs, oliguria results; and when all tubules are obstructed, anuria occurs.

These authors in a later article further characterize the changes in renal function occurring during the development of uric-acid nephropathy.[403] They found diminished inulin clearance with minimal depression of para-aminohippurate clearance, and suggest that precipitation of uric-acid crystals in the collecting tubules led to partial obstruction of these structures. This, in turn, led to increased intraluminal pressure within the proximal tubule, resulting in reduction of net glomerular filtration pressure and, therefore, decreased glomerular filtration rate as measured by inulin clearance.

To prevent uric-acid nephropathy is far better than to treat this complication. Formerly the prophylaxis of uric-acid nephropathy necessitated large fluid intake and the use of alkalinization of the urine. This type of regimen allowed a greater amount of uric acid to be dissolved in a larger volume of alkaline urine, the alkaline pH keeping most of the uric acid in the form of soluble urates. Nowadays this type of regimen with its hazards to elderly patients with poor cardiac or renal function is no longer necessary. We now have allopurinol (Zyloprim) which chemically is 4-hydroxypyrazolo (3.4-d) pyrimidine.

Allopurinol inhibits xanthine oxidase, the enzyme responsible for the conversion of hypoxanthine and xanthine to uric acid. Although there is some controversy probably explainable by differences in methodology, all of this drop is apparently replaced by an increase in the urinary excretion of the oxypurines, xanthine, and hypoxanthine. Although each of these compounds is approximately as soluble in urine as uric acid, crystals rarely form, because each of these oxypurines has its own solubility product analogous to the situation when triple sulfas are administered.[404]

In the last few years, allopurinol has become established as the recommended method for prevention and treatment of uric-acid nephropathy.[398,405-407] The usefulness of allopurinol and its relative safety have encouraged its use in all patients with hyperuricemia, but I believe that preventive treatment is necessary only in those patients who are subject to this complication. This would include all patients with lymphoma or leukemia, whether acute or chronic, who are to receive antitumor therapy. Once effective therapy has produced a remission, the allopurinol can probably be stopped; but if after stopping the allopurinol the serum uric acid returns to levels greater than 8 or 9 mg. per 100 ml., the drug should be restarted. I see no reason to use allopurinol in patients with carcinoma who have elevation of serum uric acid.[407]

Dosage of allopurinol varies from 200 to 800 mg daily in divided oral doses, with the serum uri acid used as a guide to dosage. Maximum effect may take as long as a week, so it is best to start the drug several days before antitumor therapy is initiated.

Allopurinol is apparently a very safe drug, with diarrhea, mild abdominal pain, skin rash, and mild fever as the major side effects. Mild liver-function test abnormalities occur rarely but are reversible, and rare instances of leukopenia have been reported. In patients with gout allopurinol may precipitate acute attacks of gouty arthritis.

Because xanthine oxidase is involved in the catabolism of 6-mercaptopurine, allopurinol interferes with the degradation of this antitumor drug. For this reason, approximately one quarter of the dosage of 6-mercaptopurine is used when allopurinol is given concurrently.

Before describing the treatment of uric-acid nephropathy, it is also important to discuss accurate diagnosis of this condition. There have been a number of reports of patients with lymphoma or leukemia with high serum uric acid and uremia in whom uric-acid nephropathy was not present; instead the patient had renal involvement by the underlying disease. Several facts should be noted. Uremia itself causes elevation of serum uric acid levels, and patients with lymphoma or leukemia have high serum uric acid concentrations. If they develop uremia due to any form of renal disease, they will have a higher serum uric acid level than would be expected by the degree of azotemia. For this reason, not every patient with lymphoma or leukemia who has elevated blood urea nitrogen and elevated serum uric acid levels has uric-acid nephropathy. Uric-acid nephropathy can be proved only in one of three ways: by autopsy, by surgery (nephrostomy or nephrectomy), or by ureteral catheterization. However, a presumptive diagnosis of uric-acid nephropathy can be made if the patient has oliguria and azotemia, a known lymphoma or leukemia, a serum uric acid level elevated out of proportion to the elevation of blood urea nitrogen level, and uric acid crystals in the urine. It should be noted that rare cases of uric-acid nephropathy have been reported with serum uric acid concentrations in the range of 10 mg. per 100 ml., but most patients with uric-acid nephropathy have serum uric acid levels in the range of 20 to as high as 60 or 70. It is perhaps better to overtreat than not treat at all when uric-acid nephropathy is suspected.

Every patient with established uric-acid nephropathy should receive allopurinol, but additional therapy is necessary. If the patient does not yet have oliguria, one should give large doses of alkali and intravenous fluids.[403]

Alkalinization regimens become dangerous in the face of oliguria, and could lead to serious fluid overload. Until several years ago the standard therapy in the face of decreased urine output was to catheterize both ureters and attempt to flush out the uric-acid crystals. Since the primary site of uric-acid deposition is in the collecting tubules of the kidneys, this approach does not have great theoretic justification. However, it apparently worked in some but not all patients with anuria.[399,408,409] Drastic methods such as peritoneal dialysis[410] or hemodialysis with the artificial kidney[411] have been suggested and may be necessary with some anuric patients. However, before these more heroic measures are used, a trial of mannitol should be given in an attempt to achieve diuresis. This method has been used with great success in severely oliguric patients with markedly elevated blood urea and uric acid levels by Frei *et al.*[401] and Barry *et al.*[410] Once diuresis is achieved, the alkalinizing solutions and acetazolamide (Diamox) can be used. Frei *et al*[401] recommend administration of 25 Gm. of mannitol per square meter body surface area over a fifteen-minute period to severely oliguric patients. If diuresis does not ensue, they recommend ureteropelvic lavage or extracorporeal hemodialysis.

Alopecia. Normal hair roots of growing human scalp hair have high metabolic and mitotic activity. Germinative tissue of the average hair root produces 0.35 mm. of hair shaft every twenty-four hours and reduplicates its entire cell population each day. It is this rapid cell turnover which makes the hair root so vulnerable to drug-induced damage.

Crounse and Van Scott[412] have carefully studied the effects of cancer chemotherapeutic drugs on scalp hair. They found that almost all chemotherapeutic agents inhibit hair growth, manifested by narrowing of the shaft of the scalp hair. When atrophy is severe enough, hair loss occurs. They also found that the number of hairs in the growing stage is markedly decreased by anticancer agents.

Although all cancer chemotherapeutic agents appear to be capable of producing alopecia, many of the drugs almost never do. The alkylating agents, with the notable exception of cyclophosphamide, rarely cause hair loss.

Recently it has been suggested that a tightly inflated tourniquet* placed around the scalp prior to intravenous administration of the chemotherapeutic agent and left on for ten minutes after completion of injection will protect the hair follicles and prevent alopecia.[413] The pressure in the tourniquet should be above systolic arterial pressure. O'Brien *et al.*[277] confirm this in children who received intravenous vincristine but not in those given intravenous cyclophosphamide. They suggest that the latter drug is not rapidly tissue fixed.

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*The scalp tourniquet is available on special order from W.A. Baum Co., Copiague, New York 11726.

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Clinical Anesthesia Conference

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Electrical Stimulation of Phrenic Nerve in Treatment of Hiccups

Persistent hiccuping is a distressing symptom in uremia and various diseases of the gastrointestinal tract or peritoneum. It occurs not infrequently during anesthesia in thoracic and abdominal surgery. A safe and effective treatment is the electrical stimulation of the phrenic nerve with the aid of a peripheral nerve stimulator, as demonstrated by the following case.

Case report

A forty-one-year-old male, in satisfactory general condition, was scheduled for gastrectomy for a peptic ulcer. Anesthesia was induced with 250 mg. of thiopental and maintained with a mixture of nitrous oxide, oxygen, and 1 per cent halothane. D-tubocurarine was used to provide muscle relaxation. A 38-gauge French rubber tube was used for intubation. Thirty minutes after the start of anesthesia, hiccuping occurred and was effectively treated by nasal stimulation with a catheter. Two hours later, the hiccuping recurred. The treatment, which included nasal stimulation by catheters of various sizes, hyperventilation, carbon dioxide accumulation, irrigation of the gastric tube, pressure on the common carotid artery, and intravenous injection of 10 mg. of chlorpromazine, failed. Finally, a 22-gauge needle was inserted subcutaneously at the left side of the neck at the level of the fifth cervical vertebra. No attempt was made to locate the phrenic nerve. A reference electrode needle was inserted a few inches caudally. The needle was stimulated with a peripheral nerve stimulator. The hiccups disappeared immediately following the stimulation. Hiccuping recurred one hour later at the end of surgery and again was treated successfully by the same method.

Comment

Hiccups are involuntary spasms of reflex origin of the inspiratory muscles, especially the diaphragm, followed by abrupt closure of the glottis in unintubated patients. Afferent impulses can arise from almost any part of the body including the central nervous system, but during anesthesia the most common afferent pathway is the vagus. The efferent limb of the reflex is the phrenic nerve which originates from the third through fifth cervical spinal segments.

Treatment has included deepening the anesthesia, paralyzing doses of a muscle relaxant, pressure on the eyeball, pressure on the common carotid artery, vagal and phrenic nerve blocks, relief of gastric distention, carbon dioxide inhalation, hyperventilation, atropine, chlorpromazine, edrophonium, nasopharyngeal stimulation, and electrophrenic stimulation.[1-3] In addition, acupuncture has been used in the Orient to treat hiccups for many years.[4] Several well-defined points of the body are stimulated by an acupuncture needle. The mechanism by which these methods work is not known but can be considered an interference with the reflex by either depression of the reflex pathway or inhibition of the reflex by another stimulus. Deepening of anesthesia or the use of chlorpromazine may belong to the former, nasal stimulation may belong to the latter. Stimulation of the phrenic nerve can safely be accomplished using a weak electric current in the area of the third through fifth cervical vertebrae.

A peripheral nerve stimulator is available in every well-equipped anesthesia department. This small, battery-powered, transistorized instrument is primarily designed to monitor the effects of skeletal muscle relaxants on the neuromuscular junction. The most frequently used instrument*

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*Burroughs Wellcome & Co., Inc., Burlingame, California and Tuckahoe, New York.

in the United States delivers a maximum voltage of 30 with a current output of 0.93 ma. of 0.2 msec. duration. The voltage can be regulated. The electrical pulse can be delivered once every four seconds or 30 times a second to provide a tetanizing current. To treat singultus in this patient, both the intermittent twitch and tetanic stimulation with approximately 10 volts were found satisfactory.

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Number two hundred nine in a series of Clinical Anesthesia Conferences

Case Reports

Recurrent Electrocardiogram Changes in Subarachnoid Hemorrhage

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The electrocardiographic abnormalities associated with subarachnoid hemorrhage may mimic those of acute subendocardial infarction.[1-9] This is, to our knowledge, the first reported case in which such electrocardiographic changes recurred in a patient with two documented subarachnoid hemorrhages.

Case report

A fifty-eight-year-old woman was admitted to The Mount Sinai Hospital on February 3, 1967, because of the sudden onset of severe headache and confusion. There was no past history of neurologic, hypertensive, or cardiac disease, and an electrocardiogram taken in September, 1966, gave normal results.

On admission she was drowsy and disoriented. Blood pressure was 108/70 mm. Hg, pulse rate 72 per minute, and respiratory rate 20 per minute. She had papilledema, nuchal rigidity, and bilateral Babinski's sign. Cardiovascular examination was unremarkable. A lumbar puncture revealed grossly bloody spinal fluid at an opening pressure of 300 mm. of water.

The patient was treated with analgesics and placed in a quiet room. Her vital signs remained stable, and, by the next day, she was alert and much better oriented. Repeat lumbar puncture on the third hospital day demonstrated clearing of the gross blood and increased xanthochromia, at an opening pressure of 180 mm. of water.

An electrocardiogram done on the third hospital day revealed sinus bradycardia at a rate of 56 per minute, S-T segment depression and deep T-wave inversion in leads I, II, aVf, V_4 to V_6, diphasic T waves in leads III and V_2, and prolongation of the Q-T interval (0.52 second) (Fig. 1A). The electrocardiographic changes gradually returned toward normal, so that by the tenth hospital day the S-T segments had become isoelectric; the T waves had become upright in II, III, a Vf, and precordium; the T wave in I was diphasic; and the T wave in aVl remained slightly inverted (Fig. 1B). A small U wave had emerged, and the QT interval was borderline at 0.40 second for a heart rate of 60 per minute.

On the eleventh hospital day, a right brachial cerebral angiogram demonstrated a basilar artery aneurysm. On the sixteenth hospital day, the patient suddenly developed a severe left orbital headache. Her vital signs changed transiently, with a drop in pulse to 40 per minute and a rise in blood pressure to 160/90 mm. Hg. There were no changes in her neurologic signs, but a lumbar puncture demonstrated, once again, gross bleeding. The cerebrospinal fluid pressure was 170 mm. of water.

On the seventeenth hospital day, an electrocardiogram again showed sinus bradycardia (44 per minute); S-T segment depression in leads V_4 to V_6; T-wave inversion in leads I, aVl, V_2 to V_6; and prolongation of the Q-T interval (0.56 second) (Fig. 1C). This tracing was similar to that obtained after the first hemorrhage, except that there were now no ST-T changes in leads II, III, and aVf.

The patient subsequently improved, and she was discharged on the forty-fifth hospital day. At no time did she complain of chest pain. Serum electrolytes, serum glutamic oxaloacetic transaminase, complete blood count, and erythrocyte sedimentation rate were normal after each episode. An electrocardiogram obtained three months after discharge gave normal findings (Fig. 1D).

The patient remained asymptomatic, and in August, 1970, three and one-half years after discharge, both an electrocardiogram and a double two-step exercise tolerance test result were normal.

Comment

Subarachnoid hemorrhage may produce alterations in the electrocardiogram, particularly sinus bradycardia, S-T segment depressions, deeply inverted T waves, U waves, and increased Q-T in-

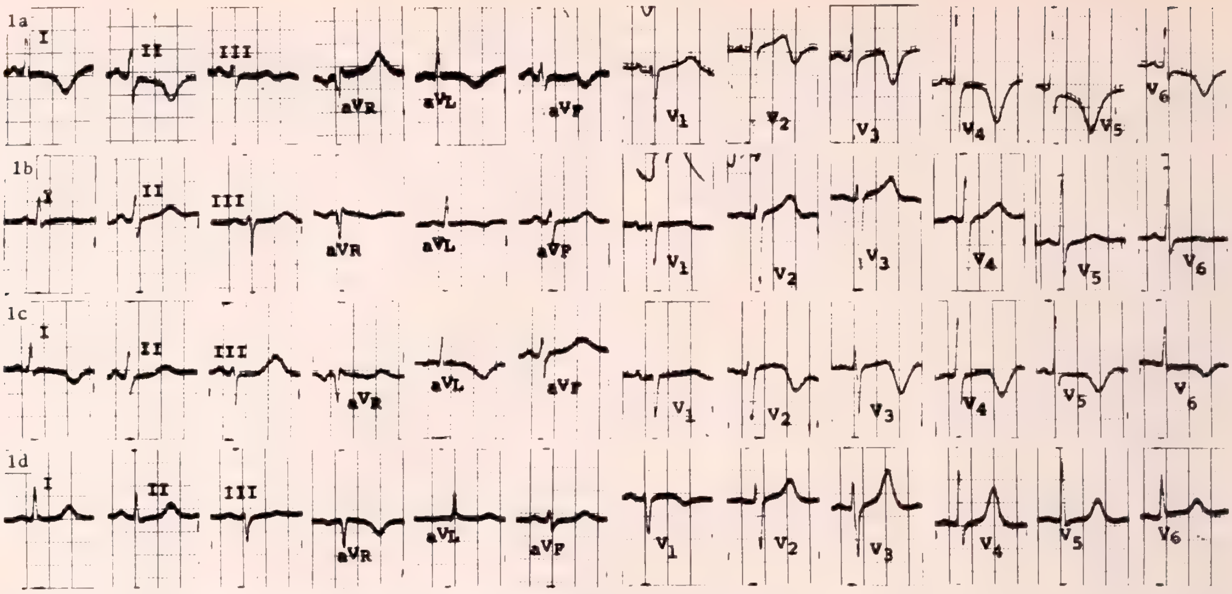

FIGURE 1. Electrocardiograms taken (A) on the third hospital day, (B) on the tenth hospital day, (C) on the seventeenth hospital day, and (D) three months after discharge from the hospital.

tervals. This patient demonstrated all of these changes, and the electrocardiograms taken after each episode of subarachnoid hemorrhage resembled those showing acute subendocardial infarction.

Most of the cases in the literature describe the electrocardiogram after a single episode of subarachnoid hemorrhage. The unique feature in this report is that the abnormalities found by electrocardiogram were shown to recur after a documented second hemorrhage.

The neurocardiac mechanisms involved in producing these electrocardiographic changes have not been clearly defined.[8,9] Most of the evidence suggests that localized stimulation of the brain can affect the electrocardiogram by influencing autonomic tone to the heart.[8]

This case illustrates that reapplication of the cerebral stimulus in subarachnoid hemorrhage can result in recurrent electrocardiographic changes. It also demonstrates that the alterations on the electrocardiogram can be completely reversible, even with two similar neurologic insults.

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Pseudomonas Osteochondritis of Sternocostal Junction

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Pseudomonas bacillus infections may involve any area and are often seen in large superficial wounds, such as major burns in which the prognosis is extremely poor.[1-5] Pseudomonas osteochondritis of the sternocostal area is a rare but serious entity. In this article we present 2 cases of isolated infections of the sternocostal junction due to pyocyanosis. The infections necessitated multiple surgical procedures and were particularly difficult to treat.

Forkner,[6] in a thorough review of reports of pseudomonas infections, describes various locations and manifestations of this condition. Osteomyelitis is relatively common, but chondritis is rare.[7] In most cases the pyocyanic infection is a "septic metastasis" from a wound elsewhere.[8,9] Forkner[6] reports only 6 cases of infection at the sternocostal junction, with treatment involving an "en bloc" excision of the area. Since the publication of his monograph there have been extremely few reports of isolated sternocostal osteochondritis.

Generally, antibiotic treatment has been unsatisfactory.[5] The combination of resistance of the organism and location of the infection presents a difficult therapeutic problem.

Case reports

Case 1 (Fig. 1). A thirty-three-year-old male sustained a gunshot wound in the chest on October 17, 1968. He was admitted to Jacobi Hospital. An exploratory thoracotomy was performed and a bullet removed from the pericardial sac. Post operation the patient had a febrile course. Cultures of the chest tube drainage showed Staphylococcus aureus coagulase-positive, and treatment with methicillin (Staphcillin) was initiated. Subsequently, cultures from the persistent draining wound showed Pseudomonas aeruginosa. He was treated successively with streptomycin, oxacillin, ampicillin, penicillin, and colistin without improvement or decrease in drainage. Four operative debridements were then performed, followed by successive excisions of the draining sixth and seventh costal cartilages with curretting of the involved sternum. The resultant defect was closed with a split-thickness skin graft.

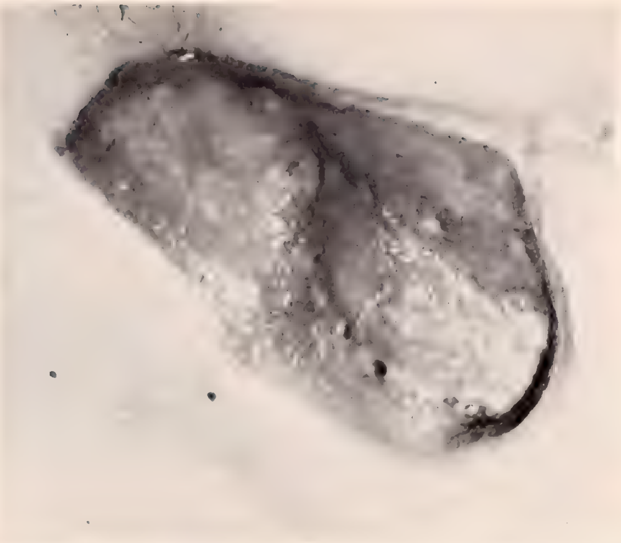
FIGURE 1. Case 1. Large chest wound after many debridements. Area has been debrided widely and skin grafted. Wound eventually healed. Biopsy showed bone and cartilage involvement.

All of the 12 cultures taken at different times during his illness showed P. aeruginosa. Readmitted twice and reoperated on twice, he finally healed completely after the last operation, which involved a large excision of soft tissue and costal cartilage. His infection had lasted more than eleven months.

Case 2 (Fig. 2). This sixty-seven-year-old taxi driver was assaulted on December 7, 1968, and sustained multiple stab wounds of the chest, abdomen, and left arm. He underwent a splenectomy and repair of lacerations of the right ventricle, greater curvature of the stomach, and diaphragm.

Postoperatively high fevers spiked and the patient sustained persistent draining from his chest wounds. Repeated cultures yielded P. aeruginosa sensitive to colistin. His treatment, in addition to drug therapy, included numerous daily de-

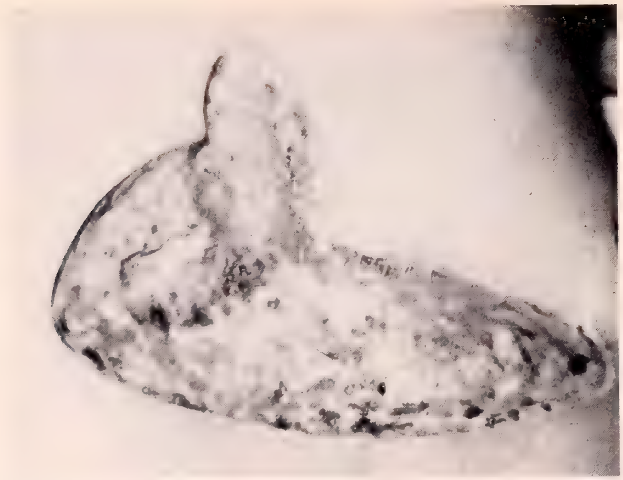

FIGURE 2. Case 2. Large chest wound after multiple debridements. Still infected with Pseudomonas.

bridements. During a five-month period 3 surgical procedures were performed including a final closure of the defect with 2 large rotation flaps.

The patient was discharged with a draining wound to be followed in the outpatient department.

On July 10, 1969, an open drainage of the wound was performed, followed by a cartilage resection with muscle transposition. Subsequently serum hepatitis and a gastric ulcer developed. On December 17, 1969, he again underwent a large debridement of the wound. At this time pulmonary emboli developed, followed with uncontrollable bleeding from the ulcer. He expired on December 30, 1969. At the time of death he still had very large chest wounds infected with Pseudomonas. Antibiotic treatment over this period had included colistin, neomycin, cephalothin (Keflin), oxacillin, and polymyxin given by local irrigations and systemically. His infected course had lasted over a year and was still uncontrolled at the time of death.

Comment

These 2 cases present an addition to previously published cases of Pseudomonas osteochondritis of the chest wall. The severity of the disease and its unusual location are worth reporting in view of the ever-present possibility of its occurrence.

Comparison of cases in the literature with these 2 cases shows their similarity and points out the necessity of a very wide excision of the involved area. Repeated small debridements of bone or cartilage bring no cure, but time is wasted, and the infection progresses insidiously. Although their value is questionable, antibiotics should be used.

Early coverage of the wound after adequate excision of the infected tissues seems to play a favorable role in these cases. Open wounds are a continuous source of infection, especially from P. aeruginosa. In these 2 cases, the organism almost always was found pure, and only toward the fatal outcome of the second case did the cultures show staphyloccocci and coliform bacteria. Pseudomonas appears to suppress growth of other organisms as well as display an unusual resistance to antibiotics.

It would appear that on the basis of experience the treatment of choice when Pseudomonas involves the ribs or the osteochondral junction is wide excision of ribs and rib cartilage with immediate skin coverage. Treatment also should include intensive antibiotic therapy by instillation, irrigations, and systemic routes.

Even the more promising newer antibiotics probably will not be sufficient alone, and adequate surgery will always play a role in the eradication of deep infections.

Summary

Although Pseudomonas osteomyelitis is well known, osteochondritis of the chest wall is an extremely rare but severe disease. More than a year of surgical and medical therapy was necessary in 2 similar cases, resulting in 1 cure and 1 death. The combination of deep-seated infection and antibiotic resistance of the Pseudomonas bacillus has prompted the authors to adopt a surgical procedure of wide "en bloc" excision and immediate skin coverage.

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Religious Rationalization of a Homosexual

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Homosexuality as a sexisocial problem is not a new phenomenon either to our culture or our time. It is as old as mankind. Despite repeated efforts to suppress and eradicate it, homosexual behavior in various forms has continued to crop up throughout the Dark Ages, the Renaissance, and into our modern times. In the last decade because of the so-called "sexual revolution," homosexuality has rocketed from earlier periods of complete silence and taboo to being a popular topic on the frontiers of our present culture. The theme has been the subject of an increasing number of recent novels, plays, and movies and is extensively covered by modern mass media. Despite this, the social attitude toward homosexuality has not changed at the same pace. A poll taken not long ago by CBS television showed that "Two out of three Americans look at homosexuals with disgust, discomfort or fear, and one out of ten regard them with outright hatred."[1]

This existing social condemnation and ostracism make the situation of homosexuals a very stressful one. Recently, in the big cities homosexuals are becoming more visible, vocal, organized, and militant, demanding civil rights for themselves as a minority. The "silent" majority of them, however, are still living a hidden, stressful life which is the root of a high incidence of anxiety, guilt, and other such psychologic problems. Therefore, the type of homosexual that is burdened with emotional problems as the effect of his deviation, voluntarily seeks help in the offices of psychiatrists or clinics. On his first encounter with the physician he admits "I am a homosexual," but the most commonly used rationalization for it is, "I was born that way," and "that is the way of my life," "there is nothing I can do about it," and so on.

Religious rationalization of a homosexual based on his misinterpretation of some passages from the *Old* and *New Testaments* is an uncommon occurrence, worthy of being reported.

Case report

A fifty-six-year-old black male was born in South Carolina as the youngest of two male siblings. He never knew the whereabouts of his father or of his only living brother. At the age of six or seven his mother died, and he was brought up by an aunt. As a slow learner, he completed only the sixth grade of public school. When his aunt died, he went at the age of sixteen to live with his "adopted brother" in Atlanta, Georgia. There he worked as a dishwasher and sang in churches where "people liked his female voice." He came to New York City in 1930 where he led and lived with a blind man. After one year he left New York; he returned in 1934. Here he supported himself by singing on the streets and in Harlem nightclubs, impersonating female singers like Kate Smith and other female celebrities. He was arrested on charges of disorderly conduct, was taken to Bellevue Hospital for observation, and was then committed to Manhattan State Hospital on May 24, 1935.

On admission his speech was rambling and incoherent; he had numerous bizarre traits and admitted to homosexual practices and cross dressing. He stated that he never had any sexual relations with a woman but had many men lovers. He claimed to be a female impersonator as a singer. Intellectually, he appeared to function on a defective level. Although he was described as definitely effeminate in both attitude and manner, on physical examination he appeared to be a well-developed, well-nourished male with normal primary and secondary sex characteristics. He was diagnosed as having psychosis, mental deficiency, and paranoid hallucinatory episodes.

In 1936 the patient was transferred to Pilgrim State Hospital. In 1942, for the first time since his hospitalization, overt homosexual advances toward other patients were reported. He was found in bed with other patients by the employes and always pleaded ignorance. On a few occasions when he went with a squad to clean the nurses' home, he came back dressed in women's attire. On the ward he told the patients stories of how he used to go to the beauty parlor for a permanent and facial makeup to attract men. On many occasions on the ward, he was assaultive toward the more masculine patients whenever his advances were turned down by them or they paid attention to other men besides himself. In interviews with physicians, he openly admitted that he always preferred to play the role of a "woman" in sexual relations. On Halloween he dressed himself as a woman, and he was known among the patients as "Madam."

In 1955 he was transferred to Middletown State Hospital where he appeared to be neat and clean, in good contact, emotionally cheerful, and very childish. He stated he had never been mentally ill and denied delusions or hallucinatory experiences. He admitted that before he was hospitalized, he used to make love to men and lived with a man in Chicago. Although he showed some effeminate mannerisms in walking and way of behavior, on physical examination he appeared to be a well-nourished and developed male with normal genitalia and secondary sex characteristics, except for a high-pitched female voice. As usual he never stopped bragging about his career as an impersonator of a female singer. He always carried a Bible or other religious pamphlets with him and preached to the patients. He continued with his overt homosexual advances and frequently was involved in altercations with patients who turned down his advances. At every masquerade party he dressed himself as a woman.

In frequent interviews with the writer, the patient frankly talked about his homosexuality dating back to the age of nine or ten, when he slept with his "adopted brother" who used to have sex with him. Later he enjoyed it very much. He openly stated that he always preferred to be a woman in sexual relations with men. He did not consider his overt homosexuality a deviation or sin. He tried to justify it by religious rationalization based on passages from the *Old* and *New Testament* which he liked to quote, such as "Love your brother as yourself," but according to him "love your sister" is never mentioned. His own interpretation of the fall of man and the original sin of Adam and Eve was that after they ate the forbidden fruit, the Almighty expelled them from Paradise because of heterosexual relations. He quoted another such passage from the *Bible*, "When thy days will be completed and thou wilt sleep with thy fathers, then I will set up thy seed after thee who shall proceed out of thy body, and I will establish His Kingdom."* He did not forget to quote from the *New Testament* the following: "Greet your brother with the holy brotherly kiss." He claimed that he was single because it was a sin to have sex with a woman. However, he would have liked to be a woman and have 12 children. He stated that while in Chicago he was married to a man. On a few occasions he came to me with some pamphlets in his hand and asked whether an operation could be arranged in Denmark for him to become anatomically a woman.

During one of the interviews, the following passages from the Bible were read and shown to him: "You shall not lie with a male as with a woman; it is an abomination."† "If a male lies with a male as with a woman, both of them have committed an abomination. They shall be put to death, their blood is upon them."** "A woman shall not wear anything that pertains to a man, nor shall a man put on a woman's garment; for whoever does these things is an abomination to Yahweh your God."†† After the above passages had been read and shown to him, he became very tense and panicky, stating, "I never came across it in my *Bible*." "My preacher did not tell me about it." "They say you should not believe everything which is written in the *Bible*."

When asked afterward whether he would give up his homosexuality, he said, "I don't know, I will think it over." However, he continued as in the past with his effeminate homosexual advances. He also did not stop quoting his favorite passages incessantly from the *Bible*. A few times he requested permission to leave the hospital and go to New York to look for a job as a dishwasher. When asked what he would do if he did not find a job, he said, "I wouldn't steal because that is a sin, but I still can make a hundred dollars a week as a woman." Because of his past history of being a sleep walker and having "fainting spells," and because of recent reports that sexual abberations may be related to brain damage, particularly temporal lobe dysfunction, an electroencephalogram was performed; the tracing showed a normal sleeping and waking pattern. A battery of psychologic tests performed on September 15, 1962, revealed the following.

> We are dealing with an individual of below average intellectual make-up, but not with a mental defective. He is emotionally immature with underlying feelings of inadequacy whose primary defense mechanisms are rationalization, phantasy, and intellectualization. However, due to his limited education and intelligence, his extensive use of these defenses might well appear schizophrenic at times. However, no schizophrenic thought disorder or feelings are reflected from this detailed study.

In 1969 he left this hospital without permission. Recently word was received that he is presently in an institution in the South.

Comment

The evidence from the foregoing supports the widely accepted view that the family constellation of a male homosexual from his early childhood is female dominated with a weak or absent father. This combination according to West,[2] "Crops up in such a striking frequency that statistical proof of its relevance hardly becomes necessary." The view that homosexual orientation in life, with its gender identity and sexual object choice, has its roots in early childhood and unfolds itself later in adolescence found strong support from psychoanalytic authorities as well as from others. Bleuler[1] stated, "All homosexual peculiarities show themselves very frequently from the earliest age." Among the many factors reported to be responsible for the development of male homosexuality, mother identification or fixation is one of the most acceptable today. This dynamic, extensively elaborated concept is deeply rooted in the Freudian theories of sexuality. A direct psychologic result of the mother-identification complex is the boy's desire to play the feminine role, like his mother, in sexual relations with men. "Vaginalizing his anus," he thus becomes the socalled receptor or insertee in his way of life as a homosexual. A further aspect of the identification complex is the boy's imitation of effeminate traits in all possible spheres such as dressing, manners, way of behavior, voice, housewifery, and not infrequently a choice of an occupation.

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*2 Samuel, 7:13.

†Leviticus, 18:22.

**Leviticus, 20:13.

††Deuteronomy, 22:5.

The transvestitic tendencies, manifested by cross dressing and impersonating a female singer in our case, are "solely for purposes of enticement" to get male lovers, not erotic urges of excitement. Therefore, such individuals, according to Socarides,[4] should be considered as pseudotransvestites. Numerous reports indicate that a majority of homosexual experiences begin at the age of eight or ten under the so-called excuse of being seduced by an older adolescent. In our case, too, the patient claimed that his homosexuality began at the age of nine or ten when he slept with his "adopted brother" who had sex with him; since then he has enjoyed it. The old adage, "nothing succeeds like success," is also applicable in sexual matters. Early sexual experiences may become a dominant factor in the type of erotic gratifications or preferences of later years. Today seduction is considered by many authorities as "really no more than an incident on the road to homosexuality."[2] Lack of masculine identification and a weak or absent father are other dynamic factors which may lead a feminized boy, such as the present case, to select strong, virile partners in homosexual practices as a fulfillment of their longing for the missing father figure.

Numerous recent reports indicate that a sense of guilt is commonly found among individuals with a history of homosexuality. It is worthwhile here to quote Willis[5]: "A profound sense of archaic guilt is one of the most universal roots of sexual deviation." According to Knight,[6] "two prominent mental mechanisms used widely in dissipating guilt are rationalization and projection." These defense mechanisms were used extensively by our patient. He openly admitted to his life-long passive overt homosexuality and tried to cover up his guilt feelings with his religious rationalizations based on his misinterpretation of certain passages from the *Bible,* especially the story of original sin. Being a very simple, intellectually limited individual and preoccupied with religious matters, our patient always viewed Adam and Eve in a sexual context, as sinners for sexual desires.[7] His almost compulsive justification by his religious rationalizations for his way of life as a homosexual appears to be a defensive avoidance of an emotional guilt complex. Recently, under the impact of publicity in the popular media about cases of sex-reassignment, our patient often approached the writer asking for surgery to become an anatomic female. He did not deny during interview that by becoming a woman he would no longer be a sinner when having relations with men. At the same time, however, he continued in his effeminized sexual practices. In frequent interviews he accepted in the fullest self-definition, "I am a male homosexual," not "a female trapped in a male's body," and for whom his penis does not constitute a so-called "mental load." Our patient, who has identified himself with the erotic and nonerotic aspects of the opposite sex throughout his life, declared openly that he hates women and never has sex with them. Furthermore, he still desires to live as a feminine male within the homosexual community. Thus, our patient should be considered as a pseudotranssexual, a term used by Pauly[8] to "designate the small percentage of men who apparently seek the operation as a means of rationalization of their homosexuality."

The reported triad in our case—effeminate homosexuality, transvestism, and transsexualism (not infrequently encountered in individuals with such sexual deviations)—is due to the fact that they share some features in common. Although "all sexual aberrations usually overlap and merge to a more or less extent," this does not disprove their individual independent existence.[9] Some authorities in this field, however, consider transvestism and/or transsexualism to be simply homosexual variances. Space does not permit consideration in detail of the pros and cons of this complicated problem. Interested readers should consult the excellent comprehensive reviews by Pauly,[8] Lukianowicz,[10] and others.[1-15] It is also beyond the scope of this report to discuss the controversy regarding homosexuality as a way of life, mental illness, or symptom of a mental illness seen with a striking frequency among schizophrenics, especially of the paranoid type. Abundant evidence, accumulated throughout the years of the patient's hospitalization and confirmed by psychologic tests, indicates that our patient is not a schizophrenic. This does not mean, however, that a person like our patient is psychologically healthy and without serious defects in his ego-adaptive capacities. Certainly a single case like ours cannot be used convincingly to represent a whole group.

Nevertheless, it supports the prevailing view that the nuclear family constellation in early childhood is one of the most important factors in the genesis of mental illness, sexual deviation, and other social aberrations.

Summary

The case of a fifty-six-year-old male who became an effeminate homosexual as a boy, a transvestite as an adolescent, and later in life expressed transsexual wishes and fantasies is reported. Like the majority of such individuals, he comes from an environment characterized by a single dominant female and absent father. Since the age of nine or ten, he has engaged in homosexual practices and still enjoys playing the female role in his sexual relations with men. As further evidence of his strong mother identification complex, he started to imitate effeminate traits in all possible spheres, such as dressing, manners, way of behavior, voice, housewifery, and so on. He supported himself by impersonating female singers and soliciting male lovers.

He was committed to an institution in 1935, while "acting and expressing funny ideas." Throughout the years of his hospitalization he has been a management problem because of his overt effeminate homosexuality and periodic cross dressing. His compulsive religious rationalization for his life-long homosexuality—based on his misinterpretation of certain passages from the *Bible*—appears to be a defensive avoidance of guilt feelings, the usual root of all sexual deviations. His transsexual wishes and his desire to become a female anatomically are other ways of warding off the same emotional conflict. Effeminate homosexuality, transvestism, and transsexualism, the triad reported in our case as well as in numerous other cases, strongly support the theory that such sexual deviations are rooted mainly in a particular family constellation—too much mother and too little or nonexistent father.

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Bacterial Aortitis

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Bacterial infection and mycotic aneurysm of the aorta are infrequently encountered and seldom diagnosed. The clinical course is usually rapid, and rupture of the aorta with fatal exsanguination occurs before the condition is recognized.

The term "mycotic" is obviously inappropriate, but it has been in common usage sine Osler[1] first applied it in 1885 to describe an aneurysm of infectious origin resulting from bacterial invasion of an arterial wall. The term "aneurysm" may also be a misnomer because most of these lesions do not result in a true aneurysm, which is defined as a permanent abnormal dilatation of an artery. Bacterial aortitis most commonly occurs on a previously damaged aorta. It may occur with an ulcerated atherosclerotic intima, with syphilitic aortitis, cystic medionecrosis, congenital abnormalities, and arteriosclerotic aneurysms.[2-4] Destruction of tissue in this entity is usually rapid, and rupture of the wall occurs before the vessel has time to yield.

Incidence and pathologic data

During the ten-year period from 1958 to 1968, 4 cases of bacterial aortitis not associated with aneurysm were found in 3,700 autopsies. Pertinent pathologic data are presented in Table I. Three of the 4 cases were men. Age varied between sixty-five and ninety years. Primary infective focus was thought to be in the lung in 2 cases, urinary bladder in 1, and postoperative infection in 1 case. In 3 instances rupture of the aorta with exsanguination was the immediate cause of death. In all cases there was marked aortic atherosclerosis.

Case reports

Case 1. A ninety-year-old man was admitted with lower abdominal pain and irregular febrile course of one month's duration. Pain was dull, constant, nonradiating, and associated with alternating constipation and diarrhea. Except for tenderness in the lower abdominal area, physical examination revealed nothing unusual. On admission the temperature was 102.4°F. Urinalysis showed numerous neutrophils and 25 to 30 red blood cells per high power field. Urine culture yielded Salmonella enteriditis. Hemoglobin and hematocrit were normal. The white blood cell count was 12,000 with 83 segmented granulocytes. Chest roentgenogram, intravenous pyelogram, and barium enema results were negative. Retrograde pyelography and cystoscopic examination revealed cystitis. The patient was given 1 Gm. of tetracycline daily and supportive treatment. He did well on this regimen, but on the sixteenth hospital day while moving about in his room he suddenly collapsed and died.

At autopsy a large retroperitoneal hemorrhage was found. In the aorta just above the origin of the celiac axis there was a 3 by 5-cm. rupture or

TABLE I. Data on 4 cases of bacterial aortitis

Case	Age, Sex	Location	Description	Source of Infection	Bacteriology
1	90 M	Abdominal aorta	Rupture with retroperitoneal hemorrhage	Cystitis	Salmonella enteriditis in antemortem urine and postmortem culture of aortic wall
2	77 M	Descending thoracic aorta	2.5-cm. tear, rupture into mediastinum and left pleural cavity	Bronchopneumonia	Gram-positive cocci in tissue sections
3	67 M	Descending thoracic aorta	1-cm. tear, rupture into left lung and left pleural cavity	Bronchopneumonia	Blood culture showed alpha hemolytic streptococcus
4	65 F	Abdominal aorta	Necrosis and acute inflammation in ulcerated plaque	Acute peritonitis	Gram-positive cocci in tissue sections

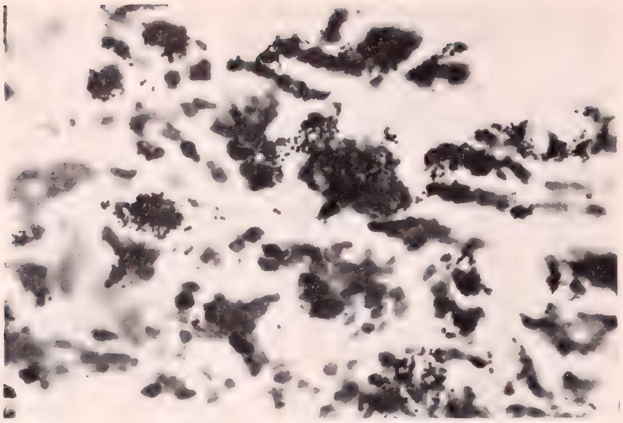

FIGURE 1. Gram-positive cocci in aortic wall lesion of Case 2 (Brown-Brenn stain × 475).

tear. The intima showed a number of ulcerated atherosclerotic plaques. Microscopic examination of the area of rupture revealed a marked granulocytic infiltration of the wall. The adventitia showed reparative changes. There were no bacteria demonstrable with the Brown-Brenn stain, but cultures from the region of the aortic rupture yielded Salmonella enteriditis.

Case 2. A seventy-one-year-old acutely ill man was admitted complaining of cough, chest pain, fatigue, dyspnea of one week's duration and chronic respiratory disease of many years standing. The patient was cyanotic, and moist rales and diminution of breath sounds were observed on auscultation. Temperature, pulse, and respirations were elevated. The white blood cell count was 20,600 with 89 per cent segmented granulocytes. Hemoglobin and hematocrit were normal. The only occupational history available was that the patient formerly had been a porcelain worker and paint sprayer. He died shortly after admission.

Significant findings at autopsy were in the thoracic cavity. The left pleural cavity contained 1,800 ml. of fluid and clotted blood. Examination of the aorta showed a transverse tear 4 to 5 cm. in length which was located 4 cm. distal to the orifice of the left subclavian artery. There was no evidence of dissection or aneurysm formation. Many atherosclerotic plaques were present. On microscopic examination a marked inflammatory cell infiltrate was seen. Brown-Brenn stain disclosed many gram-positive cocci (Fig. 1). The lungs weighed 1,800 Gm. and showed extensive and diffuse nodular fibrosis consistent with pneumoconiosis as well as bronchopneumonia.

Case 3. A sixty-seven-year-old man was admitted to the hospital for the fifth time in one year because of ascites and edema. The patient was a mild diabetic and chronic alcoholic. On the first admission an upper gastrointestinal roentgenogram suggested a duodenal tumor. A laparotomy was performed, but no duodenal lesion was found. There were many adhesions in the gallbladder area. Liver biopsy revealed Laennec-type cirrhosis. A fistulous tract thereafter developed, and cultures of drainage yielded Escherichia coli. On the three last admissions fever, disorientation, and electrolyte imbalance were present. On the final admission the hemoglobin was 10 Gm. per 100 ml.; leukocyte count was 19,300 with 93 per cent neutrophils. Blood culture yielded alpha hemolytic streptococci. Bromsulphthalein test showed 22 per cent retention after forty-five minutes. Serum protein was 7, albumin 1.9, and globulins 5.1 Gm. per 100 ml. Chest roentgenogram suggested pneumonia, and appropriate antibiotic was given. On the ninth hospital day hemoptysis occurred. On the tenth day the patient coughed up 600 ml. of blood, and he died shortly thereafter.

At autopsy there were 3,000 ml. of fluid and clotted blood in the left pleural cavity. At a point 1.5 cm. distal to the origin of the left subclavian artery there was a 1-cm. irregular tear in the aortic wall. The upper lobe of the left lung was firmly adherent to the aorta, and dissection revealed that the aorta had ruptured into the left upper lobe and dissected into the left lower lobe, where it had bled into the bronchial tree and ruptured into the pleural cavity. A partly organized mass of blood clot measuring 6 by 15 by 5 cm. was present in the left upper lobe. Sections taken through the aortic tear showed numerous neutrophils and necrosis. No bacteria were seen.

Case 4. A sixty-five-year-old woman was admitted with a typical clinical history of gallbladder disease. Cholecystectomy with exploration of the common bile duct was carried out. Calculi were present in the gallbladder. None were found in the common duct. A subsequent cholangiogram revealed a stone, and the common duct was reexplored with negative findings. Postoperatively the patient went into shock requiring intravenous medication to maintain blood pressure. Electrolyte problems and a surgical wound infection developed. Electrolyte replacement and antibiotics were administered. Material from the wound revealed pus cells, gram-negative rods, and gram-positive cocci. Wound cultures and blood cultures were sterile. The patient's condition gradually deteriorated, and she died on the thirty-first hospital day.

At autopsy the major findings were acute fibrinous peritonitis localized to the right upper quadrant, acute pyelonephritis, acute ulcerative ileitis, and arteriosclerotic heart disease with evidence of congestive failure. There was an ulcerated area in the abdominal aorta. Microscopic sections showed necrosis, neutrophilic infiltration, and masses of cocci in media, adventitia, and adjacent tissue. These changes were typical of acute bacterial aortitis.

Comment

Most frequently, bacterial infection of the aortic wall is of intravascular origin, and the usual source of infection is vegetative bacterial endocarditis. Stengel and Wolferth, in 1923,[5] noted that bacterial aneurysms rarely developed in the aorta in the absence of endocarditis. We wish to draw attention to bacterial aortitis resulting from extravascular foci of infection. Crane[6] used the term primary mycotic aneurysm for a lesion developing in the wall of an artery which is not associated with any demonstrable intravascular inflammatory focus, such as bacterial endocarditis, or with any inflammatory process in the surrounding tissue. The primary focus may or may not be recognizable clinically or even at necropsy. In all 4 cases presented here, a plausible source of extravascular infection was present. Of 24 cases of primary mycotic aneurysm reported by Revell,[7] the majority of the primary infections were in soft tissue, bone, joint, and lung.

Bacteria may gain access to the aortic wall directly from bacterial endocarditis or immediately adjacent infected structures. In cases in which there is no contiguity between involved structures it has been postulated that bacteria lodge on the intimal surface of the artery or the vasa vasorum.[4,5] Direct infection of a normal artery probably does not occur. Disease and the morphologic changes occurring in the normal aging process appear to be necessary adjuncts. It is interesting to speculate whether or not the increasing use of immunosuppressive agents and concomitant opportunistic infections will result in an increasing incidence of bacterial aortitis, a potentially catastrophic disease.

Summary

Three out of 4 cases of bacterial aortitis resulted in rupture of the aorta and death from exsanguination. All cases showed marked underlying aortic atherosclerosis and foci of infection elsewhere in the body. There was no aneurysm formation. The correct diagnosis was not entertained in any of the 4 cases prior to necropsy.

Bacterial aortitis is an uncommon disease that occurs on previously damaged aortas—most commonly those with advanced atherosclerosis. Rupture of the aorta with fatal exsanguination is the usual clinical presentation.

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Gonococcal Endocarditis*

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Prior to the introduction of penicillin into clinical medicine, gonoccal endocarditis was a well-recognized, albeit relatively uncommon, complication of gonococcal infection. At present, in our age of antibiotics, gonococcal endocarditis is a truly rare condition. The following case history describes a patient in whom gonococcal endocarditis complicated by aortic insufficiency developed.

Case report

A fourteen-year-old Puerto Rican girl was admitted to Lincoln Hospital with the chief complaint of chills and fever of two weeks' duration. She had been in good health until August 6, 1970, when she awoke with fever, chills, and a sore throat; aspirin provided symptomatic relief. A pruritic, macular-papular rash involving the thighs and forearms appeared on August 10 and lasted for five days. On August 14 a fever of 105°F. along with arthralgias of the right knee and the third toe of the right foot developed. The patient admitted to having had sexual intercourse several times in the preceding month with a veteran who had recently returned from Vietnam. She denied having any other sexual contacts. Her past medical history was unremarkable; specifically she and her family denied any history of heart disease or rheumatic fever.

Examination results. Physical examination revealed a teenaged girl in moderate distress. Her blood pressure was 140/80 mm. Hg, heart rate 120 per minute and regular, respiratory rate 18 per minute at rest, and rectal temperature 105°F.

Scattered macular-papular lesions were present over the left wrist. Cardiac examination revealed the point of maximum impulse to be in the fifth intercostal space at the midclavicular line. There were no murmurs or rubs audible. An S_4 gallop was heard by one observer. Examination of the joints revealed tenderness only over the right third toe. A purulent vaginal discharge was present, but the remainder of the pelvic examination results were normal. In all other respects the clinical examination was unremarkable.

Laboratory studies indicated that her hematocrit was 40; the white blood cell count was 16,000 per cubic millimeter with a "left" shift. The blood urea nitrogen, electrolytes, blood sugar, lupus erythematosus preparation, latex fixation, antistreptolysin O titer, urinalysis, chest roentgenogram, and electrocardiogram results were within normal limits. Cerebrospinal fluid was clear, and protein and sugar determinations were normal. The smear of the vaginal discharge revealed gram-negative intracellular diplococci; Proteus mirabilus, Escherichia coli and Enterococcus were isolated on culture of the vaginal discharge.

Neisseria gonorrhoeae was isolated from all bottles of the two sets of blood cultures taken on the day of admission. Results of blood cultures taken on September 1, 1970, were negative.

Hospital course. The patient was treated with 24 million units daily of intravenous aqueous penicillin from August 22 to August 26, 1970. From August 26, 1970, the patient received 4.2 million units daily of intramuscular procaine penicillin. On August 31, 1970, a grade 2 through 6 systolic ejection murmur and a grade 3 through 6 high pitched blowing diastolic decrescendo murmur were heard in the fourth intercostal space at the left sternal border. Repeat blood pressure was 100/50 mm. Hg. On September 2, 1970, the results of the admission blood cultures were known, and the patient was restarted on 24 million units daily of intravenous penicillin and remained on this dosage until October 5, 1970. Further studies during this latter part of her hospitalization included repeat chest roentgenogram, cardiac series, and echocardiography, all of which were normal. The phonocardiogram confirmed the murmurs of aortic stenosis and insufficiency. The blood pressure remained at 100/50 mm. Hg.

Long-term follow-up in the medical clinic has revealed that her blood pressure has remained constant at 100/50 mm. Hg, while her cardiac findings are unchanged. At no time during her hospitalization or up to the present have there been symptoms or signs of congestive heart failure.

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Comment

In the preantibiotic era approximately 4 to 10 per cent of all cases of endocarditis were caused by N. gonorrhoeae.[1] Since 1940, only single cases of gonococcal endocarditis have been reported.[2,3] Surveys of bacterial endocarditis from large medical centers have also documented that gonococcal endocarditis is now a rare disease.[4–7]

Typically gonococcal endocarditis presents as an acute illness. In common with organisms such as Staphylococcus aureus and Diplococcus pneumoniae, N. Gonorrhoeae is destructive and can invade a previously normal heart valve.[8] However, gonococcemia per se will not always result in endocarditis; other clinical conditions associated with gonococcemia, such as arthritis or skin lesions, are more common.[9] Those specific factors which result in endocarditis have never been clearly elucidated.

Aortic valve perforation is a well-recognized complication of gonococcal endocarditis.[10] In one review of endocarditis during the preantibiotic era, 2 patients of a total of 12 had aortic valve perforation.[11] In Fowler's[12] review of 12 patients with aortic valve perforation, the 1 patient with gonococcal endocarditis who had a previously normal aortic valve required replacement because of extensive destruction of that valve. Cardiac symptoms did not develop in our patient, and thus she has not required further investigation or surgery. We cannot, therefore, definitively document that she has a perforated aortic valve. Other causes of aortic insuffiency such as retraction of the valve secondary to scarring could account for the murmur and increased pulse pressure. Her benign clinical course to date would suggest that she does not have a severely destroyed valve.

Summary

Gonococcal endocarditis in the antibiotic era is a relatively uncommon occurrence. A case of gonococcal endocarditis with involvement of the aortic valve has been presented.

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Vertebral Coccidioidomycosis

Unusual polymorphic disease

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The increasing frequency of inter- and transcontinental travel provides today's physician some of his most challenging cases. Such was the case of this patient with coccidioidomycosis. Two aspects are emphasized; first, the increasing frequency with which this fungal disease is being diagnosed outside the endemic areas in the south, and, second, the multiplicity of clinical manifestations that can be observed when dealing with a patient who has coccidioidomycosis. The patient in this communication is a native New Yorker who lived in New York all his life. During the summer of 1969 he went to visit a relative at San Antonio Base in Laredo, Texas.

Case report

The patient, a nineteen-year-old Negro male was admitted to the Bronx Municipal Hospital Center on August 25, 1970, with a chief complaint of progressive swelling in the left scapular area of four months' duration. He also had intermittent low-grade fever, occasional night sweats, and a weight loss of 20 pounds during this period. No traumatic injury was related. On physical examination he was a well-developed male with a mass in the left infrascapular area measuring 8 cm. in diameter. Definite fluctuation was felt in the center of the mass. Hematocrit was 26.1, hemoglobin 8.6 Gm. per 100 ml., and white blood cells 20.3 per cubic millimeter. There were negative findings on x-ray films of the chest. Aspiration of the mass produced greenish material which was sent for culture and sensitivity testing. On August 26, 1970, incision and drainage were performed, and a large loculated cavity was found. A specimen sent for pathologic examination was reported as abscess wall. The patient stayed in the hospital for five days and on September 1, 1970, was discharged and referred to the medical clinic for anemia workup.

On September 10, 1970, the patient was readmitted for drainage of an abscess in the left gluteal region. A definite pericardial friction rub was present on this admission, and bone-marrow studies showed reactive bone marrow consistent with infection. Roentgenograms of the chest demonstrated a shift of the left paravertebral line to the left at the third to sixth thoracic vertebrae but no infiltrates (Fig. 1A). Results of skin tests for coccidioidomycosis, tuberculosis second strength, and blastomycosis were negative and for mumps positive. Slides from the earlier wound specimens were reviewed on September 19, 1970, and at this time a diagnosis of coccidioidomycosis with multiple-skin abscesses was made. The patient was started on amphotericin B, 5 mg. on the first day, 10 mg. on the second day, 20 mg. on the third day, and 50 mg. daily thereafter. During the following month, the patient's condition became

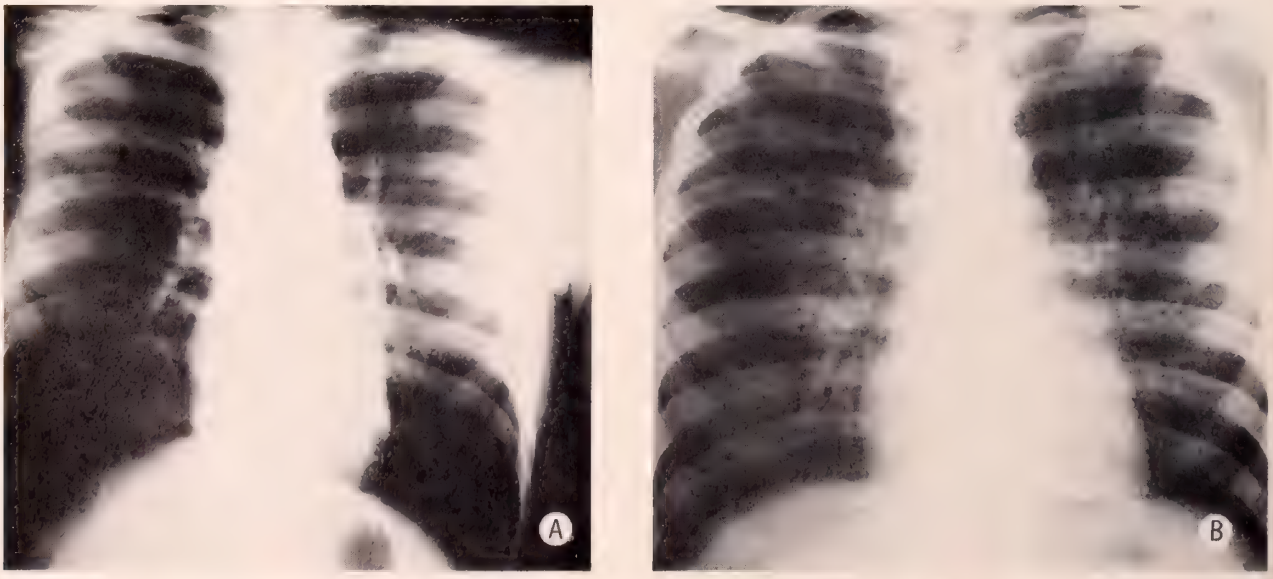

FIGURE 1. (A) Paraspinal abscess at third to sixth thoracic vertebrae. (B) X-ray film of chest showing bilateral diffuse interstitial infiltration.

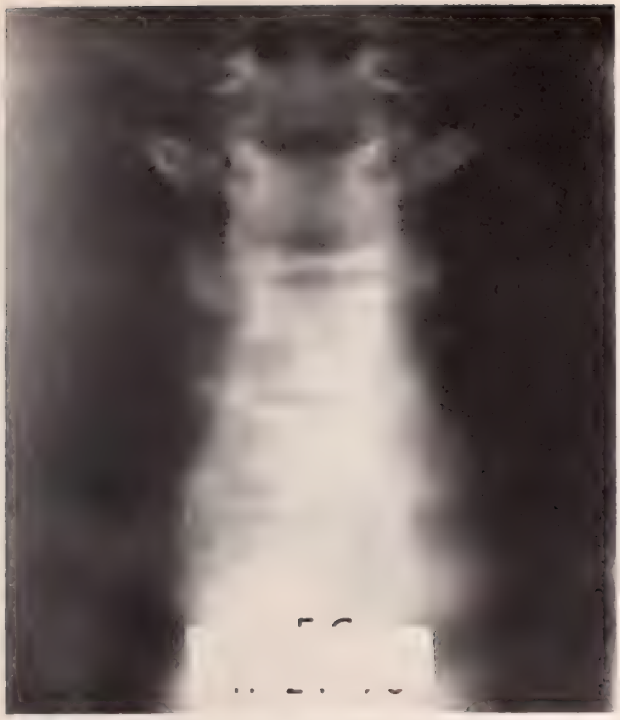

FIGURE 2. Tomograms showing erosion of third to sixth thoracic vertebral bodies.

more septic with daily temperature spikes of 103° to 104°F. Roentgenograms taken on October 8, 1970, showed a diffuse interstitial process bilaterally, and by October 14, 1970, confluence of some of these densities was apparent (Fig. 1B). At the same time the right paraspinal line was widening.

On November 24, 1970, tomograms of the dorsal spine showed bilateral erosion of the third and fourth thoracic vertebrae and of the left aspect of the fifth and sixth thoracic vertebrae (Fig. 2). The coccidioidin titer increased from 1:128 to 1:1,058. As no clinical response was present after 3.5 Gm. of amphotericin B, it was decided to do a surgical exploration for paraspinal abscess as a cause of persistent illness. He was transferred to the thoracic surgery service on December 5, 1970, and on December 7, 1970, a right fifth rib costotransversectomy was performed. No residual abscess was found, but pleural thickening and local swelling were present. Biopsy specimens obtained at this site showed coccidioidomycosis of the pleura. The patient did well postoperatively with decrease in temperature and improvement in general status. By this time he had received more than 5 Gm. of amphotericin B and continued to receive it until discharge on January 8, 1971. He is now on biweekly amphotericin as an outpatient and is doing well.

Comment

The first symptoms of coccidioidomycosis are usually respiratory because it is through the lungs that the organism enters the body. Nevertheless, in some patients these symptoms are very mild and even absent. When present they consist of mild fever; vague chest pain, usually pleuritic in nature; and coughing. Erythema nodosum accompanies the pulmonary symptoms in 10 per cent of patients.[1]

This patient originally was admitted to a general surgery ward for a skin abscess in the scapular area. The correct tissue diagnosis from the abscess wall was made only when the slides were reviewed because of the abnormal course of the disease that suggested this was no ordinary skin abscess.

The typical diffuse interstitial infiltrates suggestive of pulmonary involvement became evident only one month after the patient was in the hospital. Involvement of bones, on the other hand, is not infrequent and has been present in 10 to 50 per cent of reported series.[2] Vertebral involvement occurs in half of the cases with bone involvement. In this case erosion was demonstrated in the bodies of the third to the sixth thoracic vertebrae. Concomitantly, the paravertebral line was displaced laterally suggesting a paravertebral abscess. Attempts to drain this abscess demonstrated only thickened tissue, but biopsies taken from pleural tissue in that area were positive for coccidioidomycosis. We believe the paraspinal abscess had drained completely and spontaneously through the skin, first in the original infrascapular and later in the gluteal area.

A significant incidence of infection with coccidioidomycosis exists among the military personnel stationed in the southwest, and in this case it appears fairly certain that the patient acquired the disease while on a visit to a base in Laredo, Texas, which is in the endemic area. This appears to be a fairly common occurrence.[3] Nedwicki[4] has reported 26 cases diagnosed in Detroit hospitals, all in patients who had been to the southwest. It may also be that the endemic area is enlarging.[5] Certainly travel will make it a more common disease in New York and other nonendemic areas.

Summary

A case of coccidioidomycosis is described which appeared first as a skin abscess, next as osteomyelitis, and only late with pulmonary infiltration. This disease was brought to New York after a visit to the southwest.

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Massive Gastrointestinal Bleeding due to Hemangioma of Ileum

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Bleeding from the gastrointestinal tract remains one of the most perplexing problems facing the internist and surgeon. Since the advent of the use of endoscopy in the patient with hematemesis, unnecessary surgery has been avoided in certain cases.[1] However, no such progress has been made in treating the patient with rectal bleeding originating more than 10 inches from the anal verge. In such patients, prolonged and unrewarding surgical procedures are still being performed despite the fact that it is now possible to improve the surgical results by the use of selective visceral arteriography, a relatively safe and simple procedure. The following case report is intended (1) to illustrate that selective arteriography is useful in localizing the site of bleeding prior to operation, and (2) to call attention to one of the rarer causes of lower gastrointestinal hemorrhage.

Case report

A sixty-year-old Negro female was admitted to Metropolitan Hospital Center, New York City, on March 21, 1969, having had bloody diarrhea for two days. The patient had been admitted previously to the hospital on March 2, 1969, because of melena of nine days' duration and anemia. She was treated at that time with 3 units of whole blood and 2 units of packed red cells which raised the hematocrit from 25 to 34. Work-up at that time included routine blood studies, chest roentgenography, electrocardiography, sigmoidoscopy, barium enema, an upper gastrointestinal-tract series, and small-bowel studies, all of which gave negative results. Esophagoscopy and gastroscopy showed areas of patchy gastric atrophy, but no ulceration or bleeding points were seen. The patient was asymptomatic while hospitalized, and her stools became negative for blood. She was discharged on March 17, 1969.

On March 19, 1969, she was seen in the outpatient department of the gastroenterology service and underwent gastric analysis. On returning home she began passing purplish brown liquid through the rectum. She had three loose bowel movements one day prior to her present admission and two on the day of admission. She complained of progressive weakness and dizziness and on admission had a fainting spell and became diaphoretic. The patient's past history revealed that a hysterectomy for uterine fibroids had been performed in 1948 at Metropolitan Hospital. Her family history was not contributory.

Physical examination on admission revealed a well-developed, obese, sixty-year-old, Negro female, who appeared weak, pale, and diaphoretic. Her blood pressure was 140/90, pulse rate was 120 per minute, respirations were 20 per minute and mildly labored, and her temperature was 98.6°F. The positive physical findings included pallor, diaphoresis, and cold skin. The abdomen was soft, bowel sounds were active, and a low midline scar was present. The rectal examination revealed purplish stool on the examining glove which proved to be hematest positive. Results of routine laboratory examinations were within normal limits except for the hematocrit, which was 10.

The patient was transfused with 3 units of whole blood, and the hematocrit rose to 26. In the following two days, an additional 2 units of whole blood were given, and the hematocrit was stabilized at 32. On March 24, 1969, superior mesenteric angiography using 50 per cent sodium diatrizoate (Hypaque) was performed, which demonstrated extravasation of contrast material into the lumen of the small intestine, at a point about 15 to 45 cm. proximal to the ileocecal valve in the distal ileum (Fig. 1). On March 26, 1969, the lesion was found at laparotomy, and a small-bowel resection with end-to-end anastamosis was done. The postoperative period was uneventful, and the patient was discharged on April 15, 1969. Pathologic examination of the lesion revealed a benign cavernous hemangioma of the ileum with superficial ulceration (Fig. 2).

Comment

Hemangioma of the gastrointestinal tract is a rare disease. Approximately 200 cases have been

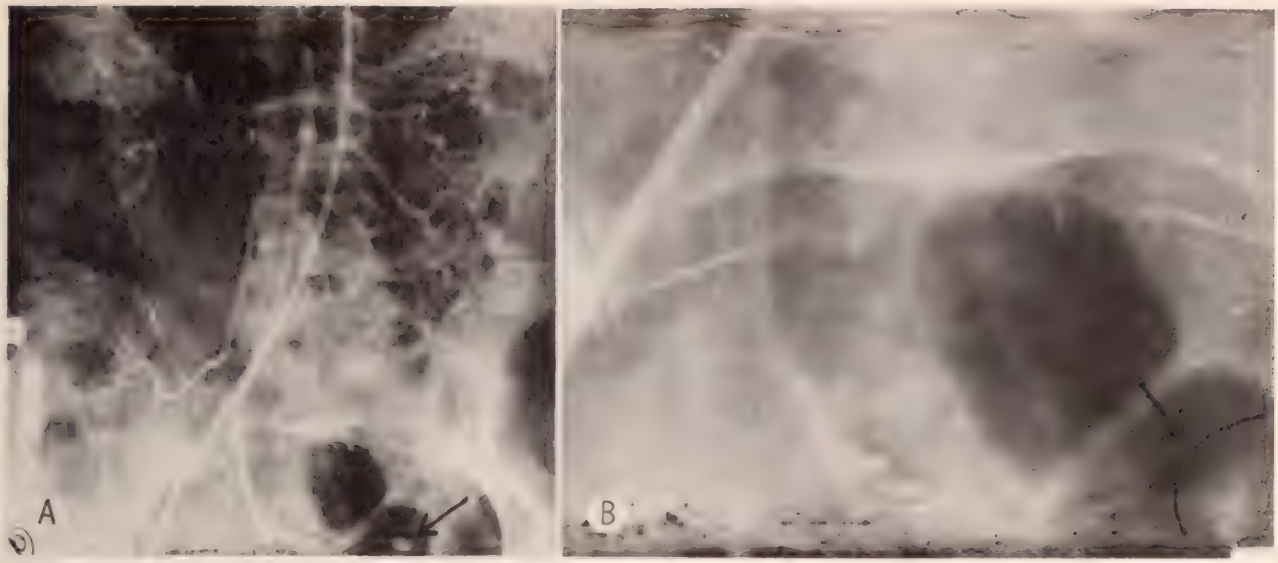

FIGURE 1. (A) Arterial phase of superior mesenteric artery four seconds after injection of 50 per cent sodium diatrizoate. Intraluminal collection of contrast material can be seen at lower edge. (B) Enlargement of right lower portion of (A) shows intraluminal contrast material in right lower corner.

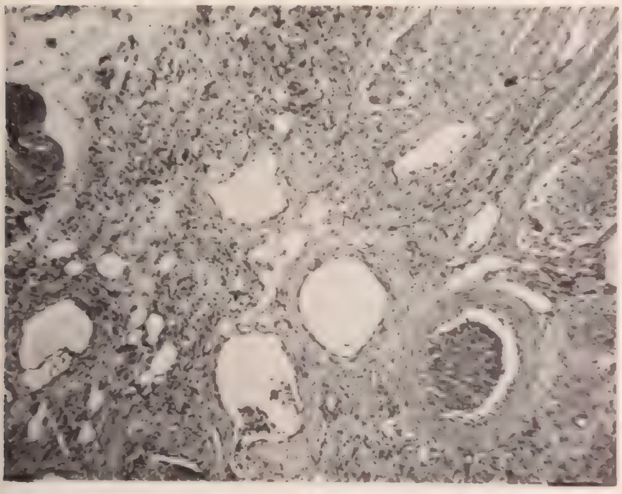

FIGURE 2. Photomicrograph of lesion of small bowel showing cavernous blood vessel tumor in submucosa with ulceration of mucosa in upper left corner.

reported in the literature in the past one hundred years. The incidence of gastrointestinal hemangiomas varies in different series from 1 to 9 per cent, and the lesion is rarest in the ileum. Hemorrhage is the most common presenting symptom, but hemangiomas have been reported as the cause of intestinal obstruction due to intussusception or pressure on the intestinal tract.[2,3] Diagnosis is verified at laparotomy, and the treatment of choice is wedge resection of the lesion, if possible, or resection of the involved intestine. To aid in locating the lesions at operation, it has been suggested that the intestine be transilluminated, since the hemangioma that produces the hemorrhage usually cannot be seen from the serosal surface of the intestine. Bleeding occurs in those patients who are between twenty and fifty years of age and is probably due to the breakdown of connective-tissue stroma in the lesion with subsequent rupture of the endothelium.

Preoperatively, the diagnosis is rarely if ever made; however, cutaneous telangiectasis or perioral lesions should lead one to suspect a hemangioma of the intestine.

Radiographically, hemangioma of the intestinal tract may be suspected if multiple radiolucent "phleboliths" outside the pelvic cavity are seen on plain film of the abdomen. Conventional barium examination is rarely, if ever, helpful in diagnosing the lesion, unless it is polypoid and appears as a filling defect within the intestinal tract. Percutaneous selective visceral ateriography is probably the best aid in locating a gastrointestinal hemorrhage of an obscure nature. The technic is safe, it need not delay surgery unduly, and by localizing the source of bleeding it may reduce intra-abdominal manipulation and operating time. A positive arteriogram is based on the finding of contrast material extravasating into the lumen of the intestinal tract in actively bleeding patients. Experimental work has shown that pooling of contrast material at the site of hemorrhage may be visualized if the bleeding rate is 0.5 ml. per minute or more.[4] When bleeding ceases, the source may be indicated by an abnormal vascular pattern due to a primary vascular abnormality, a tumor, or an inflammatory lesion. Location of the lesion on x-ray films can be quite accurate by noting the relation of extravasated contrast material in the intestinal lumen to the proximity of the major branches of the mesenteric vessels. One of the hazards of arteriography in the bleeding patient is that, in the presence of hypotension, femoral-artery thrombosis may occur at the puncture site due to the slowing of blood flow in the vessel. This hazard can be obviated by adequate blood and fluid replacement.

Summary

A case of gastrointestinal hemorrhage due to hemangioma of the ileum has been reported. The bleeding point was localized preoperatively by selective visceral arteriography. This procedure is recommended in cases of gastrointestinal hemorrhage with an obscure cause and can be tolerated usually by any patient in whom emergency surgery may become necessary.

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Diabetic diet

In a recent report of the Committee on Food and Nutrition of the American Diabetes Association (*Diabetes* **20:** 633 [September] 1971) it was stated that the average proportion of calories in the diet represented by carbohydrate, about 45 per cent, of the general population in the United States appears to be acceptable also for the average diabetic patient. This alteration in dietary concept represents an alteration in long-held precepts. Increase of carbohydrate in the diet, even to extremes, without an increase in the total calories, does not appear to increase insulin requirement in the insulin-treated patient. In less severe, typically obese patients substitution of carbohydrates for fat does not appear to elevate fasting blood glucose or worsen glucose tolerance in response to standard glucose loads. The report cautions, however, that triglyceride levels may be sensitive to increase in carbohydrate intake, so in certain adult diabetics prone to hypertriglyceridemia this possibility should be checked. The alteration of the carbohydrate and fat content of the diet is only one point in a more comprehensive report, in which it is pointed out that dietary management in diabetes should be designed to avoid metabolic derangement, but also to reduce risk factors associated with premature and accelerated atherosclerosis, to which diabetics are particularly prone. A liberalized carbohydrate intake for the diabetic will necessarily be associated with a decrease in dietary fat and cholesterol. While these general recommendations are applicable to a large percentage of the diabetic population, the report emphasizes the necessity for individualization. An appropriate dietary recommendation presupposes prior testing for hyperlipidemia in each diabetic patient, although lipid levels in most diabetics are comparable to those seen in a comparable nondiabetic population.

Retroperitoneal Liposarcoma

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A fifty-six-year-old ophthalmologist on May 16, 1966, complained of a sense of tightness in his upper abdominal area and a general lack of well-being, preceded by a marked diaphoresis at night for almost a week. Questioning revealed that eleven days before after drinking a cocktail at a meeting he was nauseated and vomited. Two days later he had general discomfort that gradually increased to pain. This centered just under the sternum and radiated to the back.

His past history was that of an individual with unusually good health and great activity. There was no history of previous illness of any consequence.

On physical examination his general appearance was one of robust health; he was well developed and well nourished without gross evidence of physical abnormality. The findings of significance were limited to the abdomen where the liver margin was some 2 fingerbreadths beneath the costal margin in the midclavicular line. Bimanual palpation indicated a nontender mass either within the liver or closely related to it. On each expiration there was a feeling of fullness in the lower thorax. Blood pressure was 130/85 mm. Hg, pulse rate 84 and regular, respirations 16, and temperature 37.4°C. Several physicians examined the patient, and it was the consensus that no bruit could be heard over the mass.

Laboratory examination revealed a definite anemia with a hemoglobin of 10.6 Gm. per 100 ml., hematocrit of 34, a white blood cell count of 10,700, bleeding and clotting time was in the normal range, reticulocyte count was normal, and blood cultures were negative for bacterial growth. Bilirubin, calcium, phosphate, uric acid, blood urea nitrogen, and serum glutamic oxaloacetic transaminase showed no departure from the normal range. Alkaline phosphatase was 9.2 units.

A scout film of the abdomen indicated a soft-tissue mass in the right upper abdominal quadrant. This was demonstrated by excretory urograms to be a large extrarenal mass located medial to the right kidney and displacing it laterally and anteriorly (Fig. 1A and B). An intravenous cholangiogram revealed a normal biliary ductal system. A liver scan using 128 Microcuries of gold-198 colloid indicated anterior displacement of the lower half of the right lobe of the liver.

A percutaneous transfemoral aortogram with selective renal lumbar and superior mesenteric arteriography and an inferior vena cavogram provided additional specific information. A red Odman catheter placed at the level of the first lumbar vertebra demonstrated the aorta to be of normal caliber. The celiac axis was partly occluded at its origin and tended to fill via the superior mesenteric artery and a grossly dilated anastomotic arcade around the head of the pancreas. There was displacement of this complex of vessels across the midline into the left side of the abdomen (Fig. 2A). Selective catheterization of the superior mesenteric artery confirmed that there was almost complete occlusion of the celiac axis. The right hepatic artery was grossly attenuated presumably because of its distortion by the tumor mass. There was no evidence of tumor seen within the area of the liver substance. The right renal artery appeared stretched by an ill-defined soft-tissue mass in the right upper quadrant displacing the kidney laterally (Fig. 2B). There was tumor staining within this tissue mass. It was concluded that this derived its blood supply predominantly from the lumbar arteries, but there was no evidence that the tumor mass derived its vasculature from the renal artery. There was some filling of the inferior suprarenal artery which was well visualized, and some staining derived from this vessel in the soft tissue mass was suggested. Selective catheterization of the first lumbar artery demonstrated gross tumor staining and abnormal vasculature in the mass which was estimated to be 18 cm. in its greatest diameter (Fig. 3A and B).

An inferior vena cavogram demonstrated some compression of the inferior cava by the tissue mass in the right upper quadrant, but there was no evidence of invasion of the vessel (Fig. 4).

It was the opinion of the physicians in attendance that the soft-tissue mass in the right upper quadrant was retroperitoneal by the roentgenologic studies. It was evidently a tumor of large size displacing kidney, liver, and duodenum. It had a luxuriant blood supply. The nature of the tumor suggested that it was malignant and most probably a liposarcoma, although other primary retroperitoneal tumors had to be considered.

On May 17, 1966, under general anesthesia a large lobulated fatty tumor resting retroperitoneally in the right upper abdominal quadrant was excised. The tumor mass was removed in its entirety. There was no evidence of extension into

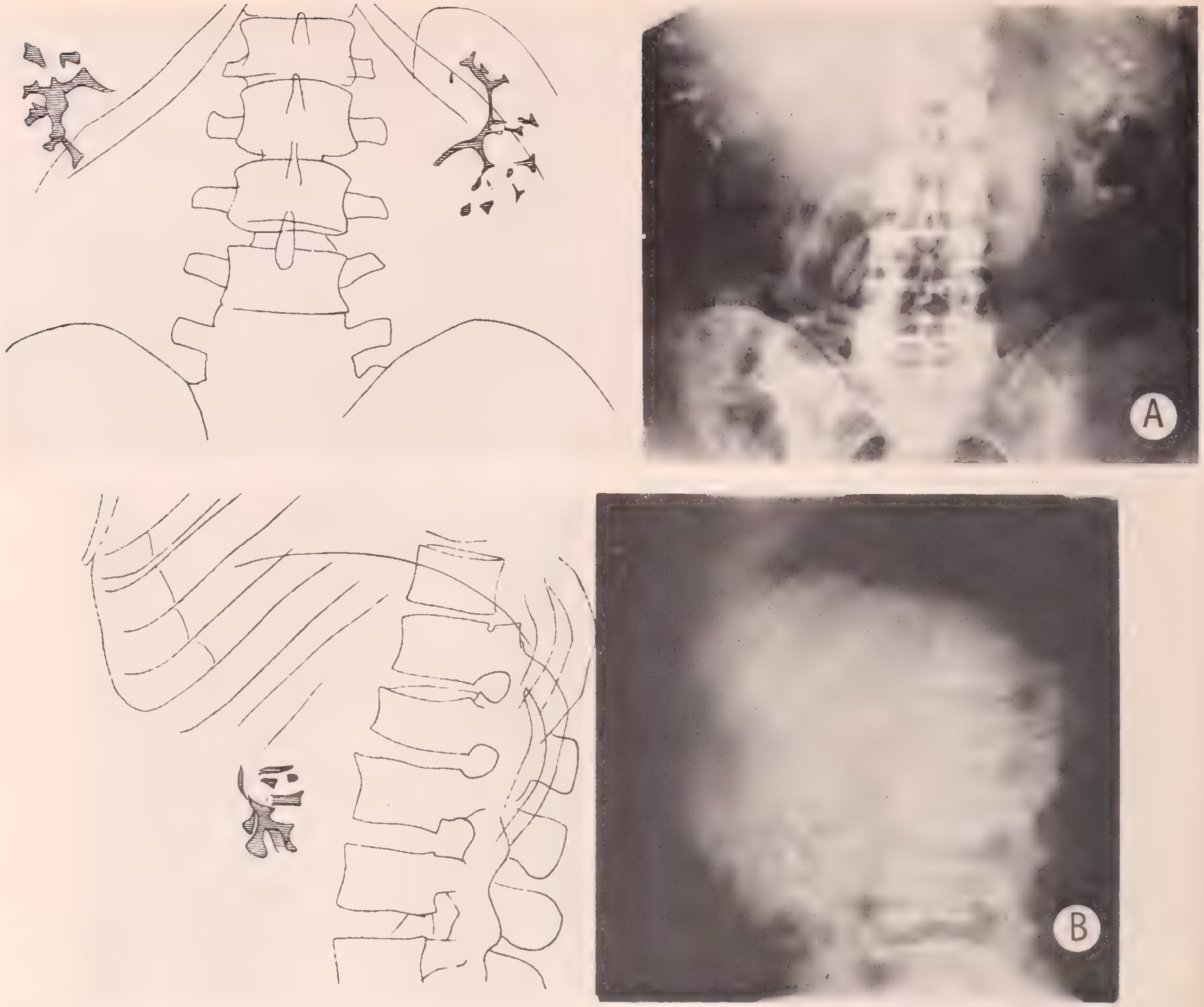

FIGURE 1. Intravenous pyelograms. (A) Displacement of right kidney laterally by large mass medial to kidney. There was elongation and compression of calcyces and renal pelvis. (B) Lateral view showing right kidney to be displaced anteriorly.

adjacent structures or into the blood vessels. It had dislocated structures normally resting in the position occupied by the tumor, but grossly it did not invade them. The tumor was grayish-tan in color, measuring 17 by 16 by 7 cm. and weighed 1,124 Gm. It was lobulated and encapsulated with a smooth glistening capsule. Its cut surface was slightly nodular, and areas bulged from nodules. There were several areas of cyst formation measuring up to 2.5 cm. in diameter. These were

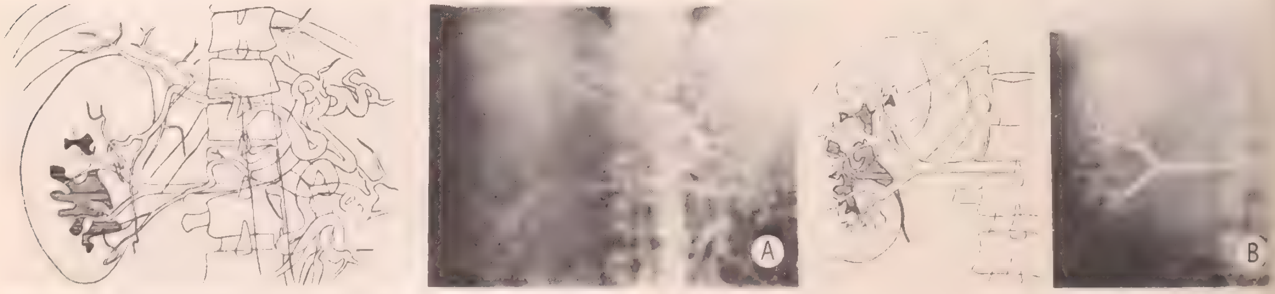

FIGURE 2. Selective aortography. (A) Celiac artery is occluded and is seen only by retrograde filling. Superior mesenteric artery and its branches appear dilated and displaced to left. (B) Selective aortogram demonstrating displacement of right kidney laterally with apparent stretching of renal artery over mass, but no vascular supply to mass is seen derived from this vessel.

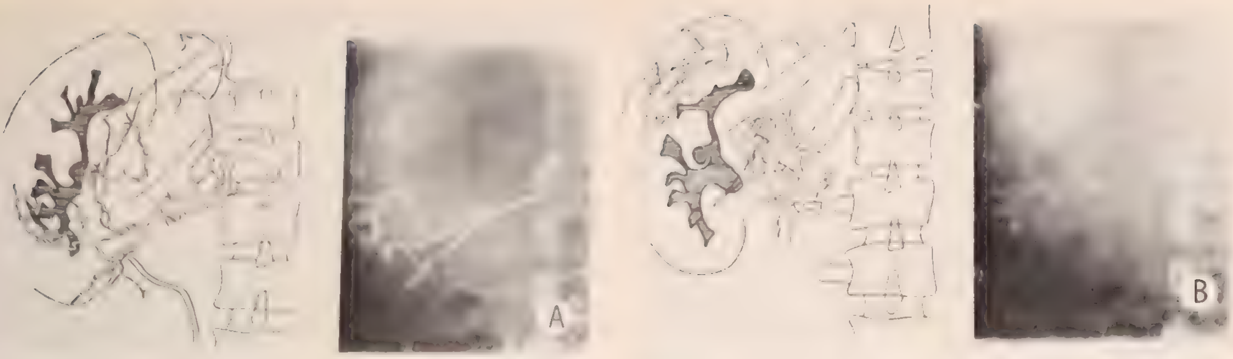

FIGURE 3. (A) Selective first lumbar arteriogram. Demonstrates abnormal and tortuous lumbar artery with numerous branches entering tumor mass. (B) Capillary phase shows diffuse tumor staining within mass.

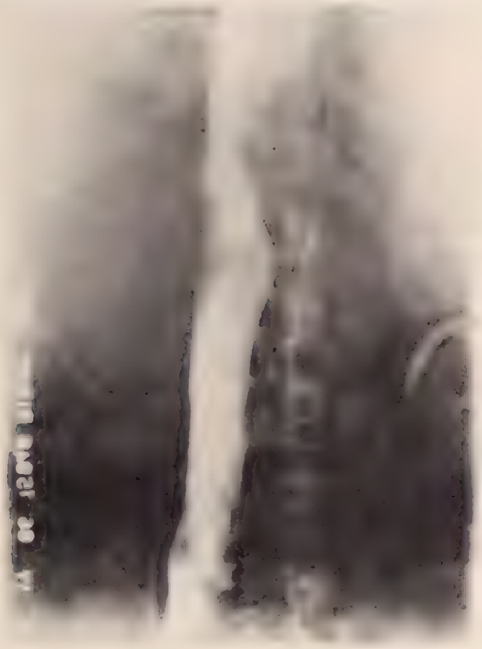

FIGURE 4. Inferior vena cavogram shows compression and displacement somewhat to left by large right abdominal mass.

filled with dark red, clotted blood and what appeared to be fluid fat.

On microscopic examination there was unequivocal evidence that this was a liposarcoma. Neoplastic lipoblasts were in abundance. These cell groups were large and irregular in size and shape. Some contained many irregular vascular spaces with distorted nuclei which were characterized by hyperchromatism. Mitoses of a bizarre nature were numerous.

The patient withstood the operative procedure well and recuperated rapidly without untoward event. On the seventh postoperative day, radiation therapy using cobalt was instituted directed to the anterior and posterior area of the right abdominal area. The patient was discharged from the hospital on the tenth postoperative day. From May 26 to July 2, 1966, the patient received a total of 3,400 r (skin doses), divided into 26 treatments. During this period the patient's appetite was poor; he experienced a general lack of well-being associated with a daily elevation of temperature of 1 to 2 degrees centigrade, followed by profuse diaphoresis.

Following completion of the radiation therapy the patient gradually lost his untoward symptoms and returned to work. He was seen at frequent intervals by his attending physician. At no time was he anemic, nor did he exhibit any manifestation of recurrent tumor growth. He remained free of symptoms until August, 1967, or approximately fourteen months after the completion of his radiation therapy. A right hydrocele was found, and he admitted to some discomfort in the right side of the abdomen. An intravenous pyelogram demonstrated a right hydronephrosis with poor visualization of the right ureter. A retrograde pyelogram demonstrated extensive compression and lateral displacement of the right ureter. It was questionable whether or not there was a mass in this area of palpation. Nevertheless it was the impression that there had been a recurrence of the liposarcoma that accounted for these findings.

On September 27, 1967, the patient was reoperated on. This was seventeen months after resection of the liposarcoma. A tumor mass was readily identified in the area where the primary tumor had been found. It extended cephalad and caudally downward over the sacrum and laterally to the right pelvis. At the sacral level it extended across the midline. There was invasion of the tumor into the mesentery of the small bowel. The findings were those of extensive recurrence of the tumor at the site of the primary lesion with massive extension into the retroperitoneal area and invasion of the mesentery of the small bowel in the retroperitoneal area across the midline. Sections of this tumor were examined by the pathologist and were identical with those of the primary tumor. Although the patient tolerated the operative procedure well, his convalescence was associated with anorexia, daily elevation of temperature, and a marked lack of well-being. He

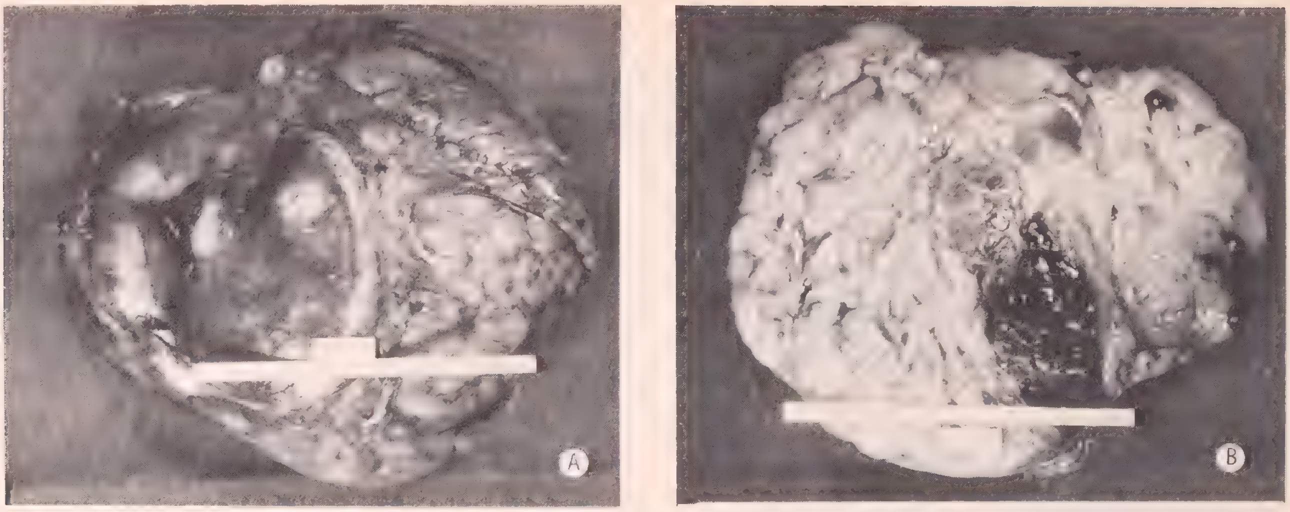

FIGURE 5 (A) Gross specimen of tumor weighing 11,400 Gm. (B) Cross section reveals numerous cystic areas, some filled with blood.

was discharged eight days after operation with evident increase in his abdominal girth and some edema of the scrotum. The patient's clinical course thereafter was one of progression of his symptoms and manifestations of the extension of the tumor. He was readmitted to the hospital for the third time on December 7, 1967, for reevaluation and attempted alleviation of symptoms. Two weeks later the patient was discharged somewhat improved. After discharge from the hospital the patient was confined to bed at home with further progression of the manifestations of his disease. He was admitted for the fourth time on April 27, 1968, and died five days later on May 2, 1968.

Postmortem examination. At autopsy an 11,400-Gm. tumor mass arising primarily in the lower part of the right retroperitoneal area was found to occupy and distend the abdominal cavity (Fig. 5A). The tumor occupied the area from where the retroperitoneal liposarcoma was removed almost two years previously. This had displaced the right kidney and the adrenal gland cephalad, and these organs were imbedded in the liver. The abdominal aorta, loops of small and large intestine, and inferior vena cava were firmly attached to the tumor mass. The tumor was also adherent to the liver and retroperitoneum penetrating to the periosteum of the vertebral column. There was metastasis with direct invasion to the right ureter and metastasis to the right lung and chest wall. A tumor 5 cm. in diameter was present in the posterior wall of the right pleural cavity. In the upper lobe of the right lung there was a small subpleural tumor nodule measuring 7 mm. across.

The cut surface of the tumor presented a lobulated appearance, was gray and yellow in color, and showed many areas of hemorrhagic necrosis (Fig. 5B). Microscopically, this tumor consisted of markedly pleomorphic spindle cells with fairly large amounts of pale cytoplasm. Mitotic figures were frequent. Granules positive for fat stain were scattered throughout the tumor. One section of bone marrow was found to be largely replaced by tumor tissue. Other bone-marrow spaces were observed to have 60 per cent solidarity and 40 per cent adipose tissue. The myeloid/erythroid ratio appeared to be moderately increased with normal maturation of both series. The megakaryocytes were unremarkable.

Comment

Retroperitoneal liposarcomas are not common. Pack and Pierson[1] in a review of 105 cases of liposarcomas from the Memorial Hospital in New York City (1928 to 1953) report only 13.3 per cent involved the retroperitoneal area and trunk.

The experience at The New York Hospital—Cornell Medical Center (1932 to 1953) was reported by Thorbjarnarson.[2] There were 10 patients with retroperitoneal liposarcomas who were followed for ten years. The average survival from recognition of the disease until death was 26.2 months. However, all but 1 died within two years. One patient survived for twelve years and died of an unrelated cause, but local residual tumor was found at autopsy.

Surgical excision of these tumors has provided alleviation of symptoms temporarily. Almost without exception local extension or recurrence to adjacent structures and systemic extension to organs throughout the body have followed. Radiation therapy has not been demonstrated to be of proved value.

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Multiple Drug Usage by Children

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Drug abuse by children is a growing pediatric and public health problem as a consequence of the increasing prevalence and acceptance of drug usage among high school and college students. The increasing prevalence among adolescents and adults is well documented, usage varying between about 25 and 50 per cent depending on the age group, the locale, and the year of the samplings.[1-3] The progression of drug usage downward from college to high school to elementary-school children is a current and worrisome aspect of the drug problem. Previous experience with children indicates that they confine their drug usage largely to glue and other inhalants.[4-6] Litt and Cohen in 1970,[7] reporting on 1,391 child and adolescent drug users, state that in their series the users of hallucinogens, amphetamines, or barbiturates were all over twelve years of age.

The rapid pace of change in drug practices renders many of our clinical impressions obsolete virtually before they are published. Recently we have encountered 2 children whose experiences testify to the use of sophisticated drugs by children well under twelve years of age, contrary to the experience of Litt and Cohen.[7] These cases are reported to illustrate the indiscriminate use of unknown drugs, the mode of spread of drug usage to children, the openness of children to drugs, and the reasons for their continued use. Whether these patients are unique in respect to their extreme youth and pursuit of multiple drugs or whether they herald a new trend is a question which can be answered only by continued observation and alertness.

Case reports

Case 1. A Puerto Rican girl aged ten years eight months, was admitted to the hospital because of strange behavior, that is, acting "drunk" and "wild," followed by drowsiness. Physical examination results were negative except for needle marks over the right and left antecubital vein. Laboratory findings were normal. She recovered after several hours but exhibited transient hallucinatory behavior three nights after admission. It was not clear whether this recurrence of disorientation was spontaneous or whether her visitors had brought her additional drugs.

The patient's account of her experiences with drugs was not totally candid because she feared incriminating herself and her friends. Her first experience with drugs consisted of sniffing glue and carbona in the company of a girl friend aged twelve years and two boys aged thirteen and eighteen. She used as much as two bottles of carbona a day. In addition, she drank beer and whiskey. She denied using marihuana but grinned and said her friends used it. She also denied using heroin, and when the needle marks on her arms were pointed out to her, she merely grinned. On the day of admission she said she drank three glasses of beer in which her friends had dissolved some "red pills."

The patient described her subjective reaction to drugs as feeling "high," "happy," "funny," and being impelled to "do bad things." She made no distinction between one drug and another, saying "I feel the same thing." She justified her use of drugs by citing the fact that she was "not the only one," that her friends "did it more times than me," and that the eighteen-year-old "took the needle, too." The locale for her drug activities was "on the roof and sometimes in an empty apartment." Her school attendance was irregular, her explanation being "I don't like school" and "I don't like to wake up early."

She terminated her hospital stay by absconding one evening during visiting hours. Her case was turned over to the municipal social agency.

Case 2. A Puerto Rican girl, ten years seven months of age, was admitted to the hospital intoxicated and disoriented, threatening homicide and suicide. She recovered within twelve hours and experienced no recurrence of her acute symptoms. Physical and laboratory findings were entirely normal.

The patient related her drug experiences readily and without self-consciousness. She admitted to using glue, "pot," LSD, wine, and whiskey. She was initiated into drug use by two older girls, aged about fifteen, who came to her school apparently for the purpose of initiating children and selling them drugs. She saw them "taking the stuff,"

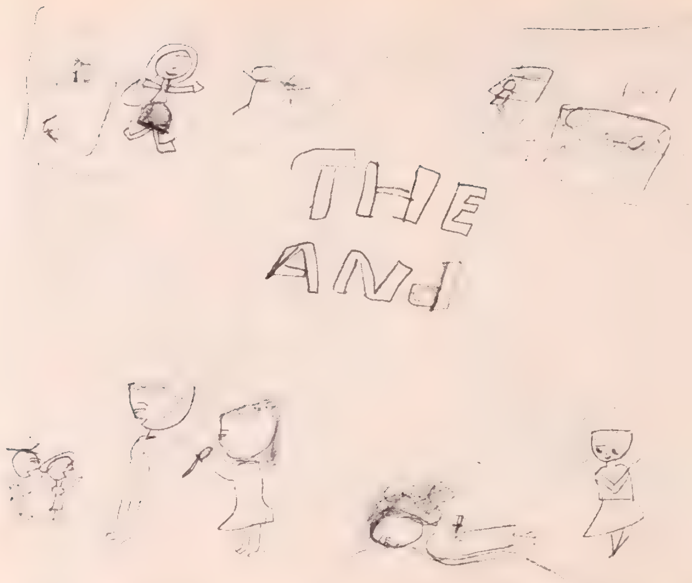

FIGURE 1. Case 2's drawings illustrating her fantasies of "stealing and killing." Upper left: stealing from store while being observed by 2 onlookers. Upper right: peering through window at her brother in crib, plotting to creep in and kill him when mother leaves room. Lower left: about to stab teacher. Lower right: teacher lies dead with knife in her back as patient looks on, smiling.

and she became intrigued because "they would talk about it" and "they acted big." "They asked me if I wanted to join." Her curiosity was aroused, and she "wanted to learn" in order "to see how it was."

Her first indoctrination was into the use of glue. She liked it because "you feel high; you laugh, too; and sometimes you see colors; and you're like funny." She described this as "a good feeling." Next the girls introduced her to marihuana, teaching her how to smoke it, giving her the first few cigarets free, then selling it to her after she had developed a liking for it and had begun to use it daily. She enjoyed marihuana because "it make you happy, and you laugh a lot." Then she was given LSD, but the girls were not as generous with this drug "because they like it more than everything; because it make you feel more than the other stuff." She, too, was intrigued by LSD because "it is different; it makes you high, and you think a lot, and you think like stealing and killing" (Fig. 1). Because her friends were reluctant to provide her with LSD, she took it from 3 older boys, aged about seventeen, who were friends of the girls, "waiting until they got drunk" and taking it from their pockets. She described the effect of whiskey as making her "real drunk," "dizzy," and causing amnesia. She related that under the influence of whiskey "I took a knife to my mother" and "I was going to jump out of the window; that's what they told me; I don't remember a thing."

The patient obtained money for drugs by stealing from her mother. She described and vividly illustrated the vacant shack near the school where she and her friends gathered for their drug-taking (Fig. 2).

In the hospital the patient adjusted well and seemed happy but complained that "something in my brain bothers me." She amplified, saying that she often experienced murderous impulses toward the other patients and ward personnel: "when they do something wrong to me a little bit, I like to take people and murder them," "like they holler, I feel like taking them and throwing them out the window," and "I hate people." She also described fears and hallucinatory experiences when she was alone in the bathroom. She was very specific that she had never had such ideas prior to using drugs.

The patient requested that she be allowed to remain in the hospital until the end of the school year. She feared that if she returned to her former school environment she would resume using drugs, although she in no way missed them in the hospital. She was aware, however, of the persuasive influence of her friends and of the drug experience, saying "I know if I go back I will do it again; that's why I want to stay in the hospital a little bit. 'Cause if I go back to school I'll see them again. I will do it again 'cause if I see that stuff again I will remember how it feels and how it was, and it was good."

She remained in the hospital for three months and attended the hospital school while her case was being investigated by the municipal social agency. In accordance with her desire she was discharged after the close of the school term. Subsequently she and her family left the city and returned to Puerto Rico.

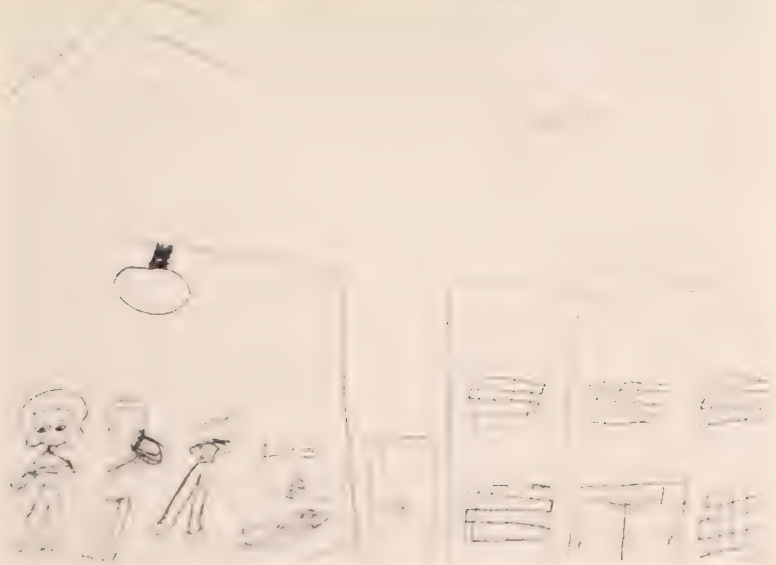

FIGURE 2. Case 2's drawing illustrating shack near school where children take drugs. School on right, playground with swing in center, and vacant shack on left. Figures from left to right represent main-line heroin shooter, glue sniffer, pot smoker, and someone reclining on an LSD "trip" with fantasies represented in balloon over his head.

Comment

Although these children are only ten years old and from a low cultural, social, and intellectual stratum of society, they illustrate many features that are common to drug users of all ages and youthful drug users particularly. Multiple drug use appears to be the rule for these children as well as for older users.[2,8] The use of the hydrocarbon inhalants is also characteristic of the child user as is the tendency to be indiscriminate and experimental. Case 1, for example, took a "red pill," the nature and effect of which she was totally ignorant.

These patients illustrate a specific problem of diagnosis, namely, the confused clinical picture that results from multiple drug usage. When a child comes into a hospital in a state of acute intoxication it is virtually impossible to obtain a coherent or reliable history. As with Case 1, the patient often does not know what drug he has taken. Even if he can identify the drug, he may not know the dose or be able to recall all of the drugs he has used. If his comrades cannot be located or cannot be persuaded to cooperate, diagnosis depends on urine tests for specific drugs.

These patients illustrate the deliberate indoctrination of younger children by older ones and the calculated exploitation of their curiosity, apparently for profit. The children's vulnerability is poignantly demonstrated by their susceptibility to exemplars who "act big."

The universality of the appeal of drugs lies in the "good feeling" with which Case 2 is so intrigued. Even the most sophisticated pharmacologic explanation does not say much more than this. Older users cite release of inhibitions, relief of anxiety, new sensations, and heightened perceptions, but it can all be summed up in the simple statement of a "good feeling."[9,10] Moreover, the adherence to drug usage, whether it justifies the designation of drug dependence or not, derives, as Case 2 says, from the "good feeling" combined with the people and peripheral experiences associated with drug usage, in other words the drug culture.

These girls also exemplify another aspect of the drug problem, namely, our ineffectiveness in counteracting the seductive effect of the drugs and their proponents. Case 1 could not even be retained in the hospital long enough for rehabilitation measures to be initiated and, even at ten years of age, was canny enough to conspire with her accomplices to run away. Case 2, despite her confidence in us and her acceptance of the undesirability of drugs, knew that she was not strong enough to withstand group pressures. Furthermore, a ten-year-old does not have the intellectual resources to combat the appeal of drugs on a reasoned or a sublimated level.

With respect to treatment, Case 2 gave us one clue: her wish to remain in the hospital until the close of school. She recognized the power of peer influence over adult warning or disapproval. Her solution is quarantine or protection from temptation. This is not a unique idea and is in part the basis of the residential self-help treatment centers.

In the absence of more definitive treatment measures perhaps segregation of users is necessary, both to protect those who are attempting to withdraw and, more especially, to protect susceptible children.

The spread of drug usage downward into the pediatric age group calls for special vigilance in case-finding as well as more effective methods than we now possess for combating this epidemic.

Summary

Two cases of multiple drug abuse by ten-year-old girls are reported. Glue, carbona, marihuana, LSD, alcohol, intravenous drug administration, and an unknown pill were used. The children were initiated into drug use by teenaged users who exploited their desire for acceptance and status. They continued to use drugs because of the pleasurable effects and despite threats of exposure or punishment. The girls who used LSD several times described homicidal fantasies and impulses produced by the drug and continuing for months after cessation of use of all drugs. These cases may be unique or may represent a new trend in earlier and more extensive experimentation with drugs.

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Actinomycosis in Acute Leukemia

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Mycotic infections are commonly encountered in patients with leukemia and may contribute to or cause the death of these patients.[1-4] Such infections have been identified post mortem in as many as 39 per cent of leukemic patients.[1] Candidiasis, cryptococcosis, aspergillosis, mycormycosis, and nocardiosis account for the great majority of mycotic infections in leukemia.[2,4-6] Other mycotic diseases such as actinomycosis, blastomycosis, coccidioidomycosis, histoplasmosis, maduromycosis, and sporotrichosis show little predilection for a diseased host and are rarely encountered in leukemia.[7] For example, we have been able to identify only one reported instance of actinomycosis in association with leukemia.[8]

The present report is prompted by the postmortem finding of actinomycosis of the larynx in a patient with acute myeloblastic leukemia. Although the association of actinomycosis and leukemia is undoubtedly rare, its clinical recognition is important since appropriate therapy may lessen morbidity and prolong useful life.

Case report

A 59-year-old single, white female was in good health until November, 1967, when she was hospitalized elsewhere for treatment of pneumococcal pneumonia. At that time, pancytopenia was noted (hematocrit, 26; white blood count, 1,500 per cubic millimeter; differential, 60 per cent mature neutrophils, 40 per cent lymphocytes; platelet count, 10,000 per cubic millimeter). The blood smear revealed no abnormal cells. Bone-marrow aspiration revealed a hypocellular specimen which was indicative of acute myeloblastic leukemia. Following a stormy course, the pneumonia resolved. Within eight weeks of the patient's hospital discharge on no specific therapy, the peripheral blood abnormalities returned to normal and remained normal over the ensuing six months. Between July and September, 1968, pancytopenia reemerged, and the patient was hospitalized for further study.

First admission. The patient was first admitted to Stone Memorial Hospital on September 6, 1968. Physical examination was unremarkable except for pallor and a few scattered ecchymoses. Hematologic parameters were hematocrit, 20; white blood count, 1,400 per cubic millimeter (12 neutrophils, 82 lymphocytes, 4 eosinophils, 2 monocytes); and platelet count, 13,000 per cubic millimeter. Bone-marrow aspiration again demonstrated a hypocellular specimen. Myeloblasts comprised 80 per cent of the nucleated elements. The patient received four units of packed red blood cells and was discharged on no therapy on September 11, 1968.

During the next seven months, the patient's hematologic status remained unchanged. Approximately two units of blood per month were required to sustain her hematocrit in the range of 24 to 30. Her only symptoms were fatigue and exertional dyspnea.

Second admission. The patient was hospitalized from April 2 through 18, 1968, following the acute onset of cough, fever, and rigor. Physical examination revealed conditions indicative of consolidation of the lower lobe of the left lung. This was confirmed by roentgenograms of the chest. On admission, the hematocrit was 24; white blood count was 1,300 per cubic millimeter (58 segmented neutrophils, 18 band neutrophils, 24 lymphocytes), and platelet count was 20,000 per cubic millimeter. Sputum culture revealed Escherichia coli. The patient was treated with kanamycin, and the pulmonary infiltrate slowly resolved together with resolution of fever. Two units of packed red blood cells raised the hematocrit to 33. The hematocrit subsequently remained stable throughout the remainder of the hospitalization and was accompanied by a reticulocytosis (3.5 per cent), progressive rise in the white blood count to 3,700 per cubic millimeter (69 neutrophils, 30 lymphocytes, 1 monocyte), and an increase in the platelet count to 166,000 per cubic millimeter.

Third admission. The patient was readmitted seventeen days following discharge with recurrence of chills, fever, and cough, and the onset of pleuritic pain in the left side of the chest. Physical examination and chest roentgenograms revealed a large pleural effusion in the left lung. Postpneumonic empyema was diagnosed. Thoracocentesis revealed purulent fluid, from which E. coli was cultured. The pleural fluid could not be adequately removed by aspiration or chest-tube drainage; therefore, a thoracotomy was performed and the fluid evacuated. Treatment with kanamycin was reinstituted. The remainder of her convalescence was uneventful and she was discharged free of symptoms on the twenty-second hospital day, May 27, 1969. Throughout this hos-

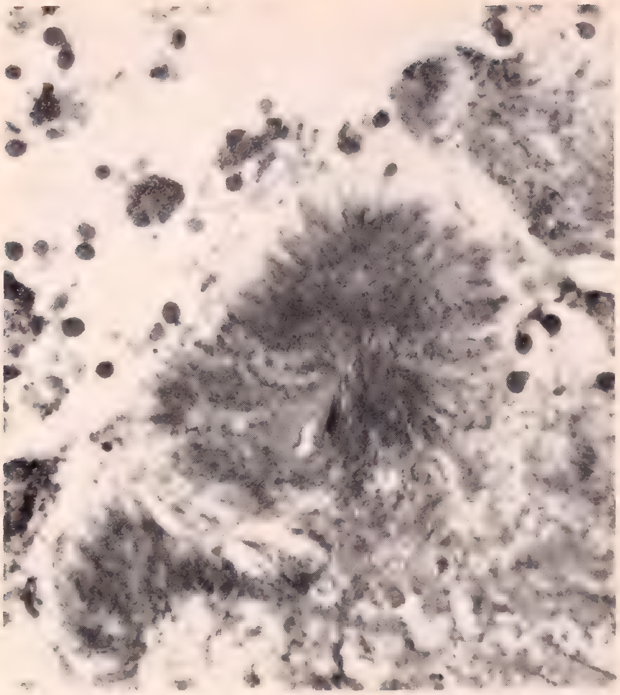

FIGURE 1. Section from paralaryngeal abscess showing sulfur granules (hematoxylin and eosin stain × 480).

pitalization, hematologic parameters remained stable (hematocrit, 30 to 34; white blood count, 3,400 to 6,500 per cubic millimeter; platelet count, 100,000 to 150,000 per cubic millimeter; and the differential white blood count consistently revealed neutrophilia without immature cells). Bone-marrow examination demonstrated an incomplete remission with the persistence of 20 per cent blast forms.

Fourth admission. Following discharge, the patient remained active and free of symptoms until August 29, 1969, when renewed pancytopenia and fatigue prompted a brief admission for transfusion of four units of packed red blood cells. At this time, the hematocrit was 14, white blood count was 1,200 per cubic millimeters, and platelet count was 21,000 per cubic millimeter. Mild hoarseness was noted for the first time. Over the ensuing six weeks hoarseness became progressively worse and was accompanied by the development of low-grade fever, dry cough, pain on swallowing, marked tenderness of the larynx, and soft-tissue swelling in the paralaryngeal area. A sputum culture revealed only Neisseria and Candida albicans. On two occasions, the last on October 3, 1969, she was examined by different otolaryngologists, both of whom rendered the diagnosis of diffuse, acute laryngitis. Tetracycline was administered in doses of 1 Gm. daily for ten days. This was accompanied by modest improvement in symptoms and signs.

TABLE I. Staining characteristics of Actinomyces and nocardia species and organisms from reported patient

Test	Patient	Actinomyces	Nocardia
Visible on hemotoxylin and eosin stain	+	+	–
Sulfur granules	+	+	Only in cutaneous infections
Acid-fast characteristics			
Ziehl-Nielson	–	–	±
Putt modification of Ziehl-Nielson	+	+	+
Fite-Faraco	–	–	±
Kinyoun	–	–	±
Methylene blue Counterstaining	+	+	–

On October 13, 1969, severe right lower quadrant discomfort developed in the patient, with diarrhea and a temperature of 105°F.; she became somnolent and was rehospitalized. Physical examination revealed marked right lower quadrant tenderness and rebound. She rapidly became moribund and hypotensive and died within a few hours of admission. Hematologic parameters prior to death included white blood count, 100 per cubic millimeter; hematocrit, 21; and few platelets on blood smear.

The postmortem examination revealed the immediate cause of death to be peritonitis and septicemia due to necrotizing colitis of the cecum. Peritoneal fluid and blood cultures were positive for Klebsiella Enterobacteriaceae and E. coli. In addition, peritoneal and pericardial fluids were positive for Clostridium perfrigens. Sputum culture revealed Candida species.

The larynx was inflamed, friable, and revealed a 1-cm. anterior perforation located 1 cm. below the true cords. A plane of dissection, which contained purulent brown material, extended inferiorly along the thyroid cartilage. Cultures of this material were not obtained. Microscopic examination of sections obtained from the larynx and contiguous tissue revealed chronic inflammation, superficial necrosis, and the presence of sulfur granules with clubs at the periphery, typical of Actinomyces (Fig. 1). The staining characteristics of these organisms are listed in Table I.

Comment

Actinomyces israelii and Nocardia asteroides are members of the order Actinomycetales. These species demonstrate taxonomic, morphologic, and clinical similarities. Because of differences in therapy and prognosis, it is important to distinguish between nocardiosis and actinomycosis. Penicillin has long been considered the drug of choice for the antibiotic treatment of actinomycosis with tetracycline being a suitable alternate. The most effective antibiotic therapy for nocardiosis has not been as clearly defined. Currently, the combination of a sulfonamide and cycloserine is the recommended treatment of choice.[9] Since the response to antibiotic therapy is less predictable in patients with nocardiosis than in those with actinomycosis, the prognosis of the latter is considered to be more favorable.[10,11] While nocardiosis has been repeatedly documented in association with leukemia,[1,8,12-15] a careful search of the literature has uncovered only a single instance of actinomycosis in a patient with leukemia.[8] In this instance, the site of involvement was not specified.

Nocardia is regularly isolable from the soil. Inhalation or contamination of superficial wounds are thought to be common modes of infection.[10] The organism may exist as a saprophyte in the respiratory tract.[11] Nocardiosis, when not localized to the skin, becomes manifest as either an acute or chronic systemic illness primarily involving the lungs and tracheobronchial tree. A predilection for hematogenous dissemination to the brain is noted, and visceral involvement is also common. Foci of infection are characterized by acute necrosis with abscess formation.

Actinomyces is a saprophytic resident of the human mouth and gastrointestinal tract. The organism has never been isolated from sources in nature.[10,11,16] Actinomycosis is characterized by chronic, destructive abscesses of soft tissue, particularly in the cervicofacial, thoracic, and abdominal areas. Although infection most commonly extends by contiguity, giving rise to multiple cutaneous fistulas, hematogenous dissemination has been reported.[17]

Nocardia and Actinomyces are easily distinguished on culture. Species of Nocardia are aerobic and grow well on all common laboratory media over a wide temperature range.[11,18] In contrast, Actinomyces species are anaerobic or microaerophilic, require enriched media such as blood agar or brain-heart infusion, and grow poorly at temperatures below 37° C.[10,19]

Since infection with either of these organisms is often an unexpected finding at the postmortem examination, a growing body of data is available to permit their differentiation in histopathologic material. Nocardia are not visible on hematoxylin and eosin stains but can be demonstrated by Gram or Gomori methenamine silver stains.[20] They are often acid-fast whether by Ziehl-Nielson, Fite-Faraco, or Kinyoun methods.[21,22] They do not counterstain with methylene blue in the Kinyoun method.[21] Sulfur granules have been reported in cutaneous nocardiosis but are said not to occur in visceral infections.[22] Actinomyces, also easily visible on Gram or Gomori methenamine silver stains, is characterized by the presence of sulfur granules on hemotoxylin and eosin stain. The organisms are non-acid fast by conventional methods but are acid-fast when stained with the Putt modification of the Ziehl-Nielson method.[22] In addition, they counterstain with methylene blue in the Kinyoun acid-fast method.[21] These distinguishing morphologic and tinctorial characteristics of Actinomyces and Nocardia are presented in Table I.

The observations in the present report indicate laryngeal and paralaryngeal infection with an organism of the Actinomycetales species. The following morphologic and tinctorial characteristics suggest that the organism is Actinomyces rather than Nocardia: the organisms are visible on hematoxylin and eosin stain; sulfur granules are present; the organisms are non-acid fast with the Ziehl-Nielson method but are acid-fast with the Putt modification of the Ziehl-Nielson stain; the organisms counterstain with methylene blue using the Kinyoun acid-fast method; and the organisms fail to grow on routine culture media (antemortem sputum culture). Additional data supporting the diagnosis of actinomycosis includes the observation that infection of the laryngeal or paralaryngeal area is documented in actinomycosis but has not, to our knowledge, been reported in nocardiosis.[23-25]

On the basis of the observations presented and the supportive data from the literature, we conclude that the present case represents the first reported instance of actinomycosis of the larynx in association with leukemia and only the second reported case of actinomycosis of any kind in a leukemic patient. Since the immediate prognosis for many patients with leukemia is relatively favorable, it is important to recognize and treat complications which contribute to morbidity and mortality, such as the occasional infection with Nocardia or the rare infection with Actinomyces.

An incidental but interesting observation in the present report relates to the spontaneous return of the patient's hematologic parameters to normal on two occasions following severe bacterial sepsis, a phenomenon in acute leukemia that has been well documented in the literature.[26,27]

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Polypharmacy of therapeutic exuberance

Iatrogenic disease is increasing proportionately to the growth and complexity of medical care. Most iatrogenic diseases are due not to ineptitude or carelessness but rather to nonrealization of the harm that can be done through well-intentioned efforts. If iatrogenic disease cannot be controlled, according to Seymour Handler in *Minnesota Medicine* (**54:** 973 [December] 1971), perhaps the mustard plaster should be brought back into use. The therapeutically exuberant physician fills up the medication sheet in a patient's chart, responding to each new complaint with another pill. Group practice or medical consultants compound polypharmacy, where inadequate physician communication tends to more ordering and less continuance of medications. The older patient is less able to combat the onslaught of polypharmacy. Multiple drugs are adversely effective; one drug may inhibit or potentiate another, resulting in a deteriorating, toxic, and confused elderly patient. After a bright consultant stops all medication, the patient often improves dramatically, begins to eat, walk, and think again. Even if that does not happen the consultant is able to distinguish between the patient's basic illness and the confusing signs and symptoms of polypharmacy. The author outlines some of the more common iatrogenic diseases due to both diagnostic and therapeutic procedures. Suggested solutions include (1) do not prescribe unnecessary drugs, (2) prescribe less medication, and (3) examine each new enthusiastically introduced therapy with a level of cynicism approaching rejection.

Pyogaseous Liver Abscess due to Klebsiella Aerogenes

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Pyogaseous liver abscess is a most unusual lesion of varied origin. Diagnosis is at best difficult, and early isolation of the causative organism essential. Klebsiella aerogenes isolate in pure culture from said cases is rare. Paliwal *et al.*,[1] culled 3 pyogaseous liver abscesses from the literature and added 1 due to K. aerogenes. We present such a case in which bone-marrow culture was the significant diagnostic factor.

Case report

This was the second Metropolitan Hospital admission, on November 11, 1969, of a sixty-three-year-old Puerto Rican female complaining of chills, sweats, fever, and weakness of two days' duration associated with shortness of breath. On the day of admission she vomited, had two diarrheal stools, and had vague abdominal pain.

She was a known diabetic of eleven years' duration and most recently had been controlled with chlorpropamide (Diabenese). A urinary tract infection had been treated at Metropolitan Hospital six months previously with full recovery.

Hospital course. Pertinent physical findings were temperature 103°F.; pulse 146 per minute; blood pressure 122/62 mm. Hg; respirations 20 per minute; and dullness, decreased breath sounds, and crepitant rales over the right and left lower lung fields. Roentgenograms of the chest revealed bilateral basal infiltrates.

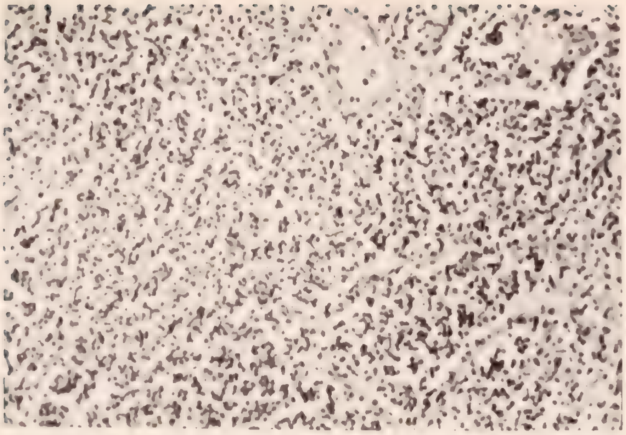

FIGURE 1. Alveoli packed with mixed infiltrate, mainly polymorphonuclear

Laboratory findings were sodium 134, potassium 3.6, chloride 88, carbon dioxide 22.5 mEq. per liter; hemoglobin 12.6 Gm. per 100 ml.; hematocrit 43; and white blood cell count 8,600 per cubic millimeter. Blood sugar was 480 on admission and 388 mg. per 100 ml. the next day. Urinalysis showed protein 1 plus, glucose 4 plus, white blood cells 15 to 20 per cubic millimeter with occasional clumping, red blood cells 5 to 8 per cubic millimeter, and many bacteria.

Clinically, she was thought to have pneumonia, possible cystitis, ketosis, and dehydration. She was started on intravenous fluids, cephalothin, kanamycin, and insulin. There was slight improvement in her condition, but she died suddenly forty-eight hours after admission.

Autopsy. An autopsy performed twenty-four hours after death revealed pertinent findings in the lungs, liver, and kidney. Bilateral pulmonary nodularity was noted, particularly in the lower lobes. Microscopically, these consisted of a central necrotic area, where pulmonary architecture had been destroyed, and a surrounding mixed infiltrate composed mainly of polymorphonuclear leukocytes (Fig. 1). Brown-Brenn stain revealed occasional gram-negative organisms.

The liver weighed 1,400 Gm.; the capsule was smooth but there were thick fibrous bands attaching the right lobe to the diaphragm. In the midportion of the right lobe a 7.5-cm. multiloculated gas-filled cyst was encountered. On sectioning adjacent areas, yellow purulent material was encountered (Fig. 2). Microscopically polymorphonuclear leukocytes were noted in the sinusoids. The abscess area was devoid of hepatic cells and surrounded by a zone of polymorphonuclear leukocytes.

The kidneys exhibited a few cortical yellow nodules up to 0.8 cm. in diameter microscopically consisting of areas of necrosis surrounded by polymorphonuclear leukocytes. At the hilum of the

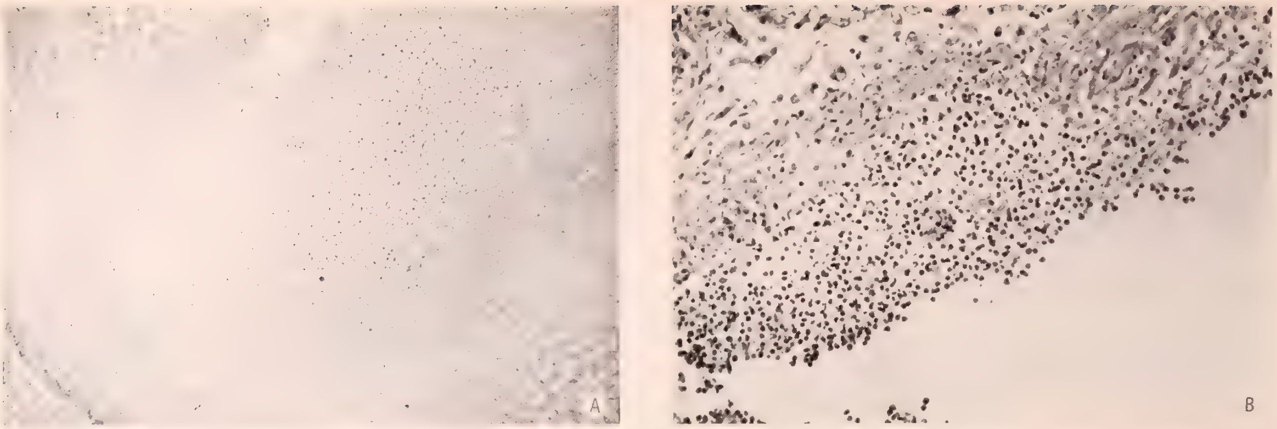

FIGURE 2. (A) Pyogaseous liver abscess. (B) Higher power view of abscess wall showing necrotic liver cell, fibrin debris, and mixed cellular infiltrate.

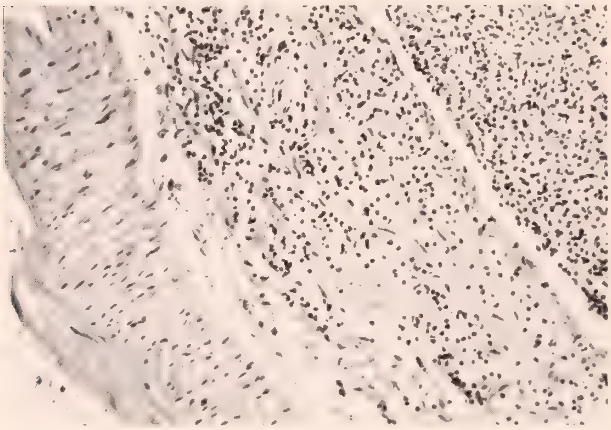

FIGURE 3. Renal vein packed with necrotic debris and polymorphonuclear leukocytes.

right kidney the renal vein was occluded with necrotic material and polymorphonuclear leukocytes were noted (Fig. 3).

Bacteriology. Specimens of bone marrow, heart blood, kidney abscess, liver abscess, and lung granulomas were each inoculated into two individual flasks, one containing tryptic soy broth, the other fluid thioglycollate. After twenty-four hours of incubation at 37° C., growth appeared in all 10 cultures. Gram-stain preparation indicated that the two bone-marrow cultures contained only gram-negative bacilli; the other eight cultures contained both gram-negative bacilli and gram-positive cocci. All cultures were subcultured to sheep-blood nutrient agar and MacConkey agar plates and incubated at 37° C. for twenty-four hours. The bone-marrow cultures were pure cultures of lactose-fermenting gram-negative-type colonies—3 to 5 mm. in diameter, slightly raised, and smooth—which were subsequently identified as K. aerogenes. The heart-blood cultures contained K. aerogenes in addition to Streptococcus faecalis, Staphylococcus epidermidis, and Pseudomonas aeroginosa. Similarly, the kidney-abscess cultures contained K. aerogenes and S. faecalis as well as Escherichia coli and Clostridium perfringens. Cultures of the liver abscess and the lung lesions grew K. aerogenes and S. faecalis.

TABLE 1. Abbreviated list of biochemical determinants for identification of Klebsiella organisms

Test	Reactions K. aerogenes	 K. pneumoniae
Gas from glucose	+	+
Acid from lactose	+	+
Acid from dulcitol	−	+
Methyl red	−	+
Vosges-Proskauer	+	−
Gluconate	+	−
Citrate	+	+
Urease	+	+
Lysin decarboxylase	+	+
Growth in potassium cyanide media	+	−

The identification of K. aerogenes was based on the battery of biochemical tests proposed by Cowan, Steel, and Duguid[2] (Table I).

Antibiogram studies of all the cultures suggested that all of the isolates of K. aerogenes were the same strain; in all instances the organisms were resistant to ampicillin and erythromycin and sensitive to cephalothin, chloramphenicol, kanamycin, streptomycin, and tetracycline. Pure cultures of the identical strain of K. aerogenes (based on antibiogram studies) were isolated from a number of blood cultures taken several days prior to death.

Comment

Although this antimicrobial era has seen a great reduction in the incidence of pyogenic hepatic abscess, the condition still presents grave problems in diagnosis.

The insidious and obscure symptoms of liver abscesses are emphasized by Butler and McCarthy[3] who point out that leukocytosis is absent in 50 per cent of cases. Rothenberg and Linder[4];

Berke and Pecora[5]; Macfadzean, Chang, and Wong[6]; Pyrtek and Bartus[7]; Diffenbaugh, Strohl, and DePadua[8]; and Hirschowitz[9] have all pointed out the difficulty of diagnosing liver abscesses.

Liver abscesses may be caused by (1) extension from infections of contiguous organs, the most common being suppurative ascending cholangitis, which has supplanted appendicitis as the commonest antecedent focal infection of pyogenic liver abscess; (2) portal venous system infection, usually portal thrombophlebitis after suppurative appendicitis; (3) posttraumatic infection (rare); (4) infections via the hepatic artery, representing extension from distant pyogenic processes, such as osteomyelitis, subacute bacterial endocarditis, and so on; and (5) "idiopathic" causes, which is a catchall term for those cases in which the primary source of infection has not been found.

Paliwal *et al.*,[1] reported the most recent case of "pneumohepatitis," also caused by K. aerogenes. They culled 3 others from the literature, 1 due to E. coli[10] and 2 due to Clostridium sporogenes and P. aeruginosa.[11,12] Of 61 cases of liver abscess reported by Joseph, Kahn, and Longmire,[13] 3 were attributable to pyelonephritis, and 1 was attributed to lung abscess.

Pyelonephritis, dormant for six months in the diabetic under consideration, would seem to be the most likely primary source of infection. Urine culture six months prior to the current admission grew out K. aerogenes, and at autopsy the renal vein was packed with debris and polymorphonuclear leukocytes. The noteworthy features are K. aerogenes as the rare cause of the liver abscess and the fact that pure culture was obtained from the sternal marrow. Had these marrow cultures not been obtained, the true single causative agent might not have been determined at postmortem examination.

From a diagnostic point of view, when a patient has chills, fever, malaise, anorexia, weakness, weight loss, and, as emphasized by Rothenberg and Lindner,[4] dull constant pain in the hepatic area, liver abscess must be considered. Enlargement of the liver, especially upwards, occurs in 75 per cent of cases. Roentgenography, according to DeBakey and Creech,[14] can be the most effective aid in diagnosis. Elevation of the right side of the diaphragm with limitation or absence of motion on fluoroscopy, change in the contour of the diaphragm, pleural effusion with obliteration of the costophrenic and cardiophrenic angle, and a cold area on liver scan are the usual available radiologic highlights. In the case of gas-producing organisms, fluid levels within the liver substance might be demonstrated. Despite all these apparent tools, the diagnosis is still frequently one of exclusion.

Summary

We have reported a rare case of "pneumohepatitis," a particularly rare complication of Klebsiella aerogenes infection of the kidney. The value of routine postmortem bone-marrow culture for the isolation of pertinent organisms is stressed.

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Prolonged Venoarterial Bypass with Membrane Pump Oxygenator

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Extracorporeal oxygenation with membrane lungs as a method of prolonged support for patients with refractory cardiac arrest, cardiogenic shock, post-traumatic respiratory insufficiency, and acute respiratory failure is a concept of recent and widespread interest. Several recent publications based on laboratory experiments on prolonged venovenous and venoarterial assists and a few reports on clinical trials appear promising.[1–3] Rapid progress has been made in the development of a disposable and simple but efficient membrane oxygenator for laboratory and clinical use by Landé and Edwards.

The following is a report of a patient in whom acute respiratory insufficiency developed following extensive pulmonary surgery, and who was successfully maintained on a partial venoarterial bypass for seventy hours with initial objective improvement.

Case report

This thirty-five-year-old white female had multiple exostoses. In June, 1966, she underwent partial excision of her left humerus for chondrosarcoma apparently arising at the site of an exostosis. Three years later a local recurrence was removed. An abnormal shadow was noted to involve her right lung at that time which remained essentially unchanged until January, 1970, when its progression was noted. The patient started to have cough and wheezing and was found to be anemic. She was hospitalized elsewhere and then referred to Memorial Hospital where she was admitted on August 3, 1970.

On admission to Memorial Hospital the patient was essentially asymptomatic. She had had poliomyelitis at age fourteen with essentially no neurologic deficit. Physical examination revealed respiratory rate of 18, pulse 80 beats per minute, blood pressure 120/90 mm. Hg, and weight 106 pounds. There were no palpable adenopathy or abnormal masses. The patient had multiple exostoses. A roentgenogram of the chest revealed mass lesions involving the right middle and lower lobes and mediastinum with large subcarinal extension displacing the esophagus noted on barium shallow (Fig. 1 left). Skeletal survey showed absence of the left proximal humerus and exostoses. An angiocardiogram revealed compression on the superior aspect of the left atrium and main right

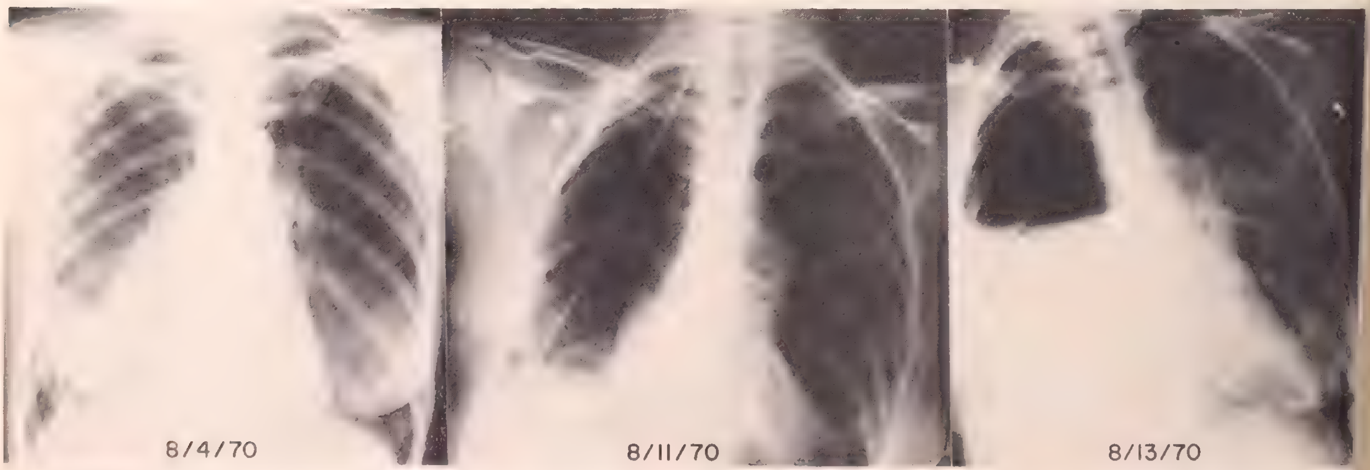

FIGURE 1. Left: preoperative chest roentgenogram reveals loculated tumor involving right lung and mediastinum. Center: immediate postpneumonectomy roentgenogram. Hemostatic silver clips mark extent of mediastinal dissection. Right: roentgenogram of chest two days postoperatively reveals beginning of infiltrative process involving left lower lobe.

pulmonary artery. Arterial blood gas studies showed a pH of 7.43; carbon dioxide tension, 39.4 mm. Hg; oxygen pressure, 91.8 mm. Hg; and an oxygen saturation of 96.6 per cent.

Pulmonary function studies showed a vital capacity of 2,500 cc. (85 per cent predicted normal); maximum voluntary ventilation 64 L. per minute (78 per cent predicted normal); forced expiratory volumes: one-second, 69 per cent, two-second, 87 per cent, and three-second, 95 per cent of predicted normal. Total lung capacity was 4,175 ml. (113 per cent predicted normal), and residual volume was 1,675 ml. (228 per cent predicted normal).

On August 7, 1970, an exploratory thoracotomy was performed with halothane, nitrous oxide, and oxygen endotracheal anesthesia. The tumor entered the pericardium, appeared to involve the left atrium, and extended across the mediastinum. It was decided that for resection of the tumor, cardiopulmonary bypass was essential as standby, and the chest was closed. The patient's postoperative course was uneventful.

Preparations were made to reexplore the patient which was done on August 11, 1970, with fentanyl-droperidol (Innovar), nitrous oxide, and oxygen endotracheal anesthesia. A right radical pneumonectomy with resection of part of the left atrial wall and pericardium was performed. It was reported that a small amount of tumor between the left pulmonary artery and superior left pulmonary vein was left behind, since it could not be resected safely from the right side. Cardiopulmonary bypass was not required. The defect in the pericardium was closed with Marlex mesh. The patient received 1,500 ml. of blood in the operating room. The pathologic diagnosis was consistent with metastatic chondrosarcoma.

During the immediate postoperative course, the patient had sinus tachycardia with a pulse rate of 140 per minute and blood pressure of 120/70 mm. Hg. Her temperature was 39°C. Blood culture was negative. The patient was given cephalothin, 2 Gm. intravenously every six hours, and heparin, 25 mg. intravenously every four hours starting twenty-four hours postoperatively. On the first postoperative day, the left lung was clear, and she was afebrile. She was discharged from the recovery room (Fig. 1 center).

At 10:00 A.M. on the second postoperative day, chest x-ray films revealed a diffuse infiltration in the left midlung field (Fig. 1 right). At 6:00 P.M. that same day she was cyanotic with a temperature of 39° C. rectally. Her pulse rate was 140 per minute and respirations were 32 per minute. She raised thick white sputum. Arterial blood gas studies showed a carbon dioxide pressure of 32.5 mm. Hg and oxygen tension of 66.7 mm. Hg. The neck veins appeared distended, and there was a gallop rhythm. She was digitalized without improvement. Gentamicin, 600 mg. every eight hours, intravenously, was started. Therapeutic bronchoscopy was performed which revealed intense congestion of the endobronchial mucosa with minimal secretions. Bronchial washings showed a few polymorphonuclear leukocytes, a few yeast cells, and many colonies of streptococci and nonpathogenic Neisseria. Aspiration pneumonia was considered but doubted, and the patient received 200 mg. of hydrocortisone every four hours.

The patient was placed on a ventilator through an endotracheal tube. At 6:00 A.M. on August 14, the patient pulled out her endotracheal tube and had a cardiac arrest. She responded to resuscitative measures with reintubation, bicarbonate administration, and external cardiac massage. A tracheostomy was performed.

At 9:30 A.M. on August 14, roentgenograms of the chest revealed complete consolidation of the left lung with serous blood-tinged fluid aspirated through the tracheostomy tube (Fig. 2 left). The neurologists believed that the patient's cerebral de-

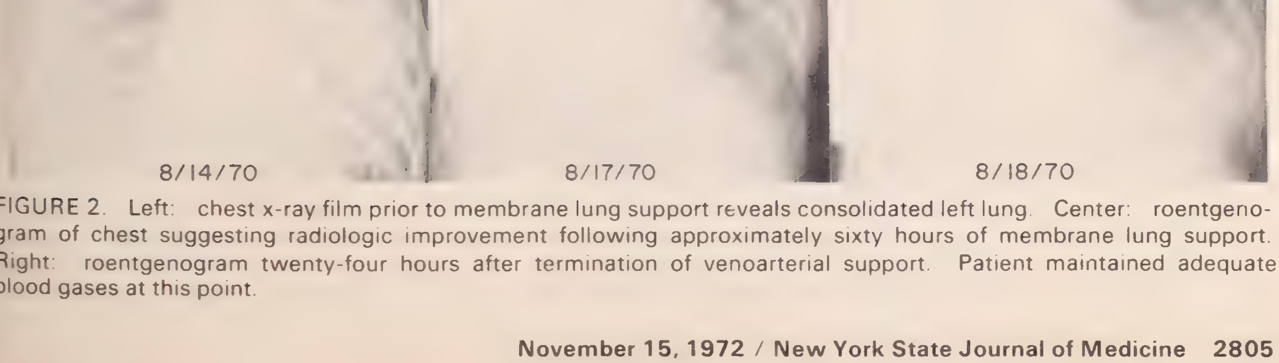

FIGURE 2. Left: chest x-ray film prior to membrane lung support reveals consolidated left lung. Center: roentgenogram of chest suggesting radiologic improvement following approximately sixty hours of membrane lung support. Right: roentgenogram twenty-four hours after termination of venoarterial support. Patient maintained adequate blood gases at this point.

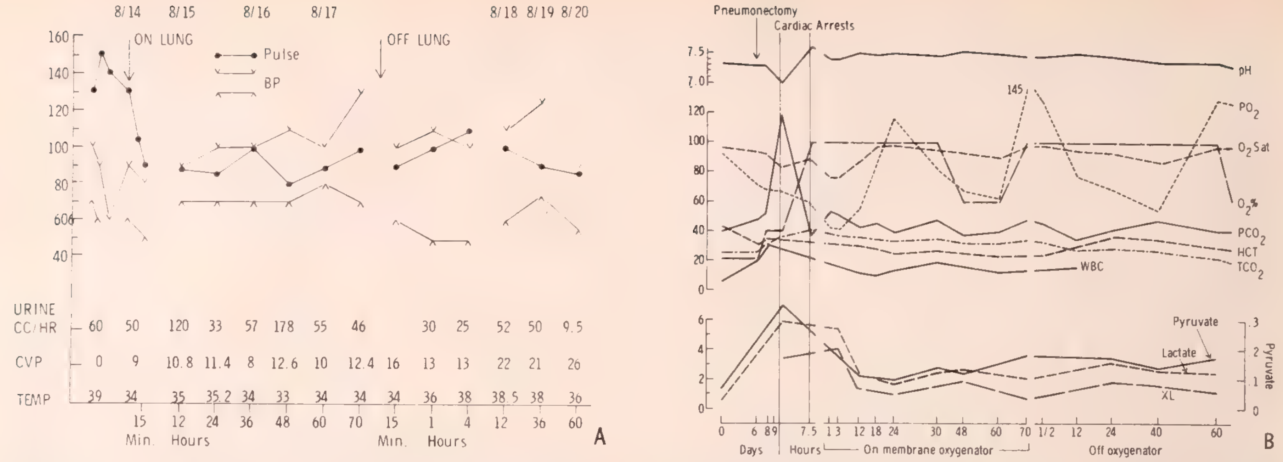

FIGURE 3. (A) Record of arterial blood pressure (BP), pulse, rectal temperature, central venous pressure (CVP), and average urinary output. (B) Graphic representation of data on arterial blood gases (pH, PO_2, O_2, saturation, PCO_2, TCO_2), hematocrit (HCT), percentage of oxygen delivered through respirator (O_2%), lactate, pyruvate, and excess lactate (XL) values.

pression was reversible. At 10:30 A.M., arterial blood lactate was 5.911 mEq. per liter (normal 1.7 mEq. per liter), and pyruvate was 0.354 mEq. per liter (normal 0.05 mEq. per liter). The patient suffered a second cardiac arrest on arrival at the intensive care unit while receiving 100 per cent oxygen through an Ambu bag ventilator. Arterial blood gases at this time were pH 7.05, oxygen pressure 59 mm. Hg, and carbon dioxide tension 54 mm. Hg. Clinically the patient became progressively cyanotic and markedly hypotensive.

At 5:43 P.M. on August 14, the patient was placed on partial venoarterial bypass with two Landé-Edwards 3-M membrane oxygenators with the Olson cardiac pump. The right femoral vein and artery were cannulated in both directions to maintain limb viability. Heparin, 4 mg. per kilogram, was used initially with 50 mg. added every

TABLE I.

COAGULATION STUDIES AND HEPARIN ADMINISTRATION

	Pre-op	Operation	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days	8 Days
Glass clotting time	7' 18"	16' 59"	19' 15"	> 2 hrs. (on lung)	> 2.5 hrs.	> 3 hrs.	> 2.5 hrs.	> 2 hrs.	39'	
Partial thromboplastin time NI - < 100"	115"	98"	2' 27"	2' 27"			7' 25"	2' 55"	2' 5"	93"
Pro. time	17.2 (c. 13.2)	14.8 (c. 13.2)	17.2 (c. 13.2)	17.2 (c. 13.2)			51.4 (c. 13.4)	18.2 (c. 13.4)	17.4 (c. 14)	15.8 (c. 14)
Thrombin time	14.8 (c. 15.8)	13.4 (c. 18)	12.8 (c. 16.6)	12.8 (c. 13.2)			2' + (c. 13.6) Protamine ⟶ 11"	2' + (c. 14.0) Protamine ⟶ 6.4"	2' + (c. 14.0) Protamine ⟶ 8"	15.4 (c. 14.0)
Fibrinogin (mg%)	690	760	770	770	350	345	324	510	530	380
Fibrin split products			Neg.	Neg.			Neg.	Neg.	+ 1: 16, Neg. 1: 32	+ 1: 4, Neg. 1: 32
Euglob. lysis NI - < 120'	> 120'		> 120'	> 120'			> 120'	> 120'	> 120'	> 120'
Platelets (1000/cc)	252.0			288.0	48.0	23.0	34.0	90.0	102.0	
Clot Retraction								Impaired	Impaired	Good
Heparin (units)		10,000		46,000	96,000	30,000	30,000			

Haptoglobins, daily, too hemolysed to report. Direct and indirect Coombs remained negative.

8th Post-op day: Qualitative G-G-PD - Negative
Donath Landsteiner - Negative
Ham Test - Negative
Osmotic fragility - compatible with moderate leptocytosis

TABLE II. Serum electrolytes, blood urea nitrogen, creatinine and liver function studies

Data*	Dates			MEMBRANE OXYGENATOR SUPPORT						POST PERFUSION		
	8/4	8/11	8/14	3 Hrs	12 Hrs	24 Hrs	39 Hrs	48 Hrs	70 Hrs	18 Hrs	40 Hrs	60 Hrs
Ca^{++}	10.2	8.5	8.3	8.6	9.2	9.0	9.0	8.9	8.8	8.8	7.5	6.5
Mg^{++}	-	-	1.47	-	1.43	1.28	1.26	1.20	1.0	1.28	1.76	1.43
Na^{+}	-	138	143	-	147	138	136	133	137	138	131	131
K^{+}	-	3.8	2.6	2.5	4.3	3.4	3.7	3.2	3.3	4.3	5.5	5.6
Cl^{-}	-	100	87	-	98	96	91	89	91	87	78	85
P	4.5	3.3	2.2	-	1.5	-	1.60	1.40	1.40	2.7	4.0	-
BUN	17.0	4.0	8.0	-	19	-	22	25	41	83	123	-
Cr	-	-	-	-	0.9	-	1.1	1.2	1.0	2.9	4.0	4.4
UA	4.8	2.9	4.8	-	3.9	-	3.0	3.2	3.5	7.3	-	9.1
LDH	140	180	323	-	560	-	710	468	810	1,695	2,500	1,458
SGOT	37	53	120	-	125	-	135	-	111	185	136	128
Alk. Phos.	62	40	90	-	51	-	59	-	50	119	140	155
TB/CB	0.50/	0.51/	0.75/	-	3.18/ 1.31	-	2.12/ 1.14	2.90/ 1.40	3.0/	7.12/	3.10/	4.0/ 2.92
TP/AL	7.8/ 4.2	/2.8	5.3/ 2.2	-	5.6/	-	5.4/ 2.1	-	5.4/ 2.8	5.9/ 2.9	5.8/	5.2/ 2.7

* BUN, blood urea nitrogen; Cr, creatinine; UA, uric acid; LDH, lactic dehydrogenase; SGOT, serum glutamic transaminase; TB/CB, total bilirubin/conjugated bilirubin; TP/AL, total protein/albumin.

two hours to keep the clotting time over one hour. Right radial artery blood oxygen tension was 42 mm. Hg at two hours fifty-one minutes after the start of the right femoral bypass at almost 3 liters per minute flow.

The record of temperature, pulse, central venous pressure, and urine output is shown in Figure 3A. The arterial blood gases and adjustments in oxygen concentration with lactate and pyruvate values are shown in Figure 3B. The coagulation studies and heparin administration are shown in Table I. Electrolyte concentration, blood urea nitrogen,

TABLE III. Fluids including blood, plasma, and platelet transfusions administered during support with membrane oxygenator

Fluids	8/14	8/15	8/16	8/17	Total
Plasmanate	1,000 mls	1,000 mls	750 mls	-	2,750 mls.
D5/W	400 mls	3,680 mls	2,000 mls	-	-
Whole blood	1,500 mls	1,100 mls	2,650 mls	2,300 mls	8,550 mls
2½ D/0.5 Sal.	625	250	250	950	2,075
Salt Poor Albumin	-	50 gms	25 gms	25 gms	100 gms
Platelets	-	5 units	-	12 units	17 units
Fresh Frozen Plasma	-	-	-	250 cc	250 cc

creatinine, uric acid, and liver profile studies are shown in Table II. Various fluids and electrolyte solutions administered are shown in Table III.

Perfusion was carried out at 2 to 3 L. per minute for seventy hours while the left lung gradually cleared and the extracorporeal oxygenation was terminated. (Fig. 2 center). After termination of the bypass, roentgenogram of the chest showed no further improvement, but her arterial oxygen and carbon dioxide pressures remained acceptable on 100 per cent oxygen through the ventilator (Fig. 2 right). She was minimally responsive and had to be kept sedated. There were serious problems with blood coagulation and post-bypass hemorrhage from the gastrointestinal tract. Suddenly thirty-six hours following termination of bypass, there was clinical evidence of suspected cerebral hemorrhage characterized by sudden decerebration, falling blood pressure, and cessation of urine output. Supportive measures were maintained for another day but later discontinued. The patient was pronounced dead on August 20, 1970.

An autopsy revealed cerebral edema, tentorial herniation, and bilateral focal hippocampal hemorrhage. Multiple gastrointestinal mucosal petechial hemorrhages and fibrin thrombosis in the renal glomeruli were also noted. The left lung showed residual tumor between the pulmonary artery and vein. There was evidence of diffuse hyaline membrane pneumonia and bronchopneumonitis. Necrotizing acute tracheitis was also noted around the tracheostomy. There were no significant bacteria cultured from the blood or lung of the patient.

Comment

Although this patient had a marked infiltration of the remaining lung, no bacterial agent was incriminated. The only positive growth in all sputum or tracheal cultures was yeast with and without mycelia. Candida albicans was cultured from the first postoperative day until death. There were occasional cultures of alpha streptococcus but these were few in number. The gentamicin and cephalothin administered prevented bacterial infection. This lung lesion could have been secondary to aspiration of gastric contents with the development of a chemical pneumonitis, but there was no known episode of vomiting. We consider that lymphedema secondary to extensive mediastinal lymph-node dissection is another possibility. There was insufficient oxygen used for oxygen toxicity. For the first two days the tracheostomy drained an excessive amount of yellowish fluid high in protein content but sterile. The chest x-ray film gradually cleared as the tracheal drainage decreased.

The patient's neurologic status was difficult to assess because she was kept on d-tubocurarine and fentanyl-droperidol for better respiratory control. However, the consulting neurologist believed that there was no irreparable brain damage.

Maintenance of body temperature was a problem and required warming of the patient to maintain the temperature above 33°C.

Initially in the bypass, adequate oxygenation could be achieved only with both the membrane oxygenator and 100 per cent oxygen from the volume ventilator through the cuffed tracheostomy tube. The lung was very rigid, and nearly 45 cm. of water pressure was required to ventilate 200 cc. volume of gas. However, oxygenation had begun to improve by the twelfth hour, and at twenty-four hours the oxygen pressure was 116 mm. Hg, and the lactate and excess lactate levels were almost normal. At the time of discontinuance of the bypass seventy hours later, the oxygen pressure was 145 mm. Hg, and the excess lactate level was minimal while breathing 100 per cent oxygen with the respirator.

There were no disturbing electrolyte variations on bypass. Liver function tests were only slightly abnormal until discontinuance of the bypass, when there was a marked increase in abnormal liver function tests probably associated with increase in the size of the liver. Similarly, there was then a decrease in renal function and elevation of blood urea nitrogen, creatinine, and uric acid as the patient continued to bleed and deteriorate.

After the initial reduction of the tachycardia and presence of hypotension on bypass, the patient's course was steady and essentially unchanged for the seventy hours of bypass. Urine output was maintained at 50 cc. per hour on bypass without elevation of the central venous pressure. There were no gross cardiac abnormalities except for one episode of ventricular premature contractions which responded to lidocaine, 60 mg intravenously.

The most serious postperfusion problem was bleeding, starting with profuse bleeding from the cut-down site twenty-four hours after going on bypass. A 5-unit platelet transfusion was given (platelet count was 48,000 that morning), and anticoagulation was maintained. Bleeding decreased somewhat over the next twenty-four hours, but at sixty hours on bypass generalized bleeding developed from the mouth, nose, tracheostomy wound, stomach, and vagina, and the stools became tarry. The bleeding stopped after a 28-unit platelet transfusion and cessation of anticoagulation; no protamine was deemed necessary. Bleeding resumed two days later.

We believe the clotting studies show a transient, mild consumption coagulopathy (fibrinogen and platelets decrease) when the patient was first put on bypass (Table I). This case also illustrates the inadequacy of glass clotting times as used to determine dosage and schedule of heparin administration. Partial thromboplastin-time determinations would probably have been more helpful.

Before going on bypass, the patient received 10,000 units of heparin and 4,000 units were added to the prime; 153,000 units of heparin were subsequently given to the patient in addition to the 34,700 units given via the 17 units of transfused blood.

The addition of heparin and calcium to transfused bank blood makes evaluation even more difficult.

It would also appear advisable to order platelet concentrates for any patient in whom prolonged bypass is being contemplated. Since the realization that platelets will remain viable for at least twenty-four hours if the concentrate is kept at room temperature, any unused platelets can easily be reassigned to another patient. Better methods of preventing excessive anticoagulation are needed.

Summary

It is feasible to maintain patients with reversible acute pulmonary insufficiency on prolonged veno-arterial support with the Landé-Edwards membrane oxygenator. Proper anticoagulation and control of heparin administration warrants further study.

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Jaundice with Dubin-Johnson-Sprinz Syndrome Precipitated by Oral Contraceptives

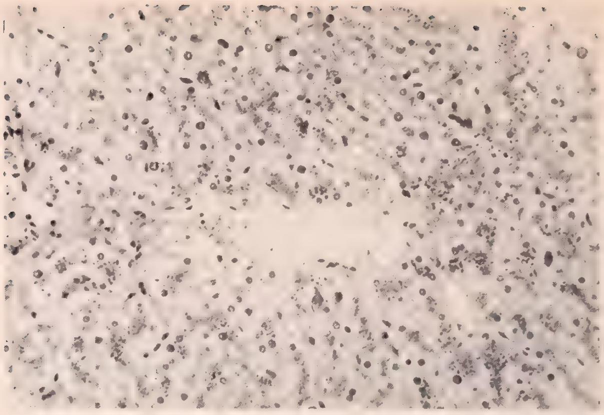

FIGURE 1. Liver biopsy, Case 1. Note coarse granular dark pigment and aggregation of pigment around central vein (Fontana melanin stain × 100).

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Pregnancy may first make manifest the symptoms or aggravate the clinical course of patients with Dubin-Johnson-Sprinz syndrome (chronic idiopathic conjugated hyperbilirubinemia).[1] In a recent symposium, Arias[2] mentioned that patients with Dubin-Johnson-Sprinz syndrome may have an otherwise subclinical hyperbilirubinemia accentuated by oral contraceptives. The following report describes in detail 2 cases of Dubin-Johnson-Sprinz syndrome uncovered only because of administration of oral contraceptive agents and discusses clinical, histologic, and pathogenic features of such cases. I wish to bring wider attention to this occurrence.

Case reports

Case 1. A twenty-seven-year-old Puerto Rican mother of 6 was admitted to Bellevue Hospital on November 17, 1967, for chills, fever, weakness, anorexia, nausea, vomiting, dark urine, and right upper quadrant pain lasting approximately one week. The patient gave a history of recurring episodes of jaundice. The first episode occurred six years prior to admission, during the eighth month of her third pregnancy. The 2 pregnancies preceding that had been normal. The second episode occurred in the eighth month of her sixth pregnancy, one year prior to admission. The family history was unremarkable except that the patient's sister, who was not pregnant, was said to have become jaundiced three weeks after the patient had had her first episode of jaundice six years earlier, and was still icteric. No other family member nor any of the patient's 6 children were stated to be icteric.

On physical examination the patient appeared icteric and showed a tender liver, the lower edge of which was 5 cm. below the right costal margin. No other significant findings were present.

Admission laboratory studies showed unremarkable hematologic data except for an eosinophilia of 10 per cent. The urine bile was negative with a urobilinogen of 1 mg. in 32 hours; bilirubin was 1.8 direct and 6.1 mg. per 100 ml. total, alkaline phosphatase 2.7 Shinowara-Jones-Reinhart units (normal 2.2 to 8.6), thymol turbidity 13.5, serum glutamic oxaloacetic transaminase 18 Karmen units, serum glutamic pyruvic transaminase 29 Karmen units, and lactic dehydrogenase was 200 units per 100 ml. On further questioning the patient indicated that recently she had begun taking norethindrone and mestranol (Ortho Novum) in undetermined dosage and had completed one cycle without ill effects. One to two weeks after completing the second cycle she developed the symptoms prompting her admission. The clinical diagnosis was jaundice of pregnancy with reactivation by oral contraceptive.

On November 30, a liver biopsy was performed. It was noted that the biopsy fragment grossly appeared black. Microscopic examination revealed a markedly increased amount of coarsely granular dark brown material of a lipofuchsin-melanin type. No alteration of hepatic cells or structure was seen, nor was bile stasis present. No inflammatory reaction was noted (Fig. 1). Special stain results were: Fontana (for melanin), positive; acid-fast stain, negative; methylene blue, greenish; Wilder reticulin stain, black staining of granules; Giemsa, dark green-black stain; Sudan black, negative; amyloid stain, black; phloxine methylene blue, negative; and periodic acid-Schiff, negative.

On December 6, 1967, a timed sulfobromophthalein test showed the following serum concentrations: zero minutes, 1, five minutes 90.4, forty-five minutes 5.05, and ninety minutes 8.7 per cent. The gallbladder was not visualized after oral cholecystogram. During her hospital course the bilirubin ranged from 1.2 direct/1.9 total to 1.8 direct/6.1 mg. per 100 ml. total, the value on admission. The alkaline phosphatase ranged from 1.5 to 6.7 units. Transaminases were always in the normal range. At the time of discharge on December 18, 1967, her bilirubin was 2.5 direct/2.8 mg. per 100 ml. total; alkaline phosphatase 2.9 units; thymol turbidity 14.0. The eosinophil percentage was 8 to 10 per cent with 2 eosinophil counts being 572 and 670. One stool examined for ova and parasites gave negative results.

Case 2. A twenty-three-year-old eight-month-pregnant Puerto Rican was first admitted to Bellevue Hospital on June 21, 1967, with complaints of "yellow eyes" for two months and pain on the right side for one month. One month before admission she had noted dark urine which subsequently returned to normal color. For a few days prior to admission she complained of increasing fatigue. The immediate history was otherwise unrevealing. She denied familial illnesses, both parental and for her 8 siblings. The patient had visited the emergency room several times previously in the past year for bronchial asthma.

On physical examination skin and scleral icterus were noted. The liver was palpable 2 cm. below the right costal margin and was nontender.

On admission laboratory data showed the following positive findings. The alkaline phosphatase was 22.3 Shinowara-Jones-Reinhart units; bilirubin was 4.1 direct/4.8 mg. per 100 ml. total; serum glutamic oxaloacetic transaminase was 65 units, and serum glutamic pyruvic transaminase was 35 units; lactic dehydrogenase was 360 units per 100 ml. The urine was positive for bile, and the urobilinogen was 1 mg. in sixteen hours.

The clinical diagnosis was jaundice of pregnancy. Four days after admission she delivered a normal male infant. Two days after delivery her alkaline phosphatase was 11.4 units; bilirubin 2.6 direct/3.0 mg. per 100 ml. total; serum glutamic oxaloacetic transaminase 18 units and serum glutamic pyruvic transaminase 8 units. At discharge, two weeks after delivery, the alkaline phosphatase was 9.7; bilirubin 1.8 direct/2.2 mg. per 100 ml. total; and lactic dehydrogenase 300 units per 100 ml.

On December 4, 1967, the patient was admitted for a second time with complaints of right upper quadrant pain, jaundice, dark urine, nausea, and vomiting for one week. It was discovered that she had been placed on norethynodrel, 2.5 mg., and mestranol, 0.1 mg. (Enovid-E) by the gynecology guidance clinic. The patient had discontinued the drug two weeks prior to admission because of metrorrhagia. Physical examination showed scleral and skin icterus. There was a mild prolongation of the expiratory phase of respiration. There was right upper quadrant tenderness with the liver edge felt 2 cm. below the right costal margin. The clinical diagnosis was cholestatic jaundice of pregnancy aggravated by norethynodrel and mestranol.

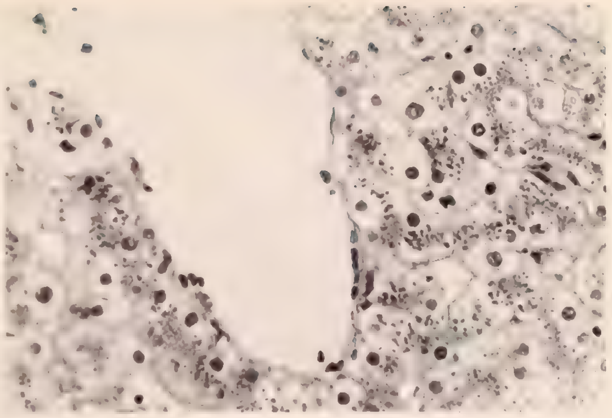

FIGURE 2. Liver biopsy, Case 2. Changes are similar to those of Case 1. Higher power emphasizes lack of significant hepatocellular damage (hematoxylin and eosin stain × 150).

TABLE I. Results of timed sulfobromophthalein test

Minutes After Injection	Per Cent Retention	Per Cent Conjugation
5	76.5	1.4
45	11	40
90	19	92
180	16	99.6

On December 6, the liver function tests showed serum glutamic oxaloacetic transaminase of 116 units, with serum glutamic pyruvic transaminase of 315 units; bilirubin was 5.4 direct/6.7 mg. per 100 ml. total; alkaline phosphatase 14 units; urine bile 4 plus, and urobilinogen was normal. The hematology data were unremarkable except for an eosinophilia of 10 per cent on admission which varied between 10 and 13 per cent thereafter. On December 8, a liver biopsy was performed; results showed a coarse pigment similar to that described in Dubin-Johnson-Sprinz syndrome and similar to that of Case 1, with no other significant alteration of the liver (Fig. 2). On December 14, a timed sulfobromophthalein test was performed with the results shown in Table I.

The gallbladder was not visualized on double-dose cholecystogram. The patient improved, and on December 16 she was discharged with laboratory values as follows: alkaline phosphatase 8.4 units; bilirubin 2.5 direct/3.5 mg. per 100 ml.

total; serum glutamic oxaloacetic transaminase 27, serum glutamic pryuvic transaminase 29 units; lactic dehydrogenase 280 units per 100 ml.

Comment

These 2 cases show many of the features of classic Dubin-Johnson-Sprinz syndrome—abdominal pain, fatigue, nausea, vomiting, anorexia, jaundice, dark urine, and mild hepatomegaly. Hyperbilirubinemia in the Dubin-Johnson-Sprinz syndrome is usually moderate in degree, with the direct value ranging from 26 to 86 per cent of the total values, but usually being about 60 per cent. The majority of cases will show bile or urobilinogen in the urine. Increased alkaline phosphatase also has been observed. One third of patients will show abnormalities of thymol turbidity or cephalin flocculation.[1] The abnormalities of laboratory values which were observed in our 2 patient, plus the failure of the gallbladder to visualize on oral cholecystography even after double dosage and the secondary rise in the timed sulfobromophthalein test, are highly characteristic of the Dubin-Johnson-Sprinz syndrome.[3,4]

The finding of a coarsely granular lipofuchsin-melanin type of pigment in the liver biopsy showing the staining characteristics described in the Dubin-Johnson-Sprinz syndrome, coupled with the absence of bile stasis or significant hepatocellular alteration in a jaundiced patient, is diagnostic of this entity.[1,5] The lack of bile stasis eliminates the possibility of cholestatic jaundice secondary to oral contraceptives.[6]

Hepatic lipofuchsin pigment accumulation in human subjects after chronic phenacetin ingestion and accumulation of lipofuchsin pigment in the renal tubules of the rat has been described after high-dosage administration of estrogen.[7,8] However, the characteristic clinical and laboratory features of the Dubin-Johnson-Sprinz syndrome in the 2 patients, the suggestive family history in 1 patient, and the short period of use of the oral contraceptives in both virtually exclude the possibility that these agents could have caused the hepatic pigment accumulation.

It is important to note that both patients were believed initially to have had cholestatic jaundice of pregnancy and then jaundice secondary to oral contraceptives, the two conditions being essentially similar.[6,9] Patients with cholestatic jaundice of pregnancy or of contraceptive drugs show, in addition to jaundice, manifestations such as malaise, anorexia, nausea, and dark urine and lack rashes, fever, arthralgia, and other severe systemic manifestations. These symptoms are also seen in the Dubin-Johnson-Sprinz syndrome. Helpful features differing between cholestatic jaundice of pregnancy or of oral contraceptives and the Dubin-Johnson-Sprinz syndrome are abdominal pain, right upper quadrant tenderness, and mild hepatomegaly—common features of the latter but unusual in the former.[1] On the other hand, pruritus, a common feature of cholestatic jaundice of pregnancy and/or oral contraceptives, is not usually seen in the Dubin-Johnson-Sprinz syndrome.[1,6,9] Additional helpful information may be found in the family history; if other members of the patient's family were known to have unexplained jaundice, the Dubin-Johnson-Sprinz syndrome would be strongly suggested. Dubin,[1] however, has pointed out that a positive family history was found in only 13 of 39 patients for whom family histories were obtained. Also, as has been shown in a large family study, many relatives of patients with clinically apparent Dubin-Johnson-Sprinz syndrome will show only a mild indirect subclinical hyperbilirubinemia.[10] The Dubin-Johnson-Sprinz syndrome is especially suggested in a patient diagnosed as having jaundice of pregnancy or cholestatic jaundice secondary to oral contraceptives whose hyperbilirubinemia does not clear completely in two months or less after delivery or removal of the drug, as is usually the case.[6,9]

Definitive differentiation is provided by liver biopsy, which in cholestatic jaundice of pregnancy or secondary to oral contraceptives shows centrolobular bile stasis, usually without significant alteration of hepatic architecture or inflammation, whereas the Dubin-Johnson-Sprinz syndrome shows the histologic changes already described.[1,5,6,9,10]

Because both patients showed mild eosinophilia of the peripheral blood, an allergic cause of the jaundice must be considered. However, since liver biopsy showed neither inflammation nor cholestasis—the usual drug-induced lesions of the liver—nor were increases in eosinophils seen in the liver biopsies, drug allergy is believed unlikely as a cause of the jaundice.[11] Both patients were native-born Puerto Ricans, and parasitic infection is another possibility. A stool tested for ova and parasites, done only once on Case 1, gave negative results. Case 2 had had bronchial asthma which also could explain her eosinophilia.

The most likely explanation for the jaundice produced in these patients with Dubin-Johnson-Sprinz syndrome lies in the known adverse effect which estrogens and, to some degree, progesterones can exert on liver function.[6] For example, with a variety of oral contraceptive preparations, mild elevations of sulfobromophthalein retention, usually no higher than 15 per cent, have occurred in from 7 to 29 per cent of women taking them.[12] In a smaller number of women, transient increases in alkaline phosphatase have been recorded.[13] The 17-alpha-alkyl-substituted steroid is believed to interfere with metabolic excretion of conjugated bilirubin.[2,11,14,15] This is the same category of metabolic defect postulated for the Dubin-Johnson-Sprinz syndrome.[2,15] It is quite reasonable, therefore, to assume that an interference with the mechanism of excretion of conjugated bilirubin caused by the 17-alpha-alkyl substituted steroid of the oral contraceptive agents could aggravate a precariously compensated similar defect in the patient with subclinical Dubin-Johnson-Sprinz syndrome producing clinical jaundice, as is postulated to have occurred in the 2 cases considered here.

The described cases lend support to the recent statement by the AMA council on drugs suggesting that oral contraceptives not be given to patients with constitutional hyperbilirubinemias.[16] Further points to consider are that in patients with the Rotor syndrome, which may really be the Dubin-Johnson-Sprinz syndrome without the hepatic pigment, jaundice also may occur with oral contraceptives.[10] In these cases clinical jaundice could occur without either hepatic centrolobular cholestasis or pigment. Finally, male patients with subclinical Dubin-Johnson-Sprinz syndrome receiving estrogens for prostatic carcinoma could also show the effect described in this report.

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Special Article

Context and Future of Cell Synthesis

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In the field of biology we are moving from an age of analysis into an age of synthesis. Within a century we shall probably be able to synthesize artificially any biologic system or entity. By system or entity I refer to viruses, cells, animals, plants, societies, and ecosystems. Some of these we can synthesize now. Many other types of synthesis will be possible within twenty years. Some biologists do not realize that this is happening, probably because they work too close to details. However, when we put together some of the remarkable events of recent years, the trend is evident. We have seen the first synthesis of a gene, the first synthesis of a virus, and recently the first reassembly of a living cell. At higher levels we have seen allophenic* mice developed and remarkable progress in plant-breeding. Our new concern for the environment merges with our developing capacity to understand, control, modify, and synthesize complete ecologic systems.

Methods of cell synthesis

The work at Buffalo on cell synthesis must be seen in context and in relation to the successes of many other biologists. We owe a particular debt to Dr. Ernest Pollard, whose energetic exploration of the field over the last eight years has been an inspiration. In general, the artificial synthesis of cells is being explored along several different routes.

1. For simple cells, such as bacteria, a genome is brought together with minimal supporting systems. Students of this method include Pollard and Morowitz.
2. Artificial reassembly of cell components (organelles) can yield cells of all degrees of complexity. This has been the field of the Buffalo team.
3. Fusion of existing cells gives more complex cells. Pioneers in this technic include Harris with animal cells and Cocking with plant cells.

The first two methods offer complete control of composition unit by unit of the synthesized cell. The fusion method is much more limited.

Future

Over the next five years we can expect to see (1) the artificial assembly of cells with components from the most varied sources, including plant-animal mixes; (2) the first artificial assemblies of egg cells, to which the work of Briggs, King, Fischberg, and Gurdon has been an essential precursor; (3) the synthesis of new organisms by cell fusion; (4) the synthesis of new organisms by fusion of embryos; and (5) a continuation of the formation of new organisms by the classic technics of breeding and genetics.

Running in parallel with these manipulative programs will be a considerable effort to synthesize new genes and to incorporate these genes into chromosomes or other cellular organelles. As this goal is achieved, biology also must develop a technic for adding these synthetic chromosomes to living cells. When this has been done, it will be feasible to transfer both synthetic and natural genes into a considerable variety of organisms.

Usefulness

Of what use will all this be? What benefit to man? My mind cannot cope with the immense possibilities, and I shall provide only a few examples of possibilities we at the Center for Theoretical Biology are considering.

1. Biologic fixation of nitrogen is often more efficient than the use of industrial fixed nitrogen At present only a few plants, such as blue-green algae and legumes, fix nitrogen. The improvement of existing nitrogen-fixers, and transfer o the capacity for nitrogen fixation to food plant should have high priority.
2. New crop plants for semi-arid areas can b developed.

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* Allophenic organisms have been obtained by fusing early embryos of different strains or species.

3. Special organisms can be developed for environmental control, for example, for desalination of water and for more efficient treatment of sewage.

4. The partial replacement of the present methods of chemical engineering by biologic synthesis using tailor-made organisms is desirable on many grounds. Whereas almost all present-day chemical plants pollute the planet, the by-products of biologic synthesis are seldom toxic and commonly are useful either as food or as fertilizer. Also, when complex products are needed, biologic synthesis is immensely more efficient than standard industrial chemistry.

5. The transfer of the capacity to synthesize human antibodies and human hormones to microorganisms will enable antibodies and hormones to be made by cheap processes and so immensely extend the resources of clinical medicine. We have made a preliminary study of this together with Ycas, of Syracuse, and with some of our colleagues at Roswell Park Memorial Institute.

6. The development of new life forms for other plants may vastly extend the value of these planets.

Thus one can say without hesitation that immense benefits will ensue from the artificial synthesis of new life forms. However, the rate at which such benefits will become available is strictly dependent on basic biologic research. As Lederberg recently observed at a press conference, the present cut-back in Federal funding of basic biologic research cuts off the base of future benefits.

David Nieto, M.D. (1654-1728)

Rabbi, physician, philosopher, and man of culture

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One of the most distinguished holders of the position of "Haham" in London was David Nieto, M.D. He was educated in medicine but shone also as a philosopher, poet, and mathematician. His translation of the prayer book was the basis of all later translations used by the London Sephardim. The historian Graetz describes him, "He was a man of culture. He was a physician, understood mathematics, was sufficiently able to defend Judaism against calumnis, and besides many platitudes, wrote much that was reasonable."*

Early career

David Nieto was born in Venice on January 18, 1654. His father was Phineas Nieto, who appears to have been a Hebrew scholar. David was educated at the University of Padua where he took his degree in medicine. Subsequently he resided in Leghorn, where he exercised the functions of Dayan, preacher, and physician. He was in Leghorn in 1684 when that city was shaken by three earthquakes; during the epidemic which followed due to poisonous vapors released by the quakes, he was stricken. He recovered his health soon afterward and resumed the practice of medicine. In addition to a busy medical practice he was also the head of a theologic seminary. In connection with the latter, he composed a poem in Hebrew urging the people to patronize the school in order to encourage scholarship, for, as he said, it would be of mutual benefit. The first verse of the poem reads, in translation;

> Let the wise of heart lay open his mental treasure
> And share with the lovers of law
> And let the noble give of his riches.
> For he whose torch kindles the lights of others
> Does not diminish his own.

It was while he was in Leghorn that he wrote in Italian, and published in Cologne, a work demonstrating the errors which had crept into the Christian calendar, which dated back to the fourth century Council of Nicea. With his mathematical skill he later developed the calculations for setting the time for ushering in the Sabbath in England which are still in use.

In 1702 he was called to London to become the head of the Spanish and Portuguese Congregation at Bevis Marks. Dr. Nieto was an eloquent preacher with a philosophic mind, but he was frequently involved in controversy, especially with those who refused to accept the oral law. He also fought against the supporters of the Messianic pretender, Shabetai Zevi.

Nieto affair

As is evident from Figure 1, Nieto had a sensitive but determined mind, and in addition to being a rabbi and a physician he was a philosopher. In a sermon delivered on November 20, 1704, he refuted the contention of the deists that there was no divine revelation. The deists believed that God created the world subject to natural laws and set it in motion but took no interest in it. Dr. Nieto boldly asserted that God and nature were one and the same. Thus began the Nieto affair; some members of his congregation resented this concept which sounded to them too much like the pantheistic ideas expressed by Spinoza. Nieto was accused of heresy. Nieto attempted to explain that he had not meant that the universe was God but that every part of the universe was a manifestation of God. A few of the congregation members were so incensed that ultimately the matter was brought before Haham Zevi Ashkenazi of Hamburg, who was called on as arbitrator. Rabbi Ashkenazi had no pretensions to the role of a philosopher but had earned his reputation as a great Talmudist. He expressed no surprise at Nieto's thesis; he accepted it as genuinely religious and natively Jewish as it conformed with the words of King David in Psalm 147: "Who covereth the heaven with clouds, who prepareth rain for the earth, who maketh the mountains to spring with grass." Rabbi Ashkenazi also complimented him on having the courage

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* Graetz: History of the Jews, Philadelphia, 1891, vol. 5, p. 200.

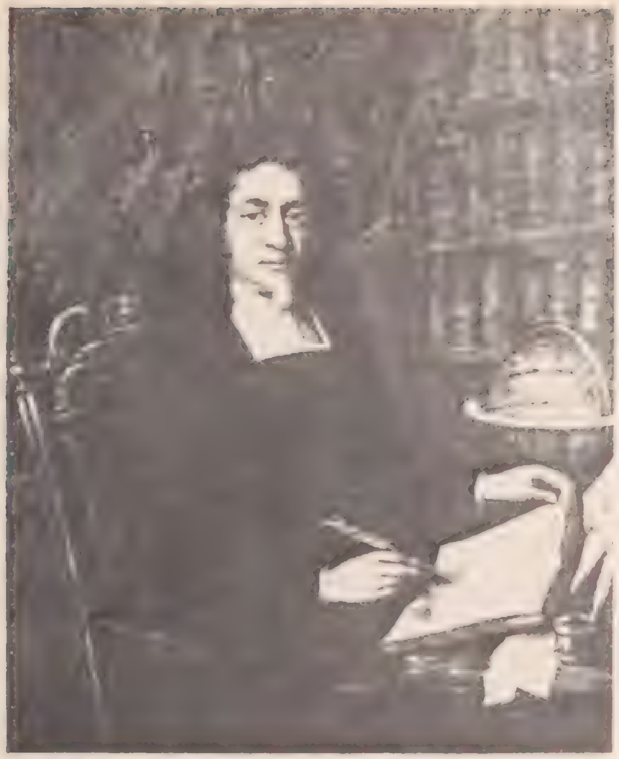

FIGURE 1. David Nieto (1654–1728). Courtesy of the Jewish Theological Seminary of America

of his convictions. His decision was accepted and thus closed the incident.

Major work

Dr. Nieto wrote in Italian, Spanish, and Hebrew. His principal work was a book entitled *Mateh Dan The Staff of Dan, Dan,* being an abbreviation of his name, David Nieto. It is a philosophic dissertation: a vindication of Judaism. It is written in a dialogue form, modeled after the style of the Jewish philosopher and physician Judah HaLevi's work *Kuzari.* This is the reason that Nieto calls his book "The second Kuzari." Whereas the first *Kuzari* defended the written law, Nieto, in his book, attempted to defend the oral law. The following is an illustration of one of his dialogues.

He is asked his opinion of Mar Samuel (born in Nahardea, Babylon, in about 165 A.D.) who was the leading Babylonian Amora. Mar Samuel had a good knowledge of medicine and astronomy. He energetically opposed the view, then current even in intellectual circles, that most diseases were due to the evil eye, declaring that the source of all disease must be sought in the noxious influence exercised by the air and climate on the human organism.* It is stated that 99 people died because of an evil eye, and one died in a natural way. But Samuel traced most diseases to the lack of cleanliness.† Dr. Nieto defended Samuel's opinion by describing the earthquake that had happened in a city and caused many people to die because of the noxious air.

Death

David Nieto died on Saturday, Tebeth 28, 5488 (January 10, 1728), the very day on which, according to the Hebrew calendar, he had completed the seventy-fourth year of his life. Among the several memorial sermons that were preached were those of his own son, Isaac Nieto, who was to succeed him as the Haham of the London community and of Jacob de Castro Sarmento, M.D. The latter, a Fellow of the Royal Society, was a close friend of Haham Nieto and on at least one occasion substituted for him in the pulpit on the Day of Atonement.

On hearing of Nieto's death, David Meldola, who was Haham and rosh yeshiva in Leghorn, eulogized Nieto by playing on his nom de plume, Dan. After showing that by dealing with religious law and by being a physician, Nieto has lived up to the ideals of the torah, abhodah, and gemiluth hasadim. Meldola proceeds to apply to him Genesis 49:17: "*Dan* shall be a serpent in a way"—that is, against heresy; "A horned snake in the path"—that is, against scepticism and those who deny the words of the Sages; "That biteth the horse's heels"—that is, against the ignorance of the Gentiles who do not know how to calculate the years.

A translation of the epitaph composed by Isaac de Sequeira Samuda, M.D., which appears on David Nieto's tombstone follows.

> Sublime Theologian, profound Sage, distinguished Physician, famous Astronomer, sweet Poet, elegant Preacher, subtle Logician, ingenious Physicist, fluent Rhetorician, pleasant Author, expert in Languages, learned in History; Since so much is here, enclosed within so little; In Death a little earth holds what is much and little.

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*B. M. 107b.

†Shab. 138b.

Scurvy in the Talmud

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Jamaica, New York

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In the thirteenth century Jacques de Vitry described a disease, considered by some to be scurvy in which ". . . the gums and teeth are attached by a sort of gangrene, and the patient can eat no more. Then the bones of the legs become horribly black . . . ."[1] Another early description of what might be scurvy is that of Jean, Sire de Joinville, who described a sickness in which ". . . leg shrivelled up and became covered with black spots, and . . . the gums became putrid with sores, and . . . the nose began to bleed . . . ."[1]

The understanding, treatment, and prevention of scurvy in the modern era is said to date from the two classic writings of James Lind (1716–1794) entitled *Treatise on the Scurvy* (1753, Edinburgh) and *An Essay on the Most Effectual Means of Preserving the Health of Seamen in the Royal Navy* (1757, London).[2-4] Lind demonstrated how scurvy might be prevented by the use of fresh fruit or, if this was not available, the use of preserved lemon juice. His work led to the routine use of lemon juice in the rations of British sailors with the result that scurvy all but disappeared as a medical problem. The whole question of what was called scurvy is a general problem beyond the scope of this report. This essay is restricted to a disease interpreted by many to be scurvy, as described in early Jewish writings.

Description of scurvy and treatment

The fifth century Babylonian *Talmud* is a rich source not only of Rabbinic but also of medical and other scientific knowledge. A disease called tzafdinah is described in which gum bleeding is the major symptom. The evidence to be presented that tzafdinah is scurvy is quite devious, and the reader is asked to keep this qualification in mind. Even so, tzafdinah in most Jewish sources, is translated as scurvy. Therefore, the Talmudic description of this malady, if in fact it represents scurvy, antedates Lind by twelve centuries. Goldstein and Schechter[5] claim that tzafdinah was already known in the time of Hippocrates, although they give no sources to support this possibility.

The *Talmud** relates that Rabbi Yochanan suffered from scurvy (tzafdinah) and went to a matron seeking a remedy (*Yoma* 84a). According to Preuss[6], quoting the Jerusalem *Talmud* (Shabbath, XIV: 14,30), the matron was a Roman woman, daughter of a certain Domitian. She prepared a remedy for Rabbi Yochanan on a Thursday and Friday.

> He said to her: How shall I do it on the Sabbath: She answered him: You will not need it any more . . . (she swore him to secrecy not to reveal the remedy) . . . what did she give to him? Rabbi Acha, son of Rabbi Ammi said: the water of leaven, olive oil and salt. Rabbi Yemar said: leaven itself, olive oil and salt. Rabbi Ashi said: geese fat smeared with a goose feather. Abaye said: I tried everything, without achieving a cure for myself, until an Arab recommended: "take the stones of olives which have not become ripe one third, burn them in fire upon a new rake, and stick them into the inside of the gums" (literally: inside the row of teeth). I did so and was cured. Whence does (scurvy) come? From eating very hot wheat foods and remnants of fish hash and flour. What is its symptom? If he puts anything between his teeth, his gums will bleed . . . .

The word tzafdinah is interpreted by the most prominent Talmudic commentator Rashi (Rabbi Shlomo ben Yitzchak, 1040–1105) to refer to a "sickness of the teeth and gums which begins in the mouth and ends in the intestines, and is dangerous to life." Tzafdinah, in both the classic German and English versions of the *Talmud*, as well as in modern Hebrew dictionaries is translated as scurvy.[7-9] Biblical-Talmudic scholars also accept scurvy as the translation of tzafdinah. Ebstein[10] reluctantly subscribes to this view, although he states there is insufficient evidence in the *Talmud* to arrive at such a conclusion and suggests "gum bleeding" as an alternate translation. Preuss[6] in his classic book states that tzafdinah undoubtedly refers to stomatitis, perhaps scorbutic. He also states that no conclusion can be drawn concerning the exact identification of this disorder from the etiologic and therapeutic descriptions in the *Talmud*.

The story of Rabbi Yochanan's scurvy and the remedy provided by the Roman matron is found elsewhere in the *Talmud* (Abodah Zara 28a) but with two variations from the earlier version. The symptoms are described before the treatment, and

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*Unless otherwise indicated, all Talmudic citations are from the Babylonian *Talmud*.

the cause for scurvy is given as eating "very cold wheat foods and very hot barley foods and remnants of a pie of fish-hash and flour." Another Talmudic tractate (Mishnah Yoma VIII, 6) states the following:

> . . . Rabbi Matthia ben Cheresh said: if one has pain in his throat, he may pour medicine into his mouth on the Sabbath because there is a possibility of danger to human life, and every danger to human life suspends the laws of the Sabbath . . . .

Some Talmudic commentators, notably Alfasi (Rabbi Isaac Alfasi, 1013–1103) and Asheri (Rabbi Asher ben Yechiel, 1250–1327) interpret this passage literally. Others, however, notably the Tur (Rabbi Jacob ben Asher, 1269–1343), Bertinoro (Rabbi Obadiah of Bertinoro, 1470–1520), and Tosfot Yom Tov (Rabbi Yom Tov Lippman Heller, 1579–1654) change the phrase "pain in the throat" to "pain in the teeth so that the gums begin to rot and the palate and throat become secondarily involved." Also supporting the latter viewpoint is Moses Maimonides (1135–1204) who, in his commentary on the previously mentioned Talmudic passage, states that "pain in the mouth means the gums which are rotting and, if nothing is done, the palate will also rot." Whether Rabbi Matthia ben Cheresh described scurvy or another malady of the mouth, teeth, gums, and throat cannot be answered with certainty.

Another sage who suffered from presumed scurvy is Rabbi Judah the Patriarch (Baba Metzia 85a). He observed that Rabbi Eleazar, son of Rabbi Simeon, had submitted to much suffering for which he was divinely rewarded in that his body remained intact, defying decomposition and decay, for many years. Thereupon Rabbi Judah the Patriarch undertook to suffer likewise for thirteen years, six through stones in the kidneys or bladder, and seven through scurvy. The Talmudic word for scurvy here is tzipparna, which Preuss[6] claims is a variation of tzafdinah. Rabbi Nathan ben Yechiel states that the manuscript versions of the *Talmud* in fact have the word tzafdinah.[11] He translates it as "mundfaüle" or thrush. The English translation of the Babylonian *Talmud* also renders tzipparna as scurvy. In several places in the *Midrash* (extra-Talmudic collection of biblical interpretation), we are told of a thirteen-year toothache of Rabbi Judah the Patriarch (Genesis Rabbah 33:3 fol. 68d; *ibid.* 96:4 fol. 178c; Koheleth Rabbah 11:1 fol. 29a). Whether this ailment is identical to the presumed scurvy from which Rabbi Judah suffered is unknown.

That tzafdinah is an affliction of the teeth which is a potential hazard to life because it begins in the mouth but spreads to the intestines is also evident from the Jerusalem *Talmud* (Abodah Zara Chap. 2:2 fol. 10b). Whether tzafdinah represents true scurvy as appears to be the opinion of most Talmudic commentators and translators or whether it is another ailment such as pyorrhea, thrush, tooth abscess, or the like, as the medical description in the *Talmud* would appear to indicate, is a problem which may never be resolved.

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Necrology

Bernard Henry Alberg, M.D., of The Bronx, died on October 17 at the age of sixty-two. Dr. Alberg graduated in 1935 from New York University School of Medicine. He was an adjunct physician at the Hospital for Joint Diseases. Dr. Alberg was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alan L. Berkley, M.D., of Elmhurst, died on September 30 at the age of sixty-three. Dr. Berkley graduated in 1936 from the University of Louisville School of Medicine. He was an assistant attending physician at Physicians Hospital. Dr. Berkley was a member of the American Public Health Association, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

John Edward Connor, M.D., of Rochester, died on August 20 at the age of sixty-one. Dr. Connor graduated in 1938 from Georgetown University School of Medicine. He was an attending physician in general practice at St. Mary's Hospital. Dr. Connor was a member of the American Academy of General Practice, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Michael James Elwood, M.D., of Syracuse, died on August 15, 1972. Dr. Elwood graduated in 1923 from Syracuse University College of Medicine. He was a senior obstetrician at Community-General Hospital of Greater Syracuse and a consulting obstetrician at St. Mary's Hospital. Dr. Elwood was a Fellow of the American College of Obstetricians and Gynecologists and a member of the Syracuse Academy of Medicine.

Paul Friedman, M.D., of New York City, died on October 12 at the age of seventy-three. Dr. Friedman received his medical degree from the University of Bern in 1920. He was an associate attending neuropsychiatrist at Beth Israel Hospital. Dr. Friedman was a member of the American Psychiatric Association, the American Psychoanalytic Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Denys Mac Donald Irving Harmar, M.D., of Ogdensburg, died on March 24, 1971. Dr. Harmar graduated in 1932 from the University of Birmingham Faculty of Medicine. He was a consulting psychiatrist at St. Lawrence State Hospital. Dr. Harmar was a member of the American Psychiatric Association and the American Public Health Association.

George Klinger, M.D., of New York City, died on September 23 at the age of seventy-nine. Dr. Klinger received his medical degree from the University of Budapest in 1916. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Bernard Loder, M.D., of Rochester, died on September 26 at the age of seventy-four. Dr. Loder graduated in 1921 from the University of Buffalo School of Medicine. He was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the International College of Surgeons, and a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Gerald McKeon, M.D., of Ogdensburg, died on November 2, 1971. Dr. McKeon graduated in 1936 from Albany Medical College. He had been an associate attending physician at St. Lawrence State Hospital.

Daniel D. McLaughlin, M.D., of Brooklyn, died on April 22 at the age of sixty-nine. Dr. McLaughlin graduated in 1929 from Loyola University School of Medicine. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Simon Mencher, M.D., of Miami Beach, Florida, formerly of Flushing, died on October 3 at the age of seventy-nine. Dr. Mencher graduated in 1915 from New York Homeopathic Medical College and Flower Hospital. He was a senior clinical assistant otolaryngologist (off service) at The Mount Sinai Hospital. Dr. Mencher was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

E. C. Moore, M.D., of Olean, died on August 13 at the age of seventy-eight. Dr. Moore graduated in 1927 from the University of Virginia School of Medicine. He was an attending ophthalmologist and otolaryngologist at St. Francis Hospital and an honorary ophthalmologist and otolaryngologist at Olean General Hospital. Dr. Moore was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the Cattaraugus County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Milton Victor Rapp, M.D., of Rochester, died on August 16 at the age of seventy-two. Dr. Rapp graduated in 1926 from the University of Buffalo School of Medicine. He was an attending dermatologist at Rochester State Hospital and a consulting dermatologist at St. Mary's, Park Avenue, and Rochester General Hospitals. Dr. Rapp was a member of the American Academy of Dermatology, the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irving Rudolph, M.D., of Brooklyn, died on September 18 at the age of sixty-four. Dr. Rudolph graduated in 1931 from the University of Vermont College of Medicine. He was director of pathology at St. Joseph's Hospital (Far Rockaway) and a consulting pathologist at Peninsula General Hospital. Dr. Rudolph was a Diplomate of the American Board of Pathology (Pathologic Anatomy), a Fellow of the College of American Pathologists, and a member of the American Society of Clinical Pathologists, the Society of Nuclear Medicine, the New York State Society of Pathologists, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Harold L. St. John, M.D., of Rochester, died on October 2 at the age of ninety-six. Dr. St. John graduated in 1898 from University and Bellevue Hospital Medical College.

Albert Schmookler, M.D., of Miami Beach, Florida, formerly of New York City, died on July 29 at the age of fifty-seven. Dr. Schmookler graduated in 1942 from St. Mungo's Medical School, Glasgow, Scotland. He was a Diplomate of the American Board of Anesthesiology, a Fellow of the American College of Anesthesiologists, and a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ernest Shomberg, M.D., of Flushing, died on October 2 at the age of eighty-one. Dr. Shomberg received his medical degree from the University of Giessen in 1914. He was a clinical assistant physician at Sydenham Hospital and an assistant attending physician at Harlem Hospital Center and Harlem Hospital Center Outpatient Department. Dr. Shomberg was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raymond Farnham Wafer, M.D., of Meridian, Mississippi, formerly of Rochester, died on September 26 at the age of ninety-two. Dr. Wafer graduated in 1908 from the University of Michigan Medical School. He was a Diplomate of the American Board of Psychiatry and Neurology and a member of the American Academy of Neurology, the American Psychiatric Association (Life Fellow), the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ira Wilens, M.D., of New York City, died on September 27 at the age of seventy-nine. Dr. Wilens graduated in 1917 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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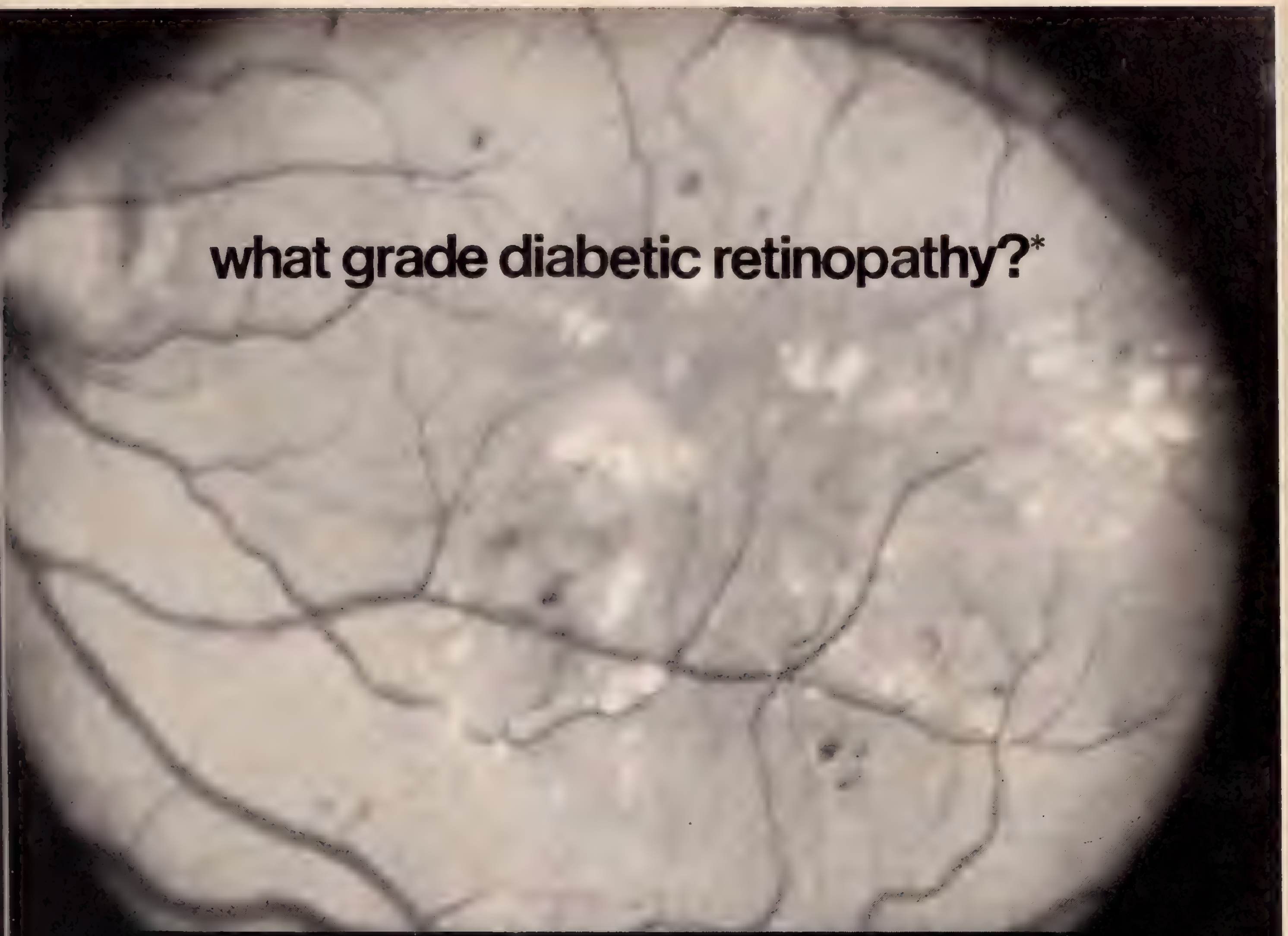

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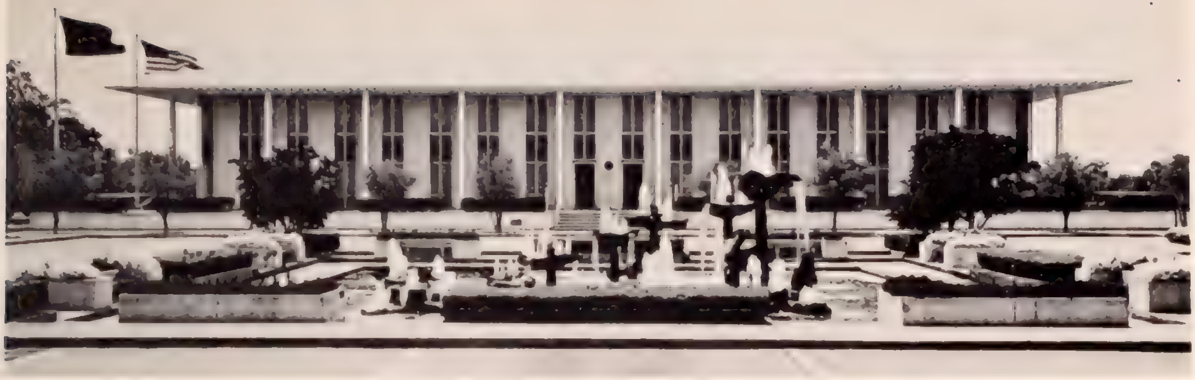

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surgery except open heart. No routine OBS. Income expectations $40,00
$50,000 per annum; one month vacation. Apply: B. F. Brophey, M.D., S
Luke's Hospital, 70 Dubois St., Newburgh, N.Y. 12550.

OPPORTUNITES FOR G.P.'S, MEDICAL SPECIALISTS, AND PSYCHI
trists are available. Vacancies exist for clinical physicians with salary
$28,522, medical specialists and psychiatrists with salary to $34,363 dependi
upon qualifications. Applicants must be licensed or hold ECFMG a
LMCC. Gowanda is an accredited psychiatric hospital operated by t
N.Y.S. Department of Mental Hygiene, south of Buffalo, N.Y. Benefits i
clude 3½ weeks paid leave and 11 paid holidays during the first year of e
ployment. A liberal non-contributory retirement plan is one of the many ben
fits. Contact: Director, Gowanda State Hospital, Helmuth, N.Y. 14079.

ANESTHETIST, CHIEF OF DEPARTMENT, BOARD CERTIFIED, IN 3
bed community hospital; university affiliated; has school for nurse anesthetis
Fee for service or salary open. Write or call Frank Dietz, Exec. Vice-Pre
Memorial Hospital, Pawtucket, R. I. 02860. (401) 722-6000.

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training to Board certified. $26,000 to $36,300 depending upon qualificatio
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land. Superb sailing, skiing, fishing. Resident theater. Near Interloch
National Music Camp. College. J.C.A.H. approved 1,400 bed psychiat
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fits. Contact: Philip B. Smith, M.D., Room 325, Traverse City State Hos
tal, Traverse City, Michigan 49684. An Equal Opportunity Employer.

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town N.Y.C. for Dec. 1972 or Jan. 1973. Excellent for retired physician.
house calls; 9 to 5; able assistance from office personnel. Excellent remun
tion. Permanent association potential if interested following coverage.
(212)GE 8-6630, 8:30 p.m. or write Dept. 258, c/o NYSJM.

ALLERGIST, BOARD CERTIFIED OR ELIGIBLE, FOR ASSOCIATION
very large private allergy practice in central New York, with large gross
come. Would lead to quick partnership. Outstanding opportunity for r
person. Dept. 262, c/o NYSJM.

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cian. Growing HMO adding to staff for two new medical centers to be ope
in 1973. Competitive salary, bonus & tax sheltered fringe benefits suc
retirement, sabbaticals, etc. Send curriculum vitae to: Henry C. Cos
M.D., Family Health Program, Room 11212, 2925 North Palo Verde Ave., I
Beach, Calif. 90815.

CHIEF M.D., DRUG ABUSE PROGRAM, MOUNT SINAI HOSPITAL S
vices City Hospital Center. Large teaching division of the Mount Sinai Sc
of Medicine. Half time vs. full time position directing very large drug a
program. Opportunities for academic appointment, teaching & investiga
activities. An Equal Opportunity Employer. Apply to: Stanley G. Sec
M.D., Chief, Department of Medicine, Mount Sinai Hospital Services,
Broadway, Elmhurst, New York. Call (212) 830-1321.

HYSICIANS WANTED—CONT'D

YNAMIC INTERNIST FOR DIRECTOR OF MEDICAL SERVICES IN 206-bed, acute, general community hospital in New England area with accessibility to teaching centers and potential faculty appointment. Responsibility for all medical staff activities. Salary range and fringe benefits attractive to the right person. Dept. 266, c/o NYSJM.

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OSITIONS WANTED

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ERNAL MEDICINE PRACTICE AVAILABLE. DESIRABLE NORTH ronx location. Very reasonable. With increased academic duties, practice a burden. Call evenings (914) 723-3981.

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PUERTO RICO: RENT MY DELUXE BEACHFRONT CONDOMINIUM apartment, weekly or monthly, less than ½ cost of hotel accomodations; Condado area. Furnished, air conditioned, sleeps up to 5 people, 2 terraces, swimming pool, kiddie pool, tennis court, playground. Walk to shopping and hotels. Call 9:30-5:00 p.m. (212) 353-2587.

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(212) 686-9060
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90 State Street
Albany, N. Y. 12207
(518) 463-2171

ROCHESTER
75 Clinton Avenue North
Rochester, N. Y. 14604
(716) 454-4930

BUFFALO
560 Delaware Avenue
Buffalo, N. Y. 14202
(716) 886-2662

WHAT GOES ON in medicine

NEW YORK STATE **December 1–15, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

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J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON,
420 Lakeville Road, Lake Success, New York 11040.
Telephone 516-488-6100.

NEW YORK CITY AREA

December 1 / 15, 1972

8:00–9:30 a.m., Fridays

Maimonides Medical Center, Downstate Medical Center and the Kings County Chapter, AAFP

4802 Tenth Avenue
Fuhs Auditorium
Brooklyn

Course for Family Physicians and Pediatricians

December 1
Diagnosis of Gynecological Cancer
ARNOLD MOLTZ, M.D.

December 8
Pediatric Dermatology Seen in the Office
YEHUDI FELMAN, M.D.

December 15
Office Care of G.I. Problems

FRIDAY, DECEMBER 1

8:30 p.m.

The American Association of Medical Assistants

Queens County Chapter
Medical Society of the County of Queens
112–25 Queens Boulevard
Forest Hills

MONTHLY MEETING

December 4 / 6, 1972

N.Y.U. School of Medicine

Department of Rehabilitation Medicine with the American Academy of Physical Medicine and Rehabilitation
400 East 34th Street

CLINICAL ELECTRODIAGNOSIS OF NEUROMUSCULAR DISEASES

JOSEPH GOODGOLD, M.D., Program Chairman

FEE: $150

Write: NYU Medical Center, Institute of Rehabilitation Medicine, RR 617, 400 East 34th Street, N.Y., N.Y. 10016.

MONDAY, DECEMBER 4

8:00 p.m.

The New York Society for Clinical Ophthalmology

New York Academy of Medicine
2 East 103rd Street

1. **Glaucoma and the Lens**
   RALPH Z. LEVENE, M.D.
   Birmingham, Alabama
2. **The Twenty-Sixth Annual Mark J. Schoenberg Memorial Lecture**
   ISAAC C. MICHAELSON, M.D.
   Jerusalem, Israel

Federation of American-European Medical Societies

Academy of Sciences
3 East 63rd Street

1. **Pharmacology in Man**
   ERVIN N. TERRY, M.D.
   (Representing the Pirquet Medical Society)
2. **Modern Management of Intestinal and Urinary Stomas**
   GEORGE SCHREIBER, M.D.
   (Representing the Rudolf Virchow Medical Society)

December 5 / 19, 1972

8:00–9:00 a.m., Tuesdays

The AAFP, Richmond Chapter

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Postgraduate Lectures on G.I.

December 5
Disease of Upper G.I. Tract
V. SOTTILE, M.D.

December 12
Disease of the Bowel
W. ROTHMAN, M.D.

December 19
Symposium—Jaundice
V. SOTTILE, W. ROTHMAN and JOAN GILES, M.D.'s

December 5 / 19, 1972

9:00 a.m., Tuesdays

Triboro Hospital

9th Floor Auditorium
Parsons Boulevard and 82nd Drive
Queens

Division of Pulmonary Medicine

December 5
Endobronchial Pathology as Photographed through the Fiberoptic Bronchoscope
F. MARICI, M.D.

December 12
Respiratory Tract Burns—a Review of Experience in our Respiratory I.C.U.
F. KHAN and R. CHITKARA, M.D.'s

December 19
Amyloidosis Complicating Tuberculosis—

an Analysis of the Experience of the Last Five Years at Triboro Hospital

H. EPSTEIN, H. SINGH, V. AZUETA, M.D.'s

December 5 / 19, 1972

10:00 a.m., Tuesdays

Maimonides Medical Center

Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

Pediatric Conferences

December 5

Maltreatment Syndrome in Children

VINCENT J. FONTANA, M.D.
N.Y.U. School of Medicine

December 12

Clinical Approach to the Adrenal Problems in Infancy

EDUARDO ORTI, M.D.
Downstate Medical Center

December 19

Clinical Pathological Conference

****December 5, 1972 / February 6, 1973***

8:00–9:30 p m., Tuesdays

St. Vincent's Hospital and Medical Center

153 West 11th Street

Postgraduate Course

MANAGEMENT OF ARTICULAR AND MUSCULOSKELETAL PAIN DISORDERS

Directors:

OTTO STEINBROCKER and HARRY BARTFIELD, M.D.'s

FEE: $50

CREDIT: 16½ hours Prescribed AAFP

*Course started November 14, 1972

Write: Rheumatology Division, Department of Medicine, above address.

WEDNESDAY, DECEMBER 6

4:00–5:30 p.m.

Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine

Conference Room 1625 St. Peters Avenue
Bronx

MEDICAL ASPECTS OF EMPHYSEMA

WALTER W. FISCHER, M.D.
Lenox Hill Hospital

NO FEE CREDIT: 1½ hours

4:00–5:00 p.m.

Flushing Hospital and Medical Center

First Floor Conference Room
Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lectures

CURRENT DEVELOPMENTS IN PEDIATRICS

ARTURO ABALLI, M.D.
Queens Hospital Center

8:00–9:00 p.m.

The New York Academy of Medicine, Section on Physical Medicine and Rehabilitation with

the New York Society of Physical Medicine and Rehabilitation
2 East 103rd Street

500 PATIENTS AND 3 YEARS LATER OF L'DOPA TREATMENT

ARTHUR LAPOVSKY, M.D.
Downstate Medical Center

8:30 p.m.

Society for Adolescent Psychiatry

Auditorium, N.Y.U. Medical Center
550 First Avenue

1200 THERAPISTS IN SEARCH OF A PATIENT

EDGAR LEVENSON, NATHAN STOCKHAMER AND ARTHUR FEINER, M.D.'s

December 7 and 8, 1972

8:00 a.m.–3:00 p.m., Thursday and Friday

French and Polyclinic Medical School

345 West 50th Street

ENDOSCOPY IN GYNECOLOGY AND INFERTILITY

MAXWELL ROLAND, M.D.

December 7 / 9, 1972

9:00 a.m.–4:30 p.m.

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
Fifth Avenue and 100th Street

NEUROCHEMISTRY

GERARD M. LEHRER, M.D.
and Faculty

FEE: $50

December 7 and 14, 1972

8:00–10:00 p.m., Thursdays

French and Polyclinic Medical School

345 West 50th Street

HEART DISEASE IN INFANCY, CHILDHOOD AND ADOLESCENCE

JOSHUA LYNFIELD, M.D.

December 7

Heart Failure (4th Lecture in Series)

December 14

Arrhythmias in the Pediatric Age Group

THURSDAY, DECEMBER 7

9:00–11:00 p.m.

Albert Einstein College of Medicine

The Forchheimer Building
First Floor Lecture Hall
1300 Morris Park Avenue
Bronx

PULMONARY DISEASE

ABRAHAM KUPERMAN, M.D.

Contact: Mrs. Frieda Fagin, Office of Continuing Education, at above address, or call (212) 430-2822.

SUNDAY, DECEMBER 10

9:00 a.m.–4:00 p.m.

French and Polyclinic Medical School

345 West 50th Street

MANAGEMENT OF TERMINAL CANCER
A Seminar for General Practitioners

ALVIN M. GELB, M.D.
and Invited Lecturers

FEE: $15

For Further information, address: The Dean, above address.

December 11 and 18, 1972

3:30 p.m., Mondays

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

Department of Medicine

December 11

Estrogen Induced Cholestasis

MARY JEANNE KREEK, M.D.
The Rockefeller University

December 18

Alcoholic Cardiomyopathy

LAWRENCE GOULD, M.D.
Misericordia Hospital

TUESDAY, DECEMBER 12

1:15–2:15 p.m.

Downstate Medical Center

Continuing Education Conference Room
Basic Sciences Building
450 Clarkson Avenue
Brooklyn

Visiting Scientist Seminar
Metabolism-Endocrine Section

QUANTITATIVE PIPOPROTEIN ASSAYS—AN APPROACH TO MORE ACCURATE PHENOTYPING

ROBERT S. LEES, M.D.
Massachusetts Institute of Technology

WEDNESDAY, DECEMBER 13

11:00 a.m.

Jewish Memorial Hospital

Broadway and 196th Street

Department of Pediatrics

PATHOLOGY OF THE PREMATURE, YESTERDAY AND TODAY

WILLIAM A. BLANC, M.D.
Columbia University P & S

8:00 p.m.

New York Surgical Society

New York Academy of Medicine
2 East 103rd Street

Case Report:

Rupture of the Stomach from Mouth to Mouth Resuscitation

W. H. CASSEBAUM and D. M. CARBERRY, M.D.'s

Papers:

1. **Prognostic Value of Liver Biopsy in the Electively Shunted Patient**
   L. M. ROUSSELOT, A. R. BURCHELL, W. F. PANI
   M. LEPORE, A. MEDLINE, and H. POPPER, M.D.'s
2. **Subphrenic Abscess: Comparison Between Surgical and Antibiotic Management**
   E. A. B. ROBERTS and T. F. NEALON, Jr., M.D.'s
3. **Clostridial Sepsis Following Abdominal Surgery**
   W. A. WICHERN, Jr., M.D.

December 13 and 20, 1972

8:30–10:00 p.m., Wednesdays

American Institute for Psychoanalysis

329 East 62nd Street

THE DYNAMICS OF PSYCHOPHARMACOLOGY IN MEDICAL PRACTICE

JACK SCHNEE, M.D.

THURSDAY, DECEMBER 14

9:00 p.m.

**The Bronx Chapter of AAFP,
Misericordia Hospital Medical Center
and New York Heart Association**

School of Nursing Auditorium
600 East 233rd Street

DIGITALIS TOXICITY

LAWRENCE GOULD, M.D.

FUTURE EVENTS

January 3 / May 25, 1973

9:00 a.m.–4:00 p.m., full time

French and Polyclinic Medical School

345 West 50th Street

BASIC MEDICAL SCIENCES CURRICULUM

This curriculum provides approximately 600 hours of formal instruction in the basic medical sciences for medical school graduates and other qualified candidates preparing for FLEX, State or National Boards, and other examinations, or for validation in other institutions.

For further information, address: the Dean, above address.

January 6 / 27, 1973

10:00 a.m.–5:00 p.m., 4 Saturdays

Columbia University P & S

630 West 168th Street

HYPNOSIS AND PSYCHIATRY

Under the direction of

HERBERT SPIEGEL, M.D. with A. A. BRIDGER, M.D.

With Guest Lecturers

RALPH V. AUGUST, LEWIS JACOBS, RONALD KATZ, HANS KRAUS, MARTIN T. ORNE, E. E. ROCKEY, HERBERT E. WALKER and L. S. WOLFE, M.D.'s

FEE: $100

For further information and application forms, write to MELVIN D. YAHR, M.D., Associate Dean, above address.

January 11 and 18, 1973

3:00–5:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
Fifth Avenue at 100th Street

INTRODUCTION TO STRABISMUS

EDWARD L. RAAB, M.D.
Mount Sinai School of Medicine

FEE: $40

SATURDAY, FEBRUARY 10

9:00 a.m.–5:00 p.m.

Medical Society of the State of New York

Americana Hotel
Georgian Ballroom

6th Annual Symposium on

MEDICAL ASPECTS OF SPORTS

Medical and Associated health professions, coaches, trainers, and athletic directors are invited.

Co-Sponsors: New York State Public High School Athletic Association; Health, Physical Education and Recreation Association, Eastern States Trainers Association, and Touchdown Club of New York

---

January 7 / March 11, 1973

9:00 a.m.–12:00 noon, Sundays

Downstate Medical Center

Continuing Education Conference Center
450 Clarkson Avenue
Brooklyn

Basic Sciences for the Practicing Physician

BASIC SCIENCES AND THEIR CLINICAL CORRELATION

HUGH J. CARROLL, M.D. and invited lecturers

FEE: $100

To register, contact: CHARLES M. PLOTZ, M.D., Director, Continuing Education, above address. Tel. (212) 270-2421.

April 25 / 27, 1973

Brooklyn Eye and Ear Hospital

29 Greene Avenue
Brooklyn

Graduate Course in

OPHTHALMIC PLASTIC SURGERY

MARTIN BODIAN, M.D., and invited guest speakers

FEE: $125

For further details and registration, contact: Mr. Vernon Dressler, Administrator, Brooklyn Eye and Ear Hospital, above address.

ALBANY AREA FUTURE EVENT

January 5 / 22, 1973

Albany Medical College

Department of Postgraduate Medicine

14th POSTGRADUATE MEDICAL SEMINAR CRUISE

An 11-day cruise from New York aboard the "Gripsholm" of the Swedish American Line.

Faculty of the Albany Medical College will present a comprehensive shipboard postgraduate program, covering subjects in pediatrics, psychiatry, surgery, hematology and physiology.

For information write to: FRANK M. WOLSEY, JR., M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

BROOME COUNTY

THURSDAY, DECEMBER 7

11:00 a.m.

Charles S. Wilson Memorial Hospital

Johnson City

Basic Science Seminar

HYPOTENSIVE DRUGS

EDWARD T. SCHROEDER, M.D.
Upstate Medical Center at Syracuse

CREDIT: Category 1 AAFP

Medical Grand Rounds will be held at 10:00 a.m. preceding the above seminar.

BUFFALO AREA

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE LAKES AREA REGIONAL MEDICAL PROGRAM

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany, and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in two series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 a.m. on Tuesdays.
2. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.

For further information, contact the State University of New York at Buffalo, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

PRECEPTORSHIPS

General

Preceptorship type experience is available in a wide variety of medical fields arranged on request on an individual basis.

Those interested should write to Continuing Medical Education indicating their field of interest, time available for study, preferred dates and phone number. A faculty member who can provide the desired instruction will then contact the applicant directly.

Preceptorship in Clinical Cardiology

A special preceptorship is offered in cardiology with emphasis on the cardiac patient, electrocardiography and the management of patients with heart disease, including acute coronary care.

The program will be directed by Dr. Jules Constant at the Buffalo General Hospital. The fee will be $10 per day or $200 a month. The schedule will be arranged in consultation with the applicant and only one physician will be accepted at a time.

For information on preceptorships, write: Continuing Medical Education, 2211 Main Street, Buffalo, N.Y. 14214.

NASSAU COUNTY

December 6 and 13, 1972

4:00 p.m., Wednesdays

Nassau County Medical Center

2201 Hempstead Turnpike
East Meadow

Radiology Department Classroom

December 6

Cooperative Residents' Training Program

RICHARD FRIEDENBERG, M.D.
New York Medical College

December 13

Roentgen Anatomy—Pathology of the Hip

JOSEPH ARCAMANO, M.D.
V.A. Hospital at Northport

December 7 and 14, 1972

11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center

Recreation Activities Building

Pediatric Postgraduate Lectures

December 7

Parasitic Disease in Temperate Climates

MURRAY WITTNER, M.D.
Albert Einstein College of Medicine

December 14

Psychological Aspects of Learning Disabilities

ALBERT ANGRILLI, Ph.D.
Queens College

SYRACUSE AREA

December 1 and 2, 1972

State University of New York

Upstate Medical Center in Syracuse
Hotel Syracuse

POSTGRADUATE COURSE IN OPHTHALMOLOGY

J. DONALD M. GASS, M.D.
Miami, Florida
DAVID L. KNOW, M.D.
Baltimore, Maryland
WHITNEY G. SAMPSON, M.D.
Houston, Texas

FEE: $35

Write: JAMES L. McGRAW, M.D., 750 East Adams Street, Syracuse, N.Y. 13210.

WESTCHESTER COUNTY

December 7 and 14, 1972

3:00–4:00 p.m., Thursdays

Mental Retardation Institute

New York Medical College
Valhalla, N.Y.

December 7

Open Education

ROBERT M. HANSON, Ed.D.
Board of Cooperative Educational Services
Second Advisory District, Elmsford

December 14

Mental Retardation Syndromes

ARNOLD GOLD, M.D.
Columbia Presbyterian Hospital

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November 13 and 27, 1972

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R. Janet Watson Hematology Lectures

November 13

Studies on Lymphocyte Membranes

ROBERT H. SILBER, M.D.
NYU School of Medicine

November 27

Intracellular Regulation of Lymphocyte Growth

ARNOLD RUBIN, M.D.
Mount Sinai School of Medicine

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December 5 / 26, 1972

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December 5

Hypercalcemia

ALEXANDRA B. DIMICH, M.D.
Memorial Hospital for Cancer and Allied Diseases

December 12

Lymphoma of the G.I. Tract

SEYMOUR FINK, M.D.
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December 26

Gouty Arthritis

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February 16–28, 1973	December 26, 1972
March 1–15, 1973	January 10, 1973
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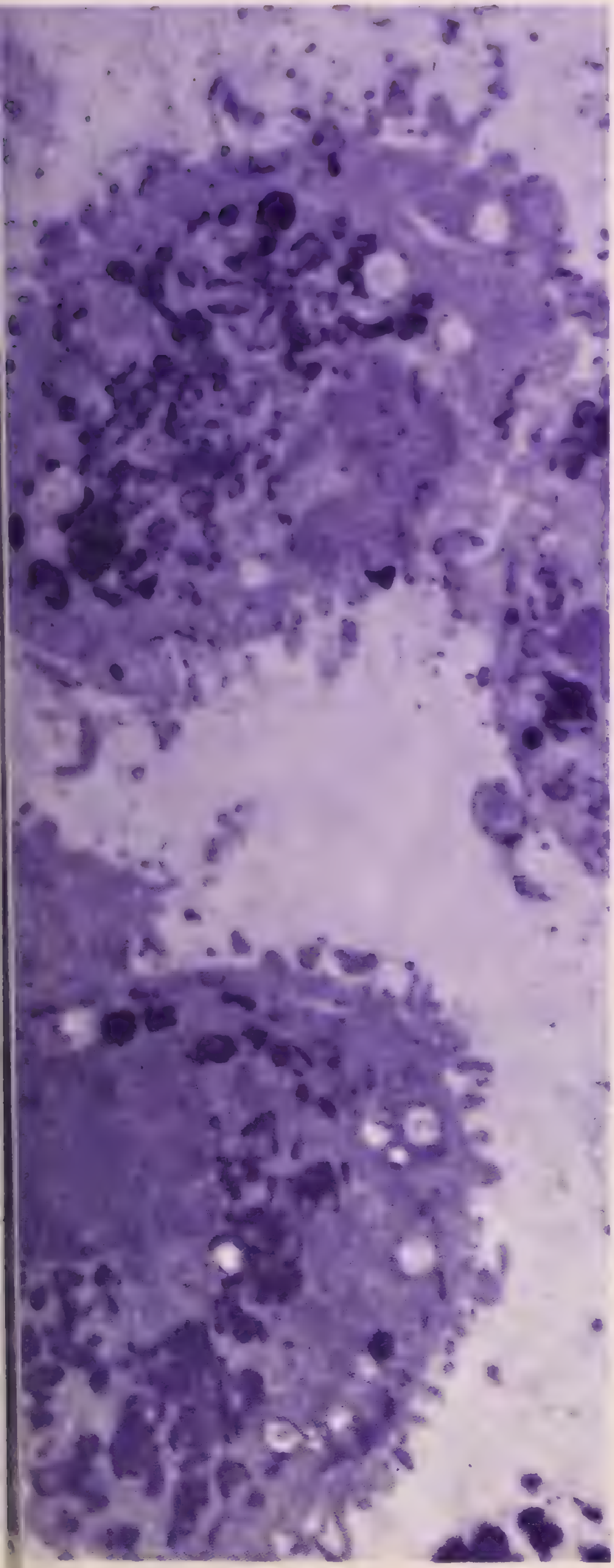

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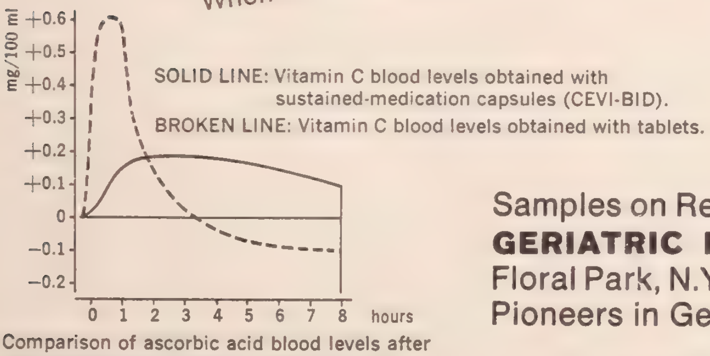

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[1] Riccitelli, M. L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20: 34, 1972.

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Abstracts

Crohn, B. B.: Granulomatous diseases of small and large bowel, ***New York State J. Med.*** 72: 2867 (Dec. 1) 1972.

Granulomatous ileitis and granulomatous colitis were considered uncommon diseases in the nineteenth and early twentieth centuries. It is not known whether this is because they were in fact much rarer than they are at present, or because they went unrecognized until modern diagnostic methods came into being. The incidence of the granulomatous diseases varies among the populations of the world and among the different strata of modern society. It is possible that environmental factors, such as the several kinds of pollution, may play a role in the cause of these diseases.

Berger, J. E.: X-ray and optical diffraction approach to skin structures, ***New York State J. Med.*** 72: 2870 (Dec. 1) 1972.

X-ray diffraction is one of the least well understood of modern scientific technics. This article briefly outlines the theory of x-ray diffraction and gives some of the uses to which the technic can be put. It can be used in identifying crystalline compounds, calculating molecular weights of unknown crystalline substances, and in interpreting electron micrographs. When diffraction data are supplemented by biochemical data, the overall picture of chemical structure can be discerned in more detail than would be possible if only one method were used.

Abstracts in Interlingua

Crohn, B. B.: Morbos granulomatose del intestine parve e grosso, ***New York State J. Med.*** 72: 2867 (1 de December) 1972.

Le ileitis e colitis granulomatose esseva considerate morbos rare in le seculo 19 e a principios de iste centuria. Non es sapete si iste es debite a que iste morbos esseva minus frequente ante que ora, o perque non esseva diagnosticate ante del uso del methodos diagnostic moderne. Le frequentia del morbos granulomatose varia in le population universal e in le differente stratas del societate moderne. Es possibile que factores ambiental como le varie typos de pollution pote haber un rolo in le causa de iste morbos.

Berger, J. E.: Approche radiologic e optic diffractional al structures del pelle, ***New York State J. Med.*** 72: 2870 (1 de Decembre) 1972.

Le diffraction radiologic es un del technicas scientific moderne minus comprendite. In iste articulo es describite brevemente le theoria del diffraction radiologic e alicun applicationes de iste technica, como le identification de compostos crystallin, le calculo del peso molecular de substantias crystallin non cognoscite e le interpretation de microphotographias electronic. Quando le information diffractional es completate con le biochemic, le structure chemic integral es definite con plus detalios que quando un sol methodo es usate.

Book Notes

Textbook of Surgery. Third edition. Edited by David A. Macfarlane, B.Sc., M.Ch., and Lewis P. Thomas, B.Sc., M.Ch. Octavo of 796 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $16.50.

The editors and writers of this textbook are surgeons practised in undergraduate and postgraduate student teaching and, no less important, mature operating surgeons. They have incorporated in this work the physiological principles required in modern surgical treatment and aftercare.

Computers in Medicine. Proceedings of the Second International Symposium held at Blackburn College of Technology and Design in March, 1971. Edited by J. Rose, M.Sc., Ph.D. Octavo of 166 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $13.25.

This book is a record of the proceedings, lectures, and discussions of this symposium. The main emphasis is on the practical uses of computers in medicine.

Current Pediatric Diagnosis and Treatment. Second edition. By C. Henry Kempe, M.D., Henry K. Silver, M.D., and Donough O'Brien, M.D. Quarto of 1,008 pages, illustrated. Los Altos, California, Lange Medical Publications, 1972. Fabrikoid, $12.

As in the first edition, the authors have focused their attention on principles of essential diagnosis and treatment and on current important up-to-date references. Several new chapters have been added and extensive revisions made.

The Handicapped Child. Educational and Psychological Guidance for the Organically Handicapped. Third edition. By Agatha H. Bowley, Ph.D., and Leslie Gardner, B.Sc. Octavo of 203 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $8.25.

The purpose of this book is to set down in terms intelligible to the nonspecialist reader certain facts and findings concerning six types of handicapped children. It is hoped that this information will allay anxiety and help build up a constructive sympathetic approach towards these children.

Sexually Transmitted Diseases. By C. B. S. Schofield, M.D. Duodecimo of 248 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $6.75.

In this book, the author provides a short account of the sexually transmitted diseases, their differentiation from other conditions of the genitalia, and their medicosurgical management. Social background and personalities of patients are also considered so that the physician may deal with individual patients more effectively.

Multiple Choice Questions for Ophthalmologists. Compiled by S. P. B. Percival, M.A., M.B. Duodecimo of 88 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $5.25.

The purpose of this booklet is twofold: first, to promote discussion among groups of ophthalmologists studying for examination and, second, for the individual candidate to review and assess his knowledge.

Books Reviewed

Pfizer Medical Monographs 6. Control of Gonadal Steroid Secretion. Edited by David T. Baird, M.D., and Prof. J. A. Strong. Quarto of 304 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $15.50.

This volume consists of the proceedings of the 6th Pfizer Symposium held in Edinburgh in May of 1970 and therein lies its limitations. In the two years which have elapsed, many of the topics in reproductive endocrinology covered have been subject to further investigation and resolution. The literature contains many more recent, and frequently more extensive, papers and reviews dealing with releasing factors, neuroendocrine mechanisms, induction of ovulation, and contraception, than those presented here.

The time lag is further emphasized by the failure of these papers to reflect the impact of newer radioimmunoassays for the measurement of steroids on our knowledge of gonadal steroid secretion and metabolism.

The contributors are all recognized authorities within their fields. This volume provides a permanent record of a working symposium in a rapidly changing field, and like others of its kind, is of some historical interest. It does not seem especially useful at this time either to other investigators in the specific areas dealt with or to those whose primary interest is in clinical reproductive endocrinology. **Eleanor Z. Wallace, M.D.**

> "The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."
>
> —George Sarton, from "The History of Medicine Versus the History of Art"

Are combination drug products useful in treatment involving concomitant use of two or more drugs?

Opinion

Results of a questionnaire to 7,000 physicians:

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Believe combination drug products are useful.

13.8%
Do not believe combination drug products are useful.

Are combination drug products useful in treatment involving concomitant use of two or more drugs?

Opinion & Dialogue

Dialogue

Doctor of Medicine

Louis Lasagna, M.D.
Professor and Chairman
Department of
Pharmacology & Toxicology
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School of Medicine
and Dentistry

Obviously, many drugs are given concomitantly. Whether it makes sense to combine medications in one preparation, be it capsule, tablet, or liquid, is a question that can be answered only by examining the advantages and disadvantages in the individual case.

Among the advantages is, first of all, convenience. The more medications that are taken concurrently and the more complicated the directions, the less likely the patient is to take medications accurately. From the standpoint of convenience and accuracy, and economy as well, you can make an important case for putting medications together in one preparation, as long as they are compatible.

By the same token, when you prescribe a properly tested and rational combination, you should have less worry about pharmaceutical or pharmacological compatibility – and about reasonable dosage ratios as well. Compatibility of the formulation should be demonstrated in the laboratory and clinic before the product is available for prescription—which is more than can usually be said for the physician's own spontaneous creations. And, the dosage ratios employed in rational precompounded combinations are designed to meet the needs of substantial numbers of "typical" patients.

There is no doubt that many "atypical" patients are to be found, and for them the prefabricated combination must be rejected. But that hardly argues for eliminating rational combinations from the market. Think, for example, of the problems that would arise if the components of widely accepted combinations, like the oral contraceptives and the diuretic-antihypertensives, always had to be prescribed, purchased and ingested separately.

One disadvantage that comes to mind is some doctors' unawareness of the ingredients a given combination contains. For example, a doctor might know that a patient is allergic to aspirin but forget that a certain analgesic mixture, which he knows only by its trade name, contains aspirin. His prescription, then, causes considerable discomfort, to say the least. This problem is a function of physician education, rather than of combination therapy as such. Improving doctors' knowledge about all medicaments they prescribe is a problem that deserves tackling on its own.

Another accusation leveled at combination drugs is that they encourage sloppiness of diagnosis and treatment. In many cases, however, a combination may prove to be the most effective choice. A good example of the usefulness of combinations appears in a recent article in the *Journal of Chronic Diseases* on the efficacy and side effects of an antihypertensive containing three ingredients, in which the track records of the combination drug and the individual ingredients were compared. Interestingly enough, whether the drugs were given individually or together, incidence and severity of side effects were the same. But blood pressure control was invariably better when the drugs were taken in one combination tablet than when they were taken separately (in "titratable" dosage) or in two or three different tablets.

Deciding which combinations constitute rational therapy obviously leads to a discussion of who is to determine which should be used and which should not. Realistically, I think combinations should be evaluated somewhat differently if they are old and established or new and untried.

In today's regulatory atmosphere, there is no possibility of a new combination being put on the market without a substantial amount of acceptable evidence in the form of controlled trials that show it to be safe and efficacious. On the other hand, I believe a different set of standards should apply to combination preparations that have been around for a long time. In other words, physician acceptance over a long period should be given some weight as evidence of the efficacy and safety of these drugs.

The FDA, however, does not seem to share this attitude. It often requires, for these older products, controlled trials that will monopolize the time of already overtired investiga-
tors and cost a great de
of money. I wish we cou
agree on a "grandfath
clause" approach to prep
rations that have been in u
for a number of years ar
that have an apparent
satisfactory track record.

For example, I thi
some of the antibiotic co
binations that were tak
off the market by the FD
performed quite well. I a
thinking particularly
penicillin - streptomyc
combinations that patien
—especially surgical p
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The cost argument for combinations appears to be irrefutable. In 1971, R. A. Gosselin studied the 71 combination products (excluding oral contraceptives) among the 200 most prescribed drugs. The study found that if all 71 products were discontinued, and if each ingredient in these combinations were prescribed separately, the price of medicines to patients would jump by $443.2 million on a national basis! At a time when the cost of medical care is under so much fire, it would be nonsensical to boost costs without clearly irrefutable medical reasons.

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In reading the actual reports of the review panels, it seems clear that some of the ratings were based less on scientific research and clinical observation than on the "informed" opinions of the panelists. These "informed" opinions were accepted at face value, while the "informed" opinions of others who had used the products were rejected. All of this put combination products into a sort of scientific never-never land.

It should be kept in mind by all, government as well as others involved in our health care system, that advances in therapy are seldom made in leaps and bounds but rather by small painstaking steps—and that some of these steps have resulted from research in combination drugs as well as with single entities. Given the near-infinite biologic variation in patient response, this is hardly surprising to clinicians. It should not be to regulatory agencies either.

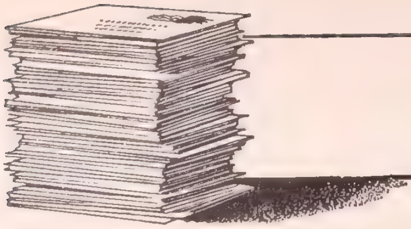
In the end, the practicing physician is in the best position to decide if a particular combination makes sense. Such a decision should not be made exclusively by those whose responsibility for continuing clinical care is limited. Clinicians are the best judges of efficacy because the ultimate proof of any product's effectiveness is acceptance by physicians who have observed its actions in patients over time. The corollary statement may be made about over-the-counter medicines, which would not long survive if they failed to afford the relief the user anticipates. That the antihistamine in a "cold" remedy may not *always* be necessary is no reason to proscribe the combination generally.

Opinion & Dialogue

What is your opinion, doctor?
We would welcome your comments.

PMA

The Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W., Washington, D.C. 20005



Letters to the Editor

Otosclerosis

To Dr. Bluestone: I read your article on otosclerosis in the August 1, 1972, issue of the ***New York State Journal of Medicine*** with great interest. You have written it from the standpoint of a young individual coming into the specialty in recent years. Were you as old as I, you would have stressed more the innovation which Shea made when he first put a prosthesis in the middle ear. This startled the old timers to no end, because we all knew about rejection of foreign bodies underneath tissue.

However, what the oldsters did not take into consideration is that the prosthesis was not buried; it was in an air-containing cavity, and this, the real revolution, makes all the difference. Rosen's work encouraged transmeatal surgery, but the introduction of a prosthesis in the middle ear was the great change.

There is one item which I would like to call to your attention. On page 2002 in the last paragraph you wrote, "The lower half of the drum was lifted out of its sulcus and folded upward on itself, exposing the chain . . . ." If you review your anatomy, you will find the incudostapedial joint cannot be exposed by this procedure. In transtympanic surgery the ear drum is folded forward on the malleus, exposing the incudostapedial joint.

You quite evidently took this from Rosen's original article on mobilization. I called this error to his attention when he made the presentation in Hollywood Beach in 1953, and he admitted to me that he was wrong. This error evolved, because the exposure of the tympanic cavity was worked out by Lempert, who did fold the lower half of the drum upward, destroying Jacobson's nerve on the medial wall of the tympanic cavity; this was done to eliminate tinnitus. Rosen observed his technic and thought he was doing a folding of the drum upward, but in reality he was folding it forward.

It is interesting to me that this is how errors are continued in medicine. You accepted his writings and his instructions for his initial operation from what he wrote himself. If he had corrected this with acknowledgement in another periodical, this misstatement would not have been carried forward for nineteen years. I thought you would be interested in this aspect of surgery for otosclerosis.

Altogether you did a good job, and I congratulate you on this.

GORDON D. HOOPLE, M.D.
1100 East Genesee Street
Syracuse, New York

To Dr. Hoople: Many thanks for your letter which I read with tremendous interest. In fact, it was not unexpected.

The article on otosclerosis to which you refer was written as a term paper in surgery in 1961, when I was an undergraduate at the Woman's Medical College of Pennsylvania. I found the carbon in my files last year, read it over, and sent it off with a painfully eked-out updating with the hope that somebody might find it interesting and technically sound.

In point of fact, I am presently a public health physician, whose closest contact with microsurgery of the ear is her father, whose early fenestration provided the impetus for the initial research.

NAOMI BLUESTONE, M.D.
Bird S. Coler Memorial Hospital
Welfare Island
New York, New York 10017

Contributions on tennis psychology

To the Editor: I am planning to edit a book with a tentative title of *Tennis Psychology* and am seeking contributors to this book. I would appreciate anyone interested in contributing to the subject writing to me at the address below.

CLAUD A. FRAZIER, M.D.
4-C Doctor's Park
Asheville, North Carolina 28801

Brucella antigen

To the Editor: This is to call to the attention of the medical profession that there is no longer available an antigen for the diagnostic intradermal test for chronic brucellosis or for therapy by desensitization of patients with the infection. This lack poses a serious problem, for no other case-finding method is so important as the intradermal test when done with a suitable antigen. The value of the skin test is exactly comparable to tuberculin testing in suspected cases of tuberculosis. Moreover, there is no other effective method of treatment of chronic brucellosis other than desensitization with an effective antigen.

Agglutinins are seldom present in the serum of patients with low-grade chronic brucellosis. Cultures are rarely informative. When positive, the intradermal test result indicates that the individual has been infected at some time and alerts the physician to the possibility that current symptoms may be due to that infection. A positive test finding does not prove that the disease is currently active, however. A negative intradermal test result, when done with a suitable antigen, is almost certain evidence that the patient has

continued on page 2854

To tell you the truth, I've lost the urge.

Lack of exercise, insufficient fluid intake, diet deficient in bulk, and certain medications can all contribute to constipation in the aging. Gradually the normal defecation "urge" is lost. And help is needed to restore the normal bowel function.

FLEET ENEMA works quickly – usually within 2 to 5 minutes. Unlike oral laxatives, which can take up to 24 hours. And oral laxatives may actually irritate the intestinal tract or retard digestion and further inhibit regularity.

FLEET ENEMA is gentle, too. Works without the burning often experienced with suppositories. Without the discomfort of soapsuds enemas.

FLEET ENEMA induces a physiological pattern of evacuation in the left colon and the rectum. Where it's needed. Helpful especially for the geriatric patient with poor intestinal tone.

And FLEET ENEMA is easy. Ready to use. Completely disposable. A timesaving plus in nursing home care – or at home.

FLEET ENEMA. For geriatric patients. Helps restore the urge.

Warning: Frequent or prolonged use of enemas may result in dependence. Take only when needed or when prescribed by a physician. Do not use when nausea, vomiting, or abdominal pain is present. **Caution:** Do not administer to children under two years of age unless directed by a physician.

FREE BOOKLET. *The Professional Treatment of Constipation.* Specifically prepared to assist you in providing your older patients with more detailed information about constipation and its treatment. For copies simply write to C.B.FLEET CO.,INC., P.O. Box 1100, Lynchburg, Va. 24505.

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The professional aid to constipation relief

Fleet pharmaceuticals

C. B. FLEET CO., INC.
Lynchburg, Va. 24505

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continued from page 2852

not been infected with Brucella.

Desensitization with Brucella antigen is the one effective method of treatment of chronic brucellosis. Antibiotics have limited value, if any, in this phase of Brucella infection and its allergic manifestations.

In spite of well-documented evidence of these facts, Merck Sharp & Dohme recently discontinued the preparation of Brucellergen for skin testing and Brucellin for desensitization without prior notice to the profession. The company denies that this was for economic reasons. Instead the statement is made that these preparations are no longer needed and that broad spectrum antibiotics have replaced vaccine for treatment. Despite adequate evidence presented to Merck Sharp & Dohme that serious disservice to the medical profession and to patients has resulted, the company has not reconsidered their decision. It is never difficult to "prove" a method is either good or useless, if one consults only those who take one or the other view.

Undoubtedly for economic reasons, no other manufacturer of biologics prepares such antigens. It is hoped that this discussion will result in revived interest in preparation of an effective Brucella vaccine, preferably killed whole organisms.

HAROLD J. HARRIS, M.D., F.A.C.P.
Westport, Essex County
New York, New York 12993

To the Editor: We welcome the opportunity to comment on the letter of Harold J. Harris, M.D. Incidentally, we have had long correspondence with Dr. Harris who, as you may know, is one of the earliest workers in the field of brucellosis.

In the past fifteen years all other manufacturers have discontinued production and sale of brucellin antigen products. Despite the declining support for this method of treating brucellosis, as evidenced by the very low usage of the product in recent years, Merck Sharp & Dohme maintained supplies as a service to the few physicians who felt such a therapeutic measure was helpful.

As part of our periodic evaluation of marketed products, we consulted with experts in the field regarding its use. The consensus was that Brucellin antigen was not needed in the treatment of brucellosis and that Brucellergen, if continued, would fulfill only an epidemiologic need. When the decision to discontinue the production and sale of these products was made, we were also confronted with nationwide headlines in which various government authorities were quoted as challenging the value of bacterial vaccines. We were given thirty days to decide whether we would undertake the necessary studies to provide within one hundred and eighty days "substantial evidence of effectiveness"—a regulatory phrase denoting rigorous, highly controlled studies. We could not justify the diversion of our scientific manpower from other pressing assignments and, therefore, elected to discontinue these products as of April 15, 1972.

The newly constituted Bureau of Biologicals of the Food and Drug Administration has announced that it plans to set up panels of experts to advise on the effectiveness of biologic products. Perhaps their deliberations can provide practitioners with current advice on the management of brucellosis. Along these lines, you might care to elicit independent comment for the edification of your readers.

We do want to make it clear that our action was taken only after receiving strong assurance from experts in the field of brucellosis that the deletion of Brucellin antigen would not be detrimental to the well-being of patients. We have most sincerely apprised Dr. Harris of the complexities of this issue and regret that we have been unable to demonstrate to his satisfaction the inevitability of this decision.

A. C. TRUE, M.D.
Director, Medical Services
Merck Sharp & Dohme
West Point, Pennsylvania 19486

Children's hearing loss

Almost 4 million American children are in danger of losing their hearing if they don't receive medical attention, stated a recent report of the Subcommittee for Hearing in Children of the American Academy of Ophthalmology and Otolaryngology. Data from two studies indicated that between 15 and 16 per cent of school children in the United States could be classed as otoscopically abnormal. Future action must be taken to safeguard the hearing of these children. It should include (1) detection and identification of ear diseases and hearing problems during preschool and school years, with yearly hearing and ear tests through the first four or five grades; (2) special attention to children with higher risks to their hearing, such as those born of mothers who had German measles while pregnant, or children who have suffered ear injuries or infections; and (3) regular care for children with hearing problems by ear physicians and hearing-and-speech specialists.

Abstracts

Crohn, B. B.: Granulomatous diseases of small and large bowel, ***New York State J. Med.*** 72: 2867 (Dec. 1) 1972.

Granulomatous ileitis and granulomatous colitis were considered uncommon diseases in the nineteenth and early twentieth centuries. It is not known whether this is because they were in fact much rarer than they are at present, or because they went unrecognized until modern diagnostic methods came into being. The incidence of the granulomatous diseases varies among the populations of the world and among the different strata of modern society. It is possible that environmental factors, such as the several kinds of pollution, may play a role in the cause of these diseases.

Berger, J. E.: X-ray and optical diffraction approach to skin structures, ***New York State J. Med.*** 72: 2870 (Dec. 1) 1972.

X-ray diffraction is one of the least well understood of modern scientific technics. This article briefly outlines the theory of x-ray diffraction and gives some of the uses to which the technic can be put. It can be used in identifying crystalline compounds, calculating molecular weights of unknown crystalline substances, and in interpreting electron micrographs. When diffraction data are supplemented by biochemical data, the overall picture of chemical structure can be discerned in more detail than would be possible if only one method were used.

Abstracts in Interlingua

Crohn, B. B.: Morbos granulomatose del intestine parve e grosso, ***New York State J. Med.*** 72: 2867 (1 de December) 1972.

Le ileitis e colitis granulomatose esseva considerate morbos rare in le seculo 19 e a principios de iste centuria. Non es sapete si iste es debite a que iste morbos esseva minus frequente ante que ora, o perque non esseva diagnosticate ante del uso del methodos diagnostic moderne. Le frequentia del morbos granulomatose varia in le population universal e in le differente stratas del societate moderne. Es possibile que factores ambiental como le varie typos de pollution pote haber un rolo in le causa de iste morbos.

Berger, J. E.: Approche radiologic e optic diffractional al structures del pelle, ***New York State J. Med.*** 72: 2870 (1 de Decembre) 1972.

Le diffraction radiologic es un del technicas scientific moderne minus comprendite. In iste articulo es describite brevemente le theoria del diffraction radiologic e alicun applicationes de iste technica, como le identification de compostos crystallin, le calculo del peso molecular de substantias crystallin non cognoscite e le interpretation de microphotographias electronic. Quando le information diffractional es completate con le biochemic, le structure chemic integral es definite con plus detalios que quando un sol methodo es usate.

Book Notes

Textbook of Surgery. Third edition. Edited by David A. Macfarlane, B.Sc., M.Ch., and Lewis P. Thomas, B.Sc., M.Ch. Octavo of 796 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $16.50.

The editors and writers of this textbook are surgeons practised in undergraduate and postgraduate student teaching and, no less important, mature operating surgeons. They have incorporated in this work the physiological principles required in modern surgical treatment and aftercare.

Computers in Medicine. Proceedings of the Second International Symposium held at Blackburn College of Technology and Design in March, 1971. Edited by J. Rose, M.Sc., Ph.D. Octavo of 166 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $13.25.

This book is a record of the proceedings, lectures, and discussions of this symposium. The main emphasis is on the practical uses of computers in medicine.

Current Pediatric Diagnosis and Treatment. Second edition. By C. Henry Kempe, M.D., Henry K. Silver, M.D., and Donough O'Brien, M.D. Quarto of 1,008 pages, illustrated. Los Altos, California, Lange Medical Publications, 1972. Fabrikoid, $12.

As in the first edition, the authors have focused their attention on principles of essential diagnosis and treatment and on current important up-to-date references. Several new chapters have been added and extensive revisions made.

The Handicapped Child. Educational and Psychological Guidance for the Organically Handicapped. Third edition. By Agatha H. Bowley, Ph.D., and Leslie Gardner, B.Sc. Octavo of 203 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $8.25.

The purpose of this book is to set down in terms intelligible to the nonspecialist reader certain facts and findings concerning six types of handicapped children. It is hoped that this information will allay anxiety and help build up a constructive sympathetic approach towards these children.

Sexually Transmitted Diseases. By C. B. S. Schofield, M.D. Duodecimo of 248 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $6.75.

In this book, the author provides a short account of the sexually transmitted diseases, their differentiation from other conditions of the genitalia, and their medicosurgical management. Social background and personalities of patients are also considered so that the physician may deal with individual patients more effectively.

Multiple Choice Questions for Ophthalmologists. Compiled by S. P. B. Percival, M.A., M.B. Duodecimo of 88 pages. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $5.25.

The purpose of this booklet is twofold: first, to promote discussion among groups of ophthalmologists studying for examination and, second, for the individual candidate to review and assess his knowledge.

Books Reviewed

Pfizer Medical Monographs 6. Control of Gonadal Steroid Secretion. Edited by David T. Baird, M.D., and Prof. J. A. Strong. Quarto of 304 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $15.50.

This volume consists of the proceedings of the 6th Pfizer Symposium held in Edinburgh in May of 1970 and therein lies its limitations. In the two years which have elapsed, many of the topics in reproductive endocrinology covered have been subject to further investigation and resolution. The literature contains many more recent, and frequently more extensive, papers and reviews dealing with releasing factors, neuroendocrine mechanisms, induction of ovulation, and contraception, than those presented here.

The time lag is further emphasized by the failure of these papers to reflect the impact of newer radioimmunoassays for the measurement of steroids on our knowledge of gonadal steroid secretion and metabolism.

The contributors are all recognized authorities within their fields. This volume provides a permanent record of a working symposium in a rapidly changing field, and like others of its kind, is of some historical interest. It does not seem especially useful at this time either to other investigators in the specific areas dealt with or to those whose primary interest is in clinical reproductive endocrinology. **Eleanor Z. Wallace, M.D.**

> *"The history of science, and in particular the history of medicine . . . is . . . the history of man's reactions to the truth, the history of the gradual revelation of truth, the history of the gradual liberation of our minds from darkness and prejudice."*
>
> *—George Sarton, from "The History of Medicine Versus the History of Art"*

Are combination drug products useful in treatment involving concomitant use of two or more drugs?

Opinion

Results of a questionnaire to 7,000 physicians:

62.9%
Believe combination drug products are useful.

13.8%
Do not believe combination drug products are useful.

useful in treatment involvin
concomitant use of two or more drugs

Opinion & Dialogue

Doctor of Medicine

Louis Lasagna, M.D.
Professor and Chairman
Department of
Pharmacology & Toxicology
University of Rochester
School of Medicine
and Dentistry

Obviously, many drugs are given concomitantly. Whether it makes sense to combine medications in one preparation, be it capsule, tablet, or liquid, is a question that can be answered only by examining the advantages and disadvantages in the individual case.

Among the advantages is, first of all, convenience. The more medications that are taken concurrently and the more complicated the directions, the less likely the patient is to take medications accurately. From the standpoint of convenience and accuracy, and economy as well, you can make an important case for putting medications together in one preparation, as long as they are compatible.

By the same token, when you prescribe a properly tested and rational combination, you should have less worry about pharmaceutical or pharmacological compatibility – and about reasonable dosage ratios as well. Compatibility of the formulation should be demonstrated in the laboratory and clinic before the product is available for prescription—which is more than can usually be said for the physician's own spontaneous creations. And, the dosage ratios employed in rational precompounded combinations are designed to meet the needs of substantial numbers of "typical" patients.

There is no doubt that many "atypical" patients are to be found, and for them the prefabricated combination must be rejected. But that hardly argues for eliminating rational combinations from the market. Think, for example, of the problems that would arise if the components of widely accepted combinations, like the oral contraceptives and the diuretic-antihypertensives, always had to be prescribed, purchased and ingested separately.

One disadvantage that comes to mind is some doctors' unawareness of the ingredients a given combination contains. For example, a doctor might know that a patient is allergic to aspirin but forget that a certain analgesic mixture, which he knows only by its trade name, contains aspirin. His prescription, then, causes considerable discomfort, to say the least. This problem is a function of physician education, rather than of combination therapy as such. Improving doctors' knowledge about all medicaments they prescribe is a problem that deserves tackling on its own.

Another accusation leveled at combination drugs is that they encourage sloppiness of diagnosis and treatment. In many cases, however, a combination may prove to be the most effective choice. A good example of the usefulness of combinations appears in a recent article in the *Journal of Chronic Diseases* on the efficacy and side effects of an antihypertensive containing three ingredients, in which the track records of the combination drug and the individual ingredients were compared. Interestingly enough, whether the drugs were given individually or together, incidence and severity of side effects were the same. But blood pressure control was invariably better when the drugs were taken in one combination tablet than when they were taken separately (in "titratable" dosage) or in two or three different tablets.

Deciding which combinations constitute rational therapy obviously leads to a discussion of who is to determine which should be used and which should not. Realistically, I think combinations should be evaluated somewhat differently if they are old and established or new and untried.

In today's regulatory atmosphere, there is no possibility of a new combination being put on the market without a substantial amount of acceptable evidence in the form of controlled trials that show it to be safe and efficacious. On the other hand, I believe a different set of standards should apply to combination preparations that have been around for a long time. In other words, physician acceptance over a long period should be given some weight as evidence of the efficacy and safety of these drugs.

The FDA, however, does not seem to share this attitude. It often requires, for these older products, controlled trials that will monopolize the time of already overtired investigators and cost a greal de
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Maker of Medicine

W. Clarke Wescoe, M.D.
President
Winthrop Laboratories

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Opinion & Dialogue

What is your opinion, doctor?
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PMA

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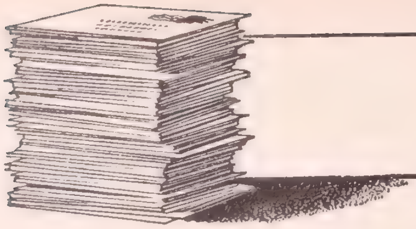

Letters to the Editor

Otosclerosis

To Dr. Bluestone: I read your article on otosclerosis in the August 1, 1972, issue of the ***New York State Journal of Medicine*** with great interest. You have written it from the standpoint of a young individual coming into the specialty in recent years. Were you as old as I, you would have stressed more the innovation which Shea made when he first put a prosthesis in the middle ear. This startled the old timers to no end, because we all knew about rejection of foreign bodies underneath tissue.

However, what the oldsters did not take into consideration is that the prosthesis was not buried; it was in an air-containing cavity, and this, the real revolution, makes all the difference. Rosen's work encouraged transmeatal surgery, but the introduction of a prosthesis in the middle ear was the great change.

There is one item which I would like to call to your attention. On page 2002 in the last paragraph you wrote, "The lower half of the drum was lifted out of its sulcus and folded upward on itself, exposing the chain . . . ." If you review your anatomy, you will find the incudostapedial joint cannot be exposed by this procedure. In transtympanic surgery the ear drum is folded forward on the malleus, exposing the incudostapedial joint.

You quite evidently took this from Rosen's original article on mobilization. I called this error to his attention when he made the presentation in Hollywood Beach in 1953, and he admitted to me that he was wrong. This error evolved, because the exposure of the tympanic cavity was worked out by Lempert, who did fold the lower half of the drum upward, destroying Jacobson's nerve on the medial wall of the tympanic cavity; this was done to eliminate tinnitus. Rosen observed his technic and thought he was doing a folding of the drum upward, but in reality he was folding it forward.

It is interesting to me that this is how errors are continued in medicine. You accepted his writings and his instructions for his initial operation from what he wrote himself. If he had corrected this with acknowledgement in another periodical, this misstatement would not have been carried forward for nineteen years. I thought you would be interested in this aspect of surgery for otosclerosis.

Altogether you did a good job, and I congratulate you on this.

GORDON D. HOOPLE, M.D.
1100 East Genesee Street
Syracuse, New York

To Dr. Hoople: Many thanks for your letter which I read with tremendous interest. In fact, it was not unexpected.

The article on otosclerosis to which you refer was written as a term paper in surgery in 1961, when I was an undergraduate at the Woman's Medical College of Pennsylvania. I found the carbon in my files last year, read it over, and sent it off with a painfully eked-out updating with the hope that somebody might find it interesting and technically sound.

In point of fact, I am presently a public health physician, whose closest contact with microsurgery of the ear is her father, whose early fenestration provided the impetus for the initial research.

NAOMI BLUESTONE, M.D.
Bird S. Coler Memorial Hospital
Welfare Island
New York, New York 10017

Contributions on tennis psychology

To the Editor: I am planning to edit a book with a tentative title of *Tennis Psychology* and am seeking contributors to this book. I would appreciate anyone interested in contributing to the subject writing to me at the address below.

CLAUD A. FRAZIER, M.D.
4-C Doctor's Park
Asheville, North Carolina 28801

Brucella antigen

To the Editor: This is to call to the attention of the medical profession that there is no longer available an antigen for the diagnostic intradermal test for chronic brucellosis or for therapy by desensitization of patients with the infection. This lack poses a serious problem, for no other case-finding method is so important as the intradermal test when done with a suitable antigen. The value of the skin test is exactly comparable to tuberculin testing in suspected cases of tuberculosis. Moreover, there is no other effective method of treatment of chronic brucellosis other than desensitization with an effective antigen.

Agglutinins are seldom present in the serum of patients with low-grade chronic brucellosis. Cultures are rarely informative. When positive, the intradermal test result indicates that the individual has been infected at some time and alerts the physician to the possibility that current symptoms may be due to that infection. A positive test finding does not prove that the disease is currently active, however. A negative intradermal test result, when done with a suitable antigen, is almost certain evidence that the patient has

continued on page 2854

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not been infected with Brucella.

Desensitization with Brucella antigen is the one effective method of treatment of chronic brucellosis. Antibiotics have limited value, if any, in this phase of Brucella infection and its allergic manifestations.

In spite of well-documented evidence of these facts, Merck Sharp & Dohme recently discontinued the preparation of Brucellergen for skin testing and Brucellin for desensitization without prior notice to the profession. The company denies that this was for economic reasons. Instead the statement is made that these preparations are no longer needed and that broad spectrum antibiotics have replaced vaccine for treatment. Despite adequate evidence presented to Merck Sharp & Dohme that serious disservice to the medical profession and to patients has resulted, the company has not reconsidered their decision. It is never difficult to "prove" a method is either good or useless, if one consults only those who take one or the other view.

Undoubtedly for economic reasons, no other manufacturer of biologics prepares such antigens. It is hoped that this discussion will result in revived interest in preparation of an effective Brucella vaccine, preferably killed whole organisms.

HAROLD J. HARRIS, M.D., F.A.C.P.
Westport, Essex County
New York, New York 12993

To the Editor: We welcome the opportunity to comment on the letter of Harold J. Harris, M.D. Incidentally, we have had long correspondence with Dr. Harris who, as you may know, is one of the earliest workers in the field of brucellosis.

In the past fifteen years all other manufacturers have discontinued production and sale of brucellin antigen products. Despite the declining support for this method of treating brucellosis, as evidenced by the very low usage of the product in recent years, Merck Sharp & Dohme maintained supplies as a service to the few physicians who felt such a therapeutic measure was helpful.

As part of our periodic evaluation of marketed products, we consulted with experts in the field regarding its use. The consensus was that Brucellin antigen was not needed in the treatment of brucellosis and that Brucellergen, if continued, would fulfill only an epidemiologic need. When the decision to discontinue the production and sale of these products was made, we were also confronted with nationwide headlines in which various government authorities were quoted as challenging the value of bacterial vaccines. We were given thirty days to decide whether we would undertake the necessary studies to provide within one hundred and eighty days "substantial evidence of effectiveness"—a regulatory phrase denoting rigorous, highly controlled studies. We could not justify the diversion of our scientific manpower from other pressing assignments and, therefore, elected to discontinue these products as of April 15, 1972.

The newly constituted Bureau of Biologicals of the Food and Drug Administration has announced that it plans to set up panels of experts to advise on the effectiveness of biologic products. Perhaps their deliberations can provide practitioners with current advice on the management of brucellosis. Along these lines, you might care to elicit independent comment for the edification of your readers.

We do want to make it clear that our action was taken only after receiving strong assurance from experts in the field of brucellosis that the deletion of Brucellin antigen would not be detrimental to the wellbeing of patients. We have most sincerely apprised Dr. Harris of the complexities of this issue and regret that we have been unable to demonstrate to his satisfaction the inevitability of this decision.

A. C. TRUE, M.D.
Director, Medical Services
Merck Sharp & Dohme
West Point, Pennsylvania 19486

Children's hearing loss

Almost 4 million American children are in danger of losing their hearing if they don't receive medical attention, stated a recent report of the Subcommittee for Hearing in Children of the American Academy of Ophthalmology and Otolaryngology. Data from two studies indicated that between 15 and 16 per cent of school children in the United States could be classed as otoscopically abnormal. Future action must be taken to safeguard the hearing of these children. It should include (1) detection and identification of ear diseases and hearing problems during preschool and school years, with yearly hearing and ear tests through the first four or five grades; (2) special attention to children with higher risks to their hearing, such as those born of mothers who had German measles while pregnant, or children who have suffered ear injuries or infections; and (3) regular care for children with hearing problems by ear physicians and hearing-and-speech specialists.

Books Received

*The following books were received during the month of October, 1972.**

An Introduction to the Diagnostic Histopathology of the Skin. By J. A. Milne, M.B., Ch.B. Quarto of 363 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $35.25.

Human Embryology. Prenatal Development of Form and Function. Fourth edition. By W. J. Hamilton, M.D., D.Sc., and H. W. Mossman, M.S., Ph.D. Quarto of 646 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $34.25.

An Atlas of Diseases of the Eye. Second edition. Compiled by E. S. Perkins, M.D., Ph.D., and Peter Hansell, M.R.C.P. Quarto of 86 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1971. Cloth, $23.50.

The Language of Fractures. By Robert Jordan Schultz, M.D. Quarto of 394 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $22.50.

Atlas of the Ultrastructure of Diseased Human Muscle. By W. G. P. Mair, M.D., and R. M. S. Tomé, M.D. Quarto of 249 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $20.75.

Anaesthesia and Pharmaceutics. Boerhaave Series for Postgraduate Medical Education. Edited by Joh. Spierdijk, M.D., and S. A. Feldman, M.D. Octavo of 144 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $20.

Sensory Coding in the Mammalian Nervous System. By George Somjen, M.D. Octavo of 386 pages, illustrated. New York, N.Y., Appleton-Century-Crofts, 1972. Cloth, $18.95.

Eighth Symposium on Advanced Medicine. Edited by Graham Neale, B.Sc., M.B. Octavo of 464 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Paper, $16.25.

Progress in Clinical Immunology. Volume 1. Edited by Robert S. Schwartz, M.D. Quarto of 217 pages, illustrated. New York, N.Y., Grune & Stratton, Inc., 1972. Cloth, $12.50.

Babies and Young Children. Feeding Management and Care. Fifth edition. By Prof. Ronald Illingworth and Cynthia Illingworth, M.D. Octavo of 336 pages, illustrated. Baltimore, Maryland, The Williams & Wilkins Company, 1972. Cloth, $10.25.

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*Books received for review are acknowledged promptly in this column. No other obligation is assumed for the courtesy of those sending them for this purpose. Selection for review is made on the basis of merit and reader interest.

Prostaglandins and platelets

In a recent series of articles in Science (175: 532 [February] 1972), the effectiveness of prostaglandin in improving the preparation of human platelet concentrates from plasma-rich platelets and from whole blood is discussed. The demand for platelet concentrates has increased steadily because of their usefulness in treating thrombocytopenia-induced hemorrhage as well as their relation to chemotherapy and immunosuppressive therapy. Platelets continue in short supply, however, since they can be stored only briefly and since their production in therapeutic quantities is expensive. Because cold reduces viability of platelets, the preparation and storage of platelet concentrates at room temperature will improve both the harvesting and maintenance of platelet function in vivo. During high-speed centrifugation of platelet-rich plasma, massive aggregates form due to release of cell components or the exposure of sticky sites. Prostaglandin E_1 is one of the most potent inhibitors of platelet aggregation known. Addition of prostaglandin to blood-collection bags not only improved harvesting; platelets were easily suspended immediately after centrifugation, and treatment with the prostaglandin did not affect survival time of these after infusion into a recipient. No adverse clinical effects were observed after administration of either liquid-stored platelet concentrates, previously frozen platelet concentrates, or the small portions of stored, concentrated red cells which had been treated with prostaglandin E_1. There were no hematologic or chemical changes in recipients during the week after transfusion of cellular elements.

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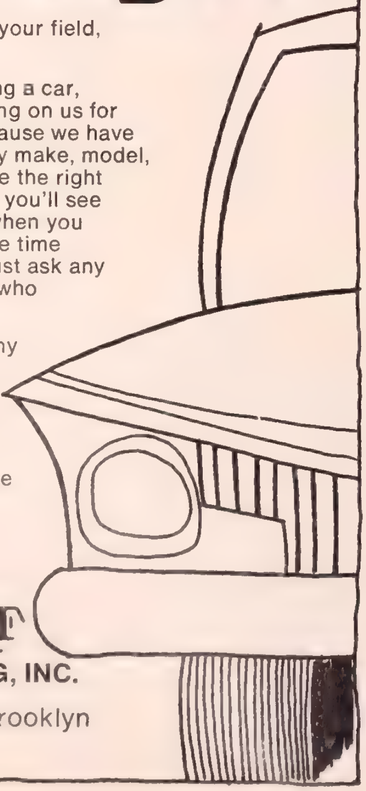

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Medical News

Robert Wood Johnson Foundation grant

A grant of $92,382 from The Robert Wood Johnson Foundation, Princeton, New Jersey, will enable New York University School of Medicine to offer interest-free loans to many of its women and rural and minority-group students. The Foundation focused the program of assistance on these students on the basis of evidence that they are the most likely to choose locations for practice in the country's underserved rural and inner-city communities on completion of their studies. The funds will be distributed by New York University over a period of four years with a ten-year repayment schedule beginning after the students complete their internship or residency, military or Peace Corps service.

Material for inclusion in the medical news section must be received six weeks prior to publication date.

Tax law compliance

The Internal Revenue Service has completed a study of compliance with the Federal tax laws by physicians, dentists, and other health-care providers participating in Medicare, Medicaid, and certain private health-benefit plans. The study covered individuals receiving more than $25,000 during the year 1968 under the Medicare and Medicaid programs. Business deductions averaged $45,100. Of persons examined, 36 per cent overstated their deductions, and 3 per cent understated them. Overall, 97 per cent of net profits were correctly reported. Errors from all sources resulted in proposed income-tax deficiencies for over half of the health-care providers examined. Beginning January 1, 1971, commercial insurance companies, Blue Cross and Blue Shield organizations, and self-financed or self-administered health plans must record payments to health-care practitioners under all private health insurance or prepaid benefit plans, as well as under public programs such as Medicare and Medicaid. They must also file annual information returns with IRS reporting all payments aggregating $600 or more during the year.

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Remember...they also serve who sit and write.

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Medical Meetings

Head and neck surgery course

A course in head and neck surgery will be offered at Columbia University by John Conley, M.D., chairman, and the faculty from April 9 through 14, 1973. Registration is limited to 15, and the fee for the course is $350. For information write to Melvin D. Yahr, M.D., Assistant Dean, Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York, New York 10032.

Environmental and occupational medicine topic of course

New York University Post-Graduate Medical School will offer a two-week course in environmental and occupational medicine for physicians from March 12 through March 23, 1973. The course will be under the direction of David H. Goldstein, M.D., professor of environmental medicine. Tuition for the course is $300; application should be made by January 15, 1973. Applications and requests for further information about this course, Number 481, should be sent to the Office of the Recorder, Room 156 MSB, New York University Post-Graduate Medical School, 550 First Avenue, New York, New York 10016.

American College of Surgeons meeting

The American College of Surgeons announced its first annual four-day spring meeting to be held April 1 through 4, 1973, at the Americana and Hilton hotels in New York. C. Rollins Hanlon, M.D., director, describes this meeting as "the initial offering in a new phase of long-range educational planning by the College." Eight structured postgraduate courses, a few of which will be supplemented by plenary sessions and small workshop discussions, comprise the program, which is planned to correlate with the Surgical Education and Self-Assessment Program of the College.

Forensic symposium

The Tenth Annual Symposium on Forensic Sciences, 1973, will be held on April 13 and 14, 1973. Information may be obtained from the Office of the Chief Medical Examiner, 520 First Avenue, New York, New York, 10016

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

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Editorials

The error of relevance

In the August 15, 1972, issue of the ***New York State Journal of Medicine*** is a letter to the editor by Abraham G. White, M.D., entitled "Irrelevance of relevance." This analysis is a profound, scholarly, and philosophic discussion. Below is a less fundamental and more pragmatic approach to the modern emphasis on relevance.

Relevance stirs paeans of praise and rightfully so. There is so much good and so much that is commendable, realistic, and pragmatic in relevance. However, there is also much that is good and important in the irrelevant and there is a potential curse when relevance is overemphasized and applied too rigidly. Relevance has become the equivalent of the wholly practical, of success and achievement, and of general and personal gain. There always has been little place in our modern materialistic era for irrelevance, for that is equated with the useless, if not the meaningless and the medieval; now the cry is loud and clear to eliminate all that is not relevant.

Our schools and particularly our medical colleges have been confronted with the demand for relevance. This has taken the form of revisions of curricula, development of core curricula, electives only, three-year programs, abolition of examinations, immediate exposure of the student to the patient, and selective emphasis on the clinical and on therapy, or as it is glibly put "care of the patient." The trouble is that all of this necessarily parallels downgrading of basic science. The relevant has been directed to the acquisition of knowledge quickly, if not immediately. Such knowledge is to be put to use almost empirically, with less attention given to the deeper scientific and esoteric aspects of the care of the patient. Incidentally, this is construed as a "productive" effort; and for some of our present students, we say cynically, it really is, because this form of practice is a source of good remuneration for the new M.D. and also seems to satisfy the unknowing patient.

Few realize that this reduces universities and medical colleges to trade schools. We no longer teach, but we train. Now, training is for horses. Physicians should be taught to become scholars obsessed with the continuing need and yearning desire for learning. True teaching instills the attitude of inquiry, the desire for perspective and full experience, yes, even the desire for knowledge for its own sake, divorced from any profitable immediate application, whether it be money or fame and glory. The true physician searches for the knowledge of disease and an understanding of its causes and its mechanisms; he is versatile with interest in sociology, economics, politics, humanity, and man's mental and physical health and well-being. It was this that always made the true physician an important leader in the community.

One can forgive the unknowing patient if he wants, and even demands, the nitty-gritty, only the immediately applicable with none of the extraneous stuff. After all 3 million patients choose chiropactors to treat them.

Thus, relevance can finally reduce itself to purely pragmatic and empirical medicine. It amounts to giving the patient help in the sense of alleviating his symptoms. There is nothing inherently wrong in this giving the drug that helps and occasionally cures. The trouble lies in the basic philosophy and attitude which rests on the unwholesome, negative notion "why bother with the anatomy, the diagnosis, the etiologic agents, or the mechanisms? Let's skip the pathology and bypass the biochemistry. Never mind all the intervening steps. Let's give relief to this sick patient. Let's care for his symptoms. The intervening, time-consuming efforts are quite irrelevant."

If we are to make relevance the criterion of education, we will be undereducating the new M.D. who is to care for the sick patient. I am even reluctant to use the term "physician," and I hesitate to call him "doctor." He is the "feldsher" of old and of modern Russia. We must be careful that the new paramedical personnel we are now training so assiduously do not become the modern version of the feldsher. These really nonmedical people can give a definite, a distinctive, if not a definitive, kind of care to the patient.

Where do we draw the line, however? Remember that not far removed is the chiropractor, many cultists, and quacks. The chiropractor also has many patients who are ready and willing to testify that he helps, and even cures, despite the fundamental error of the doctrine and the sheer nonsense in its application. It is sad, indeed, that we find ourselves comparing the positive services of the physician to the negative contribution of the chiropractor. Must we compete at this level? Unfortunately, yes, if we promote the undue stress of relevance and discard good background knowledge, the broad approach, and the encompassing perspective of genuine scientific care of the patient.

What would science be like, what would the world be like, if all progress and advances were limited to the seemingly pragmatic and the relevant? The fact is that most of our modern life style would be impossible. Could anything be more abstract and abstruse than Faraday's study of electromagnetism? Yet, as Dr. White notes in his editorial, "this led to Marconi's wireless telegraphy and finally to modern radio." Was not Einstein's formula for the relationship of mass to energy lacking in any apparent practical value? In medicine, too, Rous's original experiments with the viral relationship to tumors seemed to have no apparent connection to human disease and human tumors. The new slow-virus concept promises to transform our understanding of many chronic diseases. All these breakthroughs were very theoretical and impractical initially. Actually, the list of the so-called unimportant, impractical, and irrelevant, all of which now have major impact, could be extended endlessly.

Dr. White also notes:

> . . . an apparent irrelevance is the observation by Fleming of the lysis of bacteria by a mold, the beginnings of the discovery of penicillin.
>
> What is a relevant . . . education? Is relevance the right stimulant to prescribe for a depressed educational system? Or is it more likely to be hallucinogenic, perhaps even lethal, to the concept of a proper education?
>
> Relevance is an alluring siren that suggestively offers simplicity, expediency, and quick results with minimal effort. Thus, it appears to be pragmatic and, therefore, especially congenial to the American penchant for getting things done—the "know-how" instead of the "know-why."
>
> The more information and actions which can be eliminated because of their irrelevance, the simpler life becomes. Maximal elimination leads to pristine simplicity, an attractive prospect in an increasingly complex world. Also, by seeming to offer simpler and faster results, relevance offers a kind of instant gratification of desires. Frustration in the realization of goals is minimized. Happiness is relevance.
>
> . . . *Relevancy cannot encompass the unknown; this is its fundamental weakness. Insistence on relevance is therefore restrictive, anti-intellectual, and anti-imaginative, and anti-progressive.* (Italics mine.)
>
> In this sense, relevance is irrelevant to the present future well-being of society and mankind.

What would medicine be like without the autopsy? The autopsy initiated the modern era in medicine. Yet, today it is denigrated—all part and parcel of the worship of relevance. The autopsy commands no fee and very little reward in the form of fame and glory—that fact for many proves its irrelevance. The autopsy is a good example, for the pathologist seeks knowledge for its own sake, knowledge of the disease process. We also need the autopsy for quality control of medical care, as the final test for error, for determining the good and the bad in drug action, the establishment of truth in disease, and for legal evidence that may mean life or death for an accused. Relevance does not apply in science and in medicine; truth is the only question, and that is always relevant.

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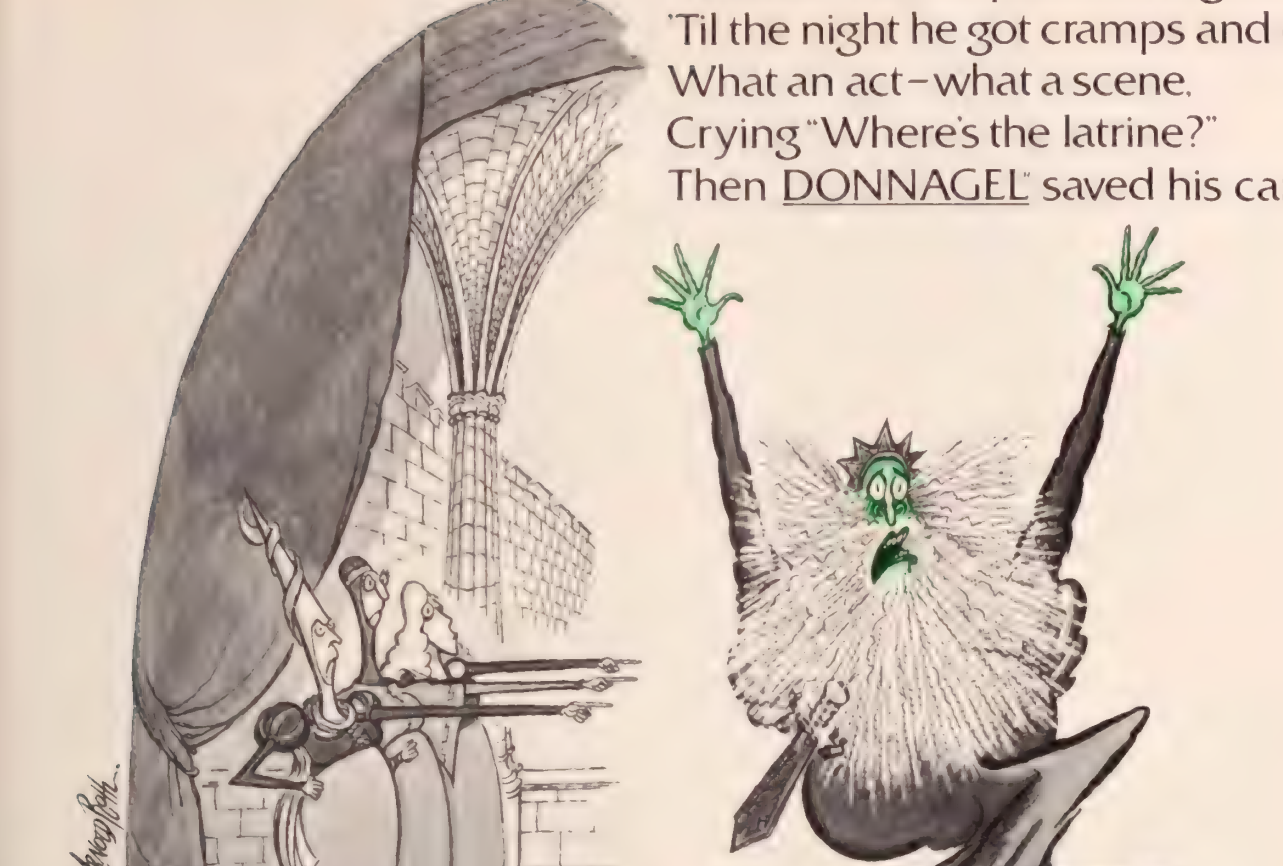

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The award was presented in 1972 to Samuel R. Powers, Jr., M.D., of the Albany Medical College, Albany, N.Y., for the development and application of modern engineering methods for the correction of the respiratory distress syndrome following trauma. The award was presented in 1971 to Ludwig Gross, M.D., for his pioneering studies of virus-induced leukemia in mammals, and presented in 1969 to Baruch S. Blumberg, M.D., of the Institute for Cancer Research, Philadelphia, for his discovery of Australia antigen, a possible cause of viral hepatitis.

You are invited to submit documentation with the name or names of those who, in your opinion, are eligible for this award, by December 15, 1972, to:

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Granulomatous Diseases of Small and Large Bowel*

BURILL B. CROHN, M.D.
New York City

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Granulomatous ileitis and granulomatous colitis were considered uncommon diseases in the nineteenth and early twentieth centuries. It is not known whether this is because they were in fact much rarer than they are at present, or because they went unrecognized until modern diagnostic methods came into being. The incidence of the granulomatous diseases varies among the populations of the world and among the different strata of modern society. It is possible that environmental factors, such as the several kinds of pollution, may play a role in the cause of these diseases.

To be asked to deliver the Annual Andresen Lecture before the Medical Society of the State of New York is a source of pride and extreme honor to me. For many years I followed the scientific career of Albert Frank Ruger Andresen—his interesting and often novel views of the relationship of visceral allergy to organic diseases and his activities as clinical professor at the Brooklyn Hospital and at the Polyclinic Hospital in New York City, Manhattan. Andresen was a keen clinician devoted to internal medicine—a practitioner of the old school who palpated the abdomen before he listened to the endless recounting of biochemical data.

History

Mores in medicine change with the times. Acute appendicitis has become a rare disease; carcinoma of the stomach is extremely infrequent. Ulcerative colitis, first described in England in 1859 and in 1875 as a clinical curiosity, today fills the hospital to capacity. Since 1932, the granulomatous diseases of the small and large bowel come not far behind, in the arithmetic relation of one to three.

The question arises as to whether these clinical entities are "new" diseases in the sense that they had not previously existed, or if they existed and remained unnoted. It is almost impossible that in the past such meticulous pathologists as Morgani and his German confreres could have overlooked such extremely obvious and often fatal diseases both at the bedside and at the operating table.

As an intern at The Mount Sinai Hospital in New York City from 1907 to 1911, I attended and assisted at all or most of the autopsies and clinical conferences during that time and saw no such pathologic material. The first case of ulcerative colitis that was presented by my most capable mentor, Emanuel Libman, M.D., attracted much clinical attention as a rarity. Today the beds of our hospital, and undoubtedly yours, are probably overflowing with cases of the various types of diarrheal diseases which we overlooked and did not understand.

After 1932, with the publication of 14 cases of regional ileitis by Crohn, Ginzburg, and Oppenheimer,[1] the identification of diarrheal diseases was much accelerated. These authors, as well as Moschcowitz and Wilensky,[2] had been studying the pathology of granulomatous inflammation of the intestine and other viscera.

My first case of ileitis was discerned because of my latent distrust of the so-called diagnoses of chronic appendicitis, the hoax of a generation, and of intestinal tuberculosis, the receptacle of all diseases affecting the small bowel. By 1930 we were using skin and patch (Calmette) and conjunctival (Von Pirquet) tests for tuberculosis, but we were also beginning to utilize x-ray films of the lungs, which hitherto had been inaccessible. In my first patient, all the test results for tuberculosis were negative as were also the x-ray films of the lungs. With great reluctance and only by ex-

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*Annual Albert F. R. Andresen Memorial Lecture.

Presented at the 166th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Gastroenterology and Proctology, February 14, 1972.

treme persuasion did A. A. Berg, M.D., perform a laparotomy and remove from the terminal small bowel a mass which proved to be a segment of granulomatous-diseased tissue.

On the wards of the hospital there were several cases of abdominal wall fistulas. Facetiously we called them "tuberculosis" without tubercle bacilli or "actinomycosis" without actinomyses. These cases were explored and at operation were recognized and classified as granulomatous disease, namely regional ileitis. One patient I distinctly remember had 9 abdominal-wall fistulas, all of which healed after a short-circuiting operation of the affected small bowel.

Some years later the true nature of perirectal fistulas was identified. The elder Lockhart-Mummery had taught that 100 per cent of those fistulas were tuberculous in origin. Today we know that few, if any, are tuberculous, and all are inflammatory or granulomatous in nature.

Extent and treatment

My first concept of ileitis was that of a disease resident only in the terminal portion of the ileum. In the ensuing literature this concept was quickly revised; the disease was observed to occupy upper regions of the small intestine by typical "skip-lesions," but also, although rarely, the duodenum, stomach, and esophagus were affected. Colp already had demonstrated extension of the ileal disease to the immediately adjacent cecum and ascending colon. I have recently encountered a case of granulomatous disease involving the terminal ileum, the antrum of the stomach, and the entire lower third of the esophagus.

Involvement of the upper duodenum and the stomach has been repeatedly reported in the current literature as an early diagnostic problem. The Cleveland Clinic noted that in a series of 11 patients the predominant clinical manifestations of Crohn's disease at the time of evaluation were the duodenal symptoms.[3] In 1955, a group of investigators at The Mount Sinai Hospital reported 20 cases of involvement of the stomach and the duodenum from the literature and added 3 more cases from their own experience.[4] These latter cases all involved the distal part of the stomach and required surgical intervention in the form of gastroenterostomy and vagotomy.

The medical treatment of ileitis is essentially expectant. The corticosteroids are effectual in allaying symptoms and fever in the active phases of the disease but are not necessarily curative. I have seen only 1 case of regional terminal ileitis with complete healing as checked by radiography.

The surgical approach initially was a two-stage procedure, short-circuiting followed in three weeks by resection. It was discovered at the second stage of the operation that the short-circuited lesion had healed. This was modified to a one-stage short-circuiting with transection of the proximal loop when it was learned by experience that the short-circuiting alone sufficed. When complications and fistulous extensions to neighboring organs existed, a radical resection was called for.

Segmental colitis

In 1938, a publication by Crohn and Berg described "right-sided or regional colitis," a segmental type of colitis with interspersed areas of the colon free of disease. The area below the rectosigmoid angle was not involved, and results of proctoscopy were invariably negative. The symptoms were similar to those of the well-recognized ulcerative colitis, namely, diarrhea, fever, abdominal pain, anemia, and a tendency to gross, even massive, hemorrhage. Toxic dilatation of the colon is unusual, and the late advent of carcinoma practically nonexistent.

In intractable cases, particularly those with gross hemorrhage, resection of the colon provided specimens for surgical pathologic study. At The Mount Sinai Hospital these specimens were reported by the pathologist as "inflammation, nonspecific." As early as 1930, Bargen and Weber[5] had previously described "regional migratory chronic ulcerative colitis," a condition similar to our descriptions of segmental colitis except that they had emphasized the cicatricial nature of the disease.

Our British confreres at St. Marks Hospital in London, Lockhart-Mummery and Morson, disagreed with us as to the true pathologic nature of this segmental colitis. They insisted that the disease was truly granulomatous—akin to if not identical with that of regional ileitis of the small bowel. Surely one would have expected the pathologist at Mount Sinai to be immediately cognizant and sensitized to granulomatous disease in these specimens, but the reports were always "chronic inflammation."

Over the years, the concept of the disease as "granulomatous" has gained credence; at least half of my later-resected specimens, as well as those of Zetzel[6] and of Kirsner[7] were in reality granulomatous in nature. At the International Congress of Gastroenterology in Czechoslovakia four years ago the British physicians, over my personal objections, bestowed the eponym of "Crohn's Disease of the Colon" on this symptom complex arguing that by so doing the granulomatous nature of the disease would be more easily accepted by the mass of the profession.

The differentiation between ulcerative and granulomatous disease often cannot be too tightly drawn. According to Rappaport and Kirsner[8] only 14 of 21 specimens had histologic features of granuloma, namely, epithelioid cells, giant-cell system (Hatfield), pseudomiliary tubercles, and histiocytes. Certainly an overlap of both diseases does exist.

The medical treatment of segmental (granulomatous) colitis consists essentially in the use of sulfonamides, corticosteroids in large doses, and perhaps immunosuppressive drugs, such as azathioprine (Imuran), mercaptopurine, and thiotextrate. These latter drugs are not without toxic side-effects, and their efficiency leaves much to be desired. Surgical treatment, consisting of subtotal colonic resection with or without permanent ileostomy, is curative. Attempts at a later time to reanastamose the ileum to the residual segment of "uninvolved" rectum succeed in approximately half the cases.[9,10]

General remarks

What is the nature of this disease in which the ileum and the colon seem to be antagonistic or antigenic to each other? Where ileum meets colon the ileum suffers; in other instances the colon becomes involved. To date, attempts to establish a viral cause have failed. Perhaps the present resurgence of the concept of cancer as a viral disease will stimulate more studies on the possible virology of the granulomatous diseases. Are the causes biochemical in nature? Kirsner[7] stated that, "A genetically determined deficiency of erythrocytes and intestinal glucose-6-phosphate dehydrogenase has been implicated."

Again one reverts to the interesting question of whether or not these are new diseases. Is the very common diverticulosis and diverticulitis of the colon a new disease, one overlooked by the pathologists but discovered by the barium enema? Diverticulitis is not even mentioned in the *Osler Textbook of Medicine*, 1904 edition. In Nigeria, diverticulitis is 20 times more prevalent in whites than in the native population. Is that because the natives live on rice and the Europeans indulge in wheat bread?

Even Paul Dudley White, M.D., writing in his recent publication, suspects that coronary thrombosis may be a relatively "new" disease. Angina pectoris has always been well recognized; John Hunter knew, and died, of this in the eighteenth century. Perhaps a clue may be offered by the biologic distribution of these diseases. Ulcerative colitis occurs in 6 to 8 per 100,000 of the general population. It occurs in 42 per cent of Jews and 3 per cent of Negroes. The disease seems to affect higher socioeconomic groups.[11]

Ecologically we are living in an industrial society characterized or accompanied by air pollution, water pollution, extensive uses of insecticides to spray our grain, wheat, corn, and cotton crops—affecting even the wild life of the prairies and the fish of the seas. "Ecology" is a grab-bag for all or most of our unpleasantnesses of today. Perhaps it also will encompass the riddle of the granulomatous diseases.

Addendum

A recent article by Lauren V. Ackerman (*Nutrition Today*, Jan.-Feb., 1972) makes some very pointed observations regarding the incidence of cancer as related to diet. In Poland, cancer of the stomach is frequent, cancer of the colon infrequent. But in the Poles who emigrated to Chicago the relationship was reversed. Cancer of the colon is frequent, cancer of the stomach lapses far into second place.

"Is the life style, the food or the environment responsible?" The Chinese are very susceptible to nasopharyngeal cancer. But for emigrants to California who assumed the new dietary habits of their host country, the incidence of nasopharyngeal cancer declined.

Cancer of the colon is most common in the populations of the northern white countries, extremely infrequent in the Bantus. The Bantu is obsessed with the dread of constipation and lives on a coarse diet based mainly on corn; he tries for three to four bowel evacuations daily. Perhaps he does not have diverticulitis because he does not strain at evacuation and force diverticular projection pockets in his lower colon.

While these remarks may seem distant from our present topic, they may have relevance. When I suggested that ileocolitis is a relatively "new" disease, the implication was that the responsibility lay with modern ecologic conditions—diet, air pollutants, and crop spraying—factors which might be responsible for "new" diseases. It is a thought, a provisional hypothesis. All progress in science depends on heretic disbelief in the past and on bright new ideas of the present and possible future.

1000 Park Avenue
New York, New York 10028

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X-Ray and Optical Diffraction Approach to Skin Structures*

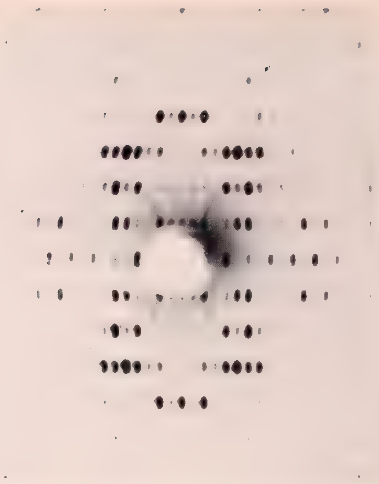

FIGURE 1. X-ray diffraction pattern of hemoglobin.

JACOB E. BERGER, M.D.
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From the Center for Crystallographic Research, Roswell Park Memorial Institute

About twenty years ago the following statement appeared in the *Journal of Investigative Dermatology*[1]:

> The research worker in morphology has always had two objectives: one to extend the frontiers of knowledge broadly and to encompass more within the scope of information; the other to bring into range of vision smaller and smaller entities of matter. In successive stages the limits of applicability have been reached with the light microscope, the U.V. microscope, and finally the electron microscope. Each of these is still of value once the true limitations are understood. But even the latter cannot give accurate information about the size, shape, and arrangement of the smaller molecules. For this purpose, one must employ x-ray diffraction by which the internal patterns of matter can be studied.

Despite this and the fact that in the past fifty years several Nobel prizes have been awarded for achievements in this single field, x-ray diffraction is perhaps the least well understood of any of the modern scientific technics. The quotation of diffraction studies is appearing more frequently in support of other investigations involving structure and function of the skin and its components, but for most readers this represents a portion of the article which they feel can profitably be ignored. At the investigative level, only a few men consider diffraction technics as tools to be employed in tackling problems relating to the structure of skin.

Here, in addition to a brief summary of diffraction theory, I shall point up some ways in which this technic may be helpful in dermatologic and other investigative work. It also happens that a modification of x-ray diffraction methodology can be used to analyze ordinary electron micrographs in such a way that details invisible on routine inspection of the electron microscopic plates are made to stand out clearly. This technic, optical diffraction, will also be outlined.

Theory

Perhaps the single greatest impediment to understanding x-ray diffraction is the use of the word "x-ray." This immediately conjures up a number of associations and ideas based on medical uses of x-rays. It is most important to realize that x-rays are not absolutely necessary for diffraction work in general. Ordinary light, for example, undergoes diffraction just as readily as x-rays; and even when x-rays are used in diffraction experiments, the data obtained are completely unrelated to the kinds of data important in diagnostic radiology. Any attempt to draw a parallel between radiology and x-ray diffraction is guaranteed to lead one far astray.

In medical radiology, a tissue or combination of tissues of varying opacity is placed in an x-ray beam, and the shadow of the specimen in that beam is recorded on film. The denser the tissue, the fewer the x-rays getting through; that is, the greater the opacity and the less the blackening of the film. The x-ray diffraction specimen is generally homogeneous; that is the radiolucency is everywhere the same, and its shadow is thus of no interest. However, what is of interest is that a great deal of the incident single beam of x-rays is scattered into a very large number of new beams each going in a different direction and each with a different intensity. This phenomenon, the splitting of a single beam of electromagnetic radiation, be it visible light, x-radiation, ultraviolet, or infrared, into many rays

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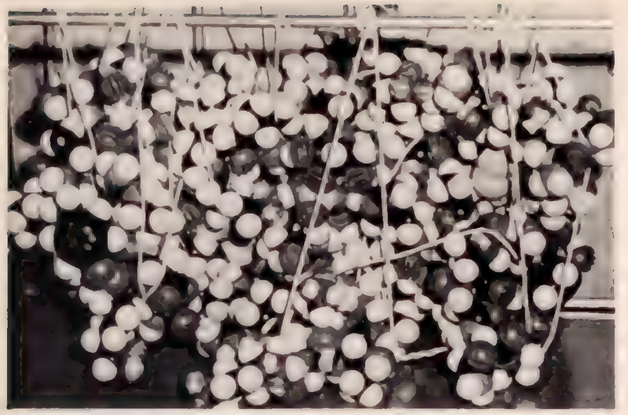

FIGURE 2. Atomic packing model of ribonuclease.

X-ray diffraction is one of the least well understood of modern scientific technics. This article briefly outlines the theory of x-ray diffraction and gives some of the uses to which the technic can be put. It can be used in identifying crystalline compounds, calculating molecular weights of unknown crystalline substances, and in interpreting electron micrographs. When diffraction data are supplemented by biochemical data, the overall picture of chemical structure can be discerned in more detail than would be possible if only one method were used.

going in different directions is one of the characteristics of diffraction. If the specimen is a crystal—is composed of a three-dimensionally regular repetition of a molecule, or small group of molecules, in parallel position—the directions of the scattered rays are very definite and relatively few. Figure 1 shows a diffraction pattern from a typical protein crystal (hemoglobin).

Each diffracted ray has two qualities, a direction and an intensity or brightness. The overall variation of intensities from point to point in a diffraction photo of a crystal is determined by the exact relative locations of the atoms in each molecule of the substance under investigation. The means by which one derives the molecular structure from these diffraction data is somewhat complex, and we will not be concerned with it here except to state that for small molecules of the size of amino acids or small antibiotics, it can be done in a matter of weeks or months; for proteins, it may take one or two decades. The atomic model of ribonuclease resulting from analysis of diffraction data is seen in Figure 2.

The directions of the diffracted rays as they issue from the specimen are determined not by the nature of the atoms or molecules in the sample but only by the presence there of some regularly repeating motif. Unlike the derivation of molecular structures from the intensities of diffraction spots, the interpretation of the direction data is relatively simple. When a beam of light or x-rays falls on any object with a regular repeating structure such that the distance between the repeating motifs is in the same range of size as the wavelength of the radiation, a diffracted ray occurs which deviates from the direction of the original beam by an angle which is large if the repeat spacings are small and by an angle which is small if the distance between the repeating motifs is large. The diffracted beam deviates from the incident beam along the direction of repetition of the motifs. The repeating motifs referred to can consist of any number of things so long as they are truly identical.

In specimens consisting of evenly spaced rows of identical molecules, the repeating unit is a single molecule. If the entire structure is a single extended polypeptide chain, the repeating unit might be a peptide bond, for example. On the other hand, in diffraction patterns of substances in which the regularly repeating sequence lacks a specific orientation, as in a randomly coiled string of beads, the angle of deviation of the diffracted beam is fixed as determined by the repeat spacing, but the azimuth takes on all possible values. The result is a diffraction pattern showing a full ring, not individual points. Partial orientation of the repeating units over a small range of directions would lead to a diffraction pattern showing arcs of a circle rather than an entire circle. Thus, even casual inspection of a diffraction pattern tells us those directions in the specimen in which there is some regularly repeating structure and permits calculation of the exact spacing separating those repeating units.

Applications

How can this sort of study be useful in dermatologic investigation? One of the most straightforward applications of x-ray diffraction is in the identification of small deposits of material in skin. Ordinarily, routine histologic stains suffice to identify calcium, urates, lipid, and so forth, but one is occasionally faced with the need to determine the nature of some foreign substances more definitively than is possible by histochemical technics. Almost all pure substances are crystalline; that is, the individual molecules pack together in a very regular way, each at a precise and identical distance from its neighbors in any one direction. Therefore, in even the smallest three-dimensional lump of such a substance there will be three different characteristic spacings which can be easily detected by x-ray diffraction. The likelihood that any two substances have all three spacings the same is vanishingly small, so this set of measurements is unique for each substance. There are tabulations of such spacings for most known chemical compounds, and the amount of material needed for an x-ray study of this type is a fraction of a milligram. Tiny specimens suffice to make a precise chemical identification under circumstances where other technics may not be applicable.

What about instances where one is interested in deriving information about some completely new material not previously known and therefore not amenable to identification by the method just described? What about previously unknown proteins, peptides, lipids, and similar substances which may be found in deposits in vivo or which may be extracted from skin or appendageal structures in normal or disease states? If the material occurs in crystalline form in the tissue, or if it can be extracted and crystallized, then a complete crystallographic analysis giving the complete chemical structure for substances of small molecular weight may be possible within a few weeks or months by measuring the intensities of the diffracted rays and using classic x-ray diffraction technics. However, even when this is not possible, a simple determination of the repeat spacings in each of the three dimensions and a determination of the specific gravity of the crystal, which can be carried out fairly accurately even on microscopic specimens, permits straightforward calculation of the molecular weight of the substance in question.[2] This can be done in less than a week and with equal ease for proteins, nucleic acids, lipids, and carbohydrates of any molecular weight from less than 100 to several million, providing only that a crystal of the material is available.

In addition to the kinds of study I have already described, there is one additional kind of x-ray diffraction investigation which can be very fruitful. This is one in which x-ray data are supplemented by biochemical knowledge to give an overall picture more detailed than would be possible if one relied on either alone. This has been done, for example, for the cornified layer of skin from normal people and patients with psoriasis and congenital icthyosiform erythroderma.[3]

Another area in which diffraction theory can be of great value is in the interpretation of electron micrographs. Many components of both epidermis and dermis, as well as other structures of biologic importance, have an intrinsically repeating structure. Examples can be found in collagen fibrils and mitochondrial cristae. It is certainly within the realm of probability that alterations in the repeat spacings of these components should occur as one of the manifestations of disease states. An accurate measure of the exact repeat distance in electron micrographs of these structures then would permit improved diagnosis and possibly lead to a better understanding of underlying pathologic mechanisms. Staining and drying of tissue specimens very often introduces artifacts, distortion, and background noise into the electron micrograph, so fine detail is obscured, or at the very least made so difficult to see that only rough estimates of the repeating distances are possible. The nature of diffraction is such that patterns produced from specimens in which there is regular repetition of some motif consist of sharp, bright spots or lines, but diffraction from any specimen without such regular structure is diffuse and dim. We therefore can use diffraction from an electron micrographic photograph to detect regularly repeating components in that mi-

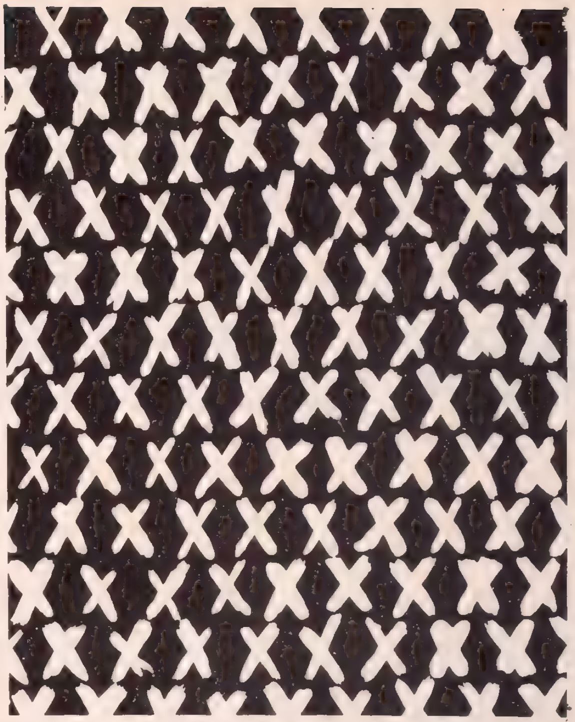

FIGURE 3. Freehand x's arranged on regular lattice.

FIGURE 4. Optical diffraction pattern of Figure 3.

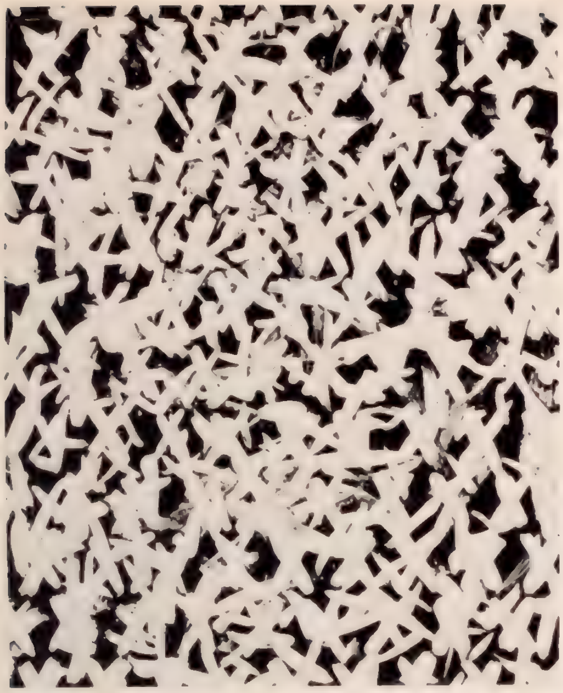

FIGURE 5. Pattern of Figure 3 with overlain random markings.

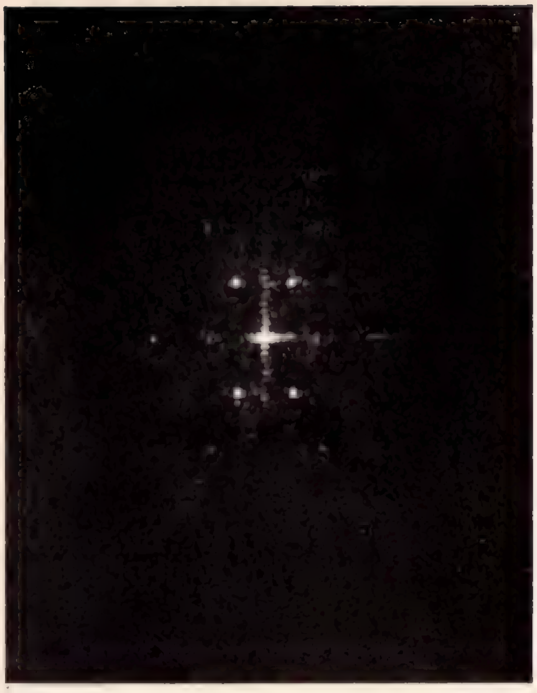

FIGURE 6. Optical diffraction pattern of Figure 5.

crograph, even when the picture is badly overlain with random distortion and background noise.[4]

An example will make this more apparent. Figure 3 shows a series of hand-drawn crosses all oriented similarly and with the center of each cross on a regular lattice. The total pattern could be thought of as a series of molecules all folded slightly differently but sitting at regularly repeating distances from each other. The diffraction pattern of this photograph can be obtained using light instead of x-rays, and it can be seen to consist of a regular lattice (Fig. 4). This indicates the presence of a periodic disposition of subunits, crosses in this case. If the original clear drawing is defaced, so that the underlying regular structure is hidden, we get the result shown in Figure 5. This is analogous to an electron micrograph in which debris, distortion, and drying of the specimen has covered up some important structure. Although the naked eye would reject such a photograph as useless, the diffraction pattern of this very image is seen to be identical in all important respects with the diffraction pattern of the original clear drawing (Fig. 6). The regular pattern of crosses generates the regular discrete pattern of diffraction spots, and the random overlay gives rise to a diffuse smear. The distance between the diffraction spots on this pattern gives exactly the distance between the centers of the crosses on the original pattern. Clearly, the utility of this kind of analysis in electron microscopic studies extends far beyond the field of dermatology. As is true for x-ray diffraction, its wider application is perhaps most severely curtailed by the general lack of appreciation among medical investigators of its capabilities and basic simplicity.

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SYMPOSIUM

EMOTIONAL CONSIDERATIONS IN CANCER AND STROKE

In Cancer

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There are many ways to categorize human needs and human strivings. An admittedly oversimplified concept is to consider three major strivings which evolve during the course of human development. These goals are (1) the need to survive, (2) the need to survive with relative freedom from physical and psychologic pain, and (3) the need to survive with some sense of accomplishment, gratification of needs, and a sense of fulfillment. Generally speaking, the mechanisms by which these goals are attained evolve in a complex fashion as the infant grows into adulthood. As maturity progresses to old age, the latter two of these goals often encounter increasing compromise. The process of compromise may occur rapidly when an individual becomes ill with a generally progressive, debilitating, and eventually fatal disease such as cancer. Medicine over recent decades has responded competently and with increasing expertise to the first need but at times has responded incompletely to the second need. The third need has been difficult to respond to especially since it sometimes must be sacrificed or markedly mitigated to fulfill the first two goals. It is indeed only within recent years that we have been able to engage ourselves in the problem of meaningful survival from serious illness. It is obvious that cancer is a disease which generates an extremely forceful impact on these human needs and seriously threatens all three of them.

The cancer patient shares with other patients the increasingly dehumanizing experiences of today's delivery of health care. It is no surprise that the need for more efficient hospital management, the increased sophistication of medical technology accompanied by mounting complexity of the hardware of that technology, along with the development of more and more refined medical specialties, have put the patient at a greater distance from the primary treating physician. The very fabric of modern health care thus often tends to isolate the patient and to cloak his feelings and attitudes about himself in the setting of serious illness.

There are four broad areas of concern in considering the emotional reactions to cancer. They are: (1) the patient's individual emotional response to having cancer or, as is more commonly the case, to his high degree of suspicion that he does have cancer with all of the implied threats that imposes, (2) the patient's reaction to treatment of cancer and the subsequent physical and psychologic incapacities which may result from that treatment, (3) the fear of death and other implications which evolve from the concept of premature death, and (4) the emotional response of the patient and his family which ensues in preterminal and terminal events. In all of these situations the physician-patient relationship is of paramount importance, an observation which most cancer clinicians will readily support but which entails certain kinds of awareness and knowledge which the clinician does not always possess. There has been increasing interest in the dying patient. This has resulted in greater focus on the mechanisms of the physician-patient relationship during a terminal event. There are many unresolved issues about this area of medical care. However, since it has been considered at other meetings, I would rather focus some brief comments on an area which is even more neglected, namely, the reactions of the patient and the management of that patient with nonterminal cancer.

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In this respect, I would like to present several of the many aspects of the emotional responses to cancer which may give a clinician some fresh insights concerning the psychologic management of the cancer patient. They are (1) individual response to having a tumor or cancerous condition, (2) beliefs concerning the cause of the disease, and (3) response to illness and treatment from an adaptational viewpoint.

Social acceptance and value

It is not always appreciated that each disease carries with it a certain measure of social acceptance and social value. These values tend to change somewhat over the years and may depend on the culture in which they are being measured. The psychoses, for instance, consist of a series of diseased states which have had very low social value for many centuries, and it is only within recent years that the psychotic individual has not been looked on with complete disdain. In essence, then, one may say that any of the many psychoses have risen somewhat in social acceptance and social value. Certain forms of heart disease have gone the other way. It was not too long ago that having a myocardial infarction, while obviously a serious disease medically, did carry a relatively high social value. This was true in that many patients, especially men who had had a "heart attack," were considered to have had this illness thrust on them because of certain characteristics which were held in relatively high esteem. It was "known" not too many years ago that a man with a heart attack had suffered thusly because he worked too hard, because he had too many pressures on him, and because he took things too seriously. Hard work and seriousness of purpose were held to be of high value by society.

Today hard work is not as highly esteemed; furthermore, since we have learned more about the contributions of obesity, smoking, and blood lipids in relationship to heart disease, the patient with a coronary occlusion may be seen more as an individual who has suffered from his own foolish acts or at the hand of genetic factors rather than as the victim of his virtues. As far as we know, cancer, and particularly solid tumors, have throughout the ages consisted of diseased states which have always had very low social value. Patients with tumors routinely feel a sense of very low self-esteem in relationship to their disease, and indeed frequently see themselves as dirty, repulsive, and, at times, not worthy of help.

This is an observation commonly made by oncologists. Over the past three years, of 80 patients seen at Memorial Hospital with solid tumors ranging from uterine fibroids to cancer of the breast, more than 50 per cent expressed concepts of self-revulsion in response to having direct evidence of or having been told that they have a tumor. This response is not well understood but may involve concepts of the body turning against itself which results in a kind of self-loathing. Many of these patients directly expressed the idea that they were perhaps not worthy of help or that only a special kind of physician could deal with such a loathsome business. They often saw their disease as punishment for past sins.

Patients' attitudes

A second powerful concept first elicited by Bard and Dyk* is that concerning beliefs in regard to serious illness. These investigators found, and we have since consistently observed, that patients frequently evolve hypotheses concerning the cause of their illness. In the original survey of 100 spontaneous statements made by patients, 50 per cent fell into a self-blame category and the remainder into a projective category. Thus, half of the patients blamed their disease for their own past misdemeanors.

Before illness strikes, all individuals have evolved adaptive patterns of behavior, thinking, and emotional reactions which have in general allowed them to fulfill life goals and to maintain a more or less harmonious balance with the environment. These adaptive mechanisms are highly complex and have been evolved during the course of individual development from a multitude of sources. They come from genetically derived psychophysiologic mechanisms and personality predispositions, from parents, teachers, peers, and essentially from all aspects of the patient's social, cultural, and ethnic milieu. From the total of his life experiences, then, man has evolved these patterns of adaptation as processes by which, to a greater or lesser degree, he is able to maintain his sense of self-esteem, his sense of fulfillment and accomplishment, and his acceptability by others. These adaptive patterns are comprised, at least in part, of attitudes, beliefs, behavior, and perception of the world. They comprise what psychoanalytic theory would define as personality traits or character structure. The patient therefore brings to the diagnostic and therapeutic situations, and indeed funnels into these situations, those beliefs, attitudes, and modes of behavior which have allowed him to maintain a psychologically homeostatic balance with his environment.

The cancer patient must be seen as a person under a special and unusually severe form of stress. That stress is the threat of disabling illness, of death, or of mutilation or loss by surgery of an important body part or of an important physiologic function. In some ways these losses have universal meaning to all human beings. In other ways each loss or potential loss has specific and special meaning to the individual. Patterns of adaptation incorporate a series of value systems relegating relatively greater or lesser importance to specific body parts and to specific physiologic processes. Although there are "realistic" fears in the concern of injury by disease, one must bear in mind that it is the total psychologic makeup of adaptive patterns including unconscious mental processes and symbolic meanings which play an important role in the patient's response to his disease. When illness strikes, the patient's adaptive patterns are threatened with disruption. Anxiety, one of its derivatives, or certain mental mechanisms which may be part of the adaptive mechanism to ward off anxiety come into play. The mechanism of denial, that is, of keeping out of conscious awareness the significance of serious symptoms, may play a role when patients delay seeking medical help.

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*Bard, M., and Dyk, R. B.: The psychodynamic significance of beliefs regarding the cause of serious illness, Psychoanalyt. Rev. 43: 146 (1956).

The prediagnostic and diagnostic phases of examination of the cancer patient are usually marked by some degree of anxiety or one of its many derivatives. Later in the course of the illness anxiety tends to diminish somewhat and becomes intermixed with varying degrees of resignation and with depression and depressive equivalents. In the face of ominous illness some patients react with fear which they often openly express if the physician gives them the opportunity. Some have difficulty expressing their fears because they think it is wrong or childish to do so; others are concerned that an inner dread will be confirmed if articulated. In still others, anxiety is manifested by demands for repeated examinations, frequent visits to the physician, and requests for extensive advice concerning each symptom. It is not surprising to find depression ensuing when there is increasing debility, discomfort, and pain, and when the projected outcome for survival appears hopeless. However, depression is also a significant factor in early phases of treatment when important adaptive patterns have been felt to be lost beyond retrieval. Therefore, it may be expected that a young or middle-aged woman whose self-esteem has depended to a large extent on her sense of femininity, her sensuality, and her feminine profile will suffer a great sense of loss and a serious depression following radical mastectomy.

Further examples of disrupted adaptive mechanisms might include, for instance, certain individuals with obsessive-compulsive personality traits. These individuals often place high value on punctuality, neatness, and cleanliness. They have a love of order and ritual. These adaptive mechanisms can suffer serious assault in the soiling and disorder of a malfunctioning colostomy, producing marked anxiety reactions. Furthermore, during periods of active treatment compulsive individuals may become severely dejected or greatly concerned when treatment schedules interrupt their daily routine, or when pharmacologic side effects produce unpleasant symptoms which lessen their sense of well-being. It is not unusual for these personalities to develop elaborate ritualistic behavior before, during, and after a particular set of treatments or regimen of drug intake. They sometimes harass the physician for repetitive and overdetailed expositions of medical procedure.

A common adaptive pattern is found among many individuals for whom the need to be strong, to be independent, and to care for others comprises a prominent value system. Cancer in any of its many forms with the ensuing fatigue and debility often produces a sense of worthlessness among such patients who find their life roles reversed as they become more dependent on others.

Physician-patient relationship

The treatment of the cancer patient is at best no easy matter. Even in situations in which the patient is properly dependent, understanding, and eager to be a "good patient" in the desire to mobilize and encourage the powerful professional figure in his defense against disease, treatment can be a draining and frustrating experience for the physician. With the patient who is frightened, apprehensive, or depressed, who manifests an obsessive clinging dependence, who presses for persistent reassurance, who expects magical cures, or who directs rage or resentment concerning his misfortune to the physician, the emotional drain can be exhausting. It, therefore, behooves the physician to listen with the "third ear," so to speak, in an attempt to learn what the patient is really trying to say by his disguised verbal productions. Psychologic responses to having a tumor or a cancerous condition, speculations or convictions concerning the cause of illness, and projected or actual interruptions of important patterns of adaptation brought about by the disease or by the treatment for that disease are only three of some half dozen reaction states to cancer which have been thus far isolated. They do influence the patient's emotional state before, during, and after treatment.

They can and do contribute to unrealistic fears, depression, hypochondriasis, excessive pain, anxiety states, and loss of self-esteem, resulting at times in marked psychologic crippling in the face of cure or extended remissions of the cancer itself. The astute physician can be aware that certain body parts and organ systems and certain physiologic functions may have special meaning to the patient and that these meanings are not difficult to uncover. Allowing the patient to speak about these inner issues can be therapeutic in itself. Furthermore, understanding what the patient feels about his disease and responding to rectify misconceptions increase the individual's ability to cope with his illness.

The important issue of what the cancer patient should be told has not been raised here since it comprises a topic within itself, one about which debate and controversy continue unabated. In a broad sense, patients generally wish to know more about their disease than the physician thinks they do.

In general, patients want things spelled out to a far greater extent than is generally appreciated. This is not to say that the use of highly charged words such as "cancer" is in order, nor is it to say that patients want academic speculations which lead to an eventual prognosis of death.

The ultimate immediate need of the patient with cancer is the sense that the physician is competent in his profession, that he is committed to the total utilization of his skills in the patient's defense, and that he has a keen awareness for the personal painful experience which the patient is undergoing.

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In Stroke*

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In this discussion of patients' emotional reactions to stroke I will look at some of the particular characteristics of these reactions which differ from the emotional reactions displayed by patients with other physical illnesses. This discussion will involve some consideration of the stroke patient's personality disturbances prior to the stroke, some comments about differential diagnosis, and some suggestions for treatment.

By way of introduction, we should note that until recently emotional reactions to physical illnesses generally were neglected topics. In fact, ten years ago, Bartemeier[1] remarked that "they may be described as the silent areas in medical practice." This neglect can be attributed in part to psychiatry's preoccupation with the causes and treatment of the neurotic disorders. Another reason for this neglect was psychosomatic medicine's overinvolvement with psychologic disorders as antecedents of physical illnesses, with a resulting disregard for the emotional consequences of physical illnesses. We can only conjecture about general medicine's lack of concern for these reactions, which occur so commonly, but I fear that therapeutic pessimism was responsible.

Disturbances prior to stroke

The stroke patient's reactions can differ from other patients' emotional reactions to physical illnesses because cerebrovascular disease may have preceded the stroke, and even greater brain damage may follow. Prior to the stroke many of these patients display affective and intellectual disturbances which cover the range of neurotic syndromes. About a century ago Jackson[2] pointed out that symptoms of brain damage reflect both the loss of higher cortical functions, particularly the symbolic, and the retention of automatic and emotional reactivity. In this century Goldstein[3] has emphasized that impairment of the abstract attitude is the most characteristic feature of brain damage. With a loss of the abstract attitude, the patient becomes more stimulus-bound, he has difficulties with attention and judgment and tends to react to stress in patterned ways. Irritability, lack of stamina, the inability to withstand stress at home or at work, emotional lability evidenced by sudden tears or jocularity, and increased anxiety or depressive moodiness are the early expressions of this condition. Such symptoms cannot be regarded solely as disturbing phenomena. As Goldstein[3] states, they "represent attempts of the personality to come to terms with the world." He emphasized that emotional phenomena are seen frequently in patients whose capacity for abstraction is impaired because these patients have difficulty organizing their world and, therefore, attempt to relate to it emotionally. Thus, emotional symptoms must be regarded as a form of communication which can be understood, not in isolation, but only in a context which encompasses the total personality and the patient's external reality.

Emotional symptoms, in the reasonably active person, may be dismissed solely as the usual manifestations of the climacteric or the aging process rather than seen as indicators of early cerebrovascular disease. Or they may be compounded by noticeable behavioral disorders such as alco-

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holism or sexual acting-out which then become the focus of concern for the family and the physician, so that possible cerebrovascular disease is not given sufficient consideration. We should be especially alert to dramatic mood swings, particularly those occurring in men for the first time in their fifties. Hypomanic episodes, which are partially camouflaged as flurries of business activity or social overinvolvement, may be difficult to perceive as abnormalities, but often they represent attempts to compensate for the early disabilities of cerebrovascular disease preceding stroke. Affective disorders, such as depression or hypomania, are frequently the earliest symptoms of arteriosclerotic brain disease, occurring when there is little demonstrable evidence of intellectual impairment in routine situations and when insight is relatively intact.

In his discussion of "Psychiatric Symptoms and the Neurologist," Macrae[4] cautions us about the dangers of labeling certain symptoms as psychiatric when, in reality, they are pseudopsychiatric symptoms resulting from cerebral dysfunctions. The loss of function of certain neuronal mechanisms, evidenced, for example, by transient blindness, agnosia for objects and persons, or apraxia, should be regarded as signs of organic brain disease until proved otherwise, particularly, when these symptoms appear in a person in midlife who also displays affective distress. Macrae[4] also mentions that some discharging cortical states produce paresthesias, compulsive events, déjà vu phenomena, or brief amnesic episodes which may be considered as hysterical, particularly when they appear as isolated symptoms.

Accompanying disturbances

An unusual case history of a couple illustrates that the emotional reactions accompanying cerebrovascular disease and stroke reflect the patient's basic personality characteristics and the quality of his interpersonal relationships. It also portrays some of the difficulties with differential diagnosis and treatment.

A few years ago, the neurology service asked for psychiatric consultation on a sixty-year-old man who had a stroke about a week earlier. They requested psychiatric assistance because he exuded a clinging dependency toward his wife and the entire staff. He would not participate in the rehabilitation program. He would lie passively in bed demanding attention, resisting efforts to have him get up or move about in his wheelchair. His past medical and personal history was relatively uneventful although when he was admitted to the hospital, his wife stated that he had been overworking and that he had been tired, irritable, and depressed for about a year. He had hemiparesis on the right side.

On the first day after admission, he showed the mental symptoms typical of the acute brain syndrome seen transiently in most stroke patients. He was bewildered, somewhat confused, apathetic, and dejected. The duration and severity of these disturbances of mentation have been found to be fairly accurate clinical guides for prognosis. Simple neuropsychologic testing one week after the stroke can furnish predictive information about a patient's ability to recover.[5]

This patient's wife was appropriately concerned with obtaining treatment for him. During the next few days he had a slow, partial recovery of function, but he made no effort to help himself. He insisted that his wife stay with him constantly and that she, rather than the nurse, should do everything for him. After a few days his wife looked tired and distressed.

The sense of powerlessness which followed the clearing of his acute brain syndrome is one of the cardinal features of the emotional reactions to stroke. The powerlessness, of course, is epitomized by the loss of function in the affected part, but the patient's fantasies about powerlessness are usually generalized so that he views himself as a completely, not partially, disabled person. The sense of powerlessness is compounded by fantasies that other parts and functions of the body will be similarly crippled, by knowledge of his disability and his mortality, and by fears that death is near. Too often such patients visualize themselves as permanently ineffective persons.

The fantasies, beliefs, and even convictions, that a patient has about his illness, as Bartemeier[1] has observed, are seldom brought to light, although they usually exert an adverse influence on management and treatment. Our psychotherapeutic efforts with the stroke patient early in the course of his illness are directed mainly toward uncovering the fantasies about the stroke and the sense of powerlessness which may compound both the physical and the emotional impairment. Often the fantasies are distorted and grim, more sinister than the reality of the illness. Very often the sense of powerlessness is indicative not only of the patient's preexisting dependency, but also, of his fears that increasing activity will bring on another stroke.

The history obtained from both this patient and his wife disclosed that they had been unusually dependent on each other, particularly since the death of their only child in an accident about ten years before. Therefore, in addition to reassuring and supporting the patient, we urged him to allow the personnel to substitute for his wife in providing care for him. During the next few days, he began to take part in his treatment program but did so slowly. We suspected that he was becoming depressed.

A day or two later, we received an urgent call from the neurology resident asking us to see the patient's fifty-seven-year-old wife who had been admitted to the hospital with complaints of numbness and weakness of the right lower extremity and the diagnosis of a possible stroke. We gathered a much more detailed history from her about their mutual dependency. His stroke was a severe, acute stress for her.

She was deprived of emotional support and now fantasied that she would be ill, helpless, alone, and without attention. When I saw her on rounds she was moving about the ward awkwardly in a wheelchair. Her right leg was extended so prominently that one had difficulty seeing the person behind the protruding extremity. She was smiling inappropriately and appeared relieved and satisfied. We suspected that she had had a conversion reaction.

On our consultation service at the University of Florida, we teach our psychiatric residents that they should not make the diagnosis of conversion reaction in any patient without the following criteria: (1) a complete neurologic evaluation which rules out a neurologic disorder possibly causing the symptom; (2) a history of a previous conversion reaction, especially in any patient over the age of twenty; (3) substantial evidence of an acute stressful situation; (4) a history of identification with a family member, friend, or colleague who has had an illness which serves as a prototype; (5) a preexisting personality disorder; (6) a demonstrable disorder of the affect; this covers the spectrum from apathy, some degree of inappropriateness, or displaced concern, to classical "la belle indifference"; (7) elements of secondary gain which are usually centered on increased dependency on the family or social agencies, manipulation of family members, and/or financial compensation; and (8) a case formulation which portrays the symbolic nature of the symptom and reveals that it embodies both a defense against and a partial expression of a basic drive.

We were able to establish most of these criteria for the diagnosis of conversion reaction on this woman, but we insisted on repeated neurologic evaluations because we could get no history of a previous episode of conversion and because of her relatively advanced age for a first conversion reaction. But a general supportive program designed to meet some of her dependency needs and desire for attention, along with physical therapy, produced rapid improvement in her condition.

The husband's depression persisted. We prescribed antidepressant medications and followed both of them in the outpatient clinic for about six months. On these visits to the clinic we openly discussed the previous stresses at work, their social isolation, and their mutual dependency. We encouraged them to make a number of major adjustments which were designed to reduce stress, increase their socialization, and transfer some of their dependency. Accordingly, they sold their business, bought a mobile home, and moved to a retirement and recreational area near the medical center. When we last heard about them, they were doing reasonably well.

Psychobiologic reactions

The emotional reactions to stroke encompass the patient's basic personality characteristics, the personality disturbances accompanying cerebrovascular disease prior to the stroke, and the mental symptoms resulting from both the added brain damage and the physical disability.

Anxiety. In addition to the symptoms accompanying cerebrovascular disease prior to the stroke, such as the personality changes which I mentioned, many of these patients suffer from a painful anxiety. Anxiety, of course, is one of the two basic psychobiologic reactions to danger, internal or external, and is indicative of a sense of helplessness. This painful anxiety is associated with an awareness of diminishing mental functions. Awareness of mental impairment and distressing anxiety are mutually reinforcing, precipitating even greater fear and anxiety which may become the patient's predominant mode of communication with others before the stroke. And with the stroke, greater intellectual difficulties and even confusion, are abruptly superimposed. But these added intellectual impairments are not accompanied by diminished emotional reactivity. Instead, they serve as releasers, allowing the patient's anguish to emerge in a naked, often terrifying form.

Depression. The second basic psychobiologic reaction, depression is generally seen more often in those patients who have less intellectual impairment. Depression may have preceded the stroke and may be carried over in a relatively unchanged form afterward. Or, it may be a clearcut reaction to the illness and the disability. As a reaction to the illness, depression may include the affects of sorrow, helplessness, and/or hopelessness, which are seen clinically as grief, the clinging dependency of the patient I discussed, or a more sinister loss of hope—a giving up.

Anxiety and depression, singly or in admixtures, are the predominant emotional syndromes which persist. But they are difficult to evaluate clinically for two reasons. First, the symptoms of anxiety, and particularly depression, may be indistinguishably intertwined with symptoms of organic brain damage resulting from the cerebrovascular disease. There is always danger, therefore, that emotional symptoms may be attributed solely to brain damage and that treatment will be limited. The second complicating factor is the changed family attitudes and interactions which affect interpersonal relationships, often adversely. In these situations, regression, dependency, manipulation, hypochondriasis, and elements of secondary gain combine to produce greater interpersonal problems and more mental and physical symptoms.

Treatment

Great strides in the rehabilitation of stroke patients have been made in the last decade, but I think that many of these patients also require comprehensive therapy that includes active treatment of the emotional and interpersonal sequelae of the stroke. We and others have observed that few stroke patients are referred for psychiatric consultation.[6,7] This may reflect an unwarranted degree of therapeutic pessimism. I am not advocating referral for ongoing psychotherapy, but psychiatric consultation can provide assistance, particularly when the consultant outlines a comprehensive treatment program. Such a program includes bringing to light the patient's fantasies about his stroke, clarifying the degree of his disability, utilizing environmental supports to compensate for diminished intellectual functions such as memory difficulties, prescribing specific psychotropic medications, and working with the family, as well as continued physical rehabilitation and regular examinations by his personal physician.

The treatment of anxiety and depression in stroke patients is much more complicated than in other patients because the emotional reactions, anxiety or depression, may be the patient's prevailing mode of communication and because of the presence of brain damage. Most of these patients require supportive therapy which involves (1) special attention to all bodily complaints, even the more common ones such as constipation, and particularly those related to perceptual acuity; (2) a structured, usually simplified environment with which the patient can become familiar; (3) a realistic appraisal of his medical status so that he does not exceed his physical capabilities; and (4) a physician-patient relationship characterized by flexibility and rapport.

In treating the stroke patient with severe anxiety we are often handicapped because he cannot employ his intellectual defenses and obtain greater knowledge. The use of intellectual defenses and the obtaining of clarification and insight through increased knowledge about threats and dangers are fundamental psychotherapeutic measures which reduce anxiety. But in working with these stroke patients, the physician is compelled to rely on environmental supports and antianxiety medications, since the patient's intellectual capabilities are limited by the brain damage.

A reasonable number of stroke patients benefit from vigorous treatment with specific antianxiety or antidepressant medications or combinations thereof. We know that the side-effects or even adverse reactions, such as hypotension, may be particularly troublesome in these patients because of their age and cardiovascular disease. However, giving test doses can diminish the likelihood of serious adverse reactions. A trial and error approach may be necessary to select the most effective medication, but we have found that these patients may need larger doses of a given medication than are conventionally prescribed. Physicians often switch too quickly from one drug to another without giving the patient an ample trial with stepwise increases of a specific drug.

Last, I would like to emphasize the critical importance of open discussions with the family. Often they are burdened by fears, guilt, and resentment toward the stroke patient and his illness. Their ambivalent attitudes may result in thinly disguised hostility and passivity toward him, rather than the constructive, active approaches which encourage rehabilitation and promote recovery. Sessions with the family and the patient can be particularly helpful in clarifying distortions about the illness, thus benefiting those who suffer from the emotional reactions to strokes.

Summary

The emotional reactions to stroke encompass the patient's basic personality characteristics, the personality disturbances accompanying cerebrovascular disease prior to the stroke, and the mental symptoms resulting from both the added brain damage and the physical disability. Thus, the stroke patient's reactions can differ from other patients' reactions to physical illnesses. Stroke patients' emotional symptoms cannot be regarded solely as disturbing phenomena; they should also be conceptualized as a form of communication which can be understood in a context which includes the patient's personality and his external reality. Both the diagnosis and treatment of basic syndromes of anxiety and depression in stroke patients are complicated by brain damage and interpersonal sequelae. This discussion presents some of the problems with differential diagnosis, including pseudopsychiatric symptoms, and offers suggestions for treatment of the emotional reactions to stroke.

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Electrocardiograms of the Month

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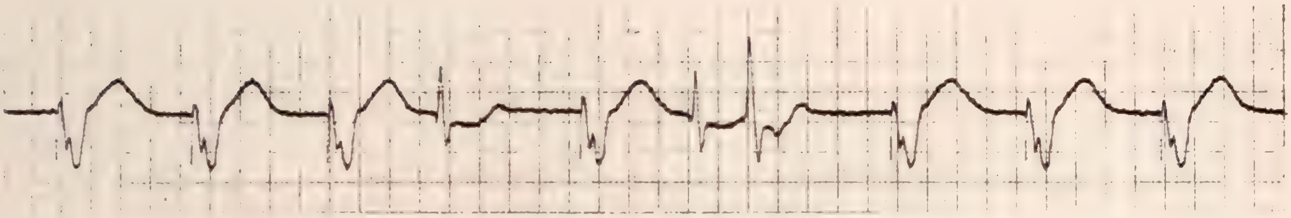
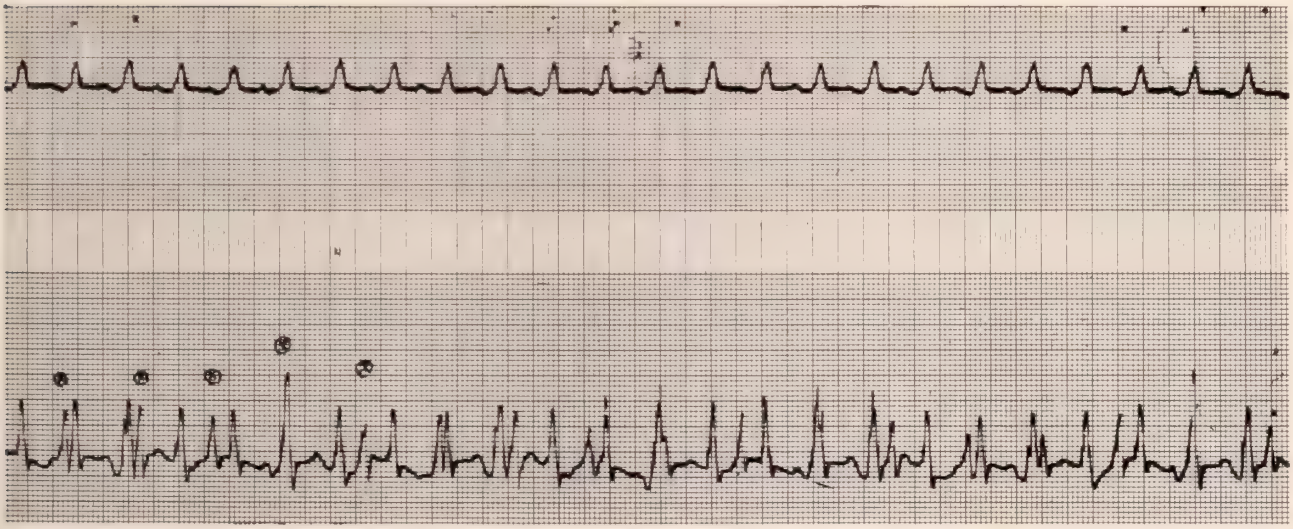


QUESTION 119. Continuous lead II. What is the interpretation?



QUESTION 120. The two strips were taken simultaneously. Lead II is on the top, and an intra-atrial lead is on the bottom. What is the rhythm?

ELUCIDATION

Question 119. A pacemaker spike is visible preceding beats 1, 2, 3, 5, 8, 9, and 10. Beats 4, 6, and 7 are early and have no pacer spike. These beats are premature, probably of atrioventricular junctional origin; beat 7 is followed by a retrograde P wave. The patient has a ventricular demand pacemaker which ceases function with premature beats. The pacemaker is functioning properly.

Question 120. In lead II the QRS complexes are regular and rapid at a rate of 145 beats per minute. The QRS interval is 0.11 second. By measuring downward from the QRS complexes in lead II the QRS complexes in the atrial lead can be identified. Superimposed on them are complexes of similar amplitude and configuration. These are P waves at a rate of 100 per minute. The rhythm is either ventricular tachycardia or junctional tachycardia with aberrantly conducted ventricular beats. There is no retrograde conduction. Intra-atrial leads are useful in evaluating cardiac arrhythmias when atrial activity cannot be clearly identified from standard leads. The P waves can be enlarged over ten times. The P waves are marked X in the lower strip.

Clinical Anesthesia Conference

A series of conferences on medical emergencies in the operating and recovery rooms including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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Preoperative Withdrawal Symptoms with Methadone Maintenance

The number of addicts on methadone maintenance who present themselves for surgery and anesthesia has increased in recent years. Severe withdrawal symptoms may be produced if this medication is discontinued and replaced with inadequate preoperative narcotic medication.

Case report

A nineteen-year-old male heroin addict maintained on daily 100 mg. of methadone oral medication was scheduled for excision of a ganglion of the right wrist. History and physical examination were within normal limits. He had taken the last dose of methadone before admission to the hospital twenty-four hours before the scheduled surgery. The patient received orally 100 mg. of secobarbital at 10:00 P.M. and 50 mg. meperidine, 50 mg. of hydroxyzine hydrochloride (Vistaril), and 0.4 mg. atropine intramuscularly at 10:00 A.M. the following morning. On arrival in the operating room thirty minutes later, the patient complained that he was unable to sleep the previous night, manifested extreme apprehension, shaking, and a temperature of 101°F. No evidence of infection was found to explain the fever, and surgery was cancelled. After the intramuscular injection of 100 mg. of methadone, all signs and symptoms subsided.

Comment

The pharmacologic actions of methadone are qualitatively identical to those of morphine. Its absorption from the gastrointestinal tract, long duration of action, and somewhat less hypnotic effect makes this a suitable substitute for rehabilitation and for prevention of withdrawal in heroin-addicted individuals.[1] It has been stated that withdrawal symptoms do not appear for seventy-two to ninety-six hours after the last oral dose of methadone in subjects physically dependent on methadone.[2] This case illustrates that withdrawal symptoms may start as early as twenty-four hours after the last oral dose. The preoperative medication of 50 mg. of meperidine is only equipotent to approximately 5 mg. of methadone and was insufficient to protect the patient from withdrawal symptoms. To prevent withdrawal reactions, preparation of such individuals for anesthesia should include the maintenance of methadone administered intramuscularly. Since addicted subjects develop tolerance to the respiratory depressant effects of narcotic analgesics, postoperative ventilatory problems are unlikely to occur.

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Number two hundred ten in a series of Clinical Anesthesia Conferences

Presented and discussed at a conference held at Montefiore Hospital and Medical Center, The Bronx, April 24, 1972. Clinical Anesthesia Conferences are held on the fourth Monday of each month.

Case Reports

Ultrasonic Therapy for Chronic Acromioclavicular Separation with Calcific Deposits

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Acromioclavicular separation with calcification of ligaments may result in shoulder pain and dysfunction. This report describes a patient with the disorder who was treated solely with ultrasound.

The first degree of acromioclavicular injury occurs as a spasm with no displacement and is reportedly the most common. The second degree manifests "visible and palpable upward displacement of the clavicle in relation to the acromion."[1] The ligamentous structures remain intact. The third degree of acromioclavicular injury is a complete dislocation with rupture of ligaments. The treatment of acromioclavicular injuries with or without calcification has been reviewed in recent surgical literature.[1–5] The nonsurgical therapy was reviewed, but no mention was noted of the use of ultrasound to relieve the sequelae of chronic acromioclavicular separation.[6–21]

Case report

The patient, a fifty-six-year-old white male, six years previously had sustained an injury to the right shoulder resulting in a second-degree acromioclavicular separation (Fig. 1). Subsequently, pain increased and was accompanied by decreased range of motion to the right shoulder. To avoid surgery, if possible, he was referred to the rehabilitation medicine department for evaluation and therapy.

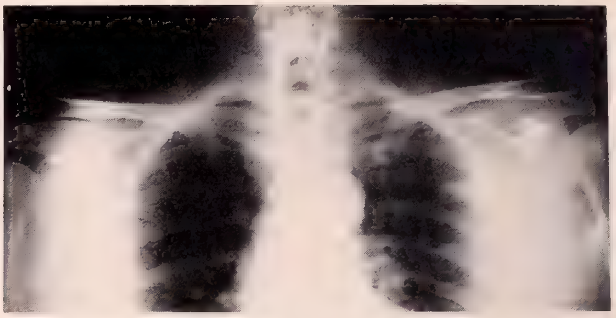

FIGURE 1. Roentgenogram of shoulder taken after original injury in 1964, six years prior to treatment. Note acromioclavicular separation and absence of calcification in ligaments.

Physical examination revealed a 1½-cm. deformity of the right acromioclavicular joint. Range of motion was 0 to 90 degrees of flexion and abduction (Fig. 2A). X-ray examination confirmed the presence of a distinct acromioclavicular separation with calcification of the trapezoid and deltoid ligaments (Fig. 2B).

Ultrasound was administered directly to the acromioclavicular joint in doses of 1.5 watts per square centimeter for seven minutes. This was continued daily for six weeks after which time roentgenograms were taken. Radiologically there was no change; however, complete remission of pain had been noted after 20 treatments, two weeks prior to recheck. Passive range of motion was almost 180 degrees at this time. An additional six weeks of daily therapy was ordered.

On reexamination a 1-cm. decrease in the discrepancy of the acromioclavicular joint was seen clinically. Active range of motion was full and painless (Fig. 3). At that time ultrasound was discontinued, and the patient was placed on a program of strengthening exercises.

Comment

Ultrasound is defined as a form of acoustic vibration occurring at frequencies too high to be perceived by the human ear.[22] Commercial ultrasonic frequencies currently available range from 0.8 to 1 megacycle. This can be administered to the patient at a dosage ranging from 0 to 2.5 watts per square centimeter. The patient will not feel heat during the administration of therapy from

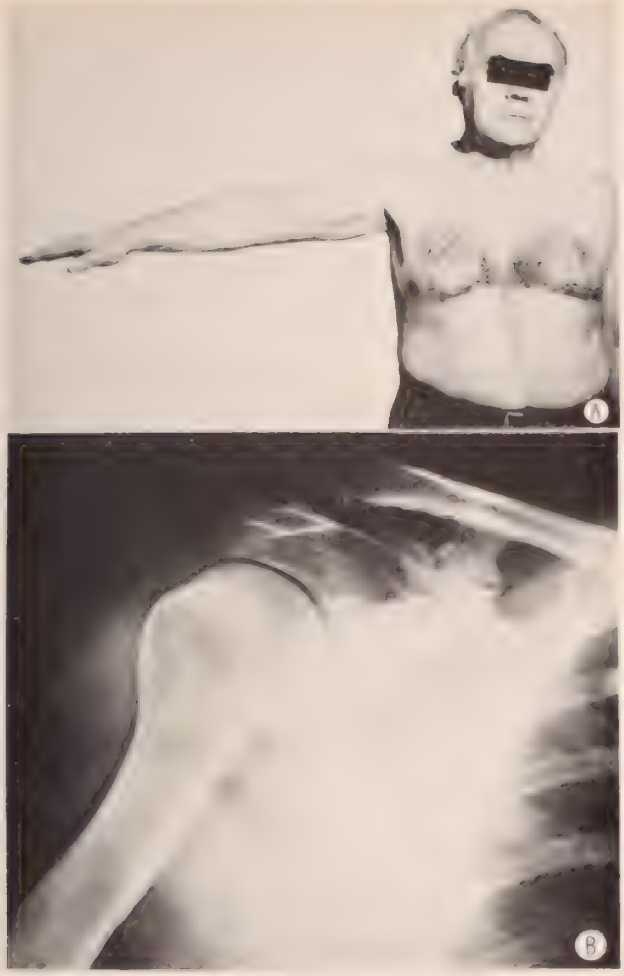
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FIGURE 2. (A) Photograph showing range of motion of shoulder limited to 90 degrees prior to therapy. (B) Roentgenogram of shoulder showing separation of acromioclavicular joints and calcification of deltoid and trapezoid ligaments.

the machine head, but may feel warmth within the tissues. If pain is elicited at any time during therapy, treatment should be discontinued immediately.

Ultrasound represents the only form of heat which can penetrate the deep joints of the body. It is a form of conversion heating in that the sound wave once entering the body is translated into heat. At body-tissue interfaces ultrasonic energy is partially reflected; however, sufficient amounts are able to reach the deepest tissues creating significant temperature rises even at depths of 10 to 15 cm.

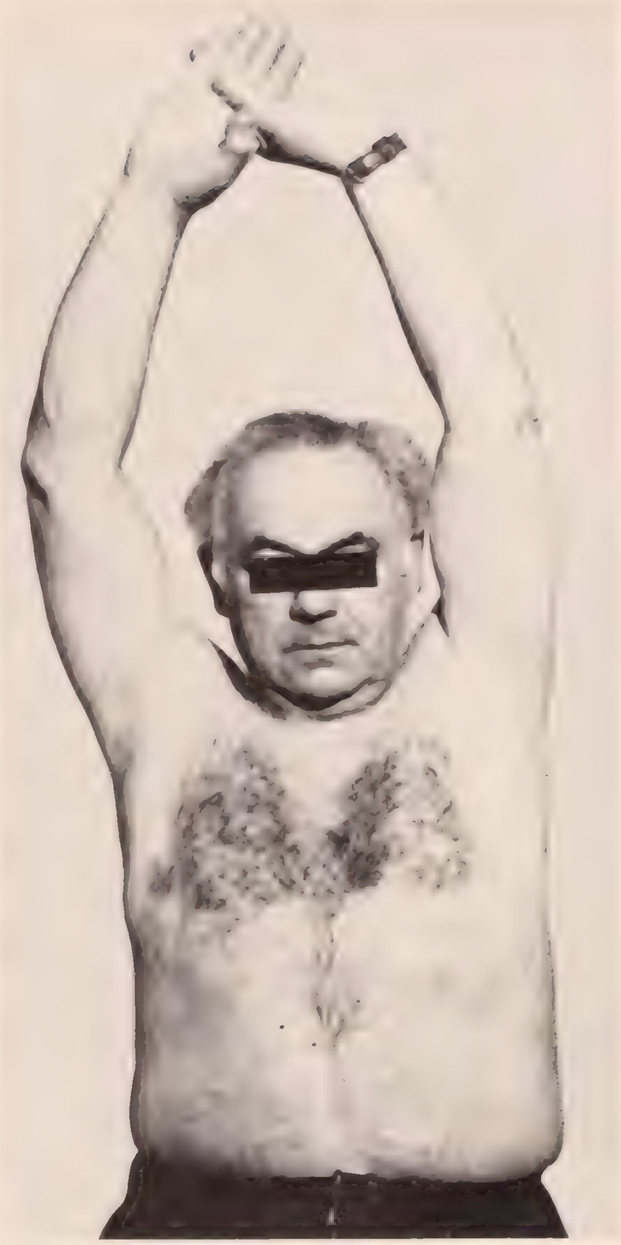
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FIGURE 3. Photograph showing full range of motion of shoulder after completion of therapy.

Ultrasound is indicated where deep heating is necessary. It is especially effective in the treatment of joints and periarticular structures such as ligaments and tendons. Ultrasound has the property of increasing the extensibility of contracted periarticular tissues.[23] Since it has been demonstrated in laboratory studies that ultrasound is capable of decalcifying bone,[24] it has a clinical application in the treatment of calcified tendons, ligaments, and bursae. It is indicated for the relief of pain such as that associated with muscle spasm, particularly in paraspinal muscles and muscles surrounding deep joints. It has been successfully and painlessly used to treat plantar warts and verruca vulgaris. The author successfully removed 22 warts from a patient's fingers, 2 of which were subungual.

Ultrasound therapy has been suggested for many years as being effective in the treatment of reflex sympathetic dystrophy.[23,25] It has also been suggested as the only physical medicine modality which will effectively cause sympathetic blockade.[25]

The contraindications of ultrasound therapy are essentially the same as those for any heat modality; that is, it is contraindicated in the presence of ischemic vascular disease when applied directly to the ischemic area. Ultrasound should not be applied in the area of the uterus of a pregnant woman, although it may safely be applied to any other area of the body. Ultrasound should not be applied directly over the spine or to the eyes. Prolonged use of ultrasound without movement of the sound head may cause cavitation due to the physiochemical effects of ultrasound within the tissues. Ultrasound should definitely not be used in areas where malignant conditions are present, since it may cause acceleration of tumor growth, dissemination of tumor tissue, or hemorrhage in tumor patients.[22]

Ultrasound may be effective in reducing the discomfort and dysfunction which result from chronic acromioclavicular separation. The patient reported was treated with ultrasound to the acromioclavicular joint without other physical modalities to demonstrate that ultrasound was responsible for the relief of pain and dysfunction. Twenty treatments were required to obtain symptomatic relief. The results suggest careful evaluation to be done before rejecting ultrasound as a therapeutic modality.

Summary

A patient with a long-standing acromioclavicular separation with calcification of the trapezoid and deltoid ligaments is presented. Complete remission of pain and return of all function resulted from a prolonged intensive program of ultrasound therapy. Ultrasound at 1.5 to 2 watts per square centimeter administered daily for three to five weeks may be recommended for similar patients.

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Granular-Cell Myoblastoma in Parotid Gland

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Granular-cell myoblastoma, a tumor of distinctive microscopic appearance but uncertain histogenesis, occurs more commonly in the head and neck than in locations below the clavicles. Primarily a tumor of soft tissue, it may develop in parenchymatous organs, and it has been reported in such uncommon sites as the bile duct, bronchus, and urinary bladder. To date, its occurrence in a salivary gland has not been reported, and an example situated within the substance of the parotid gland merits a brief recording.

Case report

A thirty-six-year-old Negro male heroin addict was admitted to the head and neck service of Beth Israel Hospital, with a firm, discrete, slightly movable, nontender mass in the area of the left parotid gland. It was first noted by the patient about five months prior to admission. There was no facial nerve palsy.

Under general anesthesia a preauricular "hockey stick" skin incision was made and a 2.5 by 2 by 2 cm. round, firm, well-delineated mass was removed from the anterior aspect of the parotid gland. The mass was easily dissected free from the overlying subcutaneous tissue and from its bed within the parotid gland. It was not adherent to the masseter muscle nor to the facial nerve. Histologically the tumor did not invade salivary tissue. His postoperative period was uncomplicated.

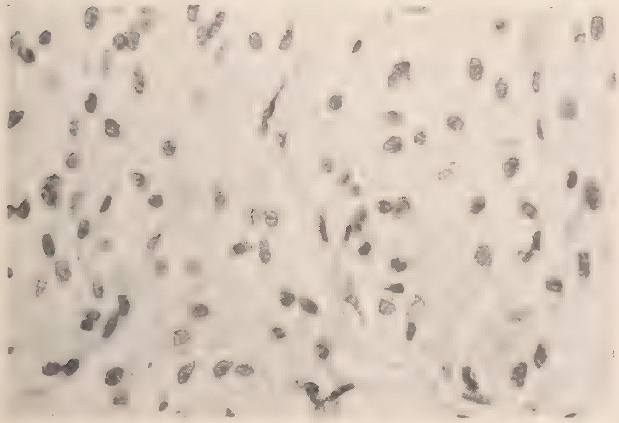
FIGURE 1. High-power view of tumor showing polyhedral cells with well-defined cell interfaces, small centrally placed nuclei, and the typical granular cytoplasm of a granular-cell myoblastoma (hematoxylin and eosin stain).

The cut surface of the mass revealed a whitish-yellow, glistening, homogeneous substance. Microscopic examination confirmed the diagnosis of granular-cell myoblastoma (Fig. 1).

Comment

The entity described by Abrikosoff in 1926 was considered a neoplasm derived from muscle cells, myoblasts. The term "myoblastic myoma" was shortened to myoblastoma. The frequent proximity of the lesion to normal muscle and the observation of a syncytium of cells containing longitudinal and cross striations with transition areas from muscle cells to cells with small deeply basophilic nuclei and eosinophilic granules in the cytoplasm, which is characteristic of granular-cell myoblastoma, support the thesis of myoblastic origin.[1,2]

Since that time, however, several conflicting theories of origin have been proposed. Based on histologic and electron microscopic criteria, as well as histochemical studies and experimental procedures, many different cell types have been implicated as the source of this neoplasm. Other investigators have denied neoplasm altogether, favoring a storage disease or the end product of trauma and regeneration. A recent review by Strong, McDivitt, and Brasfield[3] summarizes these theories. The consensus among morbid anatomists is that the neural theory of origin seems the best substantiated, although not conclusively proved.

Granular-cell myoblastomas have been reported most often in the tongue, skin, and subcutaneous tissues. But these tumors have been found in all regions of the body including middle and external ear, breast, larynx, esophagus, tracheobronchial tree, gastrointestinal tract, cystic and common bile cuts, urinary bladder, and female reproductive tract.[3] Our case is unique in that it involved a salivary gland.

The treatment of choice is local excision. Cancer in granular-cell myoblastoma has been occasionally reported with rare documented cases of metastatic spread.[4] Local recurrence, not to be construed as evidence of a malignant condition, is rare but more common than true cancer; adequate initial resection is the indicated therapy.

We report the presence of this uncommon lesion within the substance of the parotid gland.

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Bigeminy and Heroin Intoxication

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Cardiac arrhythmias have recently been noted in a significant number of patients with acute heroin intoxication. Although rapid atrial fibrillation with a slow ventricular response has been noted,[1] ventricular arrhythmias to date have not been recorded. The case reported here demonstrates the occurrence of this arrhythmia and emphasizes the role of hypoxia in the genesis and termination of the arrhythmia.

Case report

A seventeen-year-old, single, Puerto Rican girl, was brought to Lincoln Hospital by police, because she appeared unresponsive. A friend stated that the patient had suddenly become unconscious after injecting heroin intravenously. On physical examination she had a blood pressure of 100/70, a slow shallow respiratory rate of 4 to 5 per minute, and was cyanotic.

She did not respond to verbal questioning. Her pupils were miotic. A recent puncture point on the right forearm was noted in addition to needle tracks on the arm. The lungs were clear to auscultation and percussion, and after an irregular heart rate was noted, the results of an electrocardiogram were obtained (Fig. 1A). There were no murmurs heard. After the electrocardiogram demonstrated classical bigeminy, the patient was stimulated by verbal commands and by gentle slaps across the face. She responded to this therapy, her respiratory rate increased to 18 per minute, the cyanosis disappeared, and she muttered some unintelligible words. A repeat electrocardiogram at this time, approximately three minutes after the patient was brought into the emergency room, demonstrated normal sinus rhythm of 100 (Fig. 1B).

Five minutes later, 10 mg. of nalorphine hydrochloride (Nalline) were given intravenously, and within twenty-five seconds the respiratory rate had again increased, mydriasis occurred, and the patient was mentally alert. An electrocardiogram taken after she responded showed unchanged results (Fig. 2A), as did one taken five hours later (Fig. 2B). Findings on roentgenogram of the chest were normal, as were the complete blood count, blood urea nitrogen, fasting blood sugar, electrolytes, serum glutamic oxaloacetic transaminase, serum glutamic pyruvic transaminase, lactic dehydrogenase, prothrombin time, bilirubin, alkaline phosphatase, VDRL test, urinalysis, and a repeat physical examination.

Comment

It was not until May, 1969, that the occurrence of cardiac arrhythmias with heroin intoxication was reported. Labi[1] demonstrated rapid atrial fibrillation with a slow ventricular response in 6 of 60 consecutive heroin intoxications at Lincoln Hospital. He made the observation that reversion to normal sinus rhythm occurred only after one and one-half to four hours after counteraction of the heroin with nalorphine, and he, therefore, felt that the action of nalorphine was mainly on the respiratory depression and without direct influence on the arrhythmia. He cited experimental evidence that heroin was metabolized to morphine and then caused respiratory depression, anoxia, and an increase in vagal tone.

Since we have noted that the reversal of bigeminy in our case occurred before treatment with nalorphine and virtually simultaneously with stimulation of respiration and disappearance of cyanosis, it seems likely that the mechanism proposed by Labi would pertain here. It should be pointed out that there are possible contributing and even alternative, although less likely, explanations for this observed phenomenon.

Surawicz and MacDonald[2] have demonstrated that fixed coupling occurred with a similar frequency among persons with and without heart

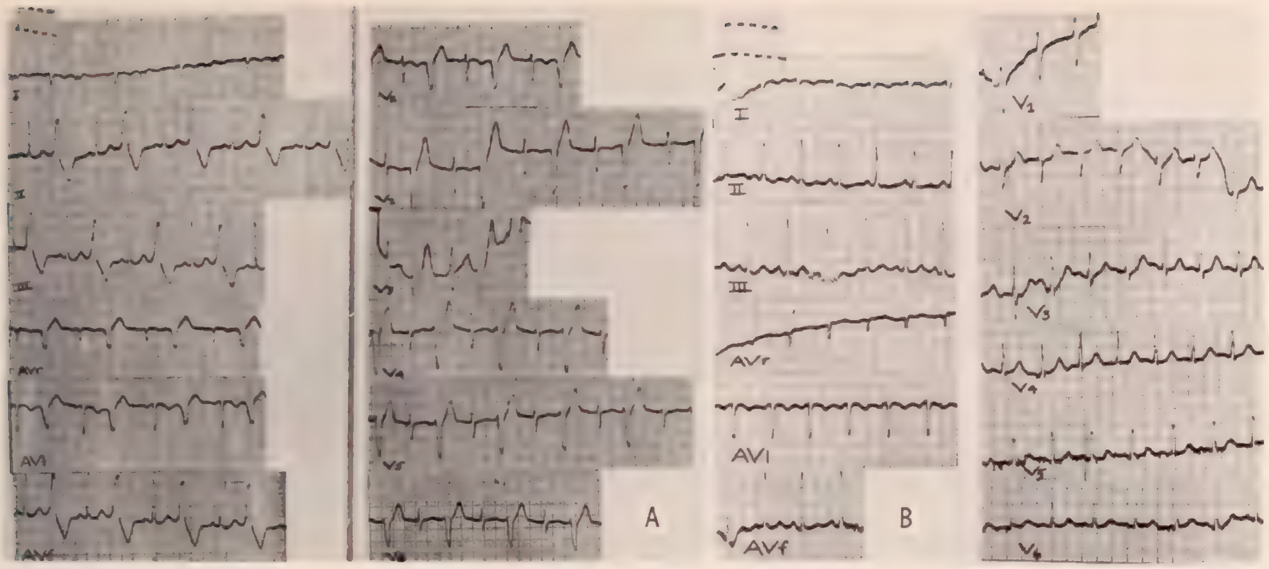

FIGURE 1. (A) Electrocardiogram of patient on arrival at hospital. Patient was cyanotic with respiratory rate of 4 to 5 per minute. Despite obvious reversal of arm leads, bigeminy is clearly seen. Pulse was irregular at 100 per minute. (B) Electrocardiogram of patient three minutes after arriving at hospital. Pulse was regular at 120 per minute, respiratory rate 18 per minute, and cyanosis had disappeared. Reversal of arm leads is same as in (A).

disease. Thus it is possible that the patient had no underlying heart disease but that she fell into this class of normal patients with fixed coupling in electrocardiographic results. However, since three progressive electrocardiograms after remission of the arrhythmia did not reveal even one premature ventricular beat, it seems untenable that the bigeminy was her regular rhythm.

Possible contaminants of the injected heroin are also to be considered as etiologic agents. It is known that heroin is usually prepared with quinine and that massive doses of quinine may lead

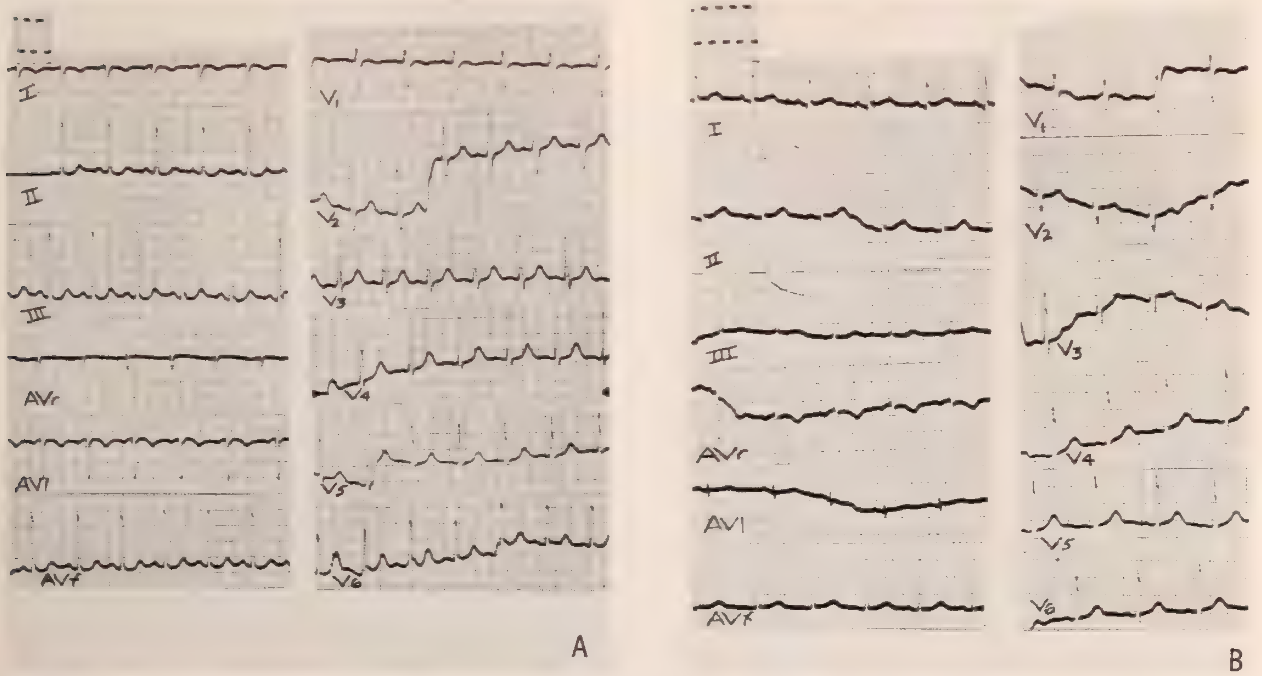

FIGURE 2. (A) Electrocardiogram taken after treatment with nalorphine (Nalline). Pulse, 100 per minute; respiratory rate, 20 per minute; and patient alert and oriented. Note inadvertent reversal of arm leads. (B) Electrocardiogram of patient taken with correct placement of leads five hours after treatment with nalorphine. Patient was alert and oriented; pulse, 80 per minute; respiratory rate, 18 per minute; with no cyanosis.

to respiratory depression, but it has been shown that the amount of quinine in confiscated samples cannot be considered a toxic dose.[3] The likelihood of either mannitol or lactose, which are often added to "cut" the heroin, causing this arrhythmia seems highly remote.

Digitalis in the presence of hypokalemia and heart disease is well known to be the primary cause of bigeminy. However, even if the heroin had inadvertently been mixed with digitalis, since there was no hypokalemia or heart disease in this patient, the likelihood of this causing the arrhythmia after one injection seems remote.

It is not uncommon for heroin to be mixed with amphetamines and the two drugs injected together. While it is known that amphetamines may produce ventricular arrhythmia, the presence of strongly miotic pupils (the pupils of a mixed injection are midpoint or dilated) and the presence of profound respiratory depression seem to argue against such a mechanism.

Even less likely mechanisms for the production of bigeminy in this patient are the histaminic effect of heroin and the contributory factor of hypothermia, which are both known to predispose one to ventricular arrhythmia. A temperature was not obtained in this patient until after her electrocardiogram results had returned to normal and she was ambulatory. It was normal at that time.

Summary

The first reported case of bigeminy in heroin intoxication occurred in a cyanotic, seventeen-year-old female. Conversion to normal sinus rhythm occurred before nalorphine hydrochloride (Nalline) was given after stimulation of respiration through verbal and physical means. There was no prior history of heart disease in the patient or her family, and all pertinent blood, urine, and radiographic examinations showed results within normal limits. Electrocardiographic results are reported in the patient shortly after she was brought into the hospital, before treatment with nalorphine, five minutes after treatment with nalorphine, and five hours after being seen in coma. Speculations about the mechanism of heroin-induced bigeminy are presented.

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Basilar Artery Thrombosis

Electrocardiogram simulating acute infarction

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That clinicians must remain alert to the possibility of acute infarction patterns resulting from intracranial disorders is emphasized in the following case report.

Case report

An eighty-one-year-old female died after a two-day admission characterized by deep coma and changing pupillary signs. She had been hypertensive ten years and had sustained a pulmonary infarction eight years prior to death.

The electrocardiogram displayed abnormal Q waves in leads II, III, and aVf and striking S-T elevations (5 mm.) in V_2 to V_6 (Fig. 1). The electrocardiogram was interpreted as follows: "Acute anterior infarction superimposed on old inferior infarction."

Autopsy showed a fresh basilar artery thrombosis with acute softening of the pons and hypothalamus. Although coronary sclerosis and calcification were present, no major branch showed significant (50 per cent) obstruction. Sectioning of the left ventricle showed no gross or microscopic evidence of recent or old infarction. The left ventricle averaged 1.8 cm. in thickness.

Comment

Clinical and experimental descriptions of cerebral disorder causing S-T elevations, widened upright or inverted T waves, and prolonged Q-T and prominent U waves have been published.[1-8] The closest to the present clinical report is the case of Levine[1] in which there was a ruptured aneurysm of the circle of Willis. The mechanism is unknown.

However, the ventricular tachycardia and ventricular premature contractions resulting from diencephalic and mesencephalic electrical stimulation in dogs are preventable with beta adrenergic blockade (propranalol). Since recent experimental and clinical observations have established a sympathetic nerve effect on repolarization, it is possible that the S-T and T-wave abnormalities as well as the dysrhythmias in patients with cerebral disorders result from altered (increased and

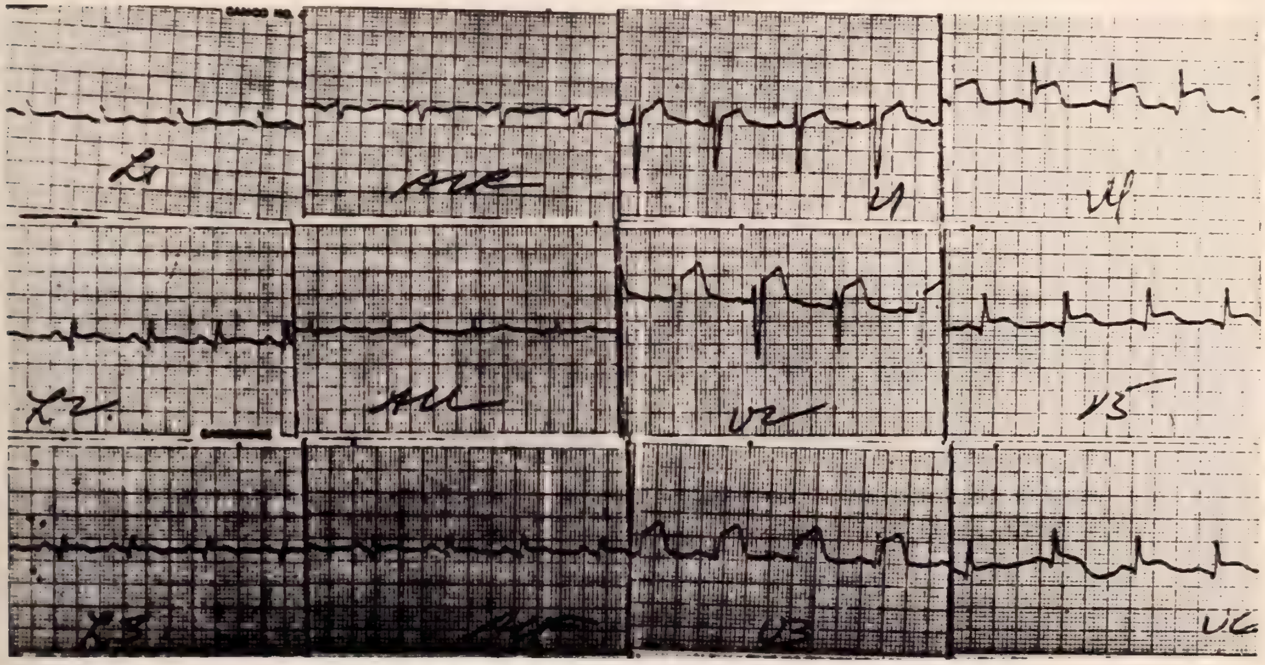

FIGURE 1. Electrocardiogram taken on admission.

asynchronous) sympathetic discharge from pontine and medullary centers.[9]

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Nutritional Megaloblastic Anemia in Vegan

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Veganism is the practice of eating only products of the plant kingdom to the exclusion of flesh, fish, fowl, eggs, honey, milk, and its derivatives; all food commodities derived wholly or in part from animals are avoided. By contrast, vegetarians, while abstaining from any meat, fowl, or fish, will eat dairy products.

Megaloblastic anemia due to dietary deficiency of vitamin B_{12} is known to occur in vegans who for economic,[1,2] social,[3] or religious[4] reasons do not ingest animal or dairy products. The present study reports the experience with a sixty-eight-year-old vegan who had maintained such dietary restrictions over a sixteen-year period and whose megaloblastic anemia was discovered during the course of a hospital admission for streptococcal pharyngitis, pneumonia, and acute glomerulonephritis.

Case report

On December 25, 1968, a sixty-eight-year-old white male was admitted to the Beekman-Downtown Hospital with fever and malaise of one month's duration. The patient had previously required no medical attention except for a hemorrhoidectomy twenty years earlier.

During the sixteen years before admission, he had adhered to a diet free of any meat or fish products, milk or dairy products, eggs, poultry, or salt. Breakfast typically consisted of raw fruits (citrus fruits, apples, grapes); his lunch, of carrots, lettuce, and potatoes; and his dinner, of nuts and citrus fruits. He believed that no one should eat any animal products, since he opposed the slaughter of the animals involved.

For the three weeks prior to admission he had had a mild cough productive of small amounts of whitish sputum, together with fever and malaise.

Physical examination on admission revealed an actuely ill white male, markedly dehydrated with a rectal temperature of 102.6°F.; his blood pressure was 140/80, his pulse was 80 and regular; and his respirations were 24 per minute. His pharynx was injected; examination of the lungs revealed a few rales at the right base. The heart was not remarkable; the liver and spleen were not enlarged. The neurologic examination was normal.

Laboratory studies included a normal urinalysis, a hemoglobin of 11.6 Gm. per 100 ml., a hematocrit of 34, and a white blood cell count of 10,700. The blood urea nitrogen was 34 mg. per 100 ml.; the fasting blood sugar 95 mg. per 100 ml.; the serum albumin 3.1 Gm.; and the globulin 2.3 Gm. per 100 ml. Sputum culture grew out beta hemolytic streptococcus, Lancefield group A. The sedimentation rate was 100 mm. per hour.

The electrocardiogram results were normal. The roentgenogram of the chest on admission revealed a normal cardiac contour and size, with infiltrates in the right middle and right lower lung fields and in the left lower lung field.

A diagnosis of streptococcal pharyngitis and pneumonia was made, and therapy with 60 million units of penicillin by intravenous drip infusion daily was begun. His temperature returned to normal after two weeks, but the blood urea nitrogen rose to 50 mg. and the patient developed progressive albuminuria, microscopic hematuria, and a low serum complement. Follow-up chest roentgenograms showed resolution of the pulmonary infiltrates but also demonstrated progressive cardiac enlargement, pleural effusion, and marked pulmonary congestive changes. A diagnosis of post-streptococcal acute glomerulonephritis was made, and after treatment with bed rest and digitalis, the patient gradually improved with the loss of 20 pounds of edema fluid. The blood urea nitrogen gradually decreased to below 25 mg. per 100 ml. with decrease in albuminuria and in microscopic hematuria.

Shortly after admission the hemoglobin decreased from 11.6 Gm. to 9.6 Gm., and a leukopenia of 4,000 white cells per cubic milliliter was noted. The peripheral blood smear showed macrocytes; bone marrow aspiration revealed an active marrow with megaloblastic changes and adequate iron stores. Gastric analysis indicated the presence of free hydrochloric acid; the gastrointestinal and small-bowel series were normal. A Schilling test showed normal absorption of cyanocobalamin without intrinsic factor (11 per cent urinary excretion after twenty-four hours). A serum vitamin B_{12} level, determined in two separate laboratories, was 46 and 45 micromicrograms (normal 100 to 900 micromicrograms per milliliter); the serum folic acid level was 1.5 millimicrograms per milliliter (normal 7.5 to 40 millimicrograms per milliliter).

The patient was treated with a low-sodium diet which included meat, fish, poultry, eggs, and dairy products. He accepted this diet when the basis of his nutritional anemia was explained to him, and he continued to maintain this dietary intake following discharge from the hospital. He was given vitamin B_{12} 100 micrograms daily by intramuscular injection, and a subsequent gradual increase in hemoglobin and a disappearance of macrocytes from his peripheral smear were observed. He was discharged in greatly improved condition on February 16, 1969, and he has been observed at biweekly intervals since that time. Laboratory evaluations on January 27, 1971, revealed the hemoglobin to be 14.5 Gm.; the hematocrit, 42; the white blood cell count 5,800; the blood urea nitrogen 29.9 micrograms; and the urinalysis within normal limits.

Comment

In the past two decades, the consequences of the vegan diet have been investigated in the United Kingdom,[5] as well as in the United States.[6] One of the interesting conclusions of these investigations is that vegans do not develop protein deficiency. Legumes contain all essential amino acids in high quantity; the content in corn is as great as in meat except for lysine and tryptophane, while both of these amino acids are plentiful in grains.[7] Hardinge, Crooks, and Stare[6] concluded that the vegan diet generously exceeds twice the minimal requirement of essential amino acids. Ellis and Montegriffo[5] compared 26 vegans with matched omniverous controls and found that, other than a lighter body weight among vegans, there was no significant difference in clinical status between vegans and omnivores.

The only significant condition that develops in vegans is vitamin B_{12} deficiency, since the diet of the vegan is completely devoid of foods containing this vitamin. The patient described in this report had maintained such a diet for sixteen years, and his serum vitamin B_{12} level was significantly low on two determinations. Addisonian pernicious anemia was excluded in our patient by a normal Schilling test result and by the presence of hydrochloric acid on gastric analysis.

In spite of the low dietary intake of vitamin B_{12}, it has been observed that fewer than half of vegans studied developed low vitamin B_{12} levels. Moreover, as illustrated in this case, such individuals may go on for many years without presenting megaloblastic anemia; when they do develop it, they present no neurologic symptoms or signs. The normal body store of this vitamin in omnivores is estimated at 3 to 5 micrograms, sufficient to maintain adequate serum levels for up to a period of five years.[8] The obligatory daily rate of loss of vitamin B_{12} is about 0.1 per cent of the pool, and the minimal daily adult requirement of oral vitamin B_{12} is therefore approximately 1 micromicrogram.[3] Normal vitamin B_{12} levels despite a diet absent in B_{12} and with no supplements of this vitamin might be due to absorption of intestinally synthesized B_{12} or to the presence of a natural enterohepatic circulation of vitamin B_{12}.[5] The low incidence of neurologic findings in these vegans has been attributed to the possibility that vegans maintain the major portion of their low serum B_{12} in the hydroxycobalamin form.[9]

This patient had consumed large quantities of leafy, green vegetables which, although lacking in vitamin B_{12}, contained substantial amounts of folic acid. Ellis and Montegriffo[5] showed that the mean serum folate level was higher for vegans (14.1 millimicrograms per milliliter) than for the controls (5.2 millimicrograms per milliliter). By contrast, in our patient the serum folic acid level was low, but the blood for this determination was drawn after the patient had been treated with high doses of penicillin for a three-week period. The assay for folic acid is a microbiologic one which is interfered with by previously administered antibiotics[10]; the vitamin B_{12} assay is a radiobiologic determination and is not so affected. It is possible that the anemia in this case might have been precipitated by the streptococcal infection present.

Summary

A case of nutritional megaloblastic anemia probably due to vitamin B_{12} deficiency is described in a sixty-eight-year-old vegan whose diet for sixteen years excluded animal and dairy products. The importance of a careful dietary history, the physician's awareness that such a deficiency state can exist, and the use of vitamin B_{12} assay are emphasized in the early and more frequent detection of this condition.

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Gastric Perforation in Premature Newborn

Operation and survival

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Although gastric perforation in the newborn is rare, it is the most common of visceral perforations in the first week of life. This pathologic entity was first described by Von Siebold in 1826.[1] It was not until 1950, however, that a newborn first survived surgery for gastric perforation.[2] Kellogg, Abelson, and Cornwell[3] are credited with the first survival reported in the American literature in 1951. In 1952, Beattie and Bohan[4] reported the first known premature infant, which weighed 4 pounds and 7 ounces, and survived the operation.

Reams, Dunaway and Wall[5] analyzed the English literature and reported that gastric perforation occurs in almost two thirds of the cases in premature infants. Pertsemlidis[6] reviewed the international literature in 1964, and analyzed 159 cases with 39 survivals, and Silbergleit and Berkas[7] added 1 case and proposed a new mechanism which may be responsible for this poorly understood phenomenon.

Case report

This white female infant, one of identical twins, was spontaneously delivered on August 27, 1970, after thirty-eight weeks' gestation. The pregnancy was complicated by two episodes of bleeding in the second trimester, requiring hospitalization. The delivery was uncomplicated, and at no time was there any evidence of fetal hypoxia. At birth the infant weighed 5 pounds 1 ounce and had an Apgar score of 10. She was started on formula feeding but was found to be a very poor eater. She passed several meconium stools. On September 1, 1970, the infant was listless, lethargic, and showed marked abdominal distention but did not vomit.

Heart rate was 170 to 180 per minute; respirations, 60 per minute; temperature, 95.6°F. (35.3°C.); and weight 4 pounds, 12 ounces (2,200 Gm.). The abdomen was markedly distended, tympanitic, with absence of the liver dullness, and bowel sounds were absent. A roentgenogram of the abdomen in the upright position showed extensive pneumoperitoneum (Fig. 1A).

The diagnosis of ruptured hollow viscus was made, and the infant was prepared for laparotomy. A catheter was placed in the saphenous vein for intravenous fluid administration, and a number 5 French polyethylene feeding tube was placed in the stomach and connected to suction. Prior to surgery, the infant received kanamycin 15 mg. intramuscularly and aqueous penicillin 20,000 units intravenously.

Approximately three hours after the diagnosis was made, the infant was operated on under general anesthesia following endotracheal intubation. The abdomen was entered through a right paramedian incision. Bilious stained fluid within the peritoneal cavity was aspirated and cultured for microorganisms. The greater omentum was necrotic, and after the gastrocolic ligament was divided, the lesser sac was found to contain necrotic material and curdled milk. A 0.5-cm., punched-out perforation was found in the posterior wall of the midportion of the stomach without significant inflammatory reaction.

The perforation was closed in one layer with interrupted 4-0 silk sutures. A patch of adjacent omentum was incorporated. After the peritoneal cavity was irrigated with 0.2 per cent kanamycin in saline solution, the incision was closed in layers. No drains were used.

The postoperative course was uncomplicated. Feedings were started after sixty hours. The infant was discharged on September 15, 1970, when her weight had reached 5 pounds (2,400 Gm.). The abdominal incision healed well, and no incisional hernia was present (Fig. 1B).

Two samples of gastric aspirate taken on the day of operation and the day following the operation did not contain free hydrochloric acid. The peritoneal fluid did not grow any microorganisms.

Comment

The etiology of gastric perforation remains poorly understood. Several causes have been reported and proposed, which include peptic ulcer disease[8]; congenital muscular deficiency[9]; gastric diverticula; distal obstruction due to pyloric or duodenal atresia; cerebral hypoxia; tumor or intracranial hemorrhage; septicemia; hypoglycemia;

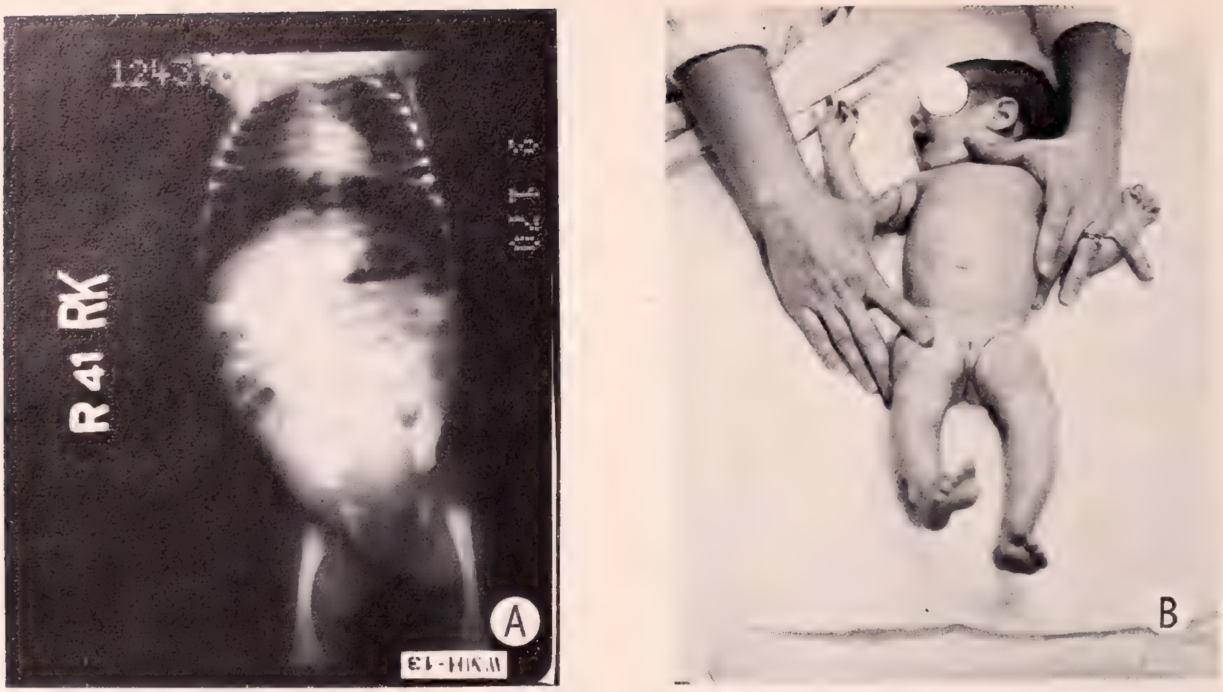

Figure 1. (A) Roentgenogram of abdomen in upright position showing extensive pneumoperitoneum. (B) Postoperative photograph showing abdominal incision healed well, leaving no incisional hernia present.

erythroblastosis fetalis; and trauma either resulting from birth, gastric intubation, or overdistention due to air (oxygen administration under pressure by means of a tight-fitting face mask).

The clinical picture of acute onset of illness, abdominal distention with the absence of liver dullness and bowel sounds, and dyspnea associated with the roentgenographic finding of pneumoperitoneum in the upright abdominal film, during the first week of life, should arouse strong suspicion of gastric perforation. Statistically, more distal perforations occur less frequently and usually later in life.

The site of perforation is most commonly found at the greater curvature, followed in frequency by the anterior surface, the body of the stomach, the cardia, the fundus, the lesser curvature and posterior surface of the stomach, and, least commonly, in the pyloric region.

Since the roentgenographic appearance of the upright abdominal film is pathognomonic, other studies with barium or other radiopaque contrast media to verify the diagnosis should be omitted and only cause unnecessary delay of surgical intervention. As soon as the diagnosis is established, intravenous fluid therapy and gastric decompression should be started, and antibiotics should be given. Exploratory laparotomy with closure of the perforation should be performed without delay. The abdominal viscera should be carefully inspected so as not to overlook any other abnormality which may be present and should be corrected. Drainage of the peritoneal cavity is not necessary.

Postoperative care under close supervision is extremely important for the survival of these infants and preferably should be done in a pediatric intensive care unit with the proper monitoring facilities. The fluid and electrolyte reserves in these infants are small, and complications are frequently encountered. The use of antibiotics in the postoperative period is of great importance.

Pertsemlidis[6] and Silbergleit and Berkas[7] reported an overall mortality rate of 75 per cent. In the nonoperated group of 56 infants, only one survived; whereas, in the operated group of 103 infants, 38 survived, indicating the necessity of prompt surgical intervention.

Summary

A case of gastric perforation in one of premature newborn twins with survival is reported. Early diagnosis and immediate surgical intervention are stressed. Close postoperative supervision in a pediatric intensive care unit is recommended.

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Peripheral Neuritis After Methimazole Therapy

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In 1947 Stanley and Astwood introduced methimazole for the treatment of hyperthyroidism.[1] In 1950 McGavack[2] stated that methimazole is the drug of choice for thyrotoxicosis since it is highly potent, active, and nontoxic. Side-effects from this drug, similar to those of propylthiouracil, were first reported in 1951. To date, practically all the systems are affected by these side-effects, which include fever; cutaneous and subcutaneous tissue involvement (urticaria, exfoliative dermatitis, edema of the hands and feet, pigmentation); gastrointestinal symptoms (nausea, diarrhea, abdominal cramps); liver and bile-duct involvement (jaundice, hepatitis, intrahepatic cholestasis and/or cholangitis, acute liver atrophy); hematologic abnormalities (leukopenia, granulocytopenia, thrombocytopenia); muscle and joint manifestation (myalgia, paresis of muscle groups, arthralgia, arthritis); lymphadenopathy; salivary gland enlargement: central nervous system involvement (stimulation or depression, psychosis, vertigo, headache, loss of taste sensation, peripheral neuritis); and collagenic syndromes. such as systemic lupus erythematosus, periarteritis nodosa, and rheumatoid arthritis.[3-6]

Of the numerous side-effects outlined, peripheral neuritis has been reported infrequently and, to the authors' knowledge, not one patient was a child.[3-8] The purpose of this communication is to report the occurrence of peripheral neuritis in a child twenty months after the start of methimazole therapy.

Case report

A thirteen-year-old, Puerto Rican female was admitted to the Brooklyn Hospital Division of The Brooklyn-Cumberland Medical Center on May 5, 1969, for evaluation of lumbosacral pain and numbness of the left leg of four months' duration. The diagnosis of Graves' disease was established at the Cumberland Hospital Division in 1967. The patient was treated with methimazole (Tapazole), 10 mg. three times a day for one week, and was discharged on 10 mg. three times a day for the subsequent week. This dose was subsequently altered to 5 mg. every eight hours. One month later, she was judged both clinically and by laboratory tests to be euthyroid; therefore, the dose of methimazole was reduced to 2.5 mg. every six hours. She stayed on that dose for twenty-three months. Despite failure to take the medicine for a few weeks, the child was euthyroid except for slight tremors of the hands. The thyroid gland was only slightly enlarged. Protein bound iodine remained within normal limits. During the following months other conditions—papular urticaria, for which she was seen at the skin clinic, episodes of vulvovaginitis, and bouts of mild abdominal pain—were thought to be unrelated to thyrotoxicosis.

On admission to the Brooklyn Hospital Division on May 5, 1969, the child complained of her left leg being "sleepy," back pain causing her to fall to the floor several times a day during the preceding few months, palpitations at night, and burning sensation on urination for one week.

The patient was born by cesarean section following a full-term, uncomplicated gestation with a birth weight of 6 pounds, 2 ounces. The neonatal course was uneventful. Growth and development were normal, and immunizations were up-to-date. There was no history of sensitivity or toxicity to drugs. Past illnesses included chickenpox, measles, mumps, pneumonia at the age of nine months, and a few bouts of asthma between the ages of one to four years. The patient had had a tonsillectomy and adenoidectomy at four years of age. Secondary sexual characteristics appeared at the age of ten and menarche occurred at eleven years. Menstrual periods occurred regularly, lasting three to four days but usually preceded by a copious, greenish, mucoid vaginal discharge. The family history was noncontributory.

Examination on admission revealed normal temperature, respiratory rate of 20 per minute, pulse rate of 110 per minute, and a blood pressure of 100/60. Exophthalmus or other eye signs were not observed. Funduscopic examination findings were negative. The thyroid gland was slightly enlarged and soft; no bruit was heard. The lungs were clear. The heart had a normal sinus rhythm, and no murmur was heard. There was questionable tenderness on deep palpation at the right lower quadrant of the abdomen but no abnormalities of the spine. Examination of the extremities showed slight tremors of the outstretched hands and moist palms. The patient demonstrated diminished sensation to touch, pain, and pressure, and inability to differentiate between cold and warm water from below the knee to the toes, excluding the plantar surface. The deep tendon reflexes were not elicited in the left lower limb but were present on the right. Gait and motor function were normal.

Hemoglobin was 13.6 Gm.; hematocrit 40; white blood cell count was 5,095 with a differential of 58 per cent polymorphonuclear leukocytes, 1 per cent eosinophils, 1 per cent basophils, 37 per cent lymphocytes, and 3 per cent mononuclears. Platelets on smear were adequate. Urinalysis, blood chemistries, and nose and throat cultures showed normal results. The protein-bound iodine ws 6.1 mg. per 100 ml.; the resin triiodothyronine uptake was 28.9 per cent. The electrocardiogram showed normal results. Roentgenogram of the chest gave negative findings. Roentgenogram of the lumbosacral spine was suggestive of spasm. The electromyogram showed conduction in the posterior tibial nerve and polyphasic conditions in the muscles innervated by the peroneal nerve, indicative of peripheral neuropathy. A lumbar puncture was attempted but was unsuccessful.

On admission, a diagnosis of peripheral neuritis resulting from methimazole was made. Methimazole dosage was gradually tapered down but not discontinued, and an analgesic and a muscle relaxant were given for the lumbar pain. Relief was obtained, and during the last few days in the hospital the left leg was no longer "sleepy." The patient was discharged on the twelfth hospital day on 2.5 mg. of methimazole daily and vitamin B complex (Lederplex).

When seen at the clinic ten days later, she again complained of some numbness and heavy sensation of the left lower limb and pain in the back when bending or lying down. Methimazole was discontinued. Thereafter signs of neuritis disappeared, but the back pain persisted. Repeat electromyographic results were normal, and all thyroid function test results were within normal levels. Because the back pain was unrelieved by muscle relaxants and analgesics, she was subsequently readmitted to the Brooklyn Hospital Division on August 4, 1969. All investigations gave normal findings, and various consultants could not identify a cause for the back pain. Back pain gradually diminished in intensity. Two months after discharge it was no longer present.

Comment

The incidence of side-effects from methimazole, as reported by various authors, ranges from 0 to 7.5 per cent.[1,2,9] The occurrence is greatest during the first few weeks of treatment but may occur at any time. Most side-effects are reversible by stopping the drug, and some may disappear despite continuation of the drug. Fortunately, the more serious side-effects, such as agranulocytosis and collagenic syndromes, are not common. There is evidence of a definite relationship between toxicity and the dosage of the drug.

Disturbances of the central nervous system resulting from the use of antithyroid agents are unusual. Gibson and Quinlain[10] reported an adult who had symptoms of joint pains, numbness of the extremities, loss of ankle jerks and vibratory sense, nausea and vomiting, and confusional states. Williams *et al.* reported 5 cases of neuritis from the use of the same drug. The patient reported by McCullagh, Hibbs and Schneider[12] complained of numbness of the extremities while on propylthiouracil. A sixty-four-year-old woman was reported by Frawley and Koepf[7] to experience a bizarre but definite neuropathy involving the throat, palate, lips, and tongue during propylthiouracil therapy. In their review mention was also made of vertigo, paresthesia, loss of taste, and paresis of muscle groups during methylthiouracil treatment. Schneeberg[5] reported 2 cases with loss of sense of taste following the use of the same drug. In 1954 Accetta, Fitzmorris, and Wettingfeld[8] reported a fifty-year-old, Hawaiian male who developed marked neuropathy with foot drop forty days following the use of methimazole. The neuropathic condition improved following the discontinuation of the drug.

Frawley and Koepf[7] postulated that thiamine depletion in thyrotoxic patients may render the nervous system more susceptible to the neurotoxic effects of thiourea derivatives. The possible role of peroxidase in nerve function and the antiperoxidase action of these compounds were also given as possible explanation. Whether the same mechanism applies to methimazole toxicity has not been determined.

In our patient, neuritis occurred twenty months after the start of methimazole, when she was receiving a small dose, and long after she had become euthyroid.

Summary

Peripheral neuritis occurred in a thyrotoxic child twenty months after the start of methimazole therapy and when the patient was already euthyroid. The symptoms disappeared completely and the electromyographic results became normal when the drug was discontinued. To the authors' knowledge, this is the only such case reported in the pediatric age group.

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Family with Congenital Heart Disease

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As patients accumulate in a pediatric cardiology clinic, occasionally a familial concentration of cardiac lesions occurs. Various authors have reported that no more than 2 per cent of congenital heart disease can be attributed to specific causes, such as rubella infections or trisomies.[1] In the vast majority of cases, an interaction of genetic and environmental factors are at work. Sometimes the genetic factors are fairly obvious as in Marfan's syndrome and idiopathic hypercalcemia, but in most cases genetic influences cannot be quantitatively measured. Thus, we feel a family clustering of cardiac lesions is worth while reporting in the hope that more light can be shed on a fascinating problem.

Case reports

Case 1. A twenty-five-year-old, Caucasian male was referred to the Albany Medical Center pediatric cardiology clinic for evaluation in 1967. History revealed that congenital heart disease was suspected at birth. In 1948, he was evaluated at the Harriet Lane Home for Invalid Children at age four and a half because of cyanosis and limitation of activity and was subsequently sent to Johns Hopkins Hospital. Physical examination revealed slight cyanosis and clubbing, a pulmonic ejection murmur, and a loud continuous murmur over the upper left part of the chest. Fluoroscopy demonstrated an enlarged heart with marked concavity in the region of the conus and decreased pulmonary vascularity. An electrocardiogram demonstrated right-axis deviation and right ventricular hypertrophy. The most likely diagnosis was tetralogy of Fallot with a patent ductus arteriosus.

At age five because of increasing symptoms he underwent an end-to-end anastomosis of the right pulmonary artery and right subclavian artery, performed by Alfred Blalock, M.D. In addition, a good-sized collateral artery arising from the subclavian artery and supplying the lung was also noted and preserved. It was assumed similar collaterals existed on the left. The right pulmonary artery was small in size but was ideal for anastomosis. Following the operation the patient improved remarkably with a growth spurt and cessation of symptoms.

Elective catheterization in 1955, when the patient was age twelve, demonstrated a ventricular septal defect, systemic pressures in both ventricles, and systemic arterial desaturation. The aorta was entered from the right ventricle, but the main pulmonary artery could not be probed. In 1961 a repeat catheterization with angiography demonstrated again a large ventricular septal defect and a small main pulmonary artery with an 87-mm. Hg gradient across the pulmonary valve. The Blalock anastomosis was functioning well.

Over the next seven years he remained in fairly good health. He fathered a child who had multiple hemangiomas at birth, but whose heart was normal. Then in 1967, the patient again experienced increasing fatigability, and cyanosis, which had been minimal for many years, was noted to increase.

Physical examination revealed a muscular man with mild cyanosis at rest with marked clubbing. There was a loud continuous murmur under both clavicles and a single second sound. Electrocardiogram demonstrated "p" pulmonale, right axis deviation, and right ventricular hypertrophy (Fig. 1A). A roentgenogram of the chest revealed an egg-shaped heart with decreased main pulmonary artery segment but with normal vascularity (Fig. 1B).

Cardiac catheterization demonstrated systemic pressures in the right lung, large ventricular septal defect, and atresia of pulmonary outflow tract. The left lung opacified through a large bronchial collateral. No patent ductus was demonstrated (Fig. 1C).

Case 2. Family history revealed that a seventeen-year-old brother was a confirmed case of tetralogy of Fallot. Cyanosis had been noted at birth. In 1953 at the age of eight months because of repeat episodes of cyanosis and unconsciousness he underwent open-chest surgery. The clinical impression of tetralogy of Fallot was confirmed at surgery, but a Potts' procedure could not be performed because of technical difficulties. A left Blalock-Taussig anastomosis was completed, and postoperatively the patient improved.

He was readmitted at twenty-four months' age, again with severe cyanotic spells. His original

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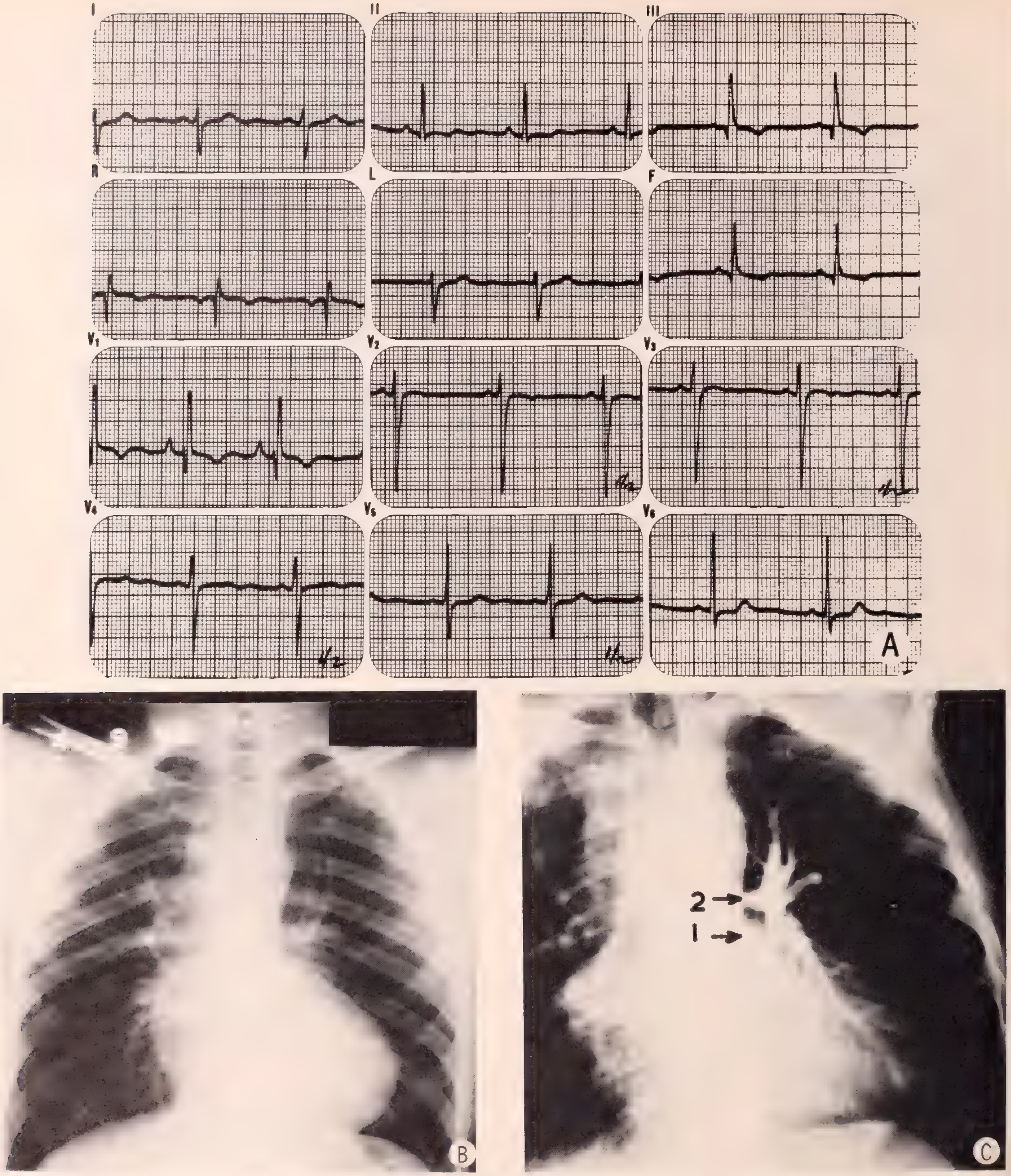

FIGURE 1. Case 1. (A) Electrocardiogram showing peaked P wave in lead V_1 and right ventricular hypertrophy. (B) Roentgenogram of chest shows egg-shaped heart, diminished vascularity, and diminished main pulmonary artery segment. (C) Angiogram in descending aorta showing large bronchial collateral (arrow 1) filling left pulmonary artery (arrow 2) in retrograde fashion.

anastomosis had thrombosed; a right Blalock-Taussig anastomosis was performed with marked postoperative improvement.

In 1958 at age six he underwent cardiac catheterization followed by total surgical correction. There were severe infundibular stenosis and a large ventricular septal defect. Postoperatively, there was complete heart block for which he was

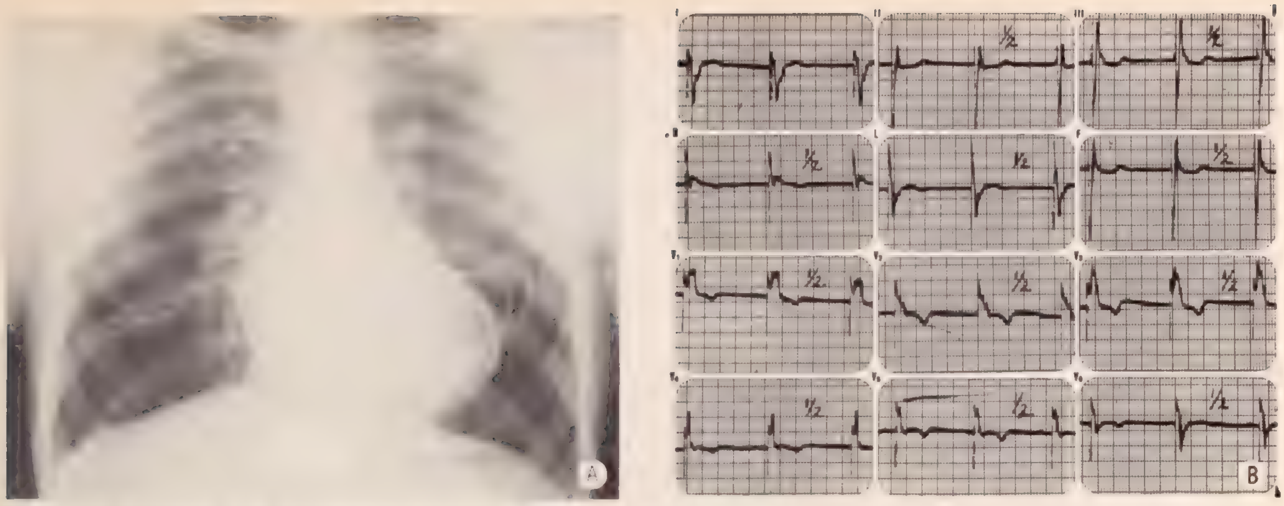

FIGURE 2. Case 2. (A) Roentgenogram of chest after total correction of tetralogy of Fallot. Pacemaker wires for the complete heart block are shown. (B) Electrocardiogram showing functioning Atricor pacemaker.

paced for one week (Fig. 2A). He was subsequently discharged and later returned to sinus rhythm.

In 1964 at age twelve complete heart block reappeared, along with Stokes-Adams attacks. Following the insertion of a fixed-rate pacemaker, the patient improved markedly in his clinical status. In 1967 a synchronized Atricor pacemaker was implanted after removal of the old unit. The patient was examined in the cardiology clinic and was doing well as a college student (Fig. 2B).

Case 3. That same year, 1967, a third brother age twenty fathered a baby boy who had a heart murmur at birth. He was examined and was followed at six-month intervals, during which time the murmur changed from a pansystolic murmur at the fourth intercostal space to an ejection murmur in the pulmonic area. The second heart sound became single. The electrocardiogram showed progressive right ventricular hypertrophy (Figs. 3A and 3B). He began to demonstrate faint cyanosis on exertion, and at age one and a half years he underwent catheterization with a clinical diagnosis of tetralogy of Fallot. Pulmonary infundibular stenosis with a 70-mm. Hg gradient and a high ventricular septal defect were demonstrated (Fig. 3C). This boy is being followed at six-month intervals.

Case 4. In late 1970 the twenty-one-year-old sister of the propositus gave birth to a baby boy who had multiple minor anomalies including simian creases, widely spaced first and second toes, upturned nose with creases at the base, low hair line, and a hoarse cry. Antenatal history was unremarkable with a birth weight of 7 pounds 9 ounces. The infant was transferred to Albany Medical Center Hospital because of tachypnea and cardiomegaly.

On clinical examination there was no cyanosis or clubbing. Heart rate was 150 per minute and respiratory rate 120 per minute. All pulses were present, but flush pressure in the right arm was 100 mm. Hg compared to 80 mm. Hg in the right leg. The liver was enlarged 3 cm. On auscultation a soft ejection murmur was heard in the pulmonary area with a single second heart sound. Roentgenogram of the chest revealed cardiomegaly and prominent vascularity. Electrocardiogram revealed right ventricular hypertrophy (Fig. 4).

A clinical diagnosis of preductal coarctation of the aorta with a probable ventricular septal defect was made. The infant was placed in the intensive care unit and was digitalized, but expired suddenly two days later before catheterization. Chromosome studies and protein bound iodine tests showed normal results. Autopsy findings revealed a large preductal coarctation of the aorta with an intact ventricular septum.

Case 5. A complete family history revealed a first cousin who reportedly had cyanosis and a common ventricle. She was noted to have a heart murmur and cyanosis at age two. At age five in 1951, she was investigated at Columbia-Presbyterian Hospital where bidirectional shunting at the atrial level was demonstrated. There was an oxygen step-up in the right atrium from the superior vena cava valve. The remaining reported saturations of right ventricle, pulmonary artery, and aorta were the same as the right atrium. Pressure in the right ventricle and pulmonary artery were elevated at near systemic levels. A diagnosis of common ventricle with pulmonary hypertension was made.

The patient was then seen only on occasional visits. She remained a frail girl who eventually married and had two unsuccessful pregnancies.

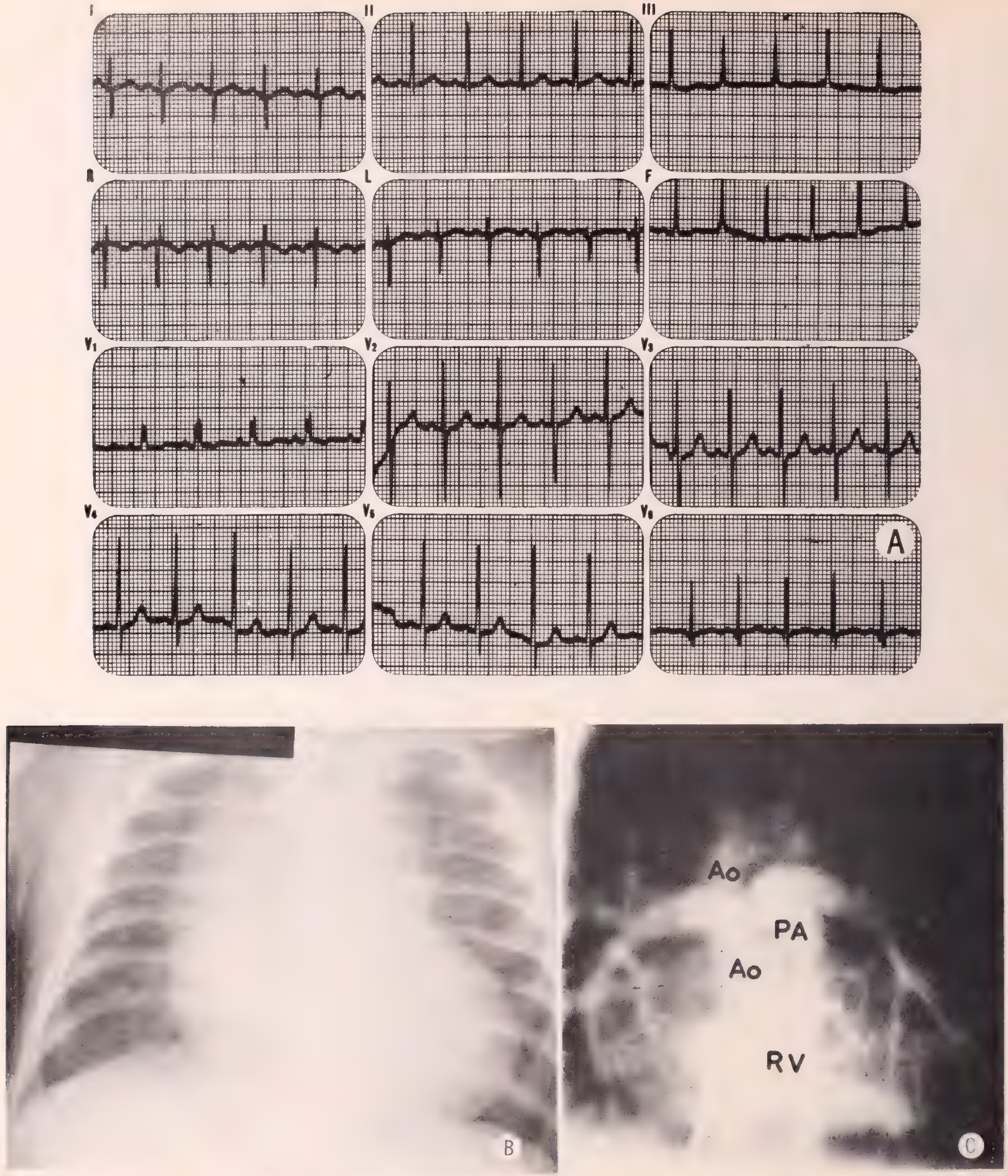

FIGURE 3. Case 3. (A) Electrocardiogram showing right ventricular hypertrophy with R-R′ pattern in lead V₁. (B) Roentgenogram of chest showing cardiomegaly with prominent thymus shadow obscuring base of heart. (C) Right ventricular (RV) angiogram in anteroposterior view showing simultaneous filling of aorta (Ao) and pulmonary artery (PA).

Her cyanosis remained moderate with clubbing. She apparently has had no other reported symptoms and has not been in heart failure. She and her husband have refused further investigation into her condition. When last seen she was in the third month of her third pregnancy.

The roentgenogram of her chest showed a moderate scoliosis and large heart with increased pul-

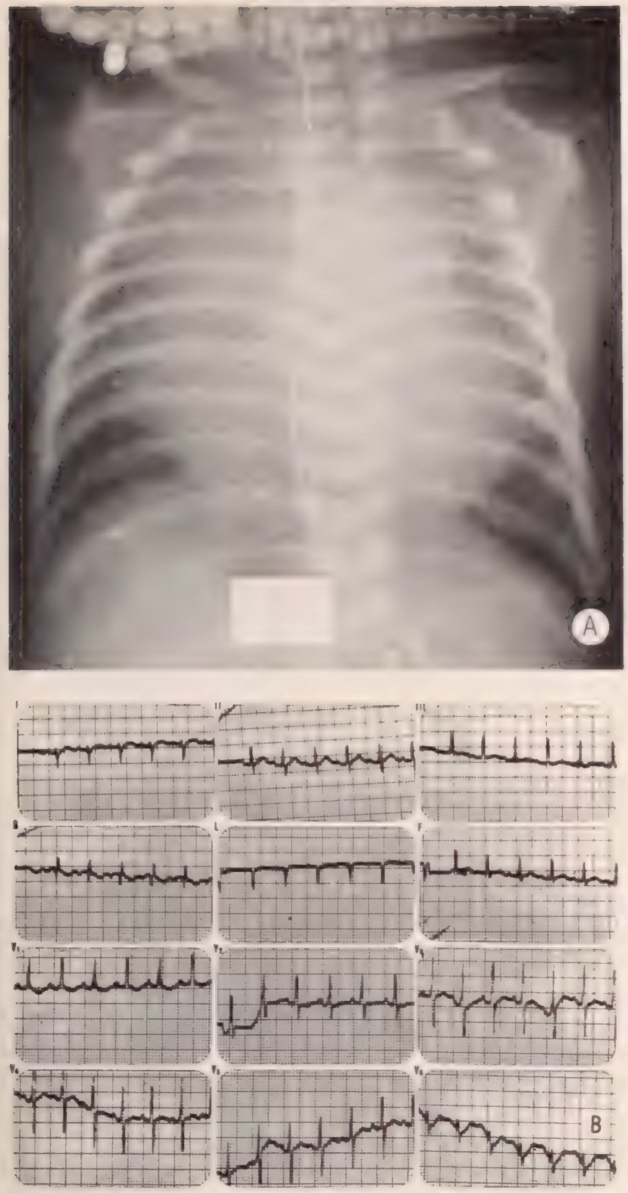

FIGURE 4. Case 4. (A) Roentgenogram of the chest showing cardiomegaly and prominent pulmonary artery. Vascular markings are slightly increased. (B) Electrocardiogram showing right ventricular hypertrophy with all R in lead V_1.

monary artery segment and vascularity. An electrocardiogram revealed right-axis deviation, combined atrial hypertrophy, and right ventricular hypertrophy. There was also complete right bundle branch block (Fig. 5).

Although her diagnosis remains in doubt, we feel that she does not have a common ventricle. The length of her survival, catheterization report, roentgenogram, and electrocardiogram results are most compatible with a total anomalous pulmonary venous drainage into the right atrium and probable pulmonary hypertension. She and her husband have remained reluctant about further investigation, but we hope to convince them

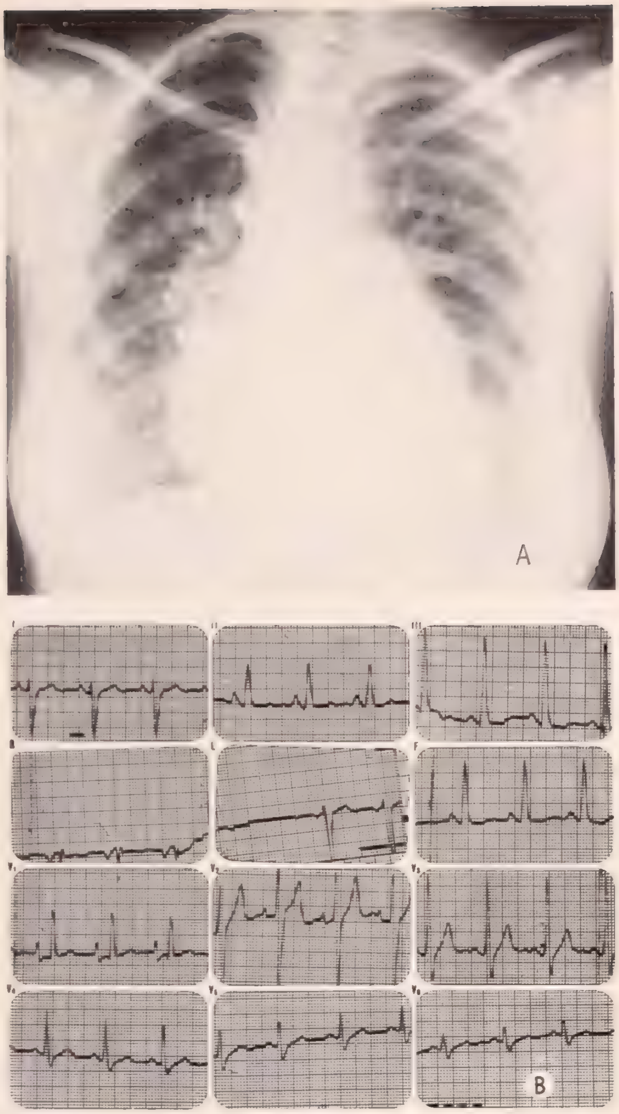

FIGURE 5. Case 5. (A) Roentgenogram of the chest showing cardiomegaly, prominent main pulmonary artery, and prominent vascular markings. (B) Electrocardiogram demonstrating right-axis deviation, complete right bundle branch block, and combined atrial hypertrophy.

to consent to a complete catheterization after her third pregnancy.

Case 6. Additionally, it was revealed, through clinical impressions of the family physician in 1943, that a five-month-old sibling of the initial patient reportedly died in congestive heart failure related to cyanotic heart disease. No autopsy was performed.

Other cases. The mapping of a family tree revealed several other possible cardiac problems. The father of the proband had died at age thirty-eight of an acute cardiac condition. This man also had a first cousin who died suddenly during a bowling tournament at age twenty-three. The

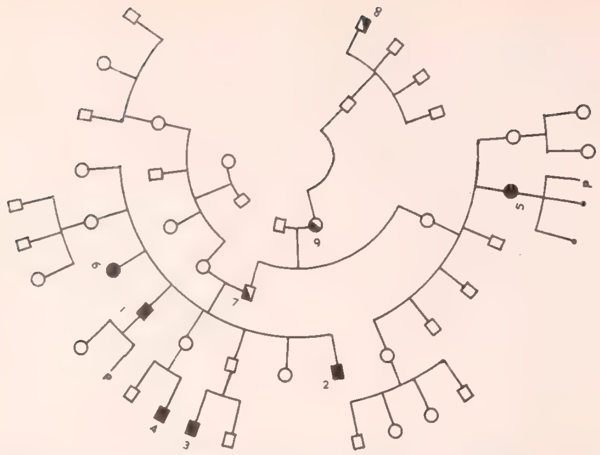

FIGURE 6. Family map. (1) Case 1, propositus, alive with tetralogy of Fallot and Blalock anastomosis. (2) Case 2, sib of propositus, alive following complete correction of tetralogy of Fallot. (3) Case 3, nephew of propositus, alive with a diagnosis of tetralogy of Fallot. (4) Case 4, nephew of propositus, expired with diagnosis of preductal coarctation of aorta. (5) Case 5, cousin of propositus, alive with incomplete diagnosis of anomalous pulmonary venous drainage and pulmonary hypertension. (6) Case 6, sib of propositus, expired age five months with diagnosis of cyanotic congenital heart disease. (7) Father of propositus, expired suddenly at age thirty-eight of unknown cardiac cause. (8) Distant uncle of propositus, expired suddenly at age twenty-four. (9) Fraternal grandmother of propositus, expired at age twenty-six of cardiac causes during a pregnancy. (squares = males, circles = females, solid color = proved or probable cases, half-solid color = possible cases, P = pregnancy, small dot = abortion)

fraternal grandmother of the propositus died at age twenty-six in the eighth month of pregnancy. The cause of death was cardiac related with an incompetent valve. It is not known whether this valvular lesion was congenital or acquired (Fig. 6).

Comment

Of the 6 cases of congenital heart disease in this pedigree, 5 were of the cyanotic group. Three of these 5 were tetralogy of Fallot and have been well confirmed by catheterization and/or surgery. One of the remaining 2 died at age five months with cyanosis and a diagnosis of congenital heart disease. No autopsy was performed. The other is cyanotic, clubbed, and probably pulmonary hypertensive, but the diagnosis remains incomplete. The 1 acyanotic patient died as an infant with congestive heart failure. The diagnosis of preductal coarctation of the aorta with a patent ductus and intact ventricular septum was confirmed at autopsy.

Emanuel[2] divided clinical material on congenital heart disease into three groups. The first group includes those families with isolated congenital heart disease. Individual pedigree studies are rarely helpful in this group, because it is unlikely that the defect is transmitted as a simple dominant or recessive trait. The notable exceptions to this rule are familial supravalvular aortic stenosis without evidence of hypercalcemia and retardation, and familial secundum atrial septal defect, both of which are transmitted as dominants. Emanuel's second group includes those syndromes with abnormal chromosomes in which heart lesions are common but only as one of many abnormalities present. The third group includes those hereditary disorders with normal chromosomes in which the heart lesion is one of the abnormalities present. Included in this group are Marfan's syndrome, Holt-Oram syndrome, and glycogen-storage disorders.

We feel this family should be classified in Emanuel's first group, since we cannot postulate any simple mode of inheritance. There is no known or reported consanguinity in the pedigree, nor are there any known evnironmental factors at work. The family has lived in several populated areas, thus precluding any environmental factors, such as increased background radiation or exposure to certain chemicals in water supply. Cytogenetic chromosome variants, (not trisomies), have been implicated in one study of familial cardiac defects, but further work is needed to confirm this point.[3] To date, we have not been able to obtain chromosomal studies on all family members because of the size and geographic distribution of the family.

The occurrence of congenital heart disease in a family carries certain risks for subsequent sibs. If the risk of congenital heart disease in the general population is 0.5 to 0.7 per cent of live births, the risk increases to 2 to 4 per cent with one affected child and to 5 to 8 per cent with two affected sibs. Campbell,[4] Polani and Campbell,[5] and Campbell and Goodwin[6] have shown this in family studies on pulmonary stenosis, ventricular septal defect, and tetralogy of Fallot.

The risk of congenital heart disease is not increased among parents, children of affected sibs, or more distant relatives, although some authors, notably Campbell,[1] now feel that as numbers increase, this will not remain so.

When a subsequent cardiac lesion does occur, it is concordant or similar about 50 per cent of the time, partially concordant in 25 per cent, and discordant in 25 per cent. These points should be kept in mind when advising a family with a child with congenital heart disease. Our family demonstrated a number of interesting points. Three of the 6 lesions were known to be concordant, those of 2 nephews (Cases 3 and 4) and 1 first cousin (Case 5) of the proband. In addition, the proband's father and fraternal grandmother and a second uncle of the proband died at young ages of cardiac-related problems. Although the diagnoses of these cases are unknown, they certainly raise some speculation concerning the mechanisms at work in this pedigree.

The catheterization data of Case 1 points out an interesting cardiologic problem, that of acquired pulmonary atresia following a systemic to pulmonary arterial anastomosis. The diagnosis of tetralogy of Fallot was confirmed both at surgery in 1948 and at catheterization in 1961, when severe pulmonary stenosis with an 87-mm. gradient was demonstrated. In two subsequent studies, the pulmonary artery could not be intubated nor demonstrated at angiography. The right lung filled via the Blalock anastomosis, and the left lung filled via the large collateral. The possible mechanisms for this aquired atresia are discussed by Sabiston *et al.*[7] and Roberts *et al.*[8]

Summary

A family with congenital heart disease is presented. Although the mechanism of inheritance is unknown, it most likely results from some genetic factors at work under certain environmental conditions. It is felt that the reporting of this family may add to an accumulating store of evidence regarding possible modes of inheritance.

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Elective Abortion

Woman in crisis

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With the new abortion laws all of society will have to undergo a shift in attitudes toward abortion. Hopefully, we will now be able to move to a clearer approach to and understanding of the effects of unwanted pregnancy and its termination by an abortion.

I would like to share with you some essential ideas distilled from my recent experience with more than 300 clinic and private patients whom I saw for psychiatric evaluation prior to a therapeutic abortion and from the follow-ups I was able to obtain between January, 1969, and June, 1970. I want to emphasize that the physician who treats these women must not lose sight of the fact that the unwanted pregnancy and need for abortion create a very emotionally sensitive individual who must be appreciated as such and that mass use of abortions without due consideration to this vulnerability must be carefully avoided.

Psychiatric crisis

I do believe that an unwanted pregnancy is an acute psychiatric emergency. A woman who learns of a pregnancy she does not want is at first terribly upset and agitated. She is unable to sleep and frequently has nightmares. She often is preoccupied with death and dying. Although she is not necessarily acutely suicidal, frequently suicidal ideation is present. She is withdrawn and often wishes she were dead. She is preoccupied to the exclusion of all else by pregnancy and abortion. Perhaps the most constant and previously least described response is her self-imposed isolation, which is very frightening and self-perpetuating. Although society's increased acceptance of abortions resulting from the new abortion laws may lessen the intensity of these responses, it is doubtful that they will be changed in any basic way.

After an abortion a woman feels basically relieved. She goes back to her prepregnant personality and style of living, but she never really forgets the pregnancy, the panic, and the abortion. Frequently, she feels depressed, at times guilty. Rarely does she regret the abortion.

Thus, abortion can be the cure for the acute, agitated, reactive depression which has been precipitated by the unwanted pregnancy. We have much to learn yet about the long-term effects of mass abortion.[1] However, we do have well-documented evidence regarding the devastating effects of unwanted pregnancies that have not been aborted.[2,3]

In addition to being aware of such acute reactive depression toward unwanted pregnancy, one must be cognizant of the premorbid personality. The more normal or stable individual will feel less conflict about the abortion and thus will be less likely to suffer any serious guilt or depressive reaction or show any serious, prolonged aftereffect. It is the more disturbed woman, heretofore the only legitimate recipient of abortion, who should be more carefully evaluated prior to and after abortion. The more conflicted, ambivalent, confused, or unstable the individual, the more likely it is that one will encounter serious psychopathologic sequelae following this procedure.

Any woman seeking an abortion has ambivalent feelings toward the pregnancy and the abortion. For most women pregnancy, even if it is desired, presents a difficult period during which great anxiety is experienced.[4,5] However, if it is an unplanned or unwanted pregnancy, it is particularly traumatic. There is no doubt that having a child brings about a dramatic change in one's life. Motherhood is a very demanding occupation and should be entered into only voluntarily.

With the new abortion laws there will be a shift regarding who should be evaluated psychiatrically. Prior to the new laws a psychiatric consultation was mandatory. For the most part consultation will now be at the discretion of the physician doing the abortion. Some cases in which I feel psychiatric consultation is advisable are (1) incest, (2) rape, (3) acute psychosis, (4) mental deficiency, (5) pregnancy in the adolescent under age seventeen, (6) any woman seeking an abortion beyond the twentieth week, and (7) those women who show obvious overt ambivalence and conflict and cannot say definitely that they want the abortion. These women might well want the physician to make the decision for them. This is a pitfall which the physician should avoid at all costs. If an individual physician feels either unable or lacking in time to deal with this issue, expert help should be suggested. As physicians we can only try to help the patient make her own decision and thus accept the responsibility for and consequences of that decision.

Determinants and sequelae

The following are some of the more frequent unconscious reasons why women become saddled with an unwanted pregnancy:

> An acting out against and in defiance of the parent and a wish to get away from home,
>
> Loneliness and a desire to get closer to a man and to have a baby to love as the person wishes to be loved, and
>
> Loss of, or threatened loss of, a significant person in one's life. This loss, or threat of, may be real or fantasied. In 10 per cent of my cases there was a recent death of a parent or spouse. Perhaps, the woman's relationship with the putative father is not going well. The girl would like the boyfriend to marry her and hopes that by becoming pregnant she will bind the boyfriend to her. Or it is a way of putting the boyfriend to a test. Will he abandon her at a time when she needs him most, or will he support her emotionally and financially through the abortion? Or the girl knows the relationship cannot work out and has been unable to end it. Somehow the abortion helps to bring the relationship to a close faster.

Most women, however, are unwilling to accept the role of the unconscious. At first they prefer to see the pregnancy as purely accidental.

Some very practical factors determining the psychiatric sequelae of an unwanted pregnancy and an abortion are (1) the legality and availability of abortion, (2) the marital status of the woman, (3) whether the woman has children, (4) the actual abortion procedure (dilatation and curettage, salting out, or hysterotomy), (5) whether the patient is older or younger than seventeen, (6) whether the single girl is able to be open with her parents or friends regarding the unwanted pregnancy (this carries a more favorable prognosis), (7) whether she has had previous abortions or illegitimate children which she has either given up for adoption or kept, (8) whether she continues to have a relationship with the putative father, and (9) religious and moral convictions.

The method of abortion is a very important determinant. Those women who have been aborted by dilatation and curettage are most often less disturbed, remorseful, or guilt ridden than women who have undergone a salting out procedure. In the dilatation and curettage or aspirator procedure, the women are undergoing abortion early in their pregnancy and are put to sleep and feel nothing. It is usually early enough that there is still a feeling of unreality. Surely, they view the fetus less as a potential baby.

The salting out by the very nature of the procedure is more traumatic. First, the woman is further along in her pregnancy; often she has already felt fetal movements. Second, in the salting out one goes into actual labor and delivers the fetus. The woman is usually awake and sees and feels everything. Third, most of the girls who require a salting out procedure are the most inexperienced adolescents who are pregnant for the first time and are too frightened to admit to their pregnancy. In a state of shock, disbelief, or denial, they have allowed the pregnancy to go so far without doing anything about it. Following this procedure, one is more likely to see depression, remorse, and guilt.

Aside from the guilt and depression which have been felt to be the usual sequelae of an unwanted pregnancy and abortion, there is certainly the fear of future impregnation, increased frigidity, and the girl's inability to accept her femininity and sexuality. She becomes afraid that to engage in sex is dangerous and gets you into trouble and, therefore, one should abstain. Also there is the increasing distrust of men, a feeling that she has been abandoned and taken advantage of. This, if unrecognized and untreated, may persist for years after the actual abortion. This is not only the most frequent serious long-term sequela but also more difficult to establish since it emerges only in depth therapy.

Psychiatric consultation

The role of the physician in counseling a patient is to hear the patient and to allow her to express how she feels about having an abortion. His role is not to make the decision for the patient but to help the patient come to her own decision. We can try to explore with the patient her conflict and ambivalence. Most patients who seek out an abortion are ambivalent. Although convinced that abortion is the best solution, they are nonetheless in conflict because of their moral, social, and religious beliefs and/or their unconscious wish to fulfill themselves and so have a child to love and who would love them in return. I have seen several women in consultation who subsequently decided not to terminate the pregnancy and have felt in retrospect that it would have been disastrous to do otherwise.

The adolescent girl must be counseled on birth control and helped to accept her sexuality in a more realistic manner. Often the parents of the adolescent girl need to be counseled, for example, in the case of a fifteen-year-old girl who wants an abortion and whose mother refuses to sign consent.

I have done group therapy with single girls who are pregnant and are awaiting an abortion and with girls who have recently had an abortion. A young woman who came to the group found that it enabled her to explore and work through her conflict with other young women who were presently facing, or had recently gone through, a similar experience. Women in a similar situation can help each other face and deal with attendant feelings more rapidly than the physician who is seen as an outsider and viewed suspiciously. Problems dealing with sexual and feminine identity and role were explored. An attempt was made to eliminate the terrible sense of isolation.

Also explored in the group were the underlying motives for becoming pregnant. The group seemed to enable the young women to explore the unconscious motivations for becoming pregnant as opposed to the purely accidental nature of the unwanted pregnancy.

Frequently the wish to be pregnant was seen as different and separate from the wish to have a child and be a mother. Each girl in the group began to see her unwanted pregnancy fitting into her individual need or fantasy at that time. For example, some saw the pregnancy as a desperate effort to force a marriage, others as a means of proving their femininity, as a retaliation gesture against parents or as a defense against loneliness. The psychologic insight gained through group activity was most remarkable and rewarding.

Abortion is a personal experience, and it is important to help the patient experience it as such. At first most women are reluctant to talk about the psychologic reason behind their becoming pregnant. It is not infrequent, however, that several months afterward they want to explore the psychologic and emotional significance of the pregnancy.

The pregnancy is certainly almost always thought of in retrospect as a significant, unforgettable experience in one's life, either as a traumatic, unpleasant, or sometimes even rewarding growth experience. Often the sequelae cannot be predicted. For example, I have seen several women who fifteen years after their abortion were having feelings of regret and remorse, because now they were menopausal and childless. The decision to have an abortion is often the first active decision a young girl makes independently.

Final comments

I feel that the acceptance of abortion is going to have a significant social and racial impact. To date we have been unable to deal with the deterioration, degradation, and oppressive depression that exists in our slum and welfare population. It is common knowledge that illegitimacy and its consequences for both the unwed mother and her offspring is one of the causes of our increasing welfare roles, delinquency, and crime.[3] Making abortion available to the poor population offers them an opportunity to get out of their oppressive environment and prevent the otherwise almost inevitable downward spiral.

I hope that what I have said provides some sense of the complexity of the emotional experience of a woman with an unwanted pregnancy who faces an abortion. While the abortion solves many of the immediate problems of the unwanted pregnancy (certainly more so than a forced and hasty marriage, carrying to term and giving the child up for adoption, or raising a child without a father), it is the successful resolution and integration of the total experience that obstetricians and psychiatrists must strive for, and this can be accomplished only if we keep the image of a woman in crisis before us.

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Malaise of Margery Kempe

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In the annals of personal religious experience there is much to interest the physician as well as the theologian. Margery Kempe of Lynne, a fourteenth-century autobiographer, was a devout Christian who suffered from that not uncommon form of mental illness in which religion, or some distortion of it, provides the armature for symptoms.

Although Margery could neither read nor write, she was familiar with the diaries of women mystics of the thirteenth and fourteenth centuries, and she was similarly impelled to record her experiences. She enlisted the aid of at least two compliant clerics, one of them probably her own son, to transcribe her dictation, invariably given in the third person. The text was rediscovered by Hope Emily Allen in 1934,[1] and both ". . . for its manner and its matter [it] is one of the most astonishing personal documents in English."[2]

After experiencing a mystical "conversion" in early adulthood, Margery made a compact of chastity with her husband and embarked on a series of pilgrimages to the world's major Christian shrines. Her travel diary chiefly records various types of psychic phenomena interpreted as supernatural signs of God's special favor but which are much more readily explicable as a fully developed and remarkably consistent case of religious hysteria.

The most frequent and prominent manifestations of Margery's mysterious malaise were loud, copious, public fits of crying, which she claimed she could neither predict nor control, and which characteristically occurred when she was approaching a shrine or hearing a sermon. Usually she would also have visual and auditory hallucinations, often her body would writhe, sometimes she would lose consciousness, and occasionally she became overtly psychotic. Annoying or impressive as these fits might have been to the companions of her various journeys, the seizures never interfered with the active and interesting life she had chosen for herself. In short, the total pattern of Margery's behavior fully satisfies Abse's[3] criteria for a diagnosis of hysteria:

> 1. A group of physical symptoms without an ascertainable structural lesion.
> 2. Complacency in the presence of gross objective disability (la belle indifférence of Janet).
> 3. Episodic disturbances in the stream of consciousness when as ego-alien homogeneous constellation of ideas and emotions occupies the field of consciousness. This may exclude the normative stream of consciousness in the individual so affected.

Onset of symptoms

The first clinically significant fact that we learn about Margery's "conversion" is that it occurred immediately after the birth of her child. Margery probably experienced a postpartum psychosis, a fairly frequent occurrence in women who bring to a first pregnancy some type of serious unresolved psychic conflict.

According to Hamilton,[4] the syndrome of postpartum dissociation is of acute onset. Confusion, disorientation, hallucinations, delusional elements, and profound changes in mood are the usual symptoms, and it would appear from her own descriptions that Margery experienced every one of these phenomena.

For some women, pregnancy is an experience in which the body is possessed by some inimical force, corrupted, subjected to discomfort, and, finally, to overwhelming pain.[5] For the neurotic woman having her first child, and perhaps unconsciously rejecting the whole experience of motherhood, both physical and psychologic traumas are likely to be acute and severe.[6] Many women never recover fully, and Margery was evidently one of these unfortunates.[7]

What evolved in Margery's case was a full-blown and apparently lifetime but episodic case of hysteria that was to take particularly bizarre forms. Probably the roots of her disease were buried deeply in childhood experiences thoroughly rejected by her adult recollection, but these are not recorded and were past recall.[8]

Sexual component

All writers from ancient to present time agree on one aspect of hysteria, its essentially sexual origin.[9] In the centuries of medical writing about hysteria, its locus has moved from the womb to the brain (or mind), but its prevention and cure has remained the same: provision of the opportunity for healthy expression of the reproductive instinct. Nothing could have been further from the temper of medieval times.

Orthodox Christianity has always maintained an inimical attitude with respect to the flesh, and the incentive to self-mortification was never lacking.[10] In the Middle Ages, the positive values of Christianity were all but submerged in morbidity; martyrs of one kind or another were abundant, and some of the more flagrant examples of masochism that emerged have caused a good deal of discomfiture to the modern Church. Such extremes of self-inflicted pain are now associated with pathologic distortion of the sexual impulse.

The attitude toward physical expression in the Middle Ages stemmed from the writings of St. Augustine, who acknowledged that sex was necessary for procreation but believed that experiencing pleasure from it, even in marriage, was sinful, especially for women. Margery must have been one of legions of women in her time who were caught in the terrible moral dilemma that inevitably developed from this view. In an age when the attitude toward feminine sexuality is especially oppressive and repressive, hysteria is more than normally common.[11]

It is likely, and fortunate, that none of her contemporaries suspected the sexual basis of Margery's hysterical outbursts. To the modern observer, however, Margery is clearly a woman wracked by disguised sexual fantasies and guilts. Her hallucinated "conversations" with Jesus, for example, have a carnal aspect that at times becomes astonishingly explicit; she reports that Jesus said:

> For it is fitting for the wife to be homely with her husband. Be he ever so great a lord, and she ever so poor a woman when he weddeth her, yet they must lie together and rest together in joy and peace. Right so must it be between thee and Me, for I take no heed what thou hast been, but what thou wouldst be, and oftentimes have I told thee that I have clean forgiven thee in all thy sins. Therefore I must needs be homely with thee, and lie in thy bed with thee. (Page 354).[1]
>
> And thereof the people hath great wonder, but there need be no wonder in thee, for thou knowest well that I fare like a husband who should wed a wife. At the time he wedded her, he thinketh that he is secure enough of her, and that no man shall part them asunder, for then, daughter, may they go to bed together without any shame or dread of the people, and sleep in rest and peace, if they will. (Page 366).[1]

Abse[12] states that one can often find evidence of erotic discharge in the particular hysterical episode. The fit represents a kind of rage reaction or temper tantrum due to frustration of sexual wishes.

Margery's agonized and distorted sexuality assumed many disguised forms. At times, however, her hysteria failed in its protective function, and frankly libidinous thoughts rose to the surface of her mind to terrify and repel. That she chose to record the following experience indicates the strength of a fantasy that, at one level of her consciousness, could not have been entirely unpleasant; to do her justice, the willingness to acknowledge the experience is also a measure of her sincerity.

> And this vexation endured for twelve days; and just as, before, she had four hours of the forenoon in holy speeches and dalliance with Our Lord, so now she had as many hours of foul thoughts and foul memories of lechery and all uncleanness, as though she had been common to all manner of people.
>
> And so the devil deluded her, dallying unto her with cursed thoughts, as Our Lord dallied to her before with holy thoughts.
>
> And, as she before had many glorious visions and high contemplation in the Manhood of Our Lord, in Our Lady and in many other holy saints, even right so had she now horrible sights and abominable, for aught she could do, of beholding men's members, and such other abominations.
>
> She saw, as she thought verily, divers men of religion, priests and many others, both heathen and Christian, coming before her sight, so that she might not eschew them or put them out of her sight, showing their bare members unto her.
>
> And therewith the devil bade her, in her mind, choose whom she would have first of them all, and she must be common to them all.
>
> And he said she liked better some one of them than all the others.
>
> She thought that he said truth; she could not say nay; and she must needs do his bidding, and yet she would not have done it for all this world.
>
> Yet she thought it should be done, and she thought these horrible sights and cursed memories were delectable to her, against her will. (Page 218).[1]

Epilepsy

Convulsions frequently occur in hysteria.[13] There is no way of knowing if the epileptic component of Margery's attacks had an organic basis or was simply another manifestation of her hysteria; in any event, ten episodes of falling, with or without unconsciousness, would surely cause a modern physician to wheel out his electroencephalograph. These are typical:

> And when they came up on to the Mount of Calvary, she fell down because she could not stand or kneel, and rolled and wrested with her body, spreading her arms abroad, and she cried with a loud voice as though her heart burst asunder . . . . (Page 107).[1]
>
> She fell down and cried with a loud voice, wonderfully turning and wresting her body on every side, spreading her arms abroad as if she would have died, and could not keep herself from crying . . . . (Page 109).[1]

> Some said she had the falling evil, for she, with the crying, wrested her body, turning from the one side to the other, and waxed all blue and livid, like the colour of lead. Then folk spat at her for horror of the sickness, and some scorned her and said that she howled as if she were a dog, and banned her and cursed her, and said she did much harm among the people. (Page 156).[1]

Abse[14] suggests certain guidelines for distinguishing convulsive hysteria from true epilepsy:

> Convulsive hysteria may simulate idiopathic or symptomatic epilepsy. Sometimes, hysteria may be suspected on the following grounds: during the attack, the patient is not completely unconscious; the attack occurs only in the presence of onlookers; the patient does not fall in a dangerous situation; the corneal, pupillary, and deep reflexes are present; the patient does not bite his tongue or micturate; he becomes red in the face rather than blue or white; attempts to open the eyes are resisted; pressure on the supraorbital notch causes withdrawal of the head.

It is curious that Margery never describes any injuries from her falls, thus satisfying the third of Abse's criteria; further, the circumstances of Margery's seizures appear invariably public, so that perhaps the second of the criteria is satisfied also. In contrast, Margery said her face turned blue, which would suggest true epilepsy; however, Margery might have been recollecting a witnessed epileptic attack.

Migraine

Margery also suffered, apparently, from a neurologic disease that is sufficiently well described to be identified as migraine:

> Afterwards, when she was recovered of all these sicknesses, in a short time there followed another sickness, which was set in her right side, lasting the time of eight years, less eight weeks, at divers times. Sometimes she had it once a week, continuing for thirty hours, sometimes twenty, sometimes ten, sometimes eight, sometimes four and sometimes two, so hard and so sharp that she must void what was in her stomach, as bitter as if it were gall, neither eating nor drinking while the sickness endured, but ever groaning til it was gone. (Page 206).[1]

Migraine is episodic ("divers times"); an attack is followed by nausea and vomiting; the untreated episode is extremely painful; and most interesting of all, migraine is characterized by its "sidedness" ("set in her right side"). The fact that the duration is variable (the length of Margery's attacks ranged between two and thirty hours) is also consistent.

This paragraph also illustrates Margery's frequent use of the number eight to characterize the periods of her various illnesses. Hopper[15] has shown how central and pervasive was the influence of number symbolism, derived from Babylonian and Pythagorian systems, on medieval religious experience and expression. In the medieval system, the number eight stood for a cluster of concepts such as eternal bliss, sanctity, blessedness, immortality, eternity after mutability, salvation, felicity, redemption, and judgment after the life-cycle (characterized by the number seven).[16] Margery was thoroughly exposed to the religious thinking of her time, and obviously she was influenced by the associative powers of various numbers. In her profound desire for personal exaltation, the number eight was unconsciously transformed into one element of an extremely well-ordered complex of symptoms, to emerge, unrecognized, as a "fact" of her autobiography.

An attack of migraine is usually preceded or accompanied by some type of visual phenomena; there are instances in which the visual phenomena constitute the entire attack. Most sufferers from this disease experience waving or scintillating lights or a sensation that normally stationary objects are in motion:

> On a day as this creature was hearing her Mass, a young man and a good priest was holding up the Sacrament in his hands, over his head, and the Sacrament shook and flickered to and fro, as a dove flickereth with her wings. And when he held up the Chalice with the Precious Sacrament, the Chalice moved to and fro, as if it would have fallen out of his hands. (Page 80).[1]
>
> She saw with her bodily eyes many white things flying all about her on every side, as thick, in a manner, as specks in a sunbeam. They were right subtle and comfortable, and the brighter the sun shone, the better might she see them. She saw them many divers times and in many divers places, both in church and in her chamber, at her meat, and at her prayers, in the fields, and in town, both going and sitting. And many times she was afraid what they might be, for she saw them as well at night in darkness, as in daylight. (Page 353).[1]

Psychotic behavior

Episodes of a more obvious type of mental disease, such as depression or paranoia, can occur during the course of a predominantly hysterical illness.[17] In the case of Margery, there were periods of acute exacerbation in which her behavior became overtly psychotic:

> Anon, for the dread she had of damnation on the one side, and his sharp reproving of her on the other side, this creature went out of her mind and was wondrously vexed and laboured with spirits for half a year, eight weeks and odd days. (Page 24).[1]
>
> She would have destroyed herself many a time at their stirrings and have been damned with them in Hell, and in witness thereof, she bit her own hand so violently, that the mark was seen all her life after. (P. 24).[1]
>
> And also she rived the skin on her body against her heart with her nails spitefully, for she had no other

> instruments, and worse she would have done, but that she was bound and kept with strength day and night so that she might not have her will. (Page 24).[1]

Contemporary reaction

Even in a time of peculiar tolerance to religious exuberance, Margery must have been a trial:

> She was variously judged in her own day; it would seem that her townsfolk were divided into two classes: those who regarded her as something of a saint, and those who were sure she was a good deal of a hypocrite.[18]

Margery, of course, was neither saint nor hypocrite, but her contemporaries could not have suspected the truth: that hysteria, although it has no organic basis, is a real illness that can cause the patient endless misery. Margery was clearly a victim of this lack of understanding. She often refers to the fact that her acquaintances thought she could control her crying spells, when in fact she could not:

> Some great clerks said Our Lady cried never so, nor any saint in Heaven, but they knew full little what she felt, nor would they believe that she could not stop crying if she wished. (P. 108).[1]
>
> Yet she might not weep but when God gave it her, and oftentimes He gave it so plenteously, that she could not withstand it, but the more she tried to withstand it or put it away, the more strongly it wrought in her soul with such holy thoughts that she could not cease. She would sob and cry full loud, all against her will, so that many a man, and woman also, wondered at her therefor. (Page 145).[1]

To say that Margery did not feign her attacks is not to say that she was not sensible of the "secondary gain" that they provided. We find, for example, that she resists any suggestion that her spells are of natural origin; to do so, she would have had to forfeit the unique attention she attracted and become only another uninteresting sick woman.

> But, he said, if she could not withstand it when it came, he believed it was a cardiac ailment, or some other sickness, and if she would so acknowledge, he would have compassion on her, and stir the people to pray for her, and, on this condition, he would have patience with her and suffer her to cry enough, so that she could say it is a natural sickness. (Page 227).[1]

Abse[19] points out:

> Often the attention-attracting function is conspicuous: by physical symbolic exhibition of conflict, the patient indirectly attracts sympathy for his plight. The flight into illness may provide escape from an intolerable job or family situation or from military service. In other words, some gain is attempted from the suffering in which the patient is caught up, and this again might sometimes be related to a precipitating factor.

One other aspect of Margery's writing has considerable diagnostic significance. She is able to relate all of her experiences with a remarkable lack of concern for the effect they might have had on people in her vicinity.

> Then she had three years of great labour with temptations which she bore as meekly as she could, thanking Our Lord for all His gifts, and was as merry when she was reproved, scorned and japed for Our Lord's love, and much more merry than she was beforetime in the worship of the world. (Page 32).[1]
>
> On a time, as this creature was at Canterbury in the church amongst the monks, she was greatly despised and reproved because she wept so fast, both by the monks and priests, and by secular men, nearly all day both forenoon and afternoon also, so much indeed that her husband went away from her as if he had not known her, and left her alone amongst them, choose how she might. Further comfort had she none of him that day. (Page 54).[1]

This cool indifference to her own behavior, her apparent lack of awareness of the extent of her aberration, is a characteristic of hysteria.[20] The complacency of hysterics in the face of grossly disabling symptoms is phenomenal.

Margery obviously took a child-like pride in her attacks, and we find throughout the book a good deal of precisely remembered information about their frequency. The following passage is typical:

> First when she had her cryings in Jerusalem, she had them often, and in Rome also. And when she came home to England, first at her coming home, it came but seldom, as it were once a month, then once a week, afterwards daily, and once she had fourteen in one day, and another day she had seven, and so on, as God would visit her, sometimes in church, sometimes in the street, sometimes in her chamber, sometimes in the fields, whenever God would send them, for she never knew the time nor the hour when they would come. (Page 108).[1]

Margery's milieu

Reports of hysteria associated with religious and pseudoreligious experience can be found in medical writings from the time of Hippocrates, who, in fact, gave the disease its etiologically suggestive name. Religious history, in turn, provides numerous examples of oracles, saints, and mystics (usually female) in whom a loss of consciousness, with or without convulsion, was followed by expressions of divine revelation.

One of the many fascinating aspects of hysteria is its adaptability to the particular milieu in which its victim lives. Symptoms vary from era to era, and the disease can be studied as much for its social as for its medical interest.

> The symptoms, it seems, were conditioned by social expectancy, tastes, mores, and religion, and were further shaped by the state of medicine in general and the knowledge of the public about medical matters. The more detailed such knowledge became the greater was the variety of symptoms. Thus we have seen departures from and returns to the generalized convulsion, the globus hystericus, the loss of consciousness, the cessation of breathing. We have watched the acting-out of demonic possession and the vast variety of physical and mental delusions related to it. Furthermore, throughout history the symptoms were modified by the prevailing concept of the feminine ideal.[21]

Religious hysteria is known in every age and place, but its incidence is higher in those times and cultures in which modes and values are determined by a highly formalized and nonhumanistic metaphysical system. For Margery, alive and sick in the richest age of the English mystical tradition, there existed a well-established and highly regarded storehouse of experiences and attitudes to furnish a very impressive hysterical illness.

Toward the end of the fourteenth century, a reaction against the rigid and depersonalized Catholic theologic establishment was reflected in the work of Wycliffe and his followers; a rebellious, missionary, individualistic religious movement was abroad which gave laymen a growing sense of their ability to enter into a direct personal communication with God.[22]

> In 1373, Margery Kempe was born into a world . . . in which personal, individual problems and values are supreme, a world in which the kinds and degrees of love, divine and human, are matters of earnest debate, together with a search for clarity of conscience and a pity for those outside the visible Church, and a balancing of the claims of the lives of Martha and Mary, the active and the contemplative.[23]

Murphy[24] describes the medieval view as that in which the "real" world was believed to interfere with that communion with the divine on which the fulfillment of human destiny depended. When this world is viewed, as it was, simply as an antechamber to the next, there is bound to be a good number of people who vociferously reject any interest in present life to concentrate exclusively on preparation for the higher life that awaits after physical death. Such was the air of Margery's times, and she breathed it deeply.

Women saints, in particular, were in unprecedented supply; many, like Margery, had been married and had lived in the world before their conversions. Further, Margery's home in East Anglia was a center of religious activity; she undoubtedly came into personal contact with many of the significant religious figures of her age, and there were any number of handy and good-humored friars who could read to her from the easily available contemporary accounts of mystical experience. Colledge[25] says of Margery's book that it ". . . provides [among other things] incomparable evidence of the literary and devotional sources of mysticism . . . ." Indeed it does; Margery had a major talent for synthesizing and incorporating the experience of others.

Margery's experiences appear especially like those of St. Gertrude, a Benedictine nun of the thirteenth century. St. Gertrude's *Revelations* became an authority on mysticism, although it contained essentially nothing except ". . . proofs of God's partiality for her undeserving person."[26]

Margery was attracted to the celebrated religious women of her own time, such as Julian of Norwich, and no doubt she privately considered herself to be in their class.

Nature of mystical experience

The nature of the mystical experience has been subjected to intense scrutiny by persons of widely varying viewpoints and motives. In general, however, scholars of the subject can be divided into two groups: those who believe that an authentic mystical experience is possible and those who do not. Obviously, all nonbelievers in a God perceivable by the human mind fall into the latter category; they can recognize that the experience is valid for the percipient, but the possibility of divine causality is not even considered. For this group, mystical experience of all types is believed to be explicable purely on a psychologic, and usually a pathologic, basis. In contrast, the former group believes that God can, and sometimes does, speak directly to his creatures; further, human beings can, in a general way, distinguish ". . . between what is illusory and morbid, and what is authentic and sane."[27] To do so, the reported experience must be examined carefully in an attempt to determine whether or not it is authentic within a given metaphysical frame of reference. The scholars of the Catholic Church belong, of course, to this group. Most are very sophisticated indeed in their awareness of the hysterical basis of much "mystical" experience, but a relatively few instances of valid personal revelation of divinity are officially acknowledged and have become part of the canon of belief.

There is nothing more frustrating, either for the experiencer or for the observer, than an attempt to write objectively about a mystical transport. As James[28] has pointed out, incommunicableness is the keynote; the truth of the revelation exists for the percipient but for no one else.

> The handiest of the marks by which I classify a state of mind as mystical is negative. The subject of it immediately says that it defies expression, that no adequate report of its contents can be given in words. It follows from this that its quality must be directly experienced; it cannot be imparted or transferred to others. In this peculiarity mystical states

> are more like states of feeling than like states of intellect. No one can make clear to another who has never had a certain feeling, in what the quality or worth of it consists. One must have musical ears to know the value of a symphony; one must have been in love one's self to understand a lover's state of mind. Lacking the heart or ear, we cannot interpret the musician or the lover justly, and are even likely to consider him weak-minded or absurd. The mystic finds that most of us accord to his experiences an equally incompetent treatment.[29]

A psychiatrist attempting to write objectively of the mystical experience finds himself thus baffled:

> Admittedly, a simple, uncontroversial definition of mysticism is extremely difficult, because the concept refers primarily to man's way of grasping nature as a total experience. Mystical experience consists in experiencing the "here and now" in its immediacy where rational, objective, discursive elements are subordinated to intuitive, nondiscursive, nonanalytic elements. Mysticism, however, does not repudiate the unconscious cognitive components in the total perceptive encounter with reality. It is opposed to the process whereby one simply uses reason to the exclusion of the other qualities in man's total self which participate in understanding what goes on around him. Mysticism attempts to avoid duality. It seeks the experience of oneness. Mysticism is realistic, involving the totality of the person's encounter with the world, although certain traditions in mysticism are far removed from this description. These traditions advocate quietism, self-abnegation, and denial of reason and the senses. They are designed to cut one off from the world.[30]

The problems associated with making a distinction between valid and psychopathologic religious experience have been nicely summarized by James,[31] who also suggests a reasonable and workable empirical criterion:

> Among the visions and messages some have always been too patently silly, among the trances and convulsive seizures some have been too fruitless for conduct and character, to pass themselves off as significant, still less as divine. In the history of Christian mysticism the problem how to discriminate between such messages and experiences as were really divine miracles, and such others as the demon in his malice was able to counterfeit, thus making the religious person twofold more the child of hell he was before, has always been a difficult one to solve, needing all the sagacity and experience of the best directors of conscience. In the end it had to come to our empiricist criterion: By their fruits ye shall know them, not by their roots. Jonathan Edwards's *Treatise on Religious Affections* is an elaborate working out of this thesis. The roots of a man's virtue are inaccessible to us. No appearances whatever are infallible proofs of grace. Our practice is the only sure evidence, even to ourselves, that we are genuinely Christians.

James[32] concluded from his exhaustive study of religious experience that the absence of definite sensible images in the revelatory message is a sine qua non of its genuineness, and all authorities on the mystical experience appear to hold this view. Margery evidently was unaware of a principle set down by St. John of the Cross, and accepted by many Catholic authorities (including Walter Hilton), that an ecstatic episode is a kind of weakness, not experienced by the soul that is truly strong.[33]

Margery represents one terminus, the clearly pathologic, of a subtly graded spectrum of experience in which some nonrational type of knowledge is gained during an alteration of what we consider normal consciousness. One must not conclude from obviously disordered people such as Margery that there is only one royal road to knowledge. In our own time, when the alteration of normal consciousness through chemical means is widely studied as well as widely practiced, the closed mind of the confirmed skeptic is as indefensible as is the closed mind of the bigoted believer.

In the case of Margery, the conclusion of the Church would be shared by the most hard-nosed skeptic:

> There existed quite clearly, and from the beginning of her adult life, a large hysterical element in Margery's personality, and the fluid and repetitive language and the insignificant content of many of the sayings attributed to Christ or to God the Father, and the prominent place taken in them by tributes to her excellence, contrast very strongly with the depth and sobriety of the *Dialogue* of St. Catherine of Siena, the *Life* of St. Teresa of Avila, and even with the *Revelations* of Julian of Norwich. In general, we may perhaps say that there is nothing in the words themselves that suggest any other origin than the vivid imagination and retentive memory of a sincere and devout, but very hysterical woman.[34]

Knowles[35] discusses Richard Rolle, the author of *The Cloud of Unknowing,* Walter Hilton, Julian of Norwich, and Father Augustine Baker along with Margery Kempe in his sympathetic study of the major mystical writers of the medieval period. He devotes the least attention to Margery; what interest he does find in her relates to the historical value of her travel diary rather than to the importance of her mystical communications. He considers the latter to be the least striking parts of her book, and characterizes them as ". . . a series of banal conversations in an otherwise well-written novel of adventure."

However, one can disagree with his conclusion that her described visions are ". . . never repellent and rarely silly . . . ." They are occasionally repellent and frequently silly, but they are worth the attention of anyone who takes a serious interest in the anomalies and curiosities of human personality.

Conclusion

Most writers about Margery Kempe use, rather loosely, the term "hysteria" to describe her episodes of hallucination, pathologic weeping, and epileptiform seizures. I have tried to show that Margery indeed had a form of hysteria, in the restricted medical sense of that word, and that the diagnosis could be established by examination of the behavior described in her dictated autobiography. I suggested that Margery had the classical triad of symptoms on which a diagnosis of hysteria is now based. Particular attention was paid to the cultural milieu that conditioned the form of her symptoms, to the significance of their onset after childbirth, to concomitant physical and emotional illnesses, and to factors associated with specific attacks. The nature of mystical experience has been discussed briefly so that Margery's could be recognized as unauthentic even within the Christian metaphysical frame of reference.

James,[36] embarking on his pioneering and still definitive study of religious experience, issued a useful caution:

> Bent as we are on studying religion's existential conditions, we cannot possibly ignore these pathological aspects of the subject. We must describe and name them just as if they occurred in non-religious men. It is true that we instinctively recoil from seeing an object to which our emotions and affections are committed handled by the intellect as any other object is handled. The first thing the intellect does with an object is to class it along with something else. But any object that is infinitely important to us and awakens our devotion feels to us also as if it must be sui generis and unique. Probably a crab would be filled with a sense of personal outrage if it could hear us class it without ado or apology as a crustacean, and thus dispose of it. "I am no such thing," it would say; "I am MYSELF, MYSELF alone."

Margery Kempe can be classified as a victim of hysteria, epilepsy, and migraine. Nevertheless, one can hear her voice, crying across the centuries, "I am no such thing; I am MYSELF, MYSELF alone."

39 Lincoln Park
Newark, New Jersey 07102

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Necrology

David George Arenson, M.D., of Brooklyn, died on August 31, 1971, at the age of sixty-nine. Dr. Arenson graduated in 1926 from George Washington University School of Medicine. He was an attending physician in general practice at Flatbush General Hospital and Community Hospital of Brooklyn. Dr. Arenson was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Berta Baer, M.D., of Forest Hills, died on July 26 at the age of seventy-three. Dr. Baer received her medical degree from the University of Wurzburg in 1925. She was a clinical assistant surgeon at City Hospital Center at Elmhurst. Dr. Baer was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Louis C. Blaha, M.D., of New York City, died on October 13 at the age of sixty-nine. Dr. Blaha graduated in 1925 from University and Bellevue Hospital Medical College. He was an associate attending obstetrician and gynecologist at Misericordia Hospital. Dr. Blaha was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alfonso Coletta, M.D., of Beechhurst, died on July 3 at the age of sixty-three. Dr. Coletta received his medical degree from the University of Naples in 1934. He was a member of the New York State Society of Anesthesiologists, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Edward DeWitt Cook, M.D., of Buffalo, died on October 10 at the age of sixty-six. Dr. Cook graduated in 1933 from the University of Buffalo School of Medicine. He was an assistant attending physician at Buffalo General Hospital and a gastroscopist at the Veterans Administration Hospital. Dr. Cook was a Diplomate of the American Board of Internal Medicine and a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Peter Dunn, M.D., retired, of Yonkers, died on October 11. Dr. Dunn graduated in 1921 from George Washington University School of Medicine.

Charles Otto Fiertz, M.D., of Manhasset, died on October 18 at the age of seventy-seven. Dr. Fiertz received his medical degree from the University of Zurich in 1920. He was an honorary psychiatrist at North Shore Hospital and a senior associate neurologist and psychiatrist at St. Clare's Hospital. Dr. Fiertz was a member of the American Psychiatric Association, the New York Neurological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Jerome Freeman, M.D., of Port Ewen, died on December 5, 1971, at the age of fifty-eight. Dr. Freeman graduated in 1940 from the University of Edinburgh Faculty of Medicine. He was a general practitioner on the medical staff at Benedictine Hospital (Kingston). Dr. Freeman was a member of the Ulster County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Theodore Gillen, M.D., of Cohoes, died on May 6. Dr. Gillen graduated in 1943 from Albany Medical College.

Solomon Goodman, M.D., of Brooklyn, died on October 21 at the age of sixty-seven. Dr. Goodman graduated in 1929 from Long Island College Hospital. He was an attending pediatrician at Coney Island Hospital and an associate attending pediatrician at Maimonides Hospital of Brooklyn. Dr. Goodman was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Fred W. Graef, M.D., of New York City, died on October 31 at the age of seventy-eight. Dr. Graef graduated in 1919 from the University of Toronto Faculty of Medicine. Formerly director of the Manhattan Eye, Ear and Throat Hospital from 1939 to 1959, he was a consulting otolaryngologist there and also an honorary member of the otolaryngology staff at Lawrence Hospital (Bronxville) at the time of his death. Dr. Graef was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Otolaryngology, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jesse Clarence Lawrence, M.D., of Bellmore, died on November 2 at the age of sixty-one. Dr. Lawrence received his medical degree from the University of Lausanne in 1938. He was a general practitioner on the medical staff at Doctors Hospital (Freeport). Dr. Lawrence was a member of the American Academy of General Practice, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Wallace Linart, M.D., of Syracuse, died on October 22 at the age of forty-seven. Dr. Linart graduated in 1947 from Albany Medical College. He was an assistant attending orthopedic surgeon at State University Hospital of the Upstate Medical Center, an attending orthopedic surgeon at St. Joseph's Hospital Health Center, and an assistant attending orthopedic surgeon at Syracuse Memorial Hospital. Dr. Linart was a Diplomate of the American Board of Orthopedic Surgery and a member of the American Academy of Orthopaedic Surgeons, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Howard Harry Maldiner, M.D., of North Tonawanda, died on October 16 at the age of forty-seven. Dr. Maldiner graduated in 1953 from New York Medical College. He was an attending physician at DeGraff Memorial Hospital. Dr. Maldiner was a member of the Aerospace Medical Association, the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irving Robert Nelson, M.D., died on October 21 at the age of fifty-one. Dr. Nelson graduated in 1943 from Bowman Gray School of Medicine of Wake Forest College. He was an assistant attending physician at St. Joseph's Hospital (Far Rockaway). Dr. Nelson was a member of the American Academy of General Practice, the American Geriatrics Society, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Nilsen, M.D., of New York City, died on February 19 at the age of eighty-eight. Dr. Nilsen graduated in 1908 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Otolaryngology and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Hyman Samberg, M.D., of Brooklyn, died on November 5 at the age of sixty-eight. Dr. Samberg graduated in 1932 from Louisville University School of Medicine. He was director of physical medicine and rehabilitation at Brooklyn-Cumberland Medical Center and an associate attending physician in physical medicine and rehabilitation at Kings County Hospital Center. Dr. Samberg was a Diplomate of the American Board of Physical Medicine and Rehabilitation and a member of the American Academy of Physical Medicine and Rehabilitation, the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Siegfried Scherl, M.D., of the Bronx, died on October 28 at the age of fifty-three. Dr. Scherl graduated in 1944 from New York Medical College. He was an adjunct physician in neoplastic diseases at Montefiore Hospital and Medical Center, an assistant adjunct physician at Bronx-Lebanon Hospital Center, and an associate attending physician at Union Hospital of The Bronx. Dr. Scherl was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Schoenlank, M.D., of Staten Island, died on October 22 at the age of seventy-two. Dr. Schoenlank received his medical degree from the University of Wurzburg in 1924. He was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Francis Sullivan, M.D., of Buffalo, died on October 2 at the age of fifty-three. Dr. Sullivan graduated in 1948 from the University of Buffalo School of Medicine. He was an attending obstetrician at Mercy Hospital. Dr. Sullivan was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sameul Suskin, M.D., of Uniondale, died on April 14, 1970. Dr. Suskin graduated in 1927 from Tufts University School of Medicine.

Judson Rutherford Vining, M.D., of Potsdam, died on August 27 at the age of sixty-four. Dr. Vining graduated in 1930 from the University of Western Ontario Faculty of Medicine. He was an attending general practitioner at North County Hospitals. Dr. Vining was a member of the American Public Health Association, the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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National Music Camp. College. J.C.A.H. approved 1,400 bed psychiat
hospital. Three year psychiatric residency program. Excellent fringe be
fits. Contact: Philip B. Smith, M.D., Room 325, Traverse City State Hos
tal, Traverse City, Michigan 49684. An Equal Opportunity Employer.

ALLERGIST, BOARD CERTIFIED OR ELIGIBLE, FOR ASSOCIATION
very large private allergy practice in central New York, with large gross
come. Would lead to quick partnership. Outstanding opportunity for ri
person. Dept. 262, c/o NYSJM.

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vices City Hospital Center. Large teaching division of the Mount Sinai Sch
of Medicine. Half time vs. full time position directing very large drug ab
program. Opportunities for academic appointment, teaching & investigat
activities. An Equal Opportunity Employer. Apply to: Stanley G. Seck
M.D., Chief, Department of Medicine, Mount Sinai Hospital Services, 7
Broadway, Elmhurst, New York. Call (212) 830-1321.

DYNAMIC INTERNIST FOR DIRECTOR OF MEDICAL SERVICES IN
bed, acute, general community hospital in New England area with acce
bility to teaching centers and potential faculty appointment. Responsibi
for all medical staff activities. Salary range and fringe benefits attractiv
the right person. Dept. 266, c/o NYSJM.

OBSTETRICIAN-GYNECOLOGIST, BOARD ELIGIBLE OR CERTIF
for full-time position in HMO-type prepaid group practice, suburb of
York City. Initial contract at $30,000 plus, depending on qualifications.
cellent opportunity. Send curriculum vitae with first letter. Dept. 268,
NYSJM.

UNLIMITED OPPORTUNITY: FOR BOARD ELIGIBLE OR CERTIF
internist or G.P. interested in family practice in beautiful, rural, Catskilll
with a new, accredited, progressive community hospital. New York Stat
cense. Contact: Chief of Medical Service, Dr. Ansari, Margaretville Me
rial Hospital, Margaretville, N.Y. 12455. Call collect (914) 586-2631.

PHYSICIAN WANTED: M.D. WITH WRITING OR EDITORIAL EXP
ence needed to work full-time on multi-media educational materials at a
expanding medical publishing/communications company. New York Cit
cation. Salary commensurate with experience. Dept. 271, c/o NYSJM.

YSICIANS WANTED—CONT'D

ERNIST-GERIATRICIAN, HALFTIME POSITION AT 1,000-BED GEN-
al hospital. Major teaching division of the Mount Sinai School of Medicine
th unique extended care and geriatric medical unit. Excellent opportunity
active participation in patient care, teaching and research. Academic op-
rtunity and salary commensurate with qualifications. An Equal Opportuni-
Employer. Write to: Leslie S. Libow, M.D., Chief Geriatrics Division,
ount Sinai Hospital Services, City Hospital Center, 79-01 Broadway, Elm-
rst, New York 11373, or call (212) 830-1491.

HROLOGY FELLOW, LARGE RENAL UNIT AND DIALYSIS SERVICE
Brooklyn, N.Y., for June 1973 to June 1974. Training in dialysis, renal
opsy, kidney transplantation and clinical nephrology is stressed. Minimum
rs. Internal medicine residency required. Send curriculum vitae to: Renal,
O. Box 781, Brooklyn, N.Y. 11201.

ELLENT OPPORTUNITY IN NON-URBAN, FOUR-SEASON CAT-
ILL Mountain area: Board certified or eligible surgeon, New York State li-
nse. Capable of handling orthopedics in an accredited, new, modern, well-
uipped community hospital. Contact: Chief of Surgical Service, Dr. Halim,
argaretville Memorial Hospital, Margaretville, N.Y. 12455. Call collect
14) 586-2631.

SICIAN, PART TIME-PERMANENT. IF YOU ARE A PHYSICIAN
th industrial experience and are interested in working half time, please send
urriculum vitae to: Executive Health Examiners, Attn: Personnel Dept.,
Third Ave., New York, N.Y. 10017.

NISH SPEAKING DOCTOR FOR GENERAL PRACTICE, FREEPORT
ea. Call (516) 231-4848.

NEED FOR GENERAL PRACTITIONER: RESORT AREA ON LAKE
tario, excellent sailing, fishing, swimming. State University 10 minutes
ay. Immediate occupancy in new, professional office building. Write: P.
Billings, Fair Haven, N.Y. 13064, or call (315) 947-5117.

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Y GENERAL PRACTICE ESTABLISHED FOR 27 YEARS IN WASH-
ton Heights (Manhattan) available. Go into semiretirement in other Bor-
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pt. 267, c/o NYSJM.

BLISHED, ACTIVE GENERAL PRACTICE AVAILABLE. DOCTOR
d and surviving widow, also a doctor, wishes to sell joint practice and com-
ation of residence and offices in Elmont, Nassau County, New York. Reply
t. 269, c/0 NYSJM.

OLOGIST, RETIRING, OFFERS LONG ESTABLISHED PRACTICE,
nd Concourse, Bronx, N.Y. Fully equipped, 6 room office. Opportunity
radiologist or allied specialties. Terms negotiable. Dept. 274, c/o
SJM.

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diologist retiring from practice, ill health. In practice 50 years. Office lo-
ed in East 60's, Manhattan. Reply Dept. 276, c/o NYSJM.

LUXURIOUS PROFESSIONAL OFFICES

on Manhattan's East Side
89th St. & York Ave.
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Units of 500 to 5000 sq. ft., centrally air conditioned, separate street and/or lobby entrances. Will build and divide to suit.

Outstanding for luxury and location . .
Competitively priced for today's market.

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REAL ESTATE FOR SALE OR RENT

FOR SALE. FIVE FLOOR BROWNSTONE IN MURRAY HILL SECTION of Manhattan. Complete medical full floor; complete residential floor. Call Le. 2-2154.

LIKE SEMI-RETIREMENT? WANT A GRACIOUS HOME? SEE THIS old 15 room colonial in a quiet country village 60 miles from N.Y.C. Population 5,000. 18 × 60 pool, 3 car garage, 5½ acres. Close to golf and skiing. $95,000. Carriage House Real Estate. Tel. 914-855-3184, Pawling, N.Y.

HICKSVILLE, L.I.: COMPLETE 4-ROOM M.D. OFFICE WITH BEAUTIful, immaculate, modern, residential home; large corner opposite school. Practice gratis. Exceptional offer at $49,000. Morton Berger, M.D., 57 Meeting Lane, Hicksville, N.Y. 11801. (516) 796-9595, or Dept. 265, c/o NYSJM.

FOR SALE: 2-FAMILY, 6 YEAR OLD, DETACHED CORNER HOUSE WITH basement. Residential. Excellent area and spot for doctor opening practice. No medical office around. Excellent income on rental. Near sr. citizens homes, 2 hospitals, nursing homes, transportation. Many extras. Beautifully landscaped. After 5 p.m. weekdays. Frank Clemente, Far Rockaway, New York City. (212) 471-4871.

VACATION PARADISE: LUXURIOUS 3 BEDROOM, 3 BATH, AIR CONditioned, St. Thomas villa. Full kitchen, 25 foot seaside gallery, maid service, on beautiful Cowpet Bay overlooking St. John. Excellent swimming, snorkeling, boating, and duty free shopping. Call Mr. Aaronson (212) 674-3230.

FOR SALE: 4 ROOM OFFICE WITH BATH, 7 ROOM LIVING QUARTERS, 2-car garage. Occupied by M.D. 40 years. Queens Village. Reasonable; and negotiable. Call (212) BA4-7294.

FOR SALE: ROCKVILLE CENTRE LUXURY HOME AND OFFICE, CUStom, built on $^1/_2$ acre cor., and designed for maximum efficiency and family privacy; 8 rm. home, 4 rm. office, 3 full baths, central a/c, office parking, large private garden, near hospitals, shopping, transportation. Suitable solo or group. Rental considered. Dept. 270, c/o NYSJM.

OFFICE SUITE AVAILABLE. HUGE ROOMS. OTHER PHYSICIANS IN professional building next door to Yonkers Professional Hospital. Call any time (914) YO 5-0230.

Sixth Annual Symposium on

Medical Aspects Of Sports

Sponsored by the

Medical Society of the State of New York,
Committee on Medical Aspects of Sports

Saturday, February 10, 1973

9:00 a.m. to 5:00 p.m.

Georgian Ballroom
Americana Hotel
New York City

* * *

Medical and Associated health professions, coaches, trainers, and athletic directors are invited.

(no registration fee)

* *

Co-sponsors

New York State Public High School Athletic Association
Health, Physical Education and Recreation Association
Eastern States Trainers Association
Touchdown Club of New York

WHAT GOES ON in medicine

NEW YORK STATE **December 15–31, 1972**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

NEW YORK CITY AREA

FRIDAY, DECEMBER 15

8:00–9:30 a.m.

Maimonides Medical Center

4802 Tenth Avenue
Brooklyn

OFFICE CARE OF G.I. PROBLEMS

BAROUKH KODSI, M.D.

MONDAY, DECEMBER 18

1:00 p.m.

Downstate Medical Center

Basic Science Building, Lecture Hall 4
450 Clarkson Avenue
Brooklyn

R. Janet Watson
Hematology Lecture

THROMBOPOIESIS AND THROMBOPOIETIN

JACK LEVIN, M.D.
Johns Hopkins University Medical School

3:30 p.m.

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
79-01 Broadway
Elmhurst

ALCOHOLIC CARDIOMYOPATHY

LAWRENCE GOULD, M.D.
Misericordia Hospital

8:30 p.m.

Beth Israel Medical Center

Dazian Pavilion
10 Nathan D. Perlman Place
12th Floor Conference Room

Medical-Surgical-Thoracic Conference

TRANSPLANT LUNG

WILLIAM COOK, M.D.
Albert Einstein College of Medicine

TUESDAY, DECEMBER 19

8:00–9:00 a.m.

The American Academy of Family Physicians Richmond Chapter

The Staten Island Hospital
101 Castleton Avenue
Staten Island

SYMPOSIUM ON JAUNDICE

V. SOTTILE, W. ROTHMAN and
JOAN GILES, M.D.'s

10:00 a.m.

Maimonides Medical Center

Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

Pediatric Conference

CLINICAL PATHOLOGICAL CONFERENCE

WEDNESDAY, DECEMBER 20

4:00–5:30 p.m.

Westchester Square Hospital

Conference Room
1625 St. Peters Avenue
Bronx

ESOPHAGO-GASTRIC JUNCTION SURGICAL IMPLICATIONS

WALTER W. FISCHER, M.D.
Lenox Hill Hospital

8:30–10:00 p.m.

American Institute for Psychoanalysis

329 East 62nd Street

THE DYNAMICS OF PSYCHOPHARMACOLOGY IN MEDICAL PRACTICE

JACK SCHNEE, M.D.

TUESDAY, DECEMBER 26

9:00 a.m.

New York Infirmary

Toscanini Room
Stuyvesant Square East and 15th Street

GOUTY ARTHRITIS

THOMAS KANTOR, M.D.
N.Y.U. Medical Center

FUTURE EVENTS

January 3 / May 25, 1973

9:00 a.m.–4:00 p.m., daily

French and Polyclinic Medical School

345 West 50th Street

BASIC MEDICAL SCIENCES CURRICULUM

For further information, address: The Dean at the above address.

February 5 / 9, 1973

8:30 a.m.-5:30 p.m., Monday-Friday

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
100th Street and Fifth Avenue

SURGERY OF THE PARANASAL SINUSES

JOSEPH L. GOLDMAN, M.D. and WILLIAM H. FRIEDMAN, M.D. and Faculty

FEE: $400

February 8 / 10, 1973

9:00 a.m.-4:30 p.m., Thursday-Saturday

The Page and William Black Post-Graduate School of Medicine

NEUROPHARMACOLOGY

GERARD M. LEHRER, M.D., JACK PETER GREEN, Ph.D., HOWARD S. MAKER, M.D. and Guest Lecturers

FEE: $150

February 8, 15, 22, 1973

3:00-5:00 p.m., Thursdays

The Page and William Black Post-Graduate School of Medicine

VERTICAL MOTILITY PROBLEMS

EDWARD L. RAAB, M.D.
The Mount Sinai School of Medicine

FEE: $60

SATURDAY, FEBRUARY 10

8:30 a.m. Registration

Medical Society of the State of New York

Committee on Medical Aspects of Sports
Americana Hotel
Georgian Ballroom

MEDICAL ASPECTS OF SPORTS
Sixth Annual Symposium

NO REGISTRATION FEE

Co-Sponsors: New York State Public High School Athletic Association; Health, Physical Education and Recreation Association; Eastern States Trainers Association and Touchdown Club of New York

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February 11 / 14, 1973

Medical Society of the State of New York

Hotel Americana, New York City

ANNUAL CONVENTION

SCHEDULE OF SCIENTIFIC MEETINGS

SUNDAY, FEBRUARY 11

10 A.M. **GENERAL SESSION, Royal Ballroom**
ARCHIVES, Versailles Ballroom
OPHTHALMOLOGY, Versailles Terrace

2 P.M. **ANESTHESIOLOGY, Versailles Terrace**

MONDAY, FEBRUARY 12

9 A.M. **(DATA PROCESSING IN MEDICINE) ....joint meeting**
(PATHOLOGY, CLINICAL PATH., & BLOOD BANKING), Versailles Terrace
DERMATOLOGY & SYPHILOLOGY, Royal Ballroom B
GASTROENTEROLOGY & PROCTOLOGY, Royal Ballroom A
SCHOOL HEALTH, Princess Room
(PLASTIC & RECONSTRUCTIVE SURGERY)
(UROLOGY) ......joint meeting, Versailles Ballroom

2 P.M. **GENERAL SESSION, Royal Ballroom A**
NEUROLOGY, Royal Ballroom B
(ORTHOPEDIC SURGERY)
(PEDIATRICS) ....joint meeting, Versailles Ballroom

TUESDAY, FEBRUARY 13

9 A.M. **CHEST DISEASES, Versailles Terrace**
(FAMILY & GENERAL PRACTICE)
(PSYCHIATRY) ...joint meeting, Versailles Ballroom
OBSTETRICS & GYNECOLOGY, Royal Ballroom A
PHYSICAL MEDICINE & REHABILITATION, Royal Ballroom B

2 P.M. **GENERAL SESSION, Royal Ballroom A**
MEDICAL LEGAL & WORKMEN'S COMP. MATTERS, Royal Ballroom B
OCCUPATIONAL MEDICINE, Versailles Ballroom
SPACE MEDICINE, Versailles Terrace

WEDNESDAY, FEBRUARY 14

8:45 **INTERNAL MEDICINE, Royal Ballroom**

9 A.M. **ALLERGY, Princess Room**
NEUROSURGERY, Versailles Terrace
PREVENTIVE MEDICINE & PUBLIC HEALTH, Versailles Ballroom

2 P.M. **GENERAL SESSION, Royal Ballroom**
OTOLARYNGOLOGY, Versailles Ballroom
RADIOLOGY, Versailles Terrace
SURGERY, Princess Room

SCIENTIFIC MOTION PICTURES AND SCIENTIFIC AND TECHNICAL EXHIBITS, SUNDAY through WEDNESDAY, February 11 through 14, open at 9 A.M., close at 5 P.M. SCIENTIFIC MEETING ROOMS, 2nd Floor. EXHIBITS, MOTION PICTURES, Albert Hall, Lower Lobby.

For further information and complete program, see New York State Journal of Medicine, January 1, 1973, or write Medical Society of the State of New York, 420 Lakeville Road, Lake Success, N.Y. 11040.

MONDAY, FEBRUARY 12

9:00 a.m.–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine

DYSLEXIA—CURRENT DEVELOPMENTS

VIRGINIA LUBKIN, M.D. and Guest Lecturers
The Mount Sinai School of Medicine

FEE: $25

February 19 / March 2, 1973

9:00 a.m.–6:00 p.m.

The Page and William Black Post-Graduate School of Medicine

TEMPORAL BONE SURGERY

HARRY ROSENWASSER, M.D. and SIMON C. PARISIER, M.D.
The Mount Sinai School of Medicine

FEE: $600

TUESDAY, FEBRUARY 20

9:00 a.m.–5:00 p.m.

Brooklyn Tuberculosis and Respiratory Disease Association and the Medical Society of the County of Kings

Downstate Medical Center
450 Clarkson Avenue
Brooklyn

Teaching Seminar

DIFFUSE PULMONARY DISEASES

Chairman: HAROLD A. LYONS, M.D.
Downstate Medical Center

NO FEE

Write: Brooklyn Tuberculosis and Respiratory Disease Association, Inc., 293 Schermerhorn Street, Brooklyn, N.Y. 11217.

February 20 / April 17, 1973

1:30–3:00 p.m., Tuesdays

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center

PSYCHOPHARMACOLOGY FOR PSYCHIATRISTS

SAMUEL L. FEDER, M.D., and SEYMOUR ROSENBLATT, M.D.
The Mount Sinai School of Medicine

FEE: $100

ALBANY AREA FUTURE EVENT

January 5 / 22, 1973

Albany Medical College

Department of Postgraduate Medicine

14th POSTGRADUATE MEDICAL SEMINAR CRUISE

An 11-day cruise from New York aboard the "Gripsholm" of the Swedish American Line.

Faculty of the Albany Medical College will present a comprehensive shipboard postgraduate program, covering subjects in pediatrics, psychiatry, surgery, hematology and physiology.

For information write to: FRANK M. WOLSEY, JR., M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

BUFFALO AREA

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE LAKES AREA REGIONAL MEDICAL PROGRAM

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany, and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in two series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 a.m. on Tuesdays.
2. The monthly series on Cancer sponsored by the Roswell

Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.

For further information, contact the State University of New York at Buffalo, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

BUFFALO FUTURE EVENT

January 4 / May 31, 1973

Continuing Medical Education, State University of New York at Buffalo and Heart Association of Western New York

Sisters of Charity Hospital
Palmer Hall

CLINICS IN PHYSICAL EXAMINATION OF THE CARDIAC PATIENT AND ARRHYTHMIA WORKSHOPS

Note: These Thursday evening sessions are workshops in which individual stethophones will be available so that each participant can hear the heart sounds and murmurs of a patient. Full advantage will be taken of TV magnification of difficult-to-see phenomena. A storage oscilloscope will be used to present phonocardiographic data. The second hour will consist of a workshop in arrhythmias, stressing basic principles and not requiring any previous training. Nurses interested in coronary care are also welcome to register.

FEE: $25 CREDIT: 38 hours AAFP and AMA

Write: SUNYAB, Continuing Medical Education, Main Street Division, 2211 Main Street, Buffalo, N.Y. 14214. Tel (716) 831-5526.

NASSAU COUNTY

WEDNESDAY, DECEMBER 20

9:00–10:00 a.m.

Mercy Hospital

MacArthur Auditorium
Rockville Centre

RENAL OSTEODYSTROPHY AND THE ANEMIA OF UREMIA

JAMES E. CLARK, M.D.

December 20 and 27, 1972

4:00 p.m., Wednesdays

Nassau County Medical Center

Meadowbrook Hospital
Radiology Department Classroom
East Meadow

December 20

Wegener's Granulomatosis

H. EPSTEIN, M.D.
Nassau Hospital

December 27

Department Symposium

Evaluation of Trial Period with
G.E. Rapport Computer

PHYSICIANS' PLACEMENT

AFTON, N.Y., Chenango County, needs a Family Physician.

CONTACT: MR. JAMES P. ERNSTROM, Chm., Afton Medical Committee, 188 Main Street, Afton, N.Y. 13730.

BOONVILLE, N.Y., Oneida County. G. P. to establish practice of family medicine with reciprocal coverage agreement; private suite in three-doctor health bldg., equipped with x-ray, lab., emergency room. Guaranteed first-year income.

CONTACT: MRS. JOHN H. THODEN, Secretary, Adirondack Health Building, Inc., 402 Main Street, Boonville, N.Y. 13309. Tel. (315) 942-2053.

ENDICOTT, N.Y., Broome County. Family Physician wanted to join 2-man incorporated group. Salary plus pension and profit sharing plans, etc.

CONTACT: SEYMOUR BRONSTEIN, M.D., Box 54B, R.D. 1, Endicott, N.Y. 13760. Tel. (607) 862-3251.

FINGER LAKES REGION, N.Y. Obstetrician/Gynecologist Board Elig/Cert.—immediate opening for a full time clinician in a Planned Parenthood organization. Must be willing to travel to satellite clinics.

CONTACT: EDWARD J. GRANDT, M.D., Med. Dir., Ivy Medical Arts Bldg., Elmira, N.Y. 14905. Tel. (607) 734-0809.

HAMMONDSPORT, N.Y., Steuben County. G.P. needed.

CONTACT: JOHN R. KUHL, M.D., Hammondsport, N.Y. 14840. Tel. (607) 569-2399.

LITTLE FALLS, N.Y., Herkimer County. Specialists in Anesthesiology, Family Medicine and Pediatrics.

CONTACT: MR. RICHARD S. QUINLAN, Little Falls, N.Y. 13365. Tel. (315) 823-1000.

PLATTSBURGH, N.Y., Clinton County. ENT, GP, Neurologist.

CONTACT: MICHAEL J. MOYNIHAN, M.D., CVPH Medical Center, Plattsburgh, N.Y. 12901. Tel. (518) 561-2000. Ext. 263 or 264.

RUSHFORD, N.Y., Allegany County. Family Physician. Village Health Officer and School Physician open.

CONTACT: MRS. FREDERIC D. MORRIS, Supervisor, Town of Rushford, RFD #3, Cuba, N.Y. 14727. Tel. (716) 437-2768.

SAUGERTIES, N.Y., Ulster County. Family Physician.

CONTACT: MICHAEL E. CATALINOTTO, Barclay Heights, Route 9W, Saugerties, N.Y. 12477. Tel. (914) 246-4551.

SIDNEY, N.Y., Delaware County. Recruiting physicians for outpatient clinic.

CONTACT: MR. GEORGE A. NUFFER, The Hospital, Pearl Street, Sidney, N.Y. 13838. Tel. (607) 563-9934.

STANFORDVILLE, N.Y., Dutchess County. Family Physician.

CONTACT: WALTER G. THORPE, Stanfordville, N.Y. 12581. Tel. (914) 868-1916.

SUFFOLK COUNTY, N.Y. Up to 80 G.P.'s and 30 Pediatricians needed in this fast-growing community.

CONTACT: MR. DON CAIRNS, Exec. Secty., Suffolk County Medical Society, 850 Veterans Memorial Highway, Hauppauge, N.Y. 11787. Tel. (516) 265-6666.

SYRACUSE, N.Y., Onondaga County, needs Internists and Pediatricians for Neighborhood Health Clinic.

CONTACT: ROBERT F. AUSTIN, M.D., 819 So. Salina St., Syracuse, N.Y. 13202. Tel. (315) 476-7921.

WALTON, N.Y., Delaware County (Catskill Mtn. Area). Ob/Gyn Board Cert./Elig., and Family Physician with residency training.

CONTACT: THOMAS E. LAVELL, M.D., Delaware Valley Hospital, Walton, N.Y. 13856. Tel. (607) 856-2861.

WHITEHALL, N.Y., Washington County. Family Physician.

CONTACT: MR. FRANK MARTUCCI, Supervisor, 5 Mountain Street, Whitehall, N.Y. 12887. Tel. (518) 499-0228.

FAIR HAVEN, N.Y., Cayuga County. Family Physician wanted. New Professional Building. Town Health Officer and School positions open.

CONTACT: MR. PEARNE W. BILLINGS, Fair Haven Plaza, Inc., Main Street, Fair Haven, New York 13064. Tel. (315) 947-5117.

MARGARETVILLE, N.Y., Delaware County. Board Certified or Eligible Surgeon, capable of handling orthopedics, N.Y.S. Lic., for new hospital.

CONTACT: DR. HALIM, Margaretville Memorial Hospital, Margaretville, N.Y. 12455. Call Collect (914) 586-2631.

MARGARETVILLE, N.Y., (Catskill Mtn. area) Bd. Elig/Cert. Internist or G.P. interested in Family Practice. NYS Lic.

CONTACT: DR. ANSARI, Chief of Medical Service, Margaretville Memorial Hospital, Margaretville, N.Y. 12455. Call collect (914) 586-2631.

FULTON, N.Y., Oswego County. Internist, new hospital based office, EKG Readings.

CONTACT: MR. PAUL A. HOYT, Adm., A.L. Lee Memorial Hospital, Fulton, N.Y. 13069.

BARKER, N.Y., Niagara County, needs a Family Physician.

CONTACT: MRS. ESTHER HYDE, Lower Lake Road, Barker, N.Y. 14012.
Tel. (716) 795-3892.

WEBSTER, N.Y., Monroe County. Recently formed multi-specialty group practice seeks men in Family Practice and/or Internal Medicine. New building being built to accommodate group.

CONTACT: JASON O. COOK, M.D., 190 South Avenue, Webster, N.Y. 14580.
Tel. (716) 872-2936.

EVENTS RECEIVED AFTER DEADLINE

TUESDAY, DECEMBER 5

8:00 p.m.

New York Diabetes Association

Einhorn Auditorium
Lenox Hill Hospital
76th Street between Park and Lexington Avenues

KIDNEY DISEASE IN DIABETES MELLITUS

HAROLD RIFKIN, M.D.

8:30 p.m.

Jewish Memorial Hospital

Broadway and 196th Street

ADVANCES IN THE TREATMENT OF LYMPHOMAS

BURTON LEE, M.D.
Cornell University Medical College

MONDAY, DECEMBER 11

8:00 p.m.

New York Academy of Gastroenterology and New York Gastroenterological Association

Auditorium, Memorial Hospital
444 East 68th Street

Panel Discussion

DIARRHEA—WHAT'S NEW?

Moderator

HOWARD M. SPIRO, M.D.
Yale University School of Medicine

Panelists

ROBERT DONALDSON, M.D.
Boston University School of Medicine
THOMAS HENDRIX, M.D.
Johns Hopkins University School of Medicine
GERALD KEUSCH, M.D.
Mount Sinai School of Medicine

American Yugoslav Medical Society

Academy of Science
2 East 63rd Street

1. **Hypercalcemic Syndrome—Diagnostic Consideration and Treatment**
   ALEKSANDRA DIMIC, M.D.
   Cornell University Medical College
2. **Current Problems of Drug Abuse**
   D. MITCHELL BEDENKO, M.D.
   New York Hospital-Cornell Medical Center

. . . **KINESED**® provides more complete relief.

Gastroenteritis, colitis, gastritis or duodenitis can produce spasm or hypermotility, gas distention and discomfort. But Kinesed can provide a balanced formulation to relieve these symptoms:

- ☐ **belladonna alkaloids—for the hyperactive bowel**
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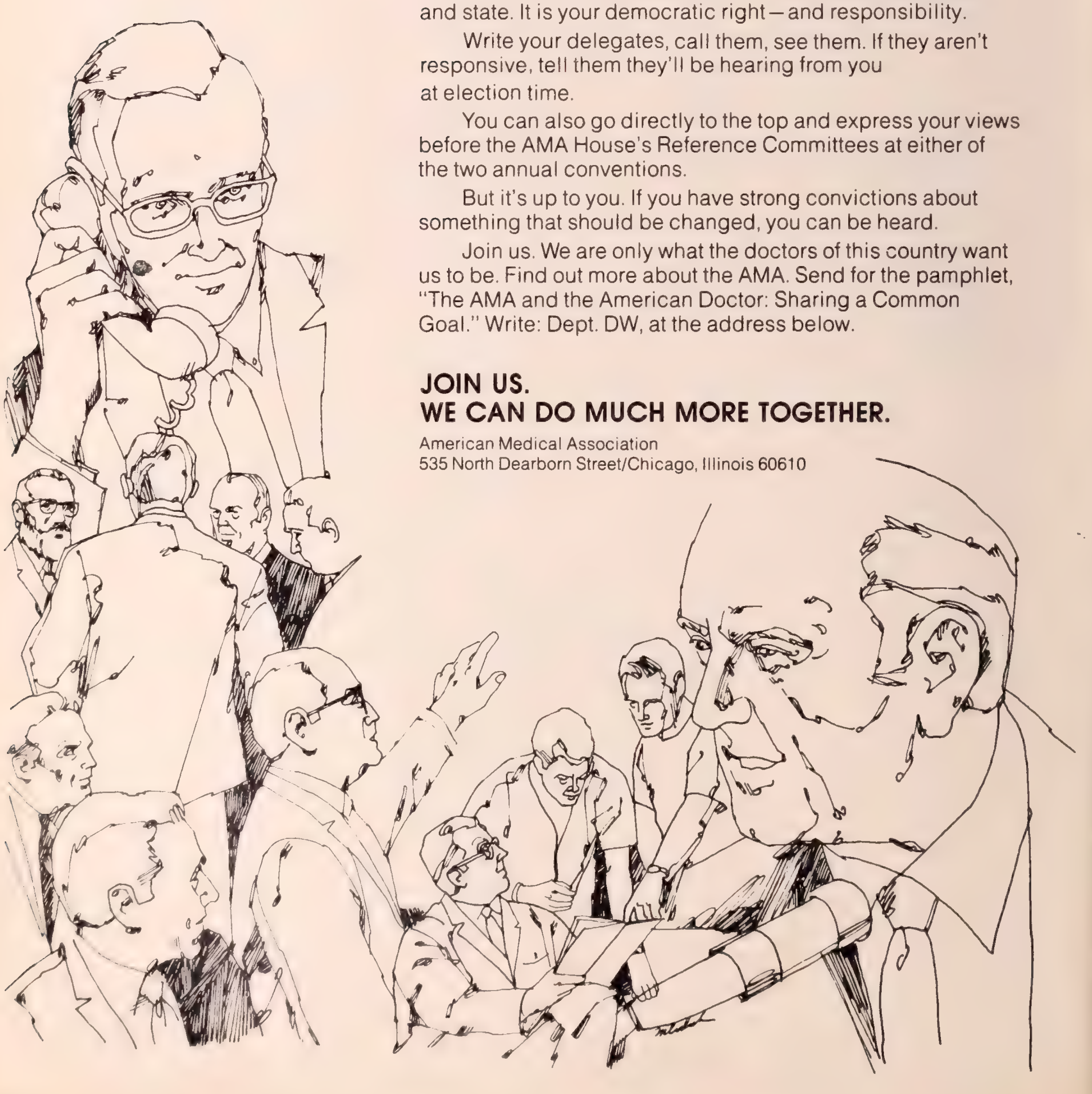

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New York State Journal of Medicine

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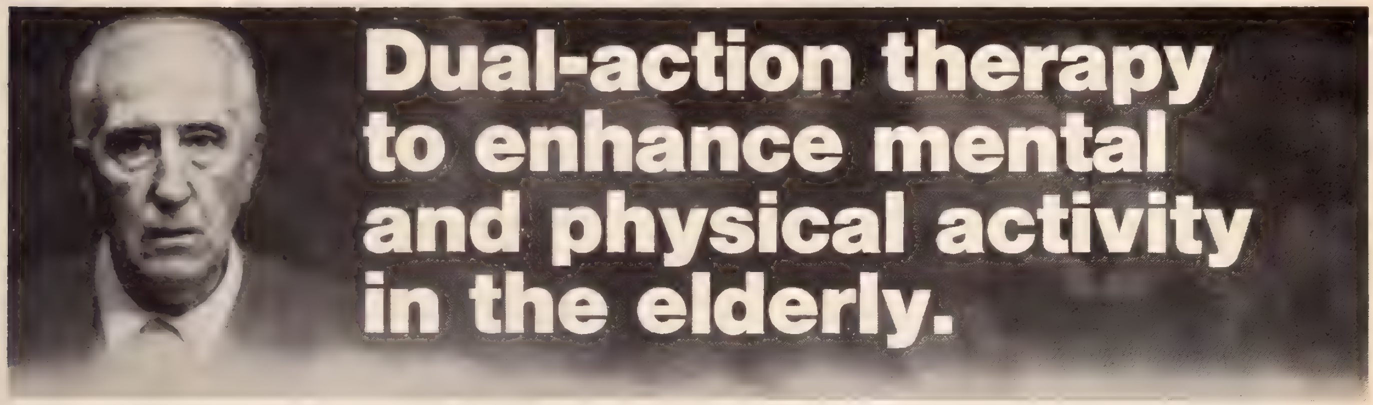

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The new building for the Medical Society of the State of New York, ideally located in the village of Lake Success, is an inspiring and beautiful structure. It gives the Medical Society of the State of New York a new home, a home of its own at last. Members of the State Society who have not seen this structure owe it to themselves and their families to visit and enjoy this architectural achievement in its idyllic setting.

It has 40,000 square feet of functional space, and this permits all of its activities, with the exception of the Annual Convention, to take place on the premises. It provides special offices and meeting rooms for all routine functions and organizational activities of the Society. The Council room is really unique and awesome. Entering the building is an impressive experience.

The building is centrally located for all travel by automobile and by air from both New York City and Upstate. It is the focal point geographically for all of the five boroughs. Prior arrangements with the Medical Society will assure comfortable transportation for participating active members of the Society at committee meetings.

As George Himler, M.D., then President of the Society, noted at the dedication ceremony, "The transfer from the rented space in New York City to this exquisite structure was a particularly fitting act, for it symbolizes the increasingly significant role the Society will play in determining the scientific, educational, social, and economic conditions which will so profoundly affect health care in the future."

The Medical Society was organized in 1807 in Albany to "advance the science of medicine and to better public health." The annual meetings of the House of Delegates, which represents 61 county medical societies, medical specialist groups, and representatives from the medical colleges in the State, establishes the format and the code of ethics under which physicians practice in the State.

The two-story, new building at 420 Lakeville Road faces an ornamental fountain with the home base of Levitt and Sons, Incorporated, opposite, an architectural mirror image on the other side of the fountain.

Much credit is due to the Officers of the Society, the several building committees, and the Executive Vice-President, whose vision contributed to making this achievement a reality.

Divisional activities of the Society include detailed planning for scientific programs, for legislation, occupational health, Workmen's Compensation, standards of medical care, public affairs, and scientific publications, including the ***New York State Journal of Medicine,*** "What Goes On," "News of New York," Ad Rem, and Hot Line.

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The ***Journal,*** the mouthpiece of MSSNY, is a reflection of the practice of medicine in the State of New York and helps physicians in the State maintain the highest professional standards. Its objective is set forth in Article I of the Constitution and Bylaws as follows: "To extend medical knowledge and advance the science and art of medicine."

Each issue of the ***Journal*** is an omnibus. There is something for everyone; more than 60 per cent of our readers are specialists. As a scientific publication it is not used for propaganda purposes. The ***Journal*** concentrates on scientific subjects and items of assistance to the physician in practice; its goal is to disseminate knowledge. The ***Journal*** solicits original contributions and promotes continuing education by reporting clinical studies and basic science contributions applicable to clinical medicine, thus keeping the membership abreast of advances in medicine. This reflects the high priority given to postgraduate continuing education by the Officers and Council of the State Society.

The scientific articles published in the ***Journal*** usually conform to one of the following categories: those which contain or establish new facts, new modes of practice, application of general principles derived from experimental work, studies of the literature, and determinations and summaries of conferences and seminars of real value in clinical medicine; and those articles presenting such complete review of facts on any particular subject that the writer has deduced therefrom conclusions of importance and general value; and this includes condensed surveys of recent advances by qualified authorities.

A survey of the headings in the table of contents is the simplest method of realizing the extent and nature of the material that appears in the ***Journal.*** Scientific articles with preliminary abstracts naturally constitute the mainstay of the ***Journal.*** One will find as subject headings: Recent Advances in Medicine, Clinicopathologic Conferences, Correlation Conferences on Radiology and Pathology, Urologic-Radiologic Reviews, Quarterly Review of Drugs, Electrocardiograms of the Month, Clinical Anesthesia Conferences, Topics in Orthopedics, Industrial Health, Nutrition Reports, Case Reports, Special Articles, Medical Arts and Letters, History of Medicine, Editorials, and Letters to the Editor. Notices of meetings and courses, medical news, book notices, and medical school news are also found. Attention is given to special programs of meetings of interest to particular specialty groups and to general practitioners. General items of medical news of interest and of practical usefulness to members of the State Society and other readers are included. "Information for Authors" appears in detail in each issue of the ***Journal*** as an aid in the preparation of material for publication.

As the official organ of the Medical Society of the State of New York the ***Journal*** reflects the activities of the Medical Society and efforts of the organization that are of concern to the membership. Edited verbatim minutes of official meetings, as at the Annual Convention and some other special sessions, and reports of committees and of officers, are published in special issues. In this manner all members of the Society are kept advised of all pertinent happenings and all actions taken by the State organization.

One section in the ***Journal*** is devoted to "What Goes On." This section includes an indexed listing of meetings by areas in the State. This function is under Norman S. Moore, M.D., Director of Scientific Activities.

If controversial material is printed in any section of the ***Journal,*** equal opportunity is offered for statements to the contrary and for viewpoints in refutation. This is done in the "Letters to the Editor" section, and such communications are encouraged. Subjects of political, social, and economic interest are usually handled in Special Articles and are also given a high priority in other publications of the Society, as the "News of New York."

As noted the ***Journal*** solicits special articles and reviews from eminent authors. It aims to make this function of increasing importance and a significant contribution to the program of continuing education, to which the Council and the Society are committed.

The Associate Editorial Board is carefully selected to help review and evaluate manuscripts in specialized fields. The Editorial Council, selected therefrom, is designed to bring the medical schools in closer liaison with the ***Journal*** and consists of one representative from each of the 12 faculties in New York State.

The ***New York State Journal of Medicine*** welcomes any comments, suggestions, or criticisms which will help the ***Journal*** fulfill its purpose and give the membership of the Society a publication which will be effective in keeping physicians abreast of the rapid progress in medicine and of the changing scene, as it involves its ethical, moral, and economic aspects.

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Abstracts

Gewirtzman, G., Bousvaros, G., and Grant, C.: Coronary and left-heart angiography in assessment of chest pain, ***New York State J. Med.*** 72: 2967 (Dec. 15) 1972.

The results of selective coronary arteriography, with catheterization of the left side of the heart, in patients who had chest pain were correlated with the clinical diagnoses in a series of 110 cases. Of 35 patients with classical angina pectoris, but no diagnosable myocardial infarction, 31 had coronary disease which was considered to be important by current standards; 3 had IHSS (idiopathic hypertrophic subaortic stenosis), and 1 had congestive cardiomyopathy. Of 17 patients with atypical chest pain, 5 had important coronary artery disease; the remainder had little or no coronary artery disease and apparently healthy hearts. Fifty-eight patients had previously documented myocardial infarction, and all were found to have significant coronary artery disease. Coronary arteriography should be considered in evaluating chest pain of obscure cause and to select patients who may need coronary surgery. This will not often be indicated in the workup of those with typical but mild angina pectoris.

Berle, B. B., Ganem, M., and Lowinson, J.: Detoxification of multiple-drug abusers with sodium amytal, ***New York State J. Med.*** 72: 2971 (Dec. 15) 1972.

This article outlines a program for the detoxification of multiple drug users utilizing decreasing doses of sodium amytal and evaluates the effects of the program. The program is designed for patients entering a methadone maintenance program. The detoxification was successful, but the patients apparently present greater psychiatric problems than do the usual heroin addicts, so the methadone programs are not designed to meet their needs. Of 96 patients detoxified, 44 were discharged from the methadone maintenance program, and 52 are continuing on methadone maintenance without relapse into mixed addiction.

Voorhess, M. L.: Genetics and pediatric ophthalmology, ***New York State J. Med.*** 72: 2974 (Dec. 15) 1972.

In this article the fundamentals of genetics are reviewed, and examples of some of the major categories of genetic abnormalities as they apply to the diagnosis of ophthalmologic problems are given. Chromosomal analysis is important not only for the child involved, but also for genetic counseling of the parents. Ocular defects may occur by themselves, or they may occur along with anomalies of other organ systems.

Abstracts in Interlingua

Gewirtzman, G., Bousvaros, G., e Grant, C.: Angiographia coronari e del cor sinestre per evalutar le dolor thoracic, ***New York State J. Med.*** 72: 2967 (15 de Decembre) 1972.

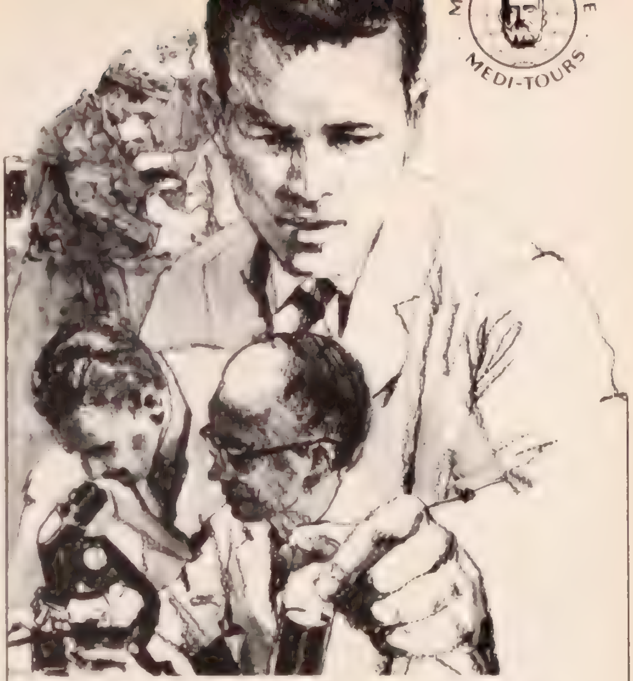
Le resultatos del arteriographia coronari selective facite mediante le catheterisation del cor sinestre in patientes con dolor thoracic esseva correlate con le diagnose clinic in un serie de 110 casos. De 35 patientes con angina pectoris classic mais con infarto myocardial non diagnosticabile, 31 habeva morbo coronari considerate de importantia per le standards currentes; 3 habeva stenosis subaortic hypertrophic idiopathic ("SSHI"), e un habeva cardiopathia congestive. De 17 patientes con dolor thoracic atypic, 15 habeva morbo del arterias coronari de importantia; le resto habeva parve o no morbo coronari con le cor apparentemente san. Cinquanta-octo (58) patientes habeva infarto myocardial previemente documentate; omne patientes suffreva de morbo coronari significative. Le arteriographia coronari debe esser considerate in le evalutation del dolor thoracic de causa obscur, e per selectionar le patientes que pote requirer chirurgia coronari. Iste non es frequentemente indicate quando le patientes es examinate per angina pectoris typic mais leve.

Berle, B. B., Ganem, M., e Lowinson, J.: Detoxification con amytal sodic de toxicomanos a multiple drogas, ***New York State J. Med.*** 72: 2971 (15 de Decembre) 1972.

In iste articulo describe se un programma de detoxification de toxicamons a multiple drogas mediante doses decrecentes de amytal sodic; etiam se evalutan le resultatos del programma. Iste esseva concebite per patientes infra un tractamento de mantenimento con methadona. Le detoxification esseva successose, mais le patientes apparentemente presentava problemas psychiatric plus grande que illos del addictos currente al heroina, de modo que le therapia con methadona non es indicate pro satisfacer lor requirimentos. De 96 patientes detoxificate, 44 esseva discargate del programma de therapia de mantenimento con methadona; 52 patientes continua con iste programma de detoxification, sin recidiva de addiction mixte.

Voorhess, M. L.: Genetica e ophthalmologia pediatric, ***New York State J. Med.*** 72: 2974 (15 de Decembre) 1972.

In iste articulo le information fundamental del genetica es revistite. Es etiam describite exemplos de alicum categorias principal de anormalitates genetic, e como es applicate al diagnose de problemas ophthalmologic. Le analyse chromosomic es importante non solmente per le puero implicate, mais etiam per le consilios genetic al parentes. Le defectos ocular pote presentar se per illos mesme, o ben pote occurrer juncto con anormalitates de altere systemas del organismo.



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Medical News

The American Journal of Chinese Medicine

A new publication is to appear in January, 1973, entitled *The American Journal of Chinese Medicine,* devoted to scholarly and objective examination of all aspects of Chinese medicine, including acupuncture, from a comprehensive and interdisciplinary perspective. The editorial board and contributors include distinguished authorities from around the world in clinical and academic medicine, Eastern and Western medicine, and related professions such as law and sinology. Editors include E. Grey Dimond, M.D., Kansas City; Frederick F. Kao, M.D., Ph.D., Brooklyn; James Y. P. Chen, M.D., Los Angeles; Nguyen van Nghi, M.D., Marseille; Jutta Rall, M.D., Ph.D., Hamburg; and W. Alden Spencer, M.D., New York.

The first issue of *The American Journal of Chinese Medicine* will be published by January, 1973, and subscription to the first volume of about 400 pages may be obtained at a special prepublication price. For subscriptions, please contact *The American Journal of Chinese Medicine,* Office of the Editor, P. O. Box 555, Garden City, New York 11530.

Nurse-midwifery qualifications

Establishment of qualifications for the practice of nurse-midwifery in New York State has been announced by Hollis S. Ingraham, M.D., State Health Commissioner. The qualifications were established by the Public Health Council, the policy-making body which adopts regulations and advises the health commissioner on pertinent issues of vital concern to the public, to conform with a State law enacted last June.

The new law repealed an archaic statute which provided for the licensing of untrained or semitrained midwives in all areas of the State except New York City and Rochester, which were exempted. In 1959 New York City amended its health code and established a nurse-midwife program which contained qualifications similar to the new State law. City Health Department statistics show that there are 102 nurse-midwives currently practicing in 18 hospitals in the city.

Today's nurse-midwife assists and advises the expectant mother throughout her pregnancy, may actually deliver the child, providing the delivery is normal, and helps the mother in family planning after the infant is born. Throughout the entire reproductive cycle, the nurse-midwife is under qualified medical direction, whether she works for a hospital, home health agency, or individual physician.

Material for inclusion in the medical news section must be received six weeks prior to publication date.

Educational program on cardiopulmonary resuscitation

Nothing has been done previously to sustain lives of heart-attack patients until an emergency mobile unit arrives. In an attempt to provide this essential care, the American College of Physicians has embarked on a nationwide educational program on cardiopulmonary resuscitation.

Cardiopulmonary resuscitation combines mouth-to-mouth respiration and closed-chest heart massage. The latter is accomplished by alternately applying and releasing downward pressure on the breastbone with the palm of the hand. By thus compressing the heart, the blood is forced into general circulation and, on release of pressure, is sucked back into the chambers of the heart. If this procedure is repeated once each second and accompanied by blowing air into the lungs through the mouth (12 times a minute), the patient's life can be sustained for over thirty minutes.

The risks involved if cardiopulmonary resuscitation is performed improperly include damage to ribs and bruising of organs. However, if done properly resuscitative procedures will do no harm, even to those who have not actually had a heart attack, and the potential for good greatly outweighs the risks involved.

Personalities

Awarded. Alan F. Guttmacher, M.D., a birth control pioneer who advocated liberalized abortion laws, the Margaret Sanger Award for courageous leadership by the Planned Parenthood Federation of America.

Penicillin

Kenneth S. Shepard reported in *American Family Physician* (4: 85 [October] 1971) that of 328 children with throat cultures positive for Group A beta-hemolytic streptococci, 206 had clinical histories of skin reactions in response to penicillin administration. All 328 were treated with benzathine penicillin G alone or in combination with procaine penicillin G. Of the 206 supposedly allergic to penicillin, mild reactions occurred in 2, and both were easily controlled by antihistamine. Mild rashes also developed in 2 of the 118 children whose histories showed no allergy. Certain acute childhood infections are themselves accompanied by skin rashes or urticaria, and parents' reports of these phenomena may be overdiagnosed as penicillin sensitivity. This investigation indicates that penicillin may be given judiciously to children with streptococcal infections in whom common rashes or hives had been attributed to former use of the antibiotic. Children with records of severe edema or respiratory obstruction after penicillin therapy were excluded from the study, as penicillin allergy was not doubted in such cases.

Medical Meetings

Winter meeting of American Analgesia Society

The American Analgesia Society will hold its winter meeting, a symposium on "Management of the Difficult Dental Patient," on January 31, 1973, from 9:00 A.M. to 4:30 P.M., at the Rose F. Kennedy Center for Research in Mental Retardation and Human Development, Bronx Municipal Hospital Center, Pelham Parkway and Eastchester Road, The Bronx, New York. Registration fee is $5.00. For more information, contact Philip E. Shipper, M.D., 9 West 67th Street, New York, New York 10023.

Adolescent gynecology symposium

The New York Academy of Medicine Section on Obstetrics and Gynecology will sponsor a symposium on adolescent gynecology on March 22, 1973, 3:00 to 6:00 P.M. The meeting, to be moderated by Hugh R. K. Barber, M.D., will be held at the Einhorn Auditorium, Lenox Hill Hospital, 131 East 76th Street, New York, New York 10021 (Telephone 212 879-8000).

Symposium on forensic sciences

The Tenth Annual Symposium on Forensic Sciences will be sponsored by the Institute of Forensic Medicine, New York University and The City of New York, the Department of Health, State of New York, the Medical Society of the State of New York, and the Dental Society of the State of New York. The preliminary program, to be held from April 13 through 14, 1973, at the Office of Chief Medical Examiner, 520 First Avenue, Room 122, New York, New York, is as follows: April 13, morning session, discussion on gunshot wounds, wound ballistics, and external ballistics; afternoon session, discussion on unlabeled and mislabeled cases, scene investigation, carbon monoxide deaths, deaths in legal custody, and determining the time of death; evening session, dinner and lecture by Milton Helpern, M.D., general chairman; April 14, morning session, panel discussion on narcotic deaths, methadone therapy and abuse, New York City's addiction services, and an addict's point of view; afternoon session, recent advances in forensic serology, and forensic odontology; and evening session, dinner.

Material for inclusion in the medical meetings section must be received six weeks prior to publication date.

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SUNDAY THROUGH THURSDAY

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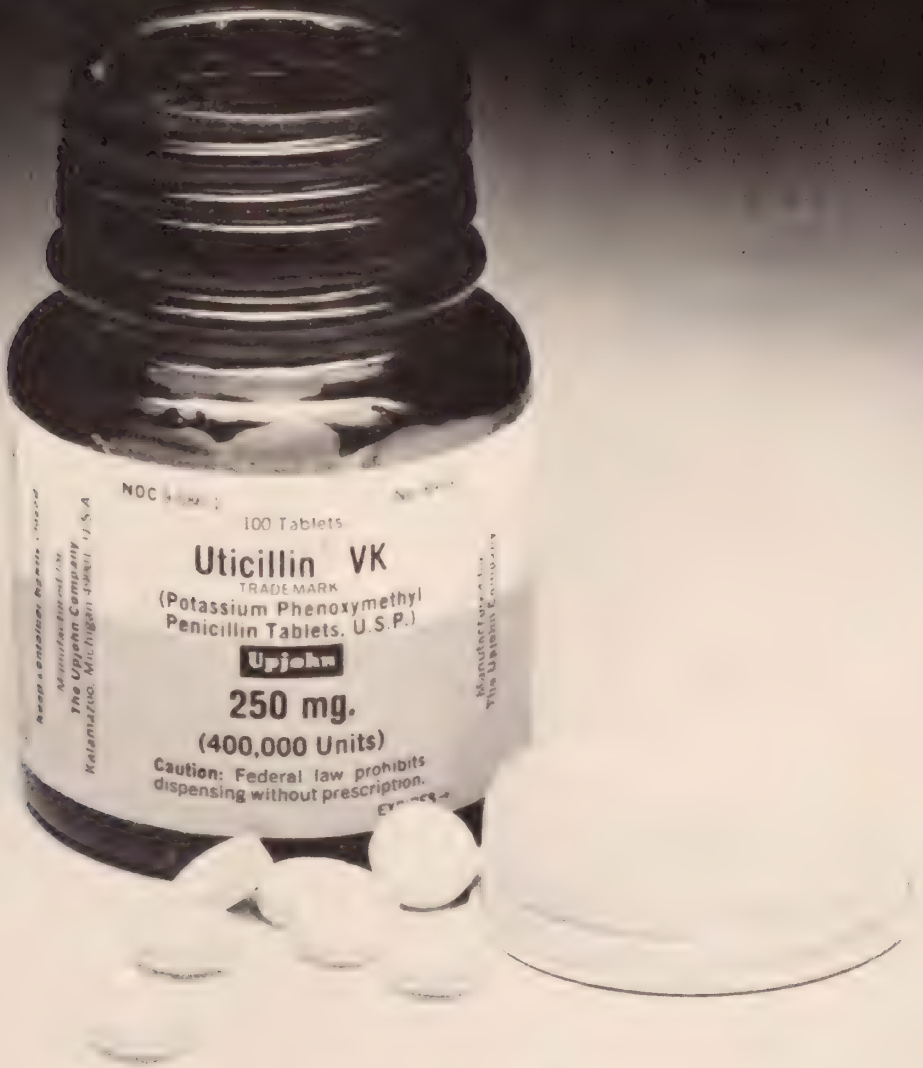
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Month in Washington

Only a handful of some 2,600 health-related bills introduced into the 92nd Congress have become public law. The most talked-about pieces of health legislation over the past two years—national health insurance and health maintenance organizations—have been set aside for deliberation by next year's 93rd Congress.

After long years of debate by two sessions of the Congress, the Social Security catch-all legislation (H.R. 1), with its significant amendments to Medicare and Medicaid, gained passage and has been signed into law by the President. Three of its measures are of major importance to physicians.

First is the Professional Standards Review Organization (PSRO) proposal of Utah's Senator Wallace Bennett which is designed to improve quality and utilization review of health care on a national basis. This provision of the law stresses that over the next two years peer review will be concentrated in institutional settings rather than in physicians' offices; such review is to be undertaken by physician organizations only.

Second, the new law stipulates that Medicare and Medicaid patients may receive care from health-maintenance organizations (HMOs) but that federal reimbursement for such care will be no greater than for similar services rendered by non-HMO providers.

Third, the new law grants certain chiropractic benefits to Medicare and Medicaid patients. As passed by the Senate, chiropractic benefits were limited only to manipulation of the spine. In joint conference, House members further modified the Senate provision to require that chiropractic benefits be covered only after a roentgenogram revealed subluxation. The language of the law is not specific, but apparently the x-ray cost will not be paid for by Medicare, nor may the film be interpreted by a chiropractor. However, this point will not be clarified until the regulations are written. The provision also requires that chiropractors, to be reimbursed, must meet minimum standards established by the Secretary of the Department of Health, Education, and Welfare.

Peer review. Under the peer-review provision of the new law, local medical societies will have the opportunity to establish peer-review mechanisms, operating independently to review the quality of care that hospitals and nursing homes provide to Medicare and Medicaid patients. The task of the PSRO is to "assure proper utilization of care and services . . . utilizing a formal professional mechanism representing the broadest possible cross-section of practicing physicians in an area."

HEW could reach agreement only "with a qualified organization which represents a substantial proportion of the physicians in the geographical area. . . ." If this is not achieved by 1976, HEW could turn to some other group to establish the PSRO.

A PSRO would be required to review only institutional care and services through 1975 unless it chooses —with approval of the government—to broaden the scope to include private practice. During the pre-1976 period, 10 per cent or more of the practicing physicians in an area could demand a poll of all practicing physicians to determine whether the organization negotiating to set up a PSRO substantially represents the physicians of the area. A "no" vote of more than 50 per cent would break off the negotiations. From now until the end of next year, HEW is ordered to establish PSRO areas around the country. These usually will include 300 or more physicians. It is believed that some entire small states will be designated as separate PSRO areas.

In carrying out its responsibilities, the PSRO would be required to regularly review provider and practitioner profiles of care and service (that is, the patterns of services delivered to Medicare and Medicaid beneficiaries by individual health-care practitioners and institutions) and other data to evaluate the necessity, quality, and appropriateness of services for which payment may be made under the Medicare and Medicaid programs. The PSRO would be expected to analyze the pattern of services rendered or ordered by individual practitioners and providers and to concentrate its attention on situations in which unnecessary, substandard, or inappropriate services seem most likely to exist or occur.

A PSRO would have authority to approve the medical necessity of all elective hospital admissions in advance solely for the purpose of determining whether Medicare and Medicaid will pay for the care. The PSRO also would be required to acknowledge and accept, in whole or in part, an individual hospital's own review of admissions and need for continued care on a hospital-by-hospital basis where it has determined that a hospital's "in-house" review is effective. It is expected that where such "in-house" review is effective this authority would be exercised by the PSRO. Similarly, a PSRO would be required to acknowledge and accept for its purposes review activities of other medical facilities and organizations, including those internal-review activities of comprehensive prepaid group-practice programs, such as the Kaiser Health Plans and the Health Insurance Plan (H.I.P.) in New York, to the extent that such review activities are effective.

The PSRO would, after reasonable notice, recommend to HEW appropriate action against persons responsible for gross or continued overuse of services, for use of services in an unnecessarily costly manner, or for inadequate quality of services and would act to the extent of its authority and influence to correct improper activities. Where a review organization finds that voluntary and educational efforts fail to correct or remedy an improper situation, it would transmit its recommendations concerning sanctions through a statewide

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Prepared by the Washington, D.C., office of the American Medical Association.

MEDICAL ASPECTS OF SPORTS

Sponsored by the

Medical Society of the State of New York
Committee on Medical Aspects of Sports

Saturday, February 10, 1973 **9:00 a.m. to 5:00 p.m.**
Americana Hotel, New York City

Registration—8 30 a.m., Georgian Foyer, Third Floor (No Registration Fee)

PROGRAM

9:00 a.m. Presiding: Ralph S Emerson, M D , *Chairman, Committee on Medical Aspects of Sports*
Introduction and Welcome: Edward Siegel, M D *President, Medical Society of the State of New York;* Ewald B. Nyquist, *Commissioner of Education of the State of New York*

9:00 a.m. JOINT SESSION—Georgian Ballroom A, Third Floor
TEAM CONCEPT OF SCREENING OF ATHLETES—DOCTOR, NURSE, COACH AND PARENT (Panel Discussion)

Presiding: Daniel Hanley, M D., *Chairman, Medical and Training Services, U.S. Olympic Committee, Bowdoin College, Brunswick, Maine*

1. Fred Allman, M.D., *Georgia Tech Team Physician; Former President, American Academy of Sports Medicine.*
2. Thomas A. Shaffer, M.D., *Ohio State Medical College Professor of Pediatrics; former Chairman, AMA Medical Aspects of Sports Committee*
3. James M. Robey, M.D., *University of North Carolina, Director, Athletic Injury Study*
4. Joseph Paterno, *Head Football Coach, Penn State University*
5. Clifford B. Fagan, Ph.D., *Executive Secretary, National Federation of State High School Athletic Association*
6. Clayton Thomas, M.D., *Vice President, Medical Affairs, Tampax Inc.*
7. Tenley Albright, M.D., *Women's Olympic Figure Skating Champion 1956.*

11:30–12:30 CLINICAL DEMONSTRATIONS JOINT SESSION
La Loire Suites 2, 3, 4 & 5, 3rd floor

Presiding: Joseph N. Abraham, Ph.D., *Director of Physical Education, Hobart College, Geneva, New York; U.S. Olympic Trainer, Women's Olympic Team*

1. Richard Malacrea, *Trainer, Princeton University*
2. Fritz Massaman, *Trainer, New York Nets (Basketball)*
3. Robert Fletcher, *Trainer, Herbert Lehman College*
4. John Johnson, *Trainer, New York Giants and Manhattan College*

12:30 p.m. LUNCHEON — Royal Ballroom A and B. Toastmaster, Ralph S. Emerson, M.D., *Chairman, Committee on Medical Aspects of Sports;* Guest Speaker Joseph Paterno, *Head Coach, Penn State University*

2:00 p.m. WOMEN'S SPORT PROGRAM—Goergian Ballroom B, Third floor

Presiding: Sandra Scott, Ph.D., *Safety Research Chairman, State Committee for Girls Athletic Activities, NYS PHSSA, SUNY, Brockport, New York*

1. STRESS IN SPORTS
   Dorothy V. Harris, Ph.D., *Penn State University*

2. CONDITIONING AND TRAINING (Panel Discussion)
   Presiding: Joseph Abraham, Ph.D., *U.S. Olympic Trainer, Women's Olympic Team, Hobart College, Geneva, New York*

   Daniel Hanley, M.D., *Chairman, Medical Training Services, U.S. Olympic Committee, Bowdoin College, Brunswick, Maine*

   Mrs. Muriel Grossfeld, *U.S. Women's Gymnastic Olympic Teams 1956, 1960, 1964; Head Coach 1968–1972*

   Clayton Thomas, M.D., *Vice President, Medical Affairs, Tampax, Inc., Palmer, Mass.*

3. HEAT EXHAUSTION IN ATHLETICS
   William Coleman, M.D., *University of Rochester Medical School, Rochester, New York*

2.00 p.m. MEN'S SPORT PROGRAM—Georgian Ballroom A, Third Floor

Presiding: Ralph S. Emerson, M.D., *Chairman, Committee on Medical Aspects of Sports*

1. WEIGHT CONTROL AND NUTRITION IN ATHLETICS
   Donald Cooper, M.D., *Team Physician, Oklahoma State University; Chairman, NCAA—Council on Competitive Safeguards and Medical Aspect of Sports*

2. POTASSIUM METABOLISM AND HEART FUNCTION DURING EXERCISE
   Kenneth Rose, M.D., *Director Division of Medical Lab. and Research, University of Nebraska Health Center*

3. VENEREAL DISEASES
   Leonard Heimoff, M.D., *Clinical Associate Professor, Cornell University Medical College; Chairman, Venereal Disease Subcommittee, New York Academy of Medicine; Chairman, MSSNY Committee on Drug Abuse*

4. ICE HOCKEY INJURIES
   David Mulder, M.D., *Orthopedic Surgeon, Montreal General Hospital; Consultant, Montreal Canadians*

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council to the Secretary of HEW. The Secretary could terminate or suspend Medicare and Medicaid payments for the services of the practitioner or provider involved or assess an amount reasonably related to the excessive costs to the programs deriving from the acts or conduct involved.

A PSRO would have the responsibility of determining, for purposes of eligibility for Medicare and Medicaid reimbursement, whether care and services provided were (1) medically necessary and (2) provided in accordance with professional standards. Additionally, the PSRO would encourage the attending physician to utilize less costly alternative sites and modes of treatment where medically appropriate.

The PSRO would not be involved with questions concerning the reasonableness of charges, costs, or methods of payment, nor would it be concerned with internal questions relating to matters of managerial efficiency in hospitals or nursing homes, except to the extent that such questions substantially affect patterns of utilization. The PSROs responsibilities are confined to evaluating the appropriateness of medical determinations, so Medicare and Medicaid payments will be made only for medically necessary services which are provided in accordance with professional standards of care. The local PSRO would be primarily responsible for review of all Medicare and Medicaid services rendered or ordered by physicians in its area. The purpose of the provision is to establish a unified review mechanism for all health-care services under the aegis of the principal element in the health-care equation, the physician.

HMO Option. The legislation contains the Administration's request for allowing Medicare-Medicaid beneficiaries to enroll in HMOs but limits the choice to existing prepaid group-practicing plans by providing that incentive reimbursement would be available only to HMOs with a minimum membership of 25,000 and which have been in operation for at least two years. Instead of the Administration's plan for paying such HMOs 95 per cent of the combined part-A and part-B costs of Medicare patients in an area, the bill sets out a formula under which HMOs would receive one-half the savings if care has been rendered for less than the Medicare average in an area (the so-called incentive reimbursement) but would have to absorb the entire loss if HMO treatment for Medicare beneficiaries runs higher than regular Medicare costs in the area.

The Joint Conference rejected a provision that would have made the Federal government share in the losses of HMO care to Medicare patients and a provision that would have established a bonus arrangement for states providing HMO care for Medicaid beneficiaries.

Chiropractic. Inclusion of chiropractic benefits for the first time in a Federal program was a set back to the medical profession, the Administration, and numerous other antichiropractic forces. However, the modification of the chiropractic-benefit language in conference may make it practically unworkable. As passed by the Senate, chiropractic benefits were limited to manual manipulation of the spine. In conference, this was modified to require that benefits would be covered only after roentgenogram revealed subluxation. Apparently the x-ray cost will not be covered, nor can the film be interpreted by a chiropractor; but these points will not be clarified until regulations are written.

Senator Edward Kennedy attempted by an amendment from the floor to strike the chiropractic provision, but it was soundly defeated by a vote of 66 to 6. Subsequently, the Massachusetts senator admonished the AMA for not supporting his amendment. However laudable his effort, Senator Kennedy, as an experienced parliamentarian, should have recognized that his attempt to strike the chiropractic provision had no chance of success. His amendment to H.R. 1 was unprinted, he introduced it from the Senate floor, and he proceeded without the cooperation of the bill's floor manager. That his approach was ill-advised from the standpoint of effective parliamentary procedure is evidenced by the amendment's lopsided defeat. Prior to the introduction of his amendment, the Senator's staff was counseled by antichiropractic forces, including the AMA, that he did not have the votes. Further, it was pointed out that an overwhelming defeat of his amendment by a recorded vote would seriously hamper the Senate conferees in their efforts to bargain with members of the House in joint conference.

On several occasions in the past, the Senate Finance Committee has added a similar chiropractic provision to a pending measure, but in each of these cases the Senate conferees later agreed to its deletion in joint conference with the House. In large part this was made possible because the chiropractic issue had not been singled out for separate vote on the Senate floor and thus did not specifically pin down the Senate conferees. In the latest instance, Senator Kennedy raised the issue singly and separately. Predictably, his amendment was roundly defeated. Unfortunately, the effect of this was to impress the Senate conferees with the recorded wishes of the vast majority of their colleagues when they sat in joint conference with the representatives of the House. In conference, however, Rep. Wilbur Mills was able to modify the Senate language so as to require an x-ray determination of subluxation.

Other provisions. *Renal disease.* Individuals under the age of sixty-five who are covered by social security would be eligible for Medicare if they require hemodialysis or renal transplantion. This is the second instance in the bill of extending Medicare to people younger than sixty-five.

Abusers. Providers determined to have overused Medicare could have their services under the program terminated under stronger powers against abusers granted to HEW.

Black lung. A Senate provision that would have extended Medicare coverage to people receiving "black lung" benefits under social security was eliminated.

Publicity. Adopted is a requirement that the HEW department make public information from a survey of health facilities or organizations on the absence or presence of "significant deficiencies." Also, the Government must make public evaluations and reports dealing with individual contractor performances of carriers, intermediaries, and staff agencies as well as program-validation survey reports with names of individuals deleted.

Joint Commission. HEW could enter into agreements to have states survey a hospital or hospitals cer-

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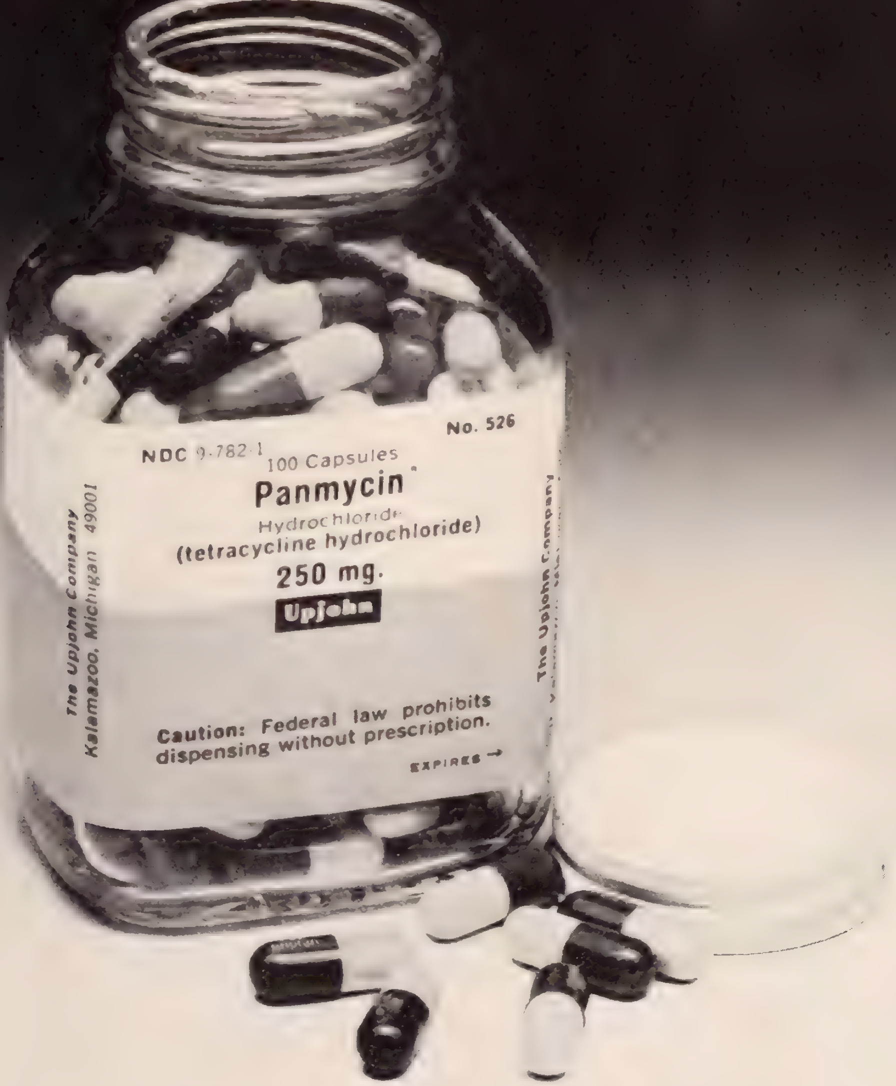
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tified by the Joint Commission on Accreditation of Hospitals on a limited basis where an allegation has been made that adverse health conditions exist.

Eyeglasses and so on. A Senate provision adding the costs of eyeglasses, podiatric services, dentures, and hearing aids to Medicare part B benefits for poor families was rejected.

Left intact in the measure is a limitation on physicians' prevailing charge levels under Medicare. Recognized as reasonable are only those charges which fall within the 75th percentile (a charge that covers 75 per cent of the existing case charges for a procedure or treatment in an area excluding the top 25 per cent of charges), a step that Social Security already has carried out administratively. Starting next year, under the bill, future charge increases would be limited by a factor which takes into account increased costs of practice and the increase in earning levels in an area.

Stricken from the bill was a $900 million provision to add drugs as an outpatient Medicare benefit and a plan that would have established an inspector general over Medicaid and Medicare in the HEW department.

Physicians responsibilites in rape

In the *American Journal of Obstetrics and Gynecology* (111: 197 [September 15] 1971) John Evrard states that rape is defined as carnal knowledge by force and without consent. Since at times the best interests of the patient and the police investigator may seem to conflict, the gynecologist must develop a positive, systematic approach to the examination of the victim to protect her, the legal investigator, and himself from recrimination. Written permission of the victim must be obtained, or, if she is a minor it must be obtained from her guardian before examination; this should include permission to take any necessary documentary photographs. The history should be in the patient's own words. Because defense questioning may be devastating, in effect putting the victim on trial herself, especially if she is a single girl or a divorced woman, the physician eliciting a history likely to put the woman in an unfavorable trial situation should forewarn his patient to get legal counsel before pressing charges.

With the means at hand to drastically reduce the number of deaths each year from uterine cancer, we have embarked on a nationwide, life-saving program. Its goal is a Pap test by 1976 for every woman 20 years or older to whom the test is applicable, and for younger women at risk. An ambitious program, doctor, and one which can only be realized with your help.

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All is calm, all is bright

The announcements on the radio and the declarations on television were almost a decree: the season had come into its fullness, it was a time for bad weather, the storms had come—and everybody should stay at home.

In absentia you can derive a certain comfort, sitting in front of a television set in Phoenix, or next to a radio in El Paso, or even in a chilly Miami, hearing a weather report that Watertown, New York, and environs, has the lowest recorded temperature in the nation and the highest snow fall.

It was in the third year of my practicing obstetrics and gynecology in the North Country that the largest snowfall occurred. There are few sudden storms anywhere, there are intimations; in the north, in winter, the preamble is a lusterless sky, a slightly rising temperature, winds briefly subsiding. And hesitating, as if testing their receptivity, the advance guard of flakes drifts in gentle shifts. Unopposed, welcomed to the vortex of the vacuum, their crystalline associates hurtle on; it is a soft deluge that lightly adheres, a whiteness that darkens; silhouettes in a distance are gone; the charcoal gray of groves of elms and maples is erased, the stand of distant, green pines, a fading mirage.

You are engulfed and isolated, as compressed as the object on the ornament table of yesteryear: the crystal sphere with the black base, the scene and creatures within, some motion imparted, and the suddeness of the obscuring white storm.

Just outside of Watertown, beyond Burville and Copenhagen, but not yet to Lowville, are large areas, sparsely inhabited. This is dairy country, for the most part flat land, with farms in the distance. Tenant farming in this area, with the "crop" sheep, not milk, are Joseph Puig and his wife. They are both Basque in origin and Joseph combines the talents of carpentry with animal husbandry. By some devious route this couple had left the Western Pyrenees for San Juan in Puerto Rico. A previously emigrated relative told of advantages to be gained in New York City and leaving one barrio, in Spanish Harlem, they found another.

Temporary farm help is often recruited in cities; and sorting through a pile of cards in a New York City employment agency, a Northern New York dairy farmer found Puig's unlikely combination of skills attractive. This prosperous landowner planned raising sheep on an experimental basis and in Joseph Puig he had found a maintenance man and an experienced herdsman.

Puig's wages included a rent free, one story farmhouse, a converted storage place for tractors, and farm equipment. This is not an unattractive dwelling; it is one-half mile off the main road, the side walls are a brown, tinted, cinder block; the barely sloping roof covered in green. The interior includes two good sized bedrooms and a smaller third bedroom containing bunks. The kitchen is large, adequately equipped; there is a large living-dining area, a bathroom with lavatory and shower. In winter the house is heated by oil and in all seasons a 60 foot well supplies abundant clear, hard water. There is a large, substantial barn in the rear. Each structure is supplied with electricity. The main house has a telephone.

This establishment is ably presided over by Puig's wife, Maria: a young, well moulded, slim woman, in her middle twenties. In contrast to the metallic argyrian tint of her husband's skin, Maria's is mocha. She is a fine featured, dark eyed, darker haired, animated woman. She is small boned, trim ankled, medium bosomed. She speaks in a soft accented staccato; and when her shyness is overcome, the words cascade. Like a metronome, her hands and arms establish the rhythm of her conversation. Her eyes participate in the cadence. She is never dressed other than gaily, the colors in crescendo, one brightness augmenting the next, all in as good taste as the varied hues in a rainbow.

Her husband, two years older, is equally slim, small in circumference like a very young woman. He is somewhat taller than his wife. Sombre, reticent, he is not unfriendly. His speech is more accented than his wife's—but entirely intelligible. Small in stature, well muscled, he is quick and agile. Chameleon like, his skin changes with the seasons; he is almost negroid, light ebony in the summer sun, the natural metallic tint is his in the spring and fall; and like people of Mediterranean ancestry, paler in the winter; his nail beds and lips cyanotic in the cold. He was found experienced in his crafts and once I heard his employer describe him as a good shepherd and a competent carpenter.

* * *

I first met Maria in my office, a primipara, three months pregnant. Her general physical examination was not remarkable. She has a small gynecoid pelvis. She and her husband are, in happy concatenation, Rh negative. Her due date was late in December, and her pregnancy ran its course uneventfully.

The storm came with the sunrise; in the beginning the dull pewter of North Country light in the winter, then the random flakes and an even, lightened darkness. The snowfall persisted and increased in degree. Patients from Ogdensburg in the north, Pulaski in the south, Clayton in the west, and Copenhagen in the east, called, complaining that road conditions were increasingly poor and cancelled their afternoon appointments. There was no room at the local Holiday Inn; by four P.M., it was completely occupied by travellers impeded by the storm.

Finishing hospital rounds at the unusually early hour of five P.M., my direction was homeward. Traffic in the city was light, the streets still unplowed, the Highway Department waiting for some abatement in the storm to begin their duties. Leaving the city I no longer had the illumination that provided some indication of what constituted the roadway. My four wheel drive vehicle proceeded slowly, my problem was more direction than traction, and abruptly, beyond the city lights, I began to discern the magnitude of the fragmented, feathery host.

The road home, in the storm, I knew only by custom—not demarcation: there were no boundaries or landmarks. In the overpowering gusts, the horizontal axis of the headlights diffused to large, twin circles of frustrated scintillation. The windshield wipers were overwhelmed. Pelted by snow, in order to see, I drove with the window down on the driver's side. In forty minutes I completed a distance that usually requires ten.

At bedtime the storm continued, and after sleeping, I awoke early to the same confetti laden winds. My children interrupted breakfast, taking me into the playroom that faces north, delightedly pointing out the snow that had drifted from the ground to the eaves, forming a solid, white insulation for this side of the house. From the picture window in the living room, facing south—nothing was visable except falling snow.

* * *

This same day, at nine A.M., Joseph Puig telephoned that his wife's labor had begun. Nervous, he was aware that travel was impossible and I reassured him saying that I would call the State Police to alert the Highway Department. Once the storm had lessened and the roads were plowed, he should immediately bring his wife into the hospital.

The intransigent trooper informed me that there was no law against labor pains, but that he would do what he could, and would let me know what arrangements were made. I heard nothing from the State Police until seven P.M., when a different officer related that the telephone lines to Puig were down and that snowplows manned with a State Trooper and first aid equipment were leaving from Carthage and Lowville. A third plow would pick up what equipment I wanted from the hospital, meet me at home, and take me to Puig's residence from Watertown.

In the front seat of the cab, I was copilot and navigator of a submarine in a sea of cold cotton. White crests erupted before us and retreated; stopping, then backing, with a probing push, moving ahead—we arrived at our destination.

The two previously arrived snowplows with their circulating overhead lights guided us through the swirls. These trucks were parked in front of the barn. On leaving the cab, I was beckoned to the barn by one of the drivers and before I entered, he pointed to the house: no lights, wires trailing, the roof distorted, angulated, heaved in by the weight of the snow.

* * *

The lighting in the barn was dim, the odor ruminant. First I saw the sheep, then the tableau of three figures—two kneeling, the bent two dressed in conventional frosty winter gear with patches of identifying luminescent tape like bright ribbons on their clothing. These, the troopers, had first aid kits at their side. A rosy emergency lamp made all faces brown. Before the trio was a V-shaped section of broken corn crib, padded with hay, occupied by a blanketed, sleeping baby. Standing in the shadows was Joseph, and next to him, fully clothed was Maria.

Placenta passed, no unusual bleeding, you do what you can—and for this circumstance the oxytocics were enough. The umbilical cord had been tied and divided. A unique trinity: husband, herdsman, carpenter, had been surrogate obstetrician.

With Maria, Joseph, and the baby following in another snowplow, we returned to the hospital. The storm subsided and was then gone. Even at night, without the moon, there is a sheen in snow-covered fields. I could not explain this except for the solitary star that I could see out of the cab window. The star seemed lower than the agitated clouds and appeared directly overhead. It occurred to me that a jeweler might make a diamond more refractile by placing it against a background of undulating black velvet.

Some weeks later I saw Maria for her postpartum examination. We reviewed the happenings of that birth day. More elated than chagrined, more accomplished than inconvenienced, she recounted the details. Concluding, I reminded her that she had made one omission: she had not mentioned the baby's name. Very precisely she said that the baby was named after her deceased father, who, she affirmed, was most assuredly in heaven. Jesus, the child, was named for him and she insisted that it was only a coincidence that her son had been born on December 25th.

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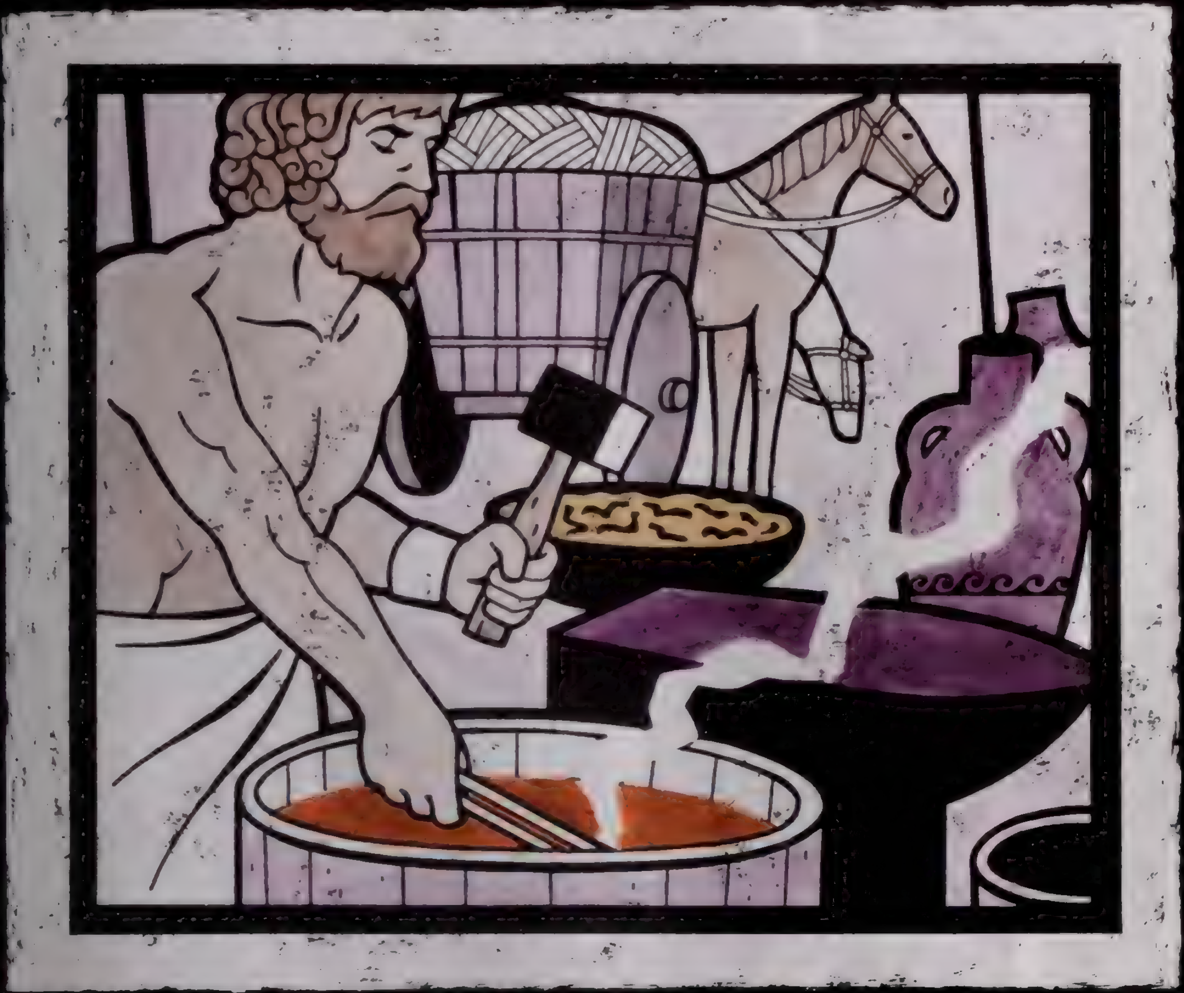
Iron therapy for anemia is almost as old as history itself



Celsus's empirical use of iron

Aulus Cornelius Celsus recommended an unusual form of iron therapy for the treatment of enlarged spleens—the oral administration of water that blacksmiths had used for dousing white-hot iron.

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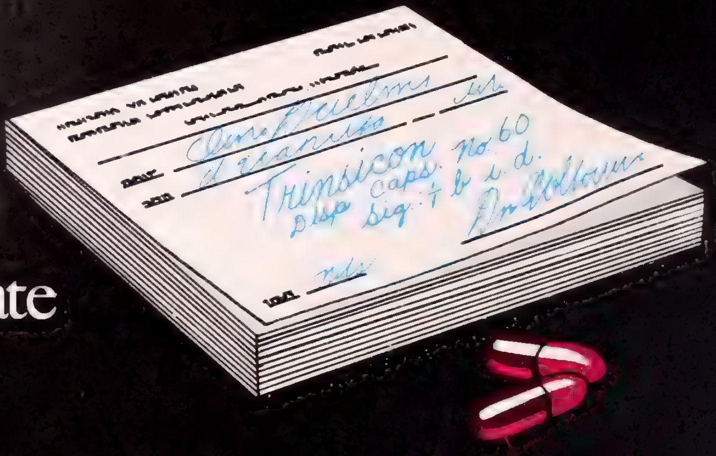
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Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	240 mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin	7.5 mcg.

(The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)

Iron, Elemental (as Ferrous Fumarate)	110 mg.
Ascorbic Acid (Vitamin C)	75 mg.
Folic Acid	0.5 mg.

Indications: Trinsicon is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia. Therapeutic quantities of hematopoietic factors that are known to be important are present in the recommended daily dose.

Vitamin B_{12} with Intrinsic Factor—When secretion of intrinsic factor in gastric juice is inadequate or absent (e.g., in Addisonian pernicious anemia or after gastrectomy), vitamin B_{12} in physiological doses is absorbed poorly, if at all. The resulting deficiency of vitamin B_{12} leads to the clinical manifestations of pernicious anemia. Similar megaloblastic anemias may develop in fish tapeworm (*Diphyllobothrium latum*) infection or after a surgically created small-bowel blind loop; in these situations, treatment requires freeing the host of the parasites or bacteria which appear to compete for the available vitamin B_{12}. Strict vegetarianism and malabsorption syndromes may also lead to vitamin B_{12} deficiency. In the latter case, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient.

Potency of intrinsic factor concentrates is determined physiologically, i.e., by their use in patients with pernicious anemia. The liver-stomach concentrate with intrinsic factor and the vitamin B_{12} contained in two Pulvules Trinsicon provide 1½ times the minimum amount of therapeutic agent which, when given daily in an uncomplicated case of pernicious anemia, will produce a satisfactory reticulocyte response and relief of anemia and symptoms.

Concentrates of intrinsic factor derived from hog gastric, pyloric, and duodenal mucosa have been used successfully in patients who lack intrinsic factor. For example, Fouts *et al.* maintained patients with pernicious anemia in clinical remission with oral therapy (liver extracts or intrinsic factor concentrate with vitamin B_{12}) for as long as twenty-nine years.

After total gastrectomy, Ficarra found multifactor preparations taken orally to be "just as effective in maintaining blood levels as any medication that has to be administered parenterally." His study was based on twenty-four patients who had survived for five years after total gastrectomy for cancer and who had been taking two Pulvules Trinsicon daily.

Folic Acid—Folic acid deficiency is the immediate cause of most, if not all, cases of nutritional megaloblastic anemia and of the megaloblastic anemias of pregnancy and infancy; usually, it is also at least partially responsible for the megaloblastic anemias of malabsorption syndromes, e.g., tropical and nontropical sprue.

It is apparent that in vitamin B_{12} deficiency (e.g., pernicious anemia), lack of this vitamin results in impaired utilization of folic acid. There are other evidences of the close folic acid-vitamin B_{12} interrelationship: (1) B_{12} influences the storage, absorption, and utilization of folic acid, and (2), as a deficiency of B_{12} progresses, the requirement for folic acid increases. However, folic acid does not change the requirement for vitamin B_{12}.

Iron—A very common anemia is that due to iron deficiency. In most cases, the response to iron salts is prompt, safe, and predictable. Within limits, the response is quicker and more certain to large doses of iron than to small doses.

Each Pulvule Trinsicon furnishes 110 mg. of elemental iron (as ferrous fumarate) to provide a maximum response.

Ascorbic Acid—Vitamin C plays a role in anemia therapy. It augments the conversion of folic acid to its active form, folinic acid. In addition, ascorbic acid promotes the reduction of ferric iron in food to the more readily absorbed ferrous form. Severe and prolonged vitamin C deficiency is associated with an anemia which is usually hypochromic but occasionally megaloblastic in type.

Contraindications and Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

Folic acid *alone* is unwarranted in the treatment of pure vitamin-B_{12}-deficiency states, such as pernicious anemia. Indeed, the use of folic acid in large doses in pernicious anemia without adequate vitamin B_{12} may result in hematologic remission but neurological progression.

As with all preparations containing intrinsic factor, resistance may develop in some cases of pernicious anemia to the potentiation of absorption of physiological doses of vitamin B_{12}. If resistance occurs, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary for adequate treatment of the patient. No single regimen fits all cases, and the status of the patient observed in follow-up is the final criterion for adequacy of therapy. Periodic clinical and laboratory studies are considered essential and are recommended.

In extremely rare instances, skin rash suggesting allergy has been noted following the oral administration of liver-stomach material. Allergic sensitization has been reported following both oral and parenteral administration of folic acid.

Hemochromatosis and hemosiderosis are contraindications to iron therapy.

Adverse Reactions: In rare instances, iron in therapeutic doses produces gastrointestinal reactions, such as diarrhea or constipation. Reducing the dose and administering it with meals will minimize these effects in the iron-sensitive patient.

Dosage: One Pulvule twice a day. (Two Pulvules daily produce a standard response in the average uncomplicated case of pernicious anemia.)

How Supplied: Pulvules Trinsicon® (hematinic concentrate with intrinsic factor, Lilly), in bottles of 60 and 500 and in Identi-Dose® (unit dose medication, Lilly) in boxes of 100.

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Coronary and Left-Heart Angiography in Assessment of Chest Pain

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The results of selective coronary arteriography, with catheterization of the left side of the heart, in patients who had chest pain were correlated with the clinical diagnoses in a series of 110 cases. Of 35 patients with classical angina pectoris, but no diagnosable myocardial infarction, 31 had coronary disease which was considered to be important by current standards; 3 had IHSS (idiopathic hypertrophic subaortic stenosis), and 1 had congestive cardiomyopathy. Of 17 patients with atypical chest pain, 5 had important coronary artery disease; the remainder had little or no coronary artery disease and apparently healthy hearts. Fifty-eight patients had previously documented myocardial infarction, and all were found to have significant coronary artery disease. Coronary arteriography should be considered in evaluating chest pain of obscure cause and to select patients who may need coronary surgery. This will not often be indicated in the workup of those with typical but mild angina pectoris.

The patient with chest pains attributed to coronary artery disease may be totally disabled and yet have entirely normal coronary arteries. Showing some of these patients their coronary arteriograms has become a useful part of their therapy, and reporting these normal findings may restore them to employability, especially in high-risk jobs (pilot, commercial driver, and so on).

The coronary arteriograms, however, may show definite coronary disease. This knowledge can increase the patient's motivation to follow treatment more meticulously and prompt him to change harmful eating and smoking habits.

In some cases the angiograms may stimulate the physician to recommend coronary artery surgery. Thus the major indications for coronary arteriography, with the accompanying left ventricular angiogram and pressure measurement, are (1) as a diagnostic measure if other clinical studies have not provided a clear diagnosis, and (2) as a preliminary demonstration if coronary surgery is a possible treatment.

Although good correlations between clinical diagnosis and coronary angiographic data have been reported, we have been impressed both by frequent findings of severe coronary disease in patients with highly atypical chest sensations, and also by the demonstration of fairly normal coronary arteries in patients with quite significant histories of chest pain.[1,2] To study this problem we reviewed the coronary angiographic data obtained during the last two years at the Veterans Administration Hospital in Albany in patients for whom the primary indication for such study was chest pain of obscure cause or when cardiac disease was suspected.

Material and methods

At the Albany Veterans Administration Hospital in 1970 and 1971, 110 male patients were studied by coronary angiography for the evaluation of chest pain. This population consisted of cases referred especially by their physicians (about 40 per cent) and of veterans who requested attention themselves (about 60 per cent), usually because of chest pain as the chief complaint. The patients were selected for angiography because other diagnostic procedures did not provide a clear diagnosis, or because they were possible candidates for coronary surgery.

They underwent catheterization of the left side of the heart and selective coronary arteriography by the Sones technic, frequently with catheterization of the right side of the heart in addition.[3] They were divided into those with typical angina and those with atypical chest pain based on the following five criteria: (1) discomfort, retrosternal in location, with or without radiation; (2) discomfort precipitated by exertion or significant emotion; (3) nature of the pain or discomfort: dull, tight, or pressure-like in character but not intermittent or stabbing; (4) relief by rest and nitroglycerin; and (5) duration of discomfort of no less than three minutes and no more than twenty to thirty minutes.[4,5] Pain with four or five of these features was considered typical angina. If there were three features or less, this was considered atypical chest pain.

In interpreting coronary arteriograms any luminal narrowings, single or multiple, which did not exceed 50 per cent of the diameter were considered unimportant; conversely, narrowings greater than 50 per cent were considered significant in terms of impairment of coronary flow and probably responsible for the chest discomfort.[6]

TABLE I. Coronary artery disease in patients with typical angina and atypical chest pain, all patients with or without previous myocardial infarction

Clinical Data	Advanced Coronary Artery Disease Number and Per Cent	No Advanced Coronary Artery Disease Number and Per Cent
Typical angina	89 96	4 4
Atypical pain	5 29	12 71

TABLE II. Coronary artery disease in patients with typical angina and atypical chest pain, excluding patients with a past history of myocardial infarction

Clinical Data	Advanced Coronary Artery Disease Number and Per Cent	No Advanced Coronary Artery Disease Number and Per Cent
Typical angina	31 89	4 11
Atypical pain	5 29	12 71

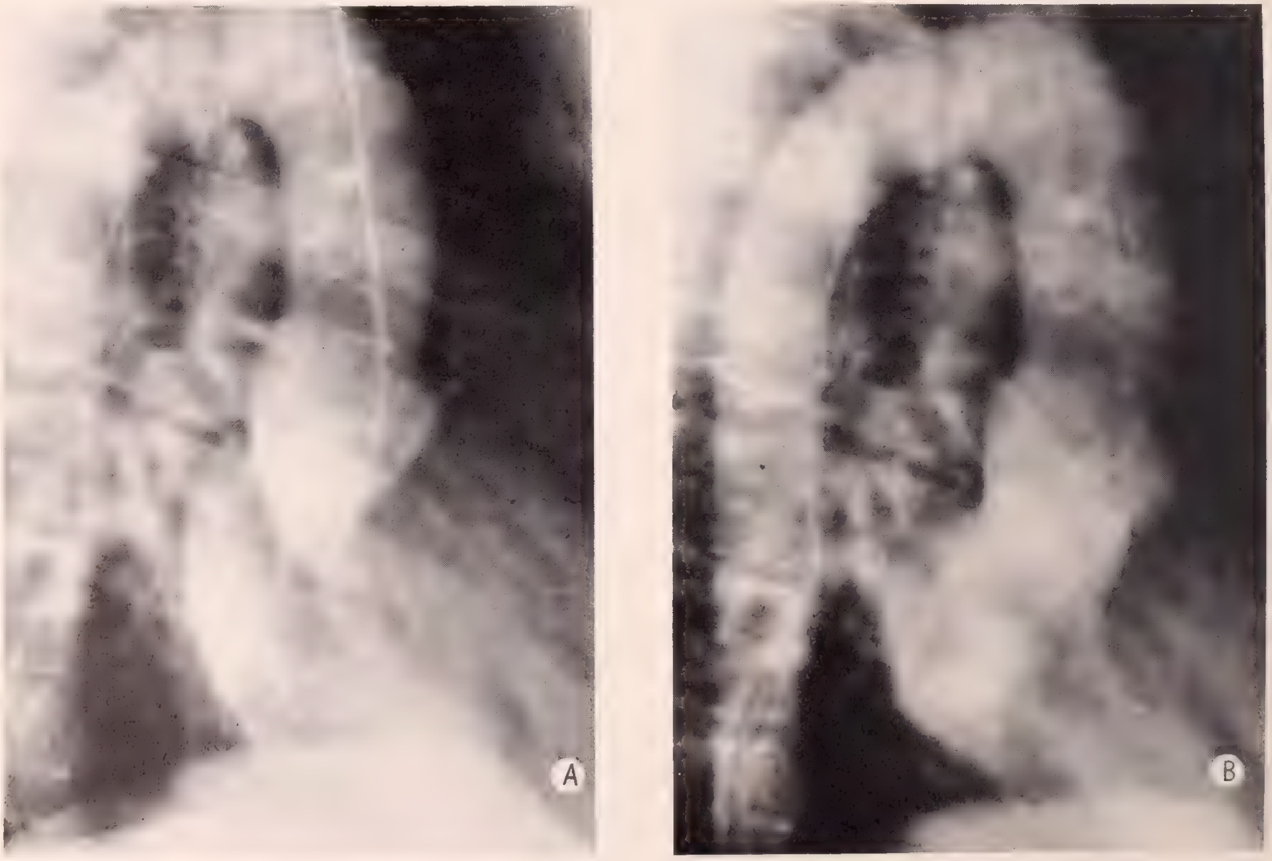

FIGURE 1. Left ventriculograms of patients with IHSS (idiopathic hypertrophic subaortic stenosis) causing angina pectoris. Catheter tip is in left ventricular outflow tract just below aortic root. Lateral and below, but largely overlapping in this view, main ventricular cavity is more faintly opacified, especially at apex. (A) In systole conical carrot-shaped outflow tract, produced by compressing hypertrophied muscle, tapers down to zone of obstruction. (B) In early diastole outflow tract is clearly much wider and more normal. Right lateral angiocardiograms.

Results

The 110 patients had an average age of 48.4 years (range twenty-four to sixty-one). Ninety-three had classical angina by history, whereas 17 were considered to have atypical chest pain (Table I). Of the 93 patients with classical angina, 58 had a documented history of myocardial infarction with pathologic Q waves or characteristic enzyme changes. These patients were considered to have definite coronary artery disease, an assumption which was confirmed by coronary arteriography in every case.

Further analysis was carried out on the 17 patients with atypical anginal pain and also on the 35 with angina but no definite clinical infarction (Table II). Thirty-one of the latter (89 per cent) had coronary artery narrowing as outlined earlier (more than 50 per cent), and there probably was a causal relation between the narrowing and the symptom picture.[6]

Of the remaining 4 with fairly normal coronary angiograms and typical angina, as defined earlier, 3 had IHSS (idiopathic hypertrophic subaortic stenosis), also called muscular subaortic stenosis, or obstructive cardiomyopathy, and 1 had ordinary congestive cardiomyopathy.[7,8]

When IHSS is a possibility, catheterization of the left side of the heart can prove it by demonstrating a pressure gradient across the subaortic zone of hypertrophied septal muscle and often by showing a distinctive left ventriculogram (Fig. 1).

In the 17 patients with atypical chest pain and no evidence of myocardial infarction, the coronary arteriograms showed 5 (29 per cent) with advanced coronary artery disease, while the remaining 12 (71 per cent) had more normal angiograms. There was no definitive evidence of cardiac disorder in the 12 patients who had atypical chest pain and more normal coronary angiograms. Five of them had normal electrocardiograms, 4 had minor nonspecific S-T and T-wave abnormalities, and 2 had electrocardiographic patterns suggesting left ventricular hypertrophy, although blood pressures and optic fundi were normal. The significance of these findings and their relation to the chest pain are uncertain.

Comment

The patient with atypical chest pain can be most difficult to diagnose and treat. If the catheterization demonstrates normal coronary arteries and normal cardiac function, the patient may be reassured about his fear of a heart attack and encouraged to resume normal activity. If the coronary arteries are found to be diseased, provocative maneuvers such as right atrial pacing or exercise may be utilized in assessing the disability more objectively.

One third of our patients with atypical chest pain did have advanced coronary disease. This is very similar to the finding of Ross and Friesinger,[2] who also showed, as expected, that patients with "atypical angina" were more likely to have coronary disease than patients with "uncertain pain," that is, the probability of disease increases with the closer resemblance to classical angina. However, such a statistical correlation is not helpful to the patient who wishes either to be freed from the fear of heart disease or is anxious to be treated for it if present. The finding of coronary disease does not, of course, exclude coexistent disease in other sites, such as gallbladder, hiatus hernia, spinal nerve roots, and so on.

In view of recent reports of myocardial infarction without coronary artery disease,[9] it is noteworthy that all of our patients with previously documented infarction did have coronary arterial abnormalities consistent with their electrocardiographic infarction patterns.

Conclusions

The most important conclusion from our study is that in the presence of classical angina, the probability of the patients having definite coronary disease is at least 90 per cent, and that those who do not have coronary arterial disease may well have IHSS.

This latter differential diagnosis is stressed, since the condition is important, treatable, and not rare.[10,11] A recent coroner's autopsy series (280 deaths) in Albany County found cardiac disease as the probable cause in one-third (about 90 cases). Of these, 3 died with IHSS.[12]

This disease is well discussed in current textbooks of medicine, although the plethora of names may make it hard to identify in the index. The resemblance to ordinary aortic stenosis is close (angina, syncope, dyspnea, systolic murmur, electrocardiogram of left ventricular hypertrophy, and sudden death), but distinctions include other electrocardiographic abnormalities (pathologic Q waves, and so on) and variations in the murmur; this is usually maximum at the lower sternal border and may suggest mitral regurgitation or an innocent so-called functional murmur. It may be intermittent or completely absent, and it may be louder in the erect posture. The disease should be seriously considered when the murmur appears to be intermediate between that of aortic stenosis and mitral regurgitation.

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Detoxification of Multiple-Drug Abusers with Sodium Amytal

This article outlines a program for the detoxification of multiple drug users utilizing decreasing doses of sodium amytal and evaluates the effects of the program. The program is designed for patients entering a methadone maintenance program. The detoxification was successful, but the patients apparently present greater psychiatric problems than do the usual heroin addicts, so the methadone programs are not designed to meet their needs. Of 96 patients detoxified, 44 were discharged from the methadone maintenance program, and 52 are continuing on methadone maintenance without relapse into mixed addiction.

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The AECOM-MMTP (Albert Einstein College of Medicine Methadone Maintenance Treatment Program) has been following a liberalized intake policy since its inception three years ago. Patients admitting to addiction to amphetamines, barbiturates, or other sedative drugs, as well as to heroin, have been admitted. A number of patients who denied a mixed addiction on admission showed clinical signs of dependency on barbiturates and/or other sedative drugs during stabilization on methadone. Such multiple-drug abusers were treated instead of being discharged as they might have been at an earlier date.

In our experience, the determination of the appropriate methadone maintenance dose can be carried out simultaneously with detoxification from other drugs; however, such simultaneous treatment cannot be conducted on an outpatient basis. Stabilization with methadone can be conducted on an ambulatory basis, but detoxification from other drugs is subject to abuse, and the possibility of an overdose or of seizures is ever present. Accordingly, patients being treated for mixed addictions were admitted to the inpatient service of AECOM-MMTP located at Bronx State Hospital.

A number of agents have been used to assist in withdrawal from barbiturates and other sedative drugs. Diphenylhydantoin has been ineffective in preventing convulsions in patients being withdrawn from barbiturates but remains essential in the treatment of patients with seizure disorders.[1] Satisfactory results have been reported with the use of pentobarbital.[2,3] Based on an earlier study conducted by Coddon and Lowinson,[4] we have chosen to use sodium amytal, a barbiturate with intermediate action. Barbital, although not itself metabolized by hepatic enzymes, markedly enhances enzyme activity and helps the metabolizing of other barbiturates.[1] Furthermore, since a cross-tolerance develops between the various drugs mentioned, a single agent is sufficient for detoxification.[3] The intermediate action of sodium amytal avoids the possible danger of oversedation which might result if a long-acting barbiturate is used.

Method

Patients for detoxification with sodium amytal were selected as follows.

1. Heroin addicts reporting dependency on other drugs at the initial interview. Applicants to the program were warned that concealing a "pill habit" might lead to discharge, but that treatment was available in the inpatient service for those requesting it.
2. A history of convulsions on admission to hospitals on previous attempts at detoxification was taken as indications for the need for hospitalization. Nineteen of the 96 patients gave such a history.
3. Individuals observed to be repeatedly intoxicated with other drugs in outpatient clinics.

Repeated urine samples testing positive for drugs were also useful indicators, although this does not differentiate between a habitual abuser and the man who takes one or two pills; this latter individual was handled by counseling in the outpatient department.

Ninety-six patients with mixed addictions were treated with sodium amytal on the inpatient ser-

TABLE I. Characteristics of patients undergoing detoxification compared with patients of entire outpatient department

Characteristic	Detoxified Patients (N = 96)		Outpatient Department Patients (N = 933)	
	Number	Per Cent	Number	Per Cent
Sex				
Male	62	64.6	767	82.2
Female	34	35.4	166	17.8
Race				
Puerto Rican	25	26.0	268	28.7
Nonwhite	21	21.9	266	28.5
White	50	52.1	390	41.8
Other	0	. . .	9	1.0
Average age	30 years		29.5 years	

vice of the AECOM-MMTP between March, 1970, and November, 1971. Follow-up information, when available, covered the period up to April 1, 1972. Demographic characteristics of these patients compared with the entire outpatient population are found in Table I.

Fifteen of the detoxified patients reported previous exposure to a psychiatric facility either as outpatients, inpatients, or emergency admissions. No comparable figures are available for the total clinic population. When compared with the total outpatient population, a higher percentage of females and whites was readmitted for detoxification from drugs other than heroin.

The drugs from which the patients were detoxified were glutethimide (24 patients), barbiturates (32), ethchlorvynol (Placidyl) (2), and alcohol (15). Twenty-five patients were detoxified from two drugs combined, including alcohol and barbiturates, barbiturates and glutethimide, and amphetamine with any of the single drugs; 10 patients were detoxified from combinations of three drugs.

The schedule for detoxification using sodium amytal was as follows.

Day 1: 4 doses of 250 mg., intramuscularly, every six hours or 8 doses of 125 mg., intramuscularly, every three hours
Day 2: 4 doses of 200 mg., orally, every six hours
Day 3: 4 doses of 100 mg., orally, every six hours
Day 4: 3 doses of 100 mg., orally, every eight hours
Day 5: 2 doses of 100 mg., orally, every twelve hours
Day 6: 2 doses of 50 mg., orally, every twelve hours
Day 7: 1 dose of 50 mg., orally, twenty-four hours after the previous dose

This schedule kept the majority of patients admitting to taking "pills" and/or a quart of hard liquor a day in a nonagitated state without outward manifestations of anxiety or withdrawal symptoms. They were able to circulate on the ward and go to the dining room and the bathroom. When observed at night, they appeared to be sleeping normally. If they showed signs of restlessness, an elevated blood pressure, or exaggerated tendon reflexes, the next dose was advanced or the physician in charge might decide to start the schedule over again from the beginning.

While on the ward, the patient was expected to participate in ward activities including group therapy sessions, occupational therapy, and housekeeping duties. Individual counselors endeavored to orient him to a training program or job opportunities.

Results

Of the 96 patients, 92 were detoxified without incident, and 4 had convulsions on the seventh day. Three of the patients who had convulsions had a history of epileptic seizures controlled by diphenylhydantoin, and 1 had no history of epilepsy or previous seizures.

Of the 96 patients treated, 52 were still on the program four to thirteen months after their last admission to the ward. Patients are allowed only two admissions to the ward, with rare exceptions. Ten of the 52 were discharged from the program and readmitted after an interval of six months. Readmission did not necessarily involve readmission to the ward; in fact, this was not necessary in 4 of the 10 cases.

Forty-four (45 per cent) have been discharged from the program or lost to follow-up. Of these 44, 2 had moved to another city, 2 were dead, 2 were incarcerated, 4 were reported doing well on another program, 2 were discharged from another program, 1 was hospitalized for a medical problem, and 31 had no follow-up. Thirty-four patients were discharged once, and 10 were discharged twice following the third readmission.

Discharges may be immediate, within a month after a patient enters the program. Patients were discharged if, in spite of warning to the contrary, they brought contraband drugs to the outpatient department or onto the ward. This situation is unusual, for efforts are made to retain the patient in the program. Indeed, one alcoholic patient is being discharged to a special drug-free program after three years of an up-and-down course where the combined resources of our program did not bring about any amelioration. Another patient remained for 2.5 years before being discharged. The average number of months on the program for the discharged patients was eight months, contrasting with 12.5 months for those not discharged.

One measure of a patient's progress on the program can be taken by noting the number of times a week he is expected to report at the outpatient department. An employed patient who has been on the program for nine months or more reports only once a week. Patients not working and considered unreliable by the staff in terms of needing more supervision and support report five or six days a week.

Of the 52 patients on the program, 7 report one day a week for medication, 6 report two days, 15 report three days, 22 report five days, and 1 reports 6 days a week. One patient in the Bronx State Hospital psychiatric service reports seven days a week. Twelve of the patients reporting five days a week have been on the program more than twelve months.

Comment

While our experience suggests that a seven-day schedule of decreasing doses of sodium amytal provides a safe and comfortable detoxification from a variety of drugs, singly or in combination, and does not interfere with either building up or maintaining a patient on methadone, the results beyond immediate detoxification are not encouraging. These patients, by history and in the estimate of the attending ward psychiatrist, present greater psychiatric problems than the usual heroin patient does. The situation-oriented therapy provided in a methadone-maintenance program is usually inadequate to meet their needs.

The question may well be asked: Do patients with mixed addiction have any place on a methadone program, particularly in view of the fact that the number of patients on methadone appears to be growing as the staff is shrinking. A patient with mixed addiction may have to be discharged soon because he is disrupting the clinic and bringing in contraband pills; he takes up an inordinate amount of staff time which could be devoted to the patient who can be rehabilitated within the framework of the program. On the other hand, there appear to be no other medical set-ups for patients with mixed addiction. They are not welcome in a psychiatric hospital and are seen in general hospitals only as emergencies in convulsion or with an overdose.

Until greater progress is made in the treatment of patients with mixed addictions, drug-abuse programs will have to do the best they can with them. In fact, chance seems to play a part. We have observed patients contaminate each other, but they occasionally rehabilitate each other. One of the worst "pill heads" on the program became interested in an alcoholic patient who had been readmitted after discharge, and both are now doing well.

Summary

Ninety-six heroin addicts with mixed addictions who were admitted to a methadone maintenance program or who were already established on a blocking methadone dose were detoxified with a regimen of sodium amytal. Four of these patients had a seizure while in the hospital; 3 of these gave a history of previous seizure disorder. Of the 96 patients, 52 are continuing on methadone maintenance without relapse into mixed addiction. Forty-four have been discharged due to relapse associated with disruptive behavior. A single readmission to the program resulted in improvement in 34 patients; 10 patients readmitted were discharged a third time.

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Genetics and Pediatric Ophthalmology

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The subject "Genetics and Pediatric Ophthalmology" encompasses such a large body of knowledge that it is difficult to decide what material should be included in a brief clinical presentation. I have elected to review the major modes of inheritance, illustrating each with ophthalmologic disorders; the major chromosomal abnormalities that are accompanied by defects of the eye; and some of the ocular findings that may occur in association with congenital anomalies and to discuss some principles of genetic counseling.

Fundamentals of Genetics

The nucleus of every somatic cell in the human body contains 23 pair of chromosomes; one member of each pair is maternal and the other member paternal in origin. Forty-four of the 46 chromosomes are autosomes, or nonsex chromosomes; the other 2 are sex chromosomes. The female has an XX sex-chromosomal pattern and the male has an XY pattern.

The units of heredity are the genes which are arranged in linear fashion along the chromosomes, each gene having a precise position known as a locus. Genes carry genetic information coded in DNA (deoxyribonucleic acid) which determines the characteristics or traits of an individual. Since chromosomes are paired, genes also are paired, and the two members of a pair may carry identical or different instructions regarding the characteristic they determine. When both genes of a pair are identical the individual is said to be homozygous for the gene pair. When each member of the gene pair carries different genetic information the individual is said to be heterozygous. An allele (one of a gene pair) which is always expressed in the phenotype, whether homozygous or heterozygous, is said to be dominant; an allele which is expressed only when homozygous is said to be recessive. A gene is autosomal when it is on an autosome and sex-linked when it is on a sex chromosome.

The patterns of inherited traits within families are determined by whether the trait is dominant or recessive, or is autosomal or sex-linked, and by the chance distribution of the gene from parents to offspring. Autosomal dominant traits tend to occur in successive generations, while autosomal recessive traits characteristically occur in siblings. A trait inherited as a sex-linked recessive is expressed by all males who carry the gene, while females are affected only if they are homozygous. Patterns of inheritance may be altered by factors such as environment, variance in expression of the gene from person to person, variability in the age of onset of the manifestations of the trait, and so on.

When a physician discovers ocular abnormality in a child which clearly is not related to trauma or infection he should seek answers to the following questions:

1. Is this an inherited disorder which solely affects the eye? Examples are retinoblastoma, hereditary strabismus, and hereditary cataract.
2. Is this an ocular manifestation of an inherited systemic disorder such as "cherry red spot" of Tay-Sachs disease or cataract of galactosemia?
3. Is this the result of a chromosomal abnormality such as trisomy 13–15 or trisomy 18?
4. Is the eye defect part of a multiple congenital anomaly syndrome?

Answers to these questions are necessary not only to establish the correct diagnosis and to plan the proper course of therapy but also for accurate genetic counseling. The primary physician and the ophthalmologist must work in concert in evaluating the child, and consultation from a geneticist should be sought when necessary. Rapid advances in somatic-cell genetics during the past several years have made it possible to diagnose an increasing number of chromosomal and biochemical disorders during the prenatal period by tissue culture of amniotic-fluid cells. If continued experience with these technics confirms that the risk of amniocentesis to mother and fetus is low and that the accuracy of prenatal diagnosis of genetic disorders is high, it appears certain that all physicians will become involved in the medical, legal, and moral implications of these developments. Generally, parents are willing to accept the risk of a genetic disorder if the defect is mild and/or amenable to treatment, such as dominantly inher-

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ited strabismus, but they are unwilling to accept even a small risk if the disorder has severe manifestations, such as Tay-Sachs disease. It appears likely that the prevention of conception or the termination of pregnancy will be accepted as appropriate preventive medicine for certain genetic disorders in the near future.

Autosomal dominant inheritance

Some of the ocular disorders which usually follow a pattern of autosomal dominant inheritance are congenital cataracts, Sturge-Weber syndrome, von Hippel-Lindau disease, hereditary strabismus, Marfan's syndrome, ptosis, and retinoblastoma. In a classic autosomal dominant disorder, one would expect every affected offspring to have an affected parent, 50 per cent of the progeny of an affected individual to manifest the disease, and both sexes to be affected in a 1:1 ratio. However, autosomal dominant disorders often show wide variation in expression among affected individuals because of differences in the penetrance of the gene from one person to another, modifying effects of gene interaction, environmental effects, and so on. Thus the dominant gene may appear to "skip" a generation, or mild or incomplete forms of the disorder may be observed.

Autosomal recessive inheritance

Some autosomal recessive disorders with ocular pathology are albinism, Riley-Day syndrome, galactosemia, Hurler's syndrome, congenital glaucoma, congenital optic atrophy, and Tay-Sachs disease. In autosomal recessive transmission the gene for the particular trait must be present in the homozygous state ("double dose") for clinical manifestations of the disorder to be observed. Classically, parents of the affected individual are clinically normal but are carriers of the mutant gene, the recurrence rate from the same parents for each subsequent child is 25 per cent, and both sexes are affected in a 1:1 ratio. The change of clinically normal offspring having the mutant gene (carrier) is two out of three.

X-linked inheritance

When the gene responsible for a particular trait is located on the X chromosome the trait is said to be X-linked. Because the male has only one X chromosome he carries only one-half the complement of X-linked genes found in the female, and a recessive disorder is expressed with a single mutant gene. Thus, in X-linked recessive disorders, usually only males are affected, and transmission is through unaffected heterozygous (carrier) females. There is no male-to-male transmission. When a mother is a carrier there is a 50 per cent risk of male offspring being affected and a 50 per cent risk of female offspring being carriers. Color blindness and retinitis pigmentosa are disorders which may be inherited as X-linked recessive traits. Of course, X-linked single-gene dominant disorders show expression in both the XX female and in the XY male.

In this article the fundamentals of genetics are reviewed, and examples of some of the major categories of genetic abnormalities as they apply to the diagnosis of ophthalmologic problems are given. Chromosomal analysis is important not only for the child involved, but also for genetic counseling of the parents. Ocular defects may occur by themselves, or they may occur along with anomalies of other organ systems.

Chromosomal abnormalities

As previously mentioned the genetic information which determines the inherited characteristics of each one of us is located on the 46 chromosomes of the somatic cells. Normal development of the human embryo depends not only on the genic content of the chromosomes but on the gene balance as well. Each cell must receive the appropriate complement of genetic material, or genetic imbalance and abnormal morphogenesis may result. Imbalance may be associated with the following chromosomal aberrations: (1) maldistribution of chromosomes during cell division, the most common aberration; (2) chromosome breakage; (3) translocation; and (4) maldivision of chromosome.

Only a few gross genetic imbalances are compatible with survival of the conceptus, and these imbalances result in a recognizable pattern of multiple congenital malformations among affected individuals. The most characteristic are the autosomal trisomy syndromes. Complete descriptions of the various syndromes are available in textbooks of cytogenetics.[1] Ocular defects which may be found in association with these chromosomal abnormalities are:

1. Trisomy 21 (Down's syndrome): inner epicanthal folds, hypertelorism, narrow palpebral fissure with obliquely upward slant, lens opacities, and Brushfield's spots.
2. Trisomy of chromosome 18 (trisomy E syndrome): ptosis, short palpebral fissures, epicanthal folds, strabismus, corneal opacities, and colobomata.
3. Trisomy 13–15 (trisomy D_1 syndrome): anophthalamos or microphthalmia, colobomata, corneal opacities, cataracts, and retinal dysplasia.

It is apparent that there is considerable overlap in the ocular malformations among these syndromes, but a thorough evaluation of the entire complex of somatic abnormalities in each patient usually permits the physician to make a diagnosis based on clinical findings alone. Nevertheless, it is important to do chromosomal analyses to confirm the diagnosis of a chromosomal aberration and to determine whether the patient has a translocation chromosome. If there is a translocation, both parents need to be studied to determine whether or not either of them is carrying a balanced translocation with a consequent high risk of having additional affected offspring. The recurrence risk of chromosomally normal young parents is less than 1 per cent.

Other congenital malformations

Structural defects of the eye also may occur in association with congenital anomalies which are not the result of recognized chromosomal aberrations. In 1964, Marden, Smith, and McDonald[1] reported their findings concerning the nature and incidence of structural defects, especially minor anomalies, in 4,412 newborn babies. They observed that 2 per cent had major defects evident by surface examination, and that 14 per cent had a single minor anomaly. However, 90 per cent of those neonates who had three or more minor anomalies (0.5 per cent of the group) had one or more major defects as well. Thus the finding of several minor malformations involving eyes, ears, hands, feet, skin, or genitalia may indicate that a more serious problem in morphogenesis exists. Thus when the ophthalmologist observes inner epicanthal folds, downslanting or upslanting palpebral fissures, hypertelorism, colobomata, Brushfield's spots, and so on, he should check the ears, hands, skin, and appendages for abnormal variations.[2]

Summary

Ocular defects may be found in association with inherited disorders that affect the eye alone or affect many organ systems; they may be caused by chromosomal abnormalities, or they may occur in association with multiple congenital anomalies of other cause. All of these factors need to be considered when evaluating children with ocular pathology to establish a diagnosis and to acquire information for genetic counseling.

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Current and Developing Aspects in Management of Scoliosis

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The cause of idiopathic scoliosis is unknown. Two recent developments, however, are worthy of mention. Experimental work by Lizska of Poland, repeated by MacEwen,[1] opens a new approach to the further investigation of the etiology of idiopathic scoliosis. Section of the dorsal and ventral nerve roots on one side of the thoracic portion of the spine in experimental animals produced a deformity with lateral angulation and rotation simulating idiopathic scoliosis in the human being. This experimental model may prove to be more fruitful in shedding light on the origins of idiopathic scoliosis than previous animal experiments. MacEwen[1] raises the question of proprioception and balance as a cause of idiopathic scoliosis. Yamada *et al.*[2,3] found equilibrial dysfunction in 57 out of 70 scoliosis patients during the period of rapid vertebral growth. They suggest that disturbance is present at the spinal cord and brain stem levels. This falls in line with the experimental work of Lizska and MacEwen.[1] The patients studied by Yamada *et al.*,[2,3] however, included cases of scoliosis of the congenital and paralytic as well as idiopathic types.

Heredity

The appearance of scoliosis in more than 1 child in a family is no longer considered to be a random occurrence. Wynne-Davies, in 1968,[4] studied the first, second, and third-degree relatives of 114 patients with scoliosis in Great Britain. Her findings have suggested either dominant or multiple gene inheritance factors, and she concluded that idiopathic scoliosis is a familial condition. MacEwen[1] found a 15 per cent positive family history in a review of 725 patients seen at the duPont Institute. He then studied the families of 100 consecutive scoliosis patients. In this group of patients with idiopathic scoliosis, there were 77 brothers with 22 (29 per cent) showing a curve over 10 degrees. Of the 85 sisters, 37 (43 per cent) had a curve over 10 degrees. Of significance was the observation that the average curve of the patient being treated at the duPont Institute was 44 degrees, and the average age was thirteen years three months. On the other hand, the average curve in the sibling examined was 13 degrees, and the average age was eleven years. It is evident, therefore, that the siblings of patients with scoliosis are good candidates for scoliosis screening. Routine examination of the siblings would mean earlier recognition of milder curves at a younger age, and more patients with scoliosis would be amenable to nonoperative treatment measures.

Classification

The following etiologic classification of scoliosis has been adopted by the Scoliosis Research Society.

1. Idiopathic scoliosis.
2. Scoliosis due to congenital skeletal abnormalities, hemivertebrae, and other failures of normal segmentation of the spine.
3. Neuromuscular scoliosis due to lower motor neuron poliomyelitis and upper motor neuron cerebral palsy.
4. Curves associated with neurofibromatosis.
5. Mesenchymal disorders such as Marfan's disease and rheumatoid arthritis.
6. Traumatic scoliosis. This may be vertebral, such as that due to fracture, radiation, or surgery, or extravertebral, such as that due to burns and thoracoplasty.
7. Curves secondary to irritative phenomena—transient curvatures such as those occurring with sciatica or spinal cord tumor.
8. Others, for example those of metabolic, nutritional, or endocrine causes.

The most common type of structural scoliosis is the so-called idiopathic type, cause unknown. It is difficult, if not impossible, to determine the age of onset of a scoliotic deformity. We therefore speak of the age of recognition. Idiopathic scoliosis is subdivided into three major groups. The

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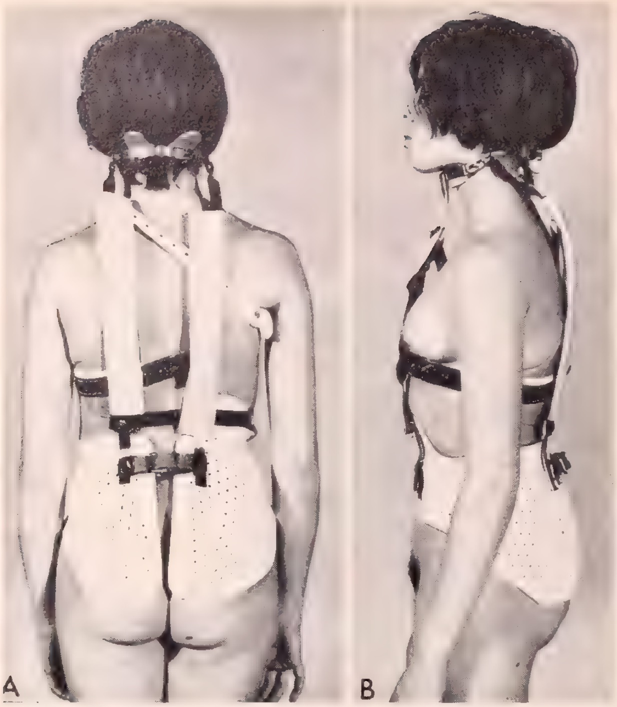
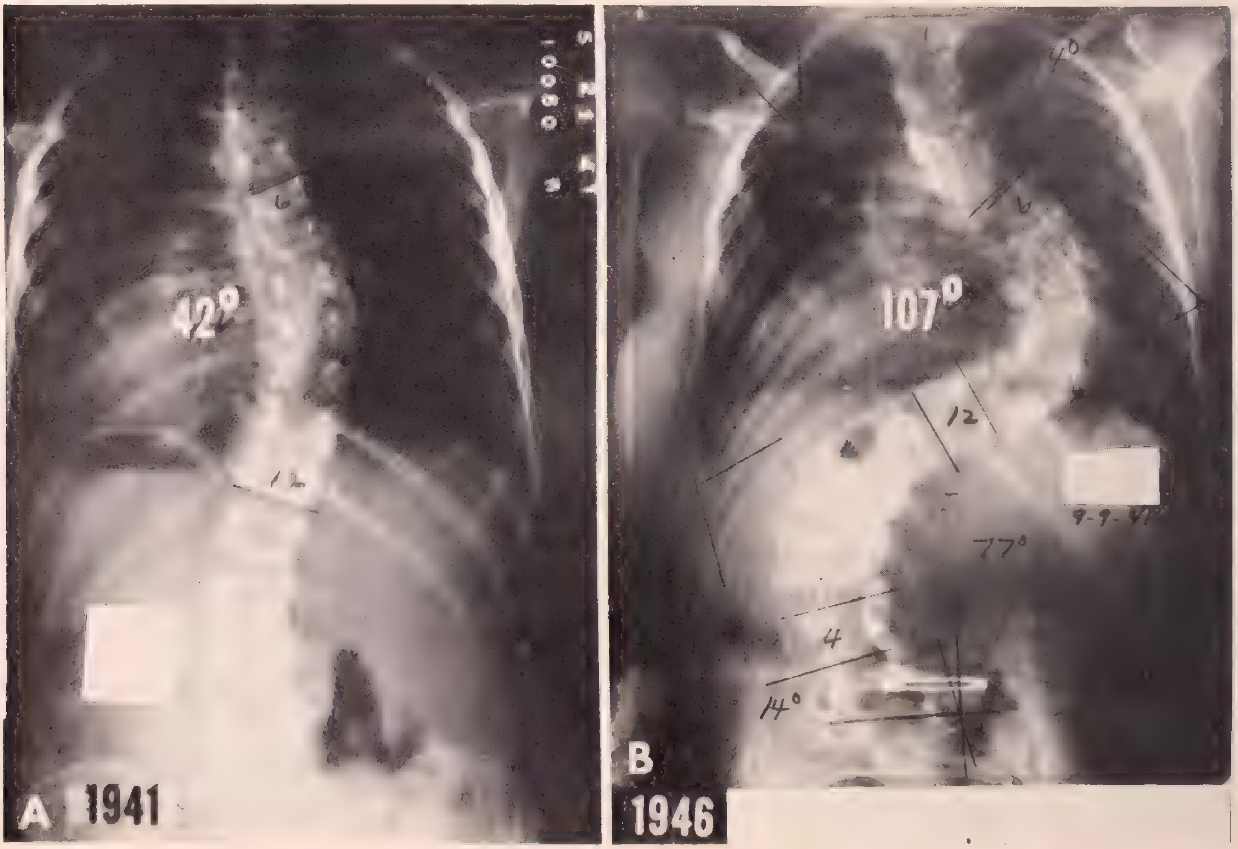


FIGURE 1. Milwaukee brace. Model has perforated orthoplast pelvic girdle which is light and washable. Plastic neck mold has replaced the chin pad, eliminating excessive pressure on mandible. Occipital pads are well under occipital protuberance. Adjustable uprights front and back are covered with velcro leather guards to protect clothing.

first of these is infantile idiopathic scoliosis, in which the age of recognition is under three years. This may be either resolving or progressive. Juvenile scoliosis refers to scoliosis recognized between the ages of three and ten, and adolescent scoliosis refers to that recognized from the age of eleven to the time of skeletal maturity.

Resolving infantile idiopathic scoliosis is a rare curve pattern in the United States, but it is found more commonly in Great Britain and on the Continent. The reason for this is not known. The deformity spontaneously resolves without treatment and rarely produces more than a 35- or 40-degree curve. No treatment is required. This contrasts with progressive infantile idiopathic scoliosis, which invariably develops into a very severe deformity unless aggressively treated.

The psychologic aspect of the patient's reaction to scoliotic deformity is often very difficult to evaluate. Psychologic examination in depth is necessary to evaluate the full impact of the scoliotic deformity on the adult patient. Most adults accommodate themselves to their deformity, but one does not know what compromises in ambition, career, and choice of mates were made along the way. Nachemson[5] found that an extremely large proportion of women with idiopathic scoliosis did not marry. Seventy-six per cent in his series were unmarried. He also found that 47 per cent of the living patients were disabled by back symptoms.



Milwaukee brace. The Milwaukee brace[6,7] is now an essential part of any comprehensive treatment program for idiopathic scoliosis (Fig. 1).[5,6] Severe deformities can be prevented by initiation of effective Milwaukee brace treatment early in the evolution of the curve (Fig. 2). Management of a patient in the Milwaukee brace is not easy. It is a long, arduous experience for the patient, the family, and the surgeon. Team work is necessary. The orthopedic surgeon must be willing to assume the responsibility of acting as the captain of the team that includes an experienced orthotist, with a special background in the fabrication and fitting of the Milwaukee brace, and a physical therapist. Blount[8] has pointed out that an active vigorous exercise regimen is a necessary supplement to the passive support provided by the Milwaukee brace if the most favorable results of treatment with the brace are to be anticipated.

The choice of the patient for treatment with the Milwaukee brace depends on the age of the patient, the degree of the deformity, and the skeletal maturation. Since chronologic age and skeletal age do not always coincide, the latter is always determined from an anteroposterior view of the hands and wrists in the patient with scoliosis, using Greulich and Pyle's Atlas. There are three criteria for determining skeletal maturation: (1) skeletal age, (2) status of the vertebral ring apophyses, and (3) status of the ossification of the iliac apophysis (Risser's sign).

In idiopathic scoliosis, as long as there is vertebral growth remaining, there is potential for increase in the deformity. Vertebral growth ceases in girls at about bone-age sixteen and in boys at bone-age eighteen, when the vertebral ring apophyses are closed and at completion of ossification of the iliac apophysis.

Radiologic criteria of skeletal maturation are important both in making a prognosis and in choosing the proper treatment program.

Guidelines and objectives of treatment have been established (Table I).[9] The most favorable response is in patients with curvatures of 40 degrees or less, with immature spines, and a bone age under thirteen years.[10] In some instances, patients approaching skeletal maturity respond favorably to brace treatment. In progressive infantile idiopathic scoliosis, the curve can usually be controlled until age ten or later, bringing the patient into a more desirable age for spine fusion. This also applies to the juvenile idiopathic curve, which in some patients can be completely controlled with the Milwaukee brace nonoperative treatment program if treatment is initiated with curvatures under 40 degrees. In a recent study, MacEwen[10a] observed an unfavorable response to Milwaukee brace treatment in patients with curves in which the height of the disk space on the concave side of the curve was less than 50 per cent

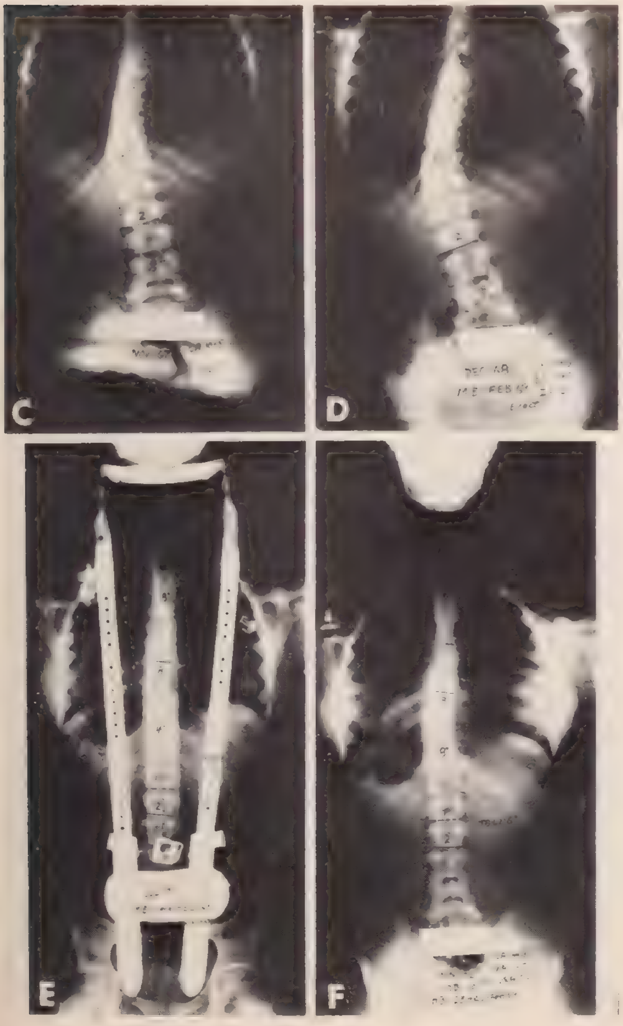


FIGURE 2. Juvenile idiopathic scoliosis. (A and B) Untreated. At nine years of age, 42-degree thoracic curve, increased to 107 degrees by fourteen years of age. (C, D, E, and F) Treated with Milwaukee brace and special scoliosis exercise routine. (C) Patient at age 10 years, five months. Curve measured 25 degrees. (D) One year later—no treatment, curve measures 35 degrees. Milwaukee brace recommended. Brace obtained in February, 1969, worn twenty-three hours a day. Supervised scoliosis exercise regimen started. (E) July, 1971, radiograph made erect in Milwaukee brace. Curve from eighth thoracic to second lumbar vertebrae measured at 0 degrees. Shortened curve, eighth thoracic to first lumbar, measures 4 degrees. (F) June, 1972. Patient was out of the brace ten minutes when the radiograph was made. Eighth thoracic to second lumbar curve measured 6 degrees; shortened curve, eighth thoracic to first lumbar, 8 degrees. Patient then fourteen years, eleven months of age. Iliac apophysis shows partial ossification, and vertebral ring apophyses are open. Spine is still immature, and there is potential for recurrent deformity if treatment is terminated too soon. Patient continued in Milwaukee brace on twenty-three-hour-a-day program except for special occasions and swimming.

TABLE I. Treatment program for idiopathic scoliosis at the University of Rochester Medical Center[9]

Bone Age of Girls (Years)	Curve Measurements (Degrees)	Treatment
All ages	Less than 20	Periodic observation
Under 10	More than 20	Milwaukee brace and exercises
Under 15	20 to 40	Milwaukee brace and exercises
10 to 15	40 to 60	Individualized. With more mobile curves, Milwaukee brace recommended as a trial; with more rigid curves, surgery treatment of choice
Over 12	Over 60	Surgery
Over 15	Unacceptable deformity	Surgery

TABLE II. Average correction and loss in 86 curves with solid fusion[12]

Variable	Curve Severity (Degrees) 38–50 (N = 7)	51–75 (N = 59)	76–100 (N = 18)	>101 (N = 2)
Average preoperative curve (degrees)	45 (38 to 50)*	63 (52 to 75)	86 (77 to 90)	106 (103 to 109)
Correction obtained				
Degrees	33 (28 to 41)	42 (25 to 62)	48 (26 to 62)	40.5 (38 to 43)
Per cent	73 (62 to 83)	65.9 (40 to 80)	56 (32 to 74)	38.5 (37 to 40)
Correction maintained				
Degrees	30 (26 to 39)	39 (22 to 61)	46 (28 to 59)	37 (32 to 42)
Per cent	66.6 (58 to 80)	61.9 (35 to 88)	53 (32 to 69)	35 (31 to 39)
Loss of correction				
Degrees	3 (2 to 4)	2.5 (0 to 7)	2.7 (0 to 6)	3.5 (1 to 6)
Per cent	9 (6 to 13)	6.1 (0 to 16)	5.6 (0 to 13)	9 (2 to 16)

* Numbers in parentheses indicate range.

than it was on the convex side, regardless of the degree of angulation. If this observation proves to be accurate, it will add an objective criterion for prognosticating favorable and unfavorable responses before initiation of Milwaukee brace treatment.

Malocclusion and deformity of the mandible were troublesome problems in the earlier years of Milwaukee brace treatment. The recent introduction of the plastic neck mold avoids pressure on the mandible and has eliminated the problem of aggravating a preexisting, or causing an occlusal or mandibular, deformity because of excessive pressure of the chin pad on the mandible.[11]

Surgical treatment. The goal of surgical treatment is to obtain a realistic degree of correction permanently maintained with a pseudarthrosis rate under 10 per cent. The degree of correction obtained will vary from approximately 30 to 90 per cent, depending on the degree and rigid-

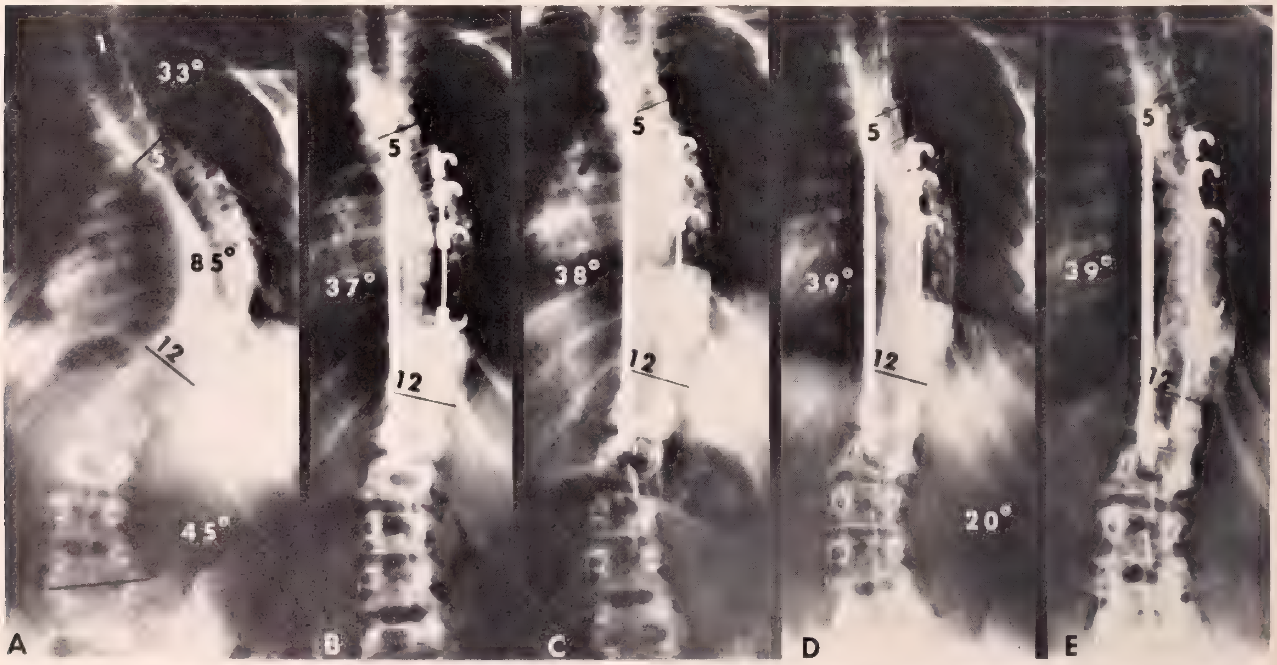


FIGURE 3. Twelve-year-old girl's idiopathic thoracic curve corrected by instrumentation and stabilized by spine fusion from fourth thoracic to first lumbar vertebrae. Follow-up postoperative roentgenographic examination and measurements are shown. Initial curve (fifth thoracic to twelfth thoracic vertebra) was 85 degrees, and initial corrected curve was 37 degrees, making correction obtained 48 degrees, or 56 per cent. Her corrected curve was 39 degrees, making correction maintained 46 degrees (54 per cent) and loss of correction 2 degrees (4 per cent).[12]

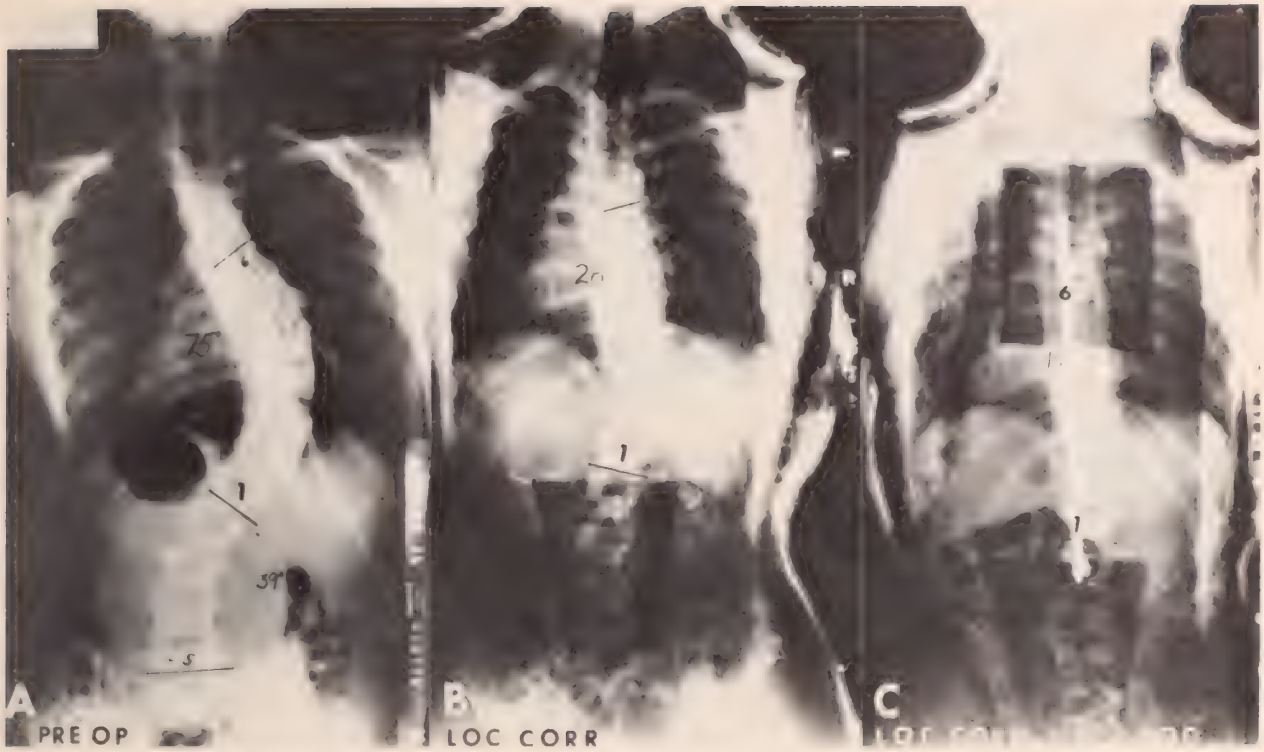


FIGURE 4. Idiopathic scoliosis. (A) Preoperative anteroposterior radiograph made in erect posture. Thoracic curve from sixth thoracic to first lumbar vertebra equals 75 degrees. (B) Radiograph made in recumbency in preoperative localizer cast. Curve measures 28 degrees. (C) Radiograph made one week postoperatively in recumbency. Curve measures 15 degrees. Harrington distraction rod seen in place.

ity of the preoperative curve (Table II).[12] A good treatment program for idiopathic scoliosis includes effective correction modalities, good fusion technic, and adequate postoperative immobilization.

Data on correction obtained and correction lost is determined as follows. The preoperative curve is measured on a radiograph made in the erect posture (Fig. 3A). The degree of correction obtained is determined by subtracting the angulation of the curve on a radiograph made in the first postoperative week in recumbency from the original curve (85 − 37 = 48-degree correction, Fig. 3B). The per cent of correction is determined by dividing the degree of correction obtained by the degree of the original curve (48 ÷ 85 × 100 = 56 per cent). The loss of correction is determined from the final radiograph made in the erect posture without external support (39 − 37 = 2-degree-loss [4 per cent]) (Fig. 3E).

Surgery is indicated in the treatment of idiopathic scoliosis under the following conditions. (1) Too late for Milwaukee brace treatment—bone age in girls over fifteen years, in boys over seventeen years; curves over 50 degrees. (2) Failure to respond to Milwaukee brace nonoperative treatment program. (3) Thoracic curves over 60 degrees. It has been shown that thoracic curvatures of this magnitude often increase even after completion of vertebral growth, showing significantly compromised pulmonary function which continues to deteriorate in adult life.[5,13-15] (4) Pain in the adult.

Methods of correction of idiopathic curve

Traction, preoperative localizer cast, and instrumentation at the time of fusion singly or in combination are now in common use.[9] Reasonable guidelines can be outlined. In curvatures under 60 degrees, one may proceed with instrumentation at the time of fusion without preoperative traction or cast correction. I prefer preoperative correction in a localizer cast except in adults and severe rigid curves treated in skeletal traction (Fig. 4). Recently, in patients who are admitted several days before cast application, Cotrel nonskeletal traction has been used for preliminary correction (Fig. 5). With curves between 60 and 90 degrees, Cotrel traction is used for a period of seven to ten days, followed first by a preoperative localizer cast and then surgery in the plaster cast with instrumentation and fusion. In patients with rigid curves over 90 degrees, halo-femoral pin (Fig. 6) or halo-Cotrel pelvic traction is used for ten days to three weeks, followed by preoperative localizer cast and surgery in the plaster cast or in traction. Preliminary correction by traction and/or preoperative cast means that there is less stretching of the spinal cord and its vascular supply at the time of instrumentation.

Harrington posterior instrumentation of the spine is now quite routine in the surgical treat-

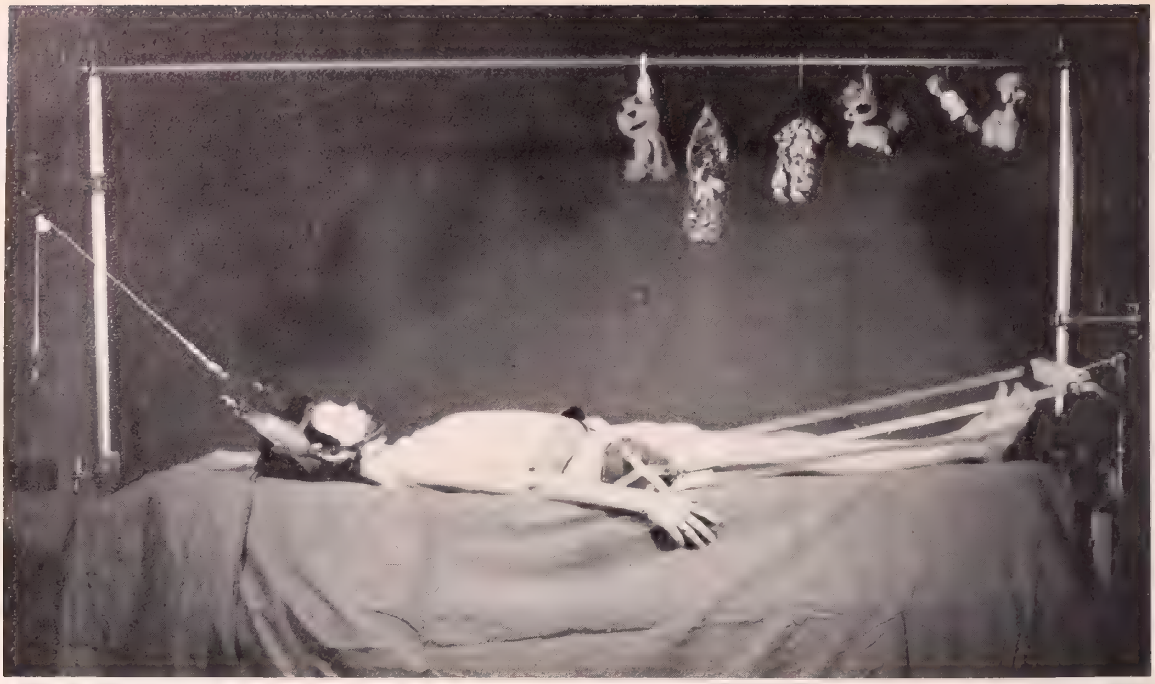


FIGURE 5. Cotrel traction. Direction of pull on halter is at 45-degree angle. This allows most of pressure to be exerted against occiput rather than chin. Crossed, padded pelvic straps adjusted above iliac crests and attached to trochanteric pads allowing effective traction with comfort.

ment of idiopathic scoliosis (Fig. 4C).[12,16] Instrumentation is a helpful adjunct in the overall treatment program as a correction device and for temporary internal fixation. It is essential to recognize that the instrumentation serves only for temporary internal fixation.

Paraplegia is an uncommon but serious complication following instrumentation of the spine. Preoperative preliminary correction would appear to be highly desirable. Patients who have instrumentation should be examined immediately on recovery from anesthesia for neurologic deficit and frequently checked during the first twelve hours postoperatively. If there is paraplegia on recovery from anesthesia or if slowly developing progressive neurologic deficit occurs, prompt re-

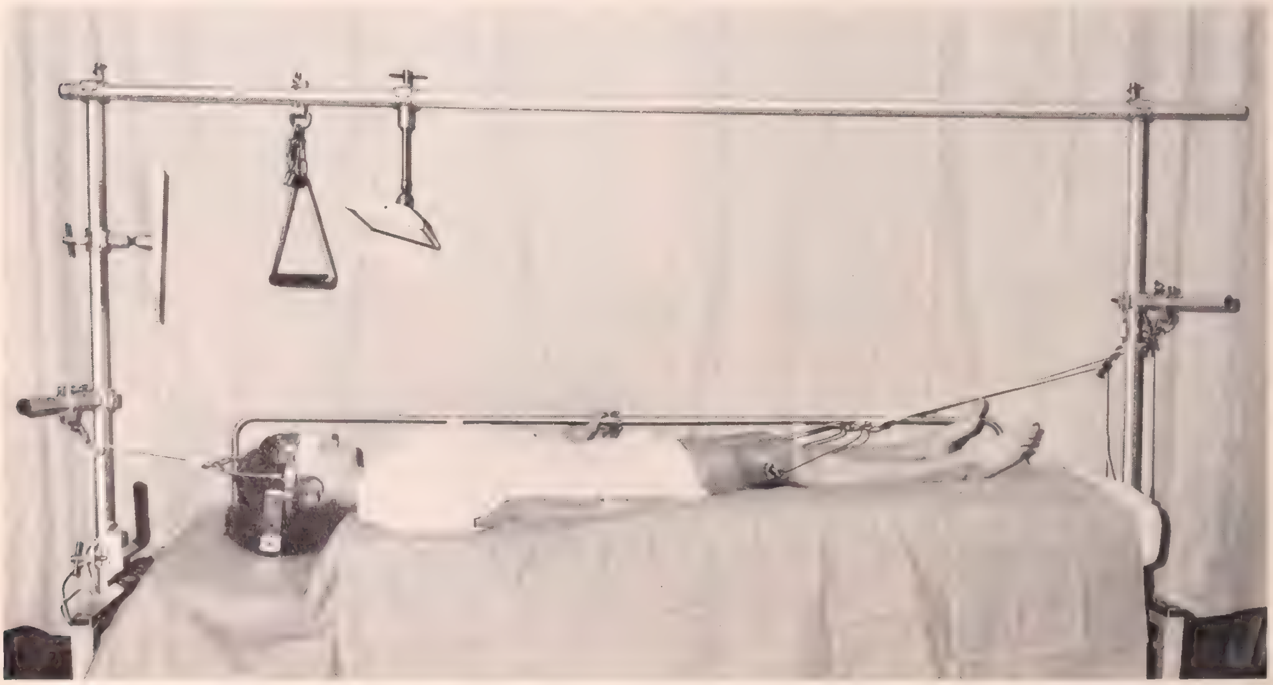


FIGURE 6. Halo-femoral pin traction. Cranial halo and supracondylar femoral pins used for correction of more severe and rigid curves.

TABLE III. Average corrections and loss of correction in 86 curves corrected and fused with no evidence of pseudarthrosis (95 per cent); 4 curves in 4 patients with pseudarthrosis (5 per cent)[12]

Operative Technic	Number of Curves	Curve Level	Average Initial Curve in Degrees (Range)	Average Correction by Preoperative Localizer Cast		Average Postoperative Correction Obtained		Average Postoperative Correction Maintained		Average Postoperative Loss of Correction	
				Degrees	Per Cent	Degrees	Per Cent	Degrees	Per Cent	(Range) Degrees	Per Cent
Harrington instrumentation alone	31	18 thoracic; 13 thoracolumbar	66 (45 to 103)	...	...	37	56	32	48	2.7 (0 to 7)	7
Rib resection and instrumentation	17	17 thoracic	73 (48 to 109)		...	41	56	33	45	2.5 (0 to 13)	6
Ligament release and instrumentation	5	5 thoracic	69 (62 to 74)	...	...	42	61	40	58	2.4 (2 to 4)	6
Preoperative localizer cast, ligament release, and instrumentation	19	17 thoracic; 2 thoracolumbar	66.5 (52 to 90)	33.6	51	46	69	43	65	2.9 (0 to 6)	6
Preoperative localizer cast and instrumentation	14	1 thoracic, 13 thoracolumbar and lumbar	65 (38 to 88)	34	51	45	71	43	66	2.8 (1 to 4)	6
Total solid fusion	86	58 thoracic; 28 thoracolumbar	67 (38 to 109)	37	57	42	63	40	60	2.7	6.5
Pseudarthrosis	4	3 thoracic; 1 thoracolumbar	81 (64 to 108)	35	53	48	59	32	39	13.3 (11 to 17)	27.9
Total	90	61 thoracic; 29 thoracolumbar and lumbar	67	...		43	64	40	59	3.2	7

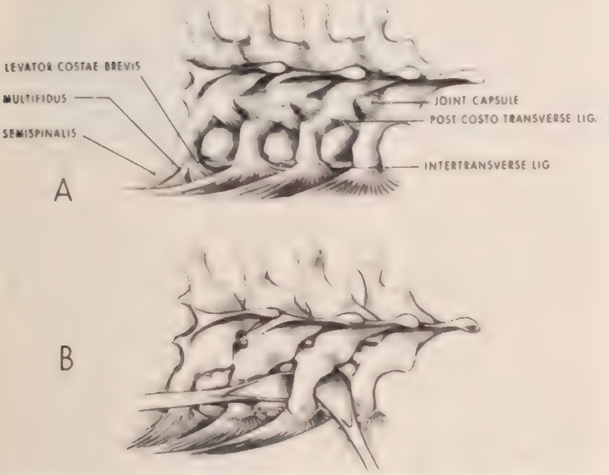


FIGURE 7. Concave ligament release. (A) Demonstrates ligamentous structures usually visualized on exposure of spine for fusion. (B) Shows exposed posterior vertebral structures after excision of joint capsules, reflection of posterior and anterior costotransverse ligaments, and reflection of tendinous attachments of short paraspinal muscles to tips of transverse processes.[18]

operation for removal of the rod is indicated. This is the recommendation of the morbidity and mortality committee of the Scoliosis Research Society.

Rib cage deformity. The patient and her parents are more interested in the degree of correction of the rib hump in a case of thoracic scoliosis than they are in the degree or percentage of correction of the lateral angulation of the spine. The correction obtained depends on two factors, the type and degree of deformity present preoperatively and the effectiveness of the treatment. In an effort to improve the quality of correction of the rib-cage deformity, concave rib resection and release of ligaments from the transverse processes in the concavity of the curve have been tried (Fig. 7, Table III.).[12,17,18]

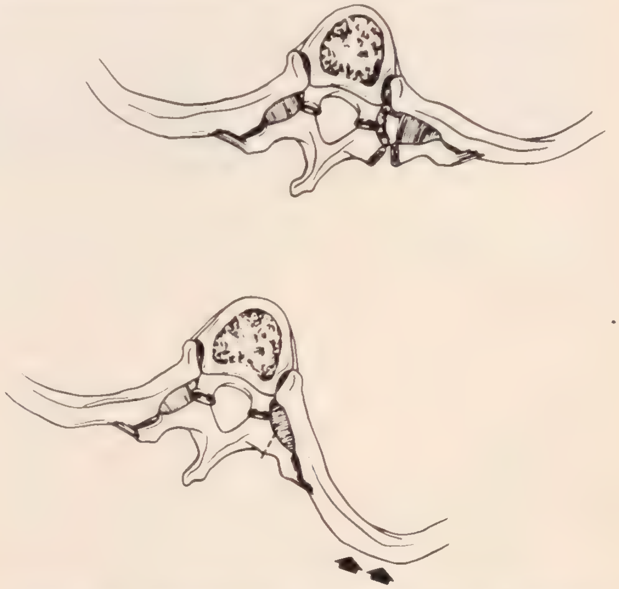


FIGURE 8. Diagramatic illustration of how osteotomy of convex transverse processes aids in correction of rib hump with postoperative Risser-Cotrel type of cast. Rib pivots at costovertebral joint carrying osteotomized transverse process with it. Rib hump reduced without changing vertebral body rotation.[20]

The most recent adjunct in correction of the rib cage deformity is osteotomy of the transverse processes on the convex side of the thoracic curve (Fig. 8).[19] The postoperative corrective cast is applied two weeks after surgery, with a broad strap drawn over a rapidly applied plaster before it sets, to derotate the prominent convex ribs (Fig. 9). The detached transverse processes then follow the ribs to which they are attached as they derotate, pivoting at the costovertebral joints (Fig. 8). We have been using this technic (after Cotrel) for the past eighteen months. Better correction of the rib hump is obtained (Figs. 10 and 11).

Blood supply to spinal cord. There has been a

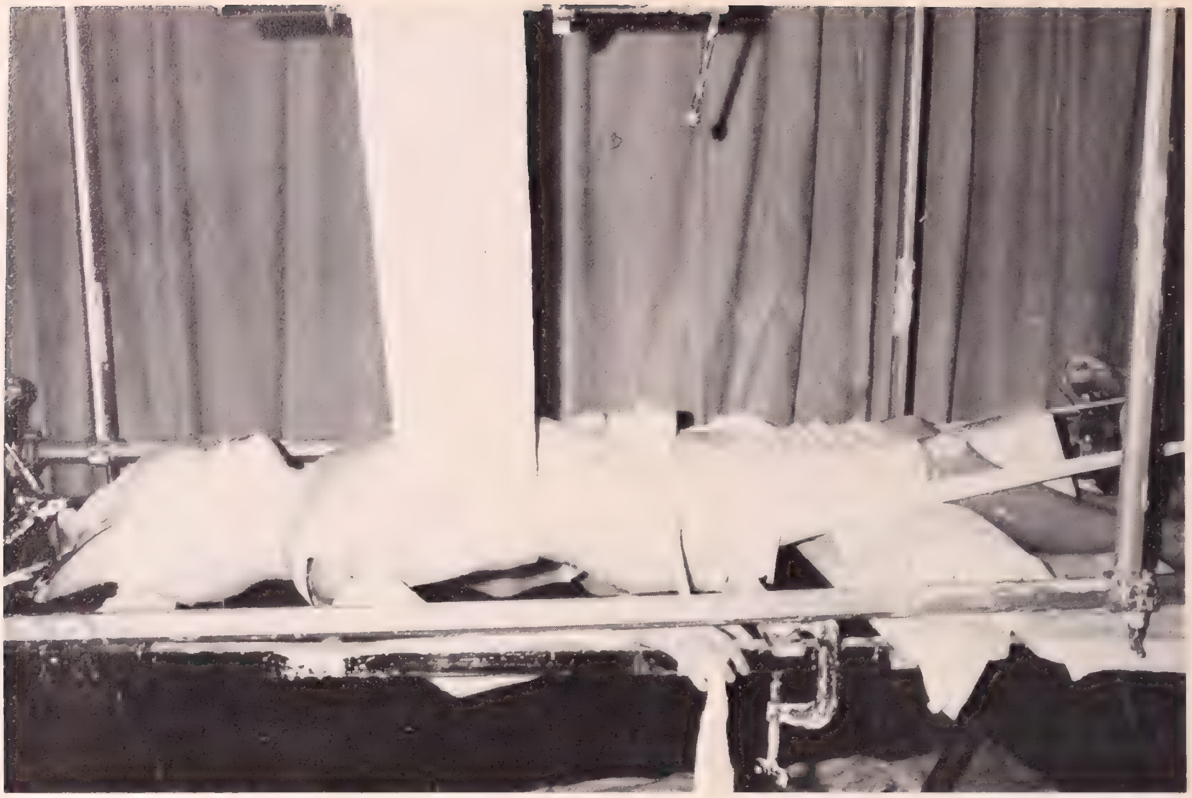


FIGURE 9. Application of modified Risser-Cotrel type of corrective cast. Patient on Risser localizer table to which overhead frame has been attached. Cast is applied under full distraction forces using disposable head halter and crossed pelvic straps. Plaster rolls are soaked in cold water to slow plaster setting. Cast is applied rapidly, and before plaster sets, broad canvas strap is applied over plaster and tightened with ratchet fixed to overhead frame. Right shoulder is tied down to shoulder bar with length of stockinette. Pelvis is stabilized. Derotation strap is fixed to cross bar on opposite side of table, and rib hump is reduced as strap is tightened over plaster with ratchet.[21]

resurgence of interest in the details of the blood supply to the spinal cord following the reporting of paraplegia complicating Harrington instrumentation postoperatively. Doppman, Giovanni, and Ommaya[22] describe the detailed anatomy of the circulation of the spinal cord. The anterior spinal artery is supplied by a rather small vessel, the artery of Ademkiewicz, arising at the level of a foramen from a left intercostal artery between the first lumbar and fifth thoracic vertebrae. The artery courses up the spine, then makes a hairpin turn to form the anterior spinal artery. Trauma to a strategic intercostal artery or sudden stretching of this vital artery associated with distraction of the spine under anesthesia, may compromise the blood supply and result in ischemia of the spinal cord. Selective arteriography of the intercostal arteries at several levels is the only way one can define the details of the vascular supply to the cord. This is a difficult and highly specialized technic that is not practical as a routine preoperative study in the scoliosis patient. Keim and Hilal[23] have performed selective arteriography in a number of scoliosis patients preoperatively and postoperatively. What is needed to increase the safety of spinal instrumentation is a method of monitoring the spinal cord during surgery.

Spine fusion. It is recognized now that a good spine fusion means meticulous, wide subperiosteal exposure and deep decortication of the posterior elements of the spine.[24,25] The facet joints may be treated in various ways.[12,25] There remains little question that the addition of a large amount of fresh autogenous iliac bone is an important factor in decreasing the incidence of pseudarthrosis.[12] With good fusion technic, supplemental fresh autogenous iliac grafts, instrumentation of the spine, and adequate postoperative external immobilization, one can anticipate a pseudarthrosis rate of 5 per cent or less and the maintenance of high percentage of the preoperatively gained correction (Fig. 12).[12]

Wound infection. Moe[19] has reported highly satisfactory results in the treatment of postoperative wound infection in spine fusions with or without instrumentation by early complete opening of the wound, thorough debridement of devitalized tissues, thorough irrigation, removal of blood clots followed by closed irrigation-suction with antibiotic solutions, and a careful closure of the wound in layers. Primary healing usually results in two weeks.

In 150 consecutive spine fusions for scoliosis at the University of Rochester Medical Center, we

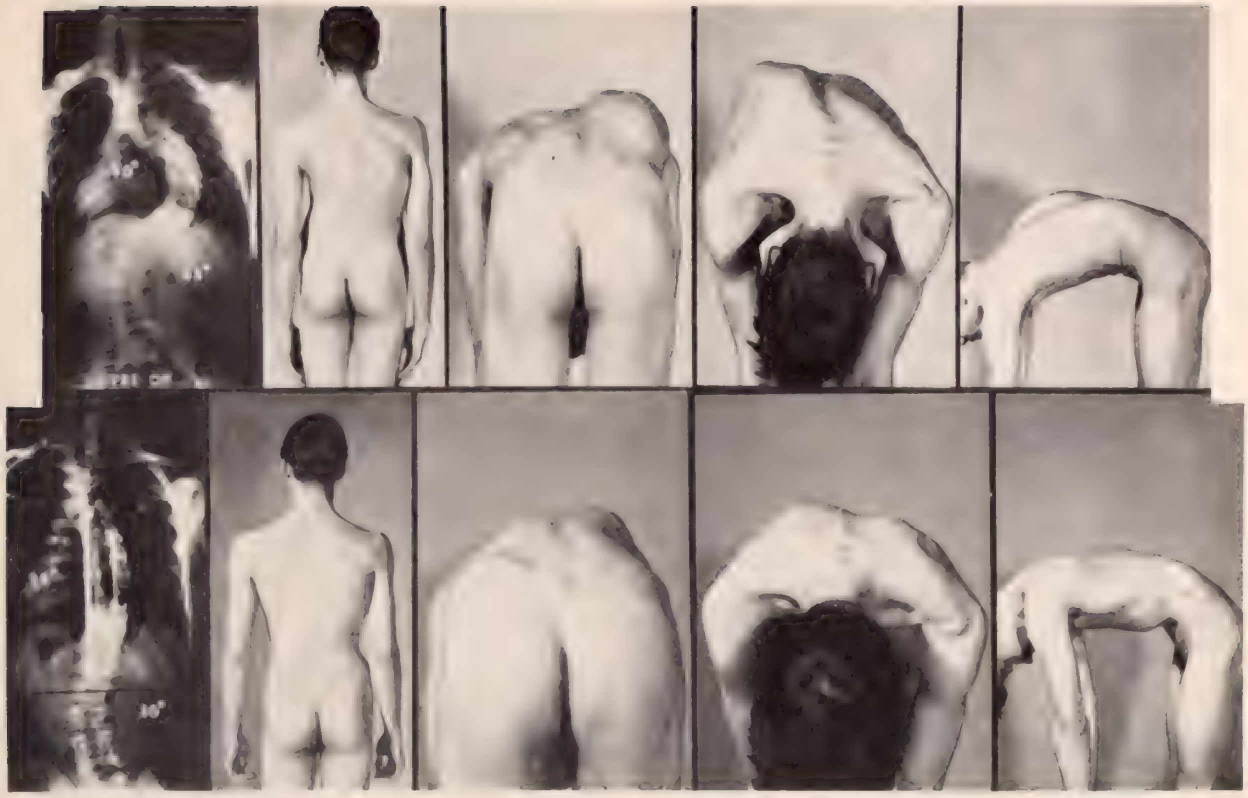


FIGURE 10. Fifteen-year-old patient with idiopathic scoliosis. Treatment by preoperative localizer cast, Harrington instrumentation, concave ligament release, instrumentation and fusion, and postoperative Risser localizer cast. Upper row of figures shows preoperative radiograph and clinical photographs. Lower row of figures, postoperative radiograph and clinical photographs. Some residual rib hump.

have used a prophylactic antibiotic regimen.[26] The patients are given 2 Gm. of methycillin intravenously during the course of the surgery; 8 to 10 Gm. of the drug are continued daily intravenously for five days postoperatively. Our experience has been too short for statistical analysis. In these 150 spine fusions, there have been no infections to date. Prior to the use of prophylactic antibiotics, our infection rate in scoliosis fusions was 4 per cent.[12,24]

Routine exploration of fusion mass. Several authors have advocated routine exploration of the fusion mass after surgical treatment of scoliosis because of the difficulty of diagnosis and the high incidence of pseudarthrosis and the consequent loss of correction.[27,28] A properly performed fusion with the addition of fresh autogenous iliac bone in sufficient quantity provides well-organized and incorporated massive bone grafts with low pseudarthrosis rate and maintenance of a high percentage of the preoperatively gained correction. The fusion mass can be visualized well on 45-degree oblique radiographs of good quality.[11] Pseudarthrosis can usually be identified. If the fusion is not solid, loss of correction and increasing wedging of one or more disk spaces is easily visualized on a radiograph of good quality indicating a level of pseudarthrosis which can be repaired promptly before significant correction is lost. Spine fusions in idiopathic scoliosis need not be routinely explored if a good fusion is performed initially. In certain cases of congenital scoliosis, in some long fusions, particularly those extending into the sacrum in cases of paralytic scoliosis, and in fusions for kyphotic deformity, exploration to reinforce the fusion mass may be warranted.

Cardiopulmonary function

In severe kyphoscoliosis, cardiorespiratory failure is due to alveolar hypoventilation and cor pulmonale.[29] The patient with severe kyphoscoliosis should be offered treatment before heart failure occurs. Severely compromised pulmonary function can be improved with preliminary halo-femoral traction, changing the status of a patient from a very high surgical risk to one in which corrective surgery can be undertaken with reasonable expectation of survival of the patient and improvement of his condition.[30] Correction of the curve and stabilization of the spine may allow the patient to return to a reasonable degree of activity after having been disabled by cardiorespiratory failure.

Various authors have studied pulmonary function in the scoliosis patient untreated and before and after surgical treatment.[5,13-15,30,31] Gazioglu *et al.*[31] reported the results of study of

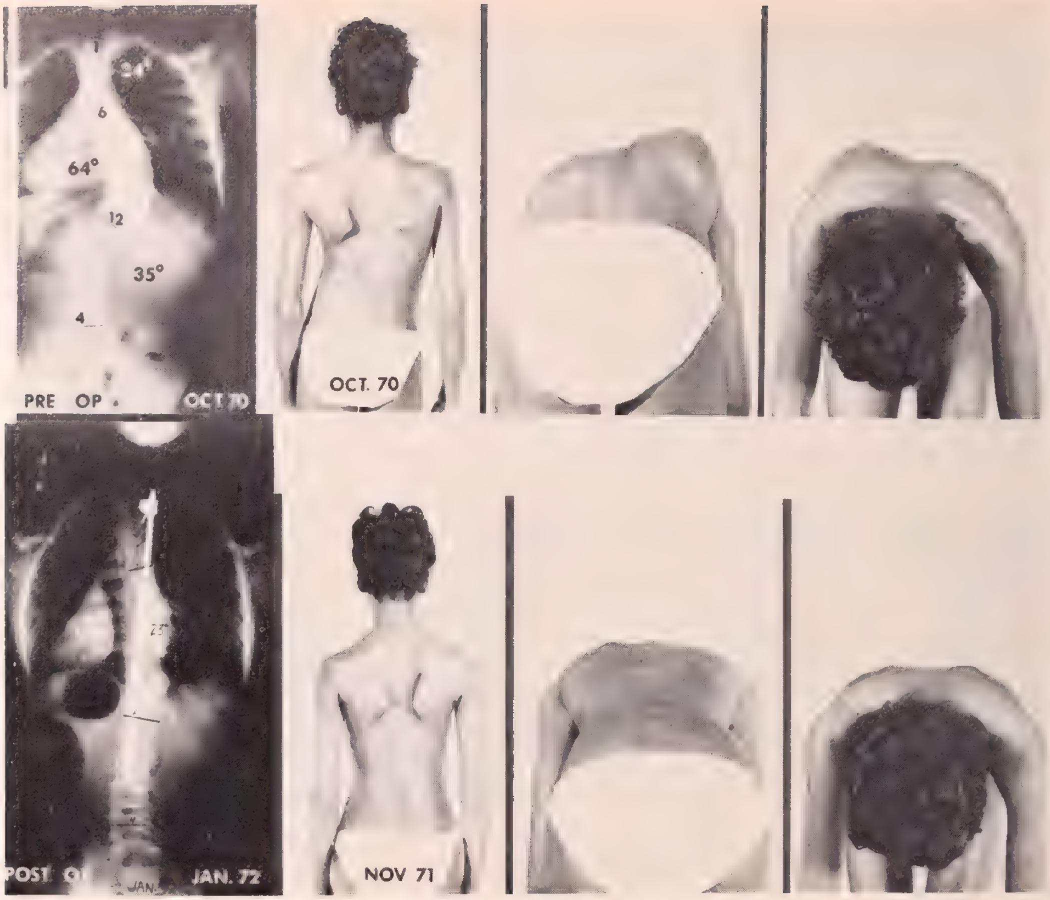


FIGURE 11. Twelve-year-old patient with idiopathic double structural thoracic curve treated with preoperative Risser-Cotrel type of cast, convex transverse process osteotomy, and instrumentation and fusion. Postoperative Risser-Cotrel type of corrective cast at two weeks after surgery followed by immediate ambulation. Note complete correction of rib hump.

pulmonary function in 62 adolescent patients with idiopathic scoliosis with ages ranging between ten and twenty years. Abnormal pulmonary function was noted in 20 patients. Fourteen patients showed a predominant restrictive type of respiratory abnormality, a reduction in pulmonary diffusing capacity and its components. Decrease in pulmonary diffusing capacity was usually associated with reduced lung volumes. Pulmonary capillary blood flow was normal in all patients. Thirty-three patients had follow-up pulmonary function evaluation one to four years after corrective surgery. The average precorrection spinal curve was 62 degrees, and the average final curve after correction and stabilization was 21 degrees in these patients. Postoperative improvement of pulmonary function toward normal was observed in 12 patients. Sixteen of the 33 patients had normal pulmonary function before and after surgical treatment, suggesting that they would have a better chance for their pulmonary status to remain normal in the future because of correction of their spinal curves.

Collis and Ponseti[14] reported a 66 per cent incidence of diminished vital capacity in patients with curvatures over 60 degrees. Nilsonne and Lundgren[15] found a two-fold increase in deaths in scoliotic patients compared with the average population; 60 per cent died of cardiac and pulmonary disease. Nachemson,[5] in a long-term follow-up, found similar mortality rates.

Westgate and Moe[30] studied pulmonary function in scoliosis patients preoperatively and following Harrington instrumentation and fusion. In 31 patients, they found a significant decrease in the overall average vital capacity, from 57 to 48 per cent of their predicted values, and a decrease of the overall maximum breathing capacity, from 55 to 51 per cent of the predicted value. The patients with paralytic scoliosis showed a decrease in vital capacity (52 to 48 per cent) and maximum breathing capacity (52 to 49 per cent). In the patients with congenital scoliosis, there was a greater change. Vital capacity decreased from 51 to 43 per cent; maximum breathing capacity, 48 to 41 per cent. The smallest change was found in the patients with idiopathic scoliosis, the vital capacity decreased 67 to 61 per cent; but the maximum breathing capacity increased after operation 61.5 to 64 per cent. They concluded that before operation in patients with idiopathic scoliosis, a significant negative correlation was present when the

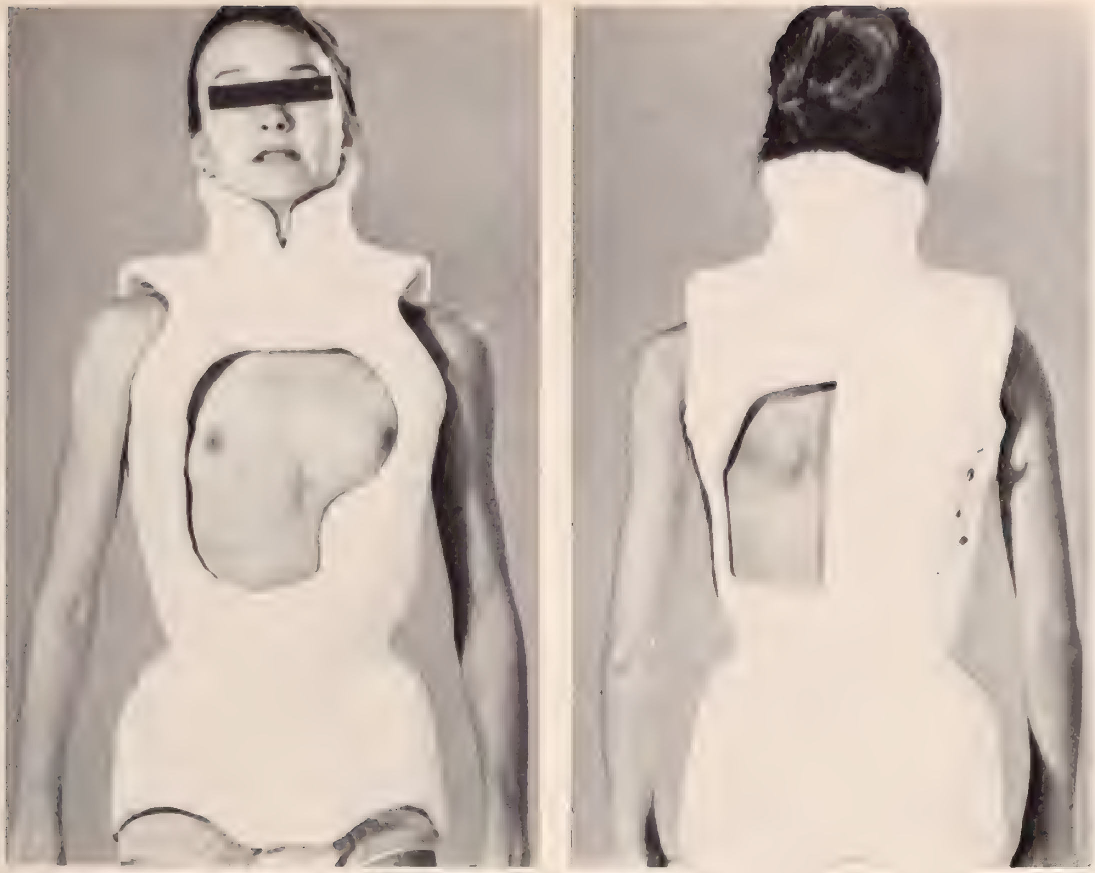


FIGURE 12. Ambulatory postoperative Risser-Cotrel cast. Cast applied ten days after surgery under strong distraction forces with Cotrel derotation strap. Patient ambulatory day after application of cast. Asymmetric anterior window favorably influences restoration of anterior rib cage symmetry with breathing exercises. Posterior window over left rib cage allows expansion of depressed concave ribs.[21]

vital capacity, maximum breathing capacity, and arterial saturation were compared with the angle of the curvature. They found that Harrington instrumentation and fusion for correction of scoliosis did not improve the average vital capacity or maximum breathing capacity but may improve arterial oxygen saturation. Since before operation there was a correlation between the amount of curvature and the decrease in vital capacity in patients with idiopathic scoliosis, treatment of idiopathic scoliosis should be instituted if there is any sudden increase in the curvature or as early as possible if the curve is slowly progressing. Treatment then will preserve what respiratory function is present at the time of surgery.

These findings emphasize the importance of treatment of idiopathic scoliosis early in the evolution of the curve to prevent a severe deformity and to preserve pulmonary function. The patient with severe scoliosis dies prematurely because of cardiorespiratory failure. A very important goal in the treatment of scoliosis, therefore, is the preservation of pulmonary function. As in other areas of medicine, prevention accomplishes more with less effort and expense than treatment of the established severe deformity.

More attention has been directed in recent years to the prevention of the severe scoliotic deformities. An idiopathic thoracic curve over 60 degrees at the completion of vertebral growth, even though it may be cosmetically acceptable to the patient, is a strong indication for surgical treatment. Curves of this magnitude or greater have been shown to increase significantly in degree of angulation after the completion of vertebral growth in 38 per cent of the patients.[13] Progressive deterioration in cardiopulmonary function occurs in adult life in cases of untreated idiopathic curvatures of this magnitude. After corrective surgery, total lung capacity and vital capacity studies may show little or no change, but the patient usually manifests symptomatic improvement.[14,30] The reason for this is that the dead space in the lung is decreased postoperatively, resulting in more functioning lung available for oxygenation of the blood. Ventilation is improved, gas exchange is more efficient, and breathing is easier. The objective of successful treatment of the patient with scoliosis is not only one of improving cosmesis. Prevention of a progressive deformity by nonoperative and/or operative treatment also preserves pulmonary function.

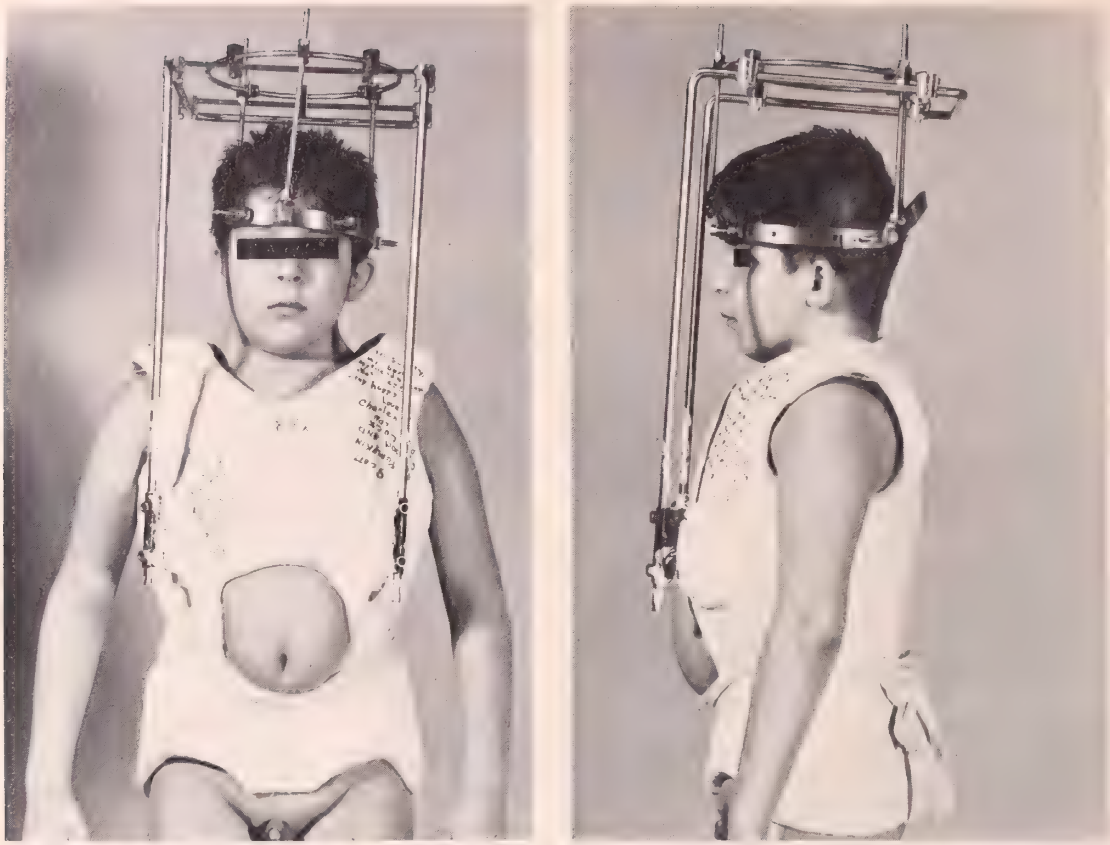


FIGURE 13. Halo cast. Patient is ambulatory two weeks after fusion of congenital cervicothoracic curve. Halo fixed to body cast.

Surgical treatment of the patient with severe thoracic scoliosis with compromised cardiopulmonary function stabilizes pulmonary function and prevents further deterioration at least temporarily.[30]

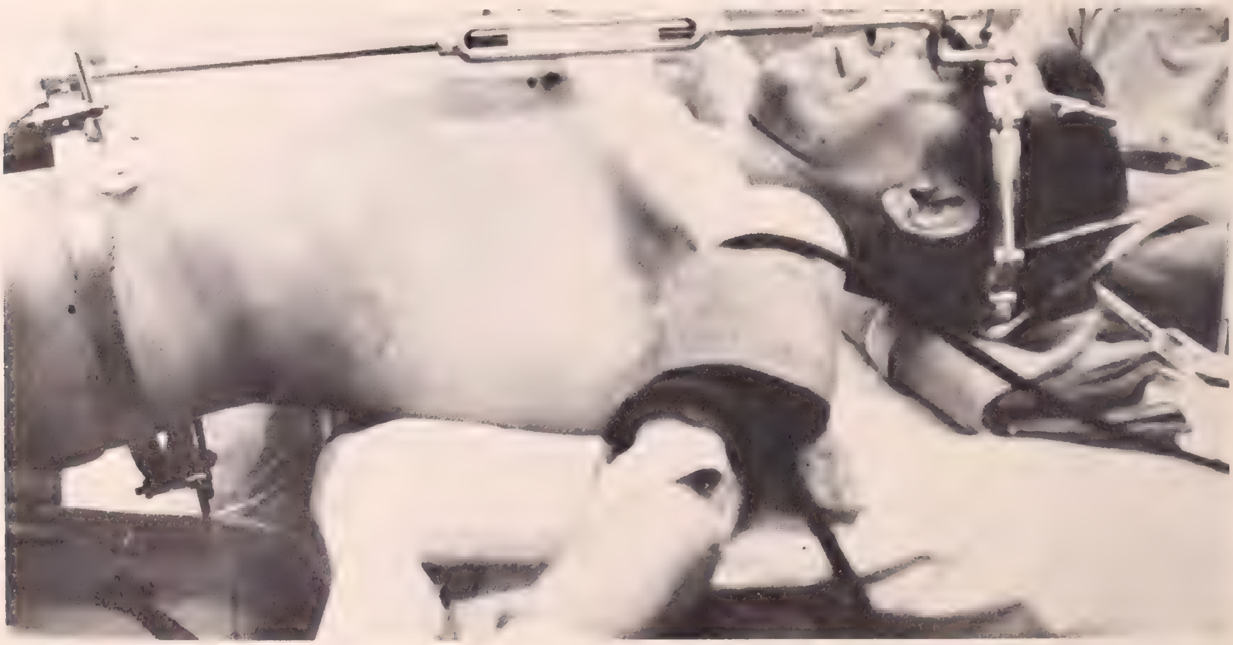


FIGURE 14. Halo-pelvic hoop appliance. Patient has severely impaired pulmonary function, is on fracture table. Cranial halo has been applied. Two pins inserted through iliac wings, one on each side, and turnbuckles attached joining cranial halo and pelvic hoop, two in front and two in back. Patients can be ambulated in this apparatus, and gradual further correction obtained.

Successful treatment may rehabilitate a cardiopulmonary cripple to a reasonable level of activity as well as make him much more comfortable.

The halo cast allows early ambulation of the patient postoperatively (Fig. 13). The more recent contribution of the pelvic halo used in conjunction with the cranial halo eliminates the need for a circular plaster cast encasing the torso (Fig. 14).[32] This apparatus is particularly useful in patients with poor cardiorespiratory function.

Congenital scoliosis

The prognosis and management of congenital scoliosis has been clarified in recent years.[33]

Special diagnostic studies are indicated to define the details of the spine abnormalities and possible congenital anomalies of other body systems. The patient should be completely evaluated with particular attention to the neurologic, genitourinary, and cardiovascular systems. Tomograms localize the spine abnormalities and are helpful in planning treatment. Patients with congenital scoliosis have a high incidence of genitourinary tract abnormalities and should have an intravenous pyelogram performed. Results may show the patient to be asymptomatic but should be documented and treatment instituted where indicated.

Before undertaking surgical treatment of congenital scoliosis, a myelogram is performed to rule out subarachnoid space abnormalities.[34] Diastematomyelia is a bone, cartilage, or fibrous tissue spike which splits the spinal cord and prevents normal assent of the cord. It is often associated with an abnormal hairy patch on the back and insidiously progressive foot deformity (Fig. 15). There may be no neurologic deficit. If present, the diastematomyelia lesion should be surgically treated before the scoliosis is corrected to prevent impaling the spinal cord during forcible correction of the scoliosis.

The bad prognostic significance of the unsegmented bar is well recognized (Fig. 16).[32] All congenital curves should be followed closely. Winter, Moe, and Eilers[33] found that about 25 per cent of congenital curves show no progression, 25 per cent slight progression, and 50 per cent severe progression. As soon as progression of the curve is noted, prompt aggresive treatment is indicated. The curve with unsegmented bar requires early surgical treatment with fusion of the anomalous segment and control of the unfused portion of the spine in a Milwaukee brace. The anomalous segment of the spine may be fused in situ before significant deformity occurs. After osteotomy of an unsegmented bar, correction may be obtained by halo-femoral traction or turnbuckle cast. Harrington instrumentation is hazardous and should be used only with great caution, if at all, in the correction of congenital curves. Statistics accumulated by the morbidity and mortality committee of the Scoliosis Research Society indicate that the highest incidence of serious neurologic complication after instrumentation of the scoliotic spine occurs in patients with congenital curvatures.[1] The Milwaukee brace may control some congenital curves, particularly the longer curves that are quite mobile.

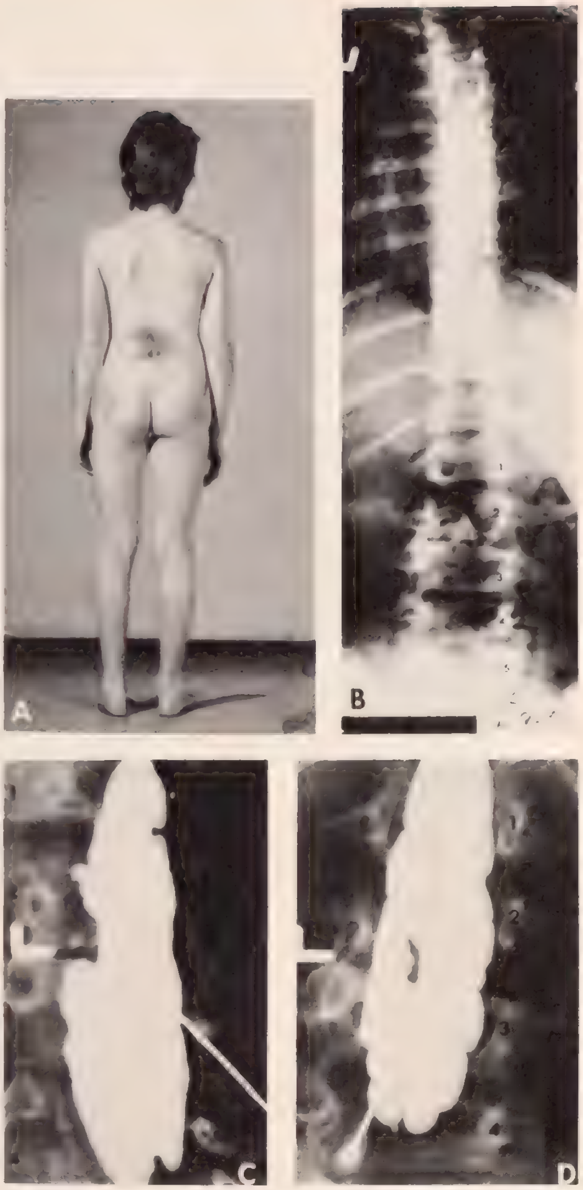


FIGURE 15. Diastematomyelia. (A) Clinical photograph showing abnormal hairy patch in lumbar area of back, atrophy of left buttock, and varus deformity of left foot. (B) Anteroposterior radiograph shows anomalous development of posterior elements of lumbar vertebrae. (C and D) Myelogram demonstrates diastematomyelia defect in dye column. At surgery, patient had a bony spur connecting vertebral body and posterior arch.

Congenital kyphosis

A kyphotic deformity due to failure of normal development of the anterior portion of one or more

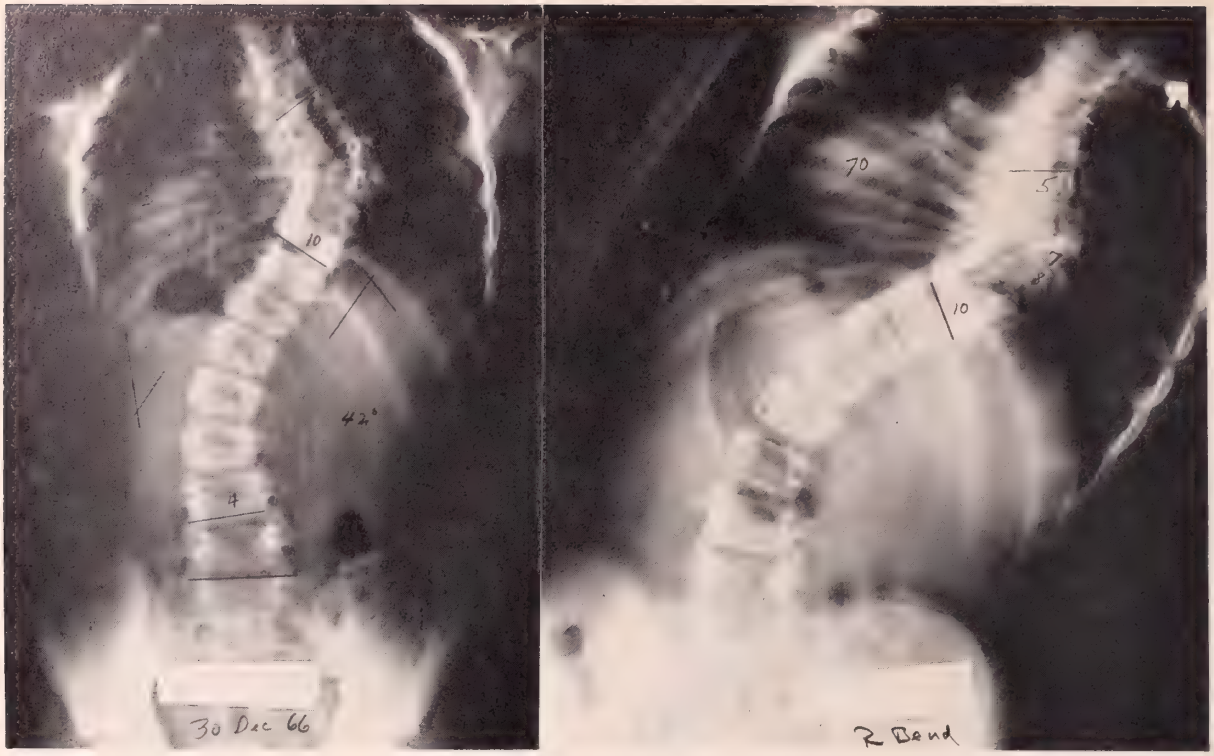


FIGURE 16. Congenital thoracic scoliosis with unsegmented bar in concavity of curve. Right-bending film on right shows rigidity of curve. This type of scoliosis warrants early aggressive surgical treatment.

vertebrae or the failure of normal segmentation with an anterior unsegmented bar is a serious abnormality that always results in a severe deformity if untreated through the adolescent period. Posterior fusion at a young age, including one vertebra above and below the anomalous segment is the treatment of choice and will prevent progressive kyphotic deformity.[35,36] The short, sharp angular kyphosis of the congenital type in the thoracic portion of the spine may produce paraplegia in adult life. Treatment of the severe kyphotic deformity in the adolescent or the adult requires extensive surgery involving anterior and posterior approaches to the spine.[36]

Anterior approaches to spine in treatment of scoliosis

Early experience with vertebral resection and excision of hemivertebrae was very unsatisfactory and discouraging.[37–38] The development of adequate and safe exposures to all levels of the spine has resulted in an increased interest in the anterior approach for the correction of the more severe scoliotic, kyphotic, and lordotic deformities with various methods of segmental vertebral excision and osteotomies.[39–41] It is recognized that one must apply the basic principles of treatment of a scoliotic curve to the congenital deformities treated by excision of hemivertebrae or wedge resections. In addition to the vertebral segment excision, the entire curve requires stabilization. This is usually accomplished in a two-stage procedure involving excision of the segment anteriorly and stabilization by a posterior fusion (Fig. 17).

Dwyer, Newton, and Sherwood[42] have devised a flexible cable system for anterior instrumentation of the spine (Fig. 18). Further experience will clarify the specific indications for the use of the Dwyer instrumentation. It has a definite place in the treatment of the scoliotic deformity associated with large defects in the posterior spinal structures making a satisfactory posterior fusion extremely difficult, if not impossible, such as in a meningomyelocele defect. It may also have a place in the more severe and rigid deformities, particularly when associated with a significant lordosis.[43] The Dwyer cable system is an excellent method of anterior spinal internal fixation. It is important, however, with the Dwyer instrumentation as with Harrington posterior instrumentation, to protect the spine with adequate external immobilization until the fusion is sufficiently organized and incorporated to maintain correction. Both instrumentation systems serve as a temporary method of internal fixation. It is the fusion that maintains permanent correction. Violation of this basic principle results in increased morbidity due to instrument failure.

Summary

Scoliosis is a special problem best treated in a center with adequate facilities and personnel within the context of an organized program of treatment. The Milwaukee brace is an essential

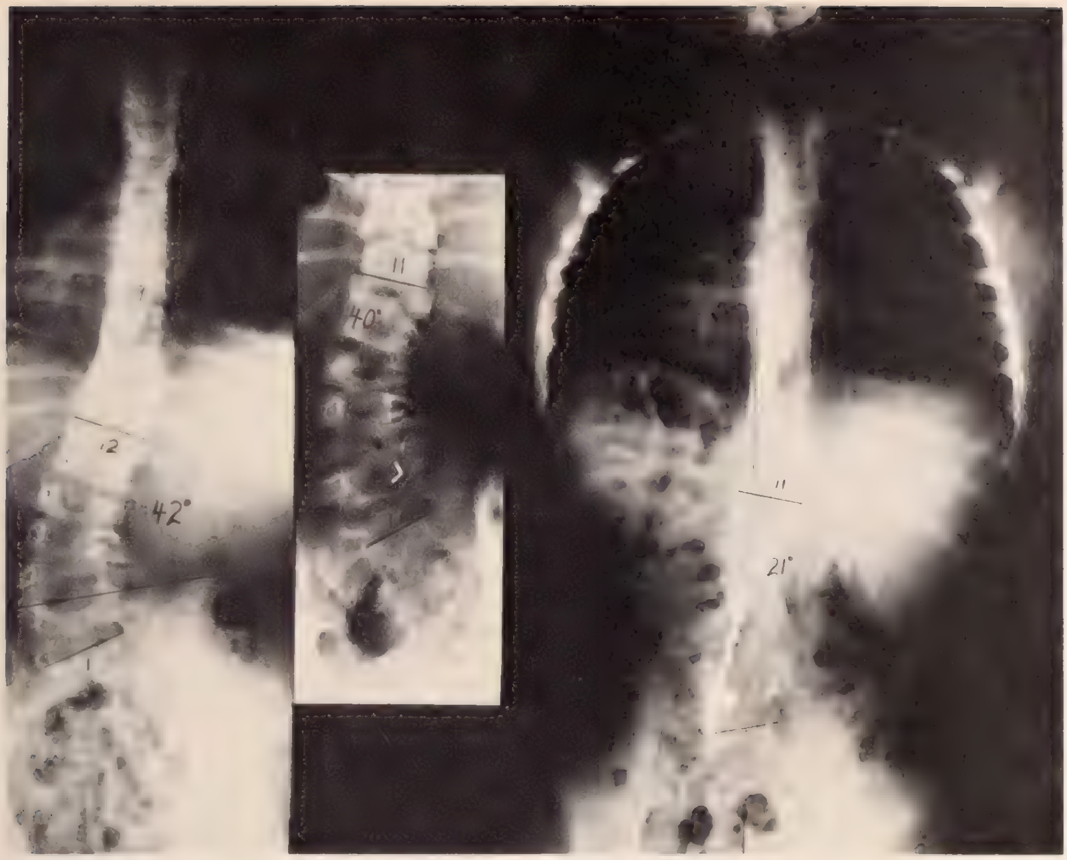


FIGURE 17. Congenital scoliosis with hemivertebra and unsegmented posterior structures requiring two-stage procedure. Anterior resection of a left fourth lumbar hemivertebra followed two weeks later by osteotomy of the unsegmented posterior structures. Correction with compression assembly and spine fusion twelfth thoracic to sacrum. Left: Preoperative radiograph showing 42-degree rigid left lumbar curve with fixed pelvic obliquity. Inset: One week postoperatively after first-stage procedure. Anterior resection of fourth lumbar hemivertebra shows no change in curve because of unsegmented posterior elements of lumbar 2, 3, and 4. Arrow points to area of resection. Right: After second-stage procedure, correction with compression assembly after wedge osteotomy of posterior elements and fusion from twelfth thoracic vertebra to sacrum.

part of a comprehensive treatment program.

The fundamental principles of good fusion technic, fresh autogenous iliac bone grafts supplementing the fusion, and adequate postoperative immobilization are well established as basic requirements for obtaining a low pseudarthrosis rate and maintaining a high percentage of the preoperatively gained correction. Harrington instrumentation is a helpful adjunct in the treatment of scoliosis for correction of the curve and for temporary internal fixation. Congenital scoliosis presents a special problem. Many patients require aggressive treatment. An unsegmented bar is a bad prognostic sign.

The indications for Dwyer anterior instrumentation of the spine have not been completely defined as yet. It has a place in the armamentarium of the scoliosis surgeon in selected situations.

Routine screening of the siblings of patients with scoliosis will result in the early recognition of a deformity and the initiation of nonoperative treatment in milder curves in younger patients. Further investigation of the etiology of so-called idiopathic scoliosis hopefully will be rewarding.

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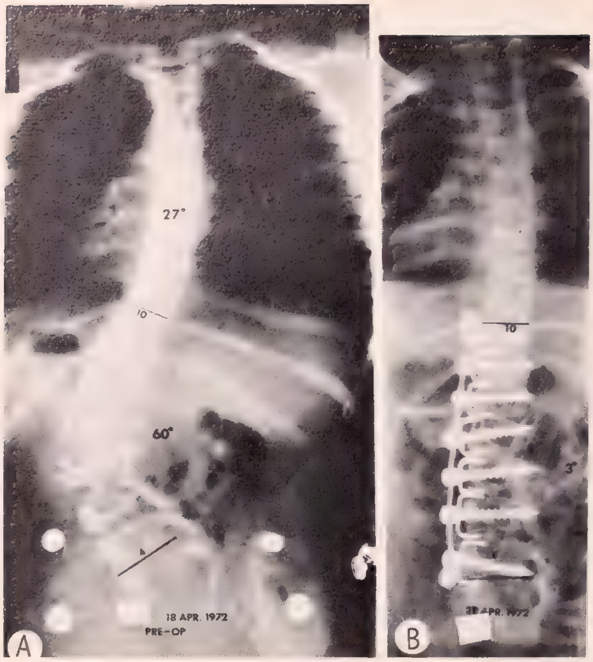

FIGURE 18. Anterior Dwyer instrumentation. Ten-year-old patient with myelomeningocele, wide defects in posterior spinal structures. (A) Preoperative radiograph showing 60-degree lumbar curve. (B) Shows correction obtained after excision of disks in segment between tenth thoracic vertebra and fourth lumbar vertebra, correction and fixation with Dwyer flexible cable instrumentation system.

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Correlation Conferences in Radiology and Pathology

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Barrett's Syndrome?

Case history

J. Lee Ambrose, M.D.*: This previously healthy fifty-six-year-old man had a six-month history of dysphagia and belching followed later by regurgitation of swallowed food. Symptoms persisted despite various medications, and he experienced a 15-pound weight loss. Results of physical examination and laboratory studies were normal. Because of dysphagia, an esophagogram was done.

Discussion

Jeng Yul Gu, M.D.†: An obvious abnormality is noted at the distal part of the esophagus where there is a stenotic lesion (Fig. 1). Symptoms of dysphagia can be easily explained by this stenosis. The rest of the esophagus appears to be normal.

I think the tubular area between the diaphragm and the stenotic area is not esophagus but hiatus hernia, and, therefore, I believe that the stenotic area is at the gastroesophageal junction. The margins of this lesion taper gradually, and no nodules are seen. In its central portion anteriorly there is a constant puckering which may well represent an ulcer crater but may be the result of scarring from recurrent esophagitis (Fig. 1). The usual cause of esophageal narrowing is either esophagitis or neoplasm.

Edward W. Carsky, M.D.**: The distal half of the esophagus shows wide longitudinal folds which may be due to esophagitis (Fig. 2). The wider folds also could reflect displaced gastric mucosa in the esophagus, or so-called Barrett's mucosa.

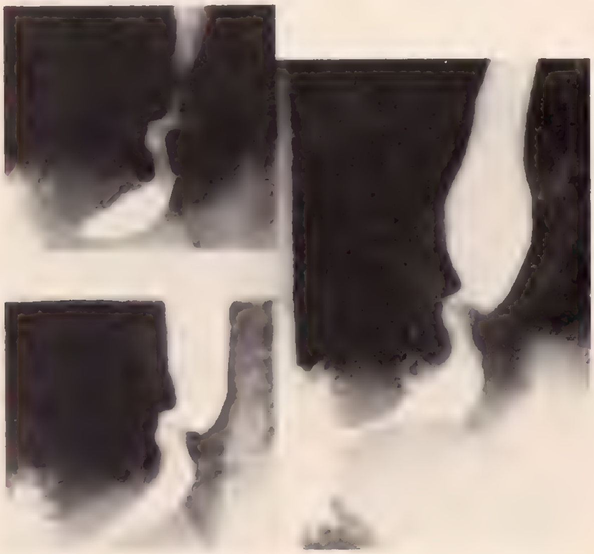

FIGURE 1. Spot films show anterior ulceration at center of stenosis at gastroesophageal junction. Lumen through stenotic area is distensible, but anterior wall is rigid with constant appearance of Figure 3.

Seuk Ky Kim, M.D.††: The suggestion of Barrett's mucosa is a good one. Barrett's syndrome is a rare condition which should be considered when you see benign mid- or upper-esophageal stenosis. Cases of distal esophageal stenosis are due most often to ordinary peptic esophagitis with hiatal hernia. For this reason and because the gross appearance of Barrett's mucosa is not much different from squamous mucosa, the roentgenographic diagnosis of Barrett's mucosa of the distal esophagus is a difficult one. However, Barrett pointed out that ulcer of columnar mucosa (Barrett's ulcer) is deeper than that of squamous

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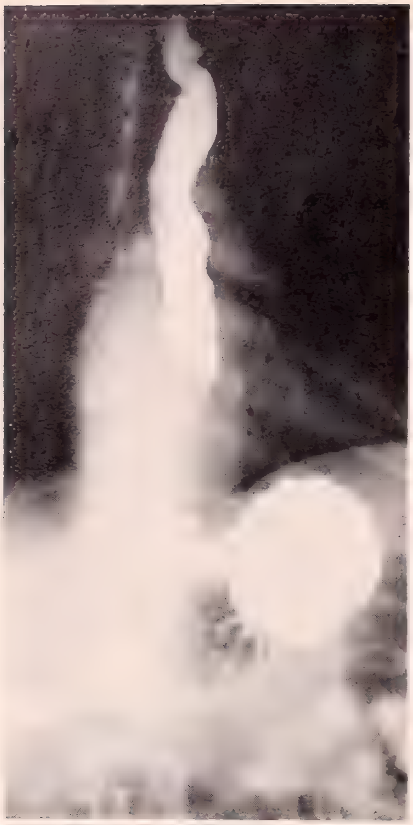

FIGURE 2. Demonstrating small hiatus hernia with stenosis at gastroesophageal junction. Lower part of esophagus has prominent longitudinal folds.

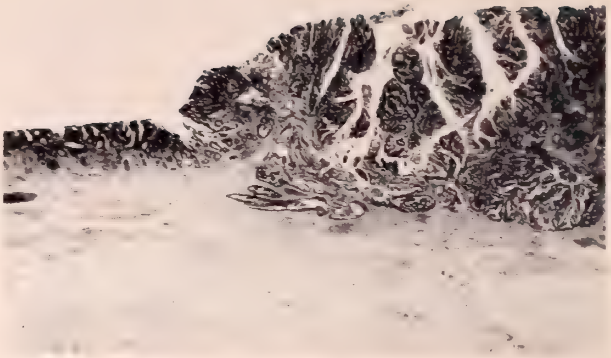

FIGURE 3. Photomicrograph of tissue taken from proximal edge of tumor at gastroesophageal junction. Left side of photograph shows columnar epithelium with atypism. Right side shows well-differentiated adenocarcinoma.

mucosa. Is this ulcer deep? Is there any possibility of tumor?

Dr. Gu: I think this ulcer is a deep one and could be Barrett's ulcer.

The case history, that of a fifty-six-year-old man with dysphagia of only six months, certainly is suggestive of cancer. I do not see any large extrinsic or intrinsic esophageal mass; however, some esophageal tumors grow predominantly in the submucosa without showing a bulky mass. Close observation of the spot films suggests to me that distensibility of the lesion occurs along the posterior wall only. The anterior wall of the lesion is more or less fixed, having a constant configuration simulating the numeral 3 (Fig. 1). These changes may well be due to central ulceration of tumor. The upper indentation is in the esophagus, and the lower indentation is in a hiatus hernia. The upper esophageal indentation could be due to scarring of peptic esophagitis, but the lower indentation in the hernia cannot be due to esophagitis, because it is the stomach and not the esophagus. Therefore, the lower indentation is due most likely to tumor mass arising from the gastroesophageal junction area. This idea of tumor is more attractive when we consider the clinical history. It has been said that regardless of roentgenographic findings, every stenotic lesion of the distal esophagus should be esophagoscoped to rule out tumor. In summary, some of the roentgenographic findings point to a diagnosis of chronic peptic esophagitis while others suggest carcinoma. However, with the clinical story I prefer the diagnosis of cancer at the gastroesophageal junction associated with a small hiatus hernia.

Dr. Gu's final diagnosis

Carcinoma of the distal esophagus with a small hiatal hernia

Dr. Kim: At esophagoscopy the distal esophagus was reddened presenting the appearance of esophagitis; it was impossible to pass the esophagoscope beyond the stenotic lesion at 40 cm. A biopsy specimen was obtained from this area. The diagnosis at esophagoscopy was severe peptic esophagitis.

Dr. Ambrose: At surgery a 6-cm. tumor with central ulceration was found at the gastroesophageal junction extending proximally and distally. There were a few metastatic lymph nodes. Resection of the distal half of the esophagus with cardiac portion of the stomach (hiatus hernia) was carried out. A gastroesophageal anastomosis was made at the level of the carina.

Pathologic report

Robert F. Rohner, M.D.*: Microscopic examination revealed the mass to be a differentiated adenocarcinoma with an area of necrotic ulceration. A very interesting finding was noted throughout the entire resected esophagus. The gross appearance of the squamous mucosa of the

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esophagus is normally pearly white and smooth; however, this esophagus showed a reddish, velvety mucosa. The entire length of resected esophagus, measuring 15 cm. in length, was covered by columnar epithelium, the so-called Barrett's mucosa. Thorough examination of the whole resected esophagus reveals that there are diffuse changes from atypism to carcinoma in situ as well as foci of adenocarcinoma (Fig. 3). Scattered islands of squamous epithelium are present within the sheet of columnar mucosa. It is likely that the unresected portion of the upper part of the esophagus has similar pathologic changes.

Final pathologic diagnosis

Columnar lined esophagus with adenocarcinoma

Dr. Kim: In 1950 Barrett[1] first described peptic ulceration of the esophagus. It was reevaluated by Allison and Johnstone in 1953.[2] An esophagus lined with columnar epithelium is often associated with ulceration, stenosis, and hiatus hernia. The condition has been called Barrett's syndrome or Allison-Johnstone anomaly. In this case stenosis and ulceration are due to cancer; it is an unusual type of Barrett's syndrome.

Barrett's mucosa generally is believed to be a congenital abnormality. However, some observers argue that it is acquired. Barrett's mucosa is a rare condition and is usually discovered when a stricture develops from esophagitis. The occurrence of cancer in this condition is even rarer. A review of the English literature reveals that only 4 such cases have been reported previously.[3]

Most of the adenocarcinomas of the esophagus arise from ectopic islands of gastric mucosa or from esophageal glands. The incidence of adenocarcinoma is approximately 10 per cent of esophageal cancer.[4]

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Case Reports

Anomalous Inferior Vena Cava

Azygos continuation producing hilar tumor

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Developmental interruption of the infrahepatic segment of the inferior vena cava without an associated cardiac lesion is a rare anomaly.[1,2] When it occurs, the venous return from the lower extremities and abdomen is via azygos or hemiazygos continuation. The resultant large blood flow through the azygos system may produce dilation of the vein. A large right hilar mass will then occur at the azygos-superior vena cava junction. Failure to recognize the cause of this mass has led to unnecessary thoracotomy.[3–7] One case is reported in which the diagnosis was established with inferior vena cavography, preventing an unnecessary thoracotomy.

Case report

A fifty-six-year-old female with a history of chronic obstructive pulmonary disease was hospitalized for hemoptysis of recent onset. Physical examination of the chest was within normal limits, and the VDRL test for syphilis was nonreactive. The electrocardiogram showed no abnormalities. The posteroanterior roentgenogram of the chest demonstrated a smoothly spherical, right paratracheal radiodensity just above the right hilum (Fig. 1A). To evaluate this mass lesion, a vena cava angiogram was performed by percutaneous passage of a catheter through the right femoral vein into the inferior vena cava. The angiogram demonstrated the typical "candy-cane" configuration of anomalous inferior vena cava with azygos continuation (Fig. 1B). No further treatment was advised and the patient has remained well.

Comment

Anomalous inferior vena cava with azygos or hemiazygos continuation is best interpreted as in-

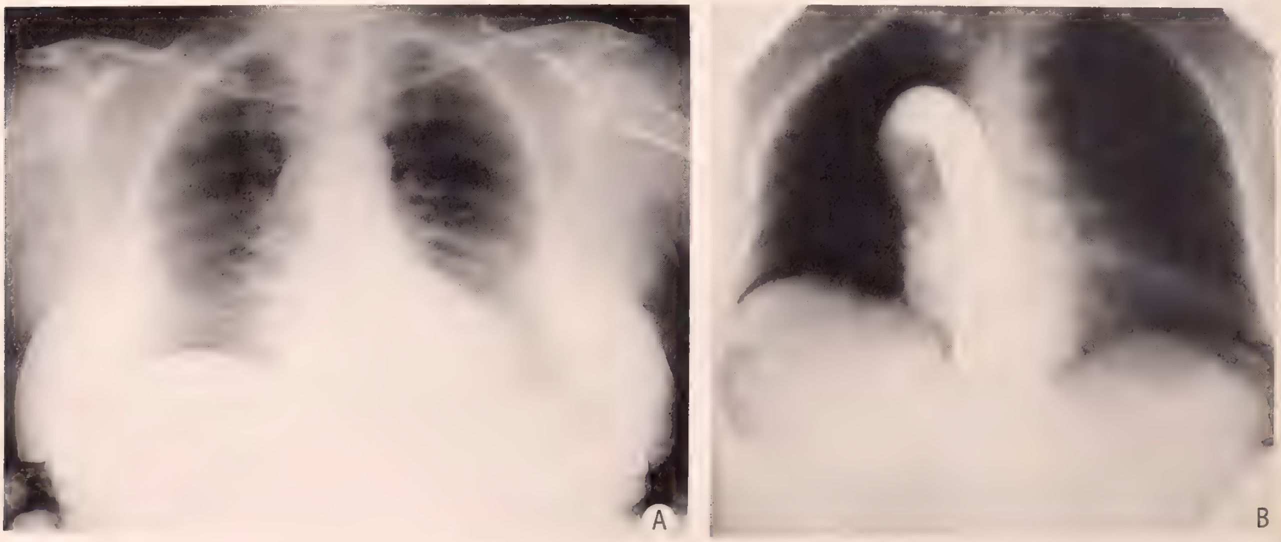

FIGURE 1. (A) Roentgenogram of the chest demonstrating rounded density in right superior mediastinum, representing dilated azygos vein passing anteriorly into superior vena cava. (B) Anteroposterior-view angiocardiogram. Opaque material passes from inferior vena cava to azygos vein and then to superior vena cava and right atrium.

terruption or failure of fusion of the hepatic and prerenal segments of the inferior vena cava, combined with persistence of either the right lumbar azygos vein or left lumbar hemiazygos vein.[2] The enlarged azygos vein returns the blood from the abdomen and lower extremities to the heart. The azygos vein usually drains into the superior vena cava in its normal position.

In over 600 patients in whom cineangiocardiography was performed, Muelheims and Mudd[2] found this anomaly in 1.3 per cent of patients. Associated cardiac lesions were present in almost all instances. This corresponds to the experience of Anderson, Adams, and Burke.[1] They found an incidence of 0.6 per cent in 2,500 patients with congenital heart disease. They observed that patients with this form of anomalous inferior vena cava generally have cardiac defects that produce cyanosis. However, there are sporadic case reports in which the anomaly was not associated with any cardiac defect.[8,9] This anomaly of the inferior vena cava by itself produces no symptoms. However, the associated cardiac lesions may produce symptoms.

Ausculatory and electrocardiographic findings in patients with this anomaly have been related to the associated cardiac defects rather than to the venous anomaly itself. Downing[10] described a characteristic roentgenogram finding which may be present in this anomaly. In the anteroposterior view a rounded density in the right superior mediastinum at the junction of the superior vena cava and the right atrium might be visible. This protuberance was well seen in our present case. An inferior vena cava angiogram will demonstrate the typical candy-cane appearance of the anomalous inferior vena cava with azygos continuation. With Valsalva's maneuver a decrease in the size of the right hilar mass in the upright position can be observed fluoroscopically.[4]

This report demonstrates that this anomaly can occur in adult patients without any associated cardiac lesion. Further, since the hilar mass can simulate a tumor, an inferior vena cava angiogram is necessary to demonstrate the anomaly and to avoid a thoracotomy. After the diagnosis has been confirmed, no treatment is indicated for this benign anomaly.

Summary

A roentgenogram of the chest revealed a large right hilar mass. An inferior vena cava angiogram demonstrated the typical candy-cane configuration of anomalous inferior vena cava with azygos continuation. Recognition of this benign anomaly prevented an unnecessary thoracotomy.

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Slow Detoxification in Heroin Addiction

Combined use of methadone and psychotherapy

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The widespread impression that the use of methadone represents the irrevocable transference from heroin addiction to methadone addiction merits reexamination. In addition, the popularly accepted view that psychotherapy is of little or no value in such cases[1] will be reexamined.[2,3] The paucity of reports of successful treatment of narcotic addiction with psychotherapy merits the reporting of this case.[4] In the case presented, methadone was used in combination with psychotherapy in a slow detoxification process with the ultimate result that the patient was freed from both heroin and methadone addiction. It further illustrates that methadone can be used not only as a maintenance program[5-9] but also as a stabilizing agent in removing drug hunger while therapy proceeds.

Case report

The patient was first seen September 12, 1966, at the age of eighteen years, eight months. His presenting complaint was that he had been experiencing horrifying hallucinations and illusions while on his first job after graduating from high school. He refused to return to work and stopped driving. Recurrent hallucinations occurred at bedtime. On April 20, 1967, a battery of psychologic tests was performed by Fred Brown, Ph.D., of The Mount Sinai Hospital. The diagnosis of "an undifferentiated schizophrenia in an individual with suicidal proclivities, whose practical judgment and social sophistication are markedly inferior when compared with his chronologic age peers" was corroborated.

At the time of his initial evaluation period, the patient gave a history of the use of marihuana since February, 1966, approximately seven months prior to his entry into therapy. Gradually, shortly after this period, he added lysergic acid diethylamide (LSD) and amphetamines to his list of forbidden drugs. There was no history at that time of the use of narcotic drugs.

The patient is one of male twins born by cesarean section into a matriarchal family constellation, where the father repeatedly said, "My wife is the boss. I do as she says." His mother, an attractive, small, but strong, woman, has a younger sister who has had several psychotic episodes requiring hospitalization. The patient's maternal grandfather was a known drug addict, dearly loved by the patient's mother but divorced by the patient's grandmother. The mother was known to have wanted a daughter. The patient's twin brother is an overt homosexual. The father, a successful business man, tended to be overly punitive and restrictive in response to the boy's misbehavior, such as not getting home when he was ordered to, getting traffic tickets, and sharing with his twin brother (but retaining the lion's share for himself) an amazing number of automobile accidents, which he invariably claimed to be due to the other driver or to defects in the family car reserved for the boys.

Although the father insisted that he was only acting as the instrument of the mother's philosophy of child rearing, it became increasingly clear that he was a more than willing tool in this regard. Occasional efforts to get the father to desist from excessively restrictive punishment, such as attempting to confine his son to the house, revealed that an underlying cause of the father's anger and punitive reaction was the patient's long hair and his use of marihuana, the hallmarks of his "hippie" life style. It also became clear that the boy found ways to be just as punitive in a passive-aggressive way to his parents, eliciting punishment and reacting punitively by the trouble he was causing his parents.

Throughout therapy, the therapist remained unswervingly supportive. The patient made recurrent attempts to manipulate the therapist by changing appointments or trying to get the therapist to act as his advocate in his conflict with his parents. These manipulative efforts were permitted to succeed wherever possible to such a degree that when it was not possible, the inability to cooperate with his maneuvers was not viewed as rigid, uncooperative, or controlling behavior on the therapist's part. Thus, during the first year and a half, a good relationship was established with the patient. This was confirmed when his mother once volunteered that he "really loves you."

The patient's personality displayed the typical charm so often found in the sociopath. He socialized with a coterie of "hippie" friends as the leader of the marihuana, amphetamine, sodium secobarbital and sodium amobarbital (Tuinal) cult, which was gradually extending the application of experimentation to glutethimide (Doriden), intravenous sodium secobarbital and sodium amobarbital, and amphetamine. He dated girls but showed no special interest in any of them until he met a pretty sixteen-year-old girl of different religious background, whom he experimented with sexually on a pregenital level until the girl terminated the relationship. The patient attributed the start of his experimentation with heroin to this rejection, which occurred in November, 1968. He was working at that time in the mailroom of a large theatrical booking agency, a job gotten through family connections after two solid years of unemployment, during which period he expressed the desire not to work and a fear of the recurrence of hallucinations.

The point of origin of the boy's flirtation with heroin occurred at the start of December, 1968, with the availability of the drug through connections made on the job, which coincided with the rejection by his first love. Although the danger of heroin addiction was highlighted by the therapist, the patient listened with an air of patient superiority and tolerance, insisting that he had heard of many, and knew several, who had taken heroin with impunity. However, he continued to come for his appointments regularly. Within two months he was a self-acknowledged heroin addict, but he did not admit this to the therapist at that time. His habit, expressed in the addict's jargon, had reached the proportions of three bags a day. About August, 1969, he met another girl, and coincidental with the rapid development of this friendship, he began to consider the necessity of "kicking" his habit to protect his relationship with his girl friend, which seemed headed in the direction of marriage.

Events shortly thereafter compelled the patient to make the effort. During the first week of January, 1970, a search of his car following the last of his many automobile accidents led to the discovery of sufficient quantities of marihuana to warrant his arrest. Pending trial he was referred for examination to a narcotics control center, where the presence of heroin in his urine, as well as fresh multiple needle marks along the veins of his forearms, was discovered. It was at this time that the youth admitted to the therapist that he was "hooked" and asked for help in going "cold turkey."

Help was given in the form of glutethimide and strong support to the extent of allowing the patient to telephone the therapist at home as late as 12:00 midnight. Through the patient's lawyer, a repeat examination at the narcotics control center was arranged for four weeks later. This examination revealed the absence of heroin, because the patient had succeeded in total withdrawal by the "cold turkey" method. His suffering during this period, as well as the report of the narcotics control center to the court, alerted his parents to the situation and they called for a conference. The patient confessed to his parents that he had been on "drugs" but claimed successful cure. At this time the therapist told both the boy and his parents that if recurrence of addiction occurred, attempts would be made to transfer him to a drug addiction treatment center.

However, soon after his negative examination before the narcotics control center, about February 15, 1970, he was back on heroin. Because he was still due to stand trial for possession of marihuana, he asked the therapist for methadone. The therapist's offer to cooperate with this request was predicated on the condition that methadone maintenance would be used as a transitional, temporary measure until his trial for possession of marihuana was disposed of. He was started on 30 mg. a day in the form of 10-mg. tablets three times a day, and rapidly built up to 80 mg. a day in the form of eight 10-mg. tablets taken in divided doses (30 mg. in the morning, 30 mg. in the afternoon, and 20 mg. in the evening). This program was instituted with the mutual agreement that as soon as his criminal trial was over there would be a rapid decrease in dosage, stepping down 10 mg. every third day. The case, however, dragged on until the summer of 1970 and was not disposed of until mid-October, eight months later, at which time the three-week withdrawal program was undertaken.

True to his word, the patient cooperated until he reached a dosage of 30 mg. daily. At this point he claimed that this dosage was inadequate to allay his "hunger" and volunteered that he might as well go "cold turkey" when he could not persuade the therapist to increase the dosage. He was persuaded to call his parents in again. Since they lived only five minutes away from the therapist's office, they were able to come in during that same session. It was agreed to have one or both of them stay with him night and day for as long as necessary to achieve the goal of total freedom from all forms of narcotic addiction.

The youth asked for and received sufficient glutethimide to sedate him at night and during the day. His maximum dosage did not exceed 1.5 Gm. of glutethimide during the night and 40 mg. of diazepam (Valium) in divided doses during the day. His parents were instructed to talk to him, particularly his father, who tended to be silent when not being punitive, and not to be critical of him in any way but rather to comfort and encourage him in every way possible.

The importance of the need for strong support and mothering was revealed when the mother called and reported that the boy was climbing into his parents' bed at night. This was indicative of regression to a neonatal, preoral, undifferentiated stage of development. When she expressed concern over this behavior, the therapist advised tolerance of this development during the transitional period. Within two weeks he was no longer suffering from withdrawal symptoms, but he continued to remain at home under constant supervision for an additional week. During this three-week period, he was seen in therapy three times weekly and was in contact with his therapist daily ad lib.

Since it was feared that his employment would be in jeopardy if he were away from his job any longer, it was arranged that his father would drive him to and from work and meet him for lunch for the first three weeks. This was accomplished with the knowledge of his fiancee. Five weeks after total abstinence was achieved, he assumed all his personal responsibilities unsupervised, with the exception that his mother had the right to inspect his arms at any time simply by requesting such an inspection. This inspection regimen continued practically up to the date of his marriage on March 20, 1971, almost five months after total abstinence from both heroin and methadone had begun.

At this date, more than twenty-four months of abstinence has been achieved. The patient does take ethchlorvynol (Placidyl) from 500 to 700 mg. nightly as a soporific, and diazepam during the day irregularly, varying from nothing to 10 mg. every six hours twice a day when necessary.

Comment

Several factors contributed to the successful outcome of this case:

1. The patient and therapist had a good relationship prior to development of addiction and throughout the course of treatment for addiction. This consistent positive transference was part of a psychotherapeutic process which promoted increased ego strength and ego maturation, enabling the patient to tolerate delayed gratification.[4] The type of psychotherapy involved was primarily supportive. It is believed that insight therapy in this case would have undermined the result because on the very few occasions when probing for reasons was attempted, the patient complained that he felt much worse.

2. The patient was motivated by the promise of employment and promotion in a field that he particularly enjoyed and by the love and devotion of his sweetheart, who was willing to marry him despite his problems.

3. Particularly important was the ability of his parents, lacking significant insight into their own problems, to cooperate with the therapist in ways that went counter to their own impulses, restraining their need to be overly restrictive or punitive.

4. Methadone maintenance was offered to the patient *conditionally* in response to his request, It was made clear to the patient from the outset that methadone would be prescribed on an interim basis to continue only until his trial for possession of marihuana was concluded.

It is premature to say that this case has been permanently cured. Whether or not that proves to be the case, it certainly offers hope that heroin addicts socially rehabilitated on a methadone program need not be inescapably trapped and tethered to the availability of an endless methadone maintenance program.

Summary

A case has been presented in which methadone was used primarily as a stabilizing effect in removing drug hunger while psychotherapy proceeded. Methadone maintenance at a dosage of 80 mg. a day was maintained for a period of eight months, after which a program of rapid withdrawal was instituted at a decreasing rate of 10 mg. every three days until a daily dosage of 30 mg. was achieved. At this point total abstinence was instituted, and drug hunger disappeared completely within a period of two weeks. The patient is, however, using tranquilizers.

This case demonstrates that the administration of methadone does not preclude simultaneous meaningful psychotherapy to achieve total narcotic abstinence. It is believed that the result obtained in this case could not have been achieved without supportive psychotherapy. Regardless of the permanence of the successful result of this case, the foregone conclusion that both heroin and methadone addiction are refractory to individual psychotherapy warrants reexamination.

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Reversibility in Agnogenic Myeloid Metaplasia*

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Although described nearly one hundred years ago,[1] MMM (myelofibrosis with myeloid metaplasia) remains enigmatic regarding etiology and pathogenesis. Earlier it was suggested that a primary insult to the marrow occurred resulting in reparative fibrosis and, this, in turn, by extramedullary hemopoiesis in an attempt to maintain normal peripheral blood.[2] More recently, on the basis of transitional forms and similarities to diseases characterized as the myeloproliferative syndrome, MMM has rather been considered a malignant disturbance in which proliferation of totipotent mesenchyme occurs en masse; in the marrow differentiation is toward fibroblasts and, concomitantly, in organs, to hematopoietic tissue.[3] Which, if either, of these hypotheses regarding pathogenesis and etiology for MMM may be true is yet unsettled.

Although modalities such as splenic irradiation, tumoricidal drugs, and transfusions may produce beneficial effects, including improvement of cytopenias or shrinkage of splenic size, the survival of patients with MMM is approximately two years.[4,5] Twenty per cent of patients terminate in a blast crisis, a state which may appear indistinguishable from acute leukemia.[4] This illness, whether treated or not, is regarded as irreversible with fibrosis of the marrow found at autopsy, even when death is occasioned by acute blast transformation.[4] Extramedullary hemopoietic lesions persist through death except in blast crisis, when collection of blast cells replaces the earlier myeloid metaplastic lesions.[4,5] In contrast to the usual course exhibited by such patients, 2 individuals were encountered with otherwise typical features of MMM, associated with megaloblastic hemopoiesis, in whom reversal of clinical and anatomic features was observed. This reversal is possibly related to therapy for the megaloblastosis. It is our purpose to report on these.

Materials and methods

Standard hematologic technics were employed.[6] Bone-marrow biopsy was performed from the posterior iliac crest with a Vim-Silverman needle, and specimens were stained with hematoxylin and eosin as well as a Masson trichrome.[7] Serum folate with expected ranges of 5 to 16 nanograms per milliliter was assayed by the Lactobacillus caseii method.[8] Serum vitamin B_{12} was determined by the technic of Lau *et al.*,[9] the normal range being 200 to 900 picograms per milliliter. Figlu (formiminoglutamic acid) was estimated electrophoretically, where the upper limit of normal is 2 mg. per hour.[10]

Case reports

Case 1. A thirty-seven-year-old Caucasian male was referred for evaluation of anemia in July, 1969. Weakness and syncope of progressive severity had begun two weeks prior to admission. There was no other relevant history. Physical examination revealed a pale, acutely ill man whose liver and spleen were each palpable 6 cm. below their respective costal margins. Laboratory data on admission included hematocrit of 18 with normal white cell and platelet counts. Polymorphonuclear leukocytes predominated on the smear, but promyelocytes, metamyelocytes, tear-drop forms, and normoblasts were seen. Bone marrow could not be aspirated from multiple sites. Wright-Giemsa stain of touch imprints of a marrow biopsy revealed megaloblastic hemopoiesis, while the biopsy itself demonstrated myelofibrosis (Fig. 1A). Liver biopsy revealed myeloid metaplasia (Fig. 1B). Urine Figlu was 11 mg.; serum folate, 8 nanograms; and serum vitamin B_{12}, 300 picograms. Studies for hemolysis, tuberculosis, and a primary cancer were all noncontributory.

Despite repeated transfusions during the first four weeks following admission, no significant increment in his hematocrit occurred. On the basis of the Figlu results, which were available prior to those of the serum folate level, coexistent folate deficiency was suspected, and 15 mg. of folic acid were administered orally from the fifth through twenty-fifth days. Transfusion requirements continued unabated while the serum folate rose to 100 nanograms; accordingly, a trial with folinic acid, 6 mg. administered intramuscularly daily, was initiated. The hematocrit began to rise progressively and by discharge had reached 40. The liver and spleen concomitantly became smaller and at discharge were no longer palpable. Re-

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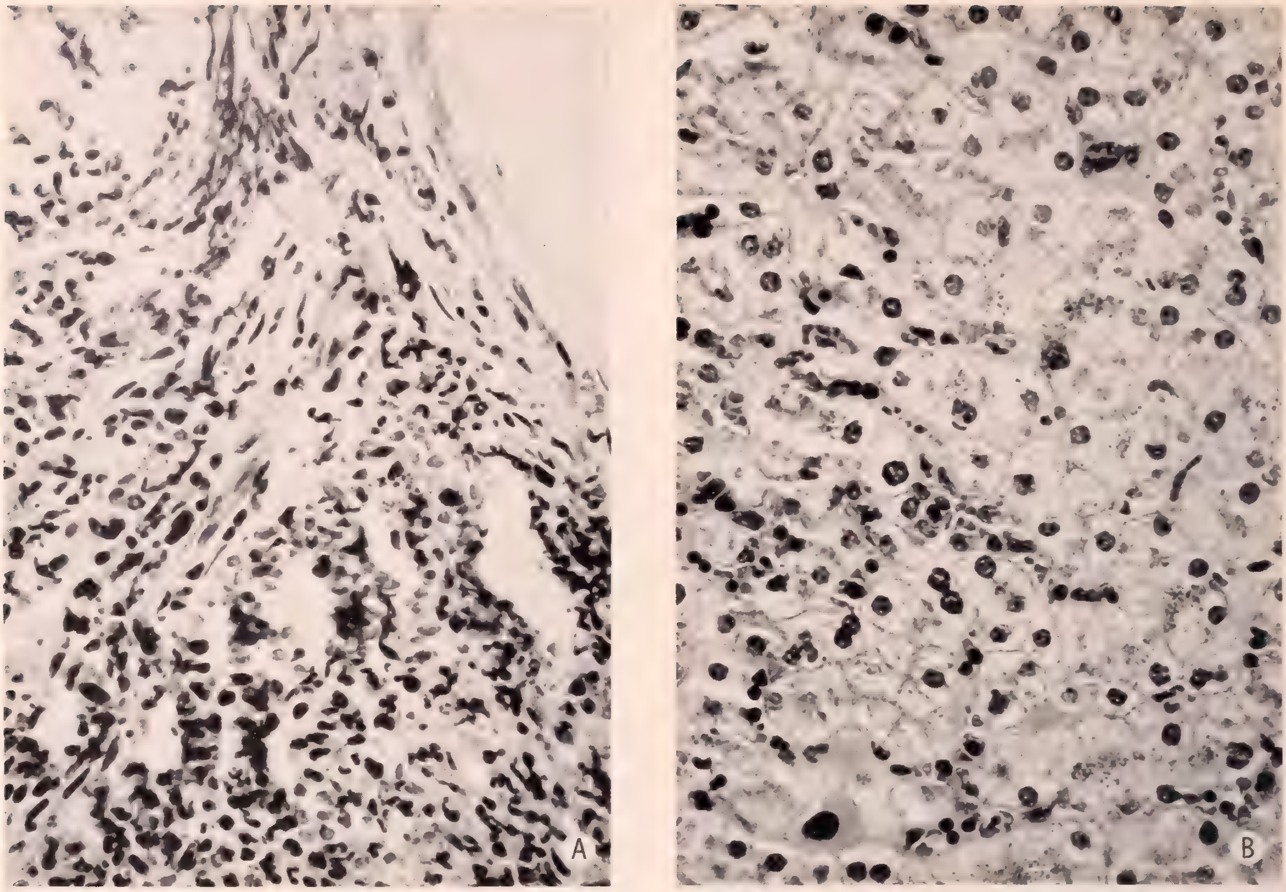

FIGURE 1. Case 1. (A) Photomicrograph of initial bone marrow biopsy, demonstrating fibrosis of marrow. (B) Photomicrograph of initial liver biopsy, showing hematopoiesis which includes two magakaryocytes. (Hematoxylin and Eosin Stain × 540)

peated marrows were easily aspirable and neither megaloblastic nor fibrotic. The liver biopsy was repeated and no longer showed extramedullary hematopoiesis. The patient has continued to receive folinic acid, 6 mg. a week and feels well. When the patient was readmitted one year after his first hospitalization, no organomegaly was found. The marrow was easily aspirable from three sites and revealed no abnormalities. Fibrosis was not demonstrable in biopsies. Liver biopsy was repeated and revealed no abnormalities. Figlu at that time was normal.

Case 2. A thirty-six-year-old Caucasian female was admitted November, 1969, with a six-month history of progressive fatigue and shortness of breath. Two days prior to admission she had been found to be anemic and given vitamin B_{12} intramuscularly by her referring physician. On physical examination she was febrile, irritable, pale, and had atrophic lingual papillae. The liver was palpable 4 cm. below the right costal margin, and the spleen, 3 cm. below the left costal margin. Neurologic examination results were normal. Laboratory studies on admission indicated a hematocrit of 15, white count of 3,000, and platelets of 60,000. On the peripheral smear, macrocytic normoblasts, tear-drop forms, and occasional myeloblasts were observed. Bone marrow could not be aspirated from three sites, but touch imprints of biopsies revealed megaloblastic hemopoiesis, and the biopsies revealed myelofibrosis. Blood transfusions given on admission effected some relief of her complaints. The serum vitamin B_{12} level was 3,000 picograms. Gastric acidity was absent following maximum histamine stimulation. Serum folate and urinary Figlu were 9 nanograms and 1 mg. respectively. Work-up for hemolysis, primary cancer, and tuberculosis were all nonrevealing. Without additional transfusion therapy there occurred a progressive reduction in organomegaly, and at discharge her liver was no longer palpable, and her spleen tip could just be felt. A Schilling test indicated the inability to absorb vitamin B_{12}. This was corrected by simultaneous administration of oral intrinsic factor.

She has been receiving 1,000 micrograms of vitamin B_{12} parenterally each month. On examination one year after the initial hospitalization, no organs were palpable, the hematocrit was 40, and marrows were easily aspirable with no evidence of megaloblastosis nor fibrosis. The patient refused to submit to a second liver biopsy.

Comment

The diagnosis of MMM can be made only when the characteristic histologic lesions are found in the marrow and organs such as the liver and spleen.[4,5,11] This combination often occurs with a distinctive clinical picture, and one for which no etiology nor concomitant disorder usually exists, agnogenic myeloid metaplasia. MMM may also be found during the course of the myeloproliferative syndrome, a spectrum of disturbances that includes among others polycythemia vera, chronic myelogenous leukemia, and recently found, paroxysmal nocturnal hemoglobinuria.[3,12] Tuberculosis,[13] carcinoma,[14] industrial solvents,[15] and ionizing irradiation[16] have been associated with MMM, although causality has not been proved. No such associations appear likely in the patients described herein in view of their histories, studies, and subsequent clinical courses.

The course of MMM, although often slowly progressive, carries a death risk greater than that of an age-matched population.[4,7] Various modalities used for treatment of the discomfort due to a large spleen or cytopenias meet with only modest success in reversing the clinical course.[4,5,18,19]

The patients described appear unusual in that following administration of agents that might have accounted for their megaloblastic morphology and metabolic features, there ensued clinical improvement, shrinkage of organs, and on the basis of biopsy disappearance of the characteristic lesions of MMM.

Reports from Great Britain have emphasized that megaloblastosis due to folate deficiency may develop in patients with MMM.[8,9] Although some reversal of cytopenias were observed following folate administration, neither regression of organomegaly nor disappearance of histologic lesions of MMM are reported in such patients.

The relationship of MMM to vitamin B_{12} deficiency is more obscure than to folic acid. Although Wintrobe[20,21] states that foci of extramedullary hematopoiesis were found in liver and spleen of patients with pernicious anemia, such lesions were not described in other studies,[22-25] and myelofibrosis is not mentioned as occurring in patients were pernicious anemia.[20-25]

The first patient described in this report appeared to have had, a transient abnormality in a pathway bringing labile carbon units into a metabolic cycle as indicated by marrow megaloblastosis and initially increased urinary excretion of Figlu. Because the Figlu datum was available before that for the serum folate level, folate deficiency was first suspected.[10] Failure to respond to oral folic acid, despite an increase in the serum folate, seemed to substantiate that folate deficiency was not relevant to the observed clinical picture and suggested the possibility of a more distal metabolic lesion as a cause for megaloblastosis and the elevated Figlu. The latter interpretation prompted treatment with formyl-5 tetrahydrofolate (folinic acid), a substance capable of introducing one-carbon units into the metabolic pool.[26] The salutary response following that treatment may indicate that folinate was instrumental in producing the observed results. There was no history that antifols, agents capable of interfering with enzymatic reductions and producing cytopenias that can be corrected by folinic acid, but not reported to cause MMM, were taken by the patient.[27]

The second patient has pernicious anemia, indicated by the gastric anacidity, Shilling test, and probable response to vitamin B_{12}. Although the relationship of pernicious anemia to MMM is vague and beyond observation, the sequence of events observed do suggest that during the course of vitamin B_{12}-dependent megaloblastopathy there developed a reversible form of MMM. Both illnesses appeared to regress, presumably following the vitamin B_{12} parenterally administered by her physician shortly prior to admission, and neither has recurred while parenteral vitamin B_{12} has been continued. What unique characteristics may have caused this patient with pernicious anemia to develop a reversible form of MMM are not explicable at present.

The unusual course seen in both patients indicates need for evaluation of patients presenting symptoms of MMM, since they may have defects that can be readily corrected. Although the follow-up on these patients is short, their striking return to an apparently normal clinical status and morphology, nonetheless, is noteworthy.

Studies from this laboratory have reported on an experimental model for inducing histologic lesions of MMM in rabbits by the repeated intravenous injection of solutions containing the plant glycoside, saponin.[28] Recently we have indicated that MMM appears as early as five days after a single dose of that agent. However, animals examined by autopsy thirty days after a single administration of the provoking agent no longer had lesions in marrow or organs.[29]

Tischendorf and Wolfe[30] recently reported producing myeloid metaplasia following removal of more than 40 per cent of the blood volume of the marmoset. The lesion appeared as early as one week and disappeared between one to two months after discontinuance of phlebotomy. Unfortunately bone-marrow biopsies were not performed.

The aforementioned studies, both clinical and experimental, indicate the existence of forms of MMM that may regress if provocative stimuli, whatever their nature, are removed. These experiences, although limited, should prompt investigation of patients with MMM for potentially correctable metabolic derangements, before currently available therapies with their frequency of failures and attendant hazards are employed.

Summary

Two patients presented acutely ill with hepatosplenomegaly, cytopenias, megaloblastic hematopoiesis, and apparently related biochemical derangements. Bone-marrow and liver biopsies revealed MMM (myelofibrosis with myeloid metaplasia). Following therapy with agents indicated for treatment of megaloblastosis, there ensued reversion to normal hematopoiesis. Concomitantly the organomegaly regressed, and tissue evidence of MMM disappeared. Both patients have continued on therapy and remain clinically well without evident recurrence of marrow fibrosis or myeloid metaplasia. It is suggested that similar defects be sought in patients with this disturbance, agnogenic myeloid metaplasia, presumed to be neoplastic and irreversible, before current therapeutic modalities with their unpredictable efficacies and significant toxicities are employed.

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Postpancreatectomy Insulin-Resistant Diabetes Mellitus

Improvement after prednisone and 5-fluorouracil

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The removal of the entire pancreas in man produces a diabetic syndrome characterized by absolute insulin dependence, proneness to ketosis, and marked lability of the blood sugar. The insulin requirement is almost always less than 50 units per day and most frequently about 10 to 25 units per day.[1-5] A search of the entire literature discloses only one instance of insulin-resistant diabetes following total pancreatectomy in which demonstrable insulin antibodies were considered to be responsible for the resistance.[6]

The following report concerns 2 patients with surgical postpancreatectomy diabetes mellitus who developed resistance to insulin associated with high insulin antibody titers. The resistance quickly diminished in one instance following the use of prednisone and in the second following the use of 5-fluorouracil. In view of the anti-antibody action of both drugs, these responses suggest that both instances of resistance were causally related to the high antibody titers.

Case reports

Case 1. A fifty-two-year-old white female was first seen in mid-September, 1965, because of obstructive jaundice. Carcinoma of the head of the pancreas was suspected, and after investigation, a total pancreatectomy was performed on September 22 (Fig. 1). An adenocarcinoma of the pancreas was found which had infiltrated and ulcerated into the duodenum. Several small peripancreatic lymph nodes were free of any metastasis, and no other distant metastases were found.

Her family history was negative for diabetes mellitus, and preoperatively all blood sugar levels were within normal limits. In the immediate postoperative period, hyperglycemia and moderate ketosis quickly developed, for which insulin was necessary. About 25 units of regular beef insulin in divided doses were adequate to maintain control when only intravenous fluids were being

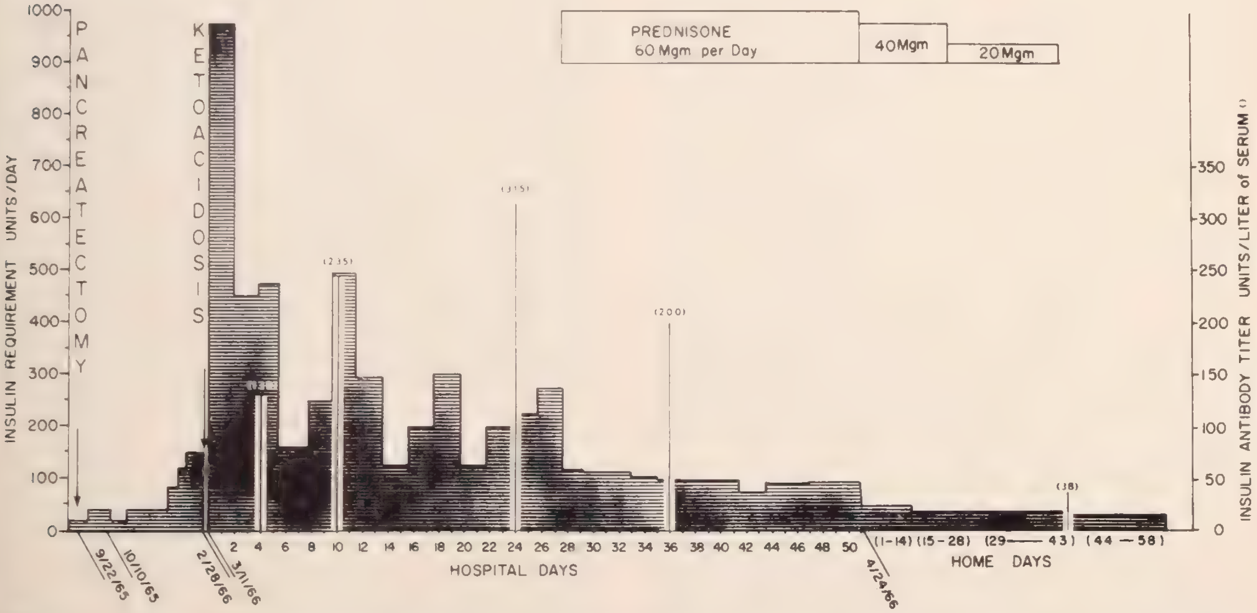

FIGURE 1. Case 1. The horizontally lined black area represents maximum insulin requirements. The vertical single black lines, with parenthesized numbers above each, indicate the individual antibody titers. Note, beginning on the twenty-eighth day, the stabilization and subsequent fall of insulin requirement during prednisone treatment associated with the decrease in antibody titer.

used. A diabetic diet containing 180 Gm. of carbohydrate, 50 Gm. of fat, and 80 Gm. of protein was subsequently prescribed, and 40 units per day of neutral protein Hagedorn beef insulin became necessary.

Fluctuating hyperglycemia, glycosuria, and hypoglycemia occurred without ketosis up until the time of her discharge from the hospital on October 10, 1965. At home the daily insulin dose was gradually reduced to 25 units given before breakfast. Pancreatin powder, taken in adequate dosage to control steatorrhea, was used three times a day. Soon thereafter the insulin requirement rose again to 40 units daily. In late January, 1966, a small lump was noted under the skin in the left axilla. Excision was performed, and a deposit of adenocarcinomatous tissue, similar to the tumor of the pancreas, was found. There were no other sites of metastatic disease. Two weeks later, severe hyperglycemia, glycosuria, and moderate to large ketonuria developed in spite of the administration of gradually increasing doses of neutral protein Hagedorn beef insulin to as high as 150 units a day.

She was rehospitalized on February 28, 1966. The only apparent physical findings were cachexia and a small amount of serous fluid draining from one end of the initial abdominal scar. This fluid was sterile. The axillary wound had healed well. Her blood sugar was 500 mg. per 100 ml.; carbon dioxide 9 mEq., serum chloride 88 mEq., serum sodium 132 mEq., and serum potassium 6.7 mEq. per liter. In the first twenty-four hours 970 units of insulin were required to correct the ketoacidosis. During the next five days her insulin requirements varied from 475 to 135 units of regular beef insulin per day. The first insulin antibody titer done on the fourth day was 130 units per liter of serum.[7] The second titer, on the tenth day, rose to 235 units per liter of serum, and the third, on the twenty-fourth day, rose still further to 315 units per liter. Between the twelfth and the twenty-eighth days the insulin requirement varied from 137 units to 275 units per day. There were no episodes of hypoglycemia.

In view of this apparent insulin resistance, prednisone was started on the twenty-eighth day with the hope that this resistance would diminish. Sixty milligrams of prednisone were given daily in divided doses. During the next six days, the daily insulin requirement remained at 135 units, but from then on it decreased gradually so that by the fifty-first day it fell to 80 units. This dosage was maintained until discharge on April 24, 1966. A fourth insulin antibody titer on the thirty-sixth day had decreased to 200 units per liter of serum. Her caloric intake was kept constant.

While at home the insulin requirement continued to decrease, as evidenced by repeated episodes of hypoglycemia. By the forty-third posthospital day the total daily requirement was 20 units of neutral protein Hagedorn beef insulin and 5 units of regular beef insulin taken together in the morning. To avoid potential future insulin resistance, both preparations were converted from the beef to the pork type. At the time of discharge the prednisone was decreased to 40 mg., then to 20 mg., and finally discontinued on the forty-third posthospital day. The last insulin antibody titer at this time had fallen to 38 units per liter of serum. Her diabetes continued to behave in the usual growth-onset pattern with moderate fluctuations from hypoglycemia to hyperglycemia. Her progress since then has been excellent. Her total body weight has been well maintained, and she has functioned well. The insulin requirement, seven years since the initial surgery, remains stable at 6 units of regular pork insulin and 14 units of neutral protein Hagedorn pork insulin taken together in the morning. The axillary metastatic site has remained well healed.

Case 2. A forty-seven-year-old white female had a total pancreatectomy performed on February 5, 1963. An adenocarcinoma was found involving the head, neck, and body with no distant metastases (Fig. 2). In the preoperative period all blood sugars, both pre- and postprandial, were normal. There was no family history of diabetes mellitus.

Significant hyperglycemia and intermittent ketosis developed in the immediate postoperative period and were effectively controlled by 35 units of a combination of regular beef and neutral protein Hagedorn beef insulin. Hypoglycemic reactions then occurred, necessitating a gradual decrease in insulin dosage so that by the time of discharge on February 24 only 18 units of neutral protein Hagedorn beef insulin were necessary. She remained ketone free but continued to have fluctuating hyperglycemia, glycosuria, and occasional hypoglycemia. The diet consisted of 175 Gm. of carbohydrate, 80 Gm. of protein, and 50 Gm. of fat, all appropriately distributed throughout the day. Pancreatin powder supplements were taken three times a day with meals. While at home the diabetes continued to be labile.

After seven months a progressive deterioration in the control of her diabetes occurred. She was readmitted to the hospital on October 5, 1963, because of increasing polyuria, polydipsia, polyphagia, weight loss, glycosuria, hyperglycemia, and ketosis. To maintain adequate control, 70 and 20 units of neutral protein Hagedorn beef insulin were needed in the morning and evening respectively. The first insulin antibody titer done at this time was 25 units per liter of serum.

She was discharged again, and between October, 1963, and May, 1964, the diabetes continued to be labile, as evidenced by varying episodes of hypoglycemia and hyperglycemia with mild ke-

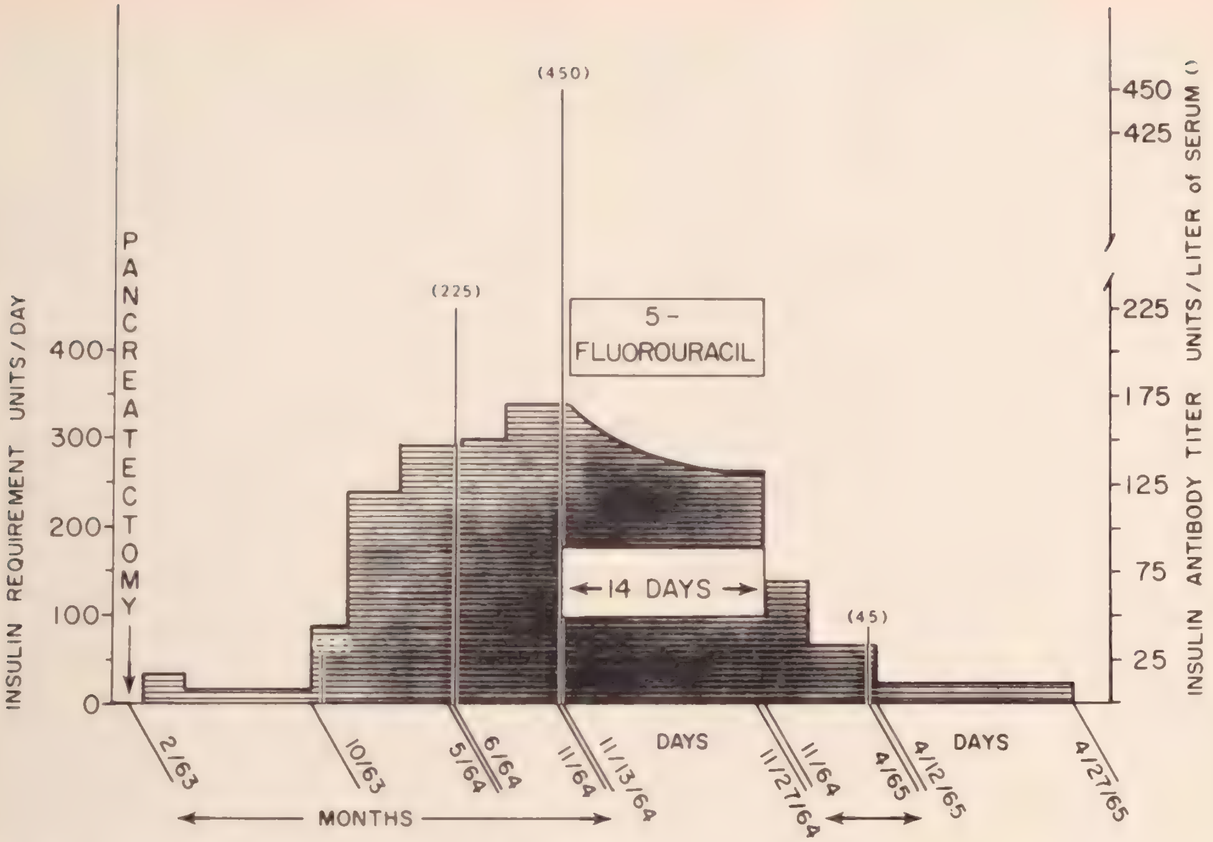

FIGURE 2. Case 2. The representation in this graph is the same as in Figure 1. Note the first rapid change in insulin requirement during the short fourteen-day period of 5-fluorouracil therapy.

tosis. The insulin requirement increased gradually and progressively so that by May, 1964, it was 245 units of neutral protein Hagedorn beef insulin given in divided doses. Hospitalization for stabilization of her diabetes became necessary. During this period a few suture granulomata, without abscess formation, were removed from the initial incision. By the end of May, 1964, 150 and 135 units of semilente beef insulin were given in the morning and the evening respectively. This combination proved to be very effective. The second insulin antibody titer in June, 1964, was 225 units per liter of serum. Although she appeared to be well, an enlarged liver was noted for the first time. During this hospitalization her diabetes continued to be labile. She was again discharged on June 16, 1964.

Her insulin requirement continued to increase so that by October 170 units were given in the morning and 130 units in the evening. By November the requirement progressed further to 195 and 145 units in the morning and evening respectively. A third insulin antibody titer then was 450 units per liter of serum. Epigastric pain and bilateral ankle edema developed, and a nodular mass was palpable in the left hypochondrium. A roentgenogram of the chest showed extensive nodular metastases throughout both lung fields. In view of the retroperitoneal and pulmonary metastases, a therapeutic trial of 5-fluorouracil was given. Over a five-hour period daily for the first five days 720 mg. dissolved in 500 ml. of 5 per cent glucose and water were administered and then repeated four times more on alternate days. During the course of this treatment, which extended from November 13 to November 27, the insulin requirement quickly dropped to 170 units in the morning and 100 units in the evening. Nausea and vomiting did not occur after the 5-fluorouracil.

She was discharged on November 30, 1964, and while at home recurrent episodes of moderate hypoglycemia continued to occur, necessitating frequent downward adjustments in insulin dosage. The requirement fell to 140 units a day, then to 65 units a day, and finally, when readmitted on April 12, 1965, to 25 units a day. The fourth insulin antibody titer done at this time had decreased to 45 units per liter of serum. She was now cachectic and had severe abdominal pain with recurrent vomiting. Sedation, analgesics, and intravenous fluids were necessary. Marked ascites had developed, and a roentgenogram of the chest revealed more extensive bilateral pulmonary metastases. Total deterioration progressed and led to death on the fifteenth hospital day. An autopsy revealed metastatic carcinomatosis of the lung, liver, peritoneum, periportal and periaortic lymph nodes, left adrenal gland, and left ovary. The glomeruli of both kidneys were normal.

Comment

Insulin resistance has been arbitrarily defined as the requirement of over 200 units of insulin a day for more than two days consecutively in the absence of ketoacidosis.[8] This definition is usually applied to those patients who, being diabetic spontaneously, need that amount of insulin to control the disease. It is, however, applicable to both of the reported patients even though their diabetes was induced by total pancreatectomy. The initial response to the pancreatectomy by Case 1 was usual when the immediate postoperative beef insulin requirement was 25 units a day. During the period of intravenous fluid maintenance, only small doses of insulin were necessary to control hyperglycemia and ketosis. With the beginning of oral feeding the requirement increased somewhat. During the next few months it was never higher than 40 units daily.

Rapid deterioration of the diabetes control suddenly occurred without any obvious cause. The area in the axilla from which the localized metastatic tumor tissue had been excised was completely healed. A vigorous search for other similar deposits was fruitless. A review by the pathologist of the initially removed tissue reconfirmed the original diagnosis. It was because of the absence of any apparent cause of the increasing insulin resistance that the first antibody titer was drawn but not immediately determined. Although the patient had only been using insulin for six months, it was yet possible that high insulin antibodies may have been present, since such antibodies can develop in any person within a few weeks after the initial administration of insulin.[9–11] Subsequent to the correction of the acute ketoacidosis, the persistence of the high insulin requirement led to the suspicion that insulin antibodies might be contributory.

The response to the prednisone was dramatic in that within eight days of the initiation of therapy a distinct fall in the total insulin requirement occurred. Apparently the prednisone was effective in bringing this about. Usually in nonresistant insulin-dependent patients and in patients with resistance not due to antibodies, steroid therapy aggravates the diabetic state.[12] Steroids are known to be successful in the reversal of insulin resistance only when an immune mechanism is the basis for such resistance.[13] Complex mechanisms, such as decreased insulin binding[14] and/or decreased insulin antibody production,[15] may be applicable but cannot be examined here, because appropriate laboratory data are not available. However, because of the demonstrable quick decrease in insulin requirement associated with a significant fall in antibody titer, it is most likely that the high titer caused the resistance. The continued decline in requirement and in the antibody titer under the influence of the steroid helps to confirm this conclusion.

During the entire period pure beef insulin was used to avoid the possibility of a change in insulin requirement secondary to a change in the species type of insulin. Beef insulin has been demonstrated to be more antigenic than pork and to have a stronger binding capacity.[16–18] In the postresistance period the beef insulin was finally converted to pork insulin to avoid any future increased antigenicity.[19,20] Thus far it has not occurred.

Seven years have now elapsed since the initial pancreatic surgery, and no signs of recurrent metastatic disease are to be found. Her diabetes is similar in behavior to other instances of postpancreatectomy diabetes. Major blood sugar fluctuations continue and ketosis can develop, particularly under stress. Hypoglycemic episodes occur in association with delayed meals and with increased muscular effort. In spite of this, now at fifty-nine and a half years of age, she has continued to be in excellent health.

The insulin requirement in Case 2 in the immediate and subsequent postoperative period was similar to that of Case 1 in that it was less than 40 units per day. During the first month it was 35 units of neutral protein Hagedorn beef insulin daily and during the next seven only 18 units of the same insulin daily. The first insulin antibody titer was done because there was no obvious cause for the increased insulin requirement that began in the eighth postoperative month. When 90 units of insulin a day were necessary, this titer was 25 units per liter of serum. Normally the antibody titer of serum after insulin administration is not greater than 10 units per liter.[21] Although in insulin-resistant patients there is not a strict association between titer and requirement, all immune insulin resistance is associated with increased titers.[21] Therefore, the titer of 25 units per liter was already mildly elevated, and the subsequent marked rise in titer occurred in association with the very significant increased insulin requirement. The clinical demonstration of a rapid change in insulin requirement during and after the therapy period associated with a subsequent significant fall in antibody titer was very similar to the response to prednisone therapy. Since an immunosuppressive activity of 5-fluorouracil has already been demonstrated, this rapid fall in insulin dosage and antibody titer may be attributed to this action.[22–24] Hepatic metastases have never been known to be a causative factor of hypoglycemia, and their presence in this patient is probably not contributory.[25]

Summary

Two female patients totally pancreatectomized because of carcinoma of the pancreas developed postsurgical diabetes mellitus that eventually became insulin resistant. No obvious cause for this resistance was apparent, except that exceedingly high insulin antibody titers were demonstrated in each instance. A rapid resolution of the insulin resistance quickly occurred following the use of prednisone in the first case of 5-fluorouracil in the second. The former patient, still alive and well seven years following the removal of a cutaneous metastasis, remains very insulin sensitive. It is considered that in both instances immune insulin resistance occurred and the therapy, serendipitously, in the response to the 5-fluorouracil, was responsible for its subsidence. The exact mechanisms involved are open to speculation in the absence of necessary laboratory data.

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Neonatal Hamartoma with Consumption Coagulopathy

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The case described is one where major surgery was performed on a neonate who developed a clotting disorder secondary to the primary disease.[1-5] The surgery was successful and the patient's outcome satisfactory because of early recognition of the coagulopathy by using rapidly available diagnostic tests performed on minimal amounts of blood. The difficulty in evaluating laboratory information in neonates, due to the paucity of specific information on normal levels, is noted.

Case report

A three-day-old female infant was admitted to Memorial Hospital with a large mass in the left upper quadrant of the abdomen. The mass was present at birth and appeared to be enlarging, causing progressive respiratory distress. There had been no problem with delivery, but the mother had polyhydramnios during the last weeks of gestation. The child appeared otherwise normal. The bowels functioned normally from birth, and she appeared to take her feedings well.

On admission, the abdomen was markedly distended, and a rubbery, hard, 7 by 8-cm. mass was palpable in the left upper quadrant of the abdomen. The liver edge could be palpated 2 cm. below the costal margin. Flat films of the abdomen showed a large, left upper quadrant mass displacing the splenic flexure of the colon, extending beyond the midline. Flecks of calcification were present within the mass.

Intravenous pyelogram showed normal excretory function with some downward displacement of the left kidney. Liver scan showed a defect in the left lobe of the liver, coinciding with the location of the mass. Skeletal survey results were negative and a roentgenogram of the chest showed normal results. Bone marrow was normal. Electrocardiogram showed right ventricular preponderance. Hemoglobin and white blood cell count with differential were essentially normal. Hematocrit and clotting studies are shown in Figure 1. Liver function tests showed total protein, 5 Gm. per 100 ml.; albumin, 2.5 Gm. per 100 ml.; total billirubin, 1.82 mg. per 100 ml.; alkaline phosphatase, 50 units (normal, 72 to 247); and serum glutamic oxaloacetic transaminase, 75 units. Serum electrolytes showed hypochloremia (60 and 89 mEq. per liter) and hypocalcemia (6.3 mg. per 100 ml.). Given the roentgenogram findings, low platelets, and the falling hemoglobin (13.6 to 11.3 Gm. per 100 ml.), hemangioma of the left lobe of the liver was considered.

The patient was explored on the third hospital day through a left transverse upper abdominal incision, with halothane and nitrous oxide anesthesia. A central-venous-pressure catheter was placed by cutdown. A large mass was found occupying 75 per cent of the left lobe of the liver (Fig. 2A). A left hepatic lobectomy was performed. Because part of the serosa of the stomach was denuded in removing adherent tumor, a gastrostomy was also performed. The liver was sectioned and found to contain large blood-filled cystic spaces with fresh clot formation (Fig. 2B). This seemed to explain the low platelet count and fall in hemoglobin preoperatively. Hemostasis was achieved within the abdomen without difficulty. On closing the abdominal wound, however, there was excessive oozing of blood, controlled by fulguration. A thromboelastograph, used at Memorial Hospital to monitor clotting during surgery, was drawn at this time and showed deficiency of platelets (Fig. 1).[6] A total of 450 cc. of warmed, buffered bank blood[7] and 60 cc. of 5 per cent albumin solution had been given in the operating room, approximately 1.5 times the baby's estimated blood volume.

On arrival in the recovery room, the dressing was stained with blood and continuous bleeding was evident from the gastrostomy tube and from the nose and mouth. Fibrinogen and phase platelet counts were drawn, and the low levels of both (Fig. 1) indicated a consumption coagulopathy, as did the previously drawn thromboelastograph. A 2-unit platelet transfusion was available within one hour after arrival in recovery room, during which time an additional 40 cc. of whole blood were transfused. Excessive bleeding stopped immediately after the platelet transfusion. Subse-

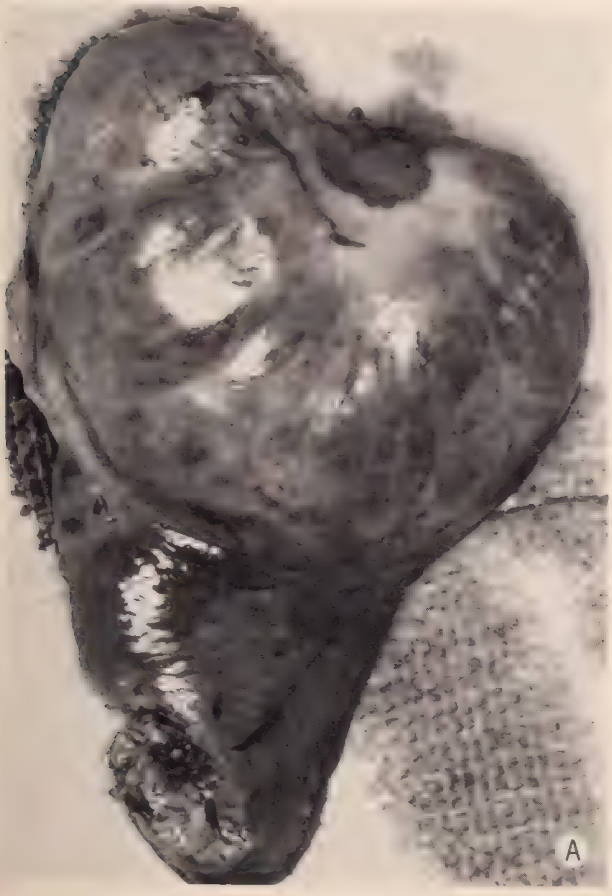
	PRE-OP		RECOVERY RM.		POST-OP			
	2d PreOp (3d old)	1d PreOp (4d old)	ON ARRIVAL	AFTER PLATELET TRANSFUS-ION	p o day 1	p o day 2	p o day 8	p o day 11
Hct	41.4	33.6	29	33	29.3	33.2	32.5	28.6
PLATELET COUNT (1000 cells/cc.)	73.0	121.0	35.0 phase	187.0 phase	240.0 phase	261.0	380.0	391.0
FIBRINOGEN (mgm %)	255	—	20	—	—	—	349	—
PTT (n'l <100 secs.)	115	—	—	—	—	—	92	—
PRO TIME (seconds)	12 (contr. 13)	—	—	—	—	—	13.2 (c. 13)	—
THROMBIN TIME (seconds)	—	—	—	—	—	—	24.4 (c. 16)	—
THROMBEL-ASTOGRAPH	—	r = 22 k = 15 am = 42	—	—	—	—	—	—

OR

FIGURE 1 Preoperative, recovery room, and postoperative clotting studies.

quent platelet counts are shown in Figure 1.

The baby was kept in the recovery room overnight to watch for renewed onset of bleeding, which would indicate a continuing consumption coagulopathy, necessitating heparin therapy and additional platelet transfusion. Bleeding did not recur.



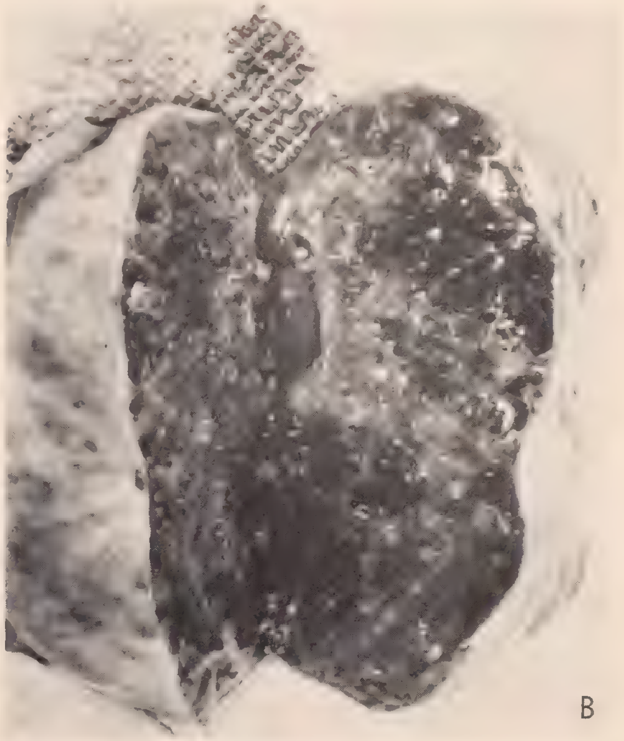


FIGURE 2. (A) Excised hepatic mass. (B) Sectioned liver showing large blood clots (darker areas).

Final pathologic diagnosis was benign mesenchymal hamartoma with multiple platelet thrombi.

Comment

The necessity of rapidly available diagnostic means of analysing coagulation problems in the operative patient is vividly demonstrated by this case. The thromboelastograph provides such a rapid method of studying clotting abnormalities. The thromboelastograph is a mechanical optical system which requires a blood sample of approximately 0.5 ml. Clotting parameters studied using the thromboelastograph are (1) initiation of a clot formation (R) normal range 15 to 23 minutes. (This is dependent on plasma factors and in our patient was essentially normal as can be seen in Figure 1. The preoperative prothrombin time confirmed this.) (2) Rapidity of clot formation (K) normal range 4.2 to 8.5 minutes, and (3) size of clot formation (AM) normal range 50 to 63 mm. This parameter reflects fibrinogen and platelet levels.

In our patient AM was below normal indicating low fibrinogen or platelet levels (Fig. 1). This was confirmed by the coagulation laboratory when the patient reached the recovery room.

Preoperative coagulation studies had shown a normal prothrombin time, slightly elevated partial thromboplastin time, and what were considered to be normal platelet and fibrinogen levels for a neonate (Fig. 1). Postoperative follow-up studies revealed considerably higher fibrinogen and platelet levels, showing the preoperative levels reflected an active consumption coagulopathy and that usual adult levels must be considered normal.

The first sign of an altered clotting mechanism in this patient was bleeding from the subcutaneous tissues, as the abdominal incision was being closed. The possibilities were a blood transfusion reaction, since the patient had received one blood volume replacement; altered plasma clotting factors due to resection of a large amount of the liver; and a consumption coagulopathy secondary to platelet thrombi in the tumor. Obviously a different therapy is indicated for each condition. The use of the thromboelastograph, utilizing only 0.5 ml. of whole blood, permitted a tentative diagnosis to be made in thirty minutes and early procurement of a platelet transfusion instigated. Thus when the patient began to bleed copiously in the recovery room, there was no need for a decision as to whether to return the patient to the operating room for exploration of the abdominal wound. Cessation of bleeding after the 2-unit platelet transfusion was dramatic and negated the necessity for heparin therapy in such a small infant.

The nonrecurrence of this condition was probably due to the removal of the liver tumor, with the result that further platelet consumption did not occur. The inciting cause of the original consumption coagulopathy was probably a combination of an existing thrombocytopenia and hypofibrinogenemia plus massive blood replacement and the extensive liver surgery resulting in critical levels of platelets and fibrinogen. The lack of necessity for fibrinogen replacement in this patient is indicative of the low fibrinogen level necessary for the initiation of the clotting process.

Summary

A consumption coagulopathy secondary to platelet-consuming liver tumor was diagnosed and successfully treated in a four-day-old infant.

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Transplantation Glossary

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Therefore is the name of it called Babel; because the Lord did there confound the language of all the Earth . . . —Gen. 11:9

Clinical transplantation is a reality. Its present drawbacks and limitations notwithstanding, this bold venture in contemporary medicine shows every indication that it will continue to be pursued with increased zeal and at an accelerated pace.

No alert physician can afford to complacently ignore how this incipient field is tilled. On the contrary, he is obliged to be conversant with its varied aspects and developments. In most instances such desirable proficiency can be acquired by the physician only by his being willing to expand the scope of his present curriculum of postgraduate instruction. His labors and the demands placed on his time cannot help but be lightened by making what he studies, reads, and hears as comprehensible as possible. To this end, an homogeneous and regulated format of communication is a prime requisite.

As knowledge accrues in any sphere of science, so does the language used to disseminate that knowledge. The sense of certain words has to be revised, or new names have to be fashioned to describe a substance or a phenomenon. When the pristine language is coherent, rational, and declarative, a communion of thought is assured to those who employ it. Conversely, if its evolution is unbridled and erratic, a veritable Tower of Babel is erected.

A typical example of how disorderly scientific nomenclature can confuse and tyrannize is the state of affairs which existed until about twenty-five years ago in work on blood coagulation. For a long while virtually every investigator attached his own pet labels for each newly discovered clotting factor. Finally, that symbol-littered and synonym-sodden terminology so boggled the mind that it had to be dismantled, and Roman numerals were substituted in its place by international convention.

The burgeoning branch of transplantation faces the hazards of a similar linguistic quagmire. Traditionally, despite or because of its multidisciplinary character, its vocabulary has never fully enjoyed uniformity of either expression or meaning within the different specialties using it most. How, then, can one expect it to be a lingua franca in the clinical arena, if it did not serve as such in the tight curtilage of investigators whose exclusive property it once was?

Is the problem to be resolved after the manner of what took place in the blood-clotting factors incident, that is, by demolishing the whole ramshackle edifice and building afresh? Or should the present semantic system be retained but modified to eliminate ambiguities and made more pliant so as to readily permit future terms to be adapted to it? The pertinence of these queries may be made more apparent by cursorily surveying a few events along the path of transplantation terminology.

Semantic problems

The word "transplantation" is of Latin origin, and, as its construction implies, referred to a botanical procedure, practiced since the dawn of mankind but brought to a high stage of refinement by ancient Mediterranean viniculturists. The etymologic root of the kindred expression "grafting" is less certain. Presumably, it derives from "graphium," denoting a pencil-shaped auger or knife with which the Romans inserted a scion into the stock.[1] However, I suspect that instead it may be an adulteration of the French "griffer," describing scarification or notching of trees. Regardless, neither transplantation nor grafting was in common usage until the latter half of the eighteenth century, well after Trembly[2] had demonstrated an analogy to the operation in plants by obtaining a permanent morphologic union of two separate animals (water polyps, to be exact). Prior to that time, there had been no convincing evidence that anything other than autografting would succeed, and the self-donated tissue was referred to as "insitionem" and "ente" in Latin and French, respectively.

It is noteworthy that even as late as 1771 there was a paucity of suitable terms for animal transplantation, which compelled Hunter[3] to comment,

> As the transplanting of teeth is very similar to the ingrafting of trees, I thought that the term ["scion"] might be transferred from gardening to surgery, finding no other expressive of the thing.[4]

Even the flurry of scientific activity in transplantation research at the beginning of the nineteenth century did not expand the vocabulary more than by introducing "autoplasty." This word was so abused that in 1836 Blandin[5] found it necessary to complain,

> The operation which consists in giving a new destination and form to a part borrowed from another individual is not autoplasty, but rather should be called "heteroplasty."

A broadened classification was set forth in 1863 by Bert[6]: "autografting" (autoplasty, autotransplantation), transfer of a part, completely freed in one or several stages, making new connections and continuing to live within the limits of the same organism; "homografting" (homoplasty, homotransplantation), transfer of a graft between animals of the same species; and "heterografting" (heteroplasty, heterotransplantation), grafting between organisms of different species, genera, and so forth. Bert's experiments included whole animals connected by a skin bridge. He named this special type of graft "Siamese twins" after the famous thoracopagous brothers, Chang and Eng Bunker, who were the star attractions of Phineas Barnum's shows.[7] This unfortunate appellation was amended half a century later by Sauerbruch and Heyde,[8,9] who renamed the preparation "parabiosis."

To Bert's fundamental terminology de Lille[10] added in 1872 "zoograft," to designate specifically a graft, usually skin, from a lower animal to man, and Ullmann[11] in 1914 popularized "implant" to signify a graft obtained from a cadaver. Although the Bert categorization was taxonomically appropriate and a malleable template for devising convenient words, it eventually proved to be too sweeping and simplistic.

Sometimes nuances implicit in the definitions of even basic parlance reflected divergent ideas about what was inferred. Thus one author declared,

> By the term transplant we mean the removing of an organ entirely and the placing of it in a new position, uniting its major blood vessels with others for the purpose of establishing adequate blood supply to the organ. The term graft in this connection refers more particularly to the placing of disconnected pieces of tissue in viable contact with other tissues but without any blood-vessel anastomosis.[12]

In the opinion of another writer,

> A transplant is a portion of tissue or a whole organ which is transplanted. Tranplants may thus be (a) living or (b) dead.
>
> Implantation means the insertion of dead material into an animal, and material so inserted constitutes an implant. Transplants of dead tissue form a special class of implants, but there are many other varieties, for example, implants of metal and plastic materials.
>
> Grafts form a special class of transplants, defined by the following criteria: (a) they consist, at the time of transplantation, of living tissue; (b) they do not remain permanently joined by vascular connections to the site whence they came.[13]

How many readers would agree with these statements verbatim?

As the scope of surgical activities in transplantation broadened beyond the pale of integumental reparative operations to vascular reconstruction procedures, the inadequacies of even fundamental phraseology, such as those given, became conspicuous. In 1954 Longmire, Cannon, and Weber[14] attempted to overcome one such deficiency by articulating "homovital" and "homostatic" to designate the state of functional viability of grafted tissue.

However, the major movement of opposition was not directed so much against neologisms as against the somewhat haphazard improvisation of what was intended to be a transplantation mother tongue. In fact, what had ensued was the appropriation of the abstruse, but orthodox, patois of geneticists, hematologists, and immunologists, which hardly improved understanding. A salient offender, for instance, was the bewildering use of the prefix ISO-, which was meaningful perhaps to Flexner, Ehrlich, Morgenroth, Landsteiner, and others at the beginning of this century, but which is at sharp variance to its connotation in latter-day transplantation terminology.

Gorer[15] was the first, in 1960, to champion the cause for a reformation in "transplantese," an appellation which he coined for the occasion. His plea has since been echoed by Medawar[16] and by Snell.[17] The existing discrepancies were highlighted by the outcome of a questionnaire sent by Snell to 22 transplantation experts; contradictory replies to the ballot told the whole story.

Results

That a healthy overhaul of transplantese has already occurred is undeniable; but just about the only ones to benefit from this change have been the transplantationists themselves. The profession at large, which is called on to endorse and to materially support their efforts on the contemporary scene, is still as much in the dark as before the recent catapulting into the limelight of clinical transplantation undertakings.

It is eminently clear that the general practitioner, the principal source of referral of prospective candidates for grafting procedures, will have to be kept continuously and accurately apprised of what is happening in both experimental and clinical transplantation, if these domains are to prosper to their fullest capabilities. It is equally plain that the real implications of enterprises, advances, or setbacks in transplantation cannot be properly grasped through the vernacular of literary expositions embodied in pulp magazines and gazettes.

How may a physician become sufficiently well versed in transplantation terminology so as not to miss information valuable to his education and to the potential welfare of his patients? Unfortunately, even the latest medical dictionaries furnish only outmoded or inapplicable definitions, and the jargon of specialty textbooks and journals amounts often to undecipherable cryptography. What is required, in effect, is a vade mecum to which the practitioner can turn for reference and as a medium for improving his working vocabulary. Since, in point of fact, there is no single publication extant which encompasses such a lexicon, I am submitting in this article a collated listing of definitions which should be amply serviceable for the stated purpose. Others may disagree, perhaps even vehemently, with the interpretation rendered for particular items. Should that be the case, it will underscore all the more the desirability for standardization of some nomenclature and its unanimous adoption once and for all.

Explanation

The majority of words selected for this glossary are firmly established and universally accepted. The attempt has been made to circumvent semantic pitfalls by assigning, whenever feasible, as broad a meaning to a word as is conceivably permissible, because that is the only way for a language to be applied sensibly and flexibly. Some terms by their very nature are restrictive in meaning.

It stands to reason that versatility in word construction should be tempered by the user with circumspection and a keen ear for euphony. There is an unhappy tendency to parrot the popular news media in their equating a patient with an operation or an organ. "The transplant walked in his room today" is as absurd and ludicrous as "The gastrectomy was given a soft diet." In another context, we need not quibble with the veracity of an implant being anything which is placed inside the body; but why talk of implanting a cardiac pacemaker or a synthetic tube intended to serve as a vascular conduit, when one could say "insert" or "introduce" just as readily, and save implant for the far more attractive role of organic structures? Implantation of the internal mammary artery into a myocardial tunnel is a case in point.

The length of the glossary has been compressed by selectively defining, in the event of several interchangeable expressions, only the one considered to be most preferable. This has been done especially with an eye to the suffixes -IC, -EIC, and -ETIC. The first is just as good as the other two and is shorter besides.

The equivalents "grafting" and "transplantation" have been kept out of deference to entrenched habit; but it is urged that a conscientious effort be made to release the longer word for a more general, albeit perhaps abstract, meaning. Thereby "transplantation," like "surgery" or "medicine," would connote a field of scientific inquiry and endeavor instead of merely an act itself, and the more compact "grafting" would be used preferentially. Is not "They are grafting, (or transplanting, if you insist), a kidney" easier and less awkward than "They are doing a renal transplantation"?

As stated already, ISO- has long been culpable as a springboard of confusion. In the current scheme of things, to a hematologist an "isoantigen" is a serologic attribute, quite restrictive, which does not imply genetic identicalness. In transplantation there has been considerable vacillation between the usage of ISO-, SYN-, and HOMO- to denote genotypic identity. To echo other authors, one "cannot see any justification for continuing to antithesize sameness and equality in the perverse way that has been commonly done."[18] This reservation notwithstanding, there are good reasons for not adhering slavishly to one prefix and employing the others as alternates.

The erstwhile term "syngenesiograft" signified the conveyance of tissue between blood-related persons, such as siblings or a parent and child. The inherent merit of this concept is evinced by mounting experience with renal grafts, the documentation of which has corroborated that the incidence of rejection is less in close blood relatives than in strangers. Accordingly, if for no other purpose than its predictive or prognostic value, there is cause enough for discrimination by using ISO- to designate genetically identical sources, SYN- for genetically very similar but nonidentical sources, and ALLO- for genetically dissimilar ones, all intraspecies specific, of course.

Old wine has been poured into new jugs not only in the case of the foregoing prefixes but also with a few other words. If the transplantation vocabulary is to thrive and to allow the molding of hitherto unforeseen terms that will become necessary consequent to future discoveries, an etymologic common denominator is mandatory. The logical denominator is the Greco-Latin one, since it is the backbone of orthodoxy in scientific terminology; permits less leeway for imprecision, error, or opinionativeness; and has substantial worth for enabling instant recognition of what a word is supposed to mean.

Heretofore, zoograft has inferred a graft from a lower animal. It is recommended that this word be revamped to allude to the conveyance of tissue from any member of the animal kingdom, Homo sapiens included, and "theriograft" be substituted in its stead for a graft from animals other than man. "Phytograft" would then pertain to the plant kingdom. A graft from a dying or dead person is referred to in the literature as a "cadaveric graft" (cadaver-donor graft in recent articles). "Biograft" and "thanatograft" are more succinct and utilitarian terms for grafts from living and dead donors, respectively. The corresponding roots of these words are cited in the composite glossary which is offered herewith.

Glossary

Adaptation, n. (L.: *adaptare,* to fit). Process whereby protection accorded to a foreign graft from the immune reaction of the recipient renders it less vulnerable to immunologic attack by the host.

Adjuvant, n. (L.: *adjuvare,* to help). Accessory substance which can increase the specific antibody production to, or the degree of sensitization against, an antigen. **Freund adjuvant** is a water-in-oil emulsion of an antigen. **Incomplete Freund adjuvant** contains oil, a dispersing agent, and antigen in the aqueous phase. **Complete Freund adjuvant** contains, in addition to dispersed antigen, either killed Mycobacterium tuberculosis or other related bacteria in the oily phase.

Alexin, n. (Gk.: *alekseis,* to assist). *Syn.* for **complement.**

Allele, n. (Gk.: *allelon,* mutual). One of alternative genes acting on the same locus of a chromosome. In the relationship of **allelism,** one gene is **dominant** and the other is **recessive.** Of the pair of alleles which each parent possesses, only one at a time can be passed on to an offspring. *adj.* **allelic.**

All-, Allo-, pref. (Gk.: *allos,* other).

Allergy, n. (Gk.: ergon, work). Accentuated immunologic reactivity, or **hypersensitivity,** usually to an otherwise innocuous substance, whereby the latter may become potentially harmful to an individual reexposed to it. **Immediate-type allergy** is produced by serum or **humoral** (q.v.) antibodies. **Delayed-type allergy** is not associated with serum antibodies, but rather with **sensitized cells,** or tissue exhibiting hyperreactivity, and therefore is said to be **cellular** or **cell-mediated.** *adj.* **allergic.**

Allogenic, adj. (Gk.: *genos,* race). *Syn.* **allogeneic; allogenetic; allospecific; allologous** (Gk.: *logos,* relation); **alloplastic** (Gk.: *plassein,* formation); **allochthonous** (Gk.: *chthon,* soil); **homogenic; homologous.** Regarding tissue derived from or grafted into other members of the same species with dissimilar genetic constitution.

Allohistocompatibility, n. (Gk.: *histos,* tissue; L.: *compati,* to have compassion with). Acceptance or growth of a graft between different members of the same species because of a special, but neither similar not identical, genetic makeup. *adj.* **allohistocompatible.** Rejection or failure of a graft to grow in such a relationship denotes **allohistoincompatibility.** *adj.* **allohistoincompatible.**

Allostatic, adj. (Gk.: *statikos,* standing, immobile). *Syn.* **homostatic; homostructural.** Describing a graft, deprived of viability during processing, from an individual of the same species. *n.* **allostatism.** *cf.* **allovital.**

Allotype, n. (Gk.: *typos,* impression, model). Genetically controlled polymorphic variant of plasma proteins having immunologic properties. *adj.* **allotypic. n. allotypism.**

Allovital, adj. (L.: *vitalis,* living). *syn.* **homovital; homocellular.** Graft obtained from individual of same species, and the normal metabolic function of the cells of which is maintained after transfer. *n.* **allovitalism; allovitality.** *cf.* **allostatic.**

Amboceptor, n. (L.: *ambo,* both; *capere,* to take). Substance in the blood and lymph which functions as one of the active components in cytolysis, the other component being **complement** (q.v.). It connects complement to the cell by intercalating affinity linkages known as **complementophil** and **cytophil** groups respectively.

Amboceptorgen, n. Antigen giving rise to amboceptor.

Ana-, pref. (Gk.: *ana,* backward, again).

Anamnesis, n. (Gk.: *mnasthai,* to remember). See under **reaction.** *adj.* **anamnestic.**

Anaphylaxis, n. (Gk.: *phylaxis,* protection). Unusual or exaggerated reaction from sensitization to foreign protein or other material. Intravenous injection causes **systemic anaphylaxis,** whereas intracutaneous injection causes **local anaphylaxis.** In **active anaphylaxis** an initial or **sensitizing dose** of antigen elicits antibody production. A second or **shocking dose** results in an antigen-antibody combination which triggers the release of pharmacologically active substances in the body. **Passive anaphylaxis** is produced by injecting the blood of a sensitized animal. *adj.* **anaphylactic.**

Anaphylactoid, adj. (Gk.: *eidos,* form). Anaphylactic-like, anaphylactic-resembling.

Anaplasty, n. Reconstructive, restorative, or cosmetic surgery.

Anergy, n. (Gk.: *an,* negative, nil). Absence of a hypersensitivity reaction such as would be expected in other similarly sensitized individuals. *adj.* **anergic.**

Antibody, n. (Gk.: *anti,* against). Substance formed in the blood to counter a sensitizing agent **(antigen),** introduced parenterally into the organism. Antibodies belong to the class of serum proteins known as immunoglobulins. Small regions on the antibody surface, **antibody-combining sites,** are complementary to chemical groupings **(determinant groups)** on antigens.

An **autoantibody** reacts with antigenic constituents of the subject's own tissues. **Isoantibody** reacts with those of an individual of identical genotype, **synantibody** with those of an individual of very similar but non-identical genotype (i.e., a close blood-relative), **alloantibody** with those of the same species but dissimilar genotype, and a **xenoantibody** with those of foreign species. An **isoantibody** is not the same as an **isophil antibody** (q.v.). Skin-sensitizing antibody in human atopic subjects is known as **atopic** (*syn.* **reaginic) antibody.** The agent which mediates immunologic **enhancement** (q.v.) is called **antigraft antibody.** A **heterophil antibody** is elicited by a distinctive type of interspecies-specific antigen known as **heterophil antigen** (q.v. under **antigen**).

Antigen, n. (Gk.: *gignesthai,* origin, evolution, development). Protein or polysaccharide complex, either free or incorporated in cells, which when it enters the body either gives rise to the development of a specific substance **(antibody)** in the tissues or body fluids tending to inactivate or neutralize it, or provokes some sort of distinctive tissue reactivity. **Antigenic determinants** (*syn.* **determinant groups**) are chemical groupings on the surface of an antigen which link with complementary regions on the corresponding antibody **(antibody-combining sites). Common antigen** is an antigen found in closely related animals. **Intraspecies-specific antigen** occurs exclusively in the members of a single species. **Tissue-specific antigen** occurs solely in a particular tissue. It is not unusual for immunologically similar antigens to be found in corresponding tissues of individuals of disparate species. Tissue-specific antigen may therefore be **interspecies specific.** A special kind of interspecies-specific antigens is the **heterophil** (*syn.* **heterophile; heterogenic; heterogeneic; heterogenetic**) **antigens.** They consist of groups of antigens which occur in cells or body fluids of phylogenetically unrelated animals and microorganisms. They are so closely related immunologically, presumably by virtue of similar or identical haptenes, that they cross-react extensively with corresponding antibodies **(heterophil antibodies)** against any member of that particular heterophil group. **Autoantigen** is a substance in an individual's tissues to which he is immunologically sensitive. **Isoantigen** is an antigen found in individuals of identical genetic constitution. **Synantigen** is in individuals of the same species with very similar but nonidentical genotype (i.e., close blood relatives). **Alloantigen** is in individuals of the same species with dissimilar genotype, and **xenoantigen** is in individuals from foreign species. *adj.* **antigenic.** *n.* **antigenicity.**

Antilymphocyte serum, n. (L.: *lympha,* clear water). *Syn.* **antilymphocyte globulin.** *abbr.* **ALS; ALG.** Antiserum containing antibodies to heterologous lymphocytes. It is employed to deliberately induce lymphopenia as a means of immunosuppression.

Antiserum, n. Serum containing antibodies, which is obtained from animals exposed to antigen(s) of a certain nature.

Antithymocyte serum, n. (Gk.: *thymos,* thyme plant). *Syn.* **Antithymocyte globulin.** *Abbr.* **ATS; ATG.** Antiserum containing antibodies to heterologous thymus cells. It is employed as a means of immunosuppression.

Atopy, n. (Gk.: *a,* out of; *topos,* place). An hereditary predisposition of various individuals to develop immediate-type hypersensitivity on contact with certain antigens **(atopens** or **reagins).** *adj.* **atopic.**

Auto-, pref. (Gk.: *autos,* self).

Autochtonous, adj. *Syn.* for **autogenic.**

Autogenic, adj. *Syn.* **autogeneic; autogenetic; autogenous; autospecific; autologous; autoplastic; autochtonous.** Of tissue derived from or grafted into one and the same individual.

Bio-, pref. (Gk.: *bios,* life). Pertaining to the living. A **biograft** is a graft from a live donor.

Blood group, n. Antigenic property of erythrocytes which can lead to the formation of specific antibodies.

Breeding, v. n. (Angl.-Sax.: *breedan,* to nourish, cherish). To propagate a certain stock of animals. **Inbreeding** is the production of an animal **strain** (q.v.) with one or more distinctive traits which is developed by mating the same parents or near ancestors. **Outbreeding** involves attenuation or extinction of a certain trait by crossing a strain with another of nonidentical ancestry. **Interbreeding** is the mating of dissimilar strains or species. *n.* **breed.** *v.t.* **breed.** *adj. suff.* **-bred.** See **hybrid; species; strain.**

Chimera, n. (Gk.: *Chimaera:* Name of mythical she-monster whose body was composed of parts of a goat, lion, and serpent). Animal whose body contains cells of disparate genetic origin and from foreign species. *adj.* **chimeric.** *n.* **chimerism.** *cf.* **hybrid; mosaic.**

Chromosome, n. (Gk.: *chroma,* color; *soma,* body). Intensely stainable thread- or loop-shaped component of cell nucleus concerned with distribution of genetic material. Chromosomes are linearly arranged groups of **genes** (q.v.). Their number in any species is usually constant. **Autosomes** are the ordinary paired chromosomes. A **monosome** (*syn.* **sex chromosome; accessory chromosome; heterosome; idiochromosome; allochromosome; odd chromosome; special chromosome**) is an unpaired chromosome which, at the time of cell division, passes entirely into one of the daughter cells instead of being divided between the two. It contains the sex-determining factor. Man has 22 pairs of autosomes and 2 monosomes (XX or XY). *adj.* **chromosomal.**

Clone, n. A population of organisms or cells of like hereditary constitution traceable through asexual propagation to a single individual. This ancestral unit multiplies without at any stage interchanging genetic material with any other unit. Its descendants have a common immunologic character. Any descendant which mutates or undergoes an inheritable change becomes a new clone. The term is important in regard to cellular theories of immunity. *adj.* **clonal.**

Compatibility, n. (L.: *cum,* with, together, in conjunction; *pati,* to bear, withstand). State of mutual harmony between organisms or cells existing as a usual or general phenomenon. *adj.* **compatible.** *cf.* **tolerance; immunity.**

Competence, n. (L.: *petere,* to seek). Attribute of certain cells whereby they can interact with **histocompatibility** (q.v.) antigens of a graft to initiate a primary immune response against them. Such responsiveness would include the formation of specific antibody, the ability to participate in delayed-type hypersensitivity reactions, or in graft rejection. Immunologically competent cells are mesenchymal, particularly of the plasma cell and small lymphocyte series, and the interaction causes them to be converted in the regional lymph nodes into large cells which are stainable with pyronine dyes. *adj.* **competent.** *ant.* **incompetence; incompetent.**

Complement, n. (L.: *pleo,* to fill). Accessory substance or cofactor in serum in the presence of which antigen-antibody complexes cause cell injury. Itself inactive, it attaches to cells through the intermediary of **amboceptor** (q.v.), thereby enabling full activity of antibody on the cells.

Cytolysis, n. (Gk.: *cytos,* cell; *lysein,* to loosen, dissolve). Dissolution of cells by antibody (or any other general substance or mechanism). *adj.* **cytolytic.**

Determinant group, n. (L.: *de,* off, away, from; *terminare, limit, bound). Syn.* **antigenic determinants.** Distinctive part of structure of antigen molecule responsible for specific interaction with antibody molecules worked by the same or a similar antigen.

Donee, n. See **recipient.**

Donor, n. (L.: *donare,* to give). Individual from whom a graft is procured.

Ec-, pref. (Gk.: *ec,* away from, out of).

Ectope, n. Structure located congenitally in an abnormal anatomic position. *adj.* **ectopic.** *cf.* **heterotope, orthotope.**

Enhancement, n. (Old Fren.: *enhaucer,* to raise, lift, exalt). Successful establishment of a graft due to abolition of the rejection reaction. This occurs consequent to the presence in the serum of the recipient of specific humoral antibody, the **antigraft antibody.** *adj.* **enhanced.** *v.t.* **enhance.** *v.n.* **enhancing.** *cf.* **promotion.**

Epitope, n. (Gk.: *epi,* upon, to, besides). Specific antigenic determinant site on a molecule. *adj.* **epitopic.** *cf.* **paratope.**

Favored site, n. (L.: *situs,* place, seat, scene, location). *Syn.* **privileged site.** Anatomic region where foreign tissues tend to survive owing to a diminished ability for an immunologic reaction to be incited there.

Forssmann antigen, n. An interspecies-specific or heterophil antigen present in the erythrocytes of many species, including some microorganisms, which is capable of inducing in animals devoid of such antigen the formation of lysin for sheep erythrocytes.

Gene, n. (Gk.: *gen,* to produce). Elementary germinal unit, situated in chromosomes, which carries an hereditarily transmissible character. It is composed of distinctly arranged deoxyribonucleic acid chains. **Histocompatibility genes** (*syn.* **"H" genes**) are special entities whose nature determines the fate of grafts. **Genotype** is the sum of the genes of an organism. *adj.* **genic, geneic, genetic.**

Graft, n. (L.: *graphium,* stylus-shaped auger). *Syn.* **transplant.** A tissue or organ, alive or dead, transferred in the same individual, between individuals of the same species, or between individuals of different species. **Autograft** (*syn.* **autotransplant; autogenic, autologous, autoplastic,** or **autochthonous graft** or **transplant**) is a graft of the subject's own tissues to himself. **Isograft** (*syn.* **isotransplant; isogenic, isologous, isoplastic, isochthonous graft** or **transplant**) is a graft between genetically identical individuals, i.e., members of the same species with identical histocompatibility antigens, such as monozygotic twins, members of the same inbred strain, or members of an hybrid population produced by crossing certain inbred strains. **Syngraft** (*syn.* **syntransplant; syngenic, synlogous, synplastic, synchthonous graft** or **transplant**) is a graft between individuals of the same species which are closely related but not genetically identical, such as dizygotic twins, siblings, parents, and children. **Allograft** (*syn.* **allotransplant; homograft; homologous graft; allogenic homograft; allogenic, allologous, alloplastic, allochthonous graft** or **transplant**) is a graft between genetically disparate individuals of the same species. **Xenograft** (*syn.* **xenotransplant; heterograft; heterologous graft; xenogenic, xenologous, xenoplastic, xenochthonous graft** or **transplant**) is a graft between foreign species. **Biograft** is a graft obtained from a living donor. **Thanatograft** is a graft procured from a cadaver. (*cf.* **allostatic; allovital; xenostatic; xenovital graft**). **Theriograft** is a graft obtained from any animal other than homo sapiens. **Zoograft** is a graft from any member of the animal kingdom; whereas a **phytograft** is derived from the plant kingdom. **Ingraft** (syn. **engraft; implant**) is any material, living or dead, introduced into the body of an organism, whereas an **exgraft** (*syn.* **explant**) is any material, living or dead, withdrawn from it. All of the foregoing terms can be used as transitive verbs, e.g., "to graft tissue," or can be converted to gerunds by attaching the suffix *-ing,* e.g., "the grafting of tissue." The location in which a graft is placed is said to be **heterotopic** or **orthotopic** (q.v.), according to the new relationship with its normal anatomic situation.

Haptene, n. (Gk.: *haptein,* to grasp). Protein-free substance with distinctive chemical configuration which, although it does not by itself elicit the formation of detectable antibody, can nevertheless interact with specific combining groups on an antibody molecule. *adj.* **haptenic.**

Hemotype, n. (Gk.: *haima,* blood). Identity of blood based on genetic composition of the erythrocytes.

Hetero-, pref. (Gk.: *heteros,* different, dissimilar, unlike).

Heterogenic, adj. *Syn. for* **xenogenic** (q.v.).

Heterologous, adj. *Syn.* **heterospecific.** Term used in a very broad sense for tissue derived from or grafted into an animal of a foreign species. The word **xenogenic** is preferable.

Heterophil, adj. Pertaining to antigenic specificity shared between species. See **heterophil antigen** under **antigen.** See also **isophil; Forssmann antigen.**

Heterotope, n. Structure located at an abnormal site or in a region dissimilar from its usual anatomic position. A graft so placed is said to be **heterotopic.** *cf.* **ectotope; orthotope.**

Heterozygosity, n. Occupancy in a chromosome of dissimilar genes. The term broadly embraces **synzygosity** and **allozygosity** (see **locus**). *adj.* **heterozygous.**

Histocompatibility, n. *Syn.* **isohistogenicity.** Broad term indicating acceptance or growth of a graft because of a special tissue genotype relationship between donor and recipient. *adj.* **histocompatible.** The converse, rejection or failure to grow of the graft in the same relationship, is **histoincompatibility.** *adj.* **histoincompatible.** The terms **allohistocompatibility; synhistocompatibility; isohistocompatibility; xenohistocompatibility** (q.v.), and their corresponding antonyms, should be used instead to qualify the particular kind of donor-recipient association.

Histotype, n. *Syn.* **tissue type.** Identity of tissue based on genetic composition. *v.t.* **histotype.** *v.n.* **histotyping.**

Homo-, pref. (Gk.: *homeos,* same, similar, alike).

Homogenic, adj. Broad synonym encompassing **allo-**

genic, syngenic and **isogenic** (q.v.).

Homograft, n. *Syn.* **homeograft; homotransplant; homeotransplant.** Term used in a very general sense without reference to genetic constitution for a graft between animals of same species. The terms **allograft, syngraft,** and **isograft** should be used appropriately to emphasize genotype differences in the same species.

Homologous, adj. *Syn.* **homospecific.** Term used very broadly without regard to genetic constitution for derivation or grafting of tissue in members of the same species. The terms **allogenic, syngenic,** and **isogenic** should be substituted appropriately to denote genotype differences in the same species.

Host, n. (L.: *hospes,* one who receives guests). Organism whose body serves to sustain a graft. Loosely interchangeable with **recipient** (q.v.).

Humoral, adj. (L.: *humere,* moist). Pertaining to body fluids, specifically blood and lymph, and inferring either the vehicle in which a certain substance resides or the agency whereby a certain phenomenon occurs. A self-explanatory term used in a kindred connection is **cellular.**

Hybrid, n. (Gk.: *hubris,* lewdness; L.: *hybrida,* mongrel). Animal whose parents belong to different species. Ordinarily procreation is dependent on a fixed sexual role of one or the other species partners. When it occurs regardless of the sexual identity of the mated species, the offspring is a **reciprocal hybrid** (*syn.* **mutual hybrid**). n. **hybridism.** *v.t.* **hybridize.** *v.n.* **hybridizing.** *n.* **hybridization.**

Hypersensitivity, n. (Gk.: *hyper,* above, beyond, overexcessive; L.: *sentire,* to feel, perceive). *Syn.* **hypersensitiveness.** Abnormally altered or exaggerated susceptibility of the body to contact with a foreign substance which in equal or stronger doses is innocuous to other individuals. *adj.* **hypersensitive.** *v.t.* **hypersensitize.** *v.n.* **hypersensitization.** *cf.* **allergy; anaphylaxis.** See **sensitivity.**

Immunity, n. (L.: *im,* not; *munia,* service, i.e., exemption). Insusceptibility of an individual against one or more specific noxious agents (antigens) to which most members of the species are vulnerable. This state exists by virtue of protective substances (antibodies) in that individual's body fluids or cells which are distinctive in their action of impeding or neutralizing the noxious agents in question. **Cellular immunity** is obtained by activity of the body cells, and **humoral immunity** is produced by the presence of antibodies in the body fluids. **Inherent immunity** is natural inborn immunity, whereas **artificial immunity** is produced by injection. **Congenital immunity** (L.: *con,* together with; *genitus,* begotten) is immunity which an individual possesses at birth. **Familial immunity** is that occurring as a characteristic in certain families. **Species immunity** is immunity manifest against one or more antigens by members of entire species; it is either **interspecies** if shared by two or more species or **intraspecies** if confined to a single species. A more descriptive term for interspecies immunity is **xenoimmunity.** A certain kind of intraspecies immunity, **racial immunity,** occurs in classes of animals having various analogous characteristics owing to a common ancestry. The sundry varieties of intraspecies immunity are qualified as **autoimmunity, synimmunity, isoimmunity** and **alloimmunity,** according to genotype relationship between donor and recipient. **Active immunity** is due to production of antibodies by the organism's own body cells under the stimulus of antigen present in the tissues as a result of either disease or passive introduction into the body. **Natural immunity** is immunity acquired by an individual without effort or purpose on his part; it is usually active immunity. **Passive immunity** is induced in an organism by parenteral injection of antibodies formed in the body of another, actively immunized individual; this immunity is usually transient. **Intrauterine immunity** (*syn.* **placental immunity**) is passive immunity acquired by the fetus through the placenta of an immune mother. **Acquired immunity** is immunity, either active or passive, which the individual obtains after birth. **Specific immunity** is immunity against a singular antigen, whereas **nonspecific immunity** is a general increase in antibody titers resulting from the injection of some nonparticular antigen. **Cross immunity** is immunity elicited by injecting an antigen different from, but belonging to the same group as, the antigen against which immunity is ultimately produced. **Transplantation immunity** is a term applied to **accelerated graft rejection** (q.v.) due to a state of immunity of the recipient by prior exposure to antigens in the graft. **Adoptively acquired immunity** (L.: *adoptare,* to choose, select) is accelerated graft rejection due to prior transfer into the recipient of primed living cells that recognize the donor histocompatibility antigens. *adj.* **immune.** *v.t.* **immunize.** *v.n.* **immunization.**

Immunogen, n. Substance capable of producing immunity by eliciting antibody formation or sensitization. *adj.* **immunogenic.**

Immunoreaction, n. Reaction between antigen and its antibody. *adj.* **immunoreactive.** *v.i.* **immunoreact.**

Immunosuppression, n. (L.: *sup,* under; *pressus,* to press, squeeze). Restraint or retardation of **graft rejection** (q.v.) by chemical or mechanical means which alter the immune properties of either donor, graft, or recipient. *adj.* **immunosuppressive.** *v.t.* **immunosuppress.** *cf.* **inertia; paralysis; tolerance.**

Inertia, n. (L.: *iners,* idle). State of inactivity or inability to react to ordinary immunologic provocations, which is peculiar to an organism or species. *cf.* **paralysis; tolerance.**

Inter-, pref. (L.: *inter,* among, between).

Intra-, pref. (L.: *intra,* within, inside).

Isophil, adj. (Gk.: *philos,* loving). Designation used traditionally in hematology. The prefix **ISO-** is employed here in a sense different from what it is in transplantation, as indicated by the following definitions: **Isoantigens** (*syn.* **isophil antigens**) are a class of antigens present in some, but not all, members of a species and are inherited according to Mendelian genetics. The most important examples of isoantigens are the blood group ones. **Isoantibody** (*syn.* **isophil antibody**) reacts with specific antigen present in the tissues or fluids of another member of the same species but not in the animal itself. Thus, antibody formed consequent to immunization with erythrocytes reacts with constituents of the erythrocytes which are peculiar to those cells used and does not cross-react with antigens in the red blood corpuscles of other species. See **Forssmann antigen.**

Iso-, pref. (Gk.: *isos,* identical or exactly equal to).

Isogenic, adj. *Syn.* **isogeneic; isogenetic; isospecific; isologous; isoplastic; isochthonous.** Regarding tissue derived from or grafted into genetically identical individuals. The term is therefore automatically restrictive for just a single species and only to **monozygotic twins** (q.v.) and to inbred strains within it.

Isohistocompatibility, n. Acceptance or growth of a graft between genetically identical twins. *adj.* **isohistocompatible.** *ant.* **isohistoincompatibility; isohistoincompatible.**

Isologous, adj. See **isogenic.**

Isozygosity, n. Occupancy in a chromosome of identical genes. *adj.* **isozygous.**

Locus, n. (L.: *locus,* place, location). Distinctive zone which a gene occupies in a chromosome. *plur.* **loci.** When corresponding loci carry identical genes **isozygosity** (q.v.) is said to exist. **Synzygosity** (q.v.) pertains to similar but nonidentical genes, and **allozygosity** (q.v.) to totally dissimilar genes.

Memory, n. (L.: *memor,* mindful). Capacity of an organism to produce substantially greater amounts of antibody following a second injection of antigen than elicited by an earlier dose of the same antigen. See under **reaction.**

Mosaic, n. (Gk.: *mouseios,* of the Muses, artistic). Individual composed of cells of different genotypes but from the same species. This can come about either through somatic mutation or by grafting cells between individuals of very close genetic constitution, such as **dizygotic twins** (q.v.).

Ontogeny, n. (Gk.: *onta,* existing). Evolution or ancestral history of an organism. *adj.* **ontogenic.** *cf.* **phylogeny.**

Ortho-, pref. (Gk.: *orthos,* correct, straight).

Orthotope, n. Structure situated in its normal anatomic position. A graft so placed is said to be **orthotopic.** *cf.* **ectope; heterotope.**

Parabiosis, n. (Gk.: *para,* beside, adjoining, next to). The surgical union of two or more organisms, each of which is known as a **parabion.** *adj.* **parabiotic.** *v.t.* **parabiose.**

Paralysis, n. Immunologic paralysis is a state of induced specific unresponsiveness to a given antigen in an adult individual. It results from prior administration of the same antigen in an amount greatly exceeding that ordinarily required to elicit an immunologic response. The normal capacity of the organism to respond to other unrelated antigens is retained. *adj.* **paralyzed.** *v.t.* **paralyze.** *v.n.* **paralyzing.** *cf.* **inertia; tolerance.**

Paratope, n. Site or area on antibody molecule complementary to the **epitope** (q.v.). *adj.* **paratopic.**

Phenomenon, n. See **reaction.**

Phylogeny, n. (Gk.: *phylon,* tribe). Evolution or ancestral history of a class of animals (or plants). *adj.* **phylogeny.** *cf.* **ontogeny.**

Phyto-, pre. (Gk.: *phyton,* plant).

Priming, n. Single previous exposure or **sensitization** (q.v.) to an antigen. *adj.* **primed.** *v.t.* **prime.**

Progeny, n. (L.: *pro,* forth, forward, onward). Offspring, issue, children. **Backcross progeny** result from the mating of an offspring with one of the original parents, or **progenitors,** of that line.

Promotion, n. (L.: *motio,* movement). Successful establishment of a graft due to abrogation of the rejection reaction. The effect is mediated through the activity of nonhumoral antibodies. *adj.* **promoted.** *v.t.* **promote.** *v.n.* **promoting.** *cf.* **enhancement.**

Prosthesis, n. (Gk.: *pros,* to, *tithenai,* to place, put). An artificial device used as substitute for a part or the whole of an anatomic structure.

Reaction, n. (L.: *re,* to turn back; *actus,* deed, drive). *Syn.* **response** (L.: *spondere,* to reply, promise); **phenomenon** (Gk.: *phainesthai,* to show, appear). Immunologic behavior of an organism in answer to a particular stimulus. A **primary reaction** is the formation of antibody consequent to contact for the first time with specific antigen in sufficient dose. This initial reaction with many antigens is brief, but after the antibody level has declined the animal will exhibit proportionately far greater antibody formation to a later injection of the same antigen given in equal or lesser amount. This subsequent effect is a **secondary reaction** (*syn.* **anamnestic reaction**). Even when no detectable antibody is elicited by the initial dose of antigen, the organism has been **primed** by the latter, and its capacity to elaborate a large quantity of antibody after a second injection of antigen is spoken of as **immunologic memory. Graft reaction** (*syn.* **homograft reaction**) is a general expression of the sequence of events leading to **rejection** (q.v.) of a graft between organisms. **First-set graft reaction** is the rejection within a normal and expected span of time of an initial graft between organisms. **Second-set graft reaction** is accelerated rejection of a second graft of the same or different tissue from the same original donor or from an individual of identical genetic constitutions as the donor. **White graft reaction** is a second-set reaction occurring so swiftly that the grafted tissue has not even developed a blood supply when rejected. **Hyperacute reaction** is accelerated rejection of a primary graft, presumably due to attack on the graft antigens of unsuspected, preformed antibodies in the recipient's circulation. **The graft-versus-host reaction** (*syn.* **GVH reaction**) is a usually fatal syndrome in a recipient resulting from his inability to reject a graft of competent adult lymphoid cells. The graft is not destroyed because it lacks the histocompatibility antigens present in the cells of the recipient. In closely related genotypes the reaction is subclinical, whereas with widely divergent ones there results severe lymphoid atrophy throughout the body and hemolytic anemia. In man a variant of the reaction is a sequel to bone-marrow grafting. In lower animals, particularly mice, the syndrome takes the form of a marked **wasting disease,** with diarrhea, stunting of growth, skin ulcers, loss of hair, and degeneration of lymphoid tissue. This condition is called **runt disease** in growing mice. It is misnamed **homologous disease** (*syn.* **allogenic disease; allogenic reaction**) in adult mice which have been exposed to lethal irradiation before transfusion with allogenic lymphoid cells. **Direct reaction** is a local, cutaneous, sort of **GVH** reaction provoked by intradermal injection of living cells or acellular antigenic matter into a previously grafted individual; it is of an accelerated nature due to swift mobilization of sensitized cells in the recipient. **Transfer reaction** is another kind of cutaneous **GVH** reaction, but it is delayed in manifesting itself. It follows the intradermal administration into a donor of cells from lymph nodes regional to a graft; the reaction which occurs at the injection site is due to the effect of the sensitized cells on local skin antigens. **Arthus reaction** is an anaphylactic phenomenon produced by repetitive injections of otherwise innocuous doses of antigen; eventually severe tissue damage ensues from the formation and deposition of antigen-antibody aggregates in tissues. **Shwartzman reaction** is an immediate-type allergic response, mediated by humoral antibodies, and causing vascular thrombosis, fibrin deposition, and tissue necrosis. **Serum sickness reaction** is a systemic allergy to the administration of a large amount of serum or purified foreign protein; its appearance coincides with, and is caused by, the interaction of newly formed antibody with excess antigen circulating in the blood and tissue fluids. *adj.* **reactive.** *v.t.* **react.** *n.* **reactivity.** See **allergy; anaphylaxis; rejection.**

Recipient, n. (L.: *capere*, to take). *Syn.* **host; donee.** The individual who receives a graft. *cf.* **donor.**

Rejection, n. (L.: *iactare*, throw, fling). Immunologic process whereby graft is not accepted or is unable to thrive in recipient's body. *adj.* **rejected.** *v.t.* **reject.** *v.n.* **rejecting.**

Resistance, n. (L.: *sistere*, to stand). The organism's general ability to oppose potentially harmful forces. The term comprises **immunity** (q.v.).

Response, n. See **reaction.**

Sensitivity, n. (L.: *sentire*, to sense, perceive). Capacity for responding to immunologic stimulation. *adj.* **sensitive.** *ant.* **insensitivity; insensitive.** See **inertia; paralysis.**

Sensitization, n. State of susceptibility to immunologic attack by prior exposure of a sensitive organism to antigen(s). *adj.* **sensitized.** *v.t.* **sensitize.** *cf.* **prime.**

Serum, n. See **antiserum.**

Serum sickness, n. See **serum sickness reaction** under **reaction.**

Species, n. (L.: *species*, a sort or kind). A population of organisms with a unique identifying name, the same physical appearance, and shared common morphologic characteristics. They actually or potentially procreate among their kind, thereby continuing these attributes. They are less apt to succeed in fertile intermating with other groups of animals; if they do, certain traits from each parent group will be noticeable in the offspring, or **hybrid** (q.v.).

Strain, n. (Angl.-Sax.: *streon*, product, lineage, progeny). Variety of organisms within a species distinguished from the rest by one or more distinctive qualities. The latter are usually made more conspicuous and are perpetuated by **inbreeding** (q.v.).

Susceptibility, n. (L.: *susceptibilis*, ready to receive). Liability or vulnerability to stimuli, antigenic, or otherwise. Term includes **sensitivity** (q.v.). *adj.* **susceptible.** *ant.* **insusceptibility; insusceptible.**

Syn-, pre. (Gk.: *syn*, with, along with, together, together with, at the same time, concurrent, associated, alike).

Syngenic, adj. *Syn.* **syngeneic; syngenetic; synlogous; synplastic; synchtonous.** Regarding tissue derived from or grafted into other members of the same species with very similar, but not identical, genetic constitution. The term is applicable to close blood relatives, such as **dizygotic twins** (q.v.), siblings, children, and parents.

Syngenesiograft, n. Obsolete term for graft between blood-related individuals. Preferred term is **syngraft.**

Synlogous, adj. See **syngenic.**

Thanato-, pref. (Gk.: *thanatos*, death). Pertaining to the dead. A **thanatograft** or **thanatogenic** tissue is obtained from a cadaver.

Therio-, pref. (Gk.: *therion*, beast). Pertaining to lower animal species. A theriograft or theriogenic tissue is obtained from an animal other than H. sapiens.

Tolerance, n. (L.: *tolerantia*, endurance). Immunologic tolerance (*syn.* **actively acquired specific immunologic tolerance**) is a state of unresponsiveness in adult life to an antigen. It results from a specific central inhibition of the faculty of immunologic response and is produced by exposure of the individual to relatively large amounts of the antigen during embryonal or early postnatal life. Immunologic response to other antigens is retained. *adj.* **tolerant.** *cf.* **paralysis; immunity.**

Transplant, n. or v.t. See **graft.**

Transplantation, n. (L.: *trans*, across, over; *planta*, plant, shoot). The field of scientific inquiry and clinical endeavor dealing with all aspects of the transfer of tissues or organs in the same individual, between individuals of the same species, or between individuals of different species. The term is also used loosely to signify the act of grafting tissues or organs.

Twin, n. (Angl.-Sax.: *twa*, two; *twi*, double). One of two individuals born simultaneously from the same mother. **Monozygotic twins** (*syn.* **identical, enzygotic, monoovular, monochorionic, or uniovular twins**) develop from a single zygote, or fertilized ovum. They are genetically identical. **Dizygotic twins** (*syn.* **fraternal, dichorionic, dichorial, heteroovular, binovular, or heterologous twins**) develop from two separate zygotes, or ova fertilized concurrently.

Type, n. Genetic constitution of a tissue.

Type, v.t. Process of determining genetic constitution of a tissue. *v.n.* **typing.**

Wasting disease, or **syndrome,** n. Pathologic state after lethal irradiation and bone-marrow transfer. See **graft-versus-host reaction** under **reaction.**

Xeno-, pref. (Gk.: *xenos*, foreign, alien, strange).

Xenogenic, adj. *Syn.* **xenogeneic; xenogenetic; xenogenous; xenospecific; xenologous; xenoplastic; xenochtonous; heterogenic; heterologous,** etc. Of tissue derived from or grafted into a member of another species.

Xenohistocompatibility, n. Acceptance of growth of a graft between foreign species. *adj.* **xenohistocompatible.** *ant.* **xenohistoincompatibility; xenohistoincompatible.**

Xenostatic, adj. (*Syn.* **heterostatic; heterostructural**). Describing a graft, deprived of viability during processing, from an individual of a foreign species. *n.* **xenostatism.** *cf.* **allostatic; xenovital.**

Xenovital, adj. (*Syn.* **heterovital; heterostructural**). Describing a graft obtained from an individual of a foreign species and the normal metabolic function of the cells of which is maintained after transfer. *n.* **xenovitalism; xenovitality.** *cf.* **allovital; xenostatic.**

Zoo-, prf. (Gk.: *zoion,* animal). Pertaining to animals in general or to members of the animal kingdom.

Zoogenic, adj. Of animal origin. Thus **zoogenic tissue** or a **zoograft** broadly describes tissue transferred between members of the animal kingdom, irrespective of species differences. The term was formerly applied to a graft from a lower animal to man. *cf.* **phytograft.**

Zygote, n. (Gk.: *zygon,* yoke). Fertilized egg cell from which the new individual develops.

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Emergency Room Crisis and Challenge

Technic for self study and change*

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Available, accessible, comprehensive, continuous, high-quality, low-cost, and personalized medical care captures the essence of what the public expects of the health-care delivery system. It is evident that the present American medical system is incapable of satisfying all of these objectives. Furthermore, for effective change to come about, it is necessary to redefine these broad objectives of health care into operational criteria and goals for the entire ambulatory health-care system as well as for the individual components of this system. A simple evaluation technic is described which can be used by physicians, hospital administrators, and health planners to improve the delivery of health care in emergency and outpatient departments.

Methods

This report is about the emergency department of the F. F. Thompson Memorial Hospital in Canandaigua, New York; however, the study technics can be easily applied to understand operational care patterns in other contemporary emergency departments. Canandaigua is located on Lake Canandiagua, 25 miles south of Rochester, New York. The resident population of Canandaigua was 10,356 in the preliminary results of the 1970 census. However, during the summer months, there is a great influx of summer residents to the lake area. The 92 acute-care-bed F. F. Thompson Memorial Hospital services the multi-county area around the city of Canandaigua.

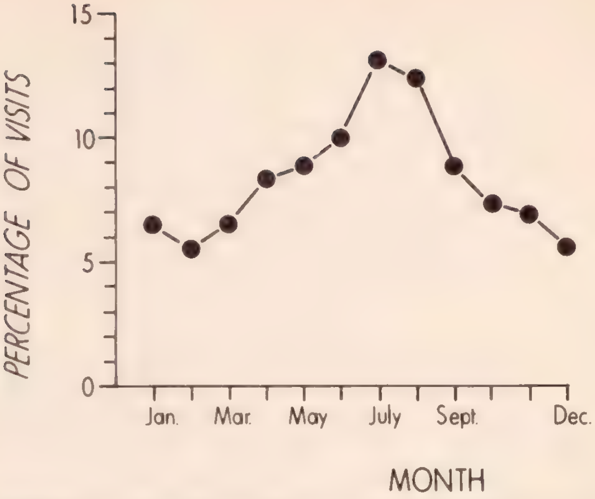

FIGURE 1. Monthly utilization of emergency department.

This report contains abridged results of a case-record study of a sample of 489 patient visits to the emergency department during the period from July 1, 1969, through June 30, 1970. The total number of visits to the emergency department during this period was 5,205; the sample of 489 represents approximately 9.4 per cent of the total number of visits. The sampled visits were selected systematically from the emergency department log. Every tenth visit was originally selected. The actual sample size of 489 resulted from excluding some cases from the sample due to incomplete information on the record or log; 520 were in the original sample.

Frequency counts were made of items of interest. For each visit one of the authors, a physician, made a classification judgment regarding the feasibility of rendering care in innovative ways under consideration by the community, based on data in the record.

Results

In scheduling personnel for the emergency department, a knowledge of the rate of visits per month, per day, and per hour is essential. Figure 1 provides data relevant to the monthly utilization rate of the emergency department. The pat-

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TABLE I. Visits by day of week

Day of Week	Percentage of Total Case Visits
Monday	13.56
Tuesday	12.12
Wednesday	12.53
Thursday	13.96
Friday	12.32
Saturday	16.01
Sunday	19.50

tern of monthly demand, peaking in the summer, is to be expected from the results of other studies.[1,2]

The lowest demand month is December, with 5.5 per cent of the case visits; the highest demand month is August, with 12.3 per cent. It is interesting to hypothesize various reasons for the seasonal variations in emergency-department utilization. In Canandaigua, the peak summer load might be attributed to the influx of summer residents.

Day of week. Table I presents the distribution of visits by day of the week; these are averages over the year. The weekend shows the heaviest patient load, perhaps because alternate facilities are not available on Saturday and Sunday and perhaps because the accident rate varies directly with amount of leisure time.

Hour of day. Information regarding hourly utilization of the emergency department is shown in Figure 2 and Table II. Table II indicates the distribution by actual hour of the day, while Figure 2 depicts utilization by nurses' shift. As in the case of the daily rates, the hourly rates are aggregates over the entire year. It should be noted that these are averages and that random variation in the system could, in any one day, cause a very different kind of distribution. The averages, nevertheless, do provide an estimate of the order of magnitude of the utilization rates. It should be noted that the period from 7:00 P.M. to 9:00 P.M. has the highest rate of utilization, a time when most physicians' offices are closed.

Utilization data by month, day, and hour are easily collected, even in a hospital without automated data processing, such as the F. F. Thompson Hospital. Information regarding these utilization rates are obviously of great importance for staffing.

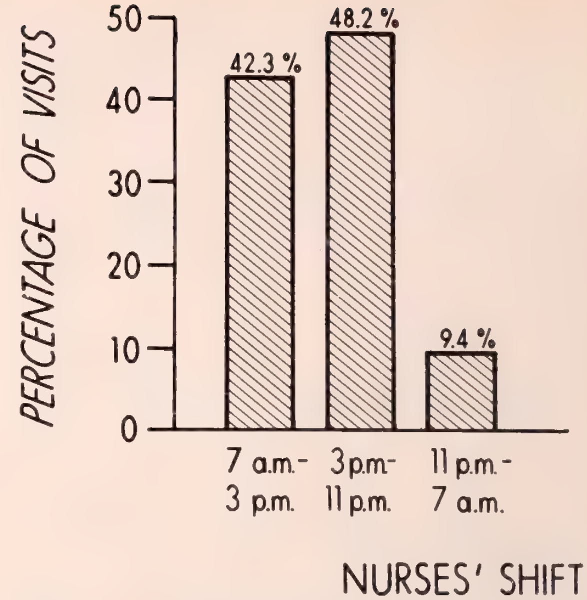

FIGURE 2. Hourly utilization of emergency department.

TABLE II. Visits by hour of day

Hours (A.M.)	Percentage of Total Visits	Hours (P.M.)	Percentage of Total Visits
12:00 to 1:00	1.85	12:00 to 1:00	4.70
1:00 to 2:00	1.65	1:00 to 2:00	5.52
2:00 to 3:00	1.44	2:00 to 3:00	7.36
3:00 to 4:00	0.41	3:00 to 4:00	6.34
4:00 to 5:00	0.61	4:00 to 5:00	7.36
5:00 to 6:00	0.41	5:00 to 6:00	5.11
6:00 to 7:00	0.61	6:00 to 7:00	5.52
7:00 to 8:00	1.84	7:00 to 8:00	7.77
8:00 to 9:00	4.29	8:00 to 9:00	8.38
9:00 to 10:00	6.34	9:00 to 10:00	5.52
10:00 to 11:00	6.34	10:00 to 11:00	2.25
11:00 to 12:00	5.93	11:00 to 12:00	2.45

Patient problems. The patients' problems were classified in the following manner: poisoning; "dead on arrival"; fracture; minor or major burns, abrasions, contusions and cuts; minor or major respiratory, dermatologic, psychiatric problems; or "other," as shown in Table III. Other studies classify patient problems by temporal urgency or diagnosis.[3] Data in the record are often insufficient for formulation of diagnoses; also, distribution by diagnoses or temporal urgency does not provide insight into the reorganization of manpower, equipment, and facility utilization. Records should be classified by attributes which illustrate medically, politically, and economically feasible strategies for change.

Poisoning and "dead on arrival" were infrequent occurrences; fractures occurred in 5.3 per cent of the cases. Burns, abrasions, contusions, and cuts comprised 49 per cent of the problems. If the problem—based on the data from the hospital log and emergency data—as judged by a physician could be cared for by a specially trained nurse or corpsman, it was considered "minor." It was assumed that the nurse or corpsman could suture minor cuts. If skin flaps, amputations, subcutaneous sutures, or contusions of body structures were involved, the problem was

TABLE III. Visits by diagnostic class

Diagonostic Classification	Percentage of Visits
Poison	0.61
Dead on arrival	0.20
Fracture	5.32
Minor burns, abrasions, contusions and cuts	36.40
Major burns, abrasions, contusions and cuts	12.47
Minor respiratory problems	4.50
Major respiratory problems	3.89
Minor psychiatric problems	0.41
Major psychiatric problems	0.20
Minor dermatologic problems	2.25
Major dermatologic problems	3.89
Other problems	31.90

categorized as "major." On the basis of physician judgment, 36 per cent of the visits were categorized as minor burns, abrasions, contusions, and cuts which could have been cared for by a nurse or corpsman. Ten per cent of the emergency visits were admitted to the hospital, which gives an approximate idea of the "true" emergency nature of these cases as well as their relative proportion of the total number of patient visits to the emergency department. Such potentially life-saving procedures as defibrillation and respiratory assistance were not employed in the 489 patients studied.

Respiratory problems were categorized in a manner similar to burns, abrasions, contusions, and cuts. "Minor" respiratory problems were those that could be cared for by a specially trained nurse or corpsman. Usually, the problem was an infection in the upper respiratory tract. "Major" respiratory problems included asthma and pneumonia; of all classifications 4.5 per cent were "minor" respiratory problems and 3.8 per cent were "major" respiratory problems.

"Minor" dermatologic problems, such as bee stings and poison ivy, were generally treated with support and nonprescription medications. It was judged by the same physician that a nurse or corpsman could render care to minor dermatologic problems. If prescription medications and differential diagnosis were involved, the dermatologic problem was classified as "major." Many of the major dermatologic problems involved the excision of a cutaneous lesion.

Comment

The roles of the various professional and allied health personnel need to be examined very carefully in all questions that are raised in this report with respect to the true emergency situation; specially trained corpsmen might be the future emergency technician, available both in the field and in the emergency department.[4,5] Currently, however, educational programs, legal foundations, and qualifications for these newer forms of manpower are insufficiently clarified for easy implementation in a community like Canandaigua.

More consideration needs to be given to the role of the hospital nurse in the emergency department setting. This should include an evaluation of nurses' training and experience related to the spectrum of cases that could be expected in the emergency department, such as care of burns, abrasions, contusions, and cuts. Specialized training might be desirable to permit the nurse or corpsman to perform emergency procedures traditionally performed by a physician.

The true emergency is relatively infrequent in this study. Emergencies of a minor nature occur in relatively large numbers. The total minor problems in this study in all diagnostic categories came to 44 per cent. There is no reason to conclude that the volume of services rendered by the emergency department can be reduced by a more judicious choice of alternative services by the patient. The only alternative currently available is private practices, and most are not accessible twenty-four hours a day. Many cases are probably patient-perceived emergencies which medical judges would classify as nonemergencies.[6]

Conclusion

The problem at hand appears to be one of accepting, and gearing up to meet, this minor-problem demand without sacrificing quality of care, physician convenience, and consumer dollars, under the assumption that the demand will increase in the future. This demand can be met nationally by private, voluntary, or government auspices in a variety of settings, either affiliated with the hospitals or not, and with varying patterns of manpower roles.

In Canandaigua, the nonemergency-department demand is not sufficient to warrant the establishment of competing facilities, for example a free-standing convenience clinic. Economies of scale warrant continued use of the hospital's facilities as both a true emergency center and as a convenience clinic. This suggests the development of a bipartite organization to include an office-examination room adjoining the more elaborate surgical-medical emergency room. The hospital setting does not necessarily imply that the service should be organized or operated under voluntary asupices. It might be possible for physicians to organize and sponsor the endeavor while renting the facilities from the hospital.

The most important issue is that of manpower roles. The evidence of the growing use of allied health personnel (Medex, Duke University's physicians' associates, and so on) suggests that there may be a role for nurse practitioners or other allied health personnel in the management of the bipartite emergency department.[7,8] Since the greatest number of cases is in the "minor" burns, abrasions, contusions, and cuts classification, some thought should be given to the use of paramedical personnel to handle these cases without the direct presence of the physician.

It is important to realize that both utilization rates and service-time estimates are fundamental for manpower planning. Such statistics should be collected throughout the year, either as a continuous process or as a sampling procedure. Actual counts may be summarized each day or taken retrospectively from the log as a concentrated study. Such counts provide insight into the nature of the cyclic or seasonal variation in the data that are not apparent in sampling averages or proportions.

Utilization patterns as well as classification judgments of records regarding alternate ways of delivering health care, such as percentile estimates of "minor" visits, can give health providers a basis for deciding new manpower potentials as well as new or altered services arrangements to meet the public's increasing expectations of ambulatory health care.

Data must be "emergency department" specific. The situation in the Canandaigua emergency department is different from the situation in an urban or inner-city emergency department, where, for example, emergency-department utilization may be increasing at a rate of 10 per cent per year. Data such as those collected in this study can be stimuli for communication and meaningful reorganization of the health-care delivery system. Quantitative approaches such as those employed in this study can provide valuable insights into emergency-department utilization and can be executed by physicians and hospital staff with modest expenditure of time and money in contemporary American communities.

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Therapeutic Club for Formerly Hospitalized Psychiatric Patients

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After-care of severely ill psychiatric patients has presented an ongoing problem for most psychiatric inpatient services. Whereas individual psychotherapy, group psychotherapy, and psychopharmacologic therapy are provided, little has been done to provide a therapeutic milieu for most discharged patients.

At Kings County Psychiatric Hospital in Brooklyn, New York, an expatient club has been established. The function of the club is to provide a structure for the continuation of relationships formed in the inpatient therapeutic community.[1]

The impetus for the creation of this club came from the observation that therapeutic gains attained from hospitalization, even if individual or group treatment were continued, were often insufficient to maintain a number of chronically ill patients out of the hospital. Those patients with severe ego deficits in the area of object relations tended to return to withdrawal and isolation after discharge, despite the fact that while in the hospital they were able to interact with other patients and gain gratification from these relationships.

History and purpose

The idea of expatient clubs developed in England during the 1940s as an outgrowth of special-interest clubs for inpatients of public hospitals. In the United States clubs formed by expatients without professional assistance first appeared during the early 1950s in California, not as a continuation of a specific inpatient experience but with membership open to any formerly hospitalized patient in the surrounding area.[2]

Olshansky[3] notes that in England clubs are considered by mental-health authorities to be of therapeutic value, while in the United States there have been many recruiting and organizational problems impeding their success. Problems include a lack of professional involvement in the clubs and the establishment of the clubs long distances from members' homes. Those patients most in need of membership were not members; it was the more socially adequate person who joined. Some persons who could have profited from membership were reluctant to have anything to do with reminders of their having been psychiatric patients. Where clubs had "gotten off the ground," the most competent members tended to leave the club, and a hard core of sick persons who repelled others from joining remained. In addition, the goal that all members should be directed toward leaving the club was questioned, since for many persons adequate and satisfying social interaction in "normal" society is not a realistic goal.[3]

Very little has been written to describe or evaluate the function of expatient clubs. Hence, the structuring and evaluation of the club described in this report has been largely without guidelines. The rationale for it was clear: there is a major need in the life of a patient with problems in object relationships for regulated social interaction. In a hospital community, a patient often experiences satisfying interaction with others for the first time in a permissive atmosphere where a broader range of behavior is tolerated. When a patient is discharged, he often returns to his prehospital pattern of isolation and withdrawal because of his feelings of difference from others, fear of rejection, and fear of his own anger when it occurs. An attempt was made to form a club which would provide the needed structure for continued interaction among former patients while avoiding the pitfalls mentioned by Olshansky.[3]

Development and function

The staff member involved with the club's operation met with 4 expatients who had been hospitalized at different times and knew large numbers of expatients. This group contacted the total expatient population from the therapeutic community who could be reached. Of a total of 70 people contacted and asked to come to a meeting to discuss the idea, 25 came. Another 15 expressed interest but for practical reasons were unable to attend. One year later, 10 of the original 25 were still regular members. The group decided to meet weekly in one of the conference rooms on the ward. The meeting was to be conducted on a social conversational basis, and part of the time was to be used to plan weekend outings. A rotating presidency has handled administrative work with the help of staff members.

Before a patient is discharged, the club is discussed with him in community meetings, by his individual psychotherapist, and by the social

TABLE I. Status of patients discharged from Kings County Psychiatric Hospital during first six months after formation of club

Patients		Number
Used club		24
Regular members	13	
Transitional members	11	
Did not use club		33
Adequate social relations	12	
Moved from hospital area	2	
Needed to join, did not	15	
Left hospital against medical advice	4	
TOTAL		57

worker who attends the club meetings. Since membership is voluntary, no further effort is made to persuade a person who does not come to the meetings. An individual therapist sometimes makes an effort to involve a patient in the club. If a person who has been attending drops out, another member calls him. Thus the club operates as an extension of the inpatient experience. Therefore, there is minimal anxiety about being in a new situation or becoming a member of an unknown group. This makes it easier for people to join, especially those for whom social contact in a new situation is extremely painful and anxiety-provoking. Since meetings are held on the ward, patients are informally introduced to club members before their own discharge.

A staff member's presence at meetings helps to provide an organizing function for the meeting as well as a knowledgeable tie to the staff and other therapeutic facilities in the hospital. The staff member does not, however, participate in other club functions off the ward.

Composition of membership

The ages of club members range from seventeen to fifty-eight years. There are approximately as many men as women, and the black-white distribution reflects the inpatient therapeutic community from which members are drawn.

During the first six months after the club began to meet, 57 patients were discharged from the ward (Table I). Of these, 13 became regular members of the club, while others used it as a way of weaning themselves from the hospital or as a transition to social functioning in the outside community. Of those who did not use club membership, 12 had adequate social relationships to which they could return immediately after hospitalization. Six others could have profited from membership but were unable to attend for a variety of reasons.

The remaining 15 could have profited from club membership but never joined. This last group is of great interest. These were the patients whom the therapeutic community inpatient experience helped the least. They (1) had effectively avoided all involvement with others while in the hospital, (2) had manifested severe anxiety about dependence on the hospital, or (3) had led lives of almost total isolation which, although minimized during hospitalization, did resume after discharge.

TABLE II. Characteristics of patients who did and did not join club*

Characteristic	Number Joined	Number Did Not Join
Sex		
Male	13	11
Female	11	16
Race		
Black	8	7
White	16	20
Marital status		
Single	13	15
Married (includes divorced, widowed, and so on)	11	12
Diagnosis		
Paranoid schizophrenia	12	16
Other schizophrenia	3	5
Psychotic depression	9	4
Other (borderline, character disorder, and so on)	0	2

* Does not include 4 patients who left the hospital against medical advice and two who left the State.

An examination of the sex, race, and marital status of those who attended the club as compared to those who did not attend the club revealed little difference between these two groups (Table II). There was a tendency for patients with a diagnosis of psychotic depression to use the club more often than those with a schizophrenic diagnosis. However, this was not statistically significant.

Utilization

Most of those who joined the club were far less than socially adept. The majority were chronic schizophrenics with long histories of shallow or nonexistent object relations.

These people have used the club in a variety of ways, as shown in the following cases.

Case 1. A twenty-year-old schizophrenic girl had been discharged from the ward before the club existed. She was depressed and lonely at home and was readmitted. During the end of this second admission, she began to attend club meetings. She came to five or six meetings after being discharged and thus weaned herself from the hospital.

Case 2. A thirty-two-year-old chronic schizophrenic had many hospitalizations only to return to a socially isolated and withdrawn life. The club provided a structure for continuation of object relations on a deeper level than he had ever allowed himself in the past and a source of friends who have helped him with reality problems such as moving or looking for an apartment.

Case 3. A fifty-eight-year-old widow had little in the way of family or friends. Her husband had died shortly before her hospitalizations. The club, most of whose members are younger than she, provided people for whom she could be useful, helpful, and maternal. This helped to prevent the return of her depression which had led her to suicide attempts in the past.

The emphasis is not on the members' psychiatric problems. The conversations at meetings have ranged from the war in Vietnam to religion to drugs to the job market and to food.

Case 4. At one meeting, a male patient who had formed an identity as a "sick patient," began to talk about "crazy things." In a way that only people who care about him could do without rejecting him, he was told to stop the "crazy stuff"; that at the club he was not a patient but an "ex-patient." Since the patient did have some control over his behavior, he was able to stop when it was not tolerated and to function and speak without having to sound sick.

Comment

The traditional function of expatient clubs in the United States is to provide a setting for the development of social skills which will lead to a person's being able to leave the protection of the club and function socially in the outside community. It is therefore expected that club membership will be a transitional event rather than an on-going experience. Based on this goal, clubs in the United States have not proved successful. As Olshansky[3] points out, there are numerous difficulties if this goal is applied to all club members. For example, as the more socially competent leave the club a hard core of "sick" members repel others from joining. When this was not the case, he found that clubs tended to attract healthier members anyway, and that those who really could have benefited from membership were reluctant to join because of the nature of their psychiatric problems.

Other difficulties found prevalent in the clubs Olshansky[3] studied were (1) the lack of cohesiveness among members whose only tie to each other was their having been patients at various psychiatric hospitals, (2) the reluctance of many to join the club because of the stigma attached to hospitalization, (3) the negative effect of lack of professional involvement in the club, and (4) the logistic problem of meetings being held distances from people's homes.

In England, where clubs have been successful in meeting the social needs of expatients, these problems do not seem to exist. Nor do they seem to exist for the club under discussion. In this club most members are chronic schizophrenics whose history of ability to form and sustain object relationships is poor. The members have enough in common other than their illnesses to meet weekly on a conversational basis without relating to each other in terms of their disorders. Yet this club is not set up with the primary goal of having members leave it. Rather, it is set up to be used by expatients in a variety of ways based on the need of the particular patient. For some it is a transitional or weaning experience; for others it is an ongoing part of their lives and their main opportunity for social interaction. In determining what seemed to create a successful expatient club in this approach, two factors emerge as crucial: (1) it is an extension of a common inpatient experience for all members, unlike other clubs where members are drawn from different patient populations, and (2) a staff member's involvement provides organizational benefits as well as a link with therapeutic facilities in the hospital and outpatient clinic when needed.

In assessing patients who do not use club membership, it has been found that there is one group whose prehospital level of social functioning could be reached by the time of discharge, and therefore there was no need for club membership. There was another group, the 15 already mentioned, who probably could have been helped by membership but did not join. Most of this group tended to be isolated, unmarried, often paranoid, and unable to function in an unstructured situation. They also did poorly as inpatients in the therapeutic community. The suitability of such patients for a short-term therapeutic community is open to question as well as their suitability for an expatient club. It may be that this type of patient requires a longer inpatient experience as well as more intensive after-care treatment. A half-way house for this kind of patient might provide the needed structure in terms of living quarters, meals, jobs, and social situations. An expatient club can supply only the social situation and assumes that the patient can provide for himself in other ways.

Conclusion

Based on the experience described here, we conclude that a viable expatient club can function in the United States, provided that it is professionally supervised, is an organic outgrowth of an inpatient experience, and its goals are commensurate with the individual's capacity and need to use it.

Bensonhurst Service
South Beach Psychiatric Center
2502 86th Street
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Thomas Jefferson 1743 to 1826

Thoughts on medicine, child care and welfare

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Thomas Jefferson, like many of his contemporaries, was profoundly influenced by the philosophy of the Enlightenment, which asserted that education and enlightenment are needed in matters of health and hygiene, that health and happiness depend on understanding and education, and that a child is not a minature adult but a developing human being with a physical and mental life of his own.[1] Just as Jefferson's knowledge, experience, and wisdom were reflected in his writings and achievements, so was his philosophy and humanitarianism evident in his interest in medicine and his concern with the care and welfare of children.

Jefferson lived in a period when American medicine was beginning to vindicate itself as an independent profession. Medicine was clinical, child hygiene, nonexistent; but scientific experiment and research by physician-scientists had commenced.[2,3] Jefferson exhibited an active interest in medicine and science; watched and studied the improvements and progress made in the sciences; was in contact with the foremost physicians, philosophers, and scientists in America and Europe; and was a member of the American Philosophical Society. He believed, however, that medical science is "the most important of all others," the study of anatomy particularly valuable, and that "no knowledge can be more satisfactory than that of its own frame, its parts, their functions, and actions."[4] In a tour through Lake George and Lake Champlain, he described the beauty of the former and the muddy turbulence of the latter, and then made the epidemiologic note, "There is as much fever and ague . . . and bilious complaints in Lake Champlain as in the swamps of Carolina." In his library were Bell's *Anatomy*, Burton's *Elements of Botany*, Lavoisier's *Conversations in Chemistry*, Blumenbach's *Manuelle d'Histoire Naturelle*, Thomas' *The Modern Practice of Medicine*, Cheselden's *Anatomy of the Human Body*, Wistar's *System of Anatomy*, Hosack's *System of Practical Nosology*, and Ewell's *Medical Companion and Improvements of the Sciences of Medicine.*[4] He also subscribed to the *Medical Repository*, the first American medical journal, founded July 26, 1797.

Eighteenth-century medicine

Jefferson's scientific enthusiasm did not blind him to medicine's deficiencies. The eighteenth century was notable for bleeding, purging, quackery, superstition, and an abundance of medical systems and theories which Robinson[5] thought were "probably due to a lag in experimentation after the remarkable seventeenth." Garrison[6] renounced eighteenth-century medicine as altogether "tedious and platitudinous philosophizing"; whereas King[7] concluded.

> Far from being arid and dull, the period between the giants of the seventeenth and those of the nineteenth century was tremendously vital. Certain trends became firmly established and gave momentum and direction to the nineteenth and twentieth centuries.

Jefferson, long before medical historians propounded their conclusions concerning eighteenth century medicine, noted, "I have lived myself to see the disciples of Hoffman, Boerhaave, Stahl, Cullen, and Brown succeed one another like the shifting figures of a magic lantern . . . ." Evidently, Jefferson had an aversion to medical theories and systems and trusted most "vis medicatrix naturae."[8-10]

The eighteenth century, Garrison[6] claimed, produced ". . . no American literature to speak of until long after the Revolution." The first medical book was a reprint (1708) of Nicolas Culpeper's *Engligh Physician.* Billings[11] stated:

> At the commencement of the Revolutionary War, we had one medical book by an American author (Jones, J.: *Plain, Concise, Practical Remarks on the Treatment of Wounds and Fractures,* published in New York, 1775), 3 reprints, and about 20 pamphlets. But during the last quarter of the eighteenth century 51 books were published.

During the early part of the nineteenth century there appeared the works of Elisha Bartlett, William Beaumont, Daniel Drake, William E. Horner, Philip Syng Physic, Wright Post, Samuel G. Morton, Nathan Smith, James Warren, and Caspar Wistar.[12] Thus, the momentum of early American Medicine and science confirmed Dr. King's ideas regarding the significance of the eighteenth century.

Jefferson knew that medicine in America was not held in high esteem, and stated, "It is not to physic that I object so much, as to physicians," and added that he would rather trust to the uninterfered efforts of nature than to physicians. Nevertheless, he advised his daughter, Mary, who was approaching labor," . . . to have scientific aid in readiness . . . ."[13] Jefferson also wrote: "I want advice. It saves a case from being serious which a little delay renders so."[14] Later, in a letter to Robley Dunglison, M.D., whom he chose as his personal physician, Jefferson wrote, "Time and experience are needed to make a skillful physician, and nature is preferable to an unskilled one. I had therefore made up my mind to trust to her altogether, until your arrival gave me better prospects."[15] Jefferson, the father of the University of Virginia (1819), proposed the addition of a medical school in 1825 when he was eighty years old. He brought Dr. Dunglison, a twenty-seven-year-old London physician, to occupy the chair of anatomy, physiology, materia medica, and the history of medicine.[16]

Child Care

Jefferson's concern with child welfare began early in the colonial revolutionary struggle. He realized the importance of popular education in a democracy and counseled education for all children. When he was thirty-six years old, just three years after he wrote the *Declaration of Independence*, Jefferson placed before the Virginia assembly a plan for public education to provide children of the Commonwealth with elementary instruction to assure useful, responsible citizens. In 1804 he accepted the appointment as president of the school board of Washington, D.C., to supervise schools for poor children. Jefferson recognized that certain factors influence character in children. He, therefore, boldly championed religious freedom for all people and vigorously opposed slavery as "unremitting despotism" and "degrading submission" that "deprived by such circumstances" the manners and morals of children.[17] Jefferson freely opened his library at Monticello to all young people.

In the early part of the eighteenth century, there was little concept or knowledge in America on child care: "The death rate was high . . . and only a very high birthrate could keep up with the mortality and allow the country to grow."[18] It was not until the latter half of the century that some children benefited from availability of hospital care and improved professional standards. Recurrent outbreaks of malaria, yellow fever, cholera, dysentery, influenza, typhoid and typhus, measles, scarlet fever, pertussis, diphtheria, respiratory diseases, and smallpox, continually plagued the colonies and young republic. Therapy for both children and adults was the same: bleeding, purging, home remedies, prayer, fasting, diet, exotic and foul concoctions, and sweating.[17] During the yellow-fever epidemic in Philadelphia in 1793, Benjamin Rush, M.D., treated hundreds of adults and children with near exsanguination and severe purging as John Mitchell, M.D., physician-botanist of Virginia, recommended in an account of yellow fever published in 1743, "Plentiful bleeding is a means found most effectual . . . ."[19]

Jefferson, on the contrary, when he learned of a grandson's indisposition, praised his daughter Martha and expressed approval of her therapeutic restraint and judgement, ". . . but glad you did not physic him. This leaves nature free and unembarrassed in her own tendencies to repair what is wrong." And again, when Martha's daughter Ann was ill, he advised,

> In a case when weakness of the digesting organs enters into the causes of illness, a food of the most easy digestion might give time for getting the better of the other causes, whatever they may be.[14]

He suggested "good breast milk," and beseeched Martha

> . . . Not to destroy the powers of her stomach with medicine. Nature alone can reestablish infant organs, only taking care that her efforts be not thwarted by any imprudencies of diet.[14]

Inoculation was introduced in Boston by Zabdiel Boylston, M.D., and Rev. Cotton Mather in 1721, and vaccination in 1801 by Benjamin Waterhouse, M.D., professor of medicine, Harvard Medical College. When Jefferson was twenty-three years old, he was inoculated by William Shippen, M.D., of Philadelphia. Following the death of his wife in 1782, his three surviving children were also inoculated. He nursed and cared for them, did not allow the administration of calomel, and isolated them to prevent the spread of smallpox and the danger of fatality. Jefferson recognized the importance of universal vaccination. The ravages in death and disfigurement of smallpox profoundly impressed him with the promise of William Jenner's discovery; he actively supported the maligned and badgered Dr. Waterhouse in his earnest and ardent crusade to extinguish the terrible scourge in the United States by inoculating against smallpox, making it a mild disease.[8,20] In 1801 Dr. Waterhouse sent active serum so he could have his family vaccinated. In 1803 Jefferson instructed Capt. Meriwether Lewis to take cowpox matter along for vaccination on his expedition up the Missouri and Columbia Rivers with Clark.[20]

Jefferson regarded whooping cough as the most dangerous of childhood diseases, and believed that "sucking children bear the disease better than those a little past that stage." He advised his granddaughter, Ellen, to "learn to bear it patiently when you consider you can never have it again." To Martha he wrote, "There is no disease I so much dread with children."[14] He also comforted Martha when Francis, one of his youngest grandsons, had fits resembling epilepsy, and assured her, "At his age, there is little doubt that he will outgrow them."[14]

Concern for family health

The tragic loss of loved ones tormented Jefferson almost all his life. Childbearing in the eighteenth century exacted a severe toll on both mother and child; his wife, Martha Wayles, (1748 to 1782), a frail and beautiful woman, bore six children, of whom only three daughters survived, before her painful end after ten years of married life. The youngest of the three, Lucy, aged two years, succumbed soon after to pertussis, which he viewed as "the most horrible of all disorders."[14] His final calamity was the death of Mary, (1778 to 1804), when she was twenty-six years old, and that of one of her two daughters. Only his beloved Martha remained, (1772 to 1836), and she became the mother of 11 children.[4] To Martha he complained that the "morning of my life has been clouded by loss after loss, till I have nothing left but you."[20] Jefferson was a totally dedicated and affectionate father and grandfather; thus, the health of his family and rearing of his grandchildren were of prime importance. This was evident in his extensive correspondence with Martha and the grandchildren despite the burden of a busy public life. He gave advice and comfort in illness; direction and counsel in comportment, dress, use of time, study habits, personal conduct, and appearance.[21] He had a tender feeling for his grandchildren; was gentle, patient, and kind; easily won their confidence; and was sensitive to their feelings in guiding their behavior.[14,21] He sent Martha *A Comparative View of the State and Faculties of Man and Those of the Animal World*, by John Gregory, published in London, 1777, as a source of useful advice on child care for a young mother.[12] Jefferson was doubtless acquainted with the essay on *Preserving and Improving Health in Children* by John Locke, physician-philosopher, published in London, 1690, and the excellent *Management of Children from Birth to Three Years*, by William Cadogan (1711 to 1797), published in London, 1748.

Infant life in the eighteenth century, and long before, was valued by the majority of the population no higher than that of the pet dog or cat today. However, during the latter half of the century, there were signs of growing interest in infant care, expanding knowledge of children's disease, and awakening of public concern.[22–24] During the first half of the nineteenth century, the welfare, growth, and happiness of children were still principally a family matter; helping children was governed more by concepts of humanitarianism than by medical aspects of child health.[12,22] Long before this period Jefferson exhibited deep feeling for mankind both in his thoughts on medicine and the care and welfare of children. This only added luster to his expressed wish that posterity remember him for his struggle for liberty, religious freedom, and education for all Americans.[13]

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Forest Hills, New York 11375

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Necrology

Harry Arthur Altner, M.D., of Rockaway Park, died on October 28 at the age of seventy-one. Dr. Altner graduated in 1925 from McGill University Faculty of Medicine. He was an attending physician in general practice at Peninsula General Hospital and an associate attending general practitioner at St. Joseph's Hospital (Far Rockaway). Dr. Altner was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Herbert Almon Bartholomew, Jr., M.D., of Glens Falls, died on August 27 at the age of sixty-seven. Dr. Bartholomew graduated in 1929 from the University of Vermont College of Medicine. He was an attending surgeon at Glens Falls Hospital. Dr. Bartholomew was a Fellow of the American College of Surgeons and a member of the Glens Falls Academy of Medicine, the Warren County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Phillip Benning Barton, M.D., of Elmira, died on July 14. Dr. Barton graduated in 1927 from McGill University Faculty of Medicine.

Jennie D. Carson, M.D., of Helena, died on November 5 at the age of sixty-six. Dr. Carson graduated in 1943 from Syracuse University School of Medicine. She was an attending obstetrician on the medical staff at Potsdam Hospital. Dr. Carson was a member of the American Academy of General Practice, the St. Lawrence County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander Goldblat, M.D., of New York City, died on November 17 at the age of fifty-six. Dr. Goldblat received his medical degree from Brussels Free University in 1940. He was an assistant attending anesthesiologist at The Mount Sinai Hospital. Dr. Goldblat was a Diplomate of the American Board of Anesthesiology, a Fellow of the American College of Anesthesiologists, and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edgar Willis Hainlen, M.D., of Rochester, died on June 10. Dr. Hainlen graduated in 1924 from McGill University Faculty of Medicine. He was a Fellow of the American College of Chest Physicians and a member of the American Thoracic Society.

Albert Samuel Hotkins, M.D., of Forest Hills, died on November 12 at the age of fifty-five. Dr. Hotkins graduated in 1942 from Middlesex University School of Medicine. He was chief school psychiatrist of the Board of Education's Bureau of Child Guidance and an associate attending child psychiatrist at City Hospital Center at Elmhurst. Dr. Hotkins was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry and Child Psychiatry) and a member of the American Psychiatric Association, the American Academy of Child Psychiatry, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

George P. Josephson, M.D., of Corona and Ridgewood, died on November 10 at the age of sixty-eight. Dr. Josephson received his medical degree from the University of Berlin in 1927. He was a member of the American Academy of General Practice, the International Academy of Proctology, the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

David Kane, M.D., of Forest Hills, died on October 25. Dr. Kane received his medical degree from the University of Bratislava in 1923.

Louis Henry Krombein, M.D., of Derby, died in November, 1971. Dr. Krombein graduated in 1907 from the University of Buffalo School of Medicine.

Charles George Neumann, M.D., of New Rochelle, White Plains, and New York City, died on October 19 at the age of fifty-nine. Dr. Neumann graduated in 1936 from Cornell University College of Medicine. He was an attending surgeon at Bellevue and University Hospitals, an attending plastic surgeon at Mount Vernon Hospital, an attending surgeon and chief of plastic surgery at Grasslands Hospital (Valhalla), and a consulting plastic surgeon at New Rochelle, Phelps Memorial (North Tarrytown) and United (Port Chester) Hospitals. Dr. Neumann was a Diplomate of the American Board of Plastic Surgery, a Fellow of the American College of Surgeons, and a member of the American Society of Plastic and Reconstructive Surgery, the American Association of Plastic Surgeons, the American Physiological Society, the New York Surgical Society, the Westchester Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lee Sinclair Preston, M.D., of Oneida, died on November 5 at the age of eighty-three. Dr. Preston graduated in 1913 from Syracuse University College of Medicine. He was an honorary member of the medical staff at Oneida City Hospital. Dr. Preston was a Fellow of the American College of Angiology, a Fellow of the American College of Cardiology, and a member of the Syracuse Academy of Medicine, the Utica Academy of Medicine, the New York State Society of Internal Medicine, the Madison County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Claude Felicien Reed, M.D., of Rochester, died on September 5, 1969. Dr. Reed graduated in 1953 from Yale University School of Medicine. He was a Diplomate of the American Board of Internal Medicine.

Augustus A. Ruggeri, M.D., formerly of The Bronx, died on October 23. Dr. Ruggeri graduated in 1929 from Louisville Medical College.

Nathaniel H. Sandler, M.D., of Brooklyn, died on July 13 at the age of seventy-eight. Dr. Sandler graduated in 1925 from Eclectic Medical Institute, Cincinnati. He was a member of the Medical Society of the County of Kings, the Medical Society of the State of New York, and the American Medical Association.

Paul Schneider, M.D., of New York City, died on October 26 at the age of seventy-nine. Dr. Schneider received his medical degree from the University of Vienna in 1919. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Paul Weissman, M.D., of Bayside, died on August 22 at the age of fifty-seven. Dr. Weissman graduated in 1942 from Middlesex University School of Medicine. He was a clinical assistant physician at Queens Hospital Center and an attending general practitioner at Deepdale General Hospital. Dr. Weissman was a member of the Medical Society of the County of Queens, the Medical Society of the State of New York, and the American Medical Association.

Elliott L. Weitzman, M.D., of New York City, died on November 11 at the age of forty-nine. Dr. Weitzman graduated in 1946 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was an associate attending psychiatrist at The New York Hospital. Dr. Weitzman was a member of the American Psychiatric Association.

Elmer Wessell, M.D., of Treasure Island, Florida, formerly of Plattsburgh, died on June 3 at the age of sixty-seven. Dr. Wessell graduated in 1929 from Albany Medical College. He had been an attending obstetrician and gynecologist at Champlain Valley Physicians Hospital and Medical Center. Dr. Wessell was a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the American College of Surgeons, and a member of the Clinton County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leon G. Wugmeister, M.D., of Astoria, died on November 10 at the age of seventy-eight. Dr. Wugmeister received his medical degrees from the University of Kiev in 1922 and the University of Padua in 1924. He was a member of the Medical Society of The County of Queens, the Medical Society of the State of New York, and the American Medical Association.

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PHYSICIAN FOR FULL-TIME CAREER POSITION IN REMINGTON Arms Company plant in Ilion, New York. Excellent opportunity. General practice background acceptable. Salary open. Equal Opportunity Employer. Write or call collect: E. Marks, M.D., Medical Director, Remington Arms Company, 939 Barnum Ave., Bridgeport, Connecticut 06602. Tel: (203) 333-1112.

INTERNIST FOR MEDICAL GROUP, SUBURB NEW YORK CITY. Initial contract leading to partnership. Starting salary $30,000 with the possibility of additional income. Include complete curriculum vitae in repiy. Dept. 185, c/o NYSJM.

INTERNIST—UROLOGIST—OPHTHALMOLOGIST, BOARD ELIGIBLE or Certified—wanted for 17-man multispecialty group. Southwestern New York State. City of 25,000 serving trade area of 150,000. Excellent skiing, hunting, fishing and sailing facilities. Early full partnership. Write to Dept. 253, c/o NYSJM.

ANESTHESIOLOGIST, BOARD ELIGIBLE OR CERTIFIED, TO BECOME third in a group of 3 physicians and 3 CRNA's. N.Y. State licensure essential. Salary first year, then partnership. Malpractice insurance paid. All general surgery except open heart. No routine OBS. Income expectations $40,000-$50,000 per annum; one month vacation. Apply: B. F. Brophey, M.D., St. Luke's Hospital, 70 Dubois St., Newburgh, N.Y. 12550.

OPPORTUNITES FOR G.P.'S, MEDICAL SPECIALISTS, AND PSYCHIATRISTS are available. Vacancies exist for clinical physicians with salary to $28,522, medical specialists and psychiatrists with salary to $34,363 depending upon qualifications. Applicants must be licensed or hold ECFMG and LMCC. Gowanda is an accredited psychiatric hospital operated by the N.Y.S. Department of Mental Hygiene, south of Buffalo, N.Y. Benefits include $3^1/_2$ weeks paid leave and 11 paid holidays during the first year of employment. A liberal non-contributory retirement plan is one of the many benefits. Contact: Director, Gowanda State Hospital, Helmuth, N.Y. 14079.

ALLERGIST, BOARD CERTIFIED OR ELIGIBLE, FOR ASSOCIATION IN very large private allergy practice in central New York, with large gross income. Would lead to quick partnership. Outstanding opportunity for right person. Dept. 262, c/o NYSJM.

DYNAMIC INTERNIST FOR DIRECTOR OF MEDICAL SERVICES IN 206-bed, acute, general community hospital in New England area with accessibility to teaching centers and potential faculty appointment. Responsibility for all medical staff activities. Salary range and fringe benefits attractive to the right person. Dept. 266, c/o NYSJM.

OBSTETRICIAN-GYNECOLOGIST, BOARD ELIGIBLE OR CERTIFIED for full-time position in HMO-type prepaid group practice, suburb of New York City. Initial contract at $30,000 plus, depending on qualifications. Excellent opportunity. Send curriculum vitae with first letter. Dept. 268, c/o NYSJM.

INTERNIST-GERIATRICIAN, HALFTIME POSITION AT 1,000-BED GENERAL hospital. Major teaching division of the Mount Sinai School of Medicine with unique extended care and geriatric medical unit. Excellent opportunity for active participation in patient care, teaching and research. Academic opportunity and salary commensurate with qualifications. An Equal Opportunity Employer. Write to: Leslie S. Libow, M.D., Chief Geriatrics Division, Mount Sinai Hospital Services, City Hospital Center, 79-01 Broadway, Elmhurst, New York 11373, or call (212) 830-1491.

NEPHROLOGY FELLOW, LARGE RENAL UNIT AND DIALYSIS SERVICE in Brooklyn, N.Y., for June 1973 to June 1974. Training in dialysis, renal biopsy, kidney transplantation and clinical nephrology is stressed. Minimum 2 yrs. Internal medicine residency required. Send curriculum vitae to: Renal, P.O. Box 781, Brooklyn, N.Y. 11201.

PHYSICIANS WANTED—CONT'D

SPANISH SPEAKING DOCTOR FOR GENERAL PRACTICE, FREEPO
area. Call (516) 231-4848.

PHYSICIAN DURING JULY AND AUGUST 1973, FOR CHILDREN'S CA
Located at Beach Lake, Pa. Accommodates 350 campers, ages 6-16. C
plete, modern health center; two R.N.'s in attendance. Will accept one M
for each month. No children of camp age accepted. Camp opens July 1
closes August 26. Private room and facilities. Please include your teleph
number in reply to: Trail's End Camp, c/o Beach Lake, Inc., 215 Adams
Brooklyn, N.Y. 11201.

PARTNERSHIP AVAILABLE, INTERNIST AND/OR FAMILY PRACT
physician, resort area Eastern Long Island. Seven man group practice. S
ry first two years if desired. Contact: Edwin C. Rowe, M.D., 94 Pan
Road, East Hampton, N.Y. 11937.

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disciplinary team approach. All government employment benefits, incluc
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New York City on North Shore of Long Island. Salary: Board certi
$31,683; Board eligible $30,197. Send curriculum vitae to: Sheph
Nathan, M.D., Director, Kings Park State Hospital, Kings Park, N.Y. 1175

POSITIONS WANTED

RADIOLOGIST, CERTIFIED, EXPERIENCED, N.Y. STATE LICE
seeks after hours or part time position in New York City or vicinity in
Island. Dept. 256, c/o NYSJM.

RADIOLOGIST, UNIVERSITY TRAINED, EXPERIENCE IN HOSP
and private office practice and teaching in special procedures, N.Y. and
states license, seeks after hours or permanent, part time position day, eve
or weekend in New York City and its vicinity and New Jersey. Dept. 277
NYSJM.

BOARD CERTIFIED PEDIATRICIAN, CARDIOLOGY BOARD ELIG
seeks part-time work in general pediatrics or pediatric cardiology. Aftern
evenings, weekends. New York City area. Dept. 278, c/o NYSJM.

PRACTICES WANTED

ANESTHESIOLOGIST, BOARD CERTIFIED, SEEKS PARTNERSH
individual practice. New York and New Jersey license. Dept. 215
NYSJM.

PEDIATRICIAN, BOARD CERTIFIED, COMPLETING MILITARY OB
tion June 30, 1973, seeks association leading to partnership. Resume,
view, additional information on request. Harris C. Lillienfeld, M.D., 42
lege Parkway, Rockville, Maryland 20850.

GASTROENTEROLOGIST-INTERNIST, TOP UNIVERSITY TRA
staff of Mount Sinai Hospital, N.Y.C., desires to purchase medical pr
and/or rent office space, East Side Manhattan; X-rays preferable. Dep
c/o NYSJM.

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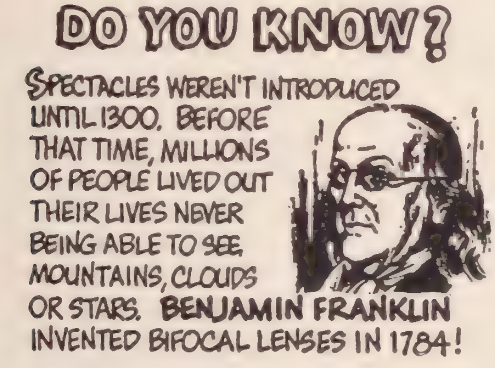
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FOR SALE: ROCKVILLE CENTRE LUXURY HOME AND OFFICE, CUStom, built on ½ acre cor., and designed for maximum efficiency and family privacy; 8 rm. home, 4 rm. office, 3 full baths, central a/c, office parking, large private garden, near hospitals, shopping, transportation. Suitable solo or group. Rental considered. Dept. 270, c/o NYSJM.

800 SQ. FT. OFFICE SPACE WITH SEPARATE ENTRANCE SUITABLE for doctor or related field. New building, excellent location, near all transportation, fully air-conditioned. 142-15 Franklin Ave., corner Union Street, Flushing, N.Y. (212) 275-8550.

BABYLON, LONG ISLAND: FULLY EQUIPPED OFFICE, MODERN X-ray, lab. facilities, suitable for one or more physicians; room to expand; many hospitals; 30 miles to N.Y. City. J. Berman, M.D., 626 Deer Park Ave., Babylon, N.Y. (516) JU7-6794.

KATONAH, WESTCHESTER COUNTY, N.Y. OUTSTANDING OPPORtunity! Long established medical practice and fully equipped building, plus 2-story garage with 4 room income apartment. Central location, 2 blocks from Penn Central Railroad. Ample off-street parking. Brochure on request. $125,000. A.E.C. Realty, Route 35, South Salem, N.Y. (914) 763-3149.

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FOR SALE: THREE STORY BROWNSTONE HOME AND OFFICE IN SUNset Park area, Brooklyn. Complete professional floor and two floors for living. Excellent condition. Central office air conditioning, circuit breakers, 220 wiring, Parquet floors, high ceiling, many appliances included, extras. Convenient to bus and subways. Must sacrifice. Call (212)492-7431.

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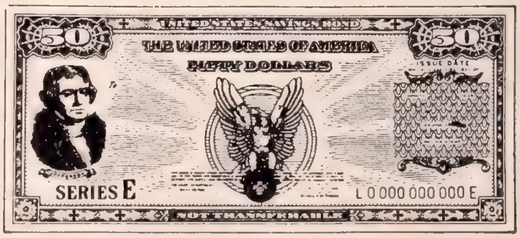

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WHAT GOES ON in medicine

NEW YORK STATE **January 1–15, 1973**

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Compiled by the
Division of Scientific Activities
Norman S. Moore, M.D., Director

Mrs. Evelyn G. Clark, Editor
J. Richard Burns, J.D., Business Manager

Please send information to the Editor, WHAT GOES ON, 420 Lakeville Road, Lake Success, New York 11040. Telephone 516-488-6100.

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1973 Deadline Dates for WHAT GOES ON

Meeting Dates	*Deadlines Dates*
January 1–15, 1973	November 10, 1972
January 16–31, 1973	November 25, 1972
February 1–15, 1973	December 10, 1972
February 16–28, 1973	December 26, 1972
March 1–15, 1973	January 10, 1973
March 16–31, 1973	January 25, 1973
April 1–15, 1973	February 10, 1973
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May 1–15, 1973	March 10, 1973
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June 1–15, 1973	April 10, 1973
June 16–30, 1973	April 25, 1973
July 1–31, 1973	May 10, 1973
August 1–31, 1973	June 10, 1973
September 1–15, 1973	July 10, 1973
September 16–30, 1973	July 25, 1973

NEW YORK CITY AREA

January 2 / 16, 1973

8:00–9:00 a.m., Tuesdays

Richmond Chapter of AAFP

The Staten Island Hospital
101 Castleton Avenue
Staten Island

Postgraduate Lectures on Gynecology/Obstetrics

January 2

Gynecologic Physiology

M. RAPP, M.D.

January 9

Recognition of Common Gynecology Pathology

R. MARKS, M.D.

January 16

Recent Advances in Obstetrics

M. MONACO, M.D.

TUESDAY, JANUARY 2

8:30 p.m.

Jewish Memorial Hospital

Broadway and 196th Street

ENDOCRINE RELATED TUMORS

ROY HERTZ, M.D.
New York Medical College

January 3 / May 25, 1973

9:00 a.m.–4:00 p.m., full time

French and Polyclinic Medical School

345 West 50th Street

BASIC MEDICAL SCIENCES CURRICULUM

This curriculum provides approximately 600 hours of formal instruction in the basic medical sciences for medical school graduates and other qualified candidates preparing for Flex, State or National Boards, and other examinations, or for validation in other institutions.

For further information, address: THE DEAN, at the above address.

WEDNESDAY, January 3

4:00–5:30 p.m.

Westchester Square Hospital in Collaboration with Albert Einstein College of Medicine

Conference Room
1625 St. Peters Avenue
Bronx

NEW PRECEPTS IN THE CARE OF THE NEWBORN

NATHAN GREENSTEIN, M.D.
Albert Einstein College of Medicine

NO FEE CREDITS: 1½ hours AAFP

8:00–9:00 p.m.

New York Society of Physical Medicine and Rehabilitation and the Section on Physical Medicine and Rehabilitation of the New York Academy of Medicine

2 East 103rd Street

PVD TODAY

HEINZ I. LIPPMANN, M.D.
Albert Einstein College of Medicine

THURSDAY, JANUARY 4

8:00 p.m.

Jewish Memorial Hospital

Broadway and 196th Street

ODONTOGENIC TUMORS

LEO ZACH, D.D.S.
N.Y.U. Dental Center

January 5 and 12, 1973

8:00–9:30 a.m., Fridays

Maimonides Medical Center

Fuhs Auditorium
4802 Tenth Avenue
Brooklyn

Course: Pediatrics, Gynecology, Surgery and Medicine for the Family Physician

January 5

Carotid Artery Surgery Stressing Indications as Recognized by the Family Physician

FELIX SIEGMAN, M.D.

January 12

Family Planning Today

DEBORAH BAUMGOLD, M.D.

FRIDAY, JANUARY 5

The Queens Chapter of the American Association of Medical Assistants

Medical Society of the County of Queens
112-25 Queens Boulevard
Forest Hills

MONTHLY MEETING

January 6 / 27, 1973

10:00 a.m.–5:00 p.m., four Saturdays

Columbia University P & S

630 West 168th Street

HYPNOSIS AND PSYCHIATRY

RALPH V. AUGUST, LEWIS JACOBS, RONALD KATZ, HANS KRAUS, MARTIN T ORNE, E. E. ROCKEY, HERBERT E WALKER and L. S. WOLFE, M.D.'s

FEE: $100

For information, write to: MELVIN D. YAHR, M.D., Associate Dean, at the above address.

January 7 / March 11, 1973

9:00 a.m.-12:00 noon, Sundays

Downstate Medical Center

Continuing Education Conference Center
450 Clarkson Avenue
Brooklyn

BASIC SCIENCES FOR THE PRACTICING PHYSICIAN

HUGH J. CARROLL, M.D., with invited lecturers

FEE: $100

To register, contact: CHARLES M PLOTZ, M.D., Dir., Continuing Education, Above address. Tel. (212) 270-2421.

MONDAY, JANUARY 8

8:30 p.m.

Rudolf Virchow Medical Society

2 East 63rd Street

1. **The Influence of Dietary Fats on Aging**
   HANS KAUNITZ, M.D.
2. **The Present Impact on Sportsmedicine on the Non-Sporting Adult Population**
   JAMES NICHOLAS, M.D.
   Lenox Hill Hospital

TUESDAY, JANUARY 9

10:00 a.m.

Maimonides Medical Center

Saltzman Auditorium
4802 Tenth Avenue
Brooklyn

Pediatric Postgraduate Conference

ANTI-CONVULSANTS

RICHARD L. MASLAND, M.D.
Columbia University

1:15-2:15 p.m.

Downstate Medical Center

Continuing Education Conference Room
450 Clarkson Avenue
Brooklyn

STUDIES IN MINERALOCORTICOID IN HYPERTENSION

JAMES C. MELBY, M.D.
Boston University Medical Center

4:00-5:00 p.m.

Flushing Hospital and Medical Center

First Floor Conference Room
Parsons Boulevard and 45th Avenue
Flushing

Pediatric Guest Lecture

THE HEMOLYTIC ANEMIAS WITH SPECIAL REFERENCE TO SICKLE CELL DISEASE

PHILIP LANZKOWSKY, M.D.
Long Island Jewish Hospital Center

WEDNESDAY, JANUARY 10

8:00 p.m.

New York Surgical Society

New York Academy of Medicine
2 East 103rd Street

Case Report:

Use of Reversed Small Bowel Segment to Control Rapid Intestinal Transit

A. E. KARK, M.D. and D. PERTSEMLIDIS, M.D.

Papers:

1. **Staging Laparotomy for Hodgkin's Disease**
   M. A. PAGLIA, M. LACHER, R. HERTZ, W. GELLER, R. C. WATSON, J. L. LEWIS, Jr., L. NISCE, P. LIEBERMAN, and E. J. BEATTIE, Jr., M.D.'s
2. **Intraluminal and Intravenous 5-FU Chemotherapy Adjuvant to Surgery for Resectable Colorectal Cancer**
   C. E. GROSSI, M.D., W. I. WOLFF, M.D., T. F. NEALON, Jr., M.D., B. PASTERNACK, Ph.D., L. GINZBURG, M.D., and L. M. ROUSSELOT, M.D.
3. **Replantation of Completely or Nearly Completely Severed Limbs**
   C. DANESE, M.D. and A. E. KARK, M.D.

January 10 and 17, 1973

8:30-10:00 p.m., Wednesdays

American Institute for Psychoanalysis

329 East 62nd Street

THE MANAGEMENT OF SEXUAL PROBLEMS IN MEDICAL PRACTICE

LEON GOTTFRIED, M.D.

January 11 and 18, 1973

3:00–5:00 p.m.

The Page and William Black Post-Graduate School of Medicine

The Mount Sinai Medical Center
100th Street and 5th Avenue

INTRODUCTION TO STRABISMUS

EDWARD L. RAAB, M.D.
Mount Sinai School of Medicine

FEE: $40

January 13 / March 17, 1973

10:00 a.m.–12:00 noon, Saturdays

Downstate Medical Center

Second Floor Lecture Room
450 Clarkson Avenue
Brooklyn

HOSPITAL ADMITTING OFFICE MANAGEMENT I

MR. MURRAY RIMMER, B.A., WITH MR. DWIGHT D. DIXON, B.B.A., and invited lecturers

FEE: $35

To register, contact: MR. DWIGHT D. DIXON, Chm., College of Health Related Professions, above address.

MONDAY, JANUARY 15

3:30 p.m.

Mount Sinai Hospital Services

City Hospital Center at Elmhurst
Auditorium
79-01 Broadway
Elmhurst

WILSON'S DISEASE

IRMIN STERNLIEB, M.D.
Albert Einstein College of Medicine

January 15 / June 25, 1973

8:00–10:00 p.m., Mondays

Downstate Medical Center

Second Floor Lecture Hall
450 Clarkson Avenue
Brooklyn

SURGICAL ANATOMY

RAYMOND K. J. LOUMANEN, M.D.

FEE: $125

To register, contact: CHARLES M. PLOTZ, M.D., Dir., Continuing Education, above address.

SUBSCRIPTION

Subscriptions to "WHAT GOES ON" are being offered at less than cost.

MONDAY, JANUARY 15

8:30 p.m.

Beth Israel Medical Center

10 Nathan D. Perlman Place

Medical-Surgical Thoracic Conference

REHABILITATION IN THE OVERALL MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

ALBERT HAAS, M.D.
N.Y.U. Medical Center

FUTURE EVENTS

THURSDAY, JANUARY 18

11:00 a.m.

Department of Health, City of New York

Bureau of Infectious Disease Control
Long Island College Hospital
340 Henry Street
Brooklyn

Tropical Disease

AMEBIASIS

JOHN N. EDSON and WILLIAM G. MULLIN, M.D.'s

**January 18 / April 19, 1973*

5:00–6:30 p.m., Monthly Thursdays

Manhattan Eye, Ear and Throat Hospital

Conference Room
210 East 64th Street

MANHATTAN OCULOPLASTIC CONFERENCE

January 18

Dacryocystorhinostomy and Mucoceles

Discussion: BYRON SMITH, M.D.

February 15

Oculoplastic Surgery of Endocrinopathies

Discussion: MARTIN BODIAN, M.D.

March 15

Lacrimal Drainage System Trauma and Recession of Eyelid Retractors

Discussion: VIRGINIA LUBKIN, M.D.

April 19

Ocularists' Symposium: Messrs.

RAYMOND JAHRLING (Boston), JOHN KELLY (Phila.), FELIX WEINBERG (Baltimore), JOSEPH SOPER (Houston), LOUIS HEYMAN (Phila.)

Discussion: PIERRE GUIBER, M.D.

*Program started November 16, 1972

SATURDAY, FEBRUARY 10

8:30 a.m. Registration

Medical Society of the State of New York

Committee on Medical Aspects of Sports
Americana Hotel
Georgian Ballroom

MEDICAL ASPECTS OF SPORTS
Sixth Annual Symposium

NO REGISTRATION FEE

Co-Sponsors: New York State Public High School Athletic Association; Health, Physical Education and Recreation Association; Eastern States Trainers Association and Touchdown Club of New York

Write for Program: Medical Society of the State of New York, 420 Lakeville Road, Lake Success, N.Y. 11040.

February 11 / 14, 1973

Medical Society of the State of New York

Hotel Americana, New York City

ANNUAL CONVENTION

SCHEDULE OF SCIENTIFIC MEETINGS

SUNDAY, FEBRUARY 11

10 A.M. GENERAL SESSION, Royal Ballroom
ARCHIVES, Versailles Ballroom
OPHTHALMOLOGY, Versailles Terrace

2 P.M. ANESTHESIOLOGY, Versailles Terrace

MONDAY, FEBRUARY 12

9 A.M. (DATA PROCESSING IN MEDICINE) ....joint meeting
(PATHOLOGY, CLINICAL PATH., & BLOOD BANKING), Versailles Terrace
DERMATOLOGY & SYPHILOLOGY, Royal Ballroom B
GASTROENTEROLOGY & PROCTOLOGY, Royal Ballroom A
SCHOOL HEALTH, Princess Room
(PLASTIC & RECONSTRUCTIVE SURGERY)
(UROLOGY) .....joint meeting, Versailles Ballroom

2 P.M. GENERAL SESSION, Royal Ballroom A
NEUROLOGY, Royal Ballroom B
(ORTHOPEDIC SURGERY)
(PEDIATRICS) ...joint meeting, Versailles Ballroom

TUESDAY, FEBRUARY 13

9 A.M. CHEST DISEASES, Versailles Terrace
(FAMILY & GENERAL PRACTICE)
(PSYCHIATRY) ...joint meeting, Versailles Ballroom
OBSTETRICS & GYNECOLOGY, Royal Ballroom A
PHYSICAL MEDICINE & REHABILITATION, Royal Ballroom B

2 P.M. GENERAL SESSION, Royal Ballroom A
MEDICAL LEGAL & WORKMEN'S COMP. MATTERS, combined with OCCUPATIONAL MEDICINE, Versailles Ballroom
SPACE MEDICINE, Versailles Terrace

WEDNESDAY, FEBRUARY 14

8:45 INTERNAL MEDICINE, Royal Ballroom

9 A.M. ALLERGY, Princess Room
NEUROSURGERY, Versailles Terrace
PREVENTIVE MEDICINE & PUBLIC HEALTH, Versailles Ballroom

2 P.M. GENERAL SESSION, Royal Ballroom
OTOLARYNGOLOGY, Versailles Ballroom
RADIOLOGY, Versailles Terrace
SURGERY, Princess Room

SCIENTIFIC MOTION PICTURES AND SCIENTIFIC AND TECHNICAL EXHIBITS, SUNDAY through WEDNESDAY, February 11 through 14, open at 9 A.M., close at 5 P.M. SCIENTIFIC MEETING ROOMS, 2nd Floor. EXHIBITS, MOTION PICTURES, Albert Hall, Lower Lobby.

For further information and complete program, see New York State Journal of Medicine, January 1, 1973, or write Medical Society of the State of New York, 420 Lakeville Road, Lake Success, N.Y. 11040.

March 1 / May 3, 1973

4:30–6:00 p.m., Thursdays

The Page and William Post-Graduate School of Medicine

The Mount Sinai Medical Center
100th Street and 5th Avenue

HYPNOSIS FOR THE PHYSICIAN AND DENTIST

ELLIOT N. WINEBURG, M.D.
Mount Sinai School of Medicine

SUNDAY, MARCH 11

9:30 a.m.

The American Association of Medical Assistants, Kings Chapter

Brooklyn Hospital
DeKalb Avenue and Ashland Place
Brooklyn

PUBLIC HEALTH FORUM

FEE: $6 for members and students
$8 for non-members

Additional information may be obtained from the Forum Chairman, MISS MARIE GANNOTTI, C.M.S., 1705 Caton Avenue, Brooklyn, N.Y. 11226, phone (212) 693-7635.

March 12 / 16, 1973

9:00 a.m.–5:00 p.m., Monday–Friday

The Page and William Black Post-Graduate School of Medicine

CLINICAL NEUROLOGY

MORRIS B. BENDER, M.D.
Mount Sinai School of Medicine

FEE: $200

March 12 / 14, 1973

9:00 a.m.–5:00 p.m., Monday–Wednesday

The Page and William Black Post-Graduate School of Medicine

LABORATORY METHODS IN BLOOD BANKS

RICHARD E. ROSENFIELD, M.D., and Members of the Blood Bank Staff Mount Sinai School of Medicine

FEE: $100

March 12 / 23, 1973

Full time

N.Y.U. Post-Graduate Medical School

550 First Avenue

ENVIRONMENTAL AND OCCUPATIONAL MEDICINE

Under the Direction of:
DAVID H. GOLDSTEIN, M.D.

FEE: $300

Application should be made by January 15, 1973.
Write: Office of the Recorder, Room 156 MSB, above address
Refer to Course No. 481.

1973 Deadline Dates and Announcement Cards available on request. Write The Editor, WHAT GOES ON.

FRIDAY, MARCH 23

8:45 a.m.–4:45 p.m.

The Page and William Black Post-Graduate School of Medicine

COMMUNICATION DISORDERS

ASHER BAR, Ph.D., and Guest Lecturers
Mount Sinai School of Medicine

FEE: $10

March 24 / 26, 1973

9:00 a.m.–5:00 p.m., Saturday–Monday

Downstate Medical Center

450 Clarkson Avenue
Brooklyn

OPHTHALMIC MICROSURGERY

RICHARD C. TROUTMAN, M.D., with PAUL B. BEDROSSIAN, AUSTIN I. FINK, JOSEPH H. GOLDSTEIN, GEORGE M. GOMBOS, FERNANDO LOSADA, MURRAY A. MELTZER, DONALD E. WILLARD, M.D.'s, and Invited Lecturers.

FEE: $500

To register, contact: MRS. SYLVIA BAER, Division of Ophthalmology, at the above address. Tel. (212) 270-1961.

March 29 / 31, 1973

American Cancer Society

Shoreham Hotel
Washington, D.C.

NATIONAL CONFERENCE ON UROLOGIC CANCER

For Advance Registration and Programs, write:
SIDNEY L. ARJE, M.D., American Cancer Society, 219 East 42nd Street, New York, N.Y. 10017.

ALBANY AREA

January 5 / 22, 1973

Albany Medical College

Department of Postgraduate Medicine

14th POSTGRADUATE MEDICAL SEMINAR CRUISE

An 11-day cruise from New York aboard the "Gripsholm" of the Swedish American Line.

Faculty of the Albany Medical College will present a comprehensive shipboard postgraduate program, covering subjects in pediatrics, psychiatry, surgery, hematology and physiology.

For information write to: FRANK M. WOLSEY, Jr., M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

BUFFALO AREA

PROGRAMS ON THE TELEPHONE LECTURE NETWORK OF THE LAKES AREA REGIONAL MEDICAL PROGRAM

The School of Medicine presents various programs via the facilities of the Telephone Lecture Network of the Regional Medical Program for Western New York. The Network covers the counties of Erie, Niagara, Genesee, Wyoming, Chautauqua, Cattaraugus, Allegany, and Steuben in New York State and the counties of Erie, McKean and Crawford in the Commonwealth of Pennsylvania.

Programs are presented in two series:

1. A weekly series of general interest considered useful to all physicians presented at 11:30 a.m. on Tuesdays.
2. The monthly series on Cancer sponsored by the Roswell Park Memorial Institute and presented on the third Wednesday of each month under the direction of Gerald P. Murphy, M.D.

For further information, contact the State University of New York at Buffalo, 2211 Main Street, Buffalo, N.Y. 14214. Tel. (716) 831-5526.

January 4 / May 31, 1973

**Continuing Medical Education,
State University of New York at Buffalo and
Heart Association of Western New York**

Sisters of Charity Hospital
Palmer Hall

CLINICS IN PHYSICAL EXAMINATION OF THE CARDIAC PATIENT AND ARRHYTHMIA WORKSHOPS

Note: These Thursday evening sessions are workshops in which individual stethophones will be available so that each participant can hear the heart sounds and murmurs of a patient. Full advantage will be taken of TV magnification of difficult-to-see phenomena. A storage oscilloscope will be used to present phonocardiographic data. The second hour will consist of a workshop in arrhythmias, stressing basic principles and not requiring any previous training. Nurses interested in coronary care are also welcome to register.

FEE: $25 CREDIT: 38 hours AAFP and AMA

Write: SUNYAB, Continuing Medical Education, Main Street Division, 2211 Main Street, Buffalo, N.Y. 14214. Tel (716) 831-5526.

NASSAU COUNTY

January 4 and 11, 1973

11:30 a.m.–12:30 p.m., Thursdays

Nassau County Medical Center

Recreation Activities Building
2201 Hempstead Turnpike
East Meadow

Pediatric Postgraduate Lectures

January 4

Common Pitfalls in Pediatric Radiology

DVORAH BALSAM, M.D.
SUNY, Stony Brook

January 11

The Handicapped Child and the Human Resources School

LEON GREENSPAN, M.D.
N.Y.U. Medical Center

PHYSICIANS' PLACEMENT

BARKER, N.Y., Niagara County, needs a Family Physician.

CONTACT: MRS. ESTHER HYDE, Lower Lake Road, Barker, N.Y. 14012. Tel. (716) 795-3892.

FAIR HAVEN, N.Y., Cayuga County. Family Physician needed.

CONTACT: MR. PEARNE W. BILLINGS, Fair Haven Plaza, Inc., Main Street, Fair Haven, N.Y. 13064. Tel. (315) 947-5117.

JAMESTOWN, N.Y., Chautauqua County. Internists and G.P./Psychiatrist for Ambulatory Primary Care Clinic.

CONTACT: JOHN D. VOLTMANN, M.D., Dir., Jamestown Medical Clinic, 103 Allen Street, Jamestown, N.Y. 14701.

OVERSEAS NEED—Doctors in all specialties needed to serve overseas with MEDICO, a Service of CARE. Two-year positions on teams w/salary, benefits, travel expenses. Also 1-month volunteers.

CONTACT: MR. LEONARD J. COPPOLD, Dir., Contract Personnel, CARE/MEDICO, 660 First Avenue, New York, N.Y. 10016. Tel. (212) 686-3110.

MARGARETVILLE, N.Y., Delaware County. Bd. Cert/Elig Surgeon capable of handling orthopedics in new hospital.

CONTACT: DR. HALIM, Chief of Surgical Service, Margaretville Memorial Hosp., Margaretville, N.Y. 12455. Tel. (914) 586-2631.

MARGARETVILLE, N.Y., Delaware County. Bd. Cert/Elig Internist or G.P. for above mentioned Hospital.

CONTACT: DR. ANSARI, Chief of Medical Service, at above address.

MECHANICVILLE, N.Y., Saratoga County. Family Physicians needed for this area.

CONTACT: MR. JOSEPH E. AUGUSTINE, Pres., Chamber of Commerce, Inc., 116 Park Avenue, Mechanicville, N.Y. 12118. Tel. (518) 664-7791.

WEBSTER, N.Y., Monroe County. Recently formed multi-specialty group practice seeks men in Family Practice and/or Internal Medicine. New building being built to accommodate group.

CONTACT: JASON O. COOK, M.D., 190 South Avenue, Webster, N.Y. 14580. Tel. (716) 872-2936.

WOODBOURNE, N.Y., Sullivan County. G.P.

CONTACT: MR. BERNARD LIPSKY, Chamber of Commerce, Woodbourne, N.Y. 12788. Tel. (914) 434-7652

WOODHULL, N.Y., Steuben County. G.P.

CONTACT: JEFFREY SMITH, JR., P.O. Box 68, Woodhull, N.Y. 14898. Tel. (607) 458-5151.

EVENTS RECEIVED AFTER DEADLINE

TUESDAY, JANUARY 9

9:00 a.m.

Triboro Hospital

Parsons Boulevard and 82nd Drive Queens

A REVIEW OF ESOPHAGEAL CANCER SURGERY IN 1972 IN QUEENS HOSPITAL CENTER

P. Crastnopol, M.D. and
J. Chang, M.D.

8:00 p.m.

The New York Academy of Medicine, Section on Medicine with the Section on Surgery

2 East 103rd Street

COMBINED MEETING

Moderator:
CARROLL M. LEEVY, M.D.
New Jersey College of Medicine

1. **Hyperimmune Globulin in Hepatic Coma**

DAVID J. GOCKE, M.D.
Columbia University P & S

2. **Neurotransmitters in Liver Failure**

ROGER WILLIAMS, M.D.
University of London

3. **Present Status of Liver Transplantation**

THOMAS STARZL, M.D.
University of Colorado

FRIDAY, JANUARY 12

8:30 p.m.

Semmelweis Scientific Society

2 East 103rd Street

1. **The "New Impotence"**

WILLIAM FROSCH, M.D.
N.Y.U. School of Medicine
Discussant: ANDREW K. BERNATH, M.D.

2. **Results of Psychotherapeutic Modalities in the Treatment of Functional Sex Disorders**

JOHN O'CONNOR, M.D.
Columbia University P & S
Discussant: LOTHAR GIDRO-FRANK, M.D.

NOTE: Members Scientific Meeting will be held on May 11, 1973. If you wish to present a paper, please contact the Committee Chairman, ALEXANDER S. HONIG, M.D., 2000 Anthony Avenue, New York, N.Y. 10457. Tel. 212 872-3131.

MONDAY, JANUARY 15

8:00 p.m.

The New York Society for Clinical Ophthalmology with The New York Academy of Medicine Section on Ophthalmology

2 East 103rd Street

Combined Meeting

1. **Ocular and Orbital Foreign Bodies**

Moderator: A. GERARD DEVOE, M.D.

2. **X-Ray Detection and Localization of Foreign Bodies**

STEVEN L. TROKEL, M.D.

3. **Ultrasonographic Delineation of Foreign Bodies**

D. JACKSON COLEMAN, M.D.

4. **Clinical Experience with Foreign Body Removal**

A. GERARD DEVOE, M.D.

5. **The Team Approach to Foreign Body Management**

NATHANIEL R. BRONSON, M.D.

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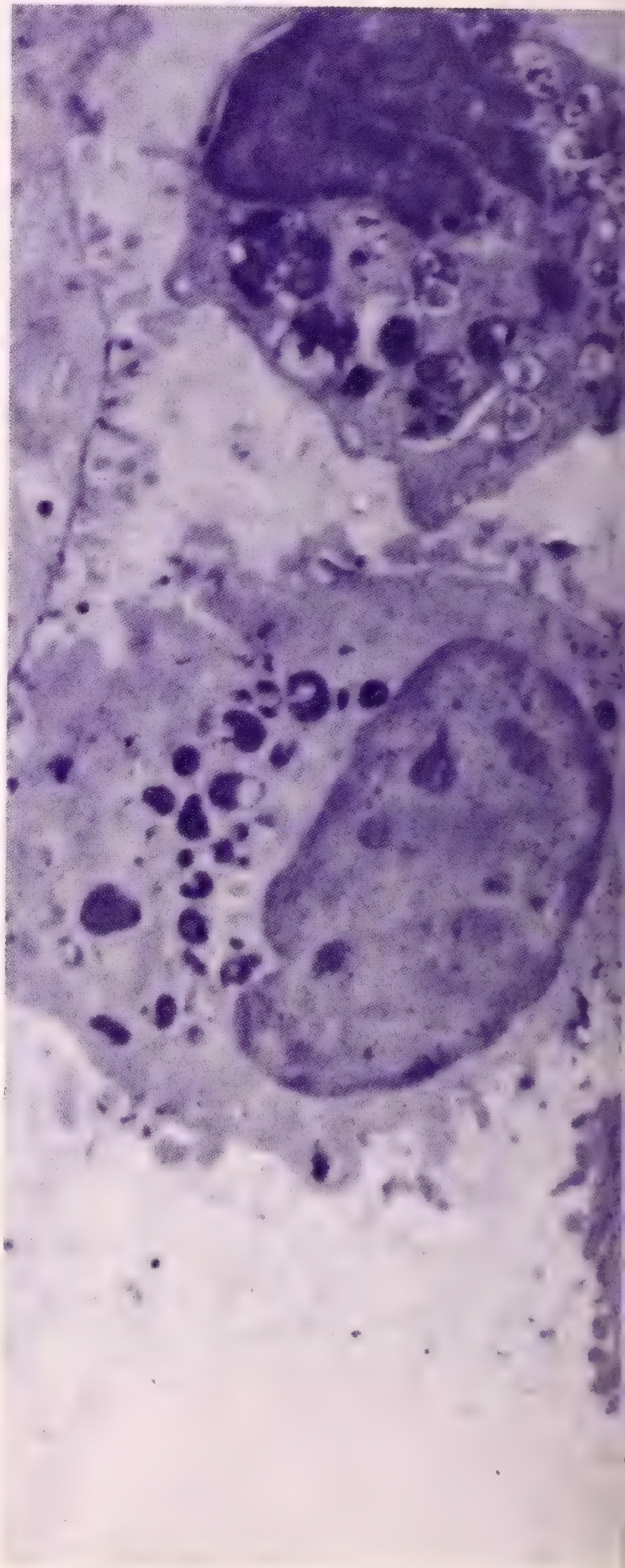

Electron microscopic photograph of alveolus containing several alveolar macrophages. In the lung, macrophages remove foreign particles which have been carried into the alveoli by inspired air. In inflammatory conditions they gather in large numbers and gorge themselves with foreign material. Note the very active cytoplasm which contains phagocytosed dust and carbon particles with many secretory granules and inclusions. The cell surface is lined by microvilli. Original magnification 5,000.

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Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when the potential benefits exceed the possible risks to mother and fetus.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving), and increase dosage gradually. Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension since phenothiazines may induce a reversed epinephrine effect on occasion. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—ECG changes (see *Cardiovascular Effects* below). *Other*—A single case described as parotid swelling.
The following reactions have occurred with phenothiazines and should be considered: *Autonomic Reactions*—Miosis, obstipation, anorexia, paralytic ileus. *CutaneousReactions*—Erythema, exfoliative dermatitis, contact dermatitis. *Blood Dyscrasias*—Agranulocytosis, leukopenia, eosinophilia, thrombocytopenia, anemia, aplastic anemia, pancytopenia. *Allergic Reactions*—Fever, laryngeal edema, angioneurotic edema, asthma. *Hepatotoxicity*—Jaundice, biliary stasis. *Cardiovascular Effects*—Changes in terminal portion of electrocardiogram, including prolongation of Q-T interval, lowering and inversion of T-wave, and appearance of a wave tentatively identified as a bifid T or a U wave have been observed with phenothiazines, including Mellaril (thioridazine); these appear to be reversible and due to altered repolarization, not myocardial damage. While there is no evidence of a causal relationship between these changes and significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients showing characteristic electrocardiographic changes while taking the drug. While proposed, periodic electrocardiograms are not regarded as predictive. Hypotension, rarely resulting in cardiac arrest. *Extrapyramidal Symptoms*—Akathisia, agitation, motor restlessness, dystonic reactions, trismus, torticollis, opisthotonus, oculogyric crises, tremor, muscular rigidity, and akinesia, occasionally persisting for several months or years especially in elderly patients with brain damage. *Endocrine Disturbances*—Menstrual irregularities, altered libido, gynecomastia, weight gain, false positive pregnancy tests. *Urinary Disturbances*—Retention, incontinence. *Others*—Hyperpyrexia; behavioral effects suggestive of a paradoxical reaction, including excitement, bizarre dreams, aggravation of psychoses, and toxic confusional states; following long-term treatment, a peculiar skin-eye syndrome marked by progressive pigmentation of skin or conjunctiva and/or accompanied by discoloration of exposed sclera and cornea; stellate or irregular opacities of anterior lens and cornea.

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